

# Texas Commission on Environmental Quality

## Edwards Aquifer Application Cover Page

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### 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> 675 KAUFFMAN LOOP				<b>2. Regulated Entity No.:</b> 112247283					
<b>3. Customer Name:</b> 675 KAUFMAN, LP				<b>4. Customer No.:</b> CN606406122					
<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>		25.008		
<b>9. Application Fee:</b>	\$650.00		<b>10. Permanent BMP(s):</b>			BATCH DETENTION POND			
<b>11. SCS (Linear Ft.):</b>	3,973		<b>12. AST/UST (No. Tanks):</b>			ZERO			
<b>13. County:</b>	Williamson		<b>14. Watershed:</b>			Middle Fork San Gabriel			

# 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.

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

<b>San Antonio Region</b>					
<b>County:</b>	<b>Bexar</b>	<b>Comal</b>	<b>Kinney</b>	<b>Medina</b>	<b>Uvalde</b>
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.  
**Thomas J. Groll, P.E.**

Print Name of Customer/Authorized Agent  
*Thomas J. Groll, P.E.*

Signature of Customer/Authorized Agent Date **February 23, 2026**

**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: Thomas J. Groll, P.E.

Date: February 23, 2026

Signature of Customer/Agent:

Thomas J. Groll, P.E.

## Project Information

1. Regulated Entity Name: 675 KAUFFMAN LOOP

2. County: Williamson

3. Stream Basin: Middle Fork San Gabriel River

4. Groundwater Conservation District (If applicable): NA

5. Edwards Aquifer Zone:

- Recharge Zone  
 Transition Zone

6. Plan Type:

- WPAP  
 SCS  
 Modification

- AST  
 UST  
 Exception Request

7. Customer (Applicant):

Contact Person: RICHARD GARY  
Entity: 675 Kaufman, LP  
Mailing Address: 7801 N. Capital of Texas Hwy, Suite 390  
City, State: Austin Zip: 78731  
Telephone: (512) 901-9800 FAX: \_\_\_\_\_  
Email Address: richard@jwdevelopmentinc.com

8. Agent/Representative (If any):

Contact Person: Thomas J. Groll, P.E.  
Entity: Tom Groll Engineering, PC  
Mailing Address: 5208 Pryor Lane  
City, State: Austin, TX Zip: 78734  
Telephone: (512) 848-5796 FAX: \_\_\_\_\_  
Email Address: tomg@tg-eng.com

9. Project Location:

- The project site is located inside the city limits of Leander
- 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.

1/4 mile east of Ronald Reagan Blvd on the south side of SH 29

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: March 15, 2026

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

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

15. Existing project site conditions are noted below:

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

### ***Prohibited Activities***

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

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

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

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

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

### ***Administrative Information***

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

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

# ATTACHMENT A ROAD MAP



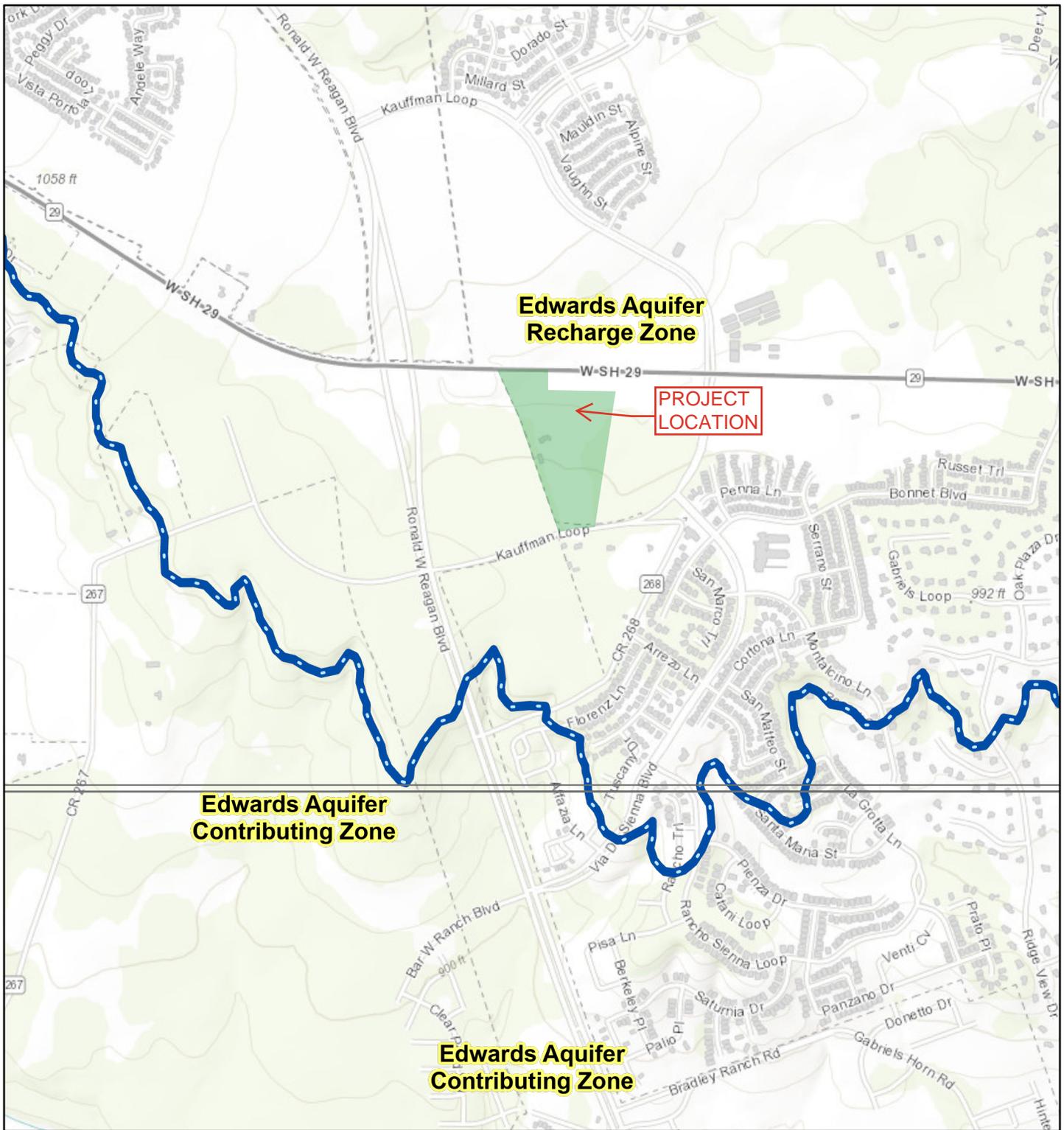
SH 29

RONALD REAGAN BLVD.

PROJECT  
LOCATION

KAUFFMAN LOOP

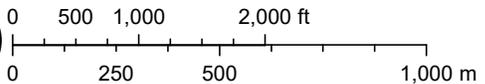
# ATTACHMENT B - EARZ MAP



3/20/2025, 5:21:22 PM

1:21,120

- TCEQ\_EDWARDS\_OFFICIAL\_MAPS
- 7.5 Minute Quad Grid
- TX Counties
- Edwards Aquifer Boundary central line
- Edwards Aquifer Boundary
- Edwards Aquifer Label
- Citations



County of Williamson, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA, TCEQ

# TCEQ GEOLOGIC ASSESSMENT

## 27-ACRE PARTIALLY DEVELOPED TRACT BETWEEN SH-29 AND KAUFFMAN LOOP LEANDER, WILLIAMSON COUNTY, TEXAS

Prepared For

Tom Groll Engineering, PC  
5208 Pryor Lane  
Austin, Texas 78734

Prepared By

M. Trojan & Associates  
Environmental Consultants  
P.O. Box 338  
Thorndale, Texas 76577

MTA Project No. TGE-23-011

March 21, 2023

**M. TROJAN & ASSOCIATES**  
Environmental Consultants

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March 21, 2023

Thomas J. Groll, PE  
Tom Groll Engineering, PC  
5208 Pryor Lane  
Austin, Texas 78734

Subject: Report of TCEQ *Geologic Assessment*  
27-Acre Partially Developed Tract  
Between SH-29 and Kauffman Loop  
Leander, Williamson County, Texas  
MTA Project No. TGE-23-011

Mr. Groll:

M. Trojan & Associates is pleased to submit this report of a Texas Commission on Environmental Quality (TCEQ) *Geologic Assessment* for the above referenced property. This *Geologic Assessment* was performed in accordance with the TCEQ requirements and instructions for completing TCEQ Form 0585.

I appreciate the opportunity to assist you in your environmental matters associated with the subject property. Should you have any questions or require additional information, please feel free to contact me at (512) 917-3695, or forward an email to mtrojan0316@gmail.com.

Respectfully,



Michael Trojan, PG  
M. TROJAN & ASSOCIATES



Certified Professional Geoscientist #1109 (TX)

c: MTA Project File TGE-23-011

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## ATTACHMENTS

ATTACHMENT A: GEOLOGIC ASSESSMENT TABLE

ATTACHMENT B: STRATIGRAPHIC COLUMN

ATTACHMENT C: SITE GEOLOGY AND FEATURES

ATTACHMENT D: SITE GEOLOGIC MAPS

Figure 1 – Site Location Map

Figure 2 – Site Aerial Photograph

Figure 3 – Surface Water Hydrology

Figure 4 – Site Soils Map

Figure 5 – General Geologic Map

Figure 6 – Site Geologic Map

ATTACHMENT E: SITE PHOTOGRAPHS

1.0 TCEQ FORM 0585

**Geologic Assessment**  
**Texas Commission on Environmental Quality**

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

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

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

**Signature**

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

Print Name of Geologist: Michael Trojan, PG

Telephone: (512) 917-3695

Representing: M. Trojan & Associates

Fax: \_\_\_\_\_

Signature of Geologist:



Michael Trojan, PG  
Certified Professional Geoscientist #1109 (TX)

**Regulated Entity Name:** 27-Acre Partially Developed Tract  
Between SH-29 and Kauffman Loop, Leander,  
Williamson County, Texas

**Project Information**

1. Date(s) Geologic Assessment was performed: March 15, 2023
2. Type of Project:
 

<input checked="" type="checkbox"/>	WPAP	<input type="checkbox"/>	AST
<input checked="" type="checkbox"/>	SCS	<input type="checkbox"/>	UST
3. Location of Project:
 

<input checked="" type="checkbox"/>	Recharge Zone
<input type="checkbox"/>	Transition Zone
<input type="checkbox"/>	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 (refer to Attachment D).

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

Soil Units, Infiltration Characteristics & Thickness		
Soil Name	Group*	Thickness (feet)
Fairlie clay, 1 – 2% slopes (FaB)	D	up to 3.8
Georgetown clay loam, 0 – 2% slopes (GeB)	D	up to 2.9
Georgetown Stony Clay Loam, 1 – 3% slopes (GsB)	D	up to 2.9

\* 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 and Features.** 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.  
Applicant's Site Plan Scale: unknown  
Site Geologic Map Scale: 1" = 400'  
Site Soils Map Scale (if more than 1 soil type): 1" = 400'
9. Method of collecting positional data:  
 Global Positioning System (GPS) technology.  
 Other method(s). Please describe method of data collection: \_\_\_\_\_
10.  The project site and boundaries are clearly shown and labeled on the Site Geologic Map.
11.  Surface geologic units are shown and labeled on the Site Geologic Map.
12.  Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.  
 Geologic or manmade features were not discovered on the project site during the field investigation.
13.  The Recharge Zone boundary is shown and labeled, if appropriate.
14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section  
 There are 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.

## 2.0 OVERVIEW

M. Trojan & Associates was retained to conduct a *Geologic Assessment* for potential future development on a 27-acre partially developed tract located between SH-29 and Kauffman Loop in Leander, Williamson County, Texas (refer to Figures 1 and 2 of Attachment D). All aspects of the *Geologic Assessment* were conducted by Mr. Michael Trojan, PG (Certified Professional Geoscientist #1109 in Texas), and the assessment was performed in accordance with Texas Commission on Environmental Quality (TCEQ) requirements and instructions for completing TCEQ Form 0585. The assessment included reconnaissance of the entire property as well as bordering portions of all neighboring properties.

Based on information obtained from the TCEQ, the study area is located on the Edwards Aquifer Recharge Zone. Accordingly, the objective of the *Geologic Assessment* was to identify any naturally occurring geologic (karst) or manmade features that may significantly contribute to recharge of the subsurface. The Edwards Aquifer rules define sensitive features as:

*“ . . . those that have potential for interconnectedness between the surface and the Edwards Aquifer and where rapid infiltration to the subsurface may occur.”*

The scope of the *Geologic Assessment* included the following general components:

- Review of published soils and geologic/hydrogeologic information;
- Field evaluation of topographic features;
- Field evaluation of soil types and horizons, relative thicknesses, and hydrologic characteristics (visual only);
- General review of the subsurface geologic units beneath the property as well as geologic units exposed at ground surface (if visible);
- Field evaluation of geologic conditions to determine the presence or absence of caves, solution cavities, solution-enlarged fractures, faults, other natural bedrock features, sinkholes, swallets or swallow holes in drainage features, non-karst closed depressions, manmade features in bedrock, and any other natural or manmade features, and evaluation of such features with respect to their potential ability to convey infiltrating surface water to the underlying subsurface; and
- Preparation of TCEQ Form 0585 for presentation of the findings of this assessment.

### 3.0 GENERAL PROPERTY DESCRIPTION AND SITE DEVELOPMENT

#### 3.1 Study Area

The study area is comprised of 27 acres of land located between SH-29 and Kauffman Loop, and near the southeast corner of the SH-29 and Ronald Reagan Blvd. intersection (refer to Figures 1 and 2 of Attachment D and photographs included in Attachment E). The property has been cleared of select large vegetation and all shrubs/underbrush and remains sparsely vegetated with old-growth trees. Improvements on the tract include a single-family home, large metal building and paved driveway and parking areas.

#### 3.2 Proposed Site Development

A site development plan was not available for review during this *Geologic Assessment*.

#### 3.3 Previously Published Reports

No previously published, site-specific technical reports were reviewed as part of this *Geologic Assessment*.

#### 4.0 GEOLIC ASSESSMENT LIMITATIONS

This *Geologic Assessment* was conducted in accordance with rules and guidelines set forth by the TCEQ, as well as consistent with standard methods and practices generally employed by professionals engaged in conducting karst assessments. Still, the scope of the *Geologic Assessment* presents certain limitations. The primary limitations include:

1. The field reconnaissance is conducted to effectively identify the geologic conditions/features at the subject property. However, certain site conditions may render features undetectable as a result of obstruction by: (1) soil cover, (2) very dense, inaccessible vegetation, (3) manmade cover including, but not limited to driveways, concrete slabs, soil and debris piles/mounds, and/or (4) stormwater runoff ground cover following significant rainfall events.
2. The scope of the *Geologic Assessment* does not include identification of features that may be discovered at the time of site development – during excavation, trenching, grading and/or leveling.
3. While this *Geologic Assessment* is confident of the identification of karst features, or lack thereof, the regulatory community reserves the right to conduct a reconnaissance of the study area. At times, regulatory field inspectors may identify additional potential karst features that, in their professional opinion, may require consideration in terms of proposed development on the study area. In this event, the author of this *Geologic Assessment* and the developer are provided the opportunity to conduct additional field investigation of such features, including employment of certain invasive methodologies (e.g., excavation), to either confirm or refute the field findings of the regulatory field inspectors.

ATTACHMENT A  
GEOLOGIC ASSESSMENT TABLE



ATTACHMENT B  
STRATIGRAPHIC COLUMN

SYSTEM	SERIES	GROUP	FORMATION	LITHOLOGY/ THICKNESS	
QUATERNARY				TERRACE AND ALLUVIUM SAND, SILT, CLAY, AND GRAVEL THICKNESS NOT REPORTED	
CRETACEOUS	UPPER CRETACEOUS (GULFIAN)	AUSTIN		CHALK, MARL, AND LIMESTONE 325-420 FEET THICK	
		EAGLE FORD	EAGLE FORD	SHALE AND SILTY LIMESTONE TO CALCAREOUS SILTSTONE 25-65 FEET THICK	
			BUDA	LIMESTONE UP TO 45 FEET THICK	
			DEL RIO	CLAY 40-70 FEET THICK	
			GEORGETOWN	LIMESTONE AND MARL 30-80 FEET THICK	
	LOWER CRETACEOUS (COMANCHEAN)	FREDERICKSBURG	EDWARDS		LIMESTONE AND DOLOSTONE 60-350 FEET THICK
			COMANCHE PEAK		LIMESTONE AND MARL UP TO 80 FEET THICK
			WALNUT FORMATION		LIMESTONE AND MARL UP TO 130 FEET THICK
			PALUXY SAND		SAND UP TO 10 FEET THICK

Geologic unit that directly underlies the subject property



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 Thorndale, Texas 76577  
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Scale: No Scale  
 Date: March 21, 2023  
 Project: TCEQ Geologic Assessment  
 MTA Project: TGE-23-011

**STRATIGRAPHIC COLUMN**  
 27-ACRE PARTIALLY DEVELOPED TRACT  
 BETWEEN SH-29 AND KAUFFMAN LOOP  
 LEANDER, WILLIAMSON COUNTY, TEXAS

ATTACHMENT C  
SITE GEOLOGY AND FEATURES

## TOPOGRAPHY AND SURFACE WATER HYDROLOGY

According to the Williamson County GIS and City of Georgetown GIS, the study area slopes gently toward the north (refer to Figure 3 of Attachment D). Topographic elevations on the study area range between approximately 1,014 to 971 feet above mean sea level (msl), with the highest elevations located at the southwest property corner and the lowest elevations within a drainage feature along the western half of the north property boundary.

As is depicted on Figure 3 of Attachment D, majority of stormwater runoff generated within the study area boundaries flows primarily toward the north and discharges onsite and offsite to a drainage way/stream directly to the north of the tract. The onsite segment of the drainage way does not exhibit bed and bank features; however, the offsite segment (to the east) transitions to a stream feature with bed and banks, and that qualifies as ephemeral. The offsite stream channels runoff to an underground culvert that crosses beneath SH-29.

The study area lies in the Middle Fork San Gabriel River watershed. This area exhibits very gently sloping drainage basins with relatively sparse "defined" creeks/streams. Middle Fork lies approximately 0.8 miles to the north of the tract. According to review of a FEMA Flood Insurance Rate Map and Williamson County GIS, no portion of the study area lies within the 100-year floodplain.

## SOILS

According to the *Soil Survey of Williamson County, Texas*, the soils that are reported to cover the study area are as follows (also refer to Figure 4 of Attachment D for soil type locations):

Soil Component Name:	Fairlie clay, 1 – 2% slopes (FaB)
Soil Surface Texture:	Dark gray clay to approximately 21 inches, underlain by gray and dark grayish-brown clay to about 46 inches
Hydrologic Group:	Permeability is very slow (Note: surface soils crack when dry; surface soil permeability may be high when dry); available water capacity is high; runoff is medium
Soil Drainage Class:	Well drained
Soil Name:	Georgetown clay loam, 0 – 2% slopes (GeB)
Soil Surface Texture:	Brown clay loam to about seven inches; subsoil is reddish brown clay and cobbly clay to about 35

---

	inches; the underlying material is indurated limestone
Hydrologic Group:	Very slow permeability; surface runoff is medium
Soil Drainage Class:	Well drained
Soil Name:	Georgetown Stony Clay Loam, 1 – 3% slopes (GsB)
Soil Surface Texture:	Brown stony clay loam to about seven inches; subsoil is reddish brown clay and cobbly clay to about 35 inches; the underlying material is indurated limestone
Hydrologic Group:	Permeability is very slow; surface runoff is medium
Soil Drainage Class:	Well drained

Based on the *Soil Survey* and as is depicted on Figure 4 of Attachment D, the Georgetown clay loam is reported to cover majority of the study area, while the Fairlie clay and Georgetown stony clay loam soils are reported to cover the northern-most and southern-most parts of the tract, respectively. Shallow excavations were made at various locations across the property and observations of the soil characteristics confirmed the presence of soils similar to those described in the *Soil Survey*. Majority of onsite soils were found to be relatively thick and fine-grained, with a very modest amount of small cobbles.

## GEOLOGY

The study area is reported to be underlain by the Edwards Limestone (Ked) (refer to the stratigraphic column in Attachment B and Figure 5 of Attachment D). The Edwards Limestone is described in geologic publications as follows:

The Edwards Limestone consists of limestone and dolomite that is light gray to tan and medium gray to grayish brown, aphanitic to fine grained, massive to thin bedded, soft to hard, and with common rudistid biostromes and nodular chert. Portions of the Edwards are commonly recrystallized, "honeycombed," and cavernous forming an aquifer. The formation forms flat areas and plateaus bordered by scarps. The thickness is reported to range 60 to 350 feet, and the formation thins northward.

Given the consistent soil cover over the entire study area, no true geologic rock outcrops were observed. Sparse outcrops and bedrock fragments were observed within the drainage way on the northwestern-most part of the property and offsite ephemeral stream directly north of the north property boundary.

## SENSITIVE KARST AND MANMADE FEATURES

### Onsite Features

The field reconnaissance of the study area included search for and identification of sensitive karst and manmade features, as defined by TCEQ, and to note potential ground recharge points that may be associated with such features. The field reconnaissance entailed walking 25- to 50-foot spaced transects across the entire study area. The results of the reconnaissance are provided below.

#### Caves

Based on TCEQ criteria, a cave is a natural underground open (or filled) space formed by dissolution of limestone that is large enough for an average-sized person to enter. When a surface cave opening is encountered, then the subsurface extent of the cave is relevant in terms of subsurface recharge.

Based on observations made across the entire study area, no cave openings/caves were identified.

#### Solution Cavities

Based on TCEQ criteria, a solution cavity is a natural cavity or depression formed as a result of dissolution of limestone. This category is designed to capture features that are not large enough for a normal-sized person to enter but appear to be part of a system of interconnected voids that connect the surface with the subsurface. The size and geometry of the feature is defined by in-place bedrock. Solution cavities also include areas where dissolution has increased the opening size and permeability along bedding planes as well as fractures.

Based on observations made across the entire study area, no solution cavities were identified.

#### Solution-Enlarged Fractures

Based on TCEQ criteria, a solution-enlarged fracture is one that shows evidence of being locally enlarged by dissolution of limestone, recognized by measurable (larger than hairline) openings and miss-matched fracture surface shapes.

Based on observations made across the entire study area, no solution-enlarged fractures were identified.

### Faults

Based on TCEQ criteria, a fault is defined as a fracture along which there has been displacement of one side of the fracture relative to the other side. Displaced geologic materials and/or an abrupt change in surface topography can both be indicative of the presence of a fault.

Based on observations made across the entire study area, no faults were identified. Moreover, information obtained from technical publications reviewed as part of this *Geologic Assessment* suggests that no known faults are located within the study area or in the close proximity.

### Swallet or Swallow Holes

Based on TCEQ criteria, a swallet or swallow hole may include a focused recharge feature in an intermittent drainage or stream in karst terrain. Some swallow holes have a surface expression, for example, a cave opening or formation of a whirlpool in the stream at high flow. The general case is that fine soil and sediment as well as gravel are deposited over the bedrock feature during falling stages of flow, thereby intermittently or frequently obscuring the feature.

Based on observations made across the entire study area, no swallet or swallow holes were identified.

### Sinkholes

Based on TCEQ criteria, a sinkhole represents a shallow, broad topographic depression formed in response to karst processes. Sinkholes are pragmatically defined as features greater than six (6) feet in diameter with more than six (6) inches of topographic relief. Sinkholes are usually circular in map view. In cross section they may be subtle swales or funnel-shaped pits and some have exposed rimrock at the perimeter. The presence of a sinkhole implies that processes including collapse, subsidence, and soil sapping over geologic time have caused the land surface to sink below the surrounding area.

Based on observations made across the entire study area, no sinkholes were identified.

### Other Natural Bedrock Features

Based on TCEQ criteria, other natural bedrock features include vuggy rock and reef deposits that may contain large holes or vugs.

Based on observations made across the entire study area, no other natural bedrock features were identified.

### Non-karst Closed Depressions

Based on TCEQ criteria, a non-karst closed depression is a natural or non-natural topographic depression that is not formed by karst processes and is not bedrock floored. A feature larger than six (6) feet in at least one direction and with six (6) inches or more of topographic relief should be considered as a feature.

Based on observations made across the entire study area, no non-karst closed depressions were identified.

### Zones

Based on TCEQ criteria, a zone is an area in which any type of karst feature occurs along a trend or in a cluster. Clustered or aligned features are more likely to be an indicator of an integrated flow system at depth than isolated features. Alignment is expected in areas where conduit flow is strongly influenced by structurally controlled fractures.

Based on observations made across the entire study area, no zones were identified.

### Manmade Features in Bedrock

Based on TCEQ criteria, manmade features in bedrock may include water wells, sanitary sewer lines, storm sewer lines, trenches, quarries, and other cultural features that intersect bedrock and can potentially increase the rate of recharge to the subsurface.

