

# Edwards Aquifer Exception Request

for

**Savanna Trail, Home Depot Blvd SUP, and Jones Road Trail**

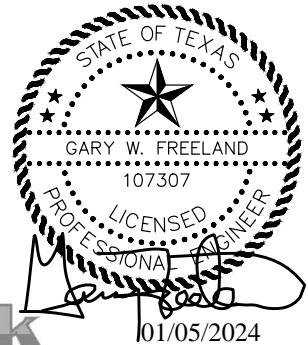


Submitted to TCEQ January 5, 2024

PREPARED BY



**Freeland**  **Turk**  
**ENGINEERING GROUP**



FREELAND TURK ENGINEERING GROUP, LLC  
18830 FORTY SIX PARKWAY, BUILDING 2, SUITE B  
SPRING BRANCH, TEXAS 78070  
(830) 377-4555  
TBPE FIRM # 21047



---

January 5, 2024

Texas Commission on Environmental Quality  
Austin Regional Office  
12100 Park 35 Circle  
Austin, TX 78753

**RE: Savanna Trail , Home Depot Blvd Trail and Jones Road Trail**

We are submitting this WPAP exception for Savanna Trail & Home Depot Blvd SUP.

If you have any questions please feel free to call me at (830) 377-4555.

Sincerely,

Gary Freeland, P.E., CFM  
Principal - Consultant City Engineer for the City of Sunset Valley



# 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.

<b>1. Regulated Entity Name:</b> Savanna Trail, Home Depot Blvd Trail, and Jones Rd Trail					<b>2. Regulated Entity No.:</b> NA				
<b>3. Customer Name:</b> City of Sunset Valley					<b>4. Customer No.:</b> CN600694970				
<b>5. Project Type:</b> (Please circle/check one)	New	Modification			Extension		Exception		
<b>6. Plan Type:</b> (Please circle/check one)	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
<b>7. Land Use:</b> (Please circle/check one)	Residential	Non-residential				<b>8. Site (acres):</b>		1.085	
<b>9. Application Fee:</b>	\$500		<b>10. Permanent BMP(s):</b>			NA			
<b>11. SCS (Linear Ft.):</b>	NA		<b>12. AST/UST (No. Tanks):</b>			NA			
<b>13. County:</b>	Travis		<b>14. Watershed:</b>			Williamson Creek & Sunset Valley Trib			

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

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

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

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

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.

GARY FREEZANO

Print Name of Customer/Authorized Agent

*[Signature]*

12-12-2023

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

## 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.*

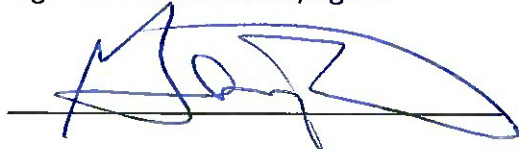
## Signature

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: Gary Freeland

Date: 1-5-24

Signature of Customer/Agent:



## Project Information

1. Regulated Entity Name: Savanna Trail, Home Depot Blvd SUP, and Jones Rd Trail

2. County: Travis

3. Stream Basin: Sunset Valley Tributary & Williamson Creek

4. Groundwater Conservation District (If applicable): Edwards Aquifer

5. Edwards Aquifer Zone:

☒ Recharge Zone

☐ Transition Zone

6. Plan Type:

☒ WPAP

☐ SCS

☐ Modification

☐ AST

☐ UST

☒ Exception Request

7. Customer (Applicant):

Contact Person: Carolyn Meredith - Public Works Director

Entity: City of Sunset Valley

Mailing Address: 3205 Jones Road

City, State: Sunset Valley, TX

Zip: 78745

Telephone: 512-891-9103

FAX: 512-892-6108

Email Address: cmeredith@sunsetvalley.org

8. Agent/Representative (If any):

Contact Person: Gary Freeland

Entity: Freeland Turk Engineering Group

Mailing Address: 172 Creekside Park

City, State: Spring Branch, Texas

Zip: 78070

Telephone: (830) 438-0329

FAX: NA

Email Address: gfreeland@freelandturk.com

9. Project Location:

- ☒ The project site is located inside the city limits of SUNSET VALLEY.
- ☐ 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.

Savanna trail is located at the corner of Brodie Lane and Ernest Robles Way within the green/wooded creek area. Lat/Lon coordinates for Savanna Trail are 30.230175N, -97.819097W. Home Depot Blvd SUP is located along the north side of Home Depot Blvd Right-of-Way, between the roadway and the shopping center. Lat/Lon coordinates for HDB SUP are 30.226193, -97.823031. Jones Rd Trail is located along Jones Rd from Pillow Rd to Lone Oak Trl with coordinates 30.227915, -97.808680

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: There is no staking, the area is notable at the corner of Brodie Lane and Ernest Robles Way (Savanna Trail). Also, there is no staking done for HDB SUP, the area is notable within the north end of Home Depot Blvd Right-of-Way. Likewise no staking for Jones Rd Trail.
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: modified for stormwater management

### ***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).

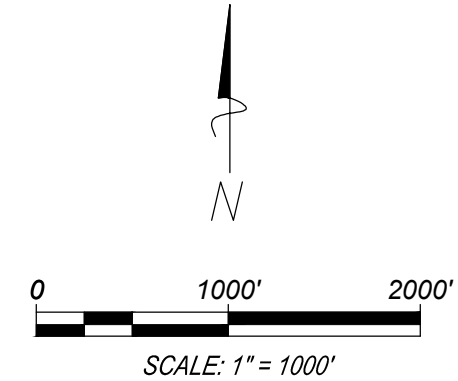
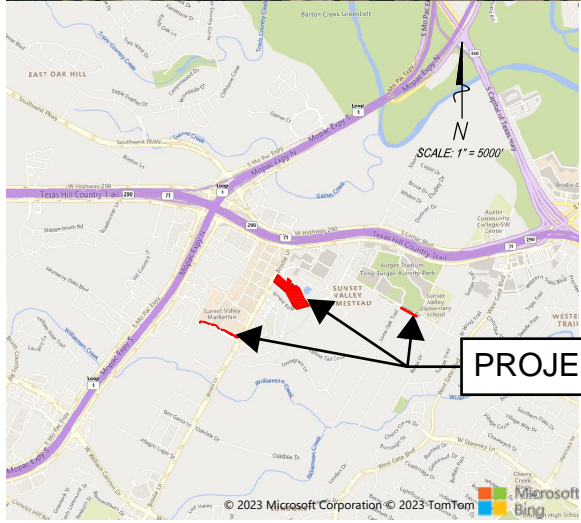
17. ☒ I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:
- (1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);
  - (2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; 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.



9/27/2023 1:53 PM - ALEXSKAR VILLARREAL Z:\ENG - PRD\120 City of Sunset Valley\117 - TO 19 UCC - Civil Engineering\CAD\Sheet\exhibits.dwg



**Freeland & Turk**  
**ENGINEERING GROUP**

172 CREEKSIDE PARK, STE 115  
SPRING BRANCH, TX 78070

(830) 438-0329  
TBPE FIRM F-21047

Savanna Trail, Home Depot  
Blvd SUP, and Jones Rd Trail  
CITY OF SUNSET VALLEY  
ROAD MAP

DRAFTED BY:	AV
DESIGNED BY:	TT
CHECKED BY:	TT

THIS DOCUMENT IS  
RELEASED FOR THE  
PURPOSE OF REVIEW ONLY  
BY GARY W. FREELAND, P.E.  
LICENSE No. 107307  
September 27, 2023  
THIS DOCUMENT IS NOT TO  
BE USED FOR  
CONSTRUCTION BIDDING,  
OR PERMITTING PURPOSES

SHEET NO.  
587 - A  
9/27/2023



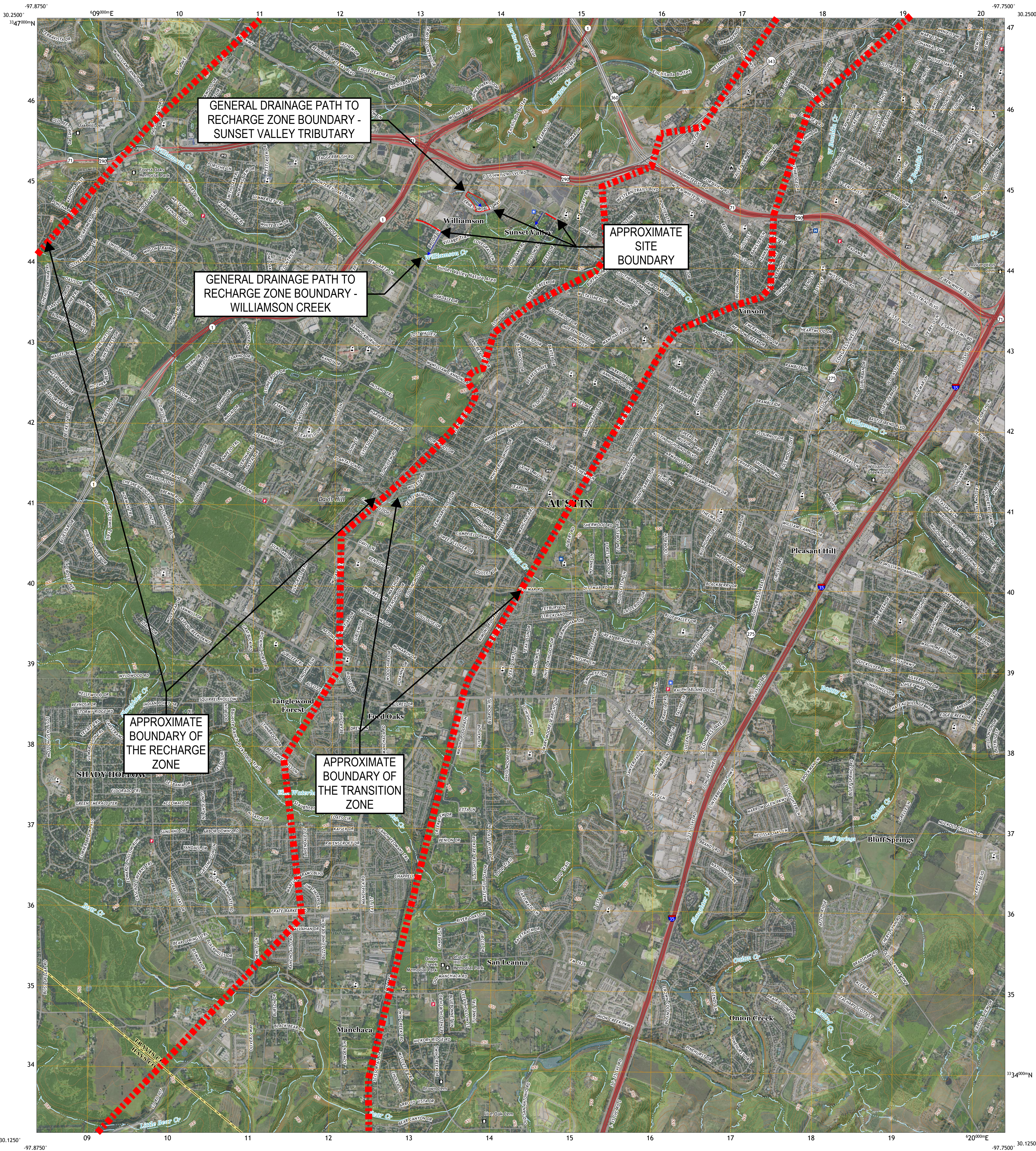
FORM TCEQ-0587 - ATTACHMENT B



U.S. DEPARTMENT OF THE INTERIOR  
U.S. GEOLOGICAL SURVEY



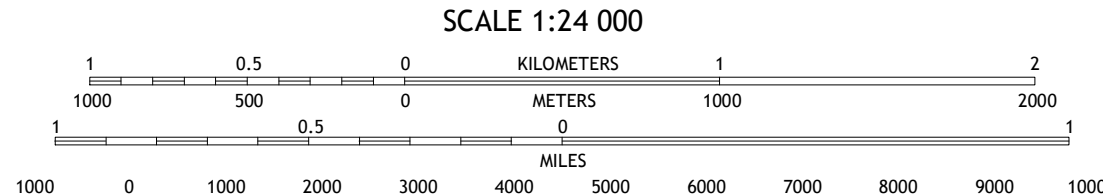
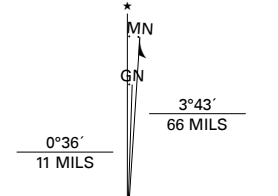
OAK HILL QUADRANGLE  
TEXAS  
7.5-MINUTE SERIES



Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)  
World Geodetic System of 1984 (WGS84). Projection and  
1 000 meter grid/Universal Transverse Mercator, Zone 14R  
This map is not a legal document. Boundaries may be  
generalized for this map scale. Private lands within government  
reservations may not be shown. Obtain permission before  
entering private lands.

Imagery.....NAIP, September 2016 - November 2016  
Roads.....U.S. Census Bureau, 2015  
Names.....GNS, 1979 - 2018  
Hydrography.....National Hydrography Dataset, 2002 -  
Contours.....National Elevation Dataset, 2002  
Boundaries.....Multiple sources; see metadata file 2016 -  
Wetlands.....FWS National Wetlands Inventory 1982



CONTOUR INTERVAL 10 FEET  
NORTH AMERICAN VERTICAL DATUM OF 1988  
This map was produced to conform with the  
National Geospatial Program US Topo Product Standard, 2011.  
A metadata file associated with this product is draft version 0.6.18



1	2	3
4	5	6
7	8	9

ADJOINING QUADRANGLES

ROAD CLASSIFICATION	
Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	4WD
Interstate Route	US Route
	State Route

OAK HILL, TX  
2019

\*7643016397497\*  
NSN 643016397497  
NSA REF NO. USGS X2.4 K3.2 7.4 D



## FORM 0587 – ATTACHMENT C – PROJECT DESCRIPTION

The project will take place throughout Sunset Valley, TX. Approximately 4100 linear feet of 11' and 550 linear feet of 5' wide trail paths will be installed. Savanna Trail, Home Depot Blvd Trail, and Jones Road Trail will be installed at their respective locations. The proposed site for Savanna Trail is 8.1 acres. Approximately 0.75 acres of impervious cover will be added to this site (9.25%). The site is located within the City of Sunset Valley City Limits on the corner of Brodie Lane and Ernest Robles Way. The proposed site for Home Depot Blvd SUP is on the north side of Home Depot Blvd Right-of-way, within the vegetated buffers. This site will add approximately 0.275 acres of impervious cover. The proposed site for Jones Road Trail is along Jones Road from Pillow road to Lone Oak Trail on the south side of the Right-of-Way. This site will add approximately 0.06 acres of impervious cover.

The Project will consist of the addition of a trail system in the form of decomposed granite, concrete, and porous concrete trails. The addition is approximately 45,000 SF of impervious cover in the form of decomposed granite trail, concrete trail, porous concrete trail, and concrete header curb. The proposed site construction is intended to be designated as hiking/bike trails. The area will be revegetated and planted and are located within heavily vegetated areas that act as natural buffers. Permanent BMPs will be the existing vegetation currently on the site and proposed planting/revegetation.

The project is partially located within flood plain according to Flood Insurance Rate Map No. 48453C0580H inside of the Sunset Valley Tributary.

**From:** James Slone <james.slone@tceq.texas.gov>  
**Sent:** Tuesday, March 5, 2024 9:22 AM  
**To:** Aleskar Villarreal  
**Subject:** RE: Savanna Trail and Home Depot Blvd Shared Use Path EXCWPAP

You can submit the application with the Exception to the Geologic Assessment (GA); in other words, no GA is required. Please note, if the TCEQ finds a potential feature during our site assessment, a GA may be required. Please retain this email for your records and submit a copy of the email chain with your application.

Thanks,  
Bo

James "Bo" Slone, P.G.  
Geoscientist  
Edwards Aquifer Protection Program  
Texas Commission on Environmental Quality  
(512) 239-6994

---

**From:** Aleskar Villarreal <[avillarreal@freelandturk.com](mailto:avillarreal@freelandturk.com)>  
**Sent:** Monday, March 4, 2024 5:26 PM  
**To:** James Slone <[james.slone@tceq.texas.gov](mailto:james.slone@tceq.texas.gov)>  
**Subject:** RE: Savanna Trail and Home Depot Blvd Shared Use Path EXCWPAP

Good afternoon Bo,

Attached is a site plan for the proposed improvements located along Jones Road from Pillow Road to Lone Oak Trail. Approximately 530 LF of 5' sidewalk.

Sincerely,



**Aleskar Villarreal**  
**Freeland Turk Engineering Group, LLC**  
**TBPE Firm Registration Number F-21047**  
18830 Forty Six Pkwy  
Building 2, Suite B  
Spring Branch, TX 78070  
**Cell:** (956) 251-0703  
**Email:** [avillarreal@freelandturk.com](mailto:avillarreal@freelandturk.com)

# **ZARA**

## **ENVIRONMENTAL LLC**

*Integrity | Science | Expertise*

1707 West FM 1626

Manchaca, Texas 78652

512-291-4555

[www.zaraenvironmental.com](http://www.zaraenvironmental.com)

### **GEOLOGIC ASSESSMENT FOR UPPER COUGAR CREEK OPEN SPACE PROJECT SUNSET VALLEY, TRAVIS COUNTY, TEXAS**



View of the Project Area from the Upper Cougar Creek Crossing at Ernest Robles Way.

Prepared for  
City of Sunset Valley  
3205 Jones Road  
Sunset Valley, Texas 78745

3 April 2023

*This page left intentionally blank*

# 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:

Kara Posso, P.G.

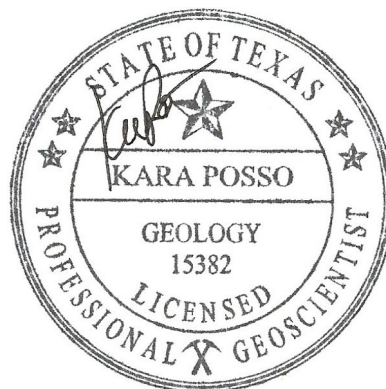
Telephone:

737-710-9610

Date: 4/3/2023

Representing: Zara Environmental LLC/ TBPB No. 50365

Signature of Geologist:



Regulated Entity Name: Upper Cougar Creek Open Space

## Project Information

1. Date(s) Geologic Assessment was performed: 17 February 2023

2. Type of Project

☒ WPAP

☐ SCS

☐ AST

☐ UST

3. Location of Project:

☒ Recharge Zone

☐ Transition Zone

☐ Contributing Zone within the Transition Zone

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

**Table 1 - Soil Units, Infiltration Characteristics and Thickness**

Soil Name	Group*	Thickness (feet)
CrB - Crawford clay, 1 to 3 percent slopes	D	2.5
SsC - Speck clay loam, moist, 1 to 5 percent slopes, stony	D	3.3
TcA - Eckrant and Speck soils, 0 to 2 percent slopes	D	2.5

*\* 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" = 150'

9. Method of collecting positional data:

☒ Global Positioning System (GPS) technology.

☒ Other method(s). Please describe method of data collection: Faults and Geology derived from the Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome et al 2005); Water and wastewater main location obtained from Sumit Geomatics, a land surveyor company (Sumit Geomatics 2023).



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 0 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
- ☐ The wells are not in use and have been properly abandoned.
- ☐ The wells are not in use and will be properly abandoned.
- ☐ The wells are in use and comply with 16 TAC Chapter 76.
- ☒ There are no wells or test holes of any kind known to exist on the project site.

### ***Administrative Information***

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

# ATTACHMENT A

GEOLOGIC ASSESSMENT TABLE						PROJECT NAME: Upper Cougar Creek Open Space Project													
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
MB-01	30.229458*	-97.818556*	MB	30	Kdr+Kg+Kplc	2.5	2.5	unk	-	-	-	-	X	5	35	X		X	Hillside/Drainage
MB-02	30.228280*	-97.817828*	MB	30	Kdr+Kplc	1	1	unk	-	-	-	-	X	5	35	X		X	Hillside/Drainage
F-01	30.230487	-97.819422	F	20	Kdr/Kplc	unk	unk	unk	32	10	-	-	X	5	35	X		X	Hillside/Drainage
F-02	30.228636	-97.817532	F	20	Kg/Kplc	unk	unk	unk	13	10	-	-	X	5	35	X		X	Hillside/Drainage

\*Coordinates for features MB-01 and MB-02 correspond to a single point where infrastructure was visible on the surface, however these features are linear alignments with additional associated infrastructure intersecting the site in various locations as seen on Figure 3 and Attachment D. F-01 and F-02 are linear fault alignments, however the listed coordinates correspond to a single central point for fault. \*\* DATUM: NAD 83.

2A	TYPE	2B POINTS	8A INFILLING
C	Cave	30	N None, exposed bedrock
SC	Solution cavity	20	C Coarse - cobbles, breakdown, sand, gravel
SF	Solution-enlarged fracture(s)	20	O Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fault	20	F Fines, compacted clay-rich sediment, soil profile, gray or red colors
O	Other natural bedrock features	5	V Vegetation. Give details in narrative description
MB	Manmade feature in bedrock	30	FS Flowstone, cements, cave deposits
SW	Swallow hole	30	X Other materials
SH	Sinkhole	20	
CD	Non-karst closed depression	5	
Z	Zone, clustered or aligned features	30	

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

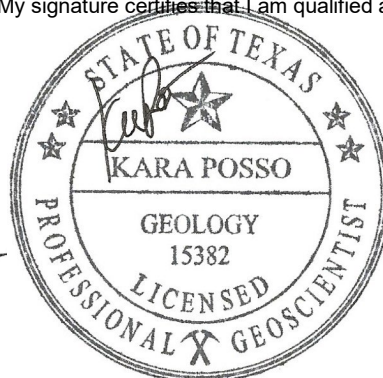
I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field. My signature certifies that I am qualified as a geologist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

Date 17 February 2023

Sheet 1 of 1

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

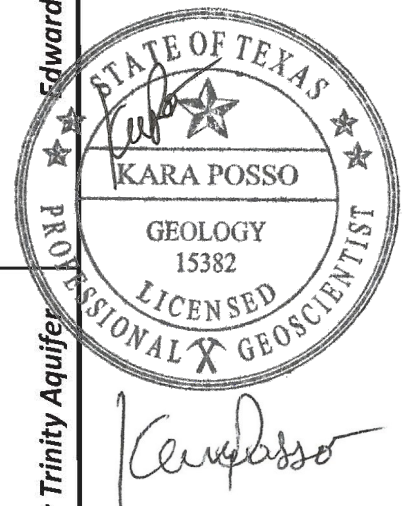
*Kara Posso*



## ATTACHMENT B

Stratigraphic Units				Feet	Hydrogeologic Units
Quarternary	Quarternary Alluvium (Qal)			0-60	
Upper Cretaceous	Upper Confining Units (Ku), undivided (Ka, Kef, Kb, Kdr)			30-350	Upper Confining Units
	Navarro and Taylor Groups (Knt), undivided			600	
	Austin Group (Ka)			130-350	
	Eagle Ford Group (Kef)			30-150	
	Buda Limestone (Kb)			40-90	
	Del Rio Clay (Kdr)			40-110	
Lower Cretaceous	Georgetown Formation (Kg)			2-20	
	Edwards Group	Person Formation	Cyclic and Marine Member (Kpcm)	10-100	
			Leached and Collapsed Member (Kplc)	70-100	Project Area
			Regional Dense Member (Kprd)	16-24	
		Kainer Formation	Grainstone Member (Kkg)	50-60	
			Kirschberg Evaporite Member (Kkke)	50-60	
			Dolomitic Member (Kkd)	110-140	
			Basal Nodular Member (Kkbn)	20-70	
	Trinity Group	Glen Rose Formation	Upper Glen Rose (Kugr)	350-800	
			Lower Glen Rose (Klgr)	200-270	
	Hensell Formation (Kh)			~45	
	Cow Creek Formation (Kcc)			50-75	

Stratigraphic column displaying the mapped geologic units in the Sunset Valley area, modified from the Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome et al. 2005) and Geologic Atlas of Texas (Barnes et al. 1974). Outcropping unit(s) are specified.



