Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with 30 TAC 213.

Administrative Review

1. Edwards Aquifer applications must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

   To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: http://www.tceq.texas.gov/field/eapp.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.

3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.

4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

   An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.

6. If the geologic assessment was completed before October 1, 2004 and the site contains "possibly sensitive" features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a "Mid-Review Modification". Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ's Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ's San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

1. Regulated Entity Name:675 Kauffman Loop						**2. Regulated Entity No.: TBD**			
3. Customer Name: 675 Kaufman LP						**4. Customer No.: TBD**			
5. Project Type: **(Please circle/check one)**	(New)		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	(WPAP)	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		(Non-residential)			**8. Site (acres): 27.61**			
9. Application Fee:	$6,500.00		**10. Permanent BMP(s):**			Batch detention pond			
11. SCS (Linear Ft.):			**12. AST/UST (No. Tanks):**			Zero			
13. County:	Williamson		**14. Watershed:**			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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	___
Region (1 req.)	___	___	___
County(ies)	___	___	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	___	___	___	___
Region (1 req.)	___	___	___	___	___
County(ies)	___	___	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	___Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park ___San Antonio (SAWS) ___Shavano Park	___Bulverde ___Fair Oaks Ranch ___Garden Ridge ___New Braunfels ___Schertz	NA	___San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.
Thomas J. Groll, P.E.
Print Name of Customer/Authorized Agent
Thomas J Groll, P.E. 6/24/25
Signature of Customer/Authorized Agent Date

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

General Information Form

Texas Commission on Environmental Quality

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

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

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

Signature

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

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

Date: March 27, 2025

Signature of Customer/Agent:

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, TX 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: April 18, 2025

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:

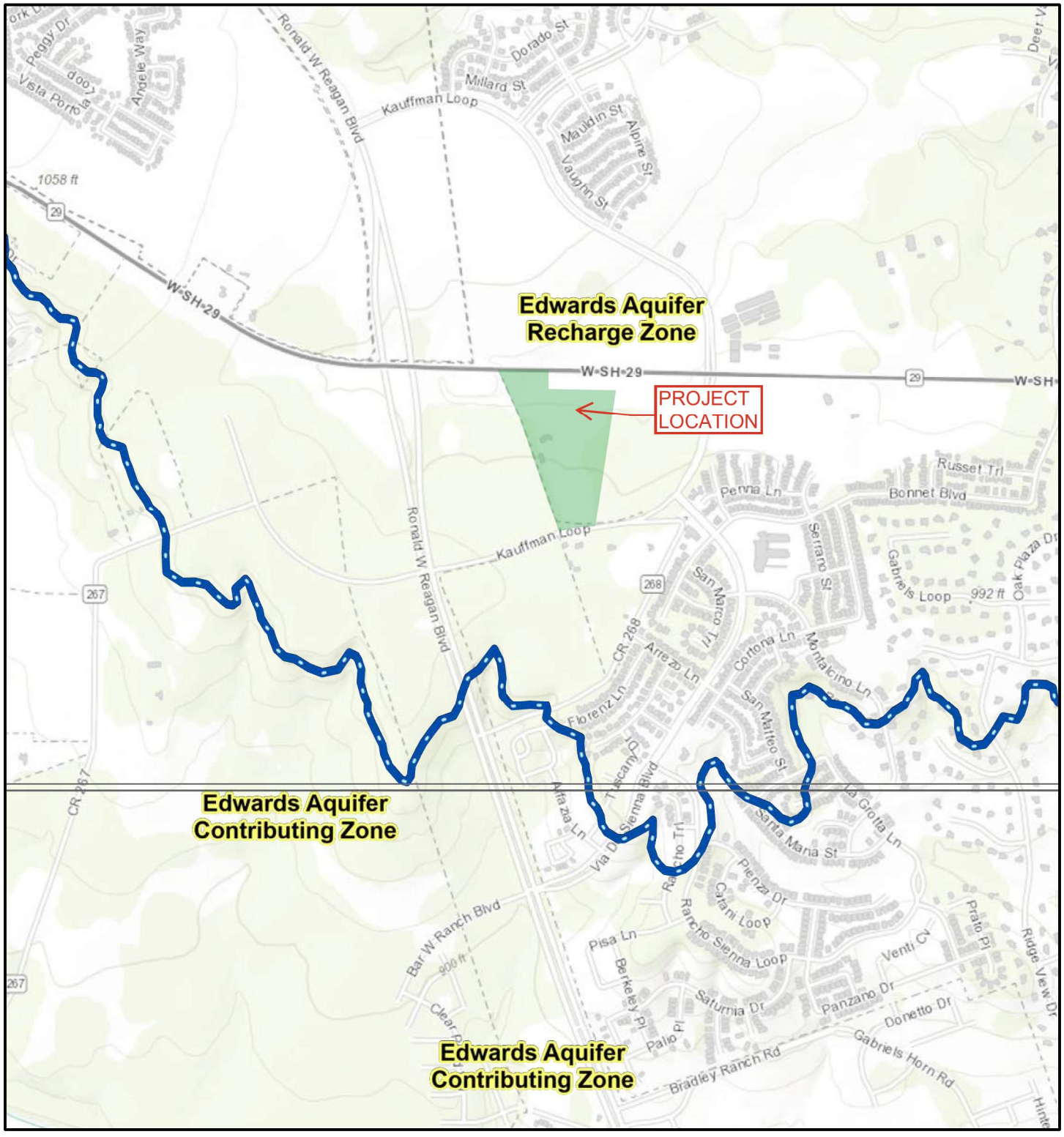
- ☐ TCEQ cashier
- ☒ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- ☐ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