Based on observations made across the entire study area, the following manmade features in bedrock were identified:

Onsite Manmade Feature in Bedrock MB-1

Latitude: 30.637247  
Longitude: -97.824219  
Dimensions: 375' (onsite length of segment)

Features represented by offsite Feature MB-1 qualify as manmade features in bedrock. The features include any/all underground infrastructure (primarily water line) that has been installed along the east-bound SH-29 corridor (refer to Geologic Assessment Table in Attachment A and Figure 6 of Appendix D). These features are engineered and represent fully-enclosed wet and dry lines (Note: This assessment has no knowledge of the installation details).

The infrastructure is installed in bedrock that presumably showed no evidence of karst features during the installation process. Therefore, it is assessed that the underground infrastructure is not significant in the potential to increase the rate of recharge to the subsurface. It is further assessed that these features will not be affected by future development on the tract.

Onsite Manmade Feature in Bedrock MB-2

Latitude: 30.635739  
Longitude: -97.823259  
Dimensions: unknown

Onsite Feature MB-2 represents an underground septic tank/field located directly north of the former onsite single-family residence (refer to the Geologic Assessment Table in Attachment A and Figure 6 of Attachment D). The feature is reported to be functional.

The infrastructure is engineered, fully-enclosed and installed in bedrock that presumably showed no evidence of karst features during the installation process. Therefore, it is assessed that the underground infrastructure is not significant in the potential to increase the rate of recharge to the subsurface.

Onsite Manmade Feature in Bedrock MB-3

Latitude: 30.635005  
Longitude: -97.823240  
Dimensions: unknown

Onsite Feature MB-3 represents a (potential) underground septic tank/field located directly east of the large onsite metal building (refer to the Geologic Assessment Table in Attachment A and Figure 6 of Attachment D). If present, the feature is believed to be functional.

The infrastructure is engineered, fully-enclosed and installed in bedrock that presumably showed no evidence of karst features during the installation process. Therefore, it is assessed that the underground infrastructure is not significant in the potential to increase the rate of recharge to the subsurface.

## Offsite Features

The field reconnaissance also included inspection of neighboring properties a distance of approximately 200 feet (as practical) from all boundaries of the study area for identification of offsite sensitive karst and/or manmade features in bedrock that could be deemed as significant in terms of development on the study area. The following offsite features were identified:

### Offsite Manmade Feature in Bedrock MB-4

Latitude: 30.637074  
Longitude: -97.825102  
Dimensions: 140' X 70' X 6' (depth)

Offsite Feature MB-4 qualifies as a manmade feature in bedrock and represents a water quality pond directly west of the study area (refer to Geologic Assessment Table in Attachment A and Figure 6 of Appendix D).

The feature is installed in bedrock that presumably showed no evidence of karst features during the installation process (Note: This assessment has no knowledge of the installation details). Therefore, it is assessed that the underground infrastructure is not significant in the potential to increase the rate of recharge to the subsurface. It is further assessed that this feature will not be affected by future development on the tract.

### Offsite Manmade Feature in Bedrock MB-5

Latitude: 30.636124  
Longitude: -97.824670  
Dimensions: 320' X 240' X 10' (depth)

Offsite Feature MB-5 qualifies as a manmade feature in bedrock and represents a water quality pond directly west of the study area (refer to

Geologic Assessment Table in Attachment A, Figure 6 of Appendix D and photograph in Attachment E).

The feature is installed in bedrock that presumably showed no evidence of karst features during the installation process (Note: This assessment has no knowledge of the installation details). Therefore, it is assessed that the underground infrastructure is not significant in the potential to increase the rate of recharge to the subsurface. It is further assessed that this feature will not be affected by future development on the tract.

Offsite Manmade Feature in Bedrock MB-6 (same as onsite Feature MB-1)

Latitude: N/A  
Longitude: N/A  
Dimensions: N/A

Features represented by offsite Feature MB-6 qualify as manmade features in bedrock. The features include any/all underground infrastructure that has been installed along the ease-bound SH-29 corridor (refer to Geologic Assessment Table in Attachment A and Figure 6 of Appendix D). The water line exhibits an access manhole along the segment (refer to photograph in Attachment E). These features are engineered and represent fully-enclosed wet and dry lines (Note: This assessment has no knowledge of the installation details).

The infrastructure is installed in bedrock that presumably showed no evidence of karst features during the installation process. Therefore, it is assessed that the underground infrastructure is not significant in the potential to increase the rate of recharge to the subsurface. It is further assessed that these features will not be affected by future development on the tract.

Offsite Manmade Feature in Bedrock MB-7

Latitude: N/A  
Longitude: N/A  
Dimensions: N/A

Features represented by offsite Feature MB-7 qualify as manmade features in bedrock. The features include any/all underground infrastructure that has been installed along the Kauffman Loop corridor (refer to Geologic Assessment Table in Attachment A and Figure 6 of Appendix D). These features are engineered and represent fully-enclosed wet and dry lines (Note: This assessment has no knowledge of the installation details).

The infrastructure is installed in bedrock that presumably showed no evidence of karst features during the installation process. Therefore, it is assessed that the underground infrastructure is not significant in the potential to increase the rate of recharge to the subsurface. It is further assessed that these features will not be affected by future development on the tract.

Offsite Manmade Feature in Bedrock MB-8

Latitude: 30.637576  
Longitude: -97.821101  
Dimensions: 85' X 20'

Offsite Feature MB-8 qualifies as a manmade feature in bedrock and represents an underground concrete storm water culvert that crosses beneath SH-29 directly north of the study area (refer to Geologic Assessment Table in Attachment A, Figure 6 of Appendix D and photograph in Attachment E).

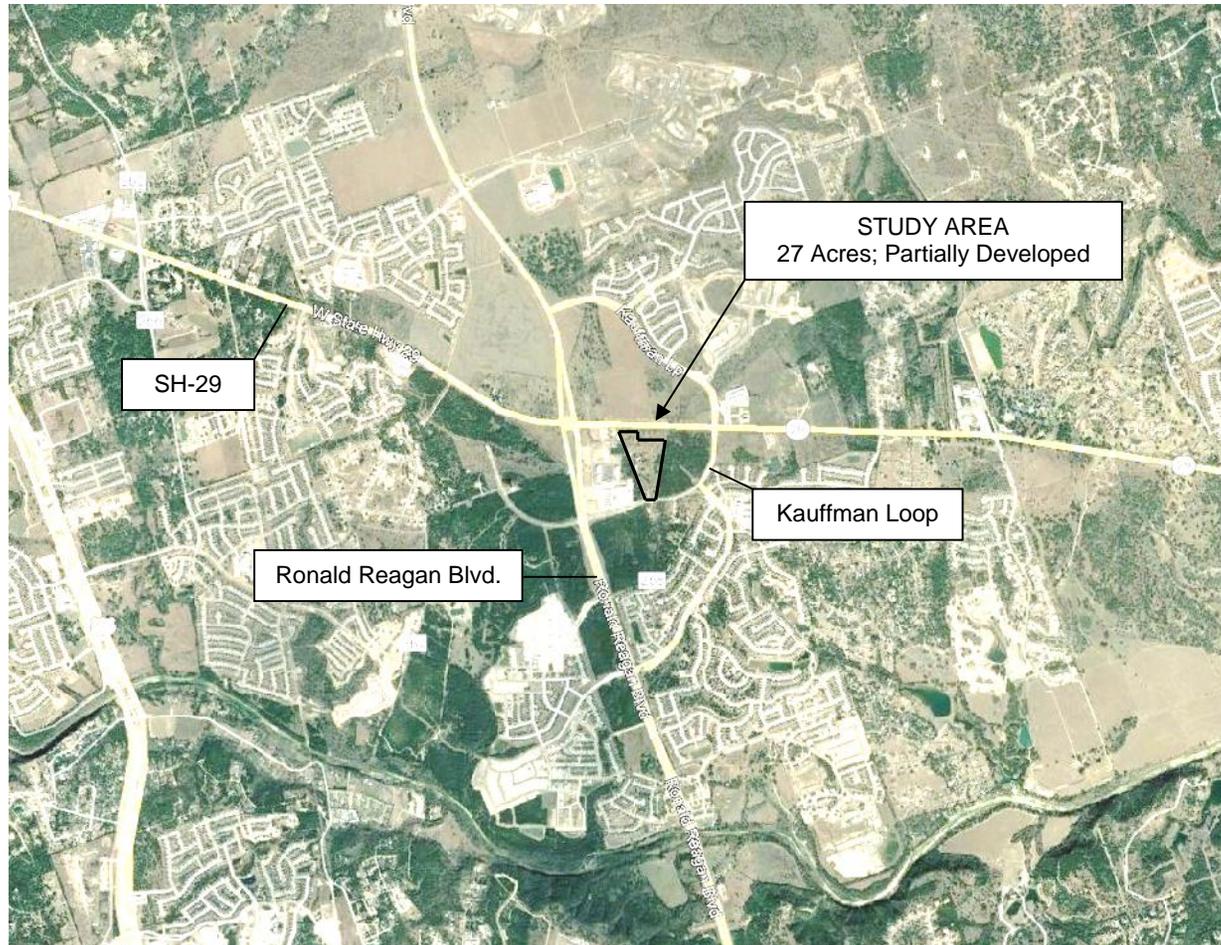
The feature is installed in bedrock that presumably showed no evidence of karst features during the installation process. Therefore, it is assessed that the underground infrastructure is not significant in the potential to increase the rate of recharge to the subsurface. It is further assessed that the feature will not be affected by future development on the tract.

## POTENTIAL FOR FLUID MOVEMENT TO THE SUBSURFACE

Based on review of available information and visual observations made during the field reconnaissance, this *Geologic Assessment* presents the following observations regarding the potential for recharge of the subsurface within the study area:

- Characteristics of soils that cover the study area are the primary factors that influence potential subsurface recharge on the property. The presence of primarily Georgetown clay loam soils with reported very slow permeability suggests overall very slow recharge potential to the subsurface.
- No "defined" karst recharge points with focused recharge potential were observed to be located on the study area.

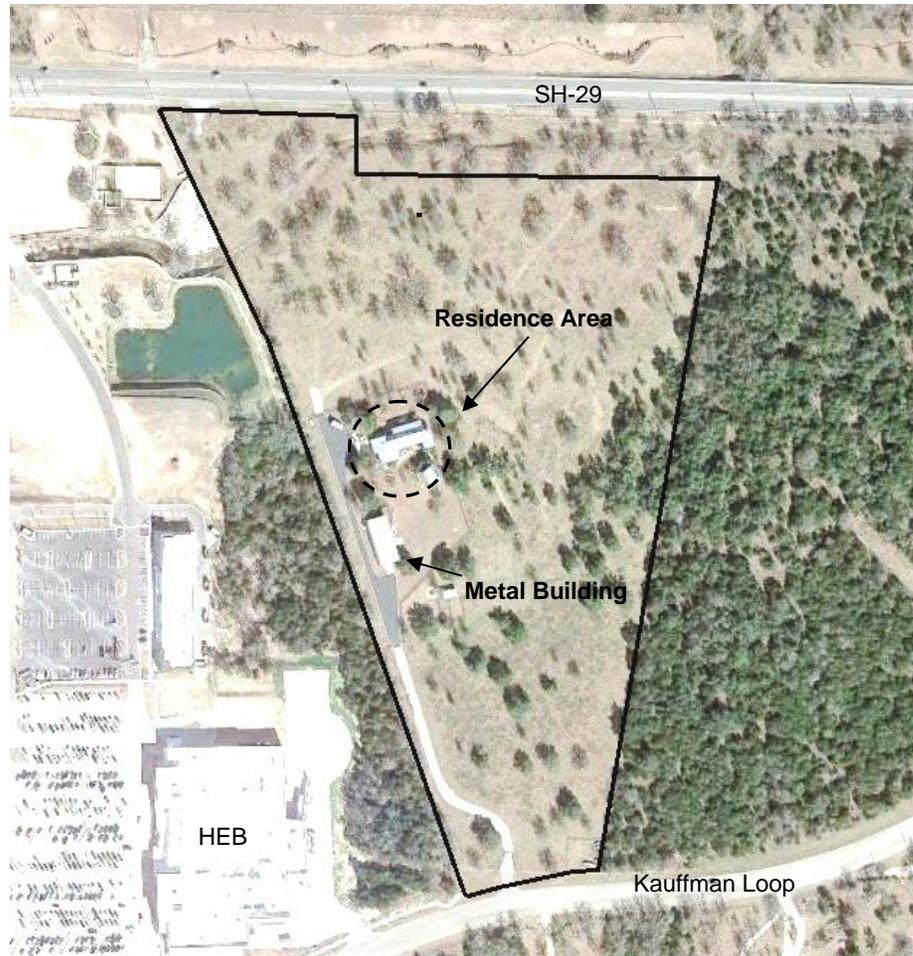
ATTACHMENT D  
SITE GEOLOGIC MAPS



**M. TROJAN & ASSOCIATES**  
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 Thorndale, Texas 76577  
 (512) 917-3695

Scale: No Scale  
 Date: March 21, 2023  
 Project: TCEQ Geologic Assessment  
 MTA Project: TGE-23-011

**FIGURE 1**  
**SITE LOCATION MAP**  
 27-ACRE PARTIALLY DEVELOPED TRACT  
 BETWEEN SH-29 AND KAUFFMAN LOOP  
 LEANDER, WILLIAMSON COUNTY, TEXAS



**M. TROJAN & ASSOCIATES**  
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Thorndale, Texas 76577  
(512) 917-3695

Scale: 1" = 400' (approx.)  
Date: March 21, 2023  
Project: TCEQ Geologic Assessment  
MTA Project: TGE-23-011

**FIGURE 2**  
**SITE AERIAL PHOTOGRAPH**  
27-ACRE PARTIALLY DEVELOPED TRACT  
BETWEEN SH-29 AND KAUFFMAN LOOP  
LEANDER, WILLIAMSON COUNTY, TEXAS





CfB – Crawford clay, 1-3% slopes / EaD – Eckrant cobbly clay, 1-8% slopes / FaB – Fairlie clay, 1-2% slopes  
GeB – Georgetown clay loam, 0-2% slopes / GsB – Georgetown stony clay loam, 1-3% slopes

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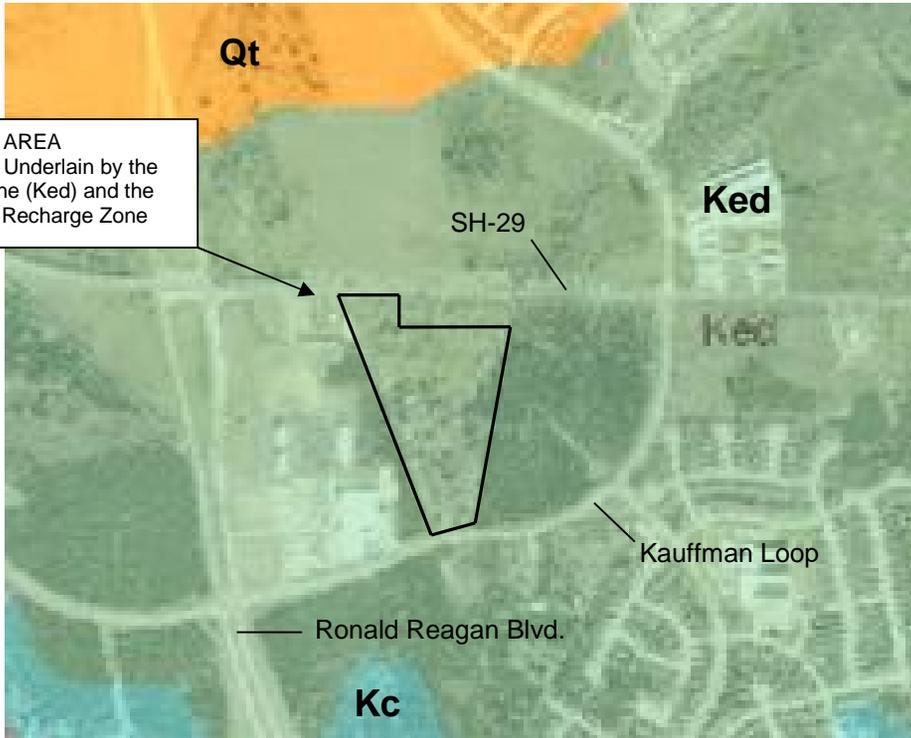
Scale: 1" = 400' (approx.)  
Date: March 21, 2023  
Project: TCEQ Geologic Assessment  
MTA Project: TGE-23-011

**FIGURE 4**  
**SITE SOILS MAP**

27-ACRE PARTIALLY DEVELOPED TRACT  
BETWEEN SH-29 AND KAUFFMAN LOOP  
LEANDER, WILLIAMSON COUNTY, TEXAS



**STUDY AREA**  
 The Study Area is Underlain by the Edwards Limestone (Ked) and the Edwards Aquifer Recharge Zone



Ked– Edwards Limestone / Kc – Comanche Peak Limestone / Qt – Fluvial terrace deposits

NOTE: Study area location is approximate  
 Sources: (1) Geologic Map of the West Half of the Taylor, Texas 30X60 Minute Quadrangle, Bureau of Economic Geology, dated 2005 (2) TCEQ

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Scale: No Scale  
 Date: March 21, 2023  
 Project: TCEQ Geologic Assessment  
 MTA Project: TGE-23-011

**FIGURE 5**  
**GENERAL GEOLOGIC MAP**  
 27-ACRE PARTIALLY DEVELOPED TRACT  
 BETWEEN SH-29 AND KAUFFMAN LOOP  
 LEANDER, WILLIAMSON COUNTY, TEXAS

**ONSITE FEATURES**

- MB-1: Manmade features in bedrock (underground infrastructure)
- MB-2: Manmade feature in bedrock (septic tank/field; area is approximate)
- MB-3: Manmade feature in bedrock (potential septic tank/field; area is approximate)

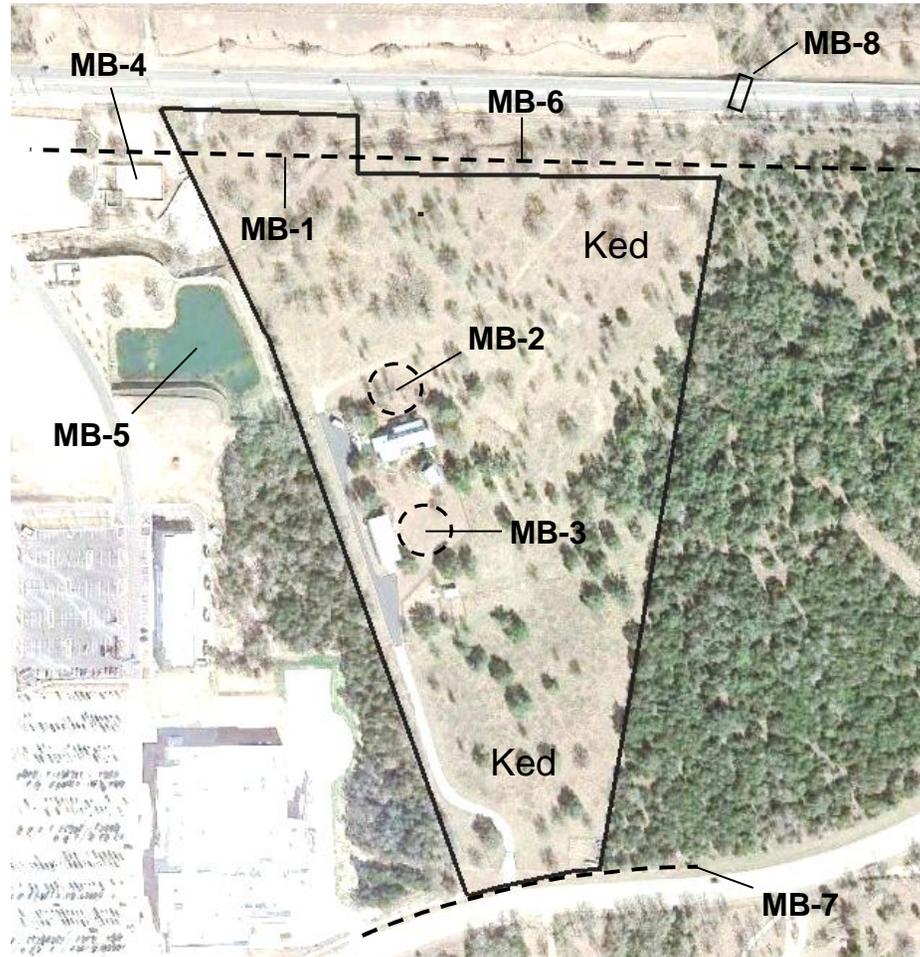
**OFFSITE FEATURES (within 200')**

- MB-4: Manmade feature in bedrock (water quality pond)
- MB-5: Manmade feature in bedrock (water quality pond)
- MB-6: Area of manmade features in bedrock (underground infrastructure)
- MB-7: Area of manmade features in bedrock (underground infrastructure)
- MB-8: Manmade feature in bedrock (underground storm culvert)



**NOTES**

Ked – Edwards Limestone  
 Refer to Attachment C for feature details.



**NO ONSITE OR OFFSITE KARST FEATURES IDENTIFIED**

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Scale: 1" = 400' (approx.)  
 Date: March 21, 2023  
 Project: TCEQ Geologic Assessment  
 MTA Project TGE-23-011

**FIGURE 6**  
**SITE GEOLOGIC MAP**  
 27-ACRE PARTIALLY DEVELOPED TRACT  
 BETWEEN SH-29 AND KAUFFMAN LOOP  
 LEANDER, WILLIAMSON COUNTY, TEXAS

ATTACHMENT E  
SITE PHOTOGRAPHS

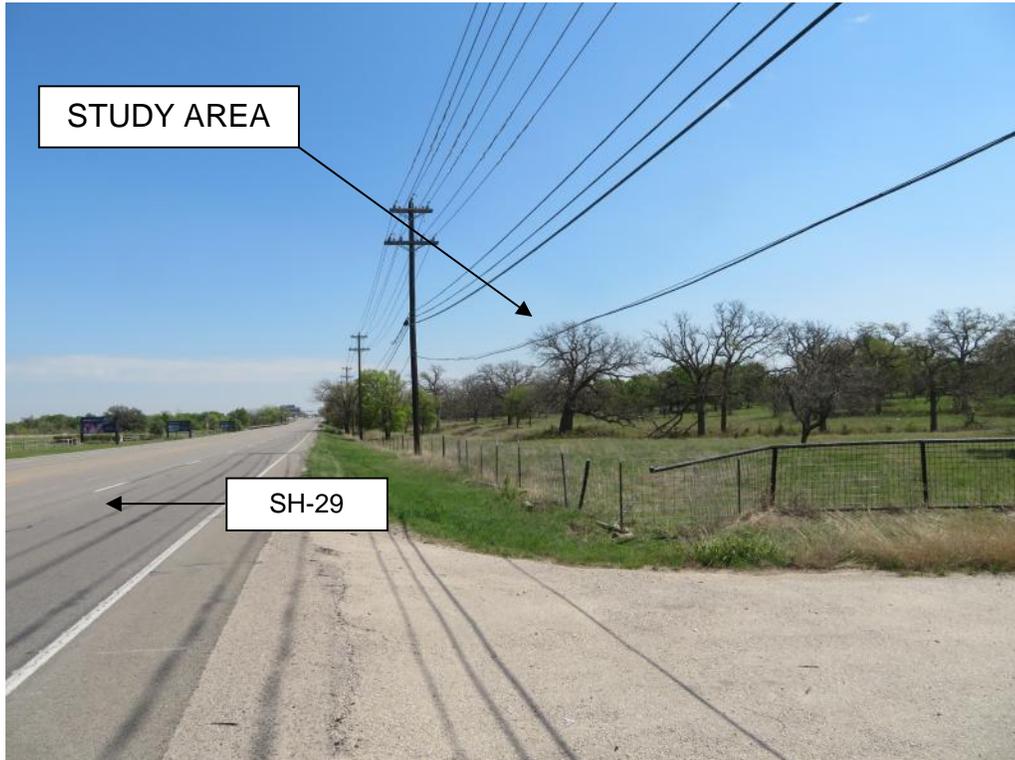
**PHOTOGRAPHIC REPORTING DATA SHEET**  
**[ PHOTOGRAPH 1 ]**



**Project:** TCEQ Geologic Assessment  
**Site:** 27-Acre Partially Developed Tract  
**Location:** Between SH-29 and Kauffman Loop, Leander, Williamson County, Texas

**Description:** View of the southern-most part of the study area along Kauffman Loop. Photograph taken from Kauffman Loop facing northeast.

**PHOTOGRAPHIC REPORTING DATA SHEET**  
**[ PHOTOGRAPH 2 ]**



**Project:** TCEQ Geologic Assessment  
**Site:** 27-Acre Partially Developed Tract  
**Location:** Between SH-29 and Kauffman Loop, Leander, Williamson County, Texas  
**Description:** View of the northern-most part of the study area along SH-29. Photograph taken from SH-29 facing east.

**PHOTOGRAPHIC REPORTING DATA SHEET**  
**[ PHOTOGRAPH 3 ]**



**Project:** TCEQ Geologic Assessment  
**Site:** 27-Acre Partially Developed Tract  
**Location:** Between SH-29 and Kauffman Loop, Leander, Williamson County, Texas  
**Description:** View of typical landscape on the southern half of the study area.