## ATTACHMENT C



*Integrity | Science | Expertise*

1707 West FM 1626

Manchaca, Texas 78652

512-291-4555

[www.zaraenvironmental.com](http://www.zaraenvironmental.com)

### **GEOLOGIC ASSESSMENT FOR UPPER COUGAR CREEK OPEN SPACE PROJECT SUNSET VALLEY, TRAVIS COUNTY, TEXAS**

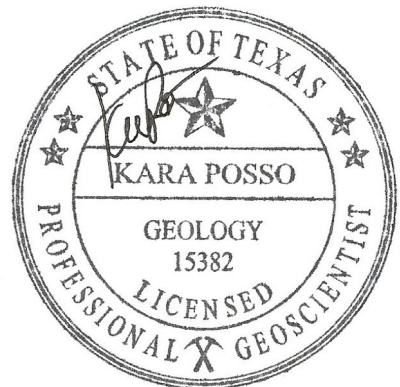
Prepared for  
City of Sunset Valley  
3205 Jones Road  
Sunset Valley, Texas 78745

3 April 2023

In accordance with the Texas Board of Professional Geologists rules at 22 Texas Administrative Code, Part 39, Chapter 851, Subchapter C, §851.156, this report is signed and sealed on the title page to assure the user that the work has been performed by or directly supervised by the following professional geologist who takes full responsibility for this work.

The computer-generated seal appearing on this document was authorized by Kara Posso, PG #15382 on 3 April 2023.

A handwritten signature in black ink, appearing to read "K. Posso", is written over a horizontal line.



---

Kara Posso, Texas Professional Geoscientist No. 15382  
Zara Environmental LLC Geoscience Firm Registration No. 50365

# ATTACHMENT C

## Table of Contents

Introduction .....	1
Methods.....	1
Background Data Collection .....	1
Field Survey.....	1
Results.....	3
Background Data and Site Information .....	3
Soils .....	3
Site Geology.....	3
Regional Geology.....	6
Regional Stratigraphy .....	6
Regional Groundwater .....	8
Water Wells.....	9
Floodplains .....	9
Previously Identified Features.....	9
General Site Conditions.....	9
Description of Features .....	10
Feature MB-01; Wastewater Infrastructure .....	10
Feature MB-02; Water Main and associated infrastructure.....	11
Feature F-01; Mapped Fault (Kdr/Kplc) .....	11
Feature F-02; Mapped Fault (Kg/Kplc) .....	12
Discussion and Recommendations .....	12
Literature Cited .....	13

## List of Figures

Figure 1. Location map displaying the Project Area in Sunset Valley, Travis County, Texas, and Edwards Aquifer Zones (TCEQ 2005). .....	2
Figure 2. Soil types occurring in the Project Area.....	4
Figure 3. Geology of the Project Area including locations of features discovered during reconnaissance.....	5
Figure 4. Example of infrastructure associated with wastewater main lines, MB-01.....	10
Figure 5. Example of infrastructure associated with water main lines, MB-02. ....	11

# ATTACHMENT C

## Introduction

A Geologic Assessment (GA) was conducted on the 8.2-acre property located at 5401 ½ Brodie Lane (Project Area) in Sunset Valley, Travis County, Texas (Figure 1). The property is owned by the City of Sunset Valley and the proposed use is for mixed use open space with trails with associated facilities. The proposed Project meets the Texas Commission of Environmental Quality's (TCEQ) requirements for regulation under the Edwards Rules at Title 30 Texas Administrative Code (TAC) Chapter §213.5 as it is within the Edwards Aquifer Recharge Zone. A detailed walking survey of the Project Area was conducted in a single day on 17 February 2023, documenting two manmade features in bedrock and two mapped faults.

## Methods

### *Background Data Collection*

Several sources were reviewed to obtain available data pertaining to the Project Area. The United States Geological Survey (USGS) 7.5-Minute Topographic Map of the Oak Hill Quadrangle was reviewed for general site information and contours (USGS 2013). Surface geology and faults were obtained from the Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome et al. 2005). Available well information was reviewed from the Texas Water Development Board (TWDB) (2023) and Texas Commission on Environmental Quality (TCEQ) (2023). Soil descriptions were obtained from the Web Soil Survey of the U.S. Department of Agriculture (USDA) (2023). Floodplain maps from the Federal Emergency Management Agency (FEMA) (2023) were also obtained and reviewed. Texas Speleological Survey (TSS) data was reviewed for any documented caves or karst features within the Project Area or within 500 feet (TSS 2023), and an on-line search of the TCEQ Central Registry (TCEQ 2023) was performed for related geologic information from previous projects that may have occurred on or adjacent to the Project Area. The location and orientation of utilities qualifying as manmade features in bedrock were obtained from GIS files produced by Sumit Geomatics, a land surveyor company that inventoried the site (Sumit Geomatics 2023); these were compared with GIS files maintained the City of Austin (Austin Water 2021).

### *Field Survey*

Karst survey methods followed protocols outlined in TCEQ Instructions to Geologists for Geologic Assessments (TCEQ 2004). Walking ground surveys, as defined by Veni and Reddell (2002), TCEQ (2004), and Barrett (2005), were conducted throughout the Project Area and reconnaissance excavations were conducted at all potential karst features. Positions of all features were documented using GPS technology and were checked with digital orthoimagery maps and information presented in a topographic survey of the site. All features identified were evaluated by a licensed professional geoscientist for potential impact to Edwards Aquifer recharge. This is completed by ranking the recharge sensitivity of each feature using the point scheme defined by TCEQ (2004). Fieldwork was conducted by two Zara personnel on 17 February 2023.



# ATTACHMENT C

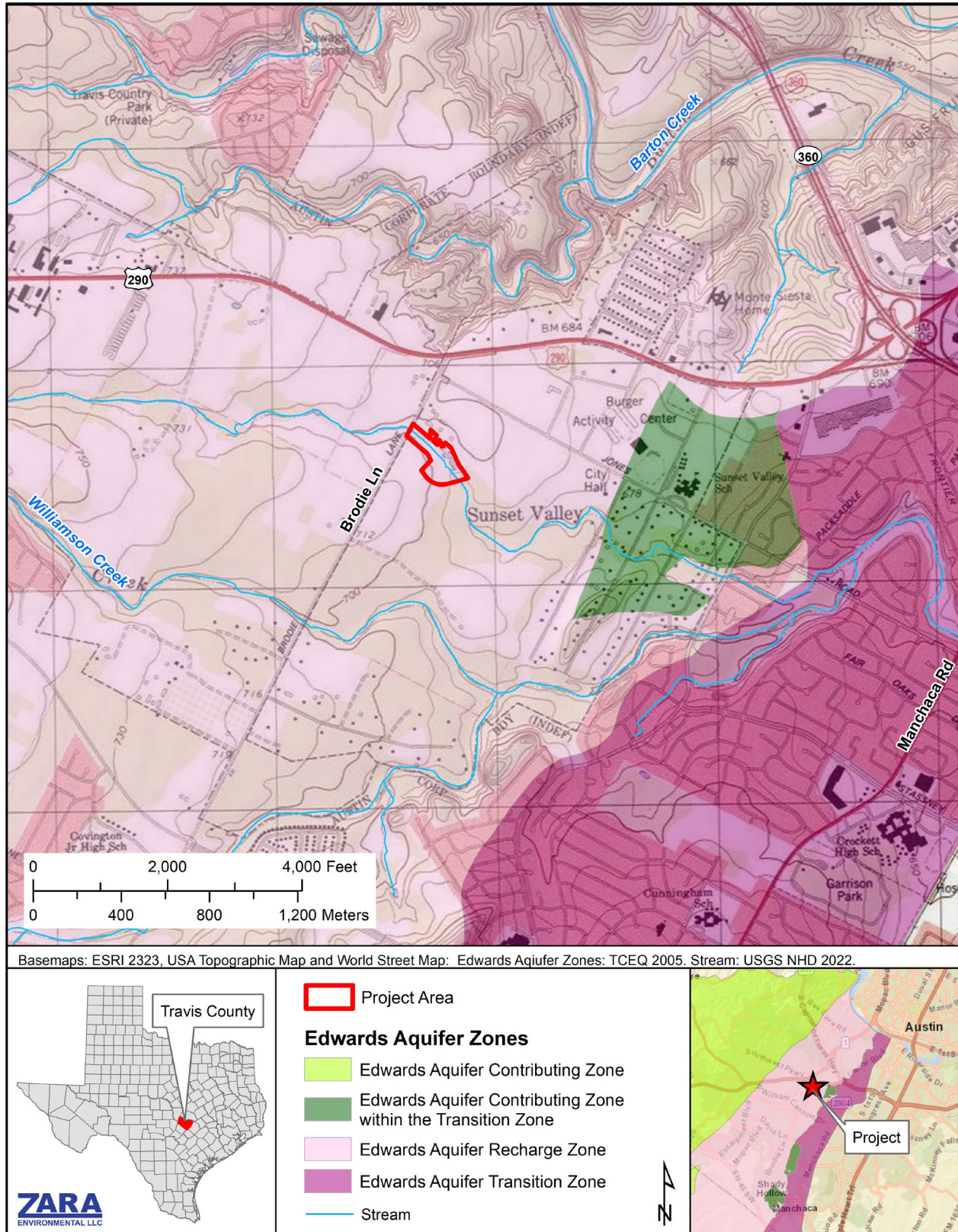


Figure 1. Location map displaying the Project Area in Sunset Valley, Travis County, Texas, and Edwards Aquifer Zones (TCEQ 2005).

# ATTACHMENT C

## Results

### *Background Data and Site Information*

#### Soils

Three different soil types were identified in the Project Area by the USDA (2023) (Figure 2). A brief description of each soil type is below:

*Crawford clay, 1 to 3 percent slopes (CrB)*. This plains soil is characterized as residuum weathered from limestone with depths between 0 and 30 inches (USDA 2023). The soil's capacity to transmit water is very low to moderately low (0.00 to 0.6 inch/hour) through its most limiting layer, placing it in Hydrologic Soil Group D. This soil comprises 17.5% of the Project Area.

*Speck clay loam, moist, 1 to 5 percent slopes, stony (SsC)*. This ridge forming soil is characterized as residuum weathered from limestone with depths between 0 and 40 inches (USDA 2023). The soil's capacity to transmit water is moderately low to moderately high (0.06 to 0.2 inch/hour) through its most limiting layer, placing it in Hydrologic Soil Group D. This soil comprises 57.2% of the Project Area.

*Eckrant and Speck soils, 0 to 2 percent slopes (TcA)*. This ridge forming soil is characterized as residuum weathered from limestone with depths between 0 and 30 inches (USDA 2023). The soil's capacity to transmit water is moderately low to moderately high (0.06 to 0.57 inch/hour) through its most limiting layer, placing it in Hydrologic Soil Group D. This soil comprises 25.3% of the Project Area.

#### Site Geology

Mapped surface geology from the Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome et al. 2005) is presented as Figure 3 and Attachment D. Three units are mapped within the Project Area; these are the Del Rio Clay (Kdr), the Georgetown Formation (Kg), and the Leached and Collapsed Member of the Person Formation of the Edwards Group (Kplc). The Cyclic and Marine Member of the Person Formation (Kpcm) is not mapped on-site and was likely removed by erosion, as the unit thickness can be as little as 5 feet in this area or not present at all (Hauwert 2009). There are two mapped faults on-site creating geologic unconformities with the Leached and Collapsed Member of the Person Group (Blome et al. 2005). In the northwestern portion of the Project Area, there is a fault between the Del Rio Clay and the Leached and Collapsed Member, and in the southeastern portion of the Project Area, there is a fault between the Georgetown Formation and Leached and Collapsed Member. These faults are part of a series of conjugate faults in the area and are likely related to the same structural event. No surface expressions of these faults were observed in the Project Area through physical observation in the field.



# ATTACHMENT C

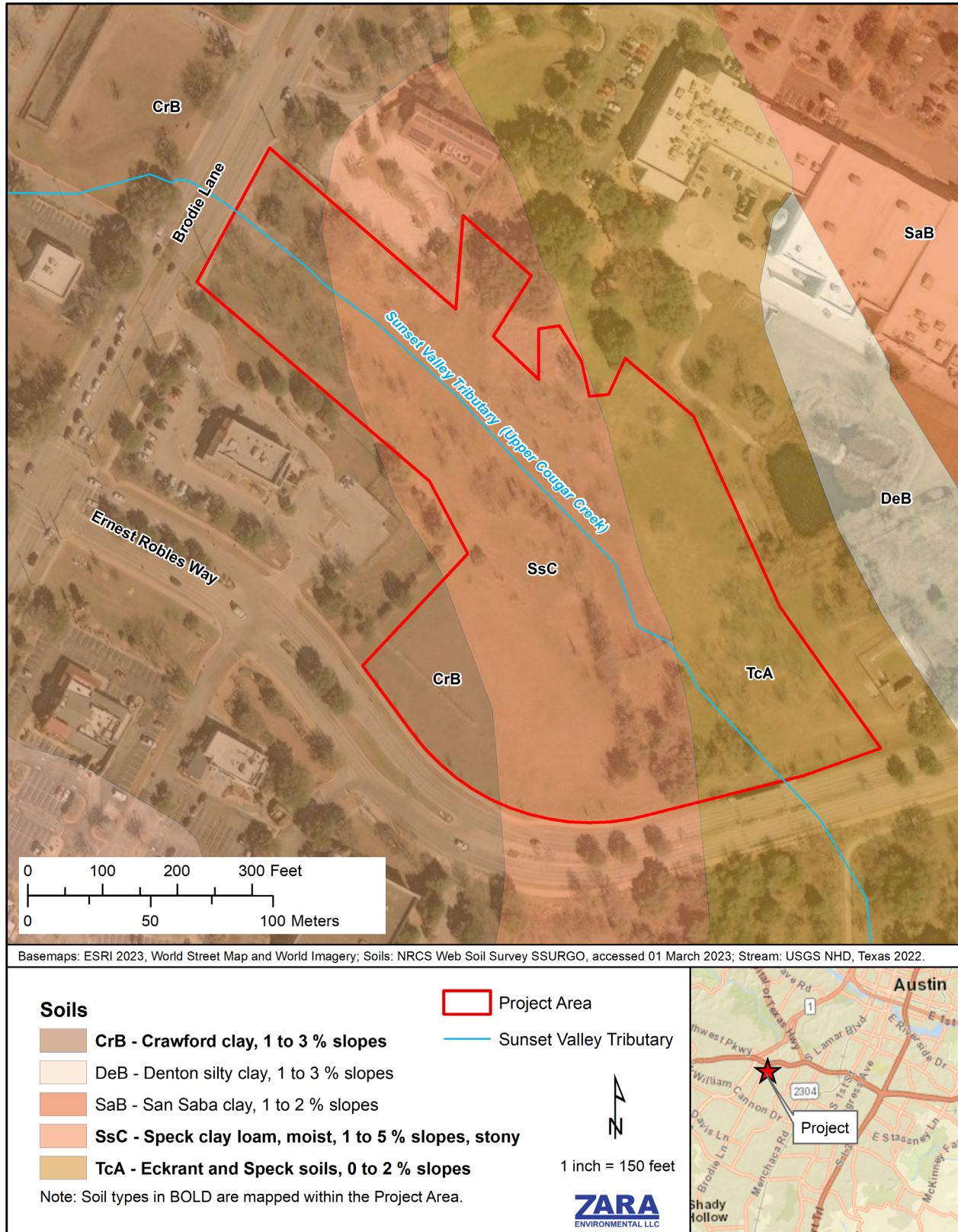


Figure 2. Soil types occurring in the Project Area.



# ATTACHMENT C

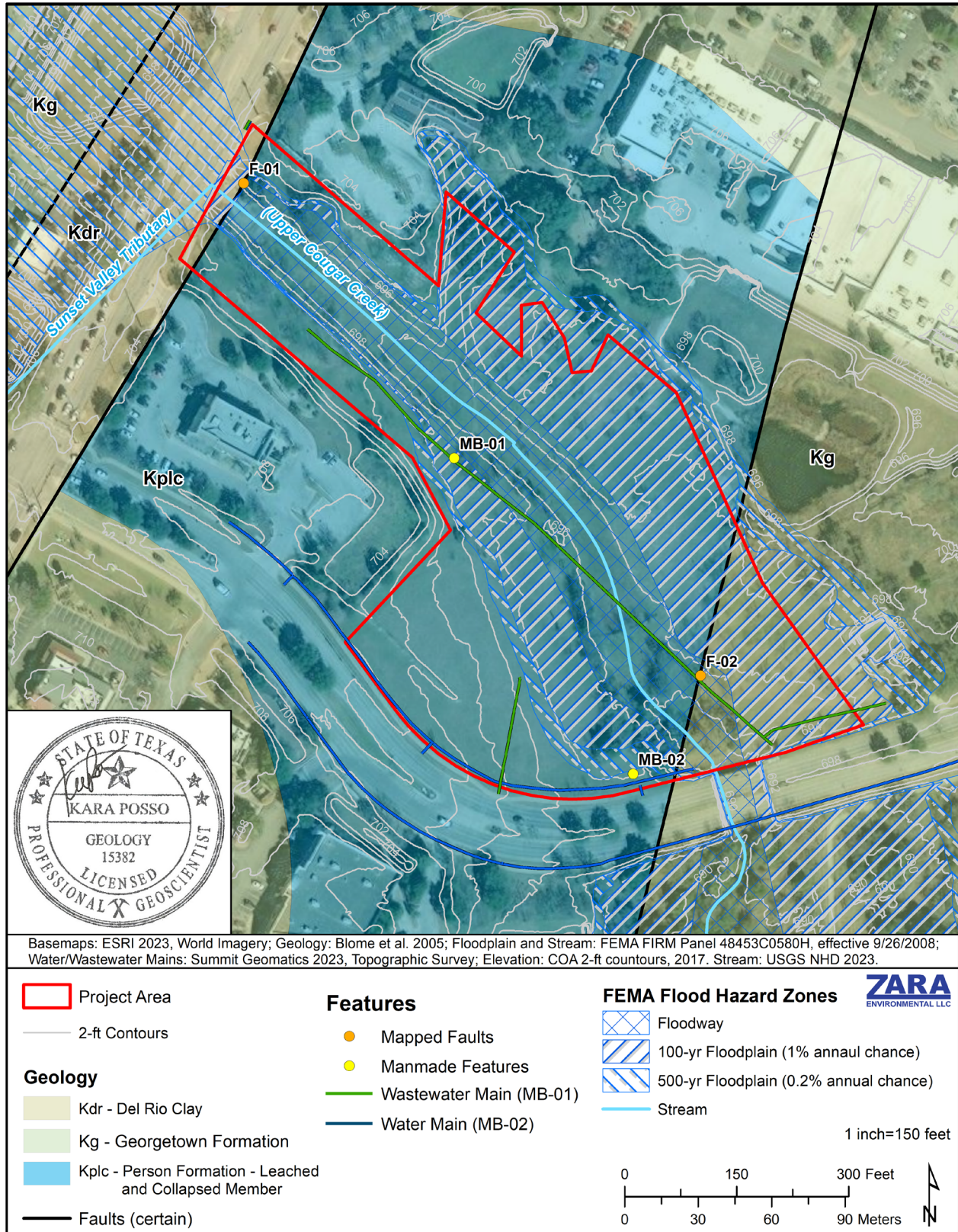


Figure 3. Geology of the Project Area including locations of features discovered during reconnaissance.

## ATTACHMENT C

### Regional Geology

The Project Area is located in the eastern portion of the Edwards Plateau Physiographic Province of Central Texas along the Balcones Escarpment, which is a highly eroded landscape bordering the Edwards Plateau on its southern and eastern boundaries. The plateau is typified by higher elevations to the north and west and generally slopes to the southeast. Canyons and drainage basins were formed by surface flow of the Colorado River and its tributaries, including the Sunset Valley Tributary (aka Upper Cougar Creek), which runs through the center of the Project Area to Williamson Creek before discharging miles downstream to the Colorado River.

The geologic formations in the Edwards Plateau are mostly Cretaceous age limestones with some Quaternary alluvium overlaying along surface drainages. The limestone bedrock developed from the accumulation of thick sequences of marine sediments deposited in a lagoon environment on the San Marcos Platform protected by a barrier reef during the Cretaceous about 100 million years ago (Rose 1972). These strata dip slightly to the southeast at about 10 to 15 feet/mile toward the Gulf of Mexico.

### Regional Stratigraphy

The geologic formations that comprise the Edwards Aquifer are from top to bottom the Georgetown Formation, Person Formation, and Kainer Formation (TCEQ 2004). The Del Rio Clay is the primary upper confining layer to the Edwards Aquifer units and sits above the Georgetown Formation. A stratigraphic column showing the regional geology is included as Attachment B.

According to Blome et al. (2005), the Del Rio Clay Formation is a blue-green to yellow-brown, variably gypsiferous clay containing iron nodules, abundant pecten-type fossil clams, and the fossil oyster *Ilymatogyra arietina* (formerly *Exogyra arietina*) (Young 1967). Minor, thin lenticular beds of highly calcareous siltstone may also occur. Unweathered Del Rio Clay is composed of kaolinite, illite, and lesser amounts of montmorillonite (Collins 2000). Secondary gypsum occurs as fracture fillings in clay-rich exposures near igneous bodies (Clark 2003). The Del Rio has no recognized cavern development and no significant porosity or permeability. Directly overlies the Lower Cretaceous formations in many areas. Thickness is about 40 to 110 feet.

The Georgetown Formation is the uppermost unit of the Edwards aquifer. The strata are covered by vegetation and soil in some areas. Bedrock is reddish-brown and gray to light-tan, marly limestone with biomicritic texture and commonly contains the brachiopod *Waconella wacoensis*, pectins, the mollusks *Kingena wacoensis* and *Gryphaea washitaensis* (Young 1967), as well as other pelecypods. The Georgetown is considered an upper confining unit, has very low porosity and permeability, and has little or no karstification or cavern development (Stein and Ozuna 1995). Thickness ranges from 2 to 20 feet and generally thins from northeast to southwest.

The Person and Kainer Formations comprise the Edwards Group (Rose 1972). The Person Formation is about 130 feet thick in southern Travis County. The composition of the Person Formation ranges from crystalline limestone to grainstone to mudstone and is comprised of three



## ATTACHMENT C

informal hydrogeologic units: the Cyclic and Marine Members, undivided; the Leached and Collapsed Members, undivided; and the Regional Dense Member.

The Cyclic and Marine Members are composed of a chert-bearing wackestone and can be somewhat variable in thickness because of the erosional unconformity between the Person and Georgetown Formations. In southern Travis County these layers are less than 5 feet or not present (Hauwert 2009).

The Leached and Collapsed Members are a light-colored wackestone with interbedded mudstone and grainstone intervals that form one of the more porous and permeable subdivisions of the Edwards Aquifer. The Leached Member is a dense, bioturbated micrite, and the Collapsed Member is composed of several one to five feet thick zones of collapsed stromatolitic limestone (Rose 1972). The combined thickness of the two members ranges from 70 feet in northern Hays County to less than 25 feet near the Colorado River in Travis County (Hauwert 2009).

The lowermost member of the Person Formation is the Regional Dense Member (RDM), which has a thickness of 15 to 32 feet in southern Travis County and thins towards the Colorado River (Hauwert 2009). The RDM is composed of a dense argillaceous mudstone and is easily identified in the outcrop and on a variety of geophysical logs. Most of the fractures that penetrate the RDM do not appear to be solution enlarged. Caves that breach the RDM are not enlarged but are usually vertical shafts with horizontal caverns developed above or below the RDM. The RDM can function as a confining unit between the upper and lower portions of the Edwards Aquifer (i.e., between the Kainer and the Person Formation); however, caves, faults, and fractures may greatly reduce the vertical confining ability of the RDM. The RDM is probably not an effective barrier to lateral flow at faults because of the relatively thin section. The flow of water tends to circumvent the RDM because of the impermeable nature of this unit.

The Kainer Formation has an approximate total thickness of 300 feet in southern Travis County. The lithology of the Kainer Formation ranges from mudstone to miliolid grainstone to crystalline limestone. The Kainer is subdivided into four informal members that include the Grainstone, Kirschberg Evaporite, Dolomitic, and Basal Nodular Members.