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

ATTACHMENT B - EARZ MAP



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

1:21,120

0 500 1,000 2,000 ft

0 250 500 1,000 m

- 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

ATTACHMENT C
675 KAUFFMAN LOOP
PROJECT NARATIVE

The 675 Kauffman Loop project consists of 25-acres of land situated east of and adjacent to the Bar W Commercial development located at the southeast corner of SH 29 and Ronald Reagan Blvd. in the City of Leander, Williamson County, Texas. The property is bound by SH 29 to the north and Kauffman Loop to the south. The site will obtain public water and wastewater service from the City of Leander, electric utility service from Pedernales Electric Cooperative, and natural gas service from Atmos Energy. The site is contained within the City of Leander full purpose jurisdiction, and within the Edwards Aquifer Recharge Zone.

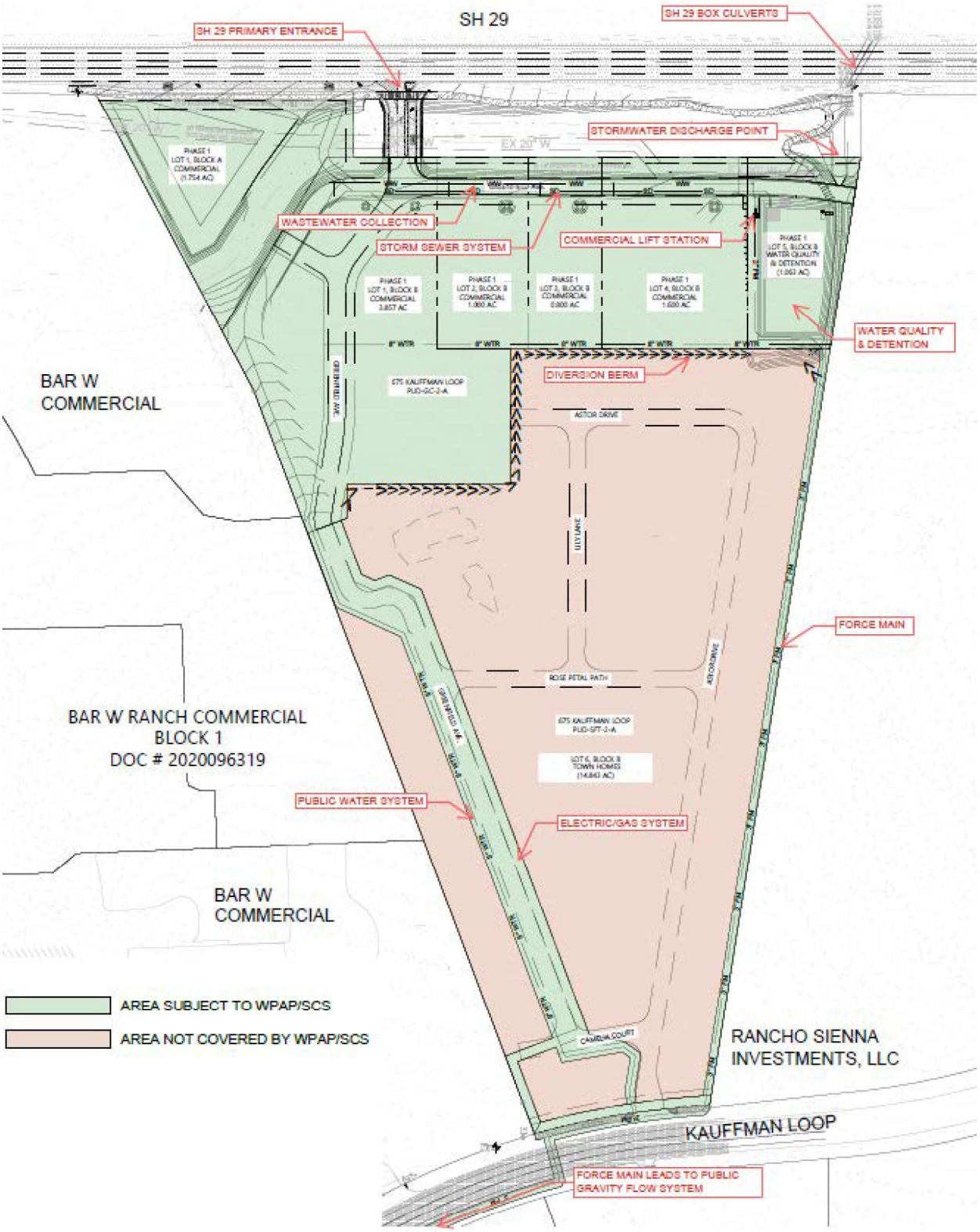
Prior to its sale in 2021 to 675 Kaufman, LP, the property was used as a single-family residence. A Preliminary Plat submitted by the developer depicting the northern 10.16-acres fronting SH 29 as commercial, and the southern 14.84-acres as multi-family residential was approved by the City of Leander in September 2024.

Per the approved Preliminary Plat, the site is to be subdivided into seven lots as follows: Lot 1, Block A, and Lots 1-6, Block B. Lot 1, Block A and Lots 1-5, Block B make up the 10.16-acres of commercial property. Lot 6, Block B represents the 14.84-acre multi-family residential property. Lot 1, Block A is hydraulically isolated from the remainder of the site by an existing drainageway paralleling the SH 29 frontage. Lots 1-5, Block B are contiguous. Lot 5, Block B is dedicated as a drainage lot and will provide water quality/detention capacity to Lots 1-4, Block B. Development of Lot 1, Block A will require its own independent water quality and detention facilities. Figure 1 shows the lot arrangement.