**PHOTOGRAPHIC REPORTING DATA SHEET**  
**[ PHOTOGRAPH 4 ]**



**Project:** TCEQ Geologic Assessment  
**Site:** 27-Acre Partially Developed Tract  
**Location:** Between SH-29 and Kauffman Loop, Leander, Williamson County, Texas  
**Description:** View of typical landscape on the northern half of the study area.

## PHOTOGRAPHIC REPORTING DATA SHEET

### [ PHOTOGRAPH 5 ]



- Project:** TCEQ Geologic Assessment  
**Site:** 27-Acre Partially Developed Tract  
**Location:** Between SH-29 and Kauffman Loop, Leander, Williamson County, Texas
- Description:** View of the single-family residence on the west-central part of the study area.

## PHOTOGRAPHIC REPORTING DATA SHEET

### [ PHOTOGRAPH 6 ]



- Project:** TCEQ Geologic Assessment  
**Site:** 27-Acre Partially Developed Tract  
**Location:** Between SH-29 and Kauffman Loop, Leander, Williamson County, Texas
- Description:** View of the metal building adjacent to the single-family residence on the west-central part of the study area.

**PHOTOGRAPHIC REPORTING DATA SHEET**  
**[ PHOTOGRAPH 7 ]**



**Project:** TCEQ Geologic Assessment  
**Site:** 27-Acre Partially Developed Tract  
**Location:** Between SH-29 and Kauffman Loop, Leander, Williamson County, Texas

**Description:** View of the onsite segment of the primary drainage feature on the northwestern-most part of the study area.

**PHOTOGRAPHIC REPORTING DATA SHEET**  
**[ PHOTOGRAPH 8 ]**



**Project:** TCEQ Geologic Assessment  
**Site:** 27-Acre Partially Developed Tract  
**Location:** Between SH-29 and Kaufman Loop, Leander, Williamson County, Texas  
**Description:** View of the offsite stream segment – directly downstream of the onsite drainage way segment.

**PHOTOGRAPHIC REPORTING DATA SHEET**  
**[ PHOTOGRAPH 9 ]**



**Project:** TCEQ Geologic Assessment  
**Site:** 27-Acre Partially Developed Tract  
**Location:** Between SH-29 and Kauffman Loop, Leander, Williamson County, Texas

**Description:** View of offsite manmade feature in bedrock MB-5 (water quality pond) directly west of the study area.

## PHOTOGRAPHIC REPORTING DATA SHEET

### [ PHOTOGRAPH 10 ]



- Project:** TCEQ Geologic Assessment
- Site:** 27-Acre Partially Developed Tract
- Location:** Between SH-29 and Kauffman Loop, Leander, Williamson County, Texas
- Description:** View of the visible manhole of offsite manmade feature in bedrock MB-6 (water line) directly north of the study area.

**PHOTOGRAPHIC REPORTING DATA SHEET**  
**[ PHOTOGRAPH 11 ]**



**Project:** TCEQ Geologic Assessment  
**Site:** 27-Acre Partially Developed Tract  
**Location:** Between SH-29 and Kauffman Loop, Leander, Williamson County, Texas

**Description:** View of offsite manmade feature in bedrock MB-8 (underground culvert) directly north of the study area.

# Modification of a Previously Approved Plan

## Texas Commission on Environmental Quality

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

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

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

## Signature

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

Print Name of Customer/Agent: Thomas J. Groll, P.E.

Date: Febraury 23, 2026

Signature of Customer/Agent:

Thomas J. Groll, P.E.

## Project Information

1. Current Regulated Entity Name: 675 KAUFFMAN LOOP  
Original Regulated Entity Name: 675 KAUFFMAN LOOP  
Regulated Entity Number(s) (RN): 112247283  
Edwards Aquifer Protection Program ID Number(s): 11004517  
 The applicant has not changed and the Customer Number (CN) is: CN606406122  
 The applicant or Regulated Entity has changed. A new Core Data Form has been provided.
2.  **Attachment A: Original Approval Letter and Approved Modification Letters.** A copy of the original approval letter and copies of any modification approval letters are attached.

3. A modification of a previously approved plan is requested for (check all that apply):
- Physical or operational modification of any water pollution abatement structure(s) including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
  - Change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
  - Development of land previously identified as undeveloped in the original water pollution abatement plan;
  - Physical modification of the approved organized sewage collection system;
  - Physical modification of the approved underground storage tank system;
  - Physical modification of the approved aboveground storage tank system.
4.  Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

<b><i>WPAP Modification</i></b>	<b><i>Approved Project</i></b>	<b><i>Proposed Modification</i></b>
<b><i>Summary</i></b>		
Acres	_____	_____
Type of Development	_____	_____
Number of Residential Lots	_____	_____
Impervious Cover (acres)	_____	_____
Impervious Cover (%)	_____	_____
Permanent BMPs	_____	_____
Other	_____	_____

<b><i>SCS Modification</i></b>	<b><i>Approved Project</i></b>	<b><i>Proposed Modification</i></b>
<b><i>Summary</i></b>		
Linear Feet	<u>3,842</u>	<u>3,973</u>
Pipe Diameter	<u>2", 3", 8"</u>	<u>3", 4", 8"</u>
Other	_____	_____

<b>AST Modification</b>	<b>Approved Project</b>	<b>Proposed Modification</b>
<b>Summary</b>		
Number of ASTs	_____	_____
Volume of ASTs	_____	_____
Other	_____	_____

<b>UST Modification</b>	<b>Approved Project</b>	<b>Proposed Modification</b>
<b>Summary</b>		
Number of USTs	_____	_____
Volume of USTs	_____	_____
Other	_____	_____

5.  **Attachment B: Narrative of Proposed Modification.** A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved, including any previous modifications, and how this proposed modification will change the approved plan.
  
6.  **Attachment C: Current Site Plan of the Approved Project.** A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
  - The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
  - The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
  - The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
  - The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
  - The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.
  
7.  The acreage of the approved plan has increased. A Geologic Assessment has been provided for the new acreage.
  - Acreage has not been added to or removed from the approved plan.
  
8.  Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

# Organized Sewage Collection System Application

## Texas Commission on Environmental Quality

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

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

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

Regulated Entity Name: 675 KAUFFMAN LOOP

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

## Customer Information

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

Contact Person: RICHARD GARY

Entity: 675 Kaufman, LP

Mailing Address: 7801 N. Capital of Texas Hwy, Suite 390

City, State: Austin, TX

Zip: 78731

Telephone: (512) 901-9800

Fax: \_\_\_\_\_

Email Address: richard@jwdevelopmentinc.com

**The appropriate regional office must be informed of any changes in this information within 30 days of the change.**

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

Contact Person: Thomas J. Groll, P.E.

Texas Licensed Professional Engineer's Number: 90976

Entity: Tom Groll Engineering, PC

Mailing Address: 5208 Pryor Lane

City, State: Austin, TX

Zip: 78734

Telephone: (512) 848-5796

Fax: \_\_\_\_\_

Email Address: tomg@tg-eng.com

## Project Information

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

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

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

100 % Domestic 14,000 gallons/day  
 \_\_\_\_\_% Industrial \_\_\_\_\_gallons/day  
 \_\_\_\_\_% Commingled \_\_\_\_\_gallons/day  
 Total gallons/day: \_\_\_\_\_

6. Existing and anticipated infiltration/inflow is 7,620 gallons/day. This will be addressed by: accounting for I&I in system sizing

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

- The WPAP application for this development was approved by letter dated 9/26/25. A copy of the approval letter is attached.  
 The WPAP application for this development was submitted to the TCEQ on \_\_\_\_\_, but has not been approved.  
 A WPAP application is required for an associated project, but it has not been submitted.  
 There is no associated project requiring a WPAP application.

8. Pipe description:

**Table 1 - Pipe Description**

<i>Pipe Diameter(Inches)</i>	<i>Linear Feet (1)</i>	<i>Pipe Material (2)</i>	<i>Specifications (3)</i>
8"	638	SDR26 PVC	D3034
8"	49	SDR26 PVC	D3034
8"	130	SDR26 PVC	D3034
4"	2,692	SCH40 PVC	ASTM D1785 & 2665
3"	463	SCH40 PVC	ASTM D1785 & 2665

**Total Linear Feet:** 3,972

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

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

- Existing  
 Proposed

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

- The City of Leander standard specifications.  
 Other. Specifications are attached.

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

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

### ***Alignment***

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

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

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

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

### ***Manholes and Cleanouts***

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

**Table 2 - Manholes and Cleanouts**

<i>Line</i>	<i>Shown on Sheet</i>	<i>Station</i>	<i>Manhole or Clean-out?</i>
A	8 Of 18	1+53.69	Manhole
A	8 Of 18	3+73.69	Manhole
A	8 Of 18	4+88.69	Manhole
A	8 Of 18	6+33.69	Manhole
A	8 Of 18	6+99.32	Manhole
A	8 Of 18	8+57.53	Manhole
A	8 Of 18	8+83.21	Manhole

<i>Line</i>	<i>Shown on Sheet</i>	<i>Station</i>	<i>Manhole or Clean-out?</i>
FM	12 Of 18	32+40.71	Manhole
	Of		
	Of		

15.  Manholes are installed at all Points of Curvature and Points of Termination of a sewer line.
16.  The maximum spacing between manholes on this project for each pipe diameter is no greater than:

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

- Attachment C – Justification for Variance from Maximum Manhole Spacing.** The maximum spacing between manholes on this project (for each pipe diameter used) is greater than listed in the table above. A justification for any variance from the maximum spacing is attached, and must include a letter from the entity which will operate and maintain the system stating that it has the capability to maintain lines with manhole spacing greater than the allowed spacing.
17.  All manholes will be monolithic, cast-in-place concrete.
- The use of pre-cast manholes is requested for this project. The manufacturer's specifications and construction drawings, showing the method of sealing the joints, are attached.

## ***Site Plan Requirements***

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

18.  The Site Plan must have a minimum scale of 1" = 400'.  
Site Plan Scale: 1" = 40 '.
19.  The Site Plan must include the sewage collection system general layout, including manholes with station numbers, and sewer pipe stub outs (if any). Site plan must be overlain by topographic contour lines, using a contour interval of not greater than ten feet and showing the area within both the five-year floodplain and the 100-year floodplain of any drainage way.
20. Lateral stub-outs:
- The location of all lateral stub-outs are shown and labeled.
- No lateral stub-outs will be installed during the construction of this sewer collection system.

21. Location of existing and proposed water lines:

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

22. 100-year floodplain:

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

**Table 3 - 100-Year Floodplain**

<i>Line</i>	<i>Sheet</i>	<i>Station</i>
	of	to

23. 5-year floodplain:

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

**Table 4 - 5-Year Floodplain**

<i>Line</i>	<i>Sheet</i>	<i>Station</i>
	of	to

24.  Legal boundaries of the site are shown.

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

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

26.  All existing or proposed water line crossings and any parallel water lines within 9 feet of sewer lines are listed in the table below. These lines must have the type of pressure rated pipe to be installed shown on the plan and profile sheets. Any request for a variance from the required pressure rated piping at crossings must include a variance approval from 30 TAC Chapter 290.
- There will be no water line crossings.
- There will be no water lines within 9 feet of proposed sewer lines.

**Table 5 - Water Line Crossings**

<i>Line</i>	<i>Station or Closest Point</i>	<i>Crossing or Parallel</i>	<i>Horizontal Separation Distance</i>	<i>Vertical Separation Distance</i>
FM	17+20.15	CROSSING	0	2.12'

27. Vented Manholes:

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

**Table 6 - Vented Manholes**

<i>Line</i>	<i>Manhole</i>	<i>Station</i>	<i>Sheet</i>

<i>Line</i>	<i>Manhole</i>	<i>Station</i>	<i>Sheet</i>

28. Drop manholes:

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

**Table 7 - Drop Manholes**

<i>Line</i>	<i>Manhole</i>	<i>Station</i>	<i>Sheet</i>

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

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

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

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

31. Minimum flow velocity (From Appendix A)

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

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

- Assuming pipes are flowing full, all slopes are designed to produce maximum flows of less than or equal to 10 feet per second for this system/line.
- Attachment D – Calculations for Slopes for Flows Greater Than 10.0 Feet per Second.** Assuming pipes are flowing full, some slopes produce flows which are greater than 10 feet per second. These locations are listed in the table below. Calculations are attached.

**Table 8 - Flows Greater Than 10 Feet per Second**

<i>Line</i>	<i>Profile Sheet</i>	<i>Station to Station</i>	<i>FPS</i>	<i>% Slope</i>	<i>Erosion/Shock Protection</i>

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

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

**Administrative Information**

- 34.  The final plans and technical specifications are submitted for TCEQ review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.
- 35.  Standard details are shown on the detail sheets, which are dated, signed, and sealed by the Texas Licensed Professional Engineer, as listed in the table below:

**Table 9 - Standard Details**

<b>Standard Details</b>	<b>Shown on Sheet</b>
Lateral stub-out marking <b>[Required]</b>	18 of 18
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) <b>[Required]</b>	18 of 18
Alternate method of joining lateral to existing SCS line for potential future connections <b>[Required]</b>	18 of 18
Typical trench cross-sections <b>[Required]</b>	18 of 18
Bolted manholes <b>[Required]</b>	18 of 18
Sewer Service lateral standard details <b>[Required]</b>	18 of 18
Clean-out at end of line <b>[Required, if used]</b>	18 of 18
Baffles or concrete encasement for shock/erosion protection <b>[Required, if flow velocity of any section of pipe &gt;10 fps]</b>	NA of 18
Detail showing Wastewater Line/Water Line Crossing <b>[Required, if crossings are proposed]</b>	18 of 18
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) <b>[Required, if Flexible Pipe is used]</b>	3 of 18

Standard Details	Shown on Sheet
Drop manholes [Required, if a pipe entering a manhole is more than 24 inches above manhole invert]	NA of 18

- 36.  All organized sewage collection system general construction notes (TCEQ-0596) are included on the construction plans for this sewage collection system.
- 37.  All proposed sewer lines will be sufficiently surveyed/staked to allow an assessment prior to TCEQ executive director approval. If the alignments of the proposed sewer lines are not walkable on that date, the application will be deemed incomplete and returned.
  - Survey staking was completed on this date: 3/15/26
- 38.  Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
- 39.  Any modification of this SCS application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

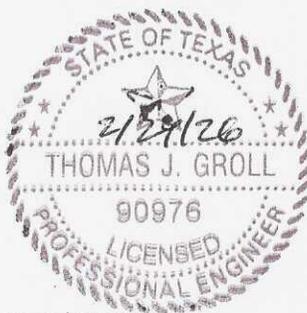
### Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Organized Sewage Collection System Application** is hereby submitted for TCEQ review and executive director approval. The system was designed in accordance with the requirements of 30 TAC §213.5(c) and 30 TAC §217 and prepared by:

Print Name of Licensed Professional Engineer: Thomas J. Groll, P.E.

Date: February 24, 2026

Place engineer's seal here:



Signature of Licensed Professional Engineer:

Thomas J. Groll, P.E.

## Appendix A-Flow Velocity Table

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

**Table 10 - Slope Velocity**

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

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

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

**Figure 1 - Manning's Formula**

Where:

$v$  = velocity (ft/sec)

$n$  = Manning's roughness coefficient (0.013)

$R_h$  = hydraulic radius (ft)

$S$  = slope (ft/ft)

# TGE

*Tom Groll Engineering, PC*

## LIFT STATION DESIGN REPORT

675 KAUFFMAN LOOP  
LEANDER, TX 78641

Prepared for:

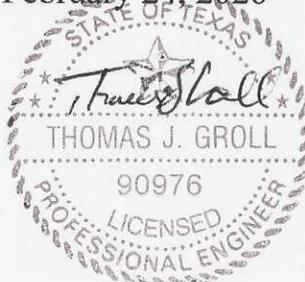
675 Kaufman, LP  
7801 N. Capital of Texas Hwy., Suite 390  
Austin, TX 78731

Prepared by:

Thomas J. Groll, P.E.  
Tom Groll Engineering, PC  
5208 Pryor Lane  
Austin, TX 78734

TBPE Firm #9799

Prepared  
May 30, 2025  
Revised  
September 18, 2025  
Revised  
February 24, 2026



2/24/26

5208 PRYOR LANE • AUSTIN, TX 78734  
(512) 848-5796 • tomg@tg-eng.com  
FIRM #9799

## Introduction

The 675 Kauffman Loop project is a 25.008-acre tract on the south side of SH 29 located approximately one-quarter mile east of Ronald Reagan Blvd. in Leander, Williamson County, Texas. The site is bound by SH 29 on the north, Kauffman Loop on the south, Rancho Sienna (undeveloped) land on the east, and the Bar W Ranch Commercial site on the west. The property is within the full purpose jurisdiction of the City of Leander and is within the Edwards Aquifer Recharge Zone. Domestic water service will be provided by the City of Leander. On-site wastewater collection and pumping will be privately owned and operated. A lift station and force main are required to pump wastewater from the site to the City of Leander public wastewater collection system located at the intersection of Ronald Reagan Blvd. and Kauffman Loop.

The 675 Kauffman Loop property is zoned to allow commercial and residential uses. The proposed development plan includes commercial use on the northern 10.165-acres fronting SH 29, and townhome development on the southern 14.843-acres fronting Kauffman Loop. Per the approved Preliminary Plat for this site, the commercial development area is allocated 42 L.U.E.s and the residential development area is allocated 108 L.U.E.s by the City of Leander. Information obtained about the proposed commercial uses indicates that 70 L.U.E.'s is a better estimate of wastewater generation for the commercial site.

The commercial area will be developed separately from the residential area; the two developments will not share a common lift station but will share a common force main leading to the City of Leander public wastewater collection system. Therefore, the commercial lift station is sized to accommodate flow from 70 L.U.E.s and the residential lift station needs to be sized to accommodate flow from 108 L.U.E.s. The force main is sized to accommodate flow from 178 L.U.E.s. This report pertains to the lift station for the commercial portion of the property and to the force main serving the entire property. A separate report addressing the townhome development lift station shall be provided by the developers of the townhome site.

Site topography ranges from 1014' msl at the southwest corner adjacent to the Kauffman Loop right-of-way to 972' msl at the northeast corner adjacent to the SH 29 right-of-way. The lowest possible finished floor elevation for the entire site is 978' msl. An internal network of privately owned and operated gravity flow wastewater lines will serve as the on-site wastewater collection system. The townhome and commercial developments will each have their own gravity flow wastewater collection systems, wholly independent of each other, leading to their respective lift stations. The lift station serving the commercial development will be located at the northeast corner of the development within a dedicated access and utility easement. The lift station pump discharge elevation is 967' msl. The force main will run approximately 1,520 feet along the eastern property line through the townhome tract to the Kauffman Loop right-of-way. Once within the Kauffman Loop right-of-way, the force becomes public infrastructure and will run approximately 1,635 feet west to the intersection of Kauffman Loop and Ronald Reagan Blvd. where it will connect to the City of Leander 12" gravity flow wastewater system at elevation 1015.69' msl. The public wastewater system gravity flows to Lift Station #25 located at Prickly Pear Path and Armitas Terrace within the Bar W Ranch subdivision. Lift Station #25 forces the wastewater to the City of Liberty Hill's South San Gabriel Wastewater Treatment Plant located 1633 US 183 N. in Leander.

Lift Station & Force Main System sizing calculations

The commercial lift station is sized to accommodate flow from 70 L.U.E.s. The land area contributing to Inflow & Infiltration is 10.16 acres. The City of Leander uses the following factors in determining wastewater flow rates:

*Table 1 - Wastewater flow rate determination factors*

Wastewater Determination Factors		
Base Flow Rate=	200	gpd/LUE
Inflow & Infiltration =	750	gal/acre/day

The Average Daily Dry Weather Flow ( $A_{DDWF}$ ) is calculated as the product of the base flow rate and the number of L.U.E.s in the contributing basin as shown in equation 1. The flow rate in gallons/minute is adjusted to account for the fact that all the waste flow generated on the commercial site will occur primarily between the hours of 8:00 am and 8:00 pm.

Equation 1

$$A_{DDWF} = \frac{200 \text{ gpd}}{\text{LUE}} \times \text{LUE}'s$$

$$A_{DDWF} = 200 \times 70 = 14,000 \text{ gpd (19.44 gpm over a 12-hour period)}$$

The peak dry weather flow is determined by the product of a peaking factor and the average daily dry weather flow. The peak dry weather flow rate is determined by equation 2:

Equation 2

$$Q_{peak (dry)} = \left[ \frac{(18 + \sqrt{0.0206 \times A_{DDWF}})}{(4 + \sqrt{0.0206 \times A_{DDWF}})} \right] \times A_{DDWF}$$

$$Q_{peak (dry)} = \left[ \frac{(18 + \sqrt{0.0206 \times 19.44})}{(4 + \sqrt{0.0206 \times 19.44})} \right] \times 19.44 = 78.2 \text{ gpm}$$

The peak wet weather flow is determined by the sum of a peak dry weather flow and the inflow & infiltration (I&I). The inflow & infiltration is determined by equation 3:

Equation 3

$$I\&I = (750 \text{ gpd})/\text{Acre} \times \text{acreage of contributing basin}$$

$$I\&I = (750 \text{ gpd})/\text{Acre} \times 10.16 \text{ acres} = 7,620 \text{ gpd (5.29 gpm)}$$

Since Inflow & Infiltration is not a function of normal operating hours, the 5.29 gpm flow rate is not adjusted to a 12-hour flow rate and is assumed to be capable of entering the system at any given time.

Therefore, the peak flow to be handled by the commercial lift station is 63,926 gpd, but the loading rate to the lift station is double that rate based on the assumption that loading occurs over a 12-

hour period each day (83.49 gpm). Due to the low pumping requirement, this system is proposed to be a grinder pump system as required by 30 TAC 217.61(J).

Pump Head calculations

The lift station wet well will have a floor elevation of 966.5’ msl. The pump discharge elevation will be set one foot above the floor at 967.5’ msl. The highpoint of the force main is at the discharge to the gravity sewer system, and is set at 1015.69’ msl, therefore, there is 48.69’ of static head between the pump and discharge location. Equation 4 shows the static head of the system piping.

Equation 4

$$1015.69' - 967.00' = 48.69'$$

Head loss calculations

The force main will be 3,156 LF of Sch 40 PVC pipe. Only the commercial site contributes to the first 462.50’ segment, which is 2” Sch 40 PVC (Sta: 1+00.00 to Sta: 5+62.5). At Station 5+62.5 the townhome site effluent enters the force main, and the pipe size is increased to 3” for the remaining length of the line. The values shown in the column labeled ΔElev represent the static head portion of the total head calculation. Table 2 summarizes the force main pipe size and length.

*Table 2 - Force main pipe summary*

Force Main Pipe Summary								
Station			Elevation			Length	Size	Material
Begin		End	Begin	End	Δ Elev	(ft)	(in)	
1+00.00	to	5+62.50	967.00	977.86	10.86’	462.50	3.0	SCH 40 PVC
5+62.50	to	32+55.71	977.86	1,015.69	37.83’	2,693.21	4.0	SCH 40 PVC
Total =					48.69’	3,155.71		

The system head loss is calculated using the Hazen-Williams equation in a form that produces the amount of head loss per 100’ length of pipe.

Equation 5

$$h_l = 0.2083 x \frac{\left(\frac{100}{CH}\right)^{1.852} x (Q^{1.852})}{D^{4.8655}} \quad \text{[feet H}_2\text{O/100’ of pipe]}$$

The head loss calculations also account for minor losses due to bends and fittings within the system. These minor losses are typically calculated as the product of the velocity head and a minor loss coefficient, and take the form shown in equation 6.

Equation 6

$$h_l = K \frac{v^2}{2g}$$

The bends and fittings within this system are assigned the loss coefficients shown in table3.

*Table 3 - Fitting loss coefficients*

Element	Loss coefficient
90° bend	0.50
45° bend	0.35
22-1/2° bend	0.18
11-14° bend	0.12
Check Valve	2.00
Valve vault assembly	5.00
Sudden expansion	0.75
Tee connection	0.40

System head loss is calculated first from the commercial lift station to the tie-in location for the townhome site at Sta: 5+62.50 and accounts for the waste flow generated by the commercial site (70 L.U.E.s). The remaining system head loss is calculated for the combined flows from the commercial (70 L.U.E.S) and residential (108 L.U.E.S) sites to the discharge end of the pipe system (178 L.U.E.s). In both cases a coefficient of 150 is used for the friction loss calculation in the Hazen-Williams equation for the normal and peak flow conditions. The analysis accounts for the average and peak flows to the commercial lift station occurring only during normal business operating hours.

Since there are two lift stations contributing to the single force main, and because the commercial lift station is the most hydraulically remote, it must be capable of providing sufficient head to operate when the townhome site lift station is operating under peak conditions. To determine the head requirement for the commercial lift station, the system is analyzed under peak operating conditions for the town home site to establish the system head at the location in the force main where the two systems combine.