The Grainstone Member is the uppermost unit of the Kainer Formation and is 45 to 60 feet thick in southern Travis County (Hauwert 2009). It is composed of thick sequences of dense, tightly cemented, miliolid grainstone. Primary matrix porosity, as measured on geophysical logs, is some of the lowest in the Edwards Aquifer. Secondary fracture porosity accounts for the bulk of effective porosity in this aquifer unit.

The Kirschberg Evaporite Member underlies the Grainstone Member and is 40 to 75 feet in thickness in this area. This hydrogeologic unit consists of crystalline limestone and chalky pulverulite with chert nodules and lenses (Hauwert 2009). Collapse features are common. The porosity has been described as boxwork (Maclay and Small 1976) because of the configuration of the voids and the secondary neospar and travertine deposits. The boxwork porosity does not seem to be prevalent throughout the entire thickness or extent of the member but occurs

## ATTACHMENT C

sporadically within more massive limestone. Dissolution of evaporite minerals, such as gypsum and anhydrite, and the existence of contorted beds in the Kirschberg Evaporite result in extensive secondary porosity, which creates one of the most permeable subdivisions in the Edwards Aquifer.

The Dolomitic Member is a resistant, highly bedded wackestone with interbedded grainstone, burrowed mudstone, and some chert nodules. The Dolomitic Member has a total thickness of about 140 feet in this area (Hauwert 2009). Effective porosity and probable pathways of water in this unit are restricted to solution enlarged bedding planes, joints, fractures, and faults.

The Basal Nodular Member is the lowermost unit of the Edwards Group and is 45 to 65 feet of fossiliferous, nodular limestone (Hauwert 2009). In the subsurface, the Basal Nodular Member has negligible porosity and permeability (Maclay and Small 1984) and can function as part of the lower confining unit; however, in outcrop the basal nodular member often displays extensive karstification, which has generated secondary porosity in the form of large lateral caves.

### Regional Groundwater

The Edwards Aquifer largely contains the regional groundwater and is one of the most permeable and productive limestone aquifers in the U.S. Karstified limestone aquifers are, by their nature, extremely vulnerable to contamination. As the humid subtropical climate of this region can produce thermal convection thunderstorms, many of the rainfall events can produce excessive amounts of precipitation in short periods of time. Some of this water makes its way into the aquifers, usually through concentrated areas along creeks and rivers in outcrop areas of the recharge zone.

The Project Area resides within a portion of the Recharge Zone for the Barton Springs Segment of the Edwards Aquifer, as delineated by the TCEQ Edwards Rules (30 TAC §213). The Barton Springs covers about 155 square miles in Travis and Hays counties. It is composed of limestone that is highly faulted, fractured, and dissolved, forming a very prolific karst aquifer up to 450 feet thick (BSEACD 2023).

The Recharge Zone of the Edwards Aquifer is defined as the land surface area where caves, sinkholes, faults, fractures, or other permeable features provide pathways for recharge of surface waters into the Edwards Aquifer. This zone is regulated due to the vulnerability of this karst aquifer to pollution. Recharge into the Edwards Aquifer occurs primarily in losing streams, where surface water from the contributing zone flows over faults, fractures, and karst features that have been solutionally enlarged in the Recharge Zone (Sharp and Banner 1997).

## ATTACHMENT C

### Water Wells

No wells were mapped within the Project Area according to the TWDB groundwater database (TWDB 2023). No wells were identified during field reconnaissance.

### Floodplains

The Sunset Valley Tributary (aka Upper Cougar Creek tributary) to Williamson Creek flows through the center of the site and lies within a modified drainage channel (USGS 2023). According to the FEMA Flood Zone Map (2023), a Floodway and the 1%, and 0.2% Annual Chance Flood Hazard Zones are mapped through the Project Area. The Floodway is mostly contained within the modified drainage channel (Figure 3 and Attachment D).

### Previously Identified Features

A search of previous work by Zara did not indicate any known karst features on adjacent properties. No previously completed GAs in the immediate area were identified in the TCEQ Central Registry. A TSS database search did not find any known caves or karst features on or within a 150-foot buffer of the Project Area boundary (TSS 2023).

### General Site Conditions

Much of the Project Area consisted of undeveloped but modified land (for the purposes of stormwater management) and corresponds to a drainage corridor for the Sunset Valley Tributary (Upper Cougar Creek). The creek has been heavily modified from its natural condition for stormwater management purposes. The center channel appears to have been widened, non-native materials such as gravel has been placed, and stabilization structures at the creek crossings are present near Brodie Lane (concrete) and Ernesto Robles Way (rock riprap). Fill embankments have been constructed on either side of the main channel to create upland areas that are approximately 8 to 10 feet higher in elevation than the center channel. There was a section of hummocky terrain toward the center of the northern upland area where the embankment fill material had eroded, creating a few sinkhole-like apertures. Four of these areas were initially evaluated as potential karst features; however, hand excavation of each revealed that the features consisted primarily loose boulders that could be removed and a soil floor. Given the land modifications that have occurred on site and lack of in situ bedrock or other indications that these were karstic in origin, these features are not documented further in this report. The site was not densely vegetated and grasses appeared to be mowed and maintained regularly. There was moderate tree cover in the upland areas, with predominate species consisting of honey mesquite, cedar elms, and oak trees. Utility infrastructure for water and wastewater were present in various locations around the site but appeared to be concentrated in alignments along Ernest Robles Way and near the center of the drainage channel.

## ATTACHMENT C

### *Description of Features*

Results of the surface karst feature survey are presented in the TCEQ Geologic Assessment Table (Attachment A) and discussed below. Four features were identified within the Project Area: two manmade features in bedrock and two mapped faults. Data for the location and orientation of the manmade features in bedrock were identified from a Topographic Land Survey (Sumit Geometrics 2023) and fault locations were derived from the Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome et al. 2005). All features were ranked for recharge sensitivity according to TCEQ standards. Locations are displayed on maps in Figure 3 and Attachment D.

### Feature MB-01; Wastewater Infrastructure

Wastewater infrastructure was observed in various locations on the Project Area, including though the center of the site along Upper Cougar Creek as well as in the upland embankments on either side of the centerline (Figure 3, Figure 4, Attachment D). The wastewater main and other manholes are owned and maintained by the City of Austin. The depth of the lines are unknown; however, GIS files indicate the main line is 30 inches in diameter (City of Austin 2023). There is a low potential for this feature to rapidly transmit water to the subsurface assuming proper construction and maintenance. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).



Figure 4. Example of infrastructure associated with wastewater main lines, MB-01.



## ATTACHMENT C

### Feature MB-02; Water Main and associated infrastructure

A water main, fire hydrants, and valves were observed along Ernest Robles Way in the south and western portions of the Project Area (Figure 3, Figure 5, Attachment D). The water main and associated public infrastructure is owned and maintained by the City of Austin. The depth of the lines are unknown; however, GIS files indicate the main is 12 inches in diameter (City of Austin 2023). There is a low potential for this feature to rapidly transmit water to the subsurface assuming proper construction and maintenance. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).



Figure 5. Example of infrastructure associated with water main lines, MB-02.

### Feature F-01; Mapped Fault (Kdr/Kplc)

Feature F-01 is a mapped fault along the westernmost edge of the Project Area and was identified by review of geologic maps (Figure 3 and Attachment D). According to Blome et al. (2005), F-01 is mapped as a certain fault trending approximately 32° and is present between the Del Rio Clay (Kdr) and the Leached and Collapsed Member of the Person Formation (Kplc). No surface expressions of the mapped fault were observed during site reconnaissance, and it appears to be covered by soil and/or fill material as well as vegetation. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

## ATTACHMENT C

### Feature F-02; Mapped Fault (Kg/Kplc)

Feature F-02 is a mapped fault in the southeastern section of the Project Area and was identified by review of geologic maps (Figure 3 and Attachment D). According to Blome et al. (2005), F-02 is mapped as a certain fault trending approximately 13° and is present between the Georgetown Formation (Kg) and the Leached and Collapsed Member of the Person Formation (Kplc). No surface expressions of the mapped fault were observed during site reconnaissance, and it appears to be covered by soil and/or fill material as well as vegetation. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

### **Discussion and Recommendations**

The proposed Upper Cougar Creek Open Space Project occupies land that is currently used and maintained for stormwater management purposes. Much of the site appears to have received land modifications that reworked natural ground surfaces, both in the drainage channel and on the upland areas on either side of the drainage. Due to previous land disturbances (primarily drainage modifications) and a lack of hydrologically sensitive features, the overall potential for the site to rapidly transmit surface runoff into the subsurface is considered to be relatively low.

The proposed Project involves creating trails and other public amenities, primarily within the upland areas of the site at existing grade. Disturbance to natural bedrock surfaces should be minimized and infrastructure should be placed in areas where existing land modifications have occurred, wherever possible. Care should be taken when working around public utilities, such as water and wastewater mains, to avoid damage to any existing infrastructure. Proper use of stormwater Best Management Practices (BMPs) is recommended through the duration of the Project; BMPs should be installed, inspected, and maintained through construction in accordance with TCEQ requirements under the Edwards Aquifer Protection Program. If any sensitive features are discovered during excavation activities, all work within 50 feet of the feature should stop and a Professional Geoscientist should evaluate the feature and coordinate with the TCEQ Edwards Aquifer Protection Program.

## ATTACHMENT C

### Literature Cited

- Austin Water. 2023. Austin Water Featured Content: Water Mains. ESRI ArcGIS Online Austin Water Records Access. Accessed 17 February 2023. Available at: <http://arcg.is/1VfBrCg> with account.
- Barnes, V.E., Shell Oil Co., Humble Oil and Refining Co., Mobile Oil Co., Proctor, C.V., Brown, T.E., McGowen, J.H., Waechter, N.B., Eargle, D.H., Baker, E.T., Peckman, R.C., and Bluntzer, R.L., 1974, Geologic atlas of Texas, Austin sheet, University of Texas at Austin, Bureau of Economic Geology, Geologic Atlas of Texas 3, 1:250,000
- Barrett, M.E. 2005. Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices: TCEQ, Field Operations Divisions, RG-348 (Revised). July 2005. 315 p.
- Barton Springs Edwards Aquifer Conservation District (BSEACD). 2023. Aquifer Science: Barton Springs Segment of the Edwards Aquifer. Accessed 17 February 2023. Available at: <https://bseacd.org/aquifer-science/about-the-aquifers/>
- Blome, C.D., Faith, J.R., Pedraza, D.E., Ozuna, G.B., Cole, J.B., Clark, A.K., Small, T.A., and R.R. Morris. 2005. Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas. US Geological Survey Scientific Investigations Map 2873.
- Clark, A.K. 2003. Geologic framework and hydrogeologic characteristics of the Edwards aquifer, Uvalde County, Texas: U.S. Geological Survey Water-Resources Investigations Report 03-4010, 17 p., 1 sheet.
- Collins, E.W. 2000. Geologic map of the New Braunfels, Texas, 30 x 60 minute quadrangle—Geologic framework of an urban-growth corridor along the Edwards aquifer, south-central Texas: University of Texas, Bureau of Economic Geology. Miscellaneous Map 39, 28 p., 1 sheet, scale 1:100,000.
- Esri. 2023. Esri's World Imagery Map. ArcGIS Online Maps, service layer credits: Esri, DigitalGlobe, Earthstar Geographics, CNES/Airbus DS, GeoEye, USDA FSA, USGS, Aerogrid, IGN, IGP, and the GIS User Community. Accessed 17 February 2023. Available at: [https://services.arcgisonline.com/ArcGIS/rest/services/World\\_Imagery/MapServer](https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer).
- Federal Emergency Management Agency (FEMA). 2023. Flood Map Service Center. Flood Insurance Rate Map No. 48453C0580H and 48209C0175F, Travis County, Texas. Available at: <https://msc.fema.gov/portal>. Accessed 17 February 2023
- Hauwert, N.M. 2009. Groundwater Flow and Recharge Within the Barton Springs Segment of the Edwards Aquifer, Southern Travis and Northern Hays Counties, Texas. Dissertation presented to the faculty of the graduate school of the University of Texas at Austin. Copyright by Nico Mark Hauwert. May 2009.

## ATTACHMENT C

- Maclay, R. W., Small, T. A. 1976. Progress report on geology of the Edwards aquifer, San Antonio area, Texas, and preliminary interpretation of borehole geophysical and laboratory data on carbonate rocks. United States Geological Survey Open-File Report 76-627, 65 p.
- Maclay, R. W., Small, T. A. 1984. Carbonate geology and hydrology of the Edwards aquifer in the San Antonio area, Texas. United States Geological Survey Open-File Report 83-537, 72 p.
- Rose, P.R. 1972. Edwards Group, surface and subsurface, central Texas: Austin, University of Texas, Bureau of Economic Geology, Report of Investigations 74, 198 p.
- Sharp, J. M., and Banner, J. L. 1997. The Edwards Aquifer: a resource in conflict. GSA Today, 7(8), 1-9.
- 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 Report 95-4030, 8 p., 1 sheet, scale 1:75,000.
- Sumit Geomatics. 2023. Topographic Survey: Upper Cougar Creek, City of Sunset Valley, Travis County, Texas. Date 09 March 2023. Scale 1" = 50'.
- Texas Commission on Environmental Quality (TCEQ). 2004. Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zone. TCEQ RG-0508, 34 p., revised 1 October 2004.
- Texas Commission on Environmental Quality (TCEQ). 2005. Edwards Aquifer Protection Program, Chapter 213 Rules – Recharge Zone, Transition Zone, Contributing Zone, and Contributing Zone Within the Transition Zone. Vector digital data. Austin, Texas. 1 September 2005.
- Texas Commission on Environmental Quality (TCEQ). 2023. Central Registry Query. Available at: <https://www15.tceq.texas.gov/crpub/>. Accessed 17 January 2023.
- Texas Speleological Survey (TSS). 2023. TSS Formal Data Request of Digital Records Pertaining to Caves and Karst Features. Data requested 2023 January 27.
- Texas Water Development Board (TWDB). 2023. TWDB Groundwater Database. Accessed via Water Data Interactive (WDI) Groundwater Data Viewer. Available at: <https://www3.twdb.texas.gov/apps/WaterDataInteractive/GroundWaterDataViewer>. Accessed 17 February 2023.
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service, Soil Survey staff. 2023. Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed 17 February 2023.
- U.S. Geological Survey (USGS). 2013. 7.5-minute Topographic Map of the Oak Hill Quadrangle, Texas. United States Department of Interior Geological Survey.

## ATTACHMENT C

- U.S. Geological Survey (USGS). 2023. National Hydrography Dataset (NHD) Viewer Application. Available online at <https://viewer.nationalmap.gov/advanced-viewer/>. Accessed on 17 February 2023.
- Veni, G., and J. Reddell. 2002. Protocols for Assessing Karst Features for Endangered Invertebrate Species. Report by George Veni and Associates, San Antonio, Texas. 7 p.
- Young, K. 1967. Comanche Series (Cretaceous), south-central Texas, in Hendricks, Leo, ed., Comanchean (Lower Cretaceous) stratigraphy and paleontology of Texas: Society of Economic Paleontologists and Mineralogists, Permian Basin Section, Publication 67-8, p. 9-29.

## ATTACHMENT D

### Attachment D. Site Geologic Maps



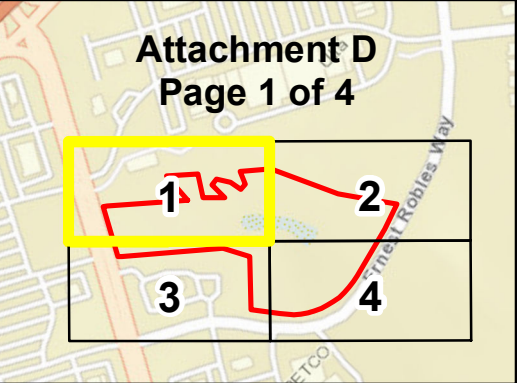


Basemaps: ESRI 2023, World Imagery; Geology: Blome et al. 2005; Floodplain and Stream: FEMA FIRM Panel 48453C0580H, effective 9/26/2008; Water/Wastewater Mains: Summit Geomatics 2023, Topographic Survey; Elevation: COA 2-ft contours, 2017.

- Project Area
- Mapped Faults
- Manmade Features
- 2-ft Contours
- Wastewater Main (MB-01)
- Water Main (MB-02)

- Geology**
- Kdr - Del Rio Clay
  - Kg - Georgetown Formation
  - Kplc - Person Formation - Leached and Collapsed Member
  - Faults (certain)

- FEMA Flood Hazard Zones**
- Floodway
  - 100-yr Floodplain (1% annual chance)
  - 500-yr Floodplain (0.2% annual chance)
  - Stream
- 0 50 100 Feet  
0 10 20 30 Meters
- 1 inch=50 feet
- ZARA**  
ENVIRONMENTAL LLC







Basemaps: ESRI 2023, World Imagery; Geology: Blome et al. 2005; Floodplain and Stream: FEMA FIRM Panel 48453C0580H, effective 9/26/2008; Water/Wastewater Mains: Summit Geomatics 2023, Topographic Survey; Elevation: COA 2-ft contours, 2017.

Project Area

Mapped Faults

Manmade Features

2-ft Contours

Wastewater Main (MB-01)

Water Main (MB-02)

Geology

Kdr - Del Rio Clay

Kg - Georgetown Formation

Kplc - Person Formation - Leached and Collapsed Member

Faults (certain)

FEMA Flood Hazard Zones

Floodway

100-yr Floodplain (1% annual chance)

500-yr Floodplain (0.2% annual chance)

Stream

0

50

100 Feet

0

10

20

30 Meters

1 inch=50 feet

ZARA

ENVIRONMENTAL LLC

Attachment D

Page 2 of 4

1

2

3

4

STATE OF TEXAS

KARA POSSO

GEOLOGY

15382

LICENSED

PROFESSIONAL GEOSCIENTIST





Basemaps: ESRI 2023, World Imagery; Geology: Blome et al. 2005; Floodplain and Stream: FEMA FIRM Panel 48453C0580H, effective 9/26/2008; Water/Wastewater Mains: Summit Geomatics 2023, Topographic Survey; Elevation: COA 2-ft contours, 2017.

Project Area

Mapped Faults

Manmade Features

2-ft Contours

Wastewater Main (MB-01)

Water Main (MB-02)

### Geology

Kdr - Del Rio Clay

Kg - Georgetown Formation

Kplc - Person Formation - Leached and Collapsed Member

Faults (certain)

### FEMA Flood Hazard Zones

Floodway

100-yr Floodplain (1% annual chance)

500-yr Floodplain (0.2% annual chance)

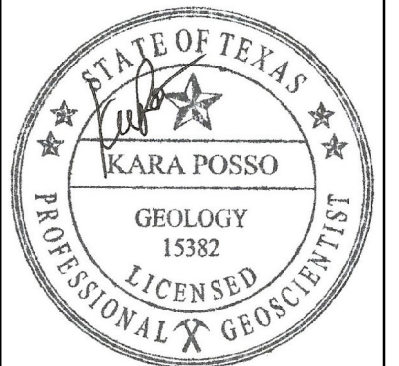
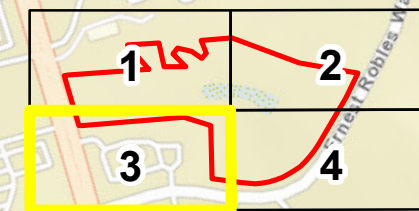
Stream

0 50 100 Feet  
0 10 20 30 Meters

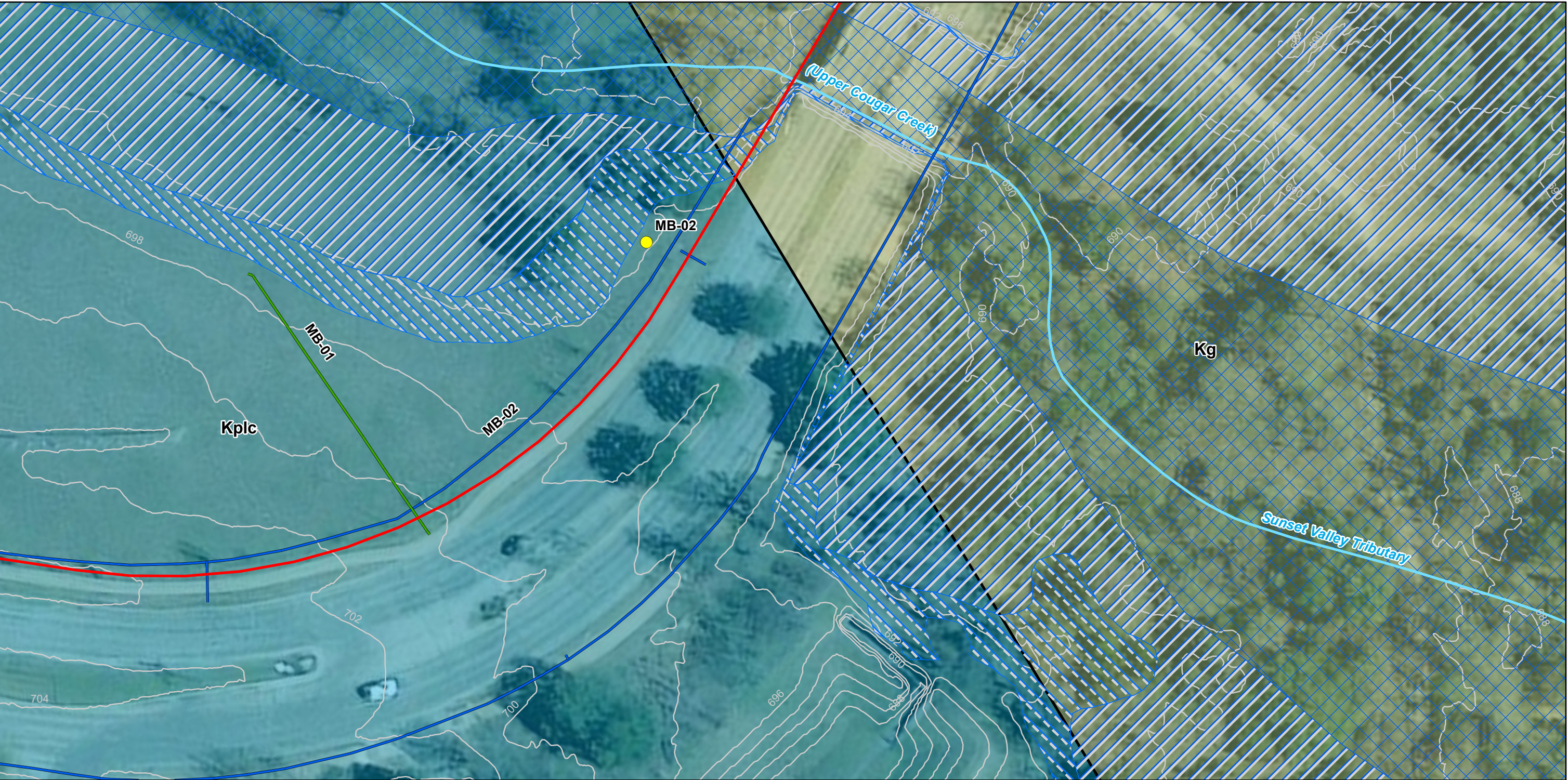
1 inch=50 feet

**ZARA**  
ENVIRONMENTAL LLC

### Attachment D Page 3 of 4







Basemaps: ESRI 2023, World Imagery; Geology: Blome et al. 2005; Floodplain and Stream: FEMA FIRM Panel 48453C0580H, effective 9/26/2008; Water/Wastewater Mains: Summit Geomatics 2023, Topographic Survey; Elevation: COA 2-ft contours, 2017.

Project Area

Mapped Faults

Manmade Features

2-ft Contours

Wastewater Main (MB-01)

Water Main (MB-02)

Geology

Kdr - Del Rio Clay

Kg - Georgetown Formation

Kplc - Person Formation - Leached and Collapsed Member

Faults (certain)

FEMA Flood Hazard Zones

Floodway

100-yr Floodplain (1% annual chance)

500-yr Floodplain (0.2% annual chance)

Stream

0

50

100 Feet

0

10

20

30 Meters

1 inch=50 feet

ZARA

ENVIRONMENTAL LLC

Attachment D

Page 4 of 4

1

2

3

4

STATE OF TEXAS

KARA POSSO

GEOLOGY

15382

LICENSED

PROFESSIONAL GEOSCIENTIST



# **ZARA**

## **ENVIRONMENTAL LLC**

*Integrity | Science | Expertise*

1707 West FM 1626

Manchaca, Texas 78652

512-291-4555

[www.zaraenvironmental.com](http://www.zaraenvironmental.com)

### **GEOLOGIC ASSESSMENT FOR THE ERNEST ROBLES WAY AND HOME DEPOT BLVD. PAVEMENT REPAIRS SUNSET VALLEY, TRAVIS COUNTY, TEXAS**



View of the Project from existing improvements on Home Depot Boulevard.