The total system head loss from Sta: 5+62.50 to the discharge end of the force main is 71.54' when both lift stations are operating under peak conditions. The 4" force main crown elevation at Sta: 5+62.50 is 978.15' msl. Therefore, the energy grade line elevation at Sta: 5+62.50 is 1049.69. The system head loss for the first 462.50 LF (Sta: 1+00.00 to 5+62.50) is 19.56' when the commercial lift station is operating at peak conditions. The commercial lift station impeller eye elevation is 967.00' msl, therefore, the commercial lift station must be able to produce 91.1' of head to operate simultaneously with the townhome site lift station.

The commercial lift station is proposed to have two Ashland Model AGP750 grinder pumps with both pumps being of equivalent capacity. The total lift station pumping capacity with only pump operating requires a wet well volume of 5.31 ft<sup>3</sup> for a 6-minute cycle time. The pumps will be

installed in a 5' diameter x 11' deep wet well. This system has the capacity to pump 83 gpm at 91' TDH.

The minimum pump cycle time allowed per 30 TAC 217.60(b)(7) – Table C.5 is 6 minutes.

The minimum wet well volumes is calculated per 30 TAC 217.60(b)(8) – Equation C.4:

$$V = \frac{T \times Q}{4 \times 7.48} = \frac{6 \times 83.49}{29.92} = 16.74 \text{ ft}^3$$

Where:

T = Pump cycle time (6 minutes)

Q = Q<sub>peak</sub> (83.49 gpm)

Per 30 TAC 217.97(c)(5), the minimum allowable pipe size is 1-1/2" for this project. A 3" Sch 40 PVC pipe is selected to reduce system head loss. Based on the 70 LUE waste flow determination, the minimum and maximum velocity in the 3" pipe will be 3.36 and 3.58 fps, respectively. Downstream of the townhome site connection point where the force main is 4" diameter, and using the 178 LUE waste flow determination, the minimum and maximum velocity in the 4" pipe will be 3.51 and 3.84 fps, respectively.

#### Site Access & Security

The commercial lift station and force main will be in dedicated easements. The lift station will be adjacent to a 26' wide shared access drive serving the commercial properties within the development. The shared access drive has direct access to SH 29. The lift station site includes a 12' minimum width service driveway within an 8' minimum height intruder-resistant fence with lockable gate. The wet well and valve vault will be equipped with lockable hatchways to prevent intrusion by unauthorized personnel.

#### Lift station emergency provisions and reliability

The 675 Kauffman Loop site will be served by Pedernales Electric Cooperative power company. The site is readily accessible from SH 29 by emergency responders if needed. A Property Owner's Association will be formed by the individual owners of developments within the site. The POA will require participants to be party to a maintenance contract with a reliable service company to perform periodic testing and inspections of the system, and to respond to emergency situations when necessary.

#### 100-yr & 25-yr flood considerations

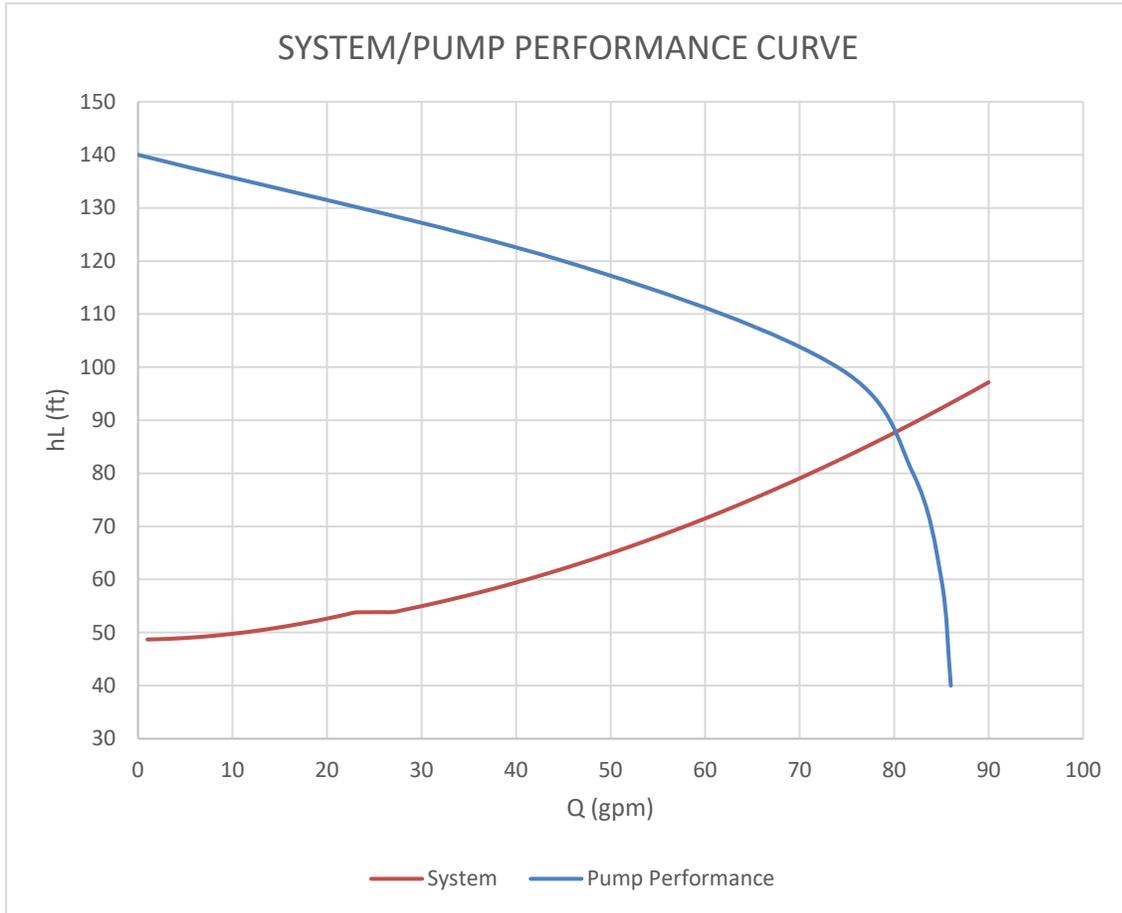
The 675 Kauffman Loop site will be developed so that no portion of the lift station is within a 100-year or 25-year floodplain. The lift station will be located adjacent to a stormwater detention pond with an emergency overflow provision that will prohibit the pond water surface elevation from being able to reach the lift station facility.

Head loss calculations – average flow conditions for commercial site											
Element	Station			Flow Line Elevation			Slope %	h <sub>L</sub> (ft H <sub>2</sub> O)			
	Beginning	Ending	Length	Beginning	Ending	Δh		Line	K	Fitting	
Wet well	1+00.00	1+02.00	2.00	967.00	973.06	6.06	303.00%	0.01	-		
90° Bend	1+02.00	1+02.00	0.00	973.06	973.06	-	0.00%	0.00	0.50	0.01	
Valve vault	1+02.00	1+16.62	14.62	973.06	972.99	(0.07)	-0.48%	0.01	5.00	0.05	
P1	1+16.62	3+84.30	267.68	972.99	970.00	(2.99)	-1.12%	0.27	-		
45° Bend	3+84.30	3+84.30	0.00	970.00	970.00	-	0.00%	0.00	0.35	0.00	
P2	3+84.30	3+87.08	2.78	970.00	967.22	(2.78)	-100.00%	0.00	-		
45° Bend	3+87.08	3+87.08	0.00	967.22	967.22	-	0.00%	0.00	0.35	0.00	
P3	3+87.08	4+40.82	53.74	967.22	966.55	(0.67)	-1.25%	0.05	-		
45° Bend	4+40.82	4+40.82	0.00	966.55	966.55	-	0.00%	0.00	0.35	0.00	
P4	4+40.82	4+47.48	6.66	966.55	973.21	6.66	100.00%	0.01	-		
45° Bend	4+47.48	4+47.48	0.00	973.21	973.21	-	0.00%	0.00	0.01	0.00	
P5	4+47.48	5+62.50	115.02	973.21	977.86	4.65	4.04%	0.11	-	-	
Check valve	5+62.50	5+62.50	0.00	977.86	977.86	-	0.00%	0.00	2.00	0.02	
Expansion	5+62.50	5+62.50	0.00	977.86	977.86	-	0.00%	0.00	0.75	0.01	
Commercial system line length =			462.50	Static head loss =			10.86		0.46		0.10
				Total head loss =			11.42				

Head loss calculations – average flow conditions for combined site											
Element	Station			Flow Line Elevation			Slope %	h <sub>L</sub> (ft H <sub>2</sub> O)			
	Beginning	Ending	Length	Beginning	Ending	Δh		Line	K	Fitting	
E-One Valve	5+62.50	5+63.50	1.00	977.86	977.90	0.04	4.04%	0.00	0.40	0.00	
P6	5+63.50	9+40.82	377.32	977.90	993.15	15.25	4.04%	0.30	-		
1° Vert Bend	9+40.82	14+00.82	460.00	993.15	993.15	-	0.00%	0.36	0.01	0.00	
P7	14+00.82	16+17.01	216.19	993.15	1,004.59	11.44	5.29%	0.17	-		
11.25° Bend	16+17.01	16+20.62	3.61	1,004.59	1,004.61	0.02	0.55%	0.00	0.12	0.00	
22.5° Bend	16+20.62	16+23.62	3.00	1,004.61	1,004.62	0.01	0.33%	0.00	0.18	0.00	
45° Bend	16+23.62	16+26.62	3.00	1,004.62	1,004.64	0.02	0.67%	0.00	0.35	0.01	
P8	16+26.62	18+69.91	243.29	1,004.64	1,005.84	1.20	0.49%	0.19	-		
45° Bend	18+69.91	18+69.91	0.00	1,005.84	1,005.84	-	0.00%	0.00	0.35	0.01	
P9	18+69.91	18+74.91	5.00	1,005.84	1,005.86	0.02	0.49%	0.00	-		
45° Bend	18+74.91	19+40.74	65.83	1,005.86	1,006.19	0.33	0.49%	0.05	0.35	0.00	
P10	19+40.74	19+45.74	5.00	1,006.19	1,006.30	0.11	2.20%	0.01	-		
45° Bend	19+45.74	19+45.74	0.00	1,006.30	1,006.30	-	0.00%	0.00	0.35	0.00	
P11	19+45.74	20+13.93	68.19	1,006.30	1,008.95	2.65	3.89%	0.05	-		
1° Vert Bend	20+13.93	20+13.93	0.00	1,008.95	1,008.95	-	0.00%	0.00	0.01	0.00	
P13	20+13.93	20+98.60	84.67	1,008.95	1,010.76	1.81	2.14%	0.07	-		
P14	20+98.60	32+55.71	1,157.11	1,010.76	1,015.69	4.93	0.43%	0.91	-		
Combined system line length =			2,693.21	Static head loss =			37.83		2.12		0.02
				Total head loss =			39.97				

Head loss calculations – peak flow conditions for commercial site											
Element	Station			Flow Line Elevation			Slope %	h <sub>L</sub> (ft H <sub>2</sub> O)			
	Begin	End	Length	Begin	End	Δh		Line	K	Fitting	
Wet well	1+00.00	1+02.00	2.00	967.00	973.06	6.06	303.00%	0.03	-		
90° Bend	1+02.00	1+02.00	0.00	973.06	973.06	-	0.00%	0.00	0.50	0.10	
Valve vault	1+02.00	1+16.62	14.62	973.06	972.99	(0.07)	-0.48%	0.22	5.00	1.00	
P1	1+16.62	3+84.30	267.68	972.99	970.00	(2.99)	-1.12%	3.96	-		
45° Bend	3+84.30	3+84.30	0.00	970.00	970.00	-	0.00%	0.00	0.35	0.07	
P2	3+84.30	3+87.08	2.78	970.00	967.22	(2.78)	-100.00%	0.04	-		
45° Bend	3+87.08	3+87.08	0.00	967.22	967.22	-	0.00%	0.00	0.35	0.07	
P3	3+87.08	4+40.82	53.74	967.22	966.55	(0.67)	-1.25%	0.80	-		
45° Bend	4+40.82	4+40.82	0.00	966.55	966.55	-	0.00%	0.00	0.35	0.07	
P4	4+40.82	4+47.48	6.66	966.55	973.21	6.66	100.00%	0.10	-		
45° Bend	4+47.48	4+47.48	0.00	973.21	973.21	-	0.00%	0.00	0.01	0.00	
P5	4+47.48	5+62.50	115.02	973.21	977.86	4.65	4.04%	1.70	-	-	
Check valve	5+62.50	5+62.50	0.00	977.86	977.86	-	0.00%	0.00	2.00	0.40	
Expansion	5+62.50	5+62.50	0.00	977.86	977.86	-	0.00%	0.00	0.75	0.15	
Commercial system line length =			462.50	Static head loss =			10.86		6.85		1.86
							Total head loss =	19.56			

Head loss calculations – peak flow conditions for combined site											
Element	Station			Flow Line Elevation			Slope %	h <sub>L</sub> (ft H <sub>2</sub> O)			
	Beginning	Ending	Length	Beginning	Ending	Δh		Line	K	Fitting	
E-One Valve	5+62.50	5+63.50	1.00	977.86	977.90	0.04	4.04%	0.01	0.40	0.08	
P6	5+63.50	9+40.82	377.32	977.90	993.15	15.25	4.04%	4.66	-		
1° Vert Bend	9+40.82	14+00.82	460.00	993.15	993.15	-	0.00%	5.69	0.01	0.00	
P7	14+00.82	16+17.01	216.19	993.15	1,004.59	1.44	5.29%	2.67	-		
11.25° Bend	16+17.01	16+20.62	3.61	1,004.59	1,004.61	0.02	0.55%	0.04	0.12	0.02	
22.5° Bend	16+20.62	16+23.62	3.00	1,004.61	1,004.62	0.01	0.33%	0.04	0.18	0.04	
45° Bend	16+23.62	16+26.62	3.00	1,004.62	1,004.64	0.02	0.67%	0.04	0.35	0.07	
P8	16+26.62	18+69.91	243.29	1,004.64	1,005.84	1.20	0.49%	3.01	-		
45° Bend	18+69.91	18+69.91	0.00	1,005.84	1,005.84	-	0.00%	0.00	0.35	0.07	
P9	18+69.91	18+74.91	5.00	1,005.84	1,005.86	0.02	0.49%	0.06	-		
45° Bend	18+74.91	19+40.74	65.83	1,005.86	1,006.19	0.33	0.49%	0.81	0.35	0.07	
P10	19+40.74	19+45.74	5.00	1,006.19	1,006.30	0.11	2.20%	0.06	-		
45° Bend	19+45.74	19+45.74	0.00	1,006.30	1,006.30	-	0.00%	0.00	0.35	0.07	
P11	19+45.74	20+13.93	68.19	1,006.30	1,008.95	2.65	3.89%	0.84	-		
1° Vert Bend	20+13.93	20+13.93	0.00	1,008.95	1,008.95	-	0.00%	0.00	0.01	0.00	
P13	20+13.93	20+98.60	84.67	1,008.95	1,010.76	1.81	2.14%	1.05	-		
P14	20+98.60	32+55.71	1,157.11	1,010.76	1,015.69	4.93	0.43%	14.30	-		
Combined system line length =			2,693.21	Static head loss =			37.83		33.29		0.42
							Total head loss =	71.54			



## **GRAVITY FLOW SYSTEM – SCS ENGINEERING DESIGN REPORT**

### CURRENT AND PROPOSED SERVICE AREA

The 675 Kauffman Loop property currently does not have wastewater service to the site. Upon completion of the proposed internal collections system and force main system, the entire 25 acres will have wastewater service.

### UTILITY EASEMENTS

A private wastewater easement (Doc. #2025090383) traversing the 675 Kauffman Loop tract has been agreed upon and recorded by the developers of the property. The off-site portion of the wastewater collection system will be within public right-of-way.

### DESIGN FLOW DETERMINATION

The design flow used for the wastewater system is calculated by assigning unit wastewater flow rates based on the City of Leander's design criteria. The unit wastewater flow rate is multiplied by the number of Living Unit Equivalents (LUE's) to produce an average daily dry weather flow ( $A_{DDWF}$ ) rate. A peaking factor is applied to the  $A_{DDWF}$  to produce the peak dry weather flow ( $P_{DDWF}$ ) rate. The peak wet weather flow ( $P_{WWF}$ ) rate is the sum of the  $P_{DDWF}$  plus Inflow & Infiltration (I & I).

According to the City of Leander's Wastewater Master Plan prepared by K. Freise & Associates, the base waste flow (BWF) rate is 200 gal/LUE/day and the groundwater infiltration rate (GWI) is 750 gal/acre/day. A peaking factor is applied to the base flow rate to determine the peak flow rate.

For this project there are 70 LUE's assigned to the commercial development portion of the property. The commercial tracts are zoned GC and are assumed to have a peak dry weather flow rate of 1,620 gal/ac/day. Using these values and including 1,000 gal/ac/day for inflow and infiltration results in a total estimated peak wet weather flow rate of 285,986 gallons per day.

### SYSTEM DESIGN CHARACTERISTICS

The gravity flow portion of the 675 Kauffman Loop subdivision wastewater collection system will consist of 768 LF of 8" SDR 26 PVC pipe as the trunk line with three 4" X 20 LF services to the commercial lots meeting ASTM D3034 specifications. The pipe embedment will be a 3/8" F – crushed limestone rock meeting the City of Leander specifications. Manholes will be pre-cast concrete sections meeting ASTM C-478 and will be internally lined with an 80-mil coat of epoxy coating meeting City of Leander specifications. Manhole bases will have integrally installed resilient boot connectors meeting ASTM C-923 specifications.

Manning's formula is used to calculate the minimum and maximum flow velocities within the system. Per 30 TAC 217.53 a Manning's 'n' value of 0.013 is used. Table C.1 provides the minimum and maximum grades to produce the minimum allowable velocity of 2 fps and maximum allowable velocity of 10 fps, respectively. However, these grades represent a full flow velocity. The City of Leander's design criteria require a minimum pipe size of 8" and that the pipe size be sufficient to carry the estimated peak wet weather flow rate without exceeding a flow depth of

80% of the pipe diameter. For an 8” diameter pipe with a Manning’s ‘n’ value of 0.013 the minimum allowable slope is calculated to be 0.26% to meet the 0.8 d/D maximum flow depth criteria at a flow velocity of 2.0 fps. Similarly, for an 8” diameter pipe with a Manning’s ‘n’ value of 0.013 the maximum allowable slope is calculated to be 6.45% to meet the 0.8 d/D maximum flow depth criteria at a flow velocity of 10.0 fps. The entire length of the system is designed to meet these criteria, resulting in minimum and maximum flow velocities within the allowable range for the peak wet weather flow condition.

The City of Leander design criteria disallow curved sewer lines. Alignment deflection must be achieved at manhole connections. Accordingly, all segments of this system are straight alignment, both horizontally and vertically, between manholes. No two consecutive manholes are greater than 500 feet from each other.

### **EFFECT ON EXISTING SYSTEM CAPACITY**

The City of Leander has confirmed available capacity in the existing public collection, pumping, and force main system. 178 LUE’s have been allocated to the 675 Kauffman Loop project.

### **ACCESS POINTS FOR FUTURE CONNECTIONS**

The following table shows the manhole locations where 20 linear feet of 4” SDR 26 PVC service laterals set at 1% grade are provided for access by future developments.

ID	STATION	8” FL IN ELEV.	DEFLECTION ANGLE	TRACT(S) SERVED
MH A02	3+73.69	971.40	90°00’00” LT	Lot 4, Block B
MH A03	4+88.69	972.08	90°00’00” LT	Lot 3, Block B
MH A04	6+33.69	972.90	90°00’00” LT	Lot 2, Block B
MH A05	6+99.32	973.23	45°00’00” LT	Lot 1, Block B
MH A06	8+42.61	974.13	45°00’00” LT	Lot 1, Block B
MH A07	8+68.28	974.35	00°00’00”	Lot 1, Block B

## STRUCTURAL ANALYSIS

A. Live Load Calculations – given the minimum allowable burial depth of 4', live loads will be insignificant.

B. Allowable buckling pressure determinations – The critical buckling pressure for a buried pipe is determined by the formula  $P_{cr} = 2E/[(1 - \nu^2)(DR - 1)^3]$  where:

$P_{cr}$  = the critical buckling pressure in psi,  
 E = the Modulus of Elasticity (400,000 lbs/in<sup>2</sup>),  
 $\nu$  = Poisson's Ratio (0.38 for PVC pipe),  
 DR = Dimension ration (26),

The critical buckling pressure is calculated to be **~60 psi**.

C. Prism load calculations – The Prism Load is determined by the formula  $W_c = HwB_c$ ; where

$W_c$  = the load generated by the weight of soil column above the pipe,  
 W = the unit weight of soil, 120 lb/ft<sup>3</sup>  
 H = the height (maximum depth) of cover over the pipe, 18.1'  
 $B_c$  = the outside diameter of the pipe, 0.70'

The maximum prism load occurs at the deepest burial depth. For an 8" pipe with 18.1' of cover at 120 lb/ft<sup>3</sup> the maximum prism load is calculated to be 1,520 lbs/LF. This value equates to a maximum prism load of **~15 psi**.

D. Wall crushing determinations – Wall crushing is determined by the formula  $T = P_y * D_0/2$  where:

T = wall thrust (lbs/in)  
 $P_y$  = vertical soil pressure on the pipe,  
 $D_0$  = pipe outside diameter (8.4"),  
 $\theta_c$  = compressive stress due to soil pressure = T/A (1,000 lb/in<sup>2</sup>),  
 A = area of pipe wall (in<sup>2</sup>/in),  
 W = unit weight of soil (120 lbs/ft<sup>3</sup>)  
 H = depth of soil (ft),  
 $P_y = 2*\theta_c*A/D_0 = wH$ , therefore, an 8" SDR 26 PVC pipe would be expected to occur at the following burial depth:

$$H = 2*\theta_c*A/(D_0*w) = [(2*1,000*0.323)/(8.4*120)]*144 \text{ in}^2/\text{ft}^2 = \sim \mathbf{92 \text{ ft deep}}$$

E. Strain prediction calculations – Strain prediction is the sum of hoop strain and flexural strain. For a gravity flow pipe without internal fluid pressure, the maximum hoop strain is the result of the maximum soil pressure developed on the pipe, and is a negative number. The formula for calculating hoop strain in solid wall pipe is  $\epsilon_h = PD/2tE$  where:

P = maximum pressure on the pipe due to soil loading (use prism load of 15 lbs/in<sup>2</sup>)  
 D = mean pipe diameter (8.4" – 0.646" = 7.75"),  
 t = wall thickness (0.323"),  
 E = modulus of elasticity (400,000 lbs/in<sup>2</sup>)

$$\epsilon_h = (15*7.75)/(2*0.323*400,000) = 4.5 \times 10^{-4} \text{ in/in}$$

The formula for calculating flexural strain is  $\epsilon_f = 1/DR * [(3\Delta Y/D)/(1-2\Delta Y/D)]$  where:

DR = the pipe dimension ratio (26),  
 $\Delta Y$  = vertical decrease in diameter (in),  
 D = mean pipe diameter (in),

Assuming the maximum allowable deflection of 7.5% per the ASTM D3034 specification,  
 $\Delta Y/D = 0.075 * 8.4 / 7.75 = 0.081$

$$\epsilon_f = (1/26) * [(3 * 0.081) / (1 - 2 * 0.081)] = 1.12 \times 10^{-2} \text{ in/in}$$

$$\epsilon_f + \epsilon_h = 0.0112 - 0.00045 = 0.0108 \text{ in/in}$$

- F. Calculations that quantify long term pipe deflection – Long term pipe deflection is calculated using the Modified Iowa Equation:

$$\% \frac{\Delta Y}{D} = \frac{(D_L K P + K W')(100)}{\left[ \left[ \frac{2E}{3(DR - 1)^3} \right] + 0.061E' \right]}$$

Where:

$D_L$  = Deflection lag factor (1.5)  
 P = Prism load (15 lb/in<sup>2</sup>),  
 K = Bedding constant (0.1),  
 W' = Live load (0 lb/in<sup>2</sup>),  
 DR = Dimension Ratio (26)  
 E = Modulus of Elasticity (400,000 lb/in<sup>2</sup>),  
 E' = Modulus of Soil Reaction (1,000 lb/in<sup>2</sup>)

**The calculated long-term deflection for the deepest portion of the alignment = 4.4%**

- G. All information pertinent to a determination of an adequate design including, but not limited to:
- i. The method of determining the modulus of soil reaction for bedding material and in-situ material – Per City of Leander specifications, the pipe bedding material is a 3/8F crushed limestone rock. Based on the literature in the Uni-Bell Handbook of PVC Pipe, a crushed rock bedding material has a typical Modulus of Soil Reaction of 3,000 psi. The in-situ trench material has been characterized by a geotechnical analysis as a very stiff clay with limestone fragments. The Modulus of Soil Reaction for this type of material is typically 1,000 psi.
  - ii. Pipe diameter and material with reference to appropriate standards – The entire length of the system will use 8” SDR 26 PVC pipe meeting ASTM D3034 and all related standards.
  - iii. Modulus of elasticity - The specified pipe meets the requirements of ASTM D1784-11. The cell class is 12454, which has a minimum allowable Modulus of Elasticity of 400,000 psi.

- iv. Tensile strength - The specified pipe meets the requirements of ASTM D1784-11. The cell class is 12454, which has a minimum allowable Tensile Strength of 7,000 psi.
- v. Pipe stiffness or ring stiffness constant converted to pipe stiffness – The specified pipe meets the standards of ASTM D3412 – PS 115.
- vi. Leonhardt's zeta factor -
- vii. Trench width – Trench width is governed by the City of Leander specification 104-2 as shown on Sheet 32 of the plan set.
- viii. Depth of cover – Per City of Leander specifications, the minimum allowable depth of cover is 4', which is less than the actual minimum along the alignment. The maximum depth of cover 8.0'.
- ix. Water table elevation – Geotechnical borings were advanced to a depth of ~20' in the vicinity of the deepest portions of the alignment. There was no groundwater present at the time of the borings.
- x. Unit weight of soil – A typical value for the unit weight of soil,  $\gamma_d$ , is 120 lb/ft<sup>3</sup> for the soil along the alignment.

The following table is taken from the North American Pipe product specifications:

Pipe Standard:	ASTM D3034
Pipe Compound:	ASTM D1784 Cell - Class 12454
Gasket:	ASTM F477
Integral Bell Joint:	ASTM D3212
Wall Thickness:	ASTM F679
Pipe Stiffness:	ASTM D3412 – PS 115
Applications:	Wastewater conveyance
Color:	Green
Lay Length:	14'

## SEPARATION DISTANCES

Per 30 TAC Chapter 217.53(d) provides separation distance requirements between water supply pipes and sewer pipes as follows:

- (1) Collection system pipes must be installed in trenches separate from water supply trenches.
- (2) Wherever possible, a collection system pipe must be located below a water supply pipe.
- (3) Wherever possible, collection system pipes and manholes must be located at least nine feet from all water supply pipes.

This project does not violate any of the foregoing separation distance requirements. There are no instances where water supply pipes and wastewater collection pipes share a common trench. In all cases of water supply pipe/wastewater collection pipe crossings, the wastewater collection system pipe shall be located beneath the water line. Additionally, a pressure rated (minimum 150 psi) pipe shall be installed on the gravity sewer system at all water line crossing locations such that the pressure rated pipe is centered at the crossing and the pipe extends at least nine feet horizontally in each direction beyond the crossing point. Special adapters must be used to make the connections

between the non-pressure rated SDR 26 PVC pipe and the pressure rated PVC pipes (either DR18 C-900 or SDR 25 Class 160 PVC). Details of these connection adapters are provided in the plan set. Furthermore, this project does not propose any water/wastewater crossings where the vertical separation is less than 24". There are no instances in this project where wastewater manholes are within nine feet horizontally of a water supply pipe.



GENERAL NOTES FOR SUBDIVISIONS AND SITE DEVELOPMENT PLANS

REVISED JULY 22, 2024

CITY CONTACTS:

ENGINEERING MAIN LINE: 512-528-2721
PLANNING DEPARTMENT: 512-528-2750
PUBLIC WORKS MAIN LINE: 512-259-2640
STORMWATER INSPECTIONS: 512-285-0055
UTILITIES MAIN LINE: 512-259-1142
UTILITIES ON-CALL: 512-690-4760

PEC CONTACTS:

PUBLIC SAFETY LINE: 1-888-343-7702
CUSTOMER OUTAGE LINE: 1-800-396-9037

GENERAL:

1. CONTRACTORS SHALL HAVE AN APPROVED SET OF PLANS WITH APPROVED REVISIONS ON SITE AT ALL TIMES. FAILURE TO HAVE APPROVED PLANS ON SITE MAY RESULT IN ISSUANCE OF WORK STOPPAGE.

2. CONTACT 811 SYSTEM FOR EXISTING WATER AND WASTEWATER LOCATIONS 48 HOURS PRIOR TO CONSTRUCTION.

a. REFRESH ALL LOCATES BEFORE 14 DAYS - LOCATE REFRESH REQUESTS MUST INCLUDE A COPY OF YOUR 811 TICKET. TEXAS PIPELINE DAMAGE PREVENTION LAWS REQUIRE THAT A LOCATE REFRESH REQUEST BE SUBMITTED BEFORE 14 DAYS, OR IF LOCATION MARKERS ARE NO LONGER VISIBLE.

b. REPORT PIPELINE DAMAGE IMMEDIATELY - IF YOU WITNESS OR EXPERIENCE PIPELINE EXCAVATION DAMAGE, PLEASE CONTACT THE CITY OF LEANDER BY PHONE AT 512-2592640.

3. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR 48 HOURS BEFORE:

a. BEGINNING EACH PHASE OF CONSTRUCTION. CONTACT ASSIGNED CITY INSPECTOR.

b. ANY TESTING. CONTRACTOR SHALL PROVIDE QUALITY TESTING FOR ALL INFRASTRUCTURES TO BE ACCEPTED AND MAINTAINED BY THE CITY OF LEANDER AFTER COMPLETION.

c. PROOF ROLLING SUB-GRADE AND EVERY LIFT OF ROADWAY EMBANKMENT. IN-PLACE DENSITY TESTING OF EVERY BASE COURSE, AND ASPHALT CORES. ALL OF THIS TESTING MUST BE WITNESSED BY A CITY OF LEANDER REPRESENTATIVE.

d. CONNECTING TO THE EXISTING WATER LINES.

e. THE INSTALLATION OF ANY DRAINAGE FACILITY WITHIN A DRAINAGE EASEMENT OR STREET ROW. THE METHOD OF PLACEMENT AND COMPACTION OF BACKFILL IN THE CITY'S ROW MUST BE APPROVED PRIOR TO THE START OF BACKFILL OPERATIONS.

4. ALL RESPONSIBILITY FOR THE ACCURACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY MUST RELY ON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.

5. EXCESS SOIL SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE. NOTIFY THE CITY OF LEANDER IF THE DISPOSAL SITE IS INSIDE THE CITY'S JURISDICTIONAL BOUNDARIES.

6. BURNING IS PROHIBITED.

7. NO WORK IS TO BE PERFORMED BETWEEN THE HOURS OF 9:00 P.M. AND 7:00 A.M. OR WEEKENDS. THE CITY INSPECTOR RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO UNCOVER ALL WORK PERFORMED WITHOUT INSPECTION.

8. CONTACT THE CITY INSPECTOR 4 DAYS PRIOR TO WORK FOR APPROVAL TO SCHEDULE ANY INSPECTIONS ON WEEKENDS OR CITY HOLIDAYS.

9. NO BLASTING IS ALLOWED.

10. ANY CHANGES OR REVISIONS TO THESE PLANS MUST FIRST BE SUBMITTED TO THE CITY BY THE DESIGN ENGINEER FOR REVIEW AND WRITTEN APPROVAL PRIOR TO CONSTRUCTION OF THE REVISION. ALL CHANGES AND REVISIONS SHALL USE REVISION CLOUDS TO HIGHLIGHT ALL REVISIONS AND CHANGES WITH EACH SUBMITTAL. REVISION TRIANGLE MARKERS AND NUMBERS SHALL BE USED TO MARK REVISIONS. ALL CLOUDS AND TRIANGLE MARKERS FROM PREVIOUS REVISIONS MUST BE REMOVED. REVISION INFORMATION SHALL BE UPDATED ON COVER SHEET AND AFFECTED PLAN SHEET TITLE BLOCK.

11. THE CONTRACTOR AND ENGINEER SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCTION THAT DEVIATES FROM THE PLANS. THE ENGINEER SHALL FURNISH THE CITY OF LEANDER ACCURATE 'RECORD DRAWINGS' FOLLOWING THE COMPLETION OF ALL CONSTRUCTION. THESE 'RECORD DRAWINGS' SHALL MEET THE SATISFACTION OF THE ENGINEERING DEPARTMENTS PRIOR TO FINAL ACCEPTANCE.

12. THE CONTRACTOR WILL REIMBURSE THE CITY FOR ALL REPAIR AND/OR COST INCURRED AS A RESULT OF ANY DAMAGE TO ANY PUBLIC INFRASTRUCTURE WITHIN CITY EASEMENT OR PUBLIC RIGHT-OF-WAY, REGARDLESS OF THESE PLANS.

13. WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINE HIS WORK TO WITHIN THE PERMANENT AND TEMPORARY EASEMENTS. PRIOR TO ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TRASH AND DEBRIS WITHIN THE PERMANENT EASEMENTS. CLEANUP SHALL BE TO THE SATISFACTION OF THE ENGINEER OF RECORD AND CITY.

14. CONTRACTOR TO LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, CONTROL POINTS AND PROJECT ENGINEERING REFERENCE POINTS. RE-ESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, AT NO ADDITIONAL COST TO THE PROPERTY OWNER.

15. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE, INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 1033 LA POSADA DR. SUITE 375, AUSTIN, TEXAS 78752-3832.

16. ALL MANHOLE FRAMES/COVERS AND WATER VALVE/METER BOXES MUST BE ADJUSTED TO FINISHED GRADE AT THE OWNER'S EXPENSE BY THE CONTRACTOR FOR CITY CONSTRUCTION INSPECTOR INSPECTION. ALL UTILITY ADJUSTMENTS SHALL BE COMPLETED PRIOR TO FINAL PAVING. CONTRACTOR SHALL BACKFILL AROUND MANHOLES AND VALVE BOXES WITH CLASS A CONCRETE.

17. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT WHERE NOT SPECIFICALLY COVERED IN THE PROJECT SPECIFICATIONS SHALL CONFORM TO ALL CITY OF LEANDER DETAILS AND CITY OF AUSTIN STANDARD SPECIFICATIONS.

18. PROJECT SPECIFICATIONS TAKE PRECEDENCE OVER PLANS AND SPECIAL CONDITIONS GOVERN OVER TECHNICAL SPECIFICATIONS.

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.

20. THE CONTRACTOR MUST OBTAIN A CONSTRUCTION WATER METER FOR ALL WATER USED DURING CONSTRUCTION. A COPY OF THIS PERMIT MUST BE CARRIED AT ALL TIMES BY ALL WHO USE WATER.

21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADS AND DRIVES ADJACENT TO AND NEAR THE SITE FREE FROM SOIL, SEDIMENT AND DEBRIS. CONTRACTOR WILL NOT REMOVE SOIL, SEDIMENT OR DEBRIS FROM ANY AREA OR VEHICLE BY MEANS OF WATER. ONLY SHOVELING AND SWEEPING WILL BE ALLOWED. THE CONTRACTOR WILL BE RESPONSIBLE FOR DUST CONTROL FROM THE SITE. THE CONTRACTOR SHALL KEEP THE SITE AREA CLEAN AND MAINTAINED AT ALL TIMES, TO THE SATISFACTION OF THE CITY. THE SUBDIVISION (OR SITE) WILL NOT BE ACCEPTED (OR CERTIFICATE OF OCCUPANCY ISSUED) UNTIL THE SITE HAS BEEN CLEANED TO THE SATISFACTION OF THE CITY.

22. TREES IN EXISTING ROW SHOULD BE PROTECTED OR NOTED IN THE PLANS TO BE REMOVED.

CONSTRUCTION SEQUENCE NOTES

NOTE: BELOW IS GENERAL SEQUENCE OF CONSTRUCTION. THE ENGINEER OF RECORD SHALL UPDATE BELOW WITH NOTES SPECIFIC TO THE PROJECT.

1. REACH OUT TO THE CITY FOR PRE-CONSTRUCTION MEETING AND CONSTRUCTION PERMIT.

2. SET-UP E/S CONTROLS AND TREE PROTECTION AND REACH OUT TO CITY FOR INSPECTION.

3. SET UP TEMPORARY TRAFFIC CONTROLS.

4. CONSTRUCT THE DRAINAGE PONDS AND STORM WATER FEATURES.

5. START UTILITY, ROAD, GRADING, FRANCHISE UTILITY AND ALL NECESSARY INFRASTRUCTURE CONSTRUCTION. [NOTE: PLEASE UPDATE AS PER THE PROJECT]

6. REQUEST FINAL WALKTHROUGH AND CONDUCT WALKTHROUGH WITH ENGINEER OF RECORD AND CITY DEPARTMENT.

7. ENGINEER OF RECORD IS RESPONSIBLE TO PREPARE AND SUBMIT CLOSEOUT DOCUMENTS FOR PROJECT CLOSEOUT.

EROSION CONTROL NOTES

1. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES AND SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.

2. THE TEMPORARY SPOILS DISPOSAL SITE IS TO BE SHOWN IN THE EROSION CONTROL MAP.

3. ANY ON-SITE SPOILS DISPOSAL SHALL BE REMOVED PRIOR TO ACCEPTANCE UNLESS SPECIFICALLY SHOWN ON THE PLANS. THE DEPTH OF SPOIL SHALL NOT EXCEED 10 FEET IN ANY AREA.

4. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 6 INCHES OF TOPSOIL AND COMPOST BLEND. TOPSOIL ON SINGLE FAMILY LOTS MAY BE INSTALLED WITH HOME CONSTRUCTION. THE TOPSOIL AND COMPOST BLEND SHALL CONSIST OF 75% TOPSOIL AND 25% COMPOST.

5. SEEDING FOR REESTABLISHING VEGETATION SHALL COMPLY WITH THE AUSTIN GROW GREEN GUIDE OR WILLIAMSON COUNTY'S PROTOCOL FOR SUSTAINABLE ROADSIDES (SPEC 164-WC001 SEEDING FOR EROSION CONTROL). RESEEDING VARIETIES OF BERMUDA SHALL NOT BE USED.

6. STABILIZED CONSTRUCTION ENTRANCE IS REQUIRED AT ALL POINTS WHERE CONSTRUCTION TRAFFIC IS EXITING THE PROJECT ONTO EXISTING PAVEMENT. LINEAR CONSTRUCTION PROJECTS MAY REQUIRE SPECIAL CONSIDERATION. ROADWAYS SHALL REMAIN CLEAR OF SILT AND MUD.

7. TEMPORARY STOP SIGNS SHOULD BE INSTALLED AT ALL CONSTRUCTION ENTRANCES WHERE A STOP CONDITION DOES NOT ALREADY EXIST. 8. IN THE EVENT OF INCREMENT WEATHER THAT MAY RESULT IN A FLOODING SITUATION, THE CONTRACTOR SHALL REMOVE INLET PROTECTION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.

WATER AND WASTEWATER NOTES

WATER AND WASTEWATER GENERAL NOTES

1. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 61 AND MUST BE CERTIFIED BY AND ORGANIZATION ACCREDITED BY ANSI.

2. ALL WATER SERVICE, WASTEWATER SERVICE AND VALVE LOCATIONS SHALL BE APPROPRIATELY STAMPED AS FOLLOWS:

WATER SERVICE "W" ON TOP OF CURB
WASTEWATER SERVICE "S" ON TOP OF CURB
VALVE "V" ON TOP OF CURB

3. OPEN UTILITIES SHALL NOT BE PERMITTED ACROSS THE EXISTING PAVED SURFACES. WATER AND WASTEWATER LINES ACROSS THE EXISTING PAVED SURFACES SHALL BE BORED AND INSTALLED IN STEEL ENCASEMENT PIPES. BELL RESTRAINTS SHALL BE PROVIDED AT JOINTS.

4. INTERIOR SURFACES OF ALL DUCTILE IRON POTABLE OR RECLAIMED WATER PIPE SHALL BE CEMENT-MORTAR LINED AND SEAL COATED AS REQUIRED BY AWWA C104.

5. SAND, AS DESCRIBED IN AUSTIN SPECIFICATION ITEM 510 PIPE, SHALL NOT BE USED AS BEDDING FOR WATER AND WASTEWATER LINES. ACCEPTABLE BEDDING MATERIALS ARE PIPE BEDDING STONE, PEA GRAVEL AND IN LIEU OF SAND, A NATURALLY OCCURRING OR MANUFACTURED STONE MATERIAL CONFORMING TO ASTM C33 FOR STONE QUALITY AND MEETING THE FOLLOWING GRADATION SPECIFICATION:

Table with 2 columns: SIEVE SIZE, PERCENT RETAINED BY WEIGHT. Rows include 1/2", 3/8", #4, #10.

6. DENSITY TESTING FOR TRENCH BACKFILL SHALL BE DONE IN MAXIMUM 12' LIFTS.

WATER

1. SAMPLING TAPS SHALL BE BROUGHT UP TO 3 FEET ABOVE GRADE AND SHALL BE EASILY ACCESSIBLE FOR CITY PERSONNEL. AT THE CONTRACTOR'S REQUEST, AND IN HIS PRESENCE, SAMPLES FOR BACTERIOLOGICAL TESTING WILL BE COLLECTED BY THE CITY OF LEANDER NOT LESS THAN 24 HOURS AFTER THE TREATED LINE HAS BEEN FLUSHED OF THE CONCENTRATED CHLORINE SOLUTION AND CHARGED WITH WATER APPROVED BY THE CITY.

2. CITY PERSONNEL WILL OPERATE OR AUTHORIZE THE CONTRACTOR TO OPERATE ALL WATER VALVES THAT WILL PASS THROUGH THE CITY'S POTABLE WATER. THE CONTRACTOR MAY BE FINED \$500 OR MORE, INCLUDING ADDITIONAL THEFT OF WATER FINES, IF A WATER VALVE IS OPERATED IN AN UNAUTHORIZED MANNER, REGARDLESS OF WHO OPERATED THE VALVE.

3. THE CONTRACTOR IS HEREBY NOTIFIED THAT CONNECTING TO, SHUTTING DOWN, OR TERMINATING EXISTING UTILITY LINES MAY HAVE TO OCCUR AT OFF-PEAK HOURS. SUCH HOURS ARE USUALLY OUTSIDE NORMAL WORKING HOURS AND POSSIBLY BETWEEN 12 AM AND 6 AM AFTER COORDINATING WITH CITY CONSTRUCTION INSPECTORS AND INFORMING AFFECTED PROPERTIES.

4. PRESSURE TAPS OR HOT TAPS SHALL BE IN ACCORDANCE WITH CITY OF LEANDER STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION AND SHALL FURNISH, INSTALL AND AIR TEST THE SLEEVE AND VALVE. A CITY OF LEANDER INSPECTOR MUST BE PRESENT WHEN THE CONTRACTOR MAKES A TAP, AND/OR ASSOCIATED TESTS. A MINIMUM OF TWO (2) WORKING DAYS NOTICE IS REQUIRED. "SIZE ON SIZE" TAPS SHALL NOT BE PERMITTED UNLESS MADE BY THE USE OF AN APPROVED FULL-CIRCLE GASKETED TAPPING SLEEVE. CONCRETE THRUST BLOCKS SHALL BE PLACED BEHIND AND UNDER ALL TAP SLEEVES A MINIMUM OF 24 HOURS PRIOR TO THE BRANCH BEING PLACED INTO SERVICE. THRUST BLOCKS SHALL BE INSPECTED PRIOR TO BACKFILL.

5. FIRE HYDRANTS ON MAINS UNDER CONSTRUCTION SHALL BE SECURELY WRAPPED WITH A BLACK POLY WRAP BAG AND TAPED INTO PLACE. THE POLY WRAP SHALL BE REMOVED WHEN THE MAINS ARE ACCEPTED AND PLACED INTO SERVICE.

6. THRUST BLOCKS OR RESTRAINTS SHALL BE IN ACCORDANCE WITH THE CITY OF LEANDER STANDARD SPECIFICATIONS AND REQUIRED AT ALL FITTINGS PER DETAIL OR MANUFACTURER'S RECOMMENDATION. ALL FITTINGS SHALL HAVE BOTH THRUST BLOCKS AND RESTRAINTS.

7. ALL DEAD END WATER MAINS SHALL HAVE "FIRE HYDRANT ASSEMBLY" OR "BLOW-OFF VALVE AND THRUST BLOCK" OR "BLOW-OFF VALVE AND THRUST RESTRAINTS". THRUST RESTRAINTS SHALL BE INSTALLED ON THE MINIMUM LAST THREE PIPE LENGTHS (STANDARD 20' LAYING LENGTH). ADDITIONAL THRUST RESTRAINTS MAY BE REQUIRED BASED UPON THE MANUFACTURERS RECOMMENDATION AND/OR ENGINEER'S DESIGN.

8. PIPE MATERIAL FOR PUBLIC WATER MAINS SHALL BE PVC (AWWA C800-DR14 MIN. 305 PSI PRESSURE RATING). WATER SERVICES (2" OR LESS) SHALL BE POLYETHYLENE TUBING (BLACK, 200PSI, AND SDR-91). COPPER PIPES AND FITTINGS ARE NOT ALLOWED IN THE PUBLIC RIGHT OF WAY. ALL PLASTIC PIPES FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL (NSF-PW).

9. ALL FIRE HYDRANT LEADS SHALL BE DUCTILE IRON PIPE (AWWA C115/C151 PRESSURE CLASS 350).

10. ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM 8-MIL POLYETHYLENE.

11. LINE FLUSHING OR ANY ACTIVITY USING A LARGE QUANTITY OF WATER MUST BE COORDINATED WITH THE PUBLIC WORKS DEPARTMENT.

12. ALL WATER METER BOXES SHALL BE:
a. SINGLE, 1" METER AND BELOW DFW37F-12-1CA, OR EQUAL
b. DUAL, 1" METERS AND BELOW DFW39F-12-1CA, OR EQUAL
c. 1.5" SINGLE METER DFW65C-14-1CA, OR EQUAL
d. 2" SINGLE METER DFW1730F-12-1CA, OR EQUAL

13. ALL WATER VALVE COVERS ARE TO BE PAINTED BLUE.

WASTEWATER

1. CURVILINEAR WASTEWATER DESIGN LAYOUT IS NOT PERMITTED.

2. MANDREL TESTING SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.

3. MANHOLES SHALL BE COATED PER CITY OF AUSTIN SPL WW-511 (RAVEN 405 OR SPRAYWALL). PENETRATIONS TO EXISTING WASTEWATER MANHOLES REQUIRE THE CONTRACTOR TO RECOAT THE ENTIRE MANHOLE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD SPECIFICATIONS SECTION NO. 506.5.

4. RECLAIMED AND RECYCLED WATER LINE SHALL BE CONSTRUCTED OF "PURPLE PIPE." ALL RECLAIMED AND RECYCLED WATER VALVE COVERS SHALL BE SQUARE AND PAINTED PURPLE.

5. FORCE MAIN PIPES NEED TO HAVE SWEEPING WYES FOR JOINTS.

STREET AND DRAINAGE NOTES

1. THE CITY OF LEANDER HAS NOT REVIEWED THESE PLANS FOR COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA). IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE COMPLIANCE WITH ALL LEGISLATION RELATED TO ACCESSIBILITY WITHIN THE LIMITS OF CONSTRUCTION SHOWN IN THESE PLANS. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARDS (TAS).

2. BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95% MAXIMUM DENSITY TO WITHIN 6" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN THE GREATEST DIMENSION. THE REMAINING 6" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND SUITABLE FOR SUSTAINING PLANT LIFE.

3. A MINIMUM OF 6" OF TOPSOIL SHALL BE PLACED BETWEEN THE CURB AND RIGHT-OF-WAY AND IN ALL DRAINAGE CHANNELS EXCEPT CHANNELS CUT IN STABLE ROCK.

4. DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT, INCLUDING GAS, ELECTRIC TELEPHONE, CABLE TV, ETC., SHALL BE A MINIMUM OF 36" BELOW SUBGRADE.

5. STREET RIGHT-OF-WAY SHALL BE GRADED AT A SLOPE OF 1/4" PER FOOT TOWARD THE CURB UNLESS OTHERWISE INDICATED.

6. ALL DRAINAGE PIPE IN PUBLIC RIGHT OF WAY OR EASEMENTS SHALL BE REINFORCED CONCRETE PIPE MINIMUM CLASS III OF TONGUE AND GROOVE OR O-RING JOINT DESIGN. CORRUGATED METAL PIPE IS NOT ALLOWED IN PUBLIC RIGHT OR WAY OR EASEMENTS.

7. THE CONTRACTOR MUST PROVIDE A PNEUMATIC TRUCK PER TxDOT SPEC FOR PROOF ROLLING.

8. ALL STRIPING, WITH THE EXCEPTION OF STOP BARS, CROSS WALKS, WORDS AND ARROWS, IS TO BE TYPE II (WATER BASED). STOP BARS, CROSS WALKS, WORDS AND ARROWS REQUIRE TYPE I THERMOPLASTIC.

9. MANHOLE FRAMES, COVERS, VALVES, CLEAN-OUTS, ETC. SHALL BE RAISED TO GRADE PRIOR TO FINAL PAVEMENT CONSTRUCTION.

10. A STOP BAR SHALL BE PLACED AT ALL STOP SIGN LOCATIONS.

11. THE GEOTECHNICAL ENGINEER SHALL INSPECT THE SUBGRADE FOR COMPLIANCE WITH THE DESIGN ASSUMPTIONS MADE DURING PREPARATION OF THE SOILS REPORT. ANY ADJUSTMENTS THAT ARE REQUIRED SHALL BE MADE THROUGH REVISIONS OF THE APPROVED CONSTRUCTION PLANS.