Prepared for  
City of Sunset Valley  
3205 Jones Road  
Sunset Valley, Texas 78745

3 April 2023

*This page left intentionally blank*

# 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.

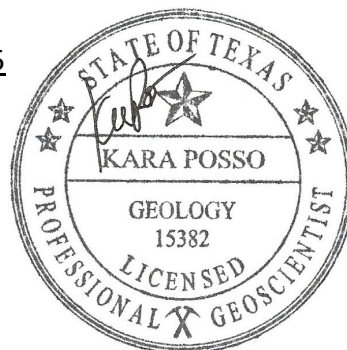
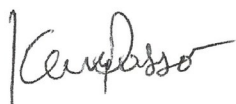
Print Name of Geologist: Kara Posso, P.G.

Telephone: 737-710-9610

Date: 3/15/2023

Representing: Zara Environmental LLC/ TBPGE No. 50365

Signature of Geologists:



Regulated Entity Name: Ernest Robles Way and Home Depot Blvd. Pavement Repairs

## Project Information

1. Date(s) Geologic Assessment was performed: 14 February 2023

2. Type of Project

☒ WPAP

☐ SCS

☐ AST

☐ UST

3. Location of Project:

☒ Recharge Zone

☐ Transition Zone

☐ Contributing Zone within the Transition Zone

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

**Table 1 - Soil Units, Infiltration Characteristics and Thickness**

Soil Name	Group*	Thickness (feet)
CrB- Crawford clay, 1 to 3 percent slopes	D	2.5
SsC - Speck clay loam, moist, 1 to 5 percent slopes, stony	D	3.3

*\* Soil Group Definitions (Abbreviated)*

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

6. ☒ **Attachment B – Stratigraphic Column.** A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.
7. ☒ **Attachment C – Site Geology.** A narrative description of the site- specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.
8. ☒ **Attachment D – Site Geologic Map(s).** The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'  
Applicant's Site Plan Scale: 1" = 20'  
Site Geologic Map Scale: 1" = 20'  
Site Soils Map Scale (if more than 1 soil type): 1" = 150'

9. Method of collecting positional data:

- ☒ Global Positioning System (GPS) technology.
- ☒ Other method(s). Please describe method of data collection: Faults and Geology derived from the Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome et al 2005); Water main location obtained from the City of Austin (Austin Water 2023); Natural Gas location obtained from a Topographic Land Survey (Sumit Geomatics 2023).



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 0 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
- ☐ The wells are not in use and have been properly abandoned.
- ☐ The wells are not in use and will be properly abandoned.
- ☐ The wells are in use and comply with 16 TAC Chapter 76.
- ☒ There are no wells or test holes of any kind known to exist on the project site.

### ***Administrative Information***

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

# ATTACHMENT A

GEOLOGIC ASSESSMENT TABLE						PROJECT NAME: Ernest Robles Way and Home Depot Blvd. Pavement Repairs														
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	FEATU RE 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	
MB-01	30.226730*	-97.824235*	MB	30	Kdr+Kg+Kplc	12	12	unk	-	-	-	-	X	5	35	X		X		Hilltop
MB-02	30.226819*	-97.824365*	MB	30	Kdr+Kg+Kplc	unk	unk	unk	-	-	14/1500'	-	X	9	39	X		X		Hilltop
MB-03	30.226478*	-97.82335*	MB	30	Kdr+Kg+Kplc	450	350	8	-	-	3/450'	-	X	9	39	X		X		Hilltop
MB-04	30.227155*	-97.824960*	MB	30	Kdr+Kg+Kplc	unk	unk	unk	-	-	-	-	X	5	35	X		X		Hilltop
F-01	30.226404*	-97.823694*	F	20	Kg/Kplc	unk	unk	unk	21	10	2/100'	-	F	5	35	X		X		Hilltop
F-02	30.226268*	-97.823420*	F	20	Kdr/Kg	unk	unk	unk	32	10	2/100'	-	F	5	35	X		X		Hilltop

\*Features MB-01 (water main), MB-02 (storm sewer), MB-04 (natural gas), F-01 and F-02 (mapped faults) are linear alignments; the GPS coordinate above represents a single location for that feature class within the Survey Area. MB-03 consists of three ponding basins that are part of a single water quality detention facility; the GPS coordinate above represents a central location for the feature within the Survey Area. The location and orientation of these features may be seen on Figure 3 and Attachment D. \*\* DATUM: NAD 1983.

2A	TYPE	2B POINTS	8A INFILLING
C	Cave	30	N None, exposed bedrock
SC	Solution cavity	20	C Coarse - cobbles, breakdown, sand, gravel
SF	Solution-enlarged fracture(s)	20	O Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fault	20	F Fines, compacted clay-rich sediment, soil profile, gray or red colors
O	Other natural bedrock features	5	V Vegetation. Give details in narrative description
MB	Manmade feature in bedrock	30	FS Flowstone, cements, cave deposits
SW	Swallow hole	30	X Other materials
SH	Sinkhole	20	
CD	Non-karst closed depression	5	
Z	Zone, clustered or aligned features	30	

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

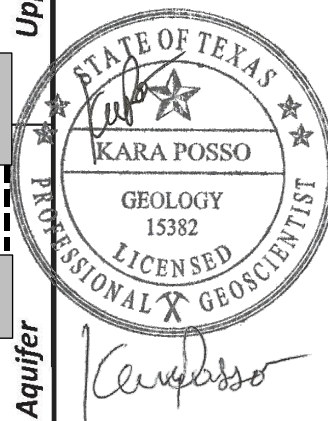
I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field. My signature certifies that I am qualified as a geologist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



Date 14 February 2023  
 Sheet 1 of 1  
 TCEQ-0585-Table (Rev. 10-01-04)

## ATTACHMENT B

Stratigraphic Units				Feet	Hydrogeologic Units	
Quarternary	Quarternary Alluvium (Qal)			0-60		
Upper Cretaceous	Upper Confining Units (Ku), undivided (Ka, Kef, Kb, Kdr)			30-350	Upper Confining Units	
	Navarro and Taylor Groups (Knt), undivided			600		
	Austin Group (Ka)			130-350		
	Eagle Ford Group (Kef)			30-150		
	Buda Limestone (Kb)			40-90		
	Del Rio Clay (Kdr)			40-110		
	Georgetown Formation (Kg)			2-20		
Lower Cretaceous	Edwards Group	Person Formation	Cyclic and Marine Member (Kpcm)	10-100	Survey Area	
			Leached and Collapsed Member (Kplc)	70-100		Survey Area
			Regional Dense Member (Kprd)	16-24		
		Kainer Formation	Grainstone Member (Kkg)	50-60	Edwards Aquifer	
			Kirschberg Evaporite Member (Kkke)	50-60		
			Dolomitic Member (Kkd)	110-140		
			Basal Nodular Member (Kkbn)	20-70		
		Trinity Group	Glen Rose Formation	Upper Glen Rose (Kugr)	350-800	Upper Trinity Aquifer
	Lower Glen Rose (Klgr)			200-270		
	Hensell Formation (Kh)		~45			
	Cow Creek Formation (Kcc)		50-75			



Stratigraphic column displaying the mapped geologic units in the Sunset Valley area, modified from the Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome et al. 2005) and Geologic Atlas of Texas (Barnes et al. 1974). Outcropping unit(s) are specified.

## ATTACHMENT C



*Integrity | Science | Expertise*

1707 West FM 1626

Manchaca, Texas 78652

512-291-4555

www.zaraenvironmental.com

### **GEOLOGIC ASSESSMENT FOR ERNEST ROBLES WAY AND HOME DEPOT BLVD. PAVEMENT REPAIRS SUNSET VALLEY, TRAVIS COUNTY, TEXAS**

Prepared for  
City of Sunset Valley  
3205 Jones Road  
Sunset Valley, Texas 78745

3 April 2023

In accordance with the Texas Board of Professional Geologists rules at 22 Texas Administrative Code, Part 39, Chapter 851, Subchapter C, §851.156, this report is signed and sealed on the title page to assure the user that the work has been performed by or directly supervised by the following professional geologist who takes full responsibility for this work.

The computer-generated seal appearing on this document was authorized by Kara Posso, PG #15382 on 3 April 2023.



---

Kara Posso, Texas Professional Geoscientist No. 15382  
Zara Environmental LLC Geoscience Firm Registration No. 50365

# ATTACHMENT C

## Table of Contents

Introduction .....	1
Methods.....	1
Background Data Collection .....	1
Field Survey.....	1
Results.....	3
Background Data and Site Information .....	3
Soils .....	3
Site Geology.....	3
Regional Geology.....	6
Regional Stratigraphy .....	6
Regional Groundwater .....	8
Water Wells.....	8
Floodplains .....	9
Previously Identified Features.....	9
General Site Conditions.....	9
Description of Features .....	11
Feature MB-01; Water Main and associated infrastructure.....	11
Feature MB-02; Storm Sewer Drains .....	11
Feature MB-03; Ponding Basins in Stormwater Facility.....	12
Feature MB-04; Natural Gas Pipeline.....	13
Features F-01 and F-02; Mapped Faults .....	13
Discussion and Recommendations .....	14
Literature Cited .....	15

## List of Figures

Figure 1. Location map displaying the Survey Area in Sunset Valley, Travis County, Texas, and Edwards Aquifer Zones (TCEQ 2005). .....	2
Figure 2. Soil types occurring in the Survey Area. ....	4
Figure 3. Geology of Survey Area including locations of features discovered during reconnaissance.....	5
Figure 4. Map of Sunset Valley Cave.....	10



## ATTACHMENT C

Figure 5. Example of infrastructure associated with the water main. ....	11
Figure 6. Example of a storm drain inlet within the Survey Area. ....	12
Figure 7. Stormwater facility and ponding basins. ....	13

# ATTACHMENT C

## Introduction

An approximately 0.21-mile shared used path (Project) is proposed from Brodie Lane to the northwest along Home Depot Boulevard, in the City of Sunset Valley, Texas. The proposed Project includes improvement to existing sidewalk infrastructure on both sides of roadway and would connect to a network of trails and green space in the vicinity. A Geologic Assessment (GA) was conducted within 50 feet of the Project on publicly accessible land totaling 3.94-acres surrounding the proposed improvements (Survey Area) (Figure 1). The proposed Project meets the Texas Commission of Environmental Quality's (TCEQ) requirements for regulation under the Edwards Rules at Title 30 Texas Administrative Code (TAC) Chapter §213.5 as it is within the Edwards Aquifer Recharge Zone. A detailed walking survey of the Survey Area was conducted in a single day on 14 February 2023, documenting four manmade features in bedrock and two mapped faults.

## Methods

### *Background Data Collection*

Several sources were reviewed to obtain available data pertaining to the Survey Area. The United States Geological Survey (USGS) 7.5-Minute Topographic Map of the Oak Hill Quadrangle was reviewed for general site information and elevation contours (USGS 2013). Surface geology and faults were obtained from the Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome et al. 2005). Available well information was reviewed from the Texas Water Development Board (TWDB) and Texas Commission on Environmental Quality (TCEQ). Soil descriptions were obtained from the Web Soil Survey of the U.S. Department of Agriculture ([USDA] 2023). Floodplain maps from the Federal Emergency Management Agency ([FEMA] 2023) were also reviewed. Data from the Texas Speleological Survey (TSS) was reviewed for any documented caves or karst features within the Survey Area or within 500-feet (TSS 2023), and an on-line search of the TCEQ Central Registry (TCEQ 2023) was performed for related geologic information from previous projects that may have occurred on or adjacent to the Survey Area. Location and orientation of some utilities qualifying as manmade features in bedrock were obtained from GIS files maintained the City of Austin (Austin Water 2023) or from a Topographic Land Survey produced by Sumit Geometrics (Sumit Geomatics 2023).

### *Field Survey*

Karst survey methods followed protocols outlined in TCEQ Instructions to Geologists for Geologic Assessments (TCEQ 2004). Walking ground surveys, as defined by Veni and Reddell (2002), TCEQ (2004), and Barrett (2005), were conducted throughout the Survey Area and reconnaissance excavations were conducted at all potential karst features. Positions of all features were documented using GPS technology and checked with field maps based on digital orthoimagery. All features identified were evaluated by a licensed professional geoscientist for potential impact to Edwards Aquifer recharge. This is completed by ranking the recharge sensitivity of each feature using the point scheme defined by TCEQ (2004). Fieldwork was conducted by two Zara Environmental LLC personnel, including a professional geoscientist, on 14 February 2023.



# ATTACHMENT C

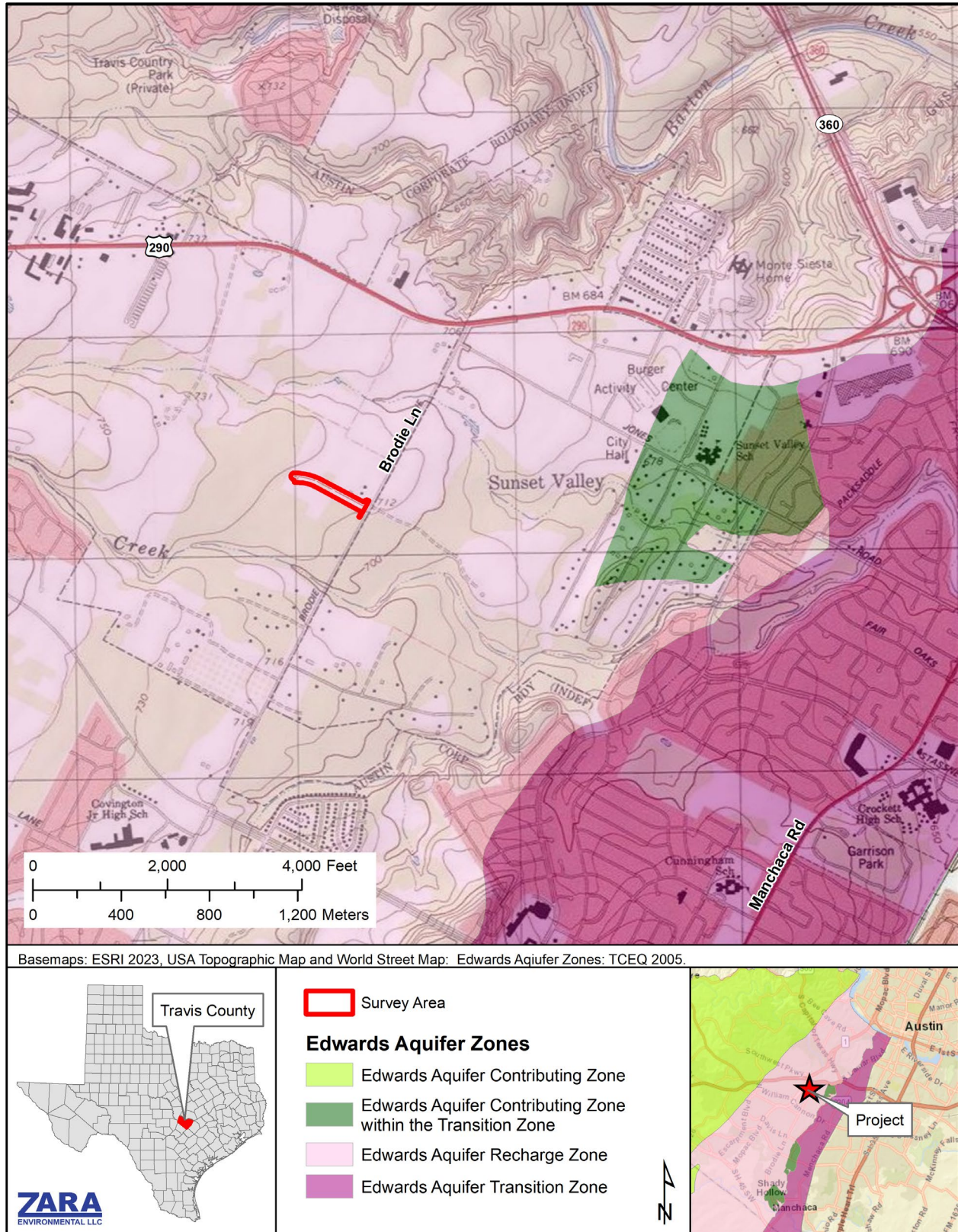


Figure 1. Location map displaying the Survey Area in Sunset Valley, Travis County, Texas, and Edwards Aquifer Zones (TCEQ 2005).

# ATTACHMENT C

## Results

### *Background Data and Site Information*

#### Soils

Two soil types were identified in the Survey Area by the USDA (2023) (Figure 2). A brief description of each soil type is below:

*Crawford clay, 1 to 3 percent slopes (CrB)*. This plains soil is characterized as residuum weathered from limestone with depths between 0 and 30 inches (USDA 2023). The soil's capacity to transmit water is very low to moderately low (0.00 to 0.6 inch/hour) through its most limiting layer, placing it in Hydrologic Soil Group D. This soil comprises 57.7% of the Survey Area.

*Speck clay loam, moist, 1 to 5 percent slopes, stony (SsC)*. This ridge forming soil is characterized as residuum weathered from limestone with depths between 0 and 40 inches (USDA 2023). The soil's capacity to transmit water is moderately low to moderately high (0.06 to 0.2 inch/hour) through its most limiting layer, placing it in Hydrologic Soil Group D. This soil comprises 42.3% of the Survey Area.

#### Site Geology

Mapped surface geology from the Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas (Blome et al. 2005) is presented as Figure 3 and Attachment D. Three units are mapped within the Survey Area; these are the Del Rio Clay (Kdr), the Georgetown Formation (Kg), and the Leached and Collapsed Member of the Person Formation of the Edwards Group (Kplc). The Cyclic and Marine Member of the Person Formation (Kpcm) is not mapped on-site and was likely removed by erosion, as the unit thickness can be as little as 5 feet in this area or not present at all (Hauwert 2009). There are two mapped faults in the eastern portion of the site; one fault exists between the Leached and Collapsed Member and the Georgetown Formation, while the other fault is between the Georgetown Formation and Del Rio Clay (Blome et al. 2005). Just off-site to the east, there is another fault between the Del Rio Clay and the Georgetown Formation and Leached and Collapsed Member. These faults are part of a series of conjugate faults in the area and are likely related to the same structural event. No surface expressions of these faults were observed in the Survey Area through physical observation in the field.



# ATTACHMENT C

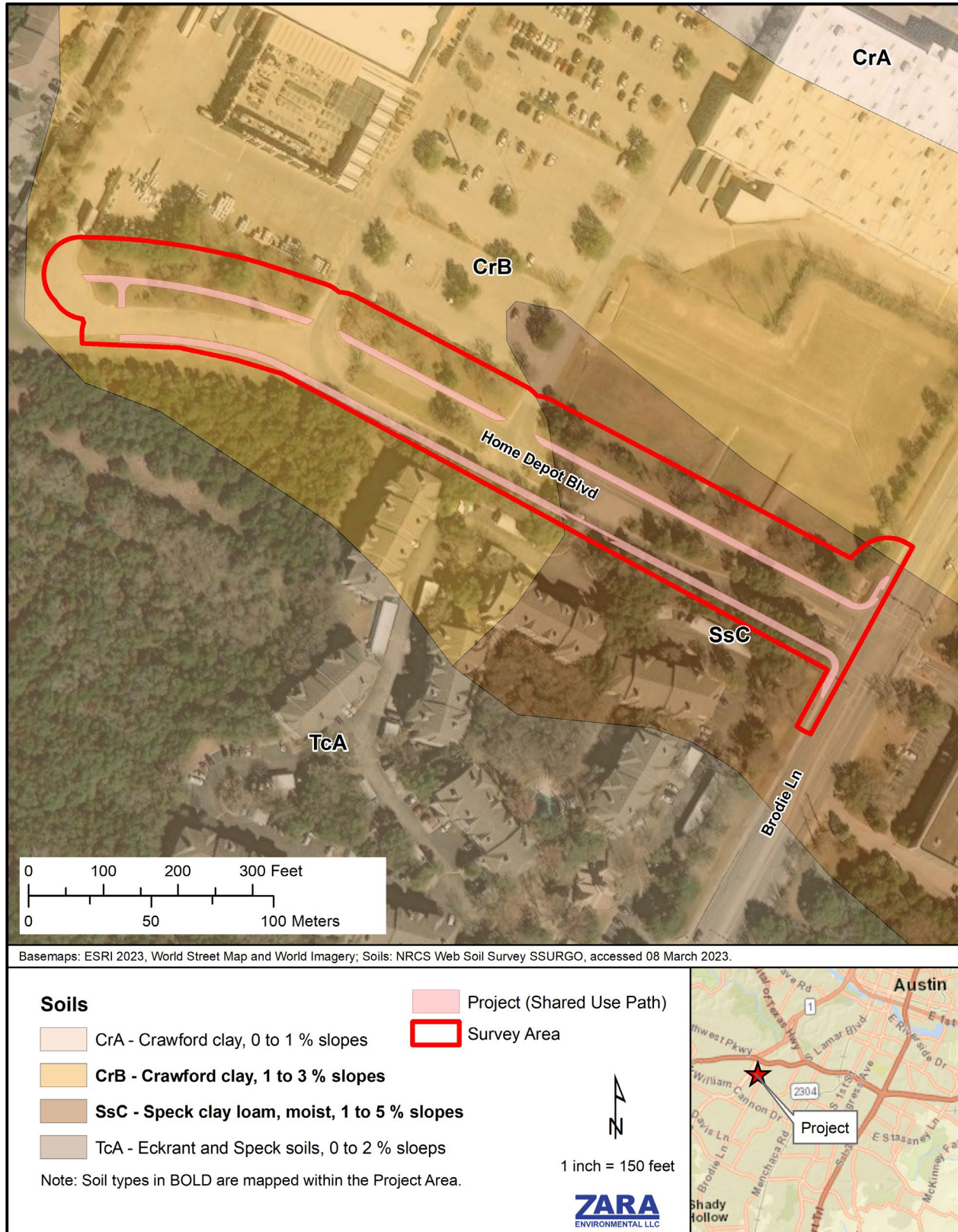


Figure 2. Soil types occurring in the Survey Area.