12. GEOTECHNICAL INVESTIGATION INFORMATION AND PAVEMENT RECOMMENDATIONS WERE PROVIDED BY MLA Geotechnical - April 2023 - Eng Job # 23101100.032. PAVEMENT RECOMMENDATIONS ARE AS FOLLOWS:

CONCRETE PAVING MAY BE APPROPRIATE FOR HEAVILY USED PARKING LOTS AND IS APPROPRIATE FOR HEAVY TRUCK MANEUVERING AND PARKING AREAS. TYPICAL REINFORCED CONCRETE PAVING IS 6 INCHES THICK. 8 TO 10 INCHES OF LIME STABILIZED SUBGRADE COULD BE REQUIRED IF THERE IS MORE THAN 2 FEET OF CLAY OR IF THE ROADS WILL BE PUBLICALLY MAINTAINED.

13. A TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL, CITY OF LEANDER STANDARD DETAILS AND TEXAS DEPARTMENT OF TRANSPORTATION CRITERIA, SHALL BE SUBMITTED TO THE CITY OF LEANDER FOR REVIEW AND APPROVAL PRIOR TO ANY PARTIAL OR COMPLETE ROADWAY CLOSURES. TRAFFIC CONTROL PLANS MUST BE SITE SPECIFIC AND SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER.

14. ALL LANE CLOSURES SHALL OCCUR ONLY BETWEEN THE HOURS OF 9 AM AND 4 PM UNLESS OTHERWISE NOTED ON THE PLANS. ANY NIGHT TIME LANE CLOSURES REQUIRE APPROVAL OF THE CITY ENGINEER AND SHALL OCCUR BETWEEN THE HOURS OF 8 PM AND 6 AM. LANE CLOSURES OBSERVED BY THE CITY DURING PEAK HOURS OF 6 AM TO 9 AM OR 4 PM TO 8 PM WILL BE SUBJECT TO A FINE AND/OR SUBSEQUENT ISSUANCE OF WORK STOPPAGE.

15. TEMPORARY ROCK CRUSHING IS NOT ALLOWED. ALL SOURCES OF FLEXIBLE BASE MATERIAL ARE REQUIRED TO BE APPROVED BY THE CITY. PRIOR TO BASE PLACEMENT ALL CURRENT TRIAXIAL TEST REPORTS FOR PROPOSED STOCK PILES ARE TO BE SUBMITTED TO THE CITY CONSTRUCTION INSPECTOR FOR REVIEW AND APPROVAL.

16. AT ROAD INTERSECTIONS THAT HAVE A VALLEY GUTTER, THE CROWN TO THE INTERSECTING ROAD WILL BE CULMINATED AT A DISTANCE OF 40 FEET FROM THE INTERSECTING CURB LINE UNLESS OTHERWISE NOTED.

17. NO PONDING OF WATER SHALL BE ALLOWED TO COLLECT ON OR NEAR THE INTERSECTION OF PRIVATE DRIVEWAYS AND PUBLIC STREETS. RECONSTRUCTION OF THE DRIVEWAY APPROACH SHALL BE AT THE CONTRACTOR'S EXPENSE.

18. ALL DRIVEWAY APPROACHES SHALL HAVE A UNIFORM TWO PERCENT SLOPE WITHIN THE PUBLIC RIGHT OF WAY UNLESS APPROVED IN WRITING BY THE ENGINEERING DEPARTMENT.

19. IMPROVEMENTS THAT INCLUDE RECONSTRUCTION OF AN EXISTING TYPE II DRIVEWAY SHALL BE DONE IN A MANNER WHICH RETAINS OPERATIONS OF NOT LESS THAN HALF OF THE DRIVEWAY TO REMAIN OPEN AT ALL TIMES. FULL CLOSURE OF SUCH DRIVEWAY CAN BE CONSIDERED WITH WRITTEN AUTHORIZATION OBTAINED BY THE CONTRACTOR FROM ALL PROPERTY OWNERS AND ACCESS EASEMENT RIGHT HOLDERS ALLOWING THE FULL CLOSURE OF THE DRIVEWAY.

20. CONTRACTOR MUST CLEAR FIVE (5) FEET BEYOND ALL PUBLIC RIGHT OF WAY TO PREVENT FUTURE VEGETATIVE GROWTH INTO THE SIDEWALK AREAS.

21. SLOPE OF NATURAL GROUND ADJACENT TO THE PUBLIC RIGHT OF WAY SHALL NOT EXCEED 3:1 SLOPE. IF A 3:1 SLOPE IS NOT POSSIBLE, SLOPE PROTECTION OR RETAINING WALL MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE.

22. THERE SHALL BE NO WATER, WASTEWATER OR DRAINAGE APPURTENANCES, INCLUDING BUT NOT LIMITED TO VALVES, FITTINGS, METERS, CLEAN-OUTS, MANHOLES, OR VAULTS IN ANY DRIVEWAY, SIDEWALK, TRAFFIC OR PEDESTRIAN AREA.

23. PUBLIC SIDEWALKS SHALL NOT USE CURB INLETS AS PARTIAL WALKING SURFACE. SIDEWALKS SHALL NOT USE TRAFFIC CONTROL BOXES, METERS, CHECK VALVE VAULTS, COMMUNICATION VAULTS, OR OTHER BURIED OR PARTIALLY BURIED INFRASTRUCTURE AS A VEHICULAR OR PEDESTRIAN SURFACE.

24. ALL WET UTILITIES SHALL BE INSTALLED AND ALL DENSITIES MUST HAVE PASSED INSPECTION(S) PRIOR TO THE INSTALLATION OF DRY UTILITIES.

25. DRY UTILITIES SHALL BE INSTALLED AFTER SUBGRADE IS CUT AND BEFORE THE FIRST COURSE OF BASE. NO TRENCHING COMPACTED BASE. IF NECESSARY DRY UTILITIES INSTALLED AFTER FIRST COURSE BASE SHALL BE BORED ACROSS THE FULL WIDTH OF THE PUBLIC RIGHT-OF-WAY.

26. A MINIMUM OF SEVEN (7) DAYS OF CURE TIME IS REQUIRED FOR HMAC PRIOR TO THE INTRODUCTION OF VEHICULAR TRAFFIC TO ALL STREETS.

TRENCH SAFETY NOTES

1. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT ARE DESCRIBED IN ITEM 509S 'TRENCH SAFETY SYSTEMS' OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS AND SHALL BE IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATION SAFETY AND HEALTH ADMINISTRATION REGULATIONS.

GRADING NOTES

1. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.

2. THE CONTRACTOR SHALL CONSTRUCT EARTHEN EMBANKMENTS WITH SLOPES NO STEEPER THAN 3:1 AND COMPACT SOIL TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS.

3. AREAS OF SOIL DISTURBANCE ARE LIMITED TO GRADING AND IMPROVEMENTS SHOWN. ALL OTHER AREAS WILL NOT BE DISTURBED.

BENCHMARK NOTES

MONUMENTS HAVE BEEN PLACED OR REFERENCE TO MONUMENTS AT ALL MAJOR BOUNDARY CORNERS OF THE BOUNDARY OR PROPERTY, UNLESS ALREADY MARKED OR REFERENCED BY EXISTING MONUMENTS OR WITNESSES IN CLOSE PROXIMITY TO THE CORNER.

BENCHMARK LOCATIONS:
POINT #5493, NORTHING: 10202825.796, EASTING: 3086000.751, ELEV: 1014.33, MAG NAIL SET IN CONCRETE

POINT #5495, NORTHING: 10204497.854, EASTING: 3086563.187, ELEV: 973.56, MAG NAIL SET IN CONCRETE

POINT #5497, NORTHING: 10204490.352, EASTING: 3085341.982, ELEV: 982.20, MAG NAIL SET IN CONCRETE

THE BASIS OF BEARING WAS ESTABLISHED USING THE TRIMBLE VRS NETWORK, NAD (83), TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, 4203, US SURVEY FOOT, GRID, A SURVEY PLAT WAS PREPARED BY A SEPARATE DOCUMENT.



675 KAUFFMAN LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 380
AUSTIN, TX 78731

Table with 3 columns: PREPARED FOR, DATE, DESCRIPTION.

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642
GENERAL NOTES

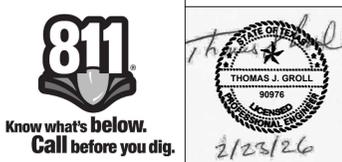


Table with 2 columns: Field, Value. Fields include Date, Check by, Drawn By, Sheet No, Project No.

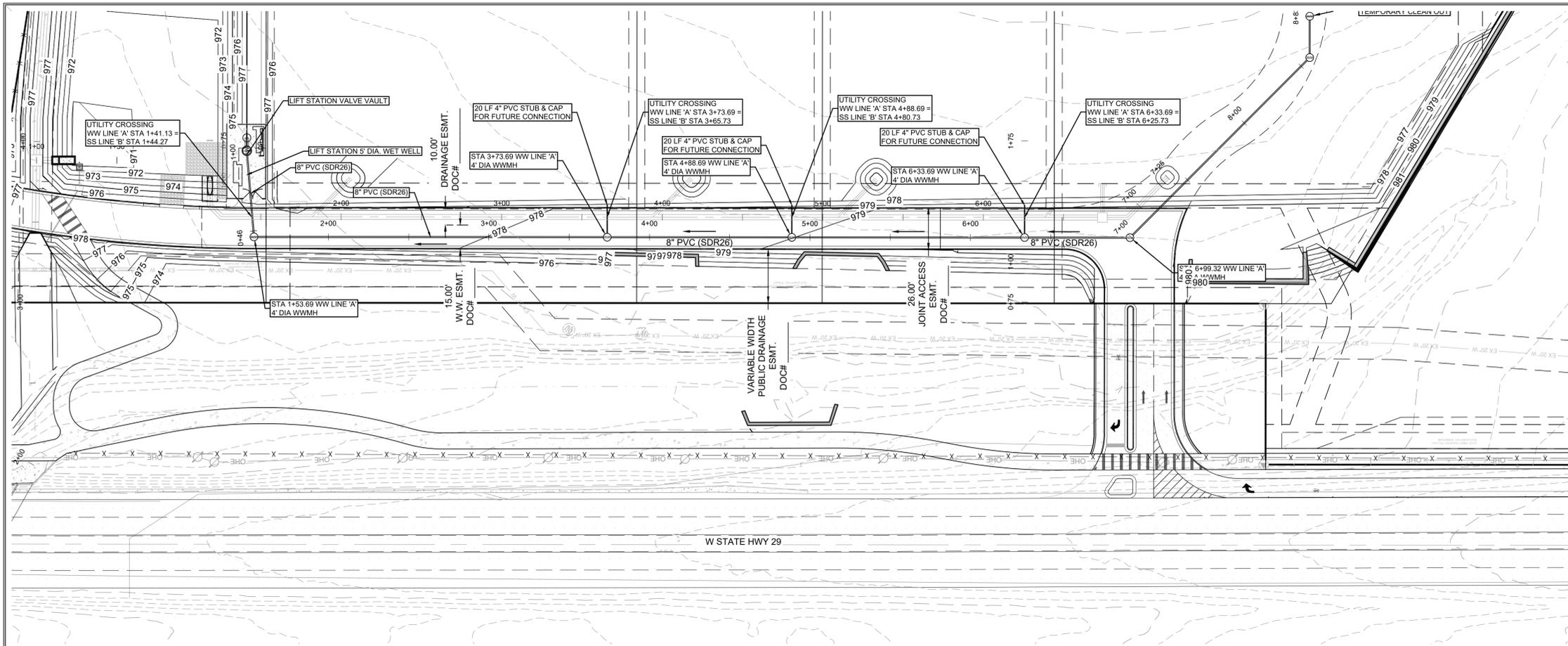












0 40' 80'  
SCALE: 1" = 40'

**LEGEND**

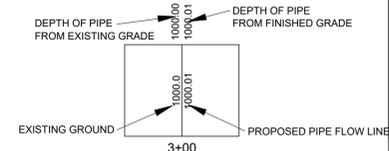
- 504 - EXISTING CONTOUR
- 500 - PROPOSED CONTOUR
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE

**PROFILE LEGEND**

- PROPOSED FINISHED GRADE
- EXISTING GRADE (CENTER)

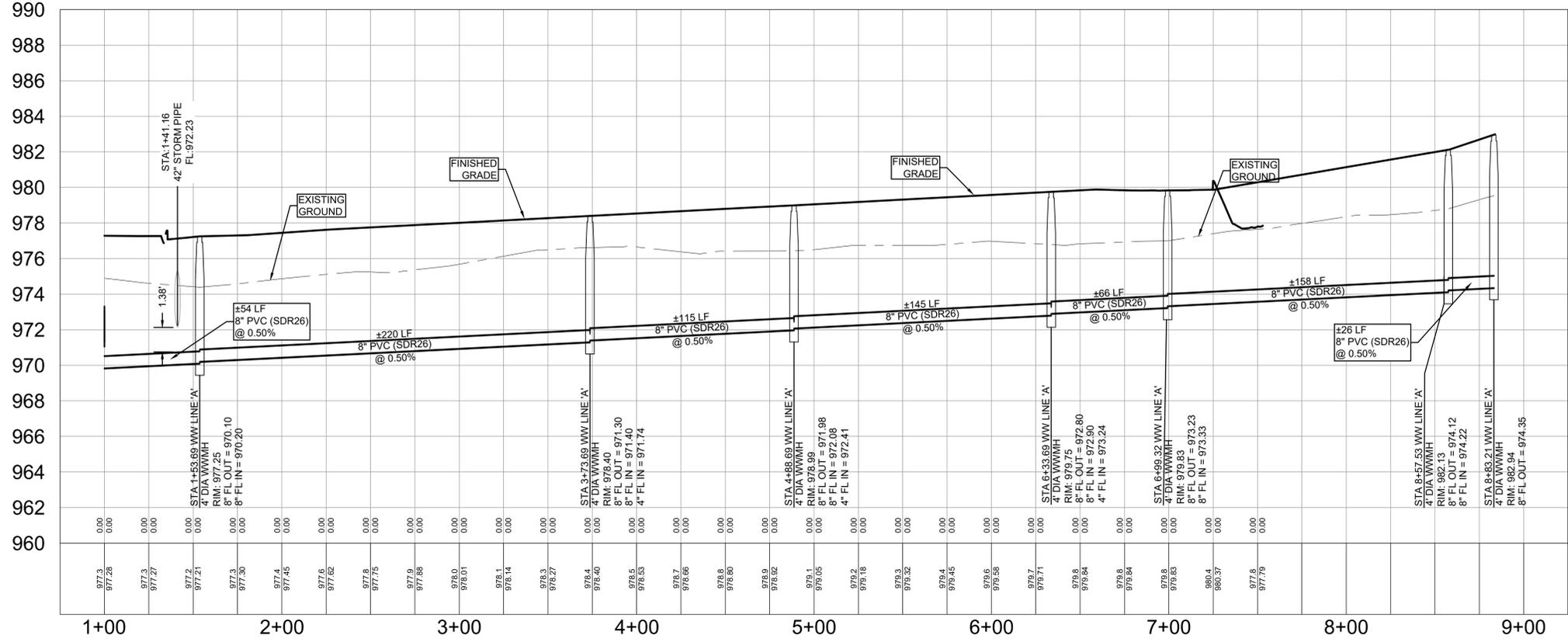
**PROFILE SCALE**

HORIZONTAL: 1" = 40', VERTICAL: 1" = 4'



- WASTEWATER NOTES:**
- ALL GRAVITY WASTEWATER LINES SHALL BE PVC SDR 26 AND CONFORM TO ASTM D 3034 WITH A PIPE STIFFNESS OF 115 PSI.
  - ALL GRAVITY SANITARY SEWER LINES CROSSING POTABLE WATER LINES SHALL CONFORM TO 30 TAC 290.44(A)(4)(B). ALL WATER LINE CROSSING TO HAVE ONE JOINT SDR-26 PVC PIPE CENTERED ON WATER LINE.
  - ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER COA DETAIL 506S-7 OR 506S-8 (DROP MANHOLE) 506S-9 OR 506S-10 (STANDARD MANHOLE), AND COA SPECIFICATION 506S.
  - ALL MANHOLES OUTSIDE OF PUBLIC RIGHT-OF-WAY AND MANHOLES OUTSIDE OF PAVED AREAS SHALL HAVE BOLTED AND GASKETED WATERTIGHT COVERS.
  - HORIZONTAL AND VERTICAL ALIGNMENT TO BE CHECKED AT NO GREATER THAN 50' INTERVALS.
  - ALL WASTEWATER SERVICES TO BE INSTALLED PER COA DETAIL 520-AW-01. NO CLEANOUTS ARE TO BE LOCATED WITHIN SIDEWALKS, DRIVEWAYS OR CURB RAMPS.
  - ALL WASTEWATER MANHOLES TO BE COATED (SPL WW-511).
  - REFER TO PROFILE SHEETS FOR THE LOCATION OF DEEP SERVICES AND 5% SERVICES.

**WW LINE 'A'**



Wastewater Determination Factors - Commercial	
Average Dry Weather Flow =	71.4 gal/person/day x population/1440
Peak Flow Factor =	4.0
Inflow & Infiltration =	750.0 gal/acre/day
L.U.E. =	2.80 people/L.U.E.

675 Kauffman Loop Wastewater Generation Calculations		
Total L.U.E.'s =	70	12-hr flow
Average Dry Weather Flow =	14,000 gpd	19.44 gpm
Peak Dry Weather Flow =	56,306 gpd	78.20 gpm
Site Area =	10.16 ac	
Inflow & Infiltration =	7,620 gpd	5.29 gpm
Peak Wet Weather Flow =	63,926 gpd	83.49 gpm



7801 N. CAPITAL OF TEXAS HWY.  
SUITE 380  
AUSTIN, TX 78731

NO.	DATE	DESCRIPTION

WASTEWATER COLLECTION SYSTEM PLAN  
675 KAUFFMAN LOOP  
LEANDER, TEXAS 78642

**WASTEWATER LINE 'A'**



Date: 2/23/2026  
Check by: TJG  
Drawn by: MBS/MRC  
Sheet No. 08 of 18  
Project No.











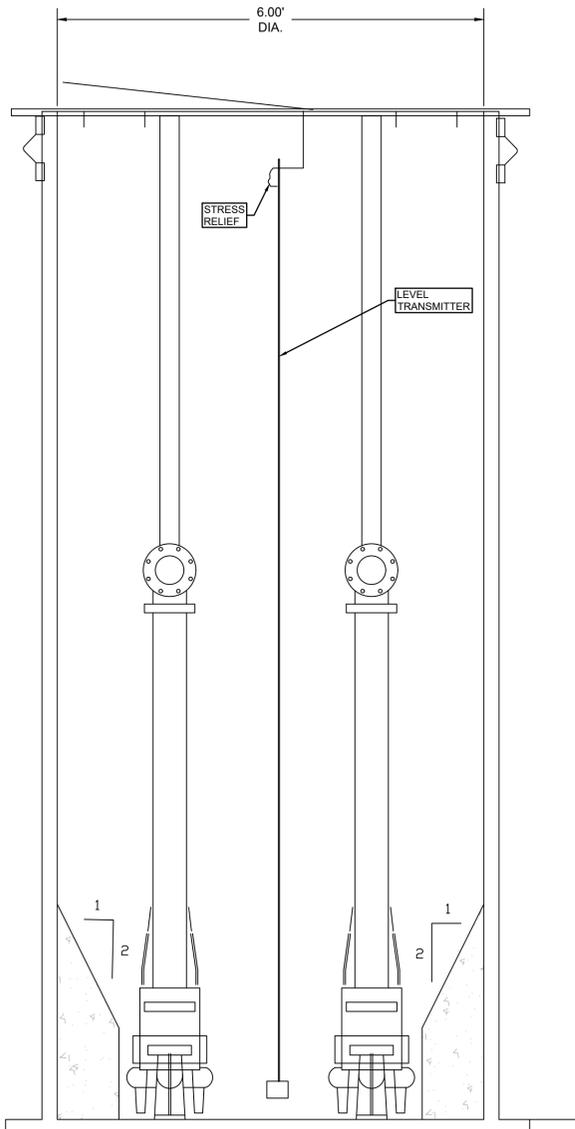
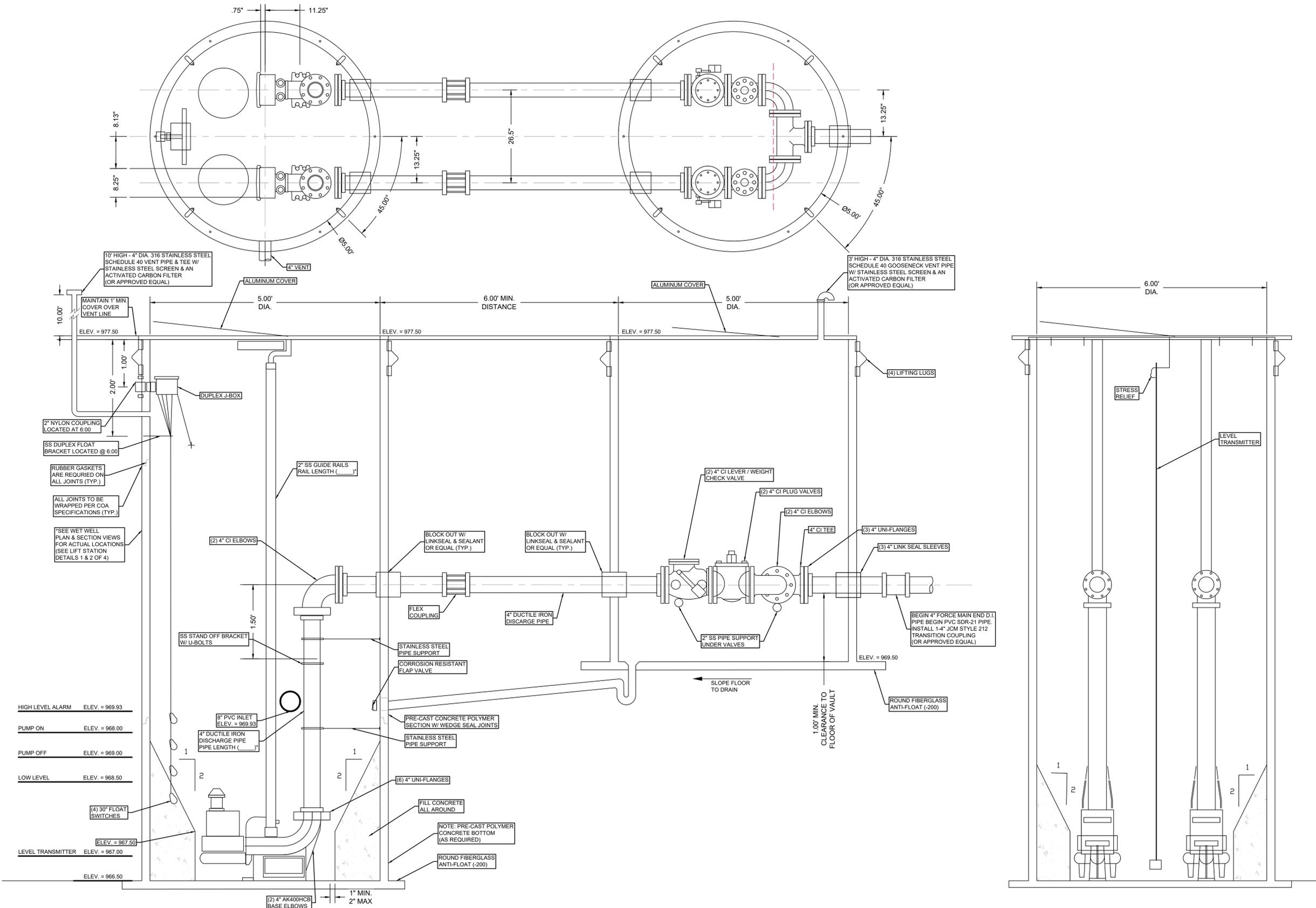




NO.	DATE	DESCRIPTION



**LIFT STATION**  
**ELEVATION SECTION**  
SCALE: 1" = 1' - 0"



- HIGH LEVEL ALARM ELEV. = 969.93
- PUMP ON ELEV. = 968.00
- PUMP OFF ELEV. = 969.00
- LOW LEVEL ELEV. = 968.50

- (4) 30" FLOAT SWITCHES
- LEVEL TRANSMITTER ELEV. = 967.00
- ELEV. = 966.50

(2) 4" AK400HCB BASE ELBOWS

NOTE: PRE-CAST POLYMER CONCRETE BOTTOM (AS REQUIRED)

FILL CONCRETE ALL AROUND

ROUND FIBERGLASS ANTI-FLOAT (-200)

BEGIN 4" FORCE MAIN END D.I. PIPE BEGIN PVC SDR-21 PIPE. INSTALL 1-4" JCM STYLE Z12 TRANSITION COUPLING (OR APPROVED EQUAL)

1.00' MIN. CLEARANCE TO FLOOR OF VAULT

ELEV. = 969.50

SLOPE FLOOR TO DRAIN

PRE-CAST CONCRETE POLYMER SECTION W/ WEDGE SEAL JOINTS

STAINLESS STEEL PIPE SUPPORT

CORROSION RESISTANT FLAP VALVE

4" DUCTILE IRON DISCHARGE PIPE PIPE LENGTH ( )

SS STAND OFF BRACKET W/ U-BOLTS

(2) 4" CI ELBOWS

2" SS GUIDE RAILS RAIL LENGTH ( )

DUPLEX J-BOX

ALUMINUM COVER

5.00' DIA.

6.00' MIN. DISTANCE

ALUMINUM COVER

5.00' DIA.

4" VENT

3" HIGH - 4" DIA. 316 STAINLESS STEEL SCHEDULE 40 GOOSENECK VENT PIPE W/ STAINLESS STEEL SCREEN & AN ACTIVATED CARBON FILTER (OR APPROVED EQUAL)

05.00'

45.00'

13.25"

26.5"

10.00'

8.25"

8.13"

11.25"

.75"

MAINTAIN 1" MIN. COVER OVER VENT LINE

ELEV. = 977.50

2.00'

1.00'

2" NYLON COUPLING LOCATED AT 6.00'

SS DUPLEX FLOAT BRACKET LOCATED @ 6.00'

RUBBER GASKETS ARE REQUIRED ON ALL JOINTS (TYP.)

ALL JOINTS TO BE WRAPPED PER COA SPECIFICATIONS (TYP.)

\*SEE WET WELL PLAN & SECTION VIEWS FOR ACTUAL LOCATIONS (SEE LIFT STATION DETAILS 1 & 2 OF 4)

2" SS PIPE SUPPORT UNDER VALVES

(2) 4" CI LEVER / WEIGHT CHECK VALVE

(2) 4" CI PLUG VALVES

(2) 4" CI ELBOWS

4" CI TEE

(3) 4" UNI-FLANGES

(3) 4" LINK SEAL SLEEVES

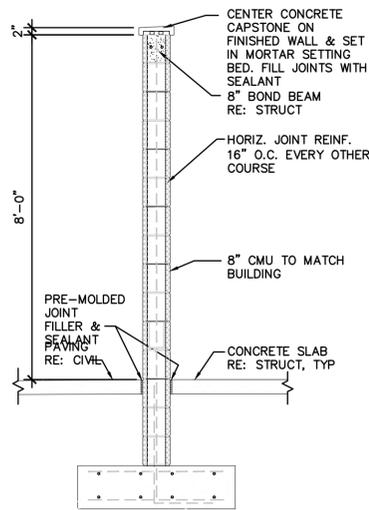
BLOCK OUT W/ LINKSEAL & SEALANT OR EQUAL (TYP.)

BLOCK OUT W/ LINKSEAL & SEALANT OR EQUAL (TYP.)

FLEX COUPLING

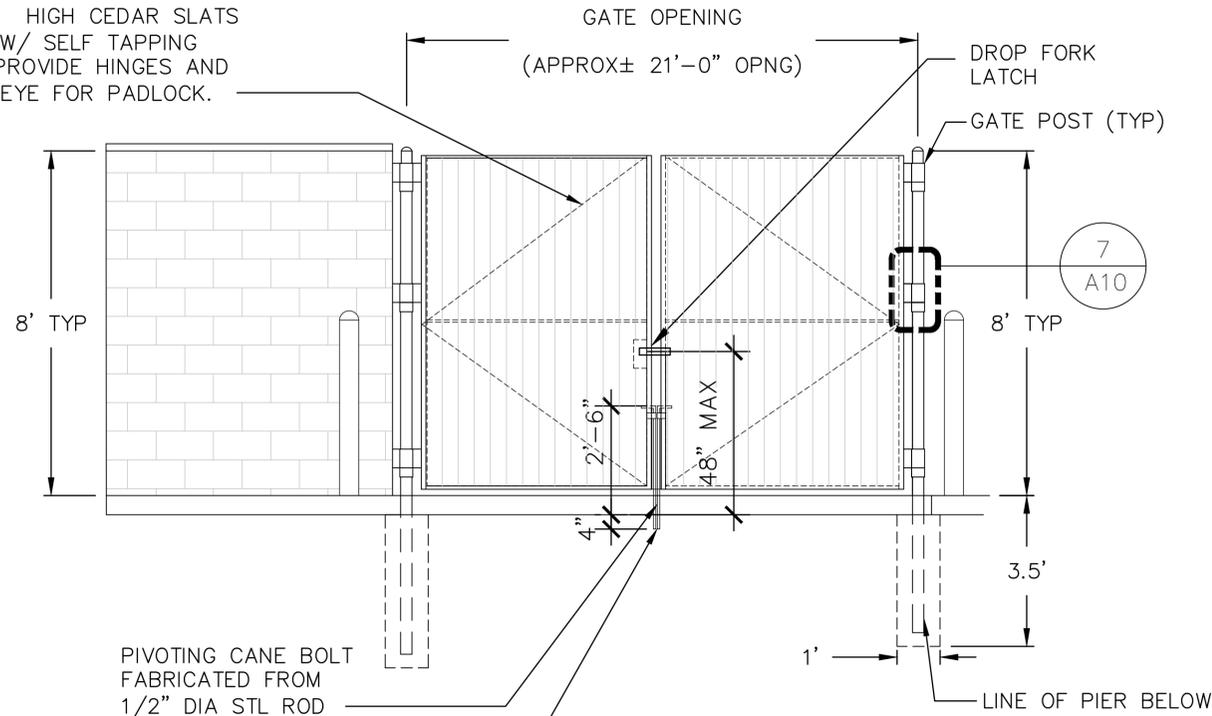
4" DUCTILE IRON DISCHARGE PIPE

ROUND FIBERGLASS ANTI-FLOAT (-200)

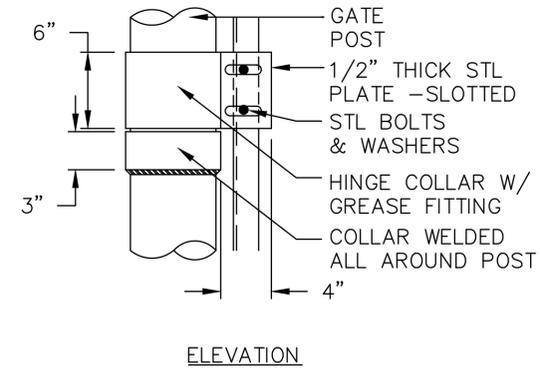


**LIFT STATION ENCLOSURE WALL SECTION**  
NOT TO SCALE

6'-0"± GATE 1.9" O.D. GALV FRAME  
W/ 4" x 8' HIGH CEDAR SLATS  
ATTACHED W/ SELF TAPPING  
SCREWS. PROVIDE HINGES AND  
LATCH W/ EYE FOR PADLOCK.



**LIFT STATION ENCLOSURE GATE ELEVATION**  
NOT TO SCALE



**LIFT STATION ENCLOSURE GATE HINGE**  
NOT TO SCALE

**GRINDER PUMPS**  
Model: AGP500

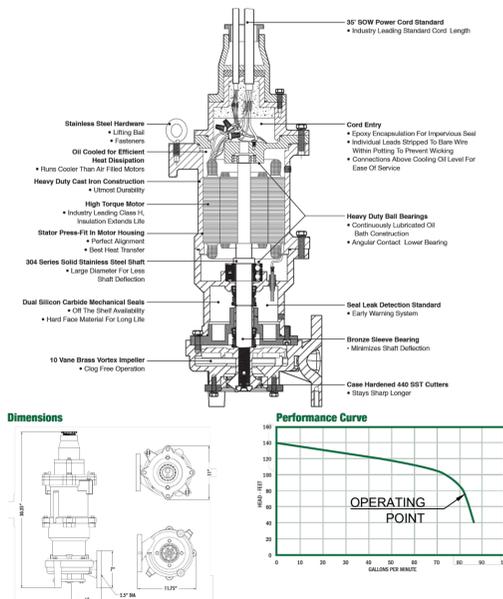


**Features**

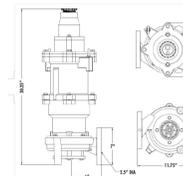
- Heavy duty cast iron construction
- Dual mechanical silicon carbide seals
- Brass, 10 vane vortex impeller
- Quick change power cords
- Wilson o-rings
- Double Row Angular contact tower bearing
- Seal leak detection

**Specifications**

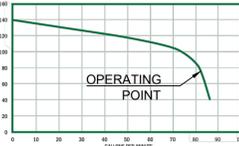
<b>Discharge Size</b>	2-1/2"
<b>Impeller Type</b>	10 Vane, Vortex, Brass
<b>Cable Length</b>	35'
<b>Lead Acidity</b>	12"
<b>Scale Conversion</b>	140°F - Intermediate 100°F - Continuous
<b>Maximum Liquid Temp.</b>	140°F - Intermediate 100°F - Continuous
<b>Acceptable pH Range</b>	6-8
<b>Winding Insulation</b>	180°C
<b>Insulation Class</b>	F
<b>Motor Cord Type</b>	SOW
<b>Motor Housing</b>	Cast Iron
<b>Casing</b>	Cast Iron
<b>Impeller</b>	Brass
<b>Motor Shaft</b>	304SS
<b>Hardware</b>	SS
<b>10 Vane</b>	SS
<b>Mechanical Seals</b>	SiC
<b>Upper Bearings</b>	SiC
<b>Lower Bearings</b>	3207 Angular Contact (Double row)
<b>Cutters</b>	440C2 - Case Hardened
<b>Motor Windings</b>	Copper
<b>Motor Data</b>	
<b>HP</b>	3/40
<b>Motor Type</b>	CEC/110% Induction (PH)
<b>Insulation Class</b>	F
<b>Stator Winding Temp</b>	180°C
<b>Winding Insulation Temp</b>	±10%
<b>Voltage Tolerance</b>	±10%
<b>IP</b>	200/200/400
<b>Voltage</b>	208/230/460
<b>Phase</b>	1/3
<b>Service Factor</b>	1.4



**Dimensions**



**Performance Curve**



Honest, Professional, Dependable  
1899 College Street, Ashland, Ohio 44805  
Telephone: 855-281-6830 • Fax: 877-326-1994 • ashlandpump.com



PREPARED FOR:  
7801 N. CAPITAL OF TEXAS HWY.  
SUITE 380  
AUSTIN, TX 78731

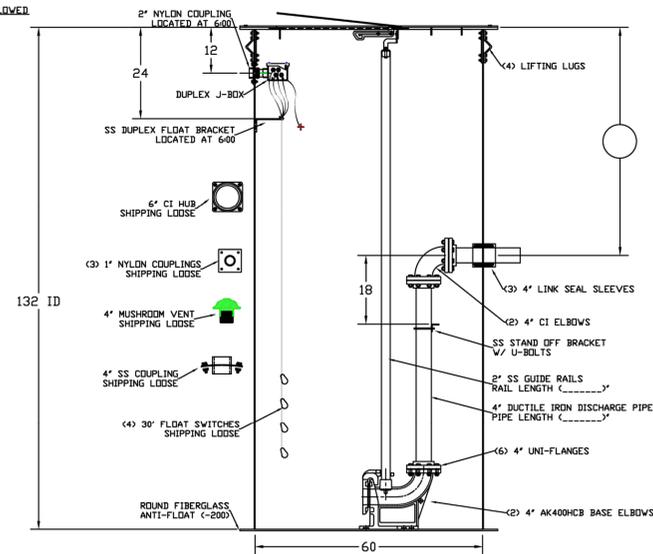
NO.	DATE	DESCRIPTION

WASTEWATER COLLECTION SYSTEM PLAN  
675 KAUFFMAN LOOP  
LEANDER, TEXAS 78642  
**LIFT STATION PLAN**  
**DETAILS 2**



Date: 2/23/2026  
Checked by: TJG  
Drawn by: MBS/MRC  
Sheet No. 16 of 18  
Project No.

NOTE: MEASUREMENTS OF BASINS ARE ALL I.D. IF NOT OTHERWISE SPECIFIED  
 \*\*\*BACKFILL INSTRUCTIONS TO BE FOLLOWED FOR AK IND. TO WARRANTY BASIN\*\*\*

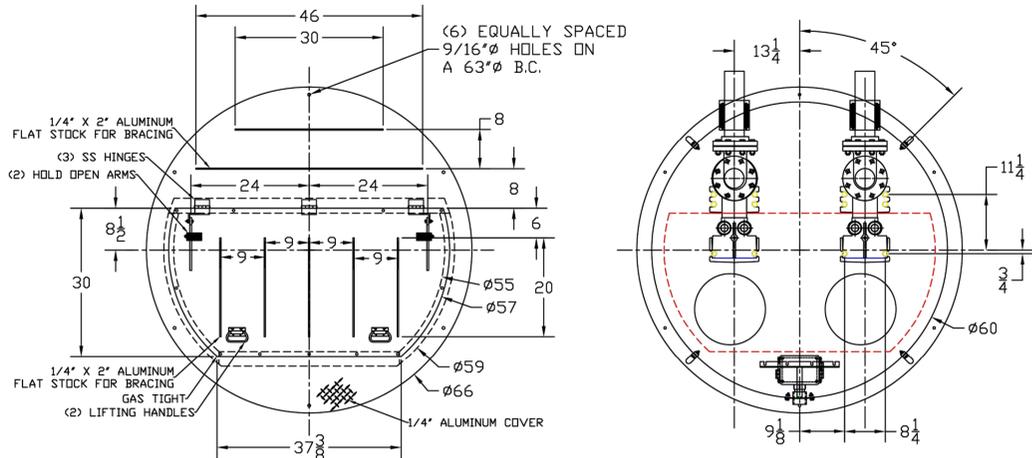


TO CUSTOMER:  
 EXAMINE THIS DRAWING CAREFULLY. VERIFY ALL DIMENSIONS, LOCATIONS, AND ELEVATIONS FOR ACCURACY. SIGN AND DATE AT LINE. ANY MODIFICATIONS OR CHANGES TO THIS DRAWING OR FINISHED PRODUCT, AFTER IT HAS BEEN SIGNED, MAY RESULT IN ADDITIONAL CHARGES AND SHIPPING DELAYS. NO JOB WILL BE STARTED UNTIL CONFIRMATION THROUGH SIGNATURE.

(REQUESTED SIGNATURE & DATE PER ABOVE)  
 CONFIRMATION THROUGH SIGNATURE RELEASES ORDER FOR PRODUCTION

DRAWN FOR: <b>HYDRO SOURCE</b>		PO# ---	DISCONNECTS: AK400HCB	SHEET 1 OF 4	Revision 0
JOB REFERENCE / Notes: KAUFFMAN LOOP		QUOTE # 89356	PUMPS: ---	"THE BEST AROUND UNDERGROUND" 	
BASIN DESCRIPTION: 60 X 132-200		DRAWN BY: B.SNYDER	DATE: 7/29/24		
COVER DESCRIPTION: 1/4" ALUMINUM GAS TIGHT HDC		CHECKED BY:	DATE CHECKED:	PH: (574)-936-6022 FX: (574)-936-5811 WWW.AKINDUSTRIES.COM	

NOTE: MEASUREMENTS OF BASINS ARE ALL I.D. IF NOT OTHERWISE SPECIFIED  
 \*\*\*BACKFILL INSTRUCTIONS TO BE FOLLOWED FOR AK IND. TO WARRANTY BASIN\*\*\*

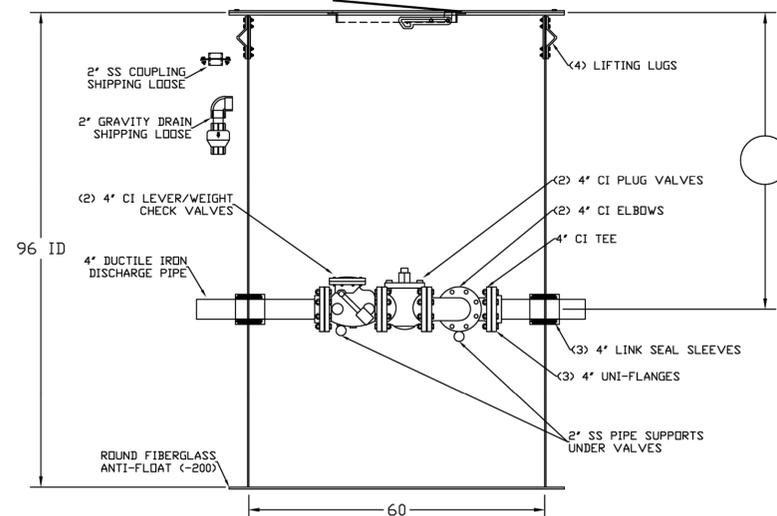


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(REQUESTED SIGNATURE & DATE PER ABOVE)  
 CONFIRMATION THROUGH SIGNATURE RELEASES ORDER FOR PRODUCTION

DRAWN FOR: <b>HYDRO SOURCE</b>		PO# ---	DISCONNECTS: AK400HCB	SHEET 2 OF 4	Revision 0
JOB REFERENCE / Notes: KAUFFMAN LOOP		QUOTE # 89356	PUMPS: ---	"THE BEST AROUND UNDERGROUND" 	
BASIN DESCRIPTION: 60 X 132-200		DRAWN BY: B.SNYDER	DATE: 7/29/24		
COVER DESCRIPTION: 1/4" ALUMINUM GAS TIGHT HDC		CHECKED BY:	DATE CHECKED:	PH: (574)-936-6022 FX: (574)-936-5811 WWW.AKINDUSTRIES.COM	

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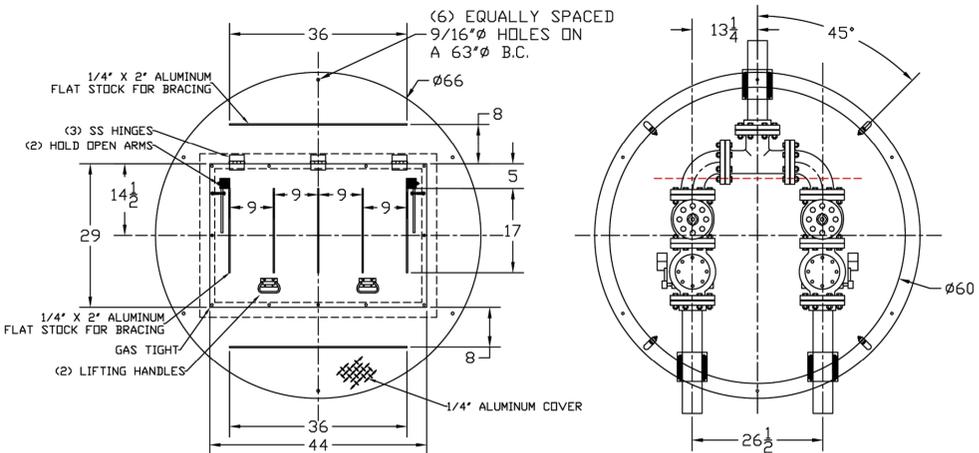


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(REQUESTED SIGNATURE & DATE PER ABOVE)  
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DRAWN FOR: <b>HYDRO SOURCE</b>		PO# ---	DISCONNECTS: AK400HCB	SHEET 3 OF 4	Revision 0
JOB REFERENCE / Notes: KAUFFMAN LOOP		QUOTE # 89356	PUMPS: ---	"THE BEST AROUND UNDERGROUND" 	
BASIN DESCRIPTION: 60 X 96-200 DETACHED VB		DRAWN BY: B.SNYDER	DATE: 7/29/24		
COVER DESCRIPTION: 1/4" ALUMINUM GAS TIGHT HDC		CHECKED BY:	DATE CHECKED:	PH: (574)-936-6022 FX: (574)-936-5811 WWW.AKINDUSTRIES.COM	

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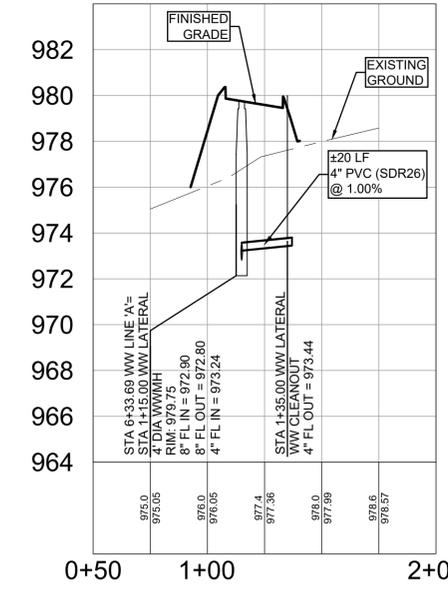
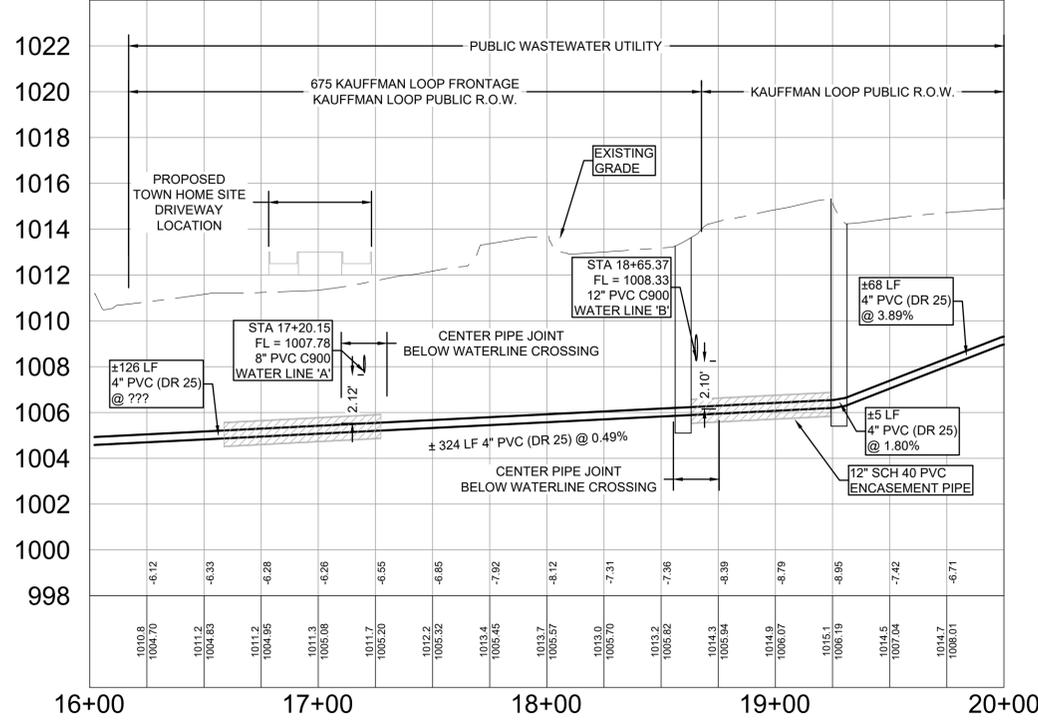
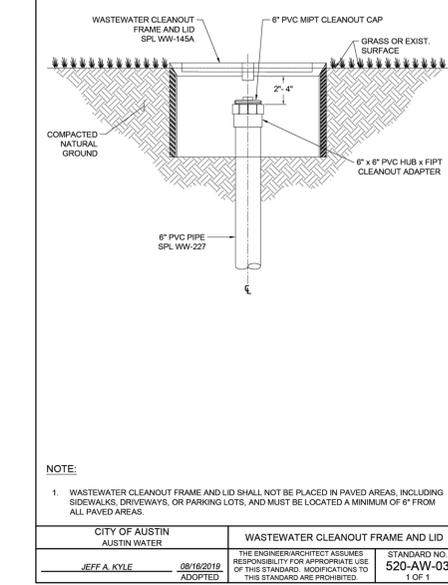
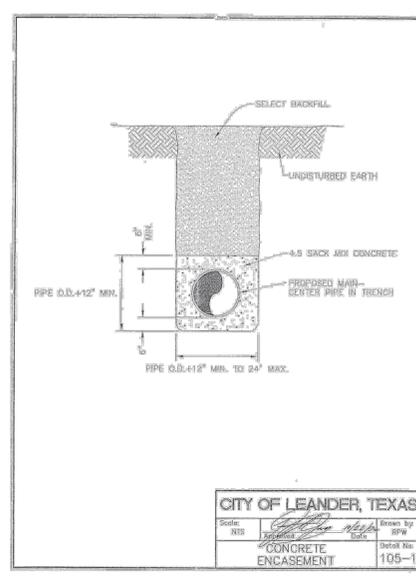
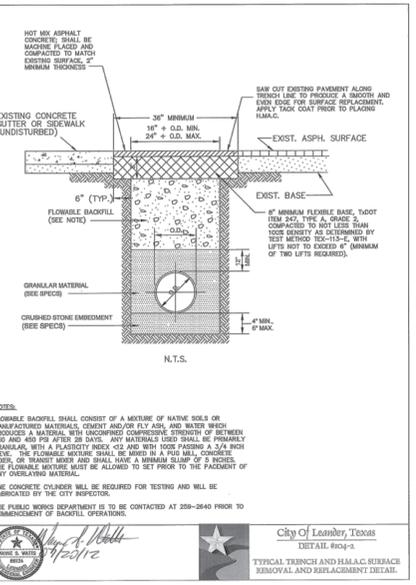
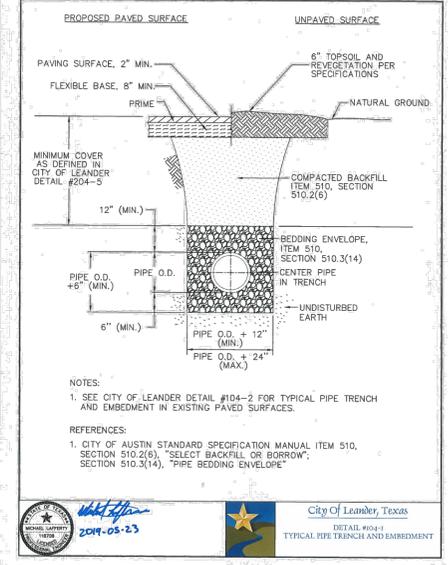
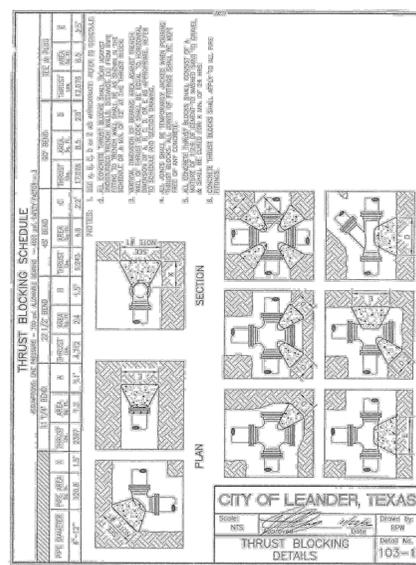
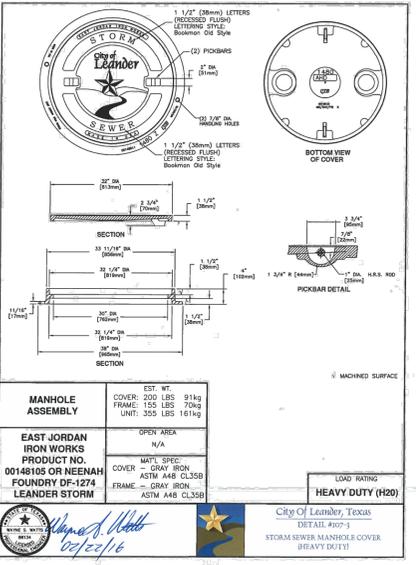
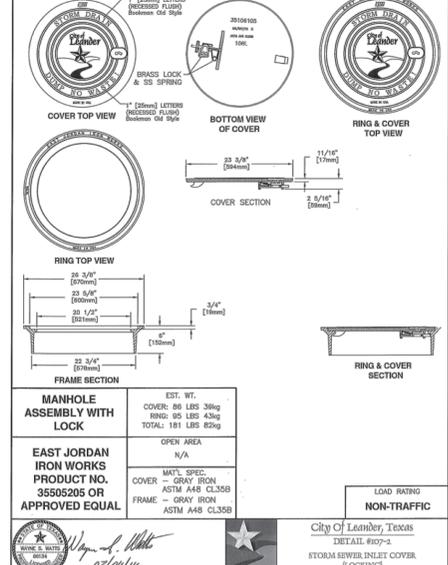
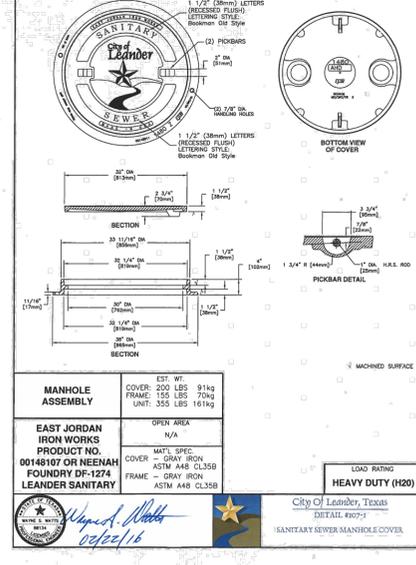
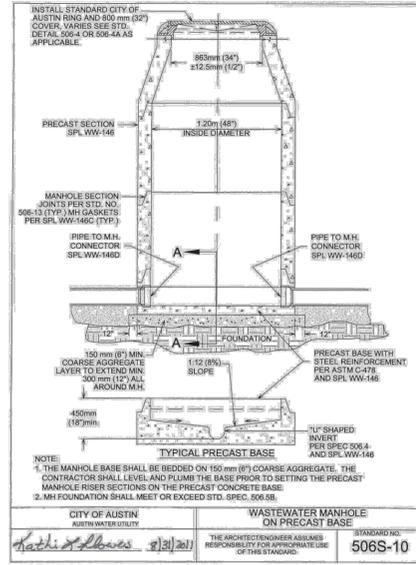
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(REQUESTED SIGNATURE & DATE PER ABOVE)  
 CONFIRMATION THROUGH SIGNATURE RELEASES ORDER FOR PRODUCTION