# ATTACHMENT C

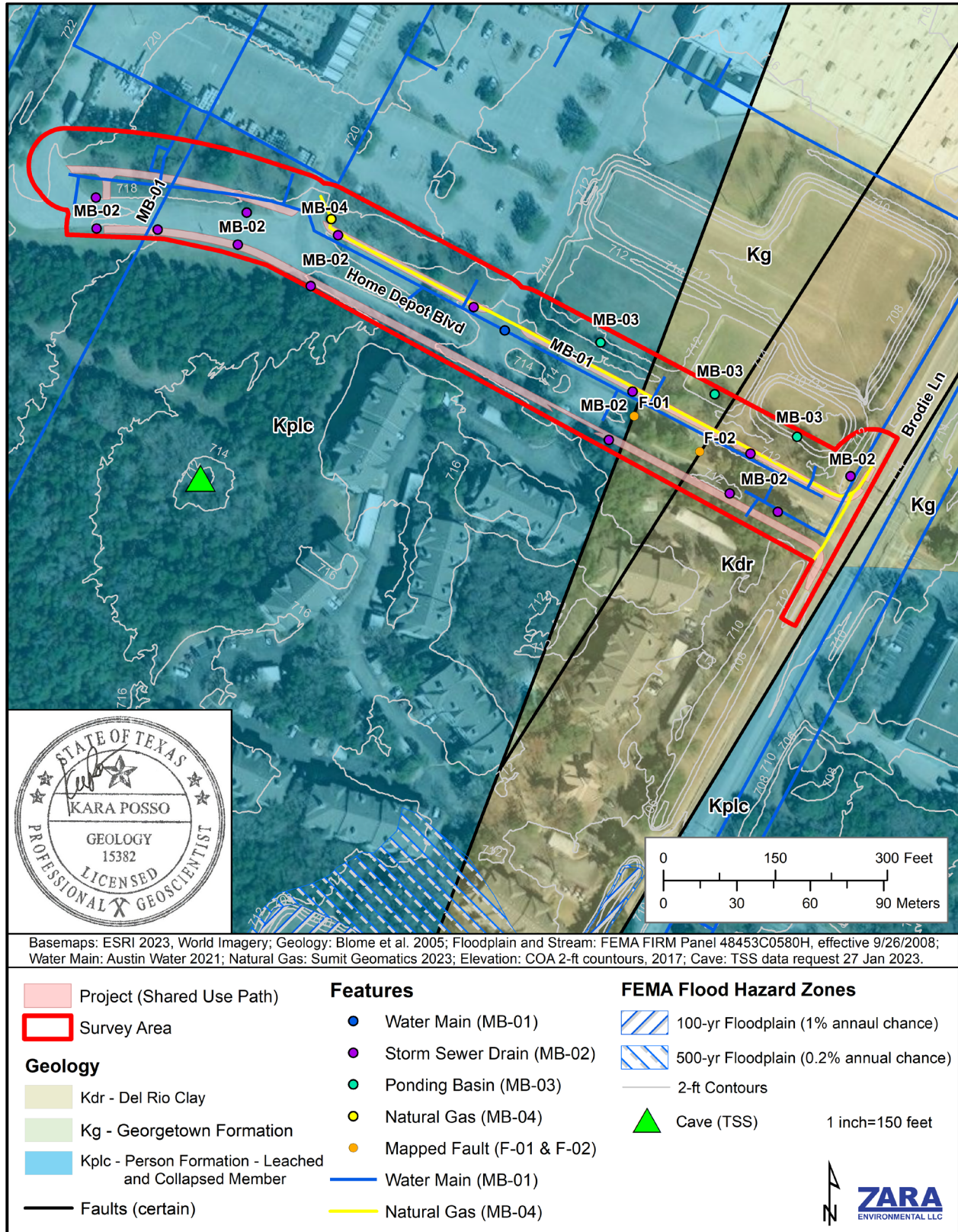


Figure 3. Geology of Survey Area including locations of features discovered during reconnaissance.



## ATTACHMENT C

### Regional Geology

The Survey Area is located in the eastern portion of the Edwards Plateau Physiographic Province of Central Texas along the Balcones Escarpment, which is a highly eroded landscape bordering the Edwards Plateau on its southern and eastern boundaries. The plateau is typified by higher elevations to the north and west and generally slopes to the southeast. Canyons and drainage basins were formed by surface flow of the Colorado River and its tributaries, including Williamson Creek, approximately a quarter mile south of the Survey Area.

The geologic formations in the Edwards Plateau are mostly Cretaceous age limestones with Quaternary alluvium overlaying bedrock in surface drainages. The limestone bedrock developed from the accumulation of thick sequences of marine sediments deposited in a lagoon environment on the San Marcos Platform protected by a barrier reef during the Cretaceous about 100 million years ago (Rose 1972). These strata dip slightly to the southeast at about 10 to 15 feet/mile toward the Gulf of Mexico.

### Regional Stratigraphy

The geologic formations that comprise the Edwards Aquifer are from top to bottom the Georgetown Formation, Person Formation, and Kainer Formation (TCEQ 2004). The Del Rio Clay is the primary upper confining layer to the Edwards Aquifer units and sits above the Georgetown Formation. A stratigraphic column showing the regional geology is included as Attachment B.

According to Blome et al. (2005), the Del Rio Clay Formation is a blue-green to yellow-brown, variably gypsiferous clay containing iron nodules, abundant pecten-type fossil clams, and the fossil oyster *Ilymatogyra arietina* (formerly *Exogyra arietina*) (Young 1967). Minor, thin lenticular beds of highly calcareous siltstone may also occur. Unweathered Del Rio Clay is composed of kaolinite, illite, and lesser amounts of montmorillonite (Collins 2000). Secondary gypsum occurs as fracture fillings in clay-rich exposures near igneous bodies (Clark 2003). The Del Rio has no recognized cavern development and no significant porosity or permeability. Directly overlies the Lower Cretaceous formations in many areas. Thickness is about 40 to 110 feet.

The Georgetown Formation is the uppermost unit of the Edwards aquifer. The strata are covered by vegetation and soil in some areas. Bedrock is reddish-brown and gray to light-tan, marly limestone with biomicritic texture and commonly contains the brachiopod *Waconella wacoensis*, pectins, the mollusks *Kingena wacoensis* and *Gryphaea washitaensis* (Young 1967), as well as other pelecypods. The Georgetown is considered an upper confining unit, has very low porosity and permeability, and has little or no karstification or cavern development (Stein and Ozuna 1995). Thickness ranges from 2 to 20 feet and generally thins from northeast to southwest.

The Person and Kainer Formations comprise the Edwards Group (Rose 1972). The Person Formation is about 130 feet thick in southern Travis County. The composition of the Person Formation ranges from crystalline limestone to grainstone to mudstone and is comprised of three

## ATTACHMENT C

informal hydrogeologic units: the Cyclic and Marine Members, undivided; the Leached and Collapsed Members, undivided; and the Regional Dense Member.

The Cyclic and Marine Members are composed of a chert-bearing wackestone and can be somewhat variable in thickness because of the erosional unconformity between the Person and Georgetown Formations. In southern Travis County these layers are less than 5 feet or not present (Hauwert 2009).

The Leached and Collapsed Members are a light-colored wackestone with interbedded mudstone and grainstone intervals that form one of the more porous and permeable subdivisions of the Edwards Aquifer. The Leached Member is a dense, bioturbated micrite, and the Collapsed Member is composed of several one to five feet thick zones of collapsed stromatolitic limestone (Rose 1972). The combined thickness of the two members ranges from 70 feet in northern Hays County to less than 25 feet near the Colorado River in Travis County (Hauwert 2009).

The lowermost member of the Person Formation is the Regional Dense Member (RDM), which has a thickness of 15 to 32 feet in southern Travis County and thins towards the Colorado River (Hauwert 2009). The RDM is composed of a dense argillaceous mudstone and is easily identified in the outcrop and on a variety of geophysical logs. Most of the fractures that penetrate the RDM do not appear to be solution enlarged. Caves that breach the RDM are not enlarged but are usually vertical shafts with horizontal caverns developed above or below the RDM. The RDM can function as a confining unit between the upper and lower portions of the Edwards Aquifer (i.e., between the Kainer and the Person Formation); however, caves, faults, and fractures may greatly reduce the vertical confining ability of the RDM. The RDM is probably not an effective barrier to lateral flow at faults because of the relatively thin section. The flow of water tends to circumvent the RDM because of the impermeable nature of this unit.

The Kainer Formation has an approximate total thickness of 300 feet in southern Travis County. The lithology of the Kainer Formation ranges from mudstone to miliolid grainstone to crystalline limestone. The Kainer is subdivided into four informal members that include the Grainstone, Kirschberg Evaporite, Dolomitic, and Basal Nodular Members.

The Grainstone Member is the uppermost unit of the Kainer Formation and is 45 to 60 feet thick in southern Travis County (Hauwert 2009). It is composed of thick sequences of dense, tightly cemented, miliolid grainstone. Primary matrix porosity, as measured on geophysical logs, is some of the lowest in the Edwards Aquifer. Secondary fracture porosity accounts for the bulk of effective porosity in this aquifer unit.

The Kirschberg Evaporite Member underlies the Grainstone Member and is 40 to 75 feet in thickness in this area. This hydrogeologic unit consists of crystalline limestone and chalky pulverulite with chert nodules and lenses (Hauwert 2009). Collapse features are common. The porosity has been described as boxwork (Maclay and Small 1976) because of the configuration of the voids and the secondary neospar and travertine deposits. The boxwork porosity does not seem to be prevalent throughout the entire thickness or extent of the member but occurs



## ATTACHMENT C

sporadically within more massive limestone. Dissolution of evaporite minerals, such as gypsum and anhydrite, and the existence of contorted beds in the Kirschberg Evaporite result in extensive secondary porosity, which creates one of the most permeable subdivisions in the Edwards Aquifer.

The Dolomitic Member is a resistant, highly bedded wackestone with interbedded grainstone, burrowed mudstone, and some chert nodules. The Dolomitic Member has a total thickness of about 140 feet in this area (Hauwert 2009). Effective porosity and probable pathways of water in this unit are restricted to solution enlarged bedding planes, joints, fractures, and faults.

The Basal Nodular Member is the lowermost unit of the Edwards Group and is 45 to 65 feet of fossiliferous, nodular limestone (Hauwert 2009). In the subsurface, the Basal Nodular Member has negligible porosity and permeability (Maclay and Small 1984) and can function as part of the lower confining unit; however, in outcrop the basal nodular member often displays extensive karstification, which has generated secondary porosity in the form of large lateral caves.

### Regional Groundwater

The Edwards Aquifer largely contains the regional groundwater and is one of the most permeable and productive limestone aquifers in the United States. Karstified limestone aquifers are, by their nature, extremely vulnerable to contamination. As the humid subtropical climate of this region can produce thermal convection thunderstorms, many of the rainfall events can produce excessive amounts of precipitation in short periods of time. Some of this water makes its way into the aquifers, usually through concentrated areas along creeks and rivers in outcrop areas of the recharge zone.

The Project resides within the Recharge Zone for the Barton Springs Segment of the Edwards Aquifer, as delineated by the TCEQ Edwards Rules (30 TAC §213). The Barton Springs covers about 155 square miles in Travis and Hays counties. It is composed of limestone that is highly faulted, fractured, and dissolved, forming a very prolific karst aquifer up to 450 feet thick (BSEACD 2021).

The Recharge Zone of the Edwards Aquifer is defined as the land surface area where caves, sinkholes, faults, fractures, or other permeable features provide pathways for recharge of surface waters into the Edwards Aquifer. This zone is regulated due to the vulnerability of this karst aquifer to pollution. Recharge into the Edwards Aquifer occurs primarily in losing streams, where surface water from the contributing zone flows over faults, fractures, and karst features that have been solutionally enlarged in the Recharge Zone (Sharp and Banner 1997).

### Water Wells

No wells were mapped within the Survey Area according to the TWDB groundwater database (TWDB 2023). No wells were identified during field reconnaissance.

## ATTACHMENT C

### Floodplains

According to the FEMA Flood Zone Map (2023), there are no Flood Zones mapped within the Survey Area. The nearest Flood Zones are mapped 375 feet south of the Survey Area and correspond to Williamson Creek (Figure 3).

### Previously Identified Features

A search of the TCEQ Edwards Aquifer Protection Program Applications that are currently under review did not identify any active applications surrounding the Project, however the TCEQ Central Registry showed that there was an active permit for a project called Violet Crown Trail North 2A, which extends from southwest of Home Depot Boulevard to Mopac. The Geologic Assessment for the Violet Crown Trail North 2A was not obtained but the permit tracking information did not indicate sensitive karst features have been identified on that project. A TSS database search did not find any known caves or karst features on or within a 150-foot buffer of the Survey Area boundary; however, the TSS data did identify one cave, Sunset Valley Cave, located approximately 300 feet south of the Survey Area in the Indian Grass Prairie Preserve (Figure 3). According to a 2007 map of Sunset Valley Cave, the cave is 50 feet deep, and it occupies a footprint that is approximately 20-30 feet in diameter (Figure 4). As the cave footprint is greater than 150 feet from the proposed Project and there is no apparent drainage channel conveying overland flow from the Project towards the cave, it is unlikely to receive runoff from the Project, with the use of proper Best Management Practices (BMPs) during construction.

### General Site Conditions

The Survey Area for this Project exists within the mostly developed right of way for Home Depot Boulevard and commercial land just to the north of the right of way. A private residential apartment complex and a fenced section of the Indian Grass Prairie Preserve located to the south of the Project were not surveyed due to lack of access, although most land within 50 feet of the proposed Project was visible through the fencing. The paved Home Depot Boulevard roadway consists of two one-way lanes separated by a vegetated center median. There was an existing sidewalk along both sides of Home Depot Boulevard and utilities such as electrical and communications lines, water lines, a gas line, and storm sewer drains were present in this corridor. The right of way and center median had landscaping and appeared to be regularly maintained with mowing. North of the intersection at Brodie Lane and Home Depot Boulevard, there was a stormwater facility consisting of at least four ponding basins (three of which intersected the Survey Area). Parking lots and buildings for The Home Depot and other commercial developments north of the Survey Area likely drain to the stormwater facility.



# ATTACHMENT C

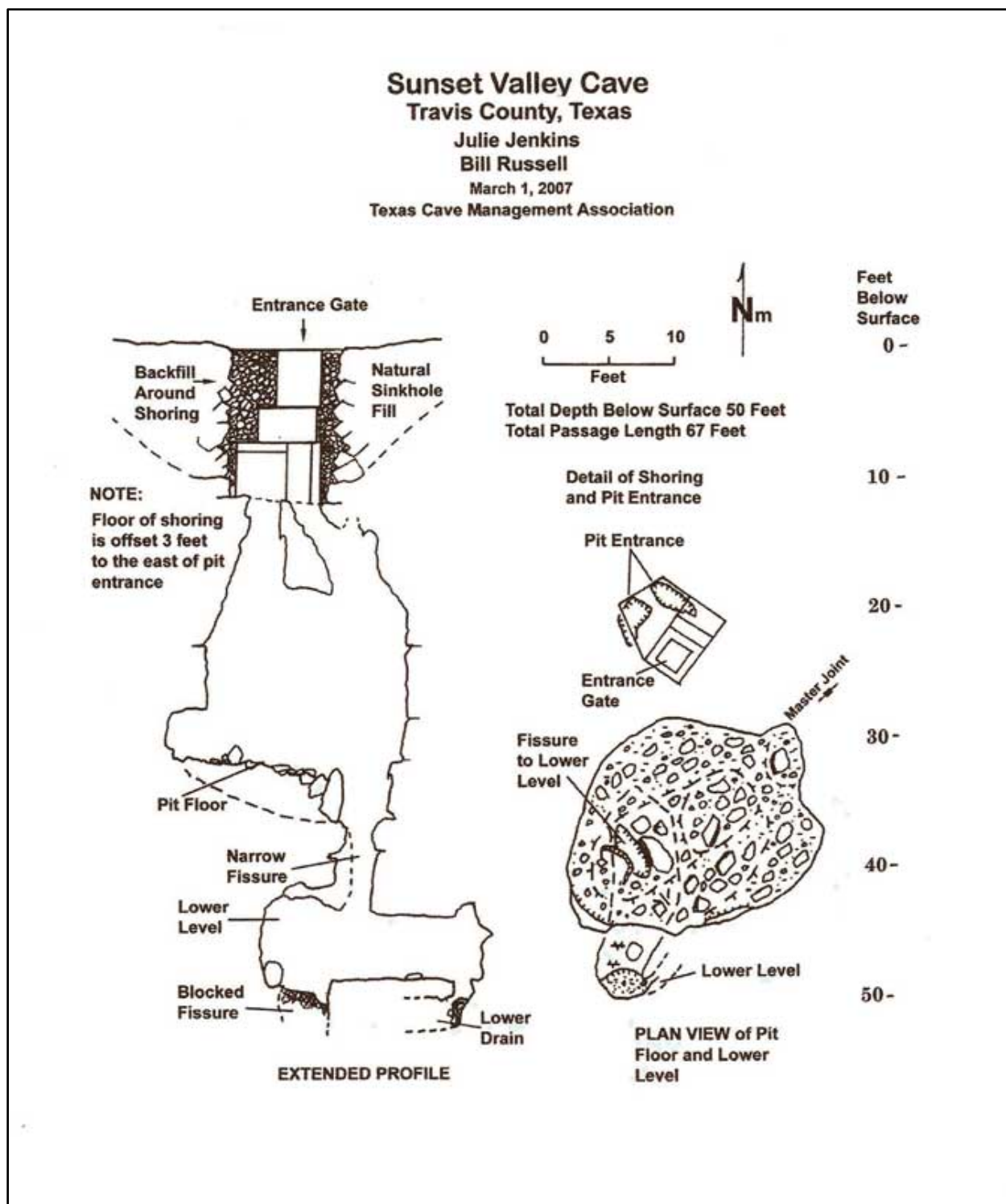


Figure 4. Map of Sunset Valley Cave.

## ATTACHMENT C

### *Description of Features*

Results of the field reconnaissance survey are presented in the TCEQ Geologic Assessment Table (Attachment A) and are discussed below. Six features were identified within the Survey Area including four manmade features in bedrock and two mapped faults. All features were ranked for recharge sensitivity according to TCEQ standards. Locations are displayed on maps in Figure 3 and Attachment D.

#### Feature MB-01; Water Main and associated infrastructure

A City of Austin-owned water main, fire hydrants, valves and other associated infrastructure were observed along Home Depot Boulevard and Brodie Lane in the Survey Area (Figure 3, Figure 5, and Attachment D). The depth of the line is unknown; however, GIS files indicate the line is 12 inches in diameter (City of Austin 2021). There is a low potential for this feature to rapidly transmit water to the subsurface assuming proper construction and maintenance. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).



Figure 5. Example of infrastructure associated with the water main.

#### Feature MB-02; Storm Sewer Drains

Storm drain inlets are present along both sides of Home Depot Boulevard within the Survey Area (Figure 3, Figure 6, Attachment D). The storm drain inlets are likely all interconnected to the same storm sewer system. The size and depth of storm sewer system is unknown; however, the storm sewer likely runs along Home Depot Boulevard to Brodie Lane before discharging in Williamson



## ATTACHMENT C

Creek south of the Project. Although this manmade feature in bedrock has a catchment area of greater than 1.6 acres, there is a low potential for this feature to rapidly transmit water to the subsurface assuming proper construction and maintenance. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).



Figure 6. Example of a storm drain inlet within the Survey Area.

### Feature MB-03; Ponding Basins in Stormwater Facility

A stormwater facility consisting of at least three ponding basins intersecting the Survey Area was observed north of the intersection at Home Depot Boulevard and Brodie Lane (Figure 3, Figure 7, and Attachment D). In total, the stormwater facility occupies an area that is 450 feet long by 350 feet wide with a depth of approximately 8 feet. There are grade breaks and/or rock riprap separating each ponding basin, and each pond appears to be clay-lined with vegetated topsoil. The facility likely captures water from The Home Depot parking lot and other commercial developments in the vicinity. Although this manmade feature in bedrock has a catchment area of greater than 1.6 acres, there is a low potential for this feature to rapidly transmit water to the subsurface assuming proper construction and maintenance. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

## ATTACHMENT C



Figure 7. Stormwater facility and ponding basins.

### Feature MB-04; Natural Gas Pipeline

This buried natural gas pipeline was identified from review of the Topographic Land Survey provided by Sumit Geomatics (2023); no surface markers indicating presence of a buried line were observed while onsite (Figure 3, Figure 6, Attachment D). The depth, diameter, and precise orientation of the pipeline are unknown, but based on the Topographic Survey, the line lies within the right of way for Home Depot Boulevard and Brodie Lane. There is a low potential for this feature to rapidly transmit water to the subsurface, assuming proper construction. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

### Features F-01 and F-02; Mapped Faults

Features F-01 and F-02 are mapped as certain faults according to review of the geologic map by Blome et al. (2005) (Figure 3 and Attachment D). Feature F-01 is a fault trending  $21^{\circ}$  that exists between the Leached and Collapsed Member (Kplc) and Georgetown Formation (Kg), whereas Feature F-02 is a fault trending  $32^{\circ}$  is between the Georgetown Formation (Kg) and Del Rio Clay (Kdr). These faults are present roughly 100 feet apart in the eastern portion of the Survey Area and are likely part of a series of conjugate faults related to the same structural event as they converge approximately 500 feet south of the Survey Area. No surface expressions of the mapped faults were observed during site reconnaissance, and they are likely covered by soil and/or fill material and concrete. These features are not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).



## ATTACHMENT C

### Discussion and Recommendations

The Project consists of a proposed shared use path that occupies land currently used and maintained as public right of way for Home Depot Boulevard and Brodie Lane. Much of this land has been developed and includes existing infrastructure such as a roadway, sidewalks, and utilities. The Project will occur at existing grade and disturbance to in situ bedrock is expected to be minimal. Due to the existing developments, minimal disturbance, lack of hydrologically sensitive features, the overall potential for the land within the Survey Area to rapidly transmit surface runoff into the subsurface is considered to be relatively low.

Proper use of stormwater BMPs are recommended through the duration of the Project. BMPs should be developed, installed, inspected, and maintained through construction in accordance with TCEQ requirements under the Edwards Aquifer Protection Program. Disturbance to natural bedrock surfaces and existing infrastructure should be minimized wherever possible. Care should be taken when working around public utilities, such as water mains, storm sewers, stormwater facilities, natural gas pipelines, and electrical or communication lines to avoid damage to any existing infrastructure. BMPs should be developed and maintained upslope of Sunset Valley Cave through the duration of construction to prevent any sediment from migrating towards the cave. If any karst features are discovered during excavation activities, all work within 50 feet of the feature should stop and a Professional Geoscientist should evaluate the feature for sensitivity and coordinate with the TCEQ Edwards Aquifer Protection Program, as necessary.

# ATTACHMENT C

## Literature Cited

- Austin Water. 2023. Austin Water Featured Content: Water Mains. ESRI ArcGIS Online Austin Water Records Access. Accessed 14 February 2023. Available at: <http://arcg.is/1VfBrCg> with account.
- Barrett, M.E. 2005. Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices: TCEQ, Field Operations Divisions, RG-348 (Revised). July 2005. 315 p.
- Barton Springs Edwards Aquifer Conservation District (BSEACD). 2021. Aquifer Science: Barton Springs Segment of the Edwards Aquifer. Accessed 11 January 2022. Available at: <https://bseacd.org/aquifer-science/about-the-aquifers/>
- Blome, C.D., Faith, J.R., Pedraza, D.E., Ozuna, G.B., Cole, J.B., Clark, A.K., Small, T.A., and R.R. Morris. 2005. Geologic Map of the Edwards Aquifer Recharge Zone, South-central Texas. US Geological Survey Scientific Investigations Map 2873.
- Clark, A.K. 2003. Geologic framework and hydrogeologic characteristics of the Edwards aquifer, Uvalde County, Texas: U.S. Geological Survey Water-Resources Investigations Report 03–4010, 17 p., 1 sheet.
- Collins, E.W. 2000. Geologic map of the New Braunfels, Texas, 30 x 60 minute quadrangle—Geologic framework of an urban-growth corridor along the Edwards aquifer, south-central Texas: University of Texas, Bureau of Economic Geology. Miscellaneous Map 39, 28 p., 1 sheet, scale 1:100,000.
- Esri. 2023. Esri's World Imagery Map. ArcGIS Online Maps, service layer credits: Esri, DigitalGlobe, Earthstar Geographics, CNES/Airbus DS, GeoEye, USDA FSA, USGS, Aerogrid, IGN, IGP, and the GIS User Community. Available at: [https://services.arcgisonline.com/ArcGIS/rest/services/World\\_Imagery/MapServer](https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer). Accessed 14 February 2023.
- Federal Emergency Management Agency (FEMA). 2023. Flood Map Service Center. Flood Insurance Rate Map No. 48453C0580H and 48209C0175F, Travis County, Texas. Available at: <https://msc.fema.gov/portal>. Accessed 14 February 2023.
- Hauwert, N.M. 2009. Groundwater Flow and Recharge Within the Barton Springs Segment of the Edwards Aquifer, Southern Travis and Northern Hays Counties, Texas. Dissertation presented to the faculty of the graduate school of the University of Texas at Austin. Copyright by Nico Mark Hauwert. May 2009.
- Maclay, R. W., Small, T. A. 1976. Progress report on geology of the Edwards aquifer, San Antonio area, Texas, and preliminary interpretation of borehole geophysical and laboratory data on carbonate rocks. United States Geological Survey Open-File Report 76-627, 65 p.
- Maclay, R. W., Small, T. A. 1984. Carbonate geology and hydrology of the Edwards aquifer in the San Antonio area, Texas. United States Geological Survey Open-File Report 83-537, 72 p.



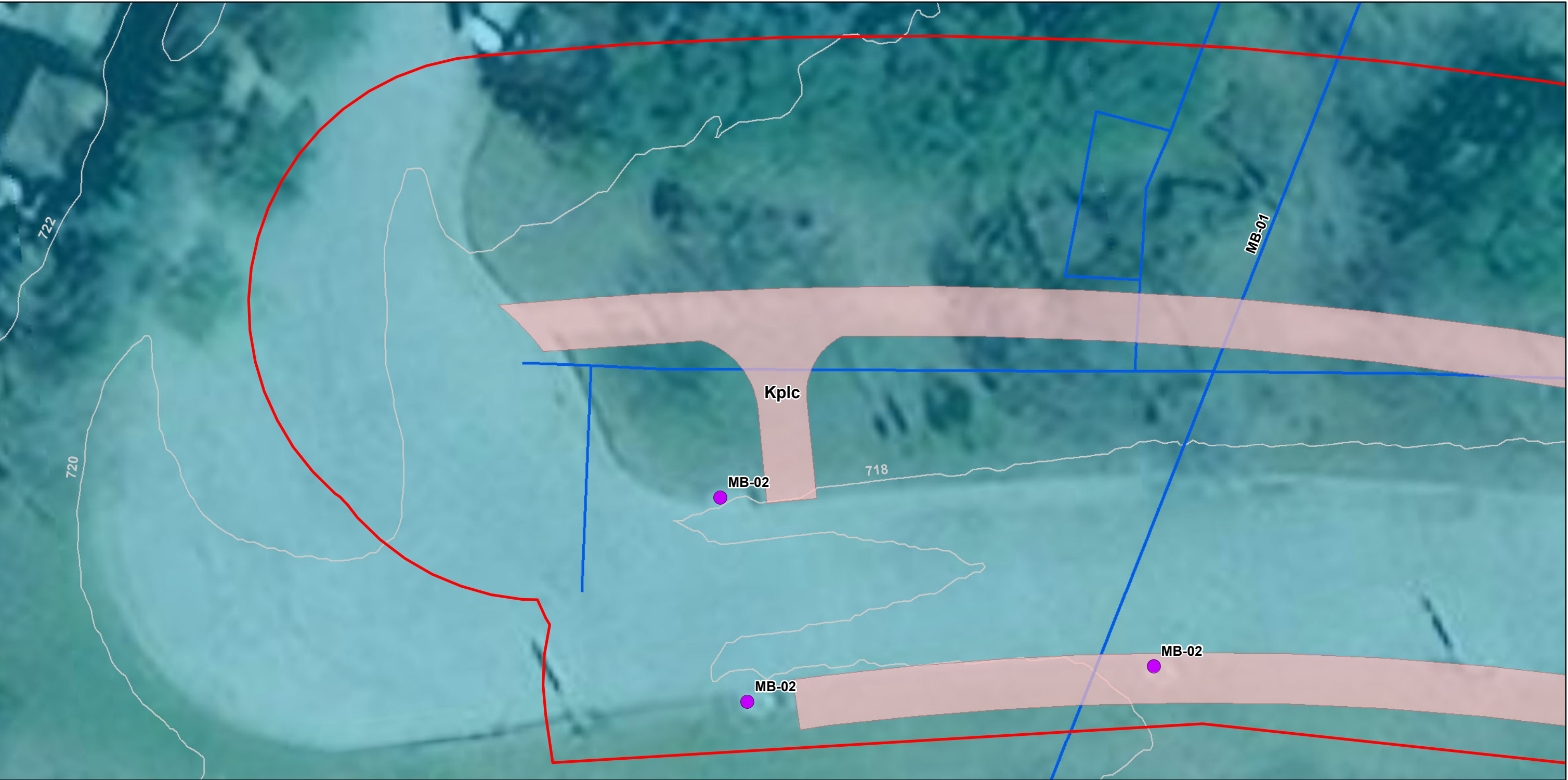
## ATTACHMENT C

- Rose, P.R. 1972. Edwards Group, surface and subsurface, central Texas: Austin, University of Texas, Bureau of Economic Geology, Report of Investigations 74, 198 p.
- Sharp, J. M., and Banner, J. L. 1997. The Edwards Aquifer: a resource in conflict. GSA Today, 7(8), 1-9.
- 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 Report 95-4030, 8 p., 1 sheet, scale 1:75,000.
- Sumit Geomatics. 2023. Topographic Survey: Home Depot Boulevard, City of Sunset Valley, Travis County, Texas. Date 06 March 2023. Scale 1" = 30'.
- Texas Commission on Environmental Quality (TCEQ). 2004. Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zone. TCEQ RG-0508, 34 p., revised 1 October 2004.
- Texas Commission on Environmental Quality (TCEQ). 2005. Edwards Aquifer Protection Program, Chapter 213 Rules – Recharge Zone, Transition Zone, Contributing Zone, and Contributing Zone Within the Transition Zone. Vector digital data. Austin, Texas. 1 September 2005.
- Texas Commission on Environmental Quality (TCEQ). 2023. Central Registry Query. Available at: <https://www15.tceq.texas.gov/crpub/>. Accessed 14 February 2023.
- Texas Speleological Survey (TSS). 2023. TSS Formal Data Request of Digital Records Pertaining to Caves and Karst Features. Data requested 2023 January 27.
- Texas Water Development Board (TWDB). 2023. TWDB Groundwater Database. Accessed via Water Data Interactive (WDI) Groundwater Data Viewer. Available at: <https://www3.twdb.texas.gov/apps/WaterDataInteractive/GroundWaterDataViewer>. Accessed 14 February 2023.
- United States Department of Agriculture (USDA). 2023. Natural Resources Conservation Service, Soil Survey staff. 2023. Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed 14 February 2023.
- United States Geological Survey (USGS). 2013. 7.5-minute Topographic Map of the Oak Hill Quadrangle, Texas. United States Department of Interior Geological Survey.
- Veni, G., and J. Reddell. 2002. Protocols for Assessing Karst Features for Endangered Invertebrate Species. Report by George Veni and Associates, San Antonio, Texas. 7 p.
- Young, K. 1967. Comanche Series (Cretaceous), south-central Texas, in Hendricks, Leo, ed., Comanchean (Lower Cretaceous) stratigraphy and paleontology of Texas: Society of Economic Paleontologists and Mineralogists, Permian Basin Section, Publication 67-8, p. 9-29.

## ATTACHMENT D

### Attachment D. Site Geologic Maps





Basemaps: ESRI 2023 World Street Map and NAIP 2020, 60cm orthoimagery, Oak Hill NW QQUAD; Geology: Blome et al. 2005; Water Main: Austin Water 2023; Natural Gas Pipeline: Summit Geomatics 2023; Elevation: COA 2-ft contours, 2017.

**Geology**

- Kdr - Del Rio Clay
- Kg - Georgetown Formation
- Kplc - Person Formation - Leached and Collapsed Member
- Faults (certain)
- 2-ft Contours

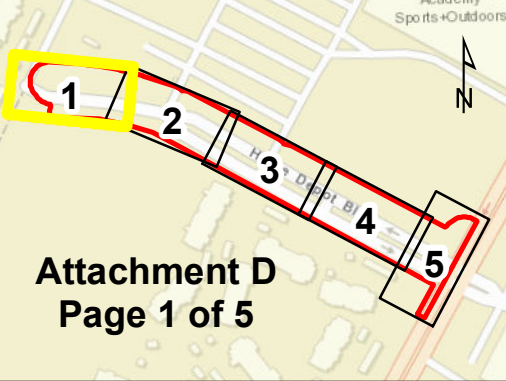
**Features**

- Water Main (MB-01)
- Storm Sewer Drain (MB-02)
- Ponding Basin (MB-03)
- Natural Gas (MB-04)
- Mapped Fault (F-01 & F-02)

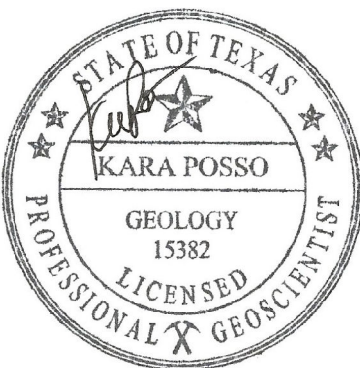
- Project (Shared Use Path)
  - Survey Area
  - Water Main (MB-01)
  - Natural Gas (MB-04)
- 0 20 40 Feet  
0 4 8 12 Meters



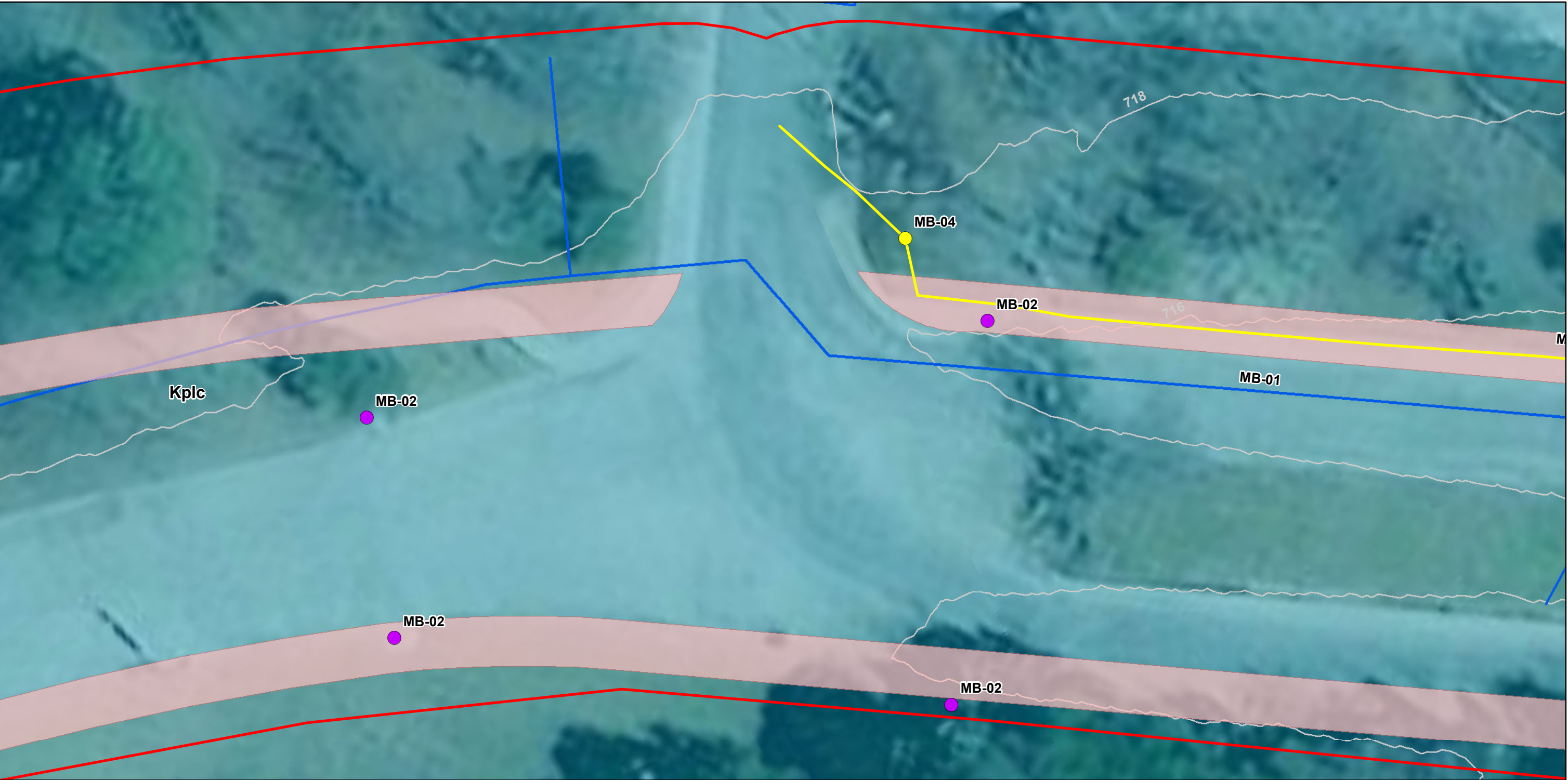
1 inch=20 feet



**Attachment D**  
**Page 1 of 5**







Basemaps: ESRI 2023 World Street Map and NAIP 2020, 60cm orthoimagery, Oak Hill NW QQUAD; Geology: Blome et al. 2005; Water Main: Austin Water 2023; Natural Gas Pipeline: Summit Geomatics 2023; Elevation: COA 2-ft countours, 2017.

**Geology**

- Kdr - Del Rio Clay
- Kg - Georgetown Formation
- Kplc - Person Formation - Leached and Collapsed Member
- Faults (certain)
- 2-ft Contours

**Features**

- Water Main (MB-01)
- Storm Sewer Drain (MB-02)
- Ponding Basin (MB-03)
- Natural Gas (MB-04)
- Mapped Fault (F-01 & F-02)

Project (Shared Use Path)

Survey Area

Water Main (MB-01)

Natural Gas (MB-04)

0 20 40 Feet

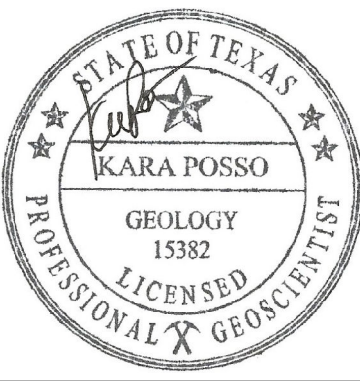
0 4 8 12 Meters

1 inch=20 feet

**ZARA**  
ENVIRONMENTAL LLC

1 2 3 4 5

**Attachment D**  
**Page 2 of 5**







Basemaps: ESRI 2023 World Street Map and NAIP 2020, 60cm orthoimagery, Oak Hill NW QQUAD; Geology: Blome et al. 2005; Water Main: Austin Water 2023; Natural Gas Pipeline: Summit Geomatics 2023; Elevation: COA 2-ft contours, 2017.

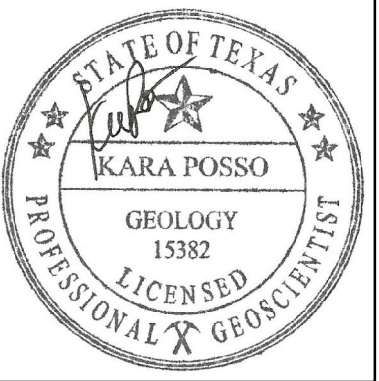
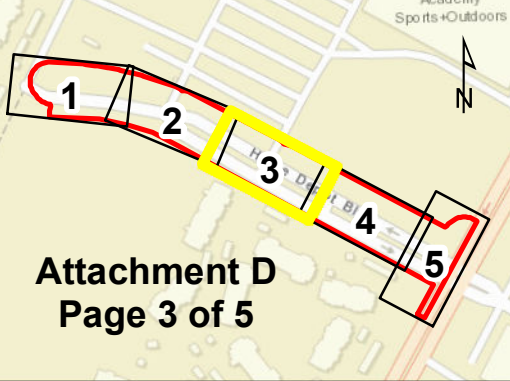
**Geology**

- Kdr - Del Rio Clay
- Kg - Georgetown Formation
- Kplc - Person Formation - Leached and Collapsed Member
- Faults (certain)
- 2-ft Contours

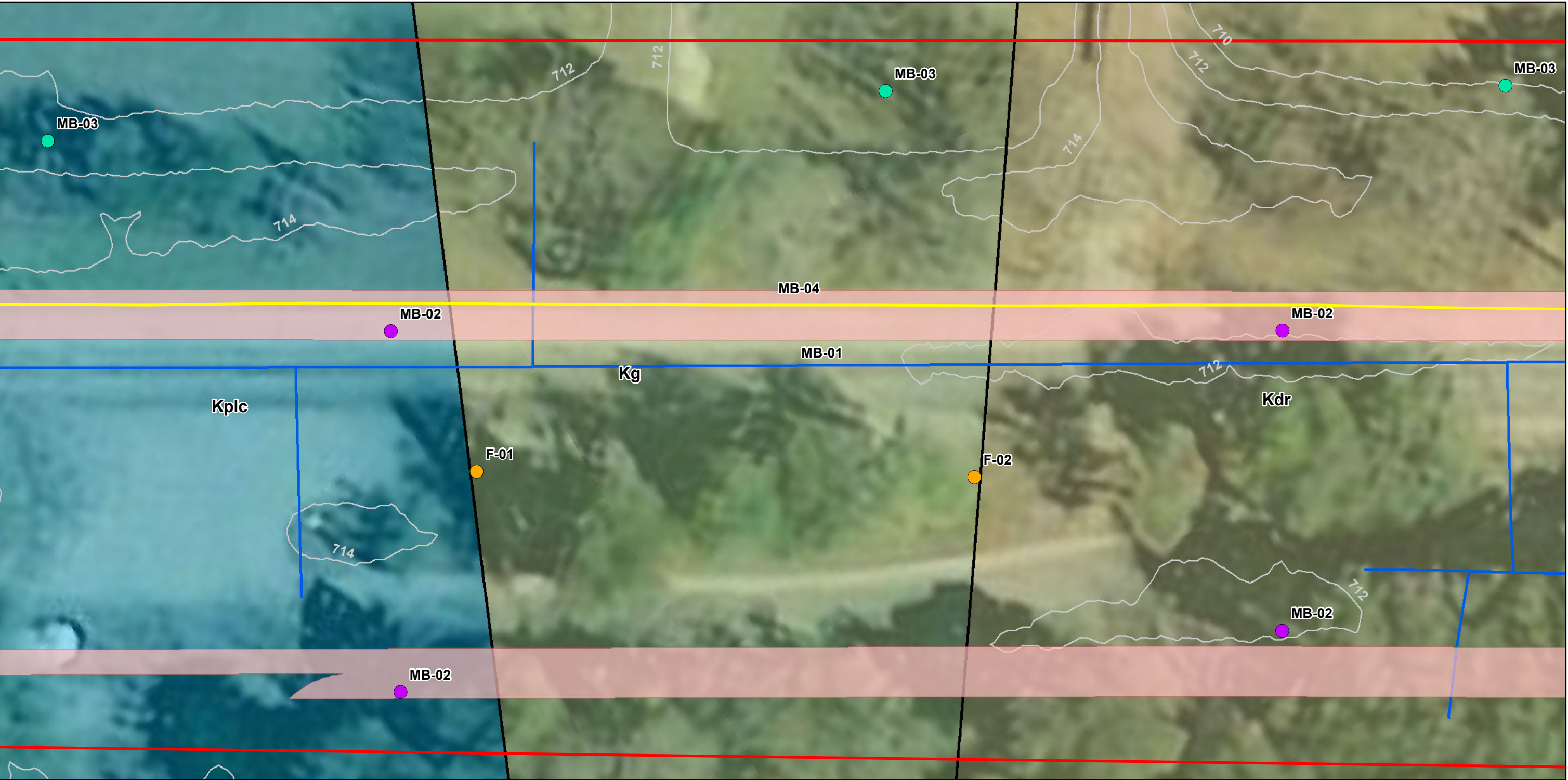
**Features**

- Water Main (MB-01)
- Storm Sewer Drain (MB-02)
- Ponding Basin (MB-03)
- Natural Gas (MB-04)
- Mapped Fault (F-01 & F-02)

- Project (Shared Use Path)
  - Survey Area
  - Water Main (MB-01)
  - Natural Gas (MB-04)
- 0 20 40 Feet  
0 4 8 12 Meters
- 1 inch=20 feet
- ZARA**  
ENVIRONMENTAL LLC







Basemaps: ESRI 2023 World Street Map and NAIP 2020, 60cm orthoimagery, Oak Hill NW QUAD; Geology: Blome et al. 2005; Water Main: Austin Water 2023; Natural Gas Pipeline: Summit Geomatics 2023; Elevation: COA 2-ft contours, 2017.

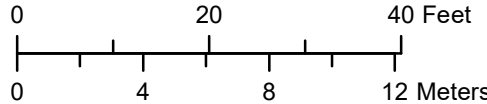
**Geology**

- Kdr - Del Rio Clay
- Kg - Georgetown Formation
- Kplc - Person Formation - Leached and Collapsed Member
- Faults (certain)
- 2-ft Contours

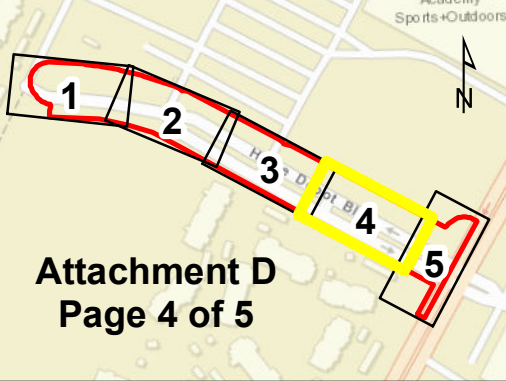
**Features**

- Water Main (MB-01)
- Storm Sewer Drain (MB-02)
- Ponding Basin (MB-03)
- Natural Gas (MB-04)
- Mapped Fault (F-01 & F-02)

- Project (Shared Use Path)
- Survey Area
- Water Main (MB-01)
- Natural Gas (MB-04)



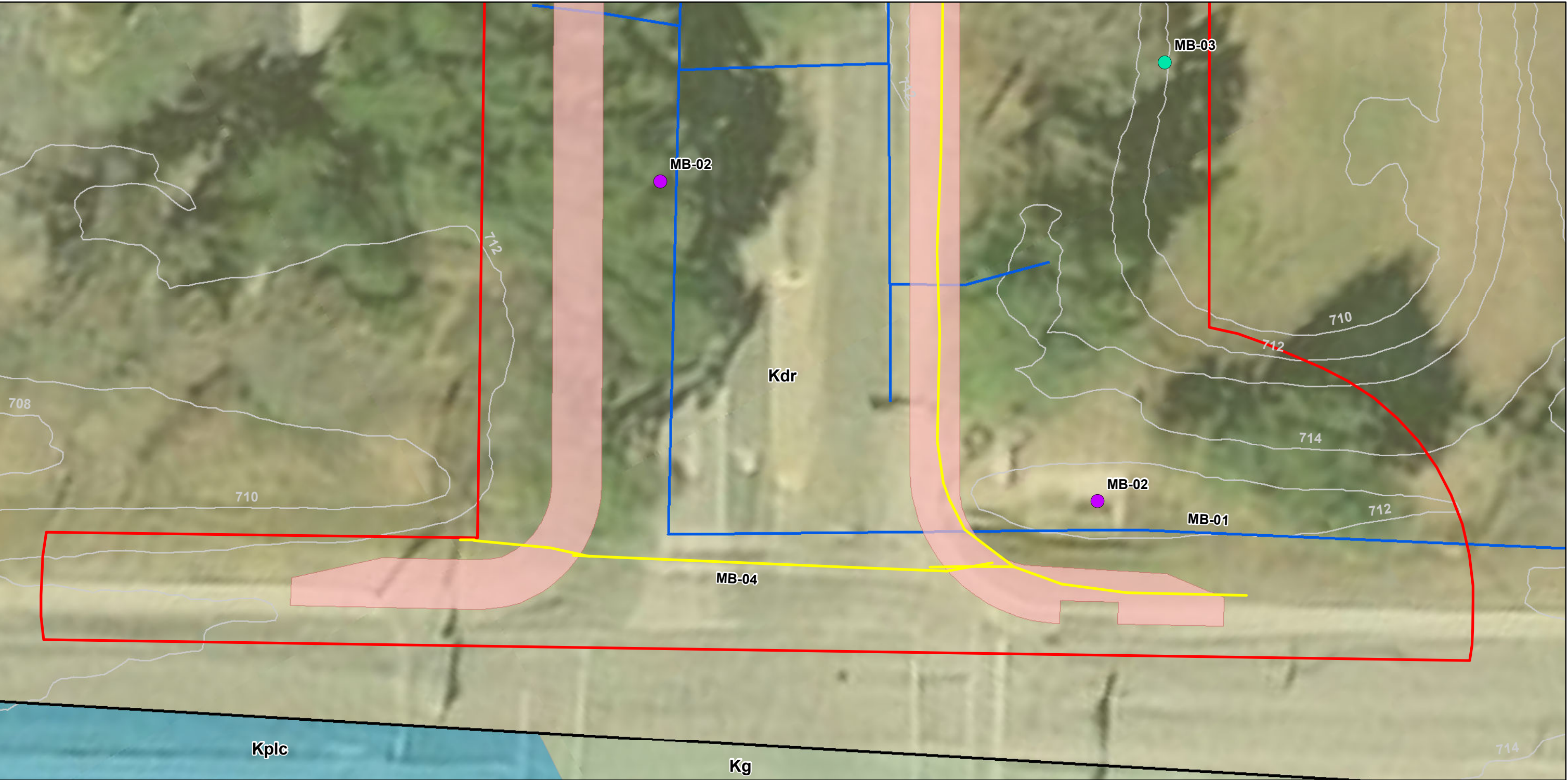
1 inch=20 feet



**Attachment D**  
**Page 4 of 5**







Basemaps: ESRI 2023 World Street Map and NAIP 2020, 60cm orthoimagery, Oak Hill NW QUAD; Geology: Blome et al. 2005; Water Main: Austin Water 2023; Natural Gas Pipeline: Summit Geomatics 2023; Elevation: COA 2-ft contours, 2017.