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JOB REFERENCE / Notes: KAUFFMAN LOOP		QUOTE # 89356	PUMPS: ---	"THE BEST AROUND UNDERGROUND" 	
BASIN DESCRIPTION: 60 X 96-200 DETACHED VB		DRAWN BY: B.SNYDER	DATE: 7/29/24		
COVER DESCRIPTION: 1/4" ALUMINUM GAS TIGHT HDC		CHECKED BY:	DATE CHECKED:	PH: (574)-936-6022 FX: (574)-936-5811 WWW.AKINDUSTRIES.COM	



Date:	2/23/2026
Check by:	TJG
Drawn by:	MBS/MRC
Sheet No.:	17 of 18
Project No.:	



**TOM GROLL**  
ENGINEERING

675 KAUFFMAN, LP  
7801 N. CAPITAL OF TEXAS HWY.  
SUITE 390  
AUSTIN, TX 78731

WASTEWATER COLLECTION SYSTEM PLAN  
675 KAUFFMAN LOOP  
LEANDER, TEXAS 78642

UTILITY DETAILS SHEET



Date: 2/23/2026  
Check by: TJG  
Drawn by: MBS/MRC  
Sheet No. 18 of 18  
Project No.

# 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: Thomas J. Groll, P.E.

Date: March 21, 2025

Signature of Customer/Agent:



Regulated Entity Name: 675 Kauffman Loop

## 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: Unnamed tributary to the Middle Fork San Gabriel River

### ***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.

## **Temporary Stormwater Section Attachments**

- Attachment A: Spill Response Actions
- Attachment B: Potential Sources of Contamination
- Attachment C: Sequence of Major Construction
- Attachment D: Best Management Practices
- Attachment E: Request to Temporarily Seal a Feature
- Attachment F: Structural Practices
- Attachment G: Drainage Area Map
- Attachment H: Temporary Sediment Pond Plans and Calculations
- Attachment I: Inspection and Maintenance of BMP's
- Attachment J: Schedule of Interim and Permanent Soil Stabilization

## Attachment A - Spill Response Actions

### Education

1. The contractor shall educate their employees about the following matters:
  - a. Different materials pollute in different amounts. The site Superintendent shall be knowledgeable about the types of materials (fuels, solvents, lubricants, coatings, piping, embedment) that will be used for construction and be prepared to respond appropriately to an unplanned release of materials.
  - b. Ensure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when a spill must be reported to the TCEQ.
  - c. Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
  - d. Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
  - e. Establish a continuing education program to indoctrinate new employees.
  - f. Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

### General Measures

1. To the extent that the work can be accomplished safely, spills of oil, petroleum products, and substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
2. Store hazardous materials and wastes in covered containers and protect from vandalism.
3. Place a stockpile of spill cleanup materials where it will be readily accessible.
4. Train employees in spill prevention and cleanup.
5. Designate responsible individuals to oversee and enforce control measures.
6. Spills should be covered and protected during rainfall events to the extent that it does not compromise cleanup activities.
7. Do not bury or wash spills with water.
8. Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
9. Do not allow water used for cleaning and decontamination to enter storm drains or water courses. Collect and dispose of contaminated water in accordance with applicable regulations.
10. Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
11. Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
12. Keep waste storage areas clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

## **Cleanup**

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

## **Minor Spills**

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

## **Semi-Significant Spills**

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

Spills should be cleaned up immediately:

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

## **Significant/Hazardous Spills**

For significant or hazardous spills that are in reportable quantities:

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

In the event of a reportable spill, the following Emergency Response Agencies can be contacted for assistance. Always inform the on-site supervisor of a reportable spill immediately. Follow company policy when responding to an emergency.

- State Emergency Response Commission .....(512) 463-7727
- National Response Center .....(800) 424-8802
- US EP A Region 6, Dallas, 24-hr Number.....(866) 372-7745
- National Weather Service .....(281) 337-5074
- TCEQ 24-hr.....(800) 832-8224
- TCEQ Region 11 Austin.....(512) 339-2929

**DETAILED TELEPHONE SPILL REPORT FORM**

Date of Incident: \_\_\_\_\_

Location of Incident: \_\_\_\_\_

Description of material spilled: \_\_\_\_\_

Quantity of material spilled: \_\_\_\_\_

Cause of spill: \_\_\_\_\_

Authorities notified: \_\_\_\_\_

Remediation/clean-up action: \_\_\_\_\_

Corrective measures taken for prevention of reoccurrence: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Notes: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

Emergency Number for the National Response Center 1-800-424-8802

## **Attachment B - Potential Sources of Contamination**

Potential sources of contamination in the project area include the following:

1. Soil, fuels, and lubricants from vehicles and equipment, construction materials and trash/debris items.
  - a. Excavation activities – Contractor shall cause all excavated materials to be properly stockpiled and secured within areas that are not subject to flooding. Excavated material stockpiles shall be within areas bordered with silt fence. All excavated materials shall be stabilized by revegetation if the stockpile is not used within 14 days.
  - b. Soil tracking – Contractor shall monitor the movement of equipment to and from public roadways (Kauffman Loop & SH 29) to ensure that any soils tracked by haul vehicles is promptly removed.
  - c. Storm Inlet Protection – Contractor shall ensure that all storm inlet protections are installed and functioning properly. If sediments accumulate at inlet protections, they shall be cleaned or replaced as appropriate.
  - d. Equipment fueling and maintenance operations – Contractor shall ensure that all equipment fueling and maintenance operations are performed in a safe manner. Any spills shall be immediately remediated by capturing any contaminated soils and placing them in an appropriate container for disposal.
  - e. Importing piping and bedding materials – Contractor shall ensure that all imported piping and associated fittings are stored in a neat and orderly manner. Materials shall not be stored in areas prone to flooding. Bedding materials shall be stockpiled in areas not prone to flooding and shall be secured by perimeter silt fence.
  - f. Daily construction activities – Contractor shall provide employees with a designated parking area established to prevent tracking of soils on to roadways. Trash receptacles shall be provided at the parking area as well as other locations throughout the site where employees can properly dispose of trash. Portable toilets shall also be provided and maintained regularly commensurate with the number of workers on site throughout the construction process.
  - g. Project completion – Contractor shall return all excavated areas to planned grades. All disturbed areas shall be revegetated and water sufficiently to ensure adequate growth to stabilize any loose materials. All excess excavated material shall be promptly removed from the site and disposed at an approved location. All excess construction materials shall be promptly removed from the site and disposed of properly. All trash and debris shall be cleaned up and removed from the site prior to acceptance of the project.

## **Attachment C - Sequence of Major Activities**

The sequence of major activities associated with this development includes: 1) installation of all construction phase erosion & sedimentation control devices, 2) stripping the land of its vegetative cover, 3) excavation of detention and water quality basin, 4) excavation and embankment to create subgrade, 5) utility trenching and installation, 6) installation of pavement, 7) final grading and site cleanup, and 8) establishment of temporary and permanent revegetation measures. Construction phase erosion and sedimentation control measures such as silt fences, rock berms, mulch logs & stabilized construction entrances will be inspected regularly and adjusted as necessary in response to the expansion of the work area and changing site conditions.

## **Attachment D - Temporary Best Management Practices (TBMPs)**

Temporary Best Management Practices proposed for this site address storm water runoff generated from the up-gradient offsite area, on-site construction activity, and downstream flows. These TBMPs include stabilized construction entrances, inlet protections, silt fencing, earthen berms, rock berms, concrete washout controls, and sedimentation basins.

*7a. A description of how BMPs and measures will prevent pollution of surface water, groundwater or storm water that originates up gradient from the site and flows across the site:*

The area up-gradient of the site consists of the Bar W Commercial site (fully developed). The finished grading, pavement, and storm network capture all up-gradient storm water run-off and divert it around the site.

*7b. 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 storm water runoff from the site:*

Proactive management of structural controls and construction activities includes regular inspection and maintenance of temporary BMP's, and appropriate planning of earth disturbing activities with respect to anticipated weather conditions. The contractor shall be responsible for securing all disturbed areas, material stockpiles, construction debris, and equipment prior to any anticipated storm events that could result in escape of contaminated runoff from the site.

*7c. A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer:*

In addition to the proposed TBMPs, the proposed storm water quality and detention pond will capture any fugitive sediments generated by the construction activity. The outfall of the storm water pond includes energy dissipators to mitigate flow velocity prior to exiting the site. By capturing all developed runoff and diverting it to the water quality/detention ponds the potential for pollutants to enter surface streams and the aquifer is significantly mitigated.

*7d. A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction:*

There are no naturally occurring sensitive features identified on site at this time. However, in the event that a sensitive feature is discovered during construction and to the maximum extent practicable, TBMPs will be installed and maintained as required to maintain flow to sensitive features while keeping sediments and other pollutants from entering. If necessary, flow will be maintained to naturally occurring sensitive features by using rock berms, silt fences, and mulch socks to separate out sediments and other pollutants and to direct flow to the feature. These types of BMP's slow the flow of water allowing for sedimentation while allowing the flow to be maintained.

Any sensitive geologic feature discovered during excavation will be handled in the following manner:

- Sediment that can be easily removed from the area adjacent to the feature without disturbing the feature will be removed.
- A rock berm will be placed around the feature to control and filter any potential flows into the feature.
- After placement of the rock berm, construction activities that could adversely affect the feature will cease.
- A Professional Geologist will be called to the site to observe and rate the feature. If the feature is determined to be sensitive in accordance with TAC 213 rules, the TCEQ will be notified and an appropriate method for addressing the feature will be formulated and submitted for TCEQ approval.
- Work will not resume in the area of the feature until the TCEQ approved method for addressing the feature has been carried out.

#### **Attachment E - Request to Temporarily Seal a Feature**

There are no geologic features needing to be temporarily sealed related to this application.

## **Attachment F - Structural Practices**

Structural practices include silt fences, stabilized construction entrances, temporary diversion berms, and creating grading to direct storm water run-off to the proposed water quality and detention pond. All areas of the project where no grading activity is proposed to occur will be off limits to construction equipment and crews. The detention pond will serve to provide storm water control during and after construction.

## **Attachment G – Drainage Area Map**

Please see the drainage plan on sheet 15 of the attached construction plan set.

## **Attachment H – Temporary Sediment Pond Plans and Calculations**

The proposed stormwater control for this site is a batch detention basin that will provide water quality and detention. The basin will be installed at the beginning of the project to serve as the construction phase erosion & sedimentation control measure. The contractor shall remove accumulated sediment from the basin whenever the sediment level accumulates to a depth of 6” during the construction phase.

## **Attachment I - Inspection and Maintenance for BMPs**

- (1) Inspection should be made weekly and after each rainfall. Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement. Repair should be made promptly as needed by the contractor.*

An inspection of all structural erosion control devices (silt fences, rock berms, earthen berms, mulch logs, etc...) shall occur weekly and after each rainfall event more than ¼". Written documentation of these inspections shall be maintained during construction at the project site. Any erosion, rutting, and/or washout of the structural control devices shall be repaired by backfilling with clean, stable material from the site.

The site is authorized to discharge storm water under the TPDES General Permit No. TXRO50000 for industrial activities. Requirements of the general permit include maintaining a Stormwater Pollution Prevention Plan (SWP3) which includes inspections of storm water best management practices and sampling of storm water discharged from the site. If necessary, dewatering will be performed in accordance with the numeric effluent limitations noted in the TPDES General Permit No. TXR050000.

If dewatering the excavation becomes necessary, it would be accomplished using a pump and filtration system to capture the solids prior to releasing the discharge from the site. Storm water runoff shall be tested to verify compliance with the numeric effluent limitations of TPDES General Permit No. TXR050000 Section J, (5)(ii) of 45 mg/L for a daily maximum and 25 mg/L for a daily average. These concentrations are lower than the estimated background concentration as stated in the Edwards Aquifer Technical Guidance Manual (RG-348) of 80 mg/L for undeveloped areas. The water would be discharged to a natural drainage area onto a rip rap pad such that soil erosion would be mitigated.

- (2) Trash and other debris should be removed after each rainfall to prevent clogging of the outlet structure.*

Sediment and other debris shall be removed from structural control devices when buildup reaches a depth of 6". The accumulated silt shall be disposed of in a manner that will not cause additional siltation. Structural control devices that no longer adequately filter sediment from storm water due to silt accumulation, washout, or other damage damages, shall be replaced.

- (3) Accumulated silt should be removed and the basin should be re-graded to its original dimensions at such point that the capacity of the impoundment has been reduced to 75% of its original storage capacity.*

Sediment and other debris shall be removed from structural control devices as required.

*(4) The removed sediment should be stockpiled or redistributed in areas that are protected from erosion.*

The accumulated silt shall be disposed of in a manner that will not cause additional siltation. Structural control devices that no longer adequately filter sediment from storm water due to silt accumulation, washout, or other damage damages, shall be replaced.



## Attachment J - Schedule of Soil Stabilization Practices

Soil stabilization measures shall be initiated within 14 days after construction activity on any portion of the site has temporarily or permanently ceased. If the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site is temporarily ceased, and earth-disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of the site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

Examples of soil stabilization practices may include establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Soil stabilization practices to be implemented at this site, if necessary, include mulching, establishment of permanent vegetation by seeding native grasses, and/or preservation of existing vegetation. Other temporary measures to prevent soil from migrating offsite include the installation of inlet protections, and the completion of sedimentation basins. All temporary soil stabilization measures shall be inspected regularly to insure their proper function.

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

I \_\_\_\_\_  
Richard Gary  
Print Name

\_\_\_\_\_ Partner  
Title - Owner/President/Other

of \_\_\_\_\_  
675 Kaufman LP  
Corporation/Partnership/Entity Name

have authorized \_\_\_\_\_  
Thomas J. Groll, P.E.  
Print Name of Agent/Engineer

of \_\_\_\_\_  
Tom Groll Engineering, PC  
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:

Richard Gary  
Applicant's Signature

3-21-25  
Date

THE STATE OF TEXAS §

County of TRAVIS §

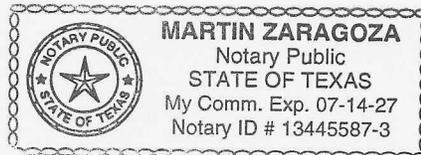
BEFORE ME, the undersigned authority, on this day personally appeared Richard Gary known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 21<sup>st</sup> day of March, 2025.

Martin Zaragoza  
NOTARY PUBLIC

Martin Zaragoza  
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 7/14/2027



# Application Fee Form

**Texas Commission on Environmental Quality**

Name of Proposed Regulated Entity: 675 Kauffman Loop

Regulated Entity Location: 675 Kauffman Loop

Name of Customer: 675 Kaufman, LP

Contact Person: Richard Gary

Phone: (512) 901-9800

Customer Reference Number (if issued): CN 606406112

Regulated Entity Reference Number (if issued): RN 112247283

**Austin Regional Office (3373)**

Hays

Travis

Williamson

**San Antonio Regional Office (3362)**

Bexar

Medina

Uvalde

Comal

Kinney

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

Austin Regional Office

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

12100 Park 35 Circle

Mail Code 214

Building A, 3rd Floor

P.O. Box 13088

Austin, TX 78753

Austin, TX 78711-3088

(512)239-0357

**Site Location (Check All That Apply):**

Recharge Zone

Contributing Zone

Transition Zone

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	\$
Sewage Collection System	130 L.F.	\$ 650.00
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$

Signature: Thomas Hall, P.E.

Date: February 24, 2026

# 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*

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



# TCEQ Core Data Form

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

## SECTION I: General Information

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

## SECTION II: Customer Information

<b>4. General Customer Information</b>		<b>5. Effective Date for Customer Information Updates</b> (mm/dd/yyyy)		3/20/2025	
<input checked="" type="checkbox"/> New Customer <input type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership <input type="checkbox"/> Change in Legal Name <i>(Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)</i>					
<i>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).</i>					
<b>6. Customer Legal Name</b> <i>(If an individual, print last name first: eg: Doe, John)</i>				<i>If new Customer, enter previous Customer below:</i>	
				675 Kaufman LP	
<b>7. TX SOS/CPA Filing Number</b>		<b>8. TX State Tax ID</b> (11 digits)		<b>9. Federal Tax ID</b>	<b>10. DUNS Number</b> <i>(if applicable)</i>
804005105		32078567123		(9 digits) 86-3138180	
<b>11. Type of Customer:</b>		<input type="checkbox"/> Corporation		<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input checked="" type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other		<input type="checkbox"/> Sole Proprietorship		<input type="checkbox"/> Other:	
<b>12. Number of Employees</b>				<b>13. Independently Owned and Operated?</b>	
<input checked="" type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>14. Customer Role</b> <i>(Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following</i>					
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Owner & Operator <input type="checkbox"/> Other: <input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant					
<b>15. Mailing Address:</b> 7801 N. Capital of Texas Hwy., Suite 390					
City		Austin		State	TX
ZIP		78731		ZIP + 4	
<b>16. Country Mailing Information</b> <i>(if outside USA)</i>				<b>17. E-Mail Address</b> <i>(if applicable)</i>	
				richard@jwdevelopmentinc.com	

<b>18. Telephone Number</b> ( 512 ) 901-9800	<b>19. Extension or Code</b>	<b>20. Fax Number (if applicable)</b> ( ) -
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### SECTION III: Regulated Entity Information

<b>21. General Regulated Entity Information</b> (If 'New Regulated Entity' is selected, a new permit application is also required.)							
<input checked="" type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information							
<i>The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).</i>							
<b>22. Regulated Entity Name</b> (Enter name of the site where the regulated action is taking place.)							
675 Kauffman Loop							
<b>23. Street Address of the Regulated Entity:</b>  (No PO Boxes)	675 Kauffman Loop						
	<b>City</b>	Leander	<b>State</b>	TX	<b>ZIP</b>	78641	<b>ZIP + 4</b>
<b>24. County</b>	Williamson						

If no Street Address is provided, fields 25-28 are required.

<b>25. Description to Physical Location:</b>	1/4 mile east of Ronald Reagan Blvd. on south side of SH 29 in Leander, Williamson County, Texas							
<b>26. Nearest City</b>	Leander				<b>State</b>	TX	<b>Nearest ZIP Code</b>	78642
<i>Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).</i>								
<b>27. Latitude (N) In Decimal:</b>		30.636986			<b>28. Longitude (W) In Decimal:</b>		97.823483	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds			
30	38	13.15	97	49	24.54			
<b>29. Primary SIC Code</b> (4 digits)	<b>30. Secondary SIC Code</b> (4 digits)		<b>31. Primary NAICS Code</b> (5 or 6 digits)		<b>32. Secondary NAICS Code</b> (5 or 6 digits)			
6552			237210					
<b>33. What is the Primary Business of this entity?</b> (Do not repeat the SIC or NAICS description.)								
<b>34. Mailing Address:</b>	7801 N. Capital of Texas Hwy., Suite 390							
	<b>City</b>	Austin	<b>State</b>	TX	<b>ZIP</b>	78731	<b>ZIP + 4</b>	
<b>35. E-Mail Address:</b>	richard@jwdevelopmentinc.com							
<b>36. Telephone Number</b>	<b>37. Extension or Code</b>			<b>38. Fax Number (if applicable)</b>				
( 512 ) 901-9800				( ) -				

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

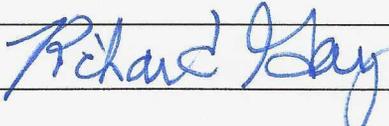
<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input checked="" type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source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

**SECTION IV: Preparer Information**

<b>40. Name:</b>	Thomas J. Groll, P.E.	<b>41. Title:</b>	President
<b>42. Telephone Number</b>	<b>43. Ext./Code</b>	<b>44. Fax Number</b>	<b>45. E-Mail Address</b>
( 512 ) 848-5796		( ) -	tomg@tg-eng.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.

<b>Company:</b>	675 Kaufman LP	<b>Job Title:</b>	Partner
<b>Name (In Print):</b>	Richard Gary	<b>Phone:</b>	( 512 ) 901- 9800
<b>Signature:</b>		<b>Date:</b>	3/21/2025