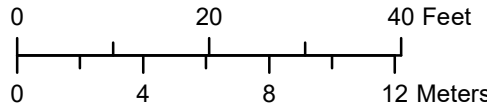
**Geology**

- Kdr - Del Rio Clay
- Kg - Georgetown Formation
- Kplc - Person Formation - Leached and Collapsed Member
- Faults (certain)
- 2-ft Contours

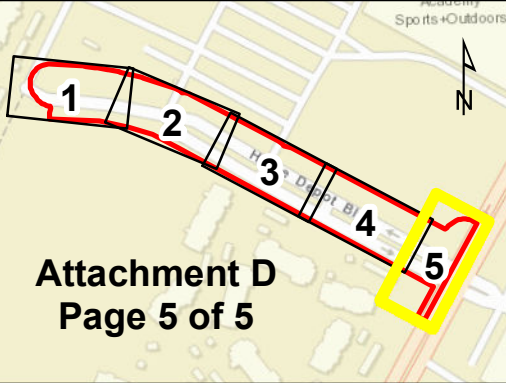
**Features**

- Water Main (MB-01)
- Storm Sewer Drain (MB-02)
- Ponding Basin (MB-03)
- Natural Gas (MB-04)
- Mapped Fault (F-01 & F-02)

- Project (Shared Use Path)
- Survey Area
- Water Main (MB-01)
- Natural Gas (MB-04)



1 inch=20 feet



**Attachment D**  
**Page 5 of 5**



# Recharge and Transition Zone Exception Request Form

Texas Commission on Environmental Quality

30 TAC §213.9 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.*

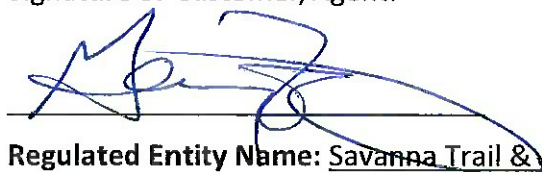
## Signature

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 **Recharge and Transition Zone Exception Request Form** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Gary Freeland

Date: 1-5-24

Signature of Customer/Agent:



Regulated Entity Name: Savanna Trail & Home Depot Blvd SUP & Jones Road Trail

## Exception Request

1. ☒ **Attachment A - Nature of Exception.** A narrative description of the nature of each exception requested is attached. All provisions of 30 TAC §213 Subchapter A for which an exception is being requested have been identified in the description.
2. ☒ **Attachment B - Documentation of Equivalent Water Quality Protection.** Documentation demonstrating equivalent water quality protection for the Edwards Aquifer is attached.

## Administrative Information

3. ☒ 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.
4. ☒ The applicant understands that no exception will be granted for a prohibited activity in Chapter 213.
5. ☒ The applicant understands that prior approval under this section must be obtained from the executive director for the exception to be authorized.



## Form 0628 – Attachment A – NATURE OF EXCEPTION

The nature and circumstances of this exception request from submitting a water pollution abatement plan because the site will undergo an increase in impervious cover by an amount that could be considered negligible. The proposed trail will only be traversed by foot and bicycle traffic. The impervious cover will be used for city owned public recreation and pedestrian travel. This increase in impervious cover will be mitigated by the existing natural vegetation around the areas of improvement and additional planting.

## Form 0628 – Attachment B – WATER QUALITY PROTECTION

The nature of this project consists of minimal soil disturbance. The total site size for Savanna Trail is approximately 8.1 acres with approximately 3000LF of 11' trails (0.75 acres) of impervious cover in the form of decomposed granite, concrete, and porous concrete trails. Likewise, the Home Depot Blvd SUP site will be approximately 0.275 acres of impervious cover, limited to the Right-of-way and vegetated buffer areas. Temporary BMPs such as silt fencing, downstream rock filter berms, and a temporary construction entrance will provide water quality protection during construction. Equivalent water quality can be achieved as the impervious cover will be exposed to no vehicular contaminants. Also, natural vegetation can be used to help provide natural filtration from the impervious cover. Extensive planting will be carried out throughout the project area as permanent BMPs.



# 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.*

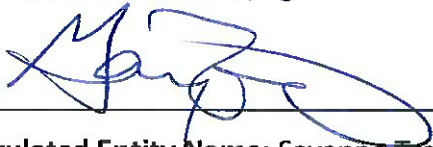
## Signature

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: Gary Freeland

Date: 1-5-24

Signature of Customer/Agent:



Regulated Entity Name: Savanna Trail & Home Depot Blvd SUP & Jones Road Trail

## 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: Sunset Valley Tributary & Williamson 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.

# Form 0602 – Attachment A – Spill Response Actions

The construction of Savanna Trail & Home Depot Blvd SUP will introduce additional impervious cover in the form of decomposed granite trails and concrete trails that requires equipment on-site for the improvements. Silt fencing will help to contain all spills within limits of construction and a rock filter berm will be installed downstream of all proposed improvements. In the event of any hazardous substance spill due to equipment failure or similar, the contractor will be required to notify the property authority and clean up the spill according to TCEQ and other governmental rules or regulations.

Please see link below for determining reportable quantities:

[https://www.tceq.texas.gov/response/spills/spill\\_rq.html](https://www.tceq.texas.gov/response/spills/spill_rq.html)

To report an environmental emergency, discharge, spill, or air release, contact:

## State

- State of Texas Spill-Reporting Hotline and the SERC: 1-800-832-8224 – 24 hours a day.
- TCEQ Regional Office: 1-512-339-2929, Monday-Friday, 8:00am-5:00pm

## Federal

- National Response Center: 1-800-424-8802 – 24 hours a day

Please see flyer on following page for more information.





# Report Spills or Discharges in Texas to 1-800-832-8224

## The Who, What, and Where of Spill Reporting

A responsible party must report a spill of a reportable quantity (RQ) as soon as possible but not later than **24 hours after the discovery of the spill or discharge** to the Texas Spill Reporting Hotline at 1-800-832-8224 or the appropriate regional office of the TCEQ during normal office hours.

The RQ depends on the substance released and where it was released. To determine whether you must report and under what rule, use the [Reportable Quantities Table](http://www.tceq.texas.gov/response/spills/spill_rq.html). <[www.tceq.texas.gov/response/spills/spill\\_rq.html](http://www.tceq.texas.gov/response/spills/spill_rq.html)>

Depending on location and type of spill, reporting could be to another state agency such as the Texas General Land Office or the Railroad Commission of Texas.

## Summary of What to Do After a Spill

### Answer these questions:

- What type of material spilled?
- What is the amount of material spilled?
  - Oil, petroleum product, and used oil will be in gallons.
  - Hazardous substances and industrial solid waste will be in pounds.
- Was the spill onto land or into waters of the state?
- Is it a reportable quantity?
  - If so, what is the appropriate agency to report the spill to?

**Mitigate, contain, and remediate all spills and discharges.**

## What to Include in the Initial Report

### Contact information:

- The name, address and telephone number of the person making the telephone report.
- If different from above, the names, addresses, and telephone numbers of the responsible person and the contact person at the location of the discharge or spill.

### What and where:

- The date, time, and location of the spill or discharge.
- A specific description or identification of the oil, petroleum product, hazardous substances or other substances discharged or spilled.
- An estimate of the quantity discharged or spilled and the duration of the incident.
- The source of the discharge or spill.
- The name of the surface water or a description of the waters in the state affected or threatened by it.
- A description of the extent of actual or potential water pollution or harmful impacts to the environment and an identification of any environmentally sensitive areas or natural resources at risk.
- Any known or anticipated health risks.
- A description of any actions that have been taken, are being taken, and will be taken to contain and respond to the discharge or spill.

### Response and actions:

- The identity of any governmental representatives, including local authorities or third parties, responding to it.
- Any other information that may be significant to the response action.

For additional information on initial notification requirements, refer to Title 30, Texas Administrative Code Section 327.3.

## Examples of Reportable Quantities

Kind of Spill	Where Discharged	Reportable Quantity	Agency
Petroleum product, used oil (e.g. hydraulic fluid)	Onto land, or onto land from a non-exempt PST facility	25 gallons	TCEQ
Petroleum product, used oil	*Onto land, from an exempt PST facility	210 gallons (five barrels)	TCEQ
Any oil	Into coastal waters	As required by the Texas General Land Office	Texas General Land Office (1-800-832-8224)
Industrial solid waste (e.g. lime slurry)	Into waters in the state	100 pounds	TCEQ
Hazardous substance (e.g. 2,4-D herbicide)	Onto land	see Table 302.4 in 40 CFR §302.4	TCEQ

\* Petroleum storage tank (PST) exempted facilities are electric service facilities including generation, transmission, distribution equipment and transformers; petrochemical plants; petroleum refineries; bulk loading facilities; and pipelines that are exempted from the Aboveground Storage Tank (AST) program under 30 TAC, Subsection 334.123(a)(9) and (b), and 30 TAC, Subsection 334.124(a)(4).

## Additional Resources

See the [Spills and Discharges webpage](http://www.tceq.texas.gov/response/spills) <[www.tceq.texas.gov/response/spills](http://www.tceq.texas.gov/response/spills)> | [30 TAC Chapter 327 - Spill Prevention and Control](http://www.tceq.texas.gov/goto/view-30tac) <[www.tceq.texas.gov/goto/view-30tac](http://www.tceq.texas.gov/goto/view-30tac)> | [EPA's Consolidated List of Chemicals](http://www.epa.gov/sites/production/files/2015-03/documents/list_of_lists.pdf) [PDF] <[www.epa.gov/sites/production/files/2015-03/documents/list\\_of\\_lists.pdf](http://www.epa.gov/sites/production/files/2015-03/documents/list_of_lists.pdf)> | EPCRA Section 302 Extremely Hazardous Substances | CERCLA Hazardous Substances | EPCRA Section 313 Toxic Chemicals | CAA 112(r) Regulated Chemicals for Accidental Release Prevention

## Form 0602 – Attachment B – Potential Sources of Contamination

The construction of Savanna Trail & Home Depot Blvd SUP will require construction equipment to be on site. Potential sources of contamination affecting surface water quality could be:

1. Accidental spill from paving and construction equipment operation
2. Accidental tracking of sediments(dirt) from construction equipment.
3. Other construction debris that may accumulate on-site



# Form 0602 – Attachment C – Sequence of Major Activities

The sequence of major activities is:

1. Installation of Temporary BMPs to protect the disturbance done to both Trails.
2. Installation of approximately 33,000 square feet of impervious cover trails in the form of decomposed granite, header curb, concrete, and porous concrete for Savanna Trail
3. Installation of approximately 11,775 square feet of impervious cover in the form of concrete SUP.
4. Revegetation and planting
5. Remove temporary BMPs

## Form 0602 – Attachment D – TEMPORARY BMPs

Temporary BMPs to control debris, solid, and discharge from the project area will consist of general housekeeping practices.

The construction of Savanna Trail & Home Depot Blvd will be protected within the Limits of Construction by silt fencing. A rock filter berm will be installed downstream of the Savanna Trail improvements within Sunset Valley Tributary. The silt fencing will act as a barrier for upgradient stormwater as well as contain any sediment that may be generated within the LOC. All nearby storm drain inlets will be protected with the use of erosion control logs. The contractor will be required to keep the work area clean and dispose of trash daily.

A temporary construction exit will be implemented to diminish the potential for construction vehicles to track sediment off the site. Since soil disturbance will be minimal, natural flow paths should be maintained and not impact existing conditions.



## Form 0602 – Attachment F – Structural Practices

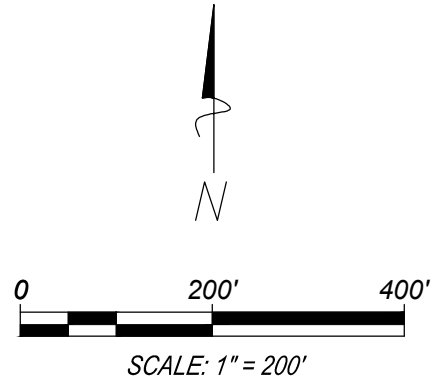
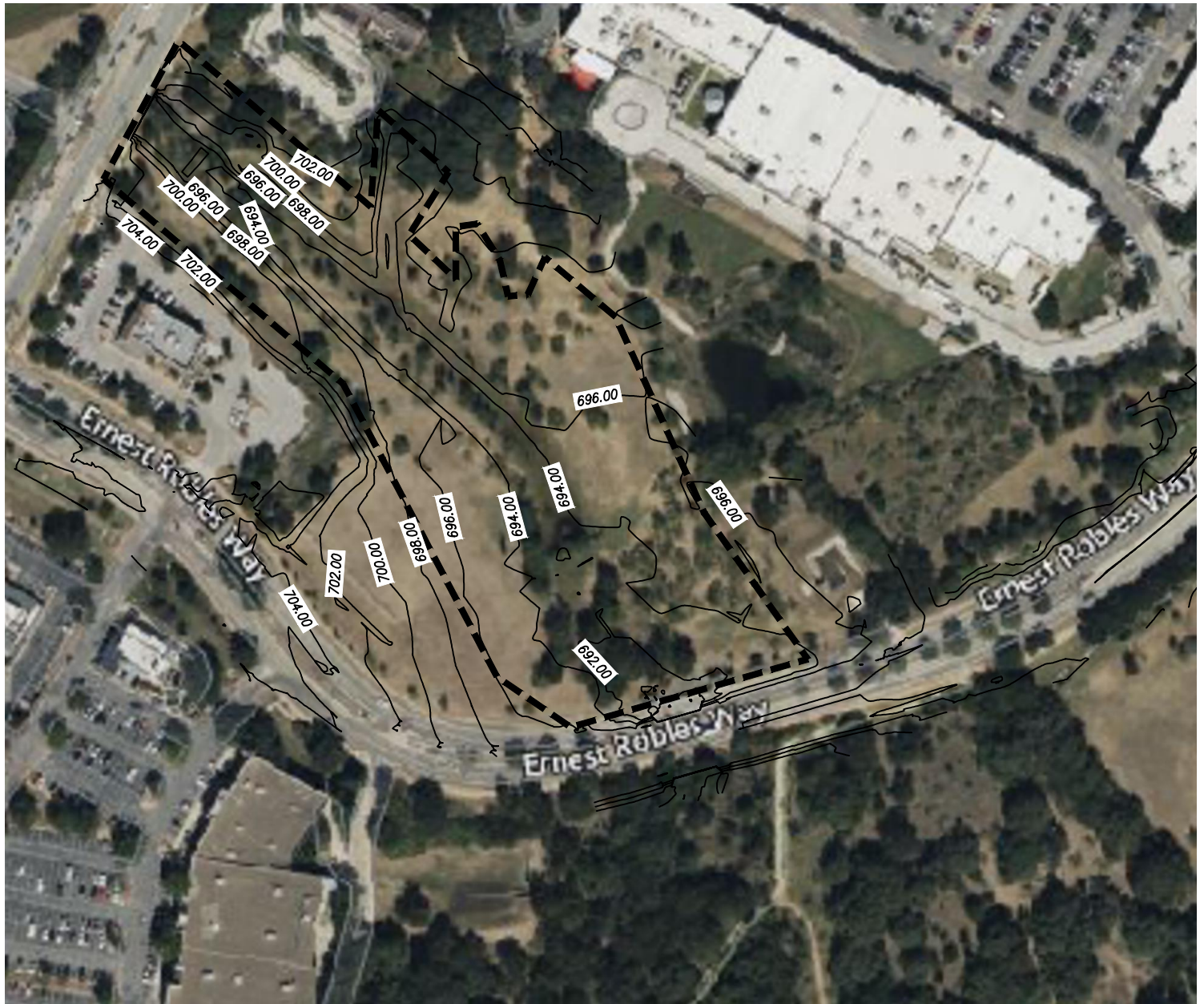
No permanent structural practices are proposed on this site and soil disturbance will be contained within the trail layouts. Significant replanting and revegetation efforts will be implemented throughout the disturbed areas. Natural flow paths should be maintained and not impact existing conditions.

## Form 0602 – Attachment G – Drainage Area Map

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 the disturbed drainage area will be used. The overall site at Savanna Trail is approximately 8.1 acres and the limits of construction will be contained within a silt fence. Savanna Trail is within one common local drainage area and a rock filter dam will be installed downstream of construction limits. The silt fencing and rock berm will function as a sediment trap for any soil disturbance. The overall site at Home Depot Blvd SUP is approximately 0.27 acres. Home Depot Blvd SUP is located within one common local drainage area and erosion control logs will be installed at all curb inlets near the project.



9/28/2023 2:00 PM - ALEXSKAR VILLARREAL Z:\ENG - PRD\120 City of Sunset Valley\117 - TO 19 UCC - Civil Engineering\CAD\Sheet\exhibits.dwg



**Freeland+Turk**  
ENGINEERING GROUP

172 CREEKSIDE PARK, STE 115  
SPRING BRANCH, TX 78070

(830) 438-0329  
TBPE FIRM F-21047

SAVANNA TRAIL  
CITY OF SUNSET VALLEY  
DA MAP - SAVANNA TRAIL

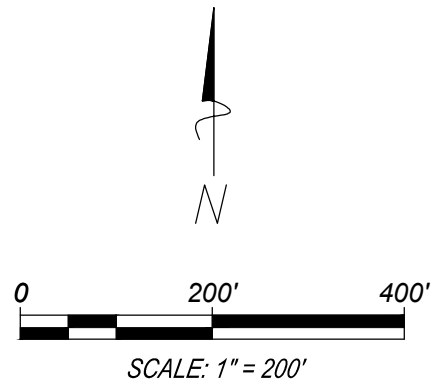
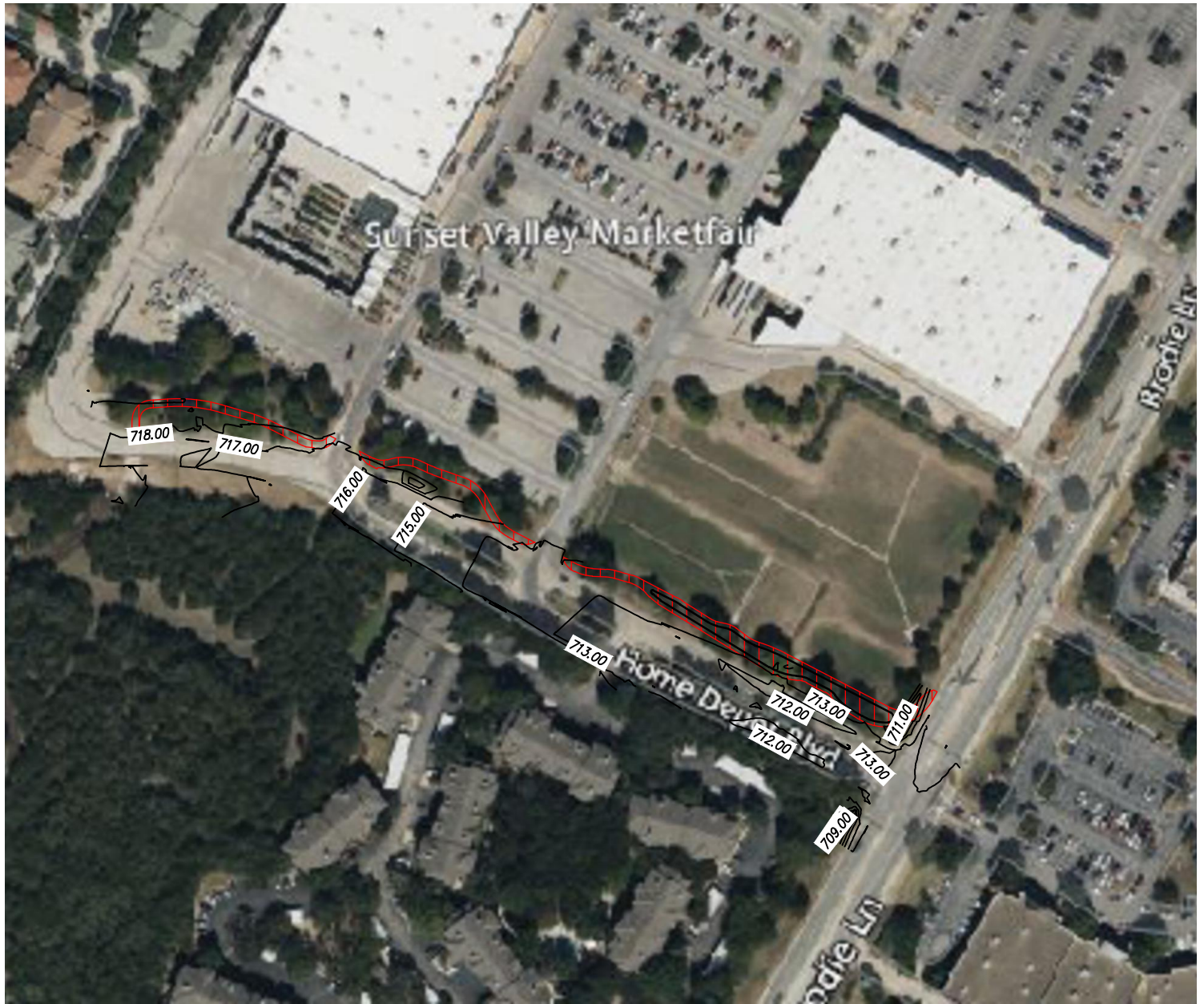
DRAFTED BY:	AV
DESIGNED BY:	TT
CHECKED BY:	TT

THIS DOCUMENT IS  
RELEASED FOR THE  
PURPOSE OF REVIEW ONLY  
BY GARY W. FREELAND, P.E.  
LICENSE No. 107307  
September 28, 2023  
THIS DOCUMENT IS NOT TO  
BE USED FOR  
CONSTRUCTION BIDDING,  
OR PERMITTING PURPOSES

SHEET NO.  
  
602 - DA  
  
9/28/2023



9/28/2023 1:59 PM - ALEXSKAR VILLARREAL Z:\ENG - PRD\120 City of Sunset Valley\117 - TO 19 UCC - Civil Engineering\CAD\Sheet\exhibits.dwg



172 CREEKSIDE PARK, STE 115 (830) 438-0329  
SPRING BRANCH, TX 78070 TBPE FIRM F-21047

SAVANNA TRAIL  
CITY OF SUNSET VALLEY  
DA MAP - HOME DEPOT BLVD SUP

DRAFTED BY: AV

DESIGNED BY: TT

CHECKED BY: TT

THIS DOCUMENT IS  
RELEASED FOR THE  
PURPOSE OF REVIEW ONLY  
BY GARY W. FREELAND, P.E.  
LICENSE No. 107307  
September 28, 2023  
THIS DOCUMENT IS NOT TO  
BE USED FOR  
CONSTRUCTION BIDDING,  
OR PERMITTING PURPOSES

SHEET NO.

602 - DA

9/28/2023

## Form 0602 – Attachment H – Temporary Sediment Pond

There will not be 10 acres of disturbed soil in one common drainage area that will occur at one time. There is no temporary sediment pond on-site, or needed for this project.



# Form 0602 – Attachment I – Inspection and Maintenance for BMPs.

No permanent BMPs will be installed. The contractor will be required to keep the work site clean by removing trash daily. The contractor will be required to provide regular maintenance to temporary BMPs on a weekly basis and after any rainfall events. As soil disturbance will be minimal, and a temporary construction entrance will be installed, it is not anticipated that sediments will be tracked off the site. Temporary BMPs will be monitored according to TCEQ requirements during the various stages of construction.

The maintenance for temporary BMPs should be carried out as follows:

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

Silt Fence: Remove sediment when buildup reaches 6 inches. Replace any torn fabric or install a second line of fencing parallel to the torn section. Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

Rock Filter Dam: Inspection should be made weekly and within 24 hours after each rainfall event in excess of 0.5 inches. For installations in streambeds, additional daily inspections should be made. Remove sediment and other debris when buildup reaches 6 inches or half the height of the berm, whichever is less and dispose of in an approved spoils area and in a manner that will not cause any additional siltation. Repair any loose wire sheathing. The berm should be reshaped, as needed. The berm should be replaced when the structure ceases to function as intended (silt accumulation among the rocks, washout, construction traffic damage, etc.). The rock berm should be left in place until all upstream areas are stabilized.

Erosion Control Logs: Inspection should be made weekly and within 24 hours after each rainfall event in excess of 0.5 inches. Maintain the integrity of the control, including keeping the erosion control logs free of accumulated silt, debris, etc., until earthwork construction and permanent erosion control features are in place, and/or the disturbed area has been adequately stabilized. Repair or entirely

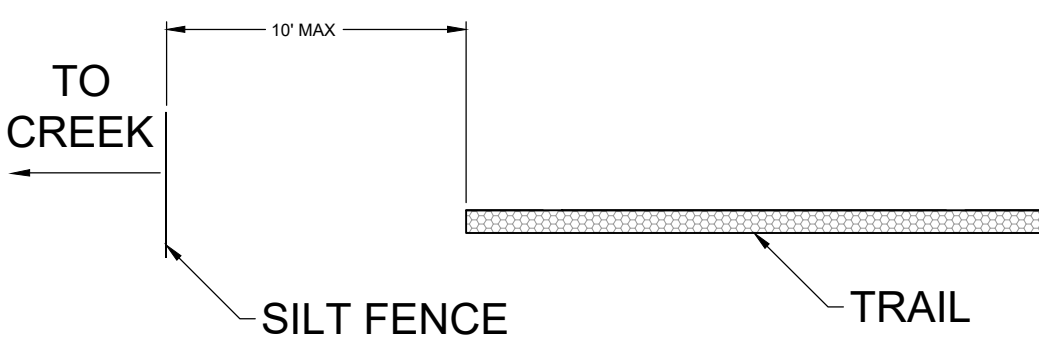
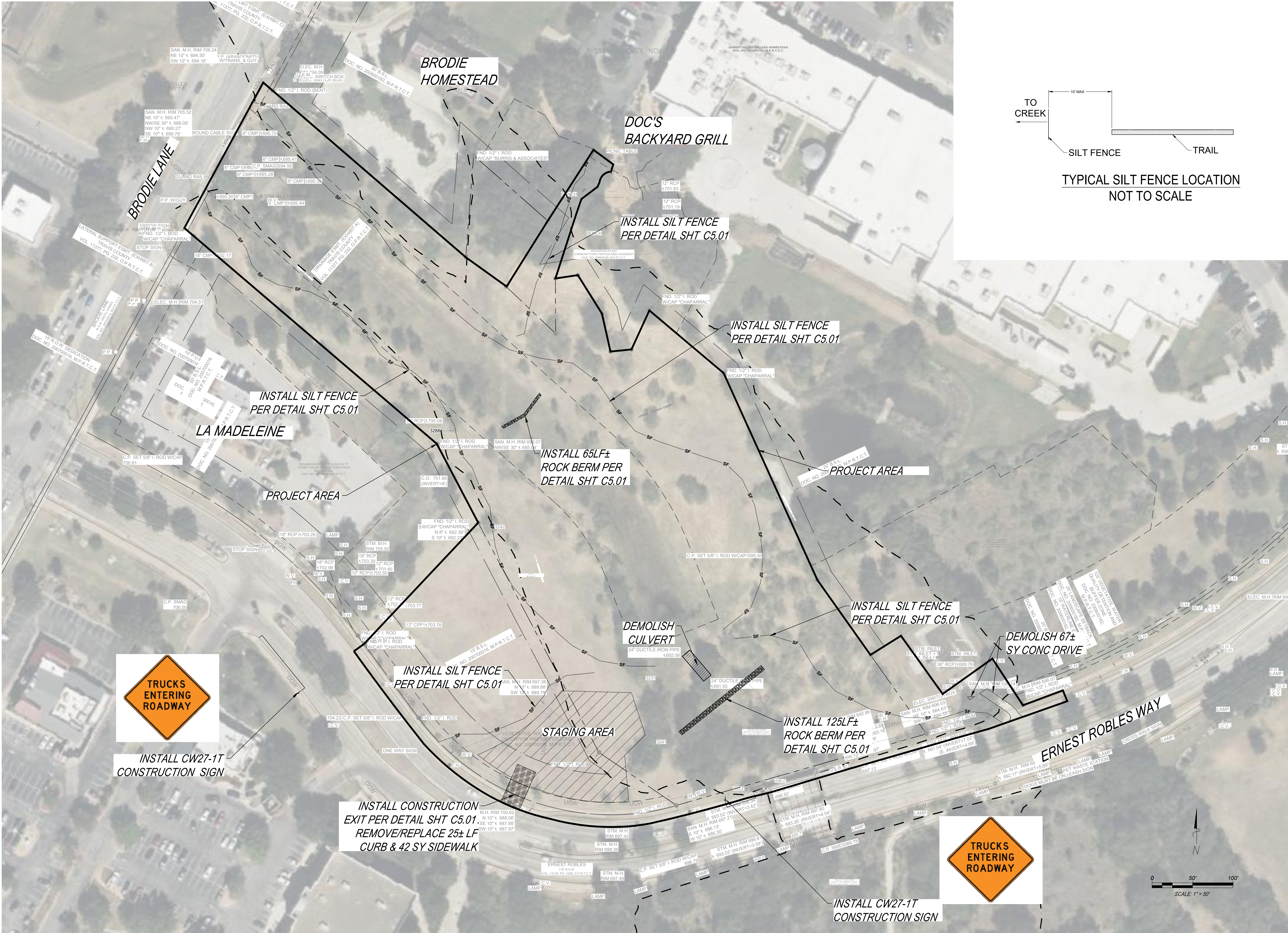
replace torn or punctured erosion control logs as required and as directed by the Engineer. Temporarily remove and replace erosion control logs as required to facilitate construction operations. Remove the accumulated sediment deposit when it reaches a depth of approximately 6 inches and dispose of it at an approved site in a manner that will not contribute to additional siltation.

## Form 0602 – Attachment J – Interim and Permanent Soil Stabilization Practices

As soil disturbance will be minimal, only revegetation will be incorporated into the project.

Bare soils should be seeded or otherwise stabilized within 14 calendar days after final grading or where construction activity has temporarily ceased for more than 21 days.





**mend**  
collaborative

310 Comal Street, Second Floor  
Austin, TX 78702  
(847) 421-6228  
www.mendcollaborative.com

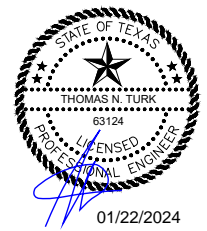
**SAVANNA TRAIL**

5401 BRODIE LN  
SUNSET VALLEY, TX 78745

**CONSULTANTS:**



Freeland Turk Engineering Group LLC  
18830 Forty Six Pkwy,  
Building 2, Suite B  
Spring Branch, TX 78070  
(830) 438-0329  
www.freelandturk.com



REVISION	DESCRIPTION
----------	-------------

SEAL / REGISTRATION

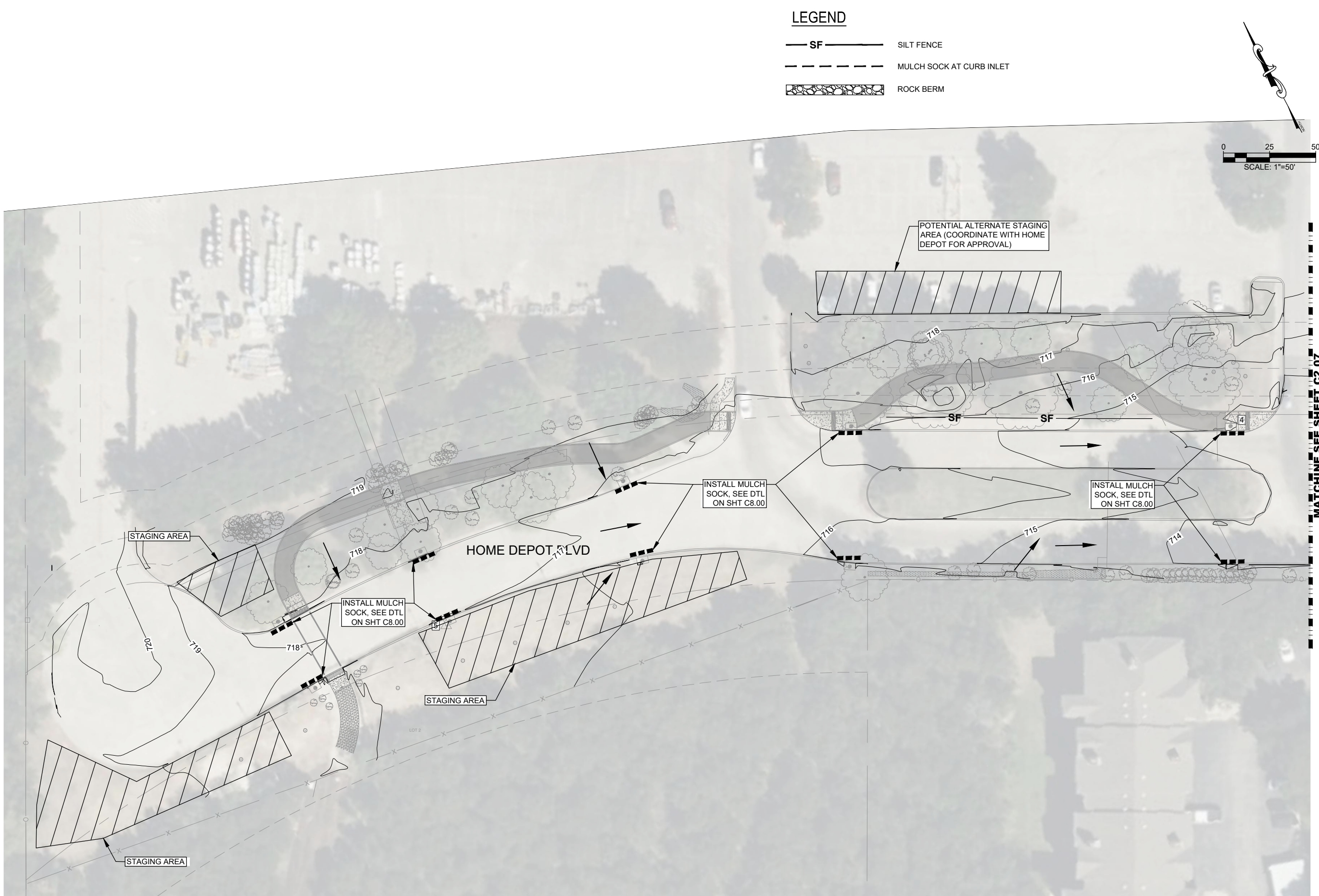
DRAWN BY: ZC  
CHECKED BY: KR  
APPROVED BY: KS  
DATE: XX.XX.XXXX  
PROJECT NO: CVS-2301  
SHEET NO: C1.00

**(E) CONDITIONS  
DEMOLITION & SWPPP**

**C1.00**



12/1/2023 11:18 AM - MELANIE NORRIS  
\\FreelandTurk\FTEG\ENG-PRD\120 City of Sunset Valley\115 - Task Order 16 FY 22-23 - 2022-2023 CP Construction Improvements\Home Depot - ERW Pavement Repairs\_CAD\_HD\Sheet\C2.0 EROSION CONTROL PLAN.dwg



LEGEND

- SF SILT FENCE
- MULCH SOCK AT CURB INLET
- ROCK BERM

HOME DEPOT BLVD SHARED USE PATH  
AND INTERSECTION IMPROVEMENTS  
EROSION CONTROL PLAN SHT 1

DRAFTED BY:	TN
DESIGNED BY:	TT
CHECKED BY:	TT

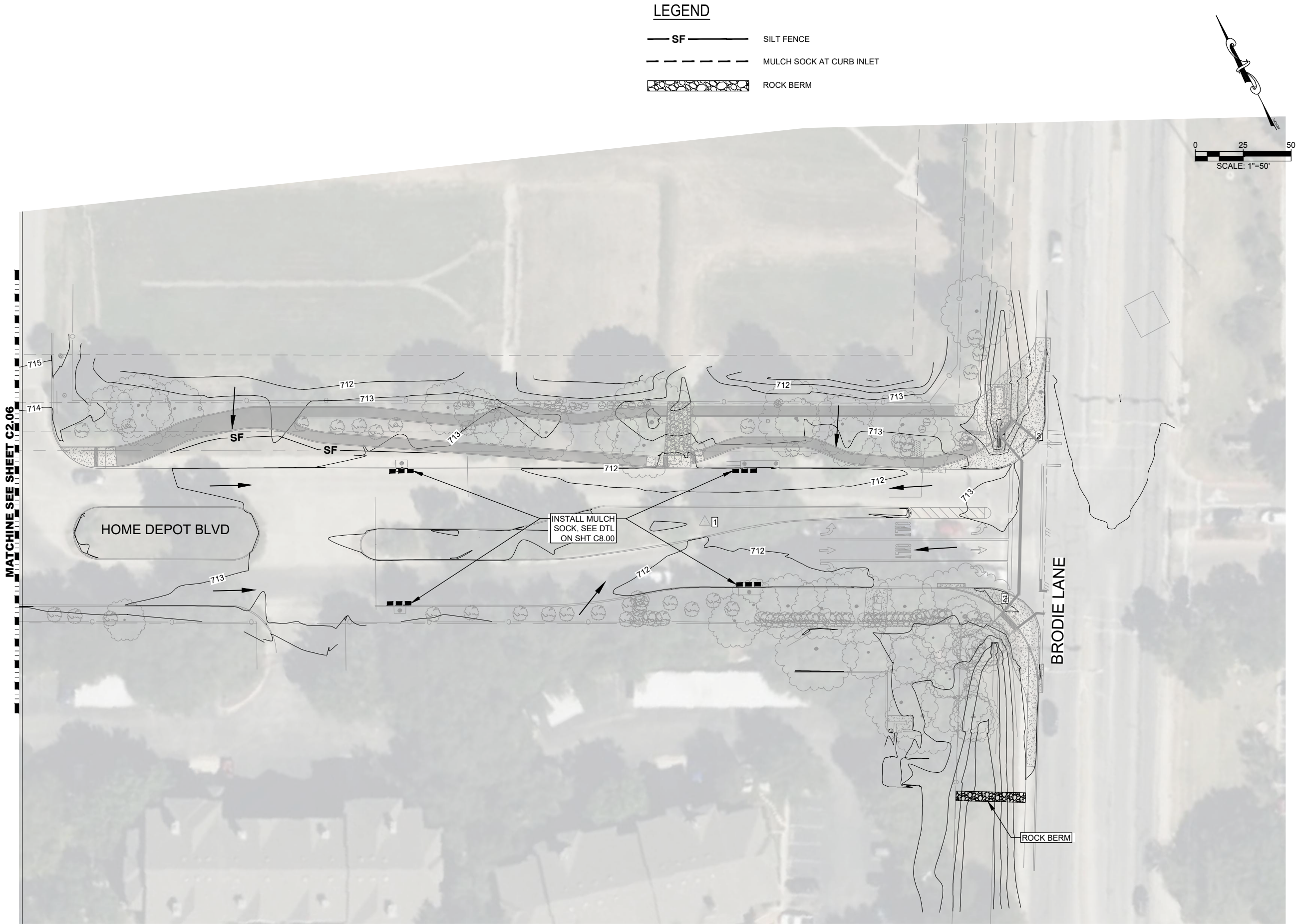
SHEET NO.  
C2.06



18830 FORTY SIX PKWY, BLDG 2 SUITE B (630) 438-0329  
SPRING BRANCH, TX 78070  
TBP# FIRM F-21047



12/1/2023 11:18 AM - MELANIE NORRIS  
\\FreelandTurk\FTEG\ENG-PRD\120 City of Sunset Valley\115 - Task Order 16 FY 22-23 - 2022-2023 CP Construction Improvements\Home Depot - ERW Pavement Repairs\CAD HD\Sheet\C2.0 EROSION CONTROL PLAN.dwg



HOME DEPOT BLVD SHARED USE PATH  
AND INTERSECTION IMPROVEMENTS  
EROSION CONTROL PLAN SHT 2

DRAFTED BY:	TN
DESIGNED BY:	TT
CHECKED BY:	TT

</



# Permanent Stormwater Section

## Texas Commission on Environmental Quality

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

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

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

## Signature

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

Print Name of Customer/Agent: Gary Freeland

Date: 1-5-24

Signature of Customer/Agent



Regulated Entity Name: Savanna Trail & Home Depot Blvd SUP & Jones Road Trail

## Permanent Best Management Practices (BMPs)

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

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

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

☒ N/A

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

☒ N/A

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

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

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

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

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

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

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

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

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

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



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

### ***Responsibility for Maintenance of Permanent BMP(s)***

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

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

## Form 0600 – Attachment B – BMPs for Upgradient Stormwater

Permanent BMPs are not required for this site. Since soil disturbance is minimal, natural flow paths should be maintained and not impact existing conditions. Vegetative filter strips will be utilized around the perimeter of the trail to capture all water affected by the addition of impervious cover.

## Form 0600 – Attachment C – BMPs for On-site Stormwater

Permanent BMPs are not required for this site. Since soil disturbance is minimal, natural flow paths should be maintained and not impact existing conditions. Pollution of surface water or groundwater is unlikely due to the nature of the project, there will be only pedestrian and bicycle traffic. Vegetative filter strips will be utilized around the perimeter of the trail to capture all water affected by the addition of impervious cover.



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

I Marc Bruner  
\_\_\_\_\_  
Print Name  
Mayor  
\_\_\_\_\_  
Title - Owner/President/Other  
of The City of Sunset Valley, TX  
\_\_\_\_\_  
Corporation/Partnership/Entity Name  
have authorized Gary Freeland  
\_\_\_\_\_  
Print Name of Agent/Engineer  
of Freeland Turk Engineering Group  
\_\_\_\_\_  
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:

[Signature]  
Applicant's Signature

2023-10-17  
Date

THE STATE OF Texas §  
County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Marc Bruner 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 17<sup>th</sup> day of October, 2023.



Melissa Marquez  
NOTARY PUBLIC

Melissa Marquez  
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 10/05/2025

# Application Fee Form

## Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Savanna Trail & Home Depot Blvd SUP & Jones Road Trail

Regulated Entity Location: Sunset Valley

Name of Customer: The City of Sunset Valley

Contact Person: Gary Freeland

Phone: 830-377-4555

Customer Reference Number (if issued): CN 600694970

Regulated Entity Reference Number (if issued): RN \_\_\_\_\_

### Austin Regional Office (3373)

☐ Hays

☒ Travis

☐ Williamson

### San Antonio Regional Office (3362)

☐ Bexar

☐ Medina

☐ Uvalde

☐ Comal

☐ Kinney

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

☐ Austin Regional Office

☐ San Antonio Regional Office

☐ Mailed to: TCEQ - Cashier

☒ Overnight Delivery to: TCEQ - Cashier

Revenues Section

Mail Code 214

P.O. Box 13088

Austin, TX 78711-3088

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	L.F.	\$
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	1 Each	\$ 500
Extension of Time	Each	\$

Signature: \_\_\_\_\_



Date: 1-5-24

## Application Fee Schedule

Texas Commission on Environmental Quality

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

### **Water Pollution Abatement Plans and Modifications**

#### **Contributing Zone Plans and Modifications**

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

#### **Organized Sewage Collection Systems and Modifications**

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

#### **Underground and Aboveground Storage Tank System Facility Plans and Modifications**

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

#### **Exception Requests**

<i>Project</i>	<i>Fee</i>
Exception Request	\$500

***Extension of Time Requests***

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



TCEQ Use Only

# TCEQ Core Data Form

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

## SECTION I: General Information

<b>1. Reason for Submission</b> (If other is checked please describe in space provided.)	
<input type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)	
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)	<input checked="" type="checkbox"/> Other
<b>2. Customer Reference Number</b> (if issued)	<b>3. Regulated Entity Reference Number</b> (if issued)
CN 600694970	RN

Follow this link to search  
for CN or RN numbers in  
Central Registry\*\*

## SECTION II: Customer Information

<b>4. General Customer Information</b>		<b>5. Effective Date for Customer Information Updates</b> (mm/dd/yyyy)	
<input type="checkbox"/> New Customer		<input checked="" type="checkbox"/> Update to Customer Information	
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)		<input type="checkbox"/> Change in Regulated Entity Ownership	
<b>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).</b>			
<b>6. Customer Legal Name</b> (If an individual, print last name first: eg: Doe, John)		If new Customer, enter previous Customer below:	
City of Sunset Valley			
<b>7. TX SOS/CPA Filing Number</b>	<b>8. TX State Tax ID</b> (11 digits)	<b>9. Federal Tax ID</b> (9 digits)	<b>10. DUNS Number</b> (if applicable)
<b>11. Type of Customer:</b>	<input type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input checked="" type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship	<input checked="" type="checkbox"/> Other: City	
<b>12. Number of Employees</b>		<b>13. Independently Owned and Operated?</b>	
<input type="checkbox"/> 0-20 <input checked="" type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>14. Customer Role</b> (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Owner & Operator			
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> Voluntary Cleanup Applicant <input type="checkbox"/> Other:			
<b>15. Mailing Address:</b>	3205 Jones Road		
	City	Sunset Valley	State TX ZIP 78745 ZIP + 4
<b>16. Country Mailing Information</b> (if outside USA)		<b>17. E-Mail Address</b> (if applicable)	
NA		NA	
<b>18. Telephone Number</b>	<b>19. Extension or Code</b>	<b>20. Fax Number</b> (if applicable)	
( 512 ) 892-1383		( 512 ) 892-6108	

## SECTION III: Regulated Entity Information

<b>21. General Regulated Entity Information</b> (If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)	
<input checked="" type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information	
<b>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).</b>	
<b>22. Regulated Entity Name</b> (Enter name of the site where the regulated action is taking place.)	
Savanna Trail & Home Depot Blvd SUP and Jones Rd Trail	



23. Street Address of the Regulated Entity: (No PO Boxes)	5401 1/2 Brodie Ln						
	Home Depot Blvd						
	City	Sunset Vall	State	TX	ZIP	78745	ZIP + 4
24. County	Travis County						

**Enter Physical Location Description if no street address is provided.**

25. Description to Physical Location:	Wooded area on the corner of Brodie Lane & Ernest Robles Way, within Sunset Valley Tributary. North and South ROW along Home Depot Blvd						
26. Nearest City	Sunset Valley				State	TX	Nearest ZIP Code
							78745
27. Latitude (N) In Decimal:	30.230106 N			28. Longitude (W) In Decimal:	-97.819112 W		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
30	13	48.381	-97	49	8.8032		
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)		
1771	NA		237310		NA		
33. What is the Primary Business of this entity? (Do not repeat the SIC or NAICS description.)							
Pedestraian and bicyle trail							
34. Mailing Address:	NA						
	City	Sunset Valley	State	TX	ZIP	78745	ZIP + 4
							NA
35. E-Mail Address:	NA						
36. Telephone Number		37. Extension or Code		38. Fax Number (if applicable)			
( 512 ) 892-1383		NA		( 512 ) 892-6108			

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

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

#### **SECTION IV: Preparer Information**

40. Name:	Gary Freeland		41. Title:	Consultant Professional Engineer
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address	
( 830 ) 377-4555	NA	( NA ) -	gfreeland@freelandturk.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:	City of Sunset Valley, Texas	Job Title:	Mayor
Name (In Print):	Marc Bruner	Phone:	( 512 ) 892- 1383
Signature:		Date:	2025-10-17