Per the approved Preliminary Plat, Lot 6, Block B will be subdivided as a single lot. The multi-family residential portion of the site will have 148 residential units and an amenity center. The residential development will have its own water quality/detention facilities and will not share the commercial development's stormwater pond. The developers of the townhome site will be responsible for gaining approval from the TCEQ for the WPAP and SCS for their development.

As the project developer, 675 Kaufman, LP is responsible for subdivision of the property and installation of the infrastructure necessary to support subsequent development of the individual commercial sites by the buyers of those sites. The infrastructure delivered by 675 Kaufman, LP to the buyers of the individual commercial lots includes the primary access driveway from SH 29 into the site, a shared internal access driveway, a public water distribution system, a private wastewater collection system with a private lift station and force main, electric and natural gas distribution systems, a private stormwater collection system leading to a water quality/detention facility, and public sidewalks as required by the City of Leander. The intent of this application is to obtain TCEQ approval of an Organized Sewage Collection System Plan (SCS) and a Water Pollution Abatement Plan (WPAP) for construction of the infrastructure deliverables required of 675 Kaufman, LP. This application is not intended to represent the specific development of each individual commercial lot and does not represent development of the multi-family residential lot. The subsequent buyers/developers of the subdivided lots are responsible for permitting their site development plans through the City of Leander and the TCEQ, as applicable.

Figure 1 - 675 Kauffman Loop site layout



EXISTING CONDITIONS

Vegetation on the tract consists of native grasses with clusters of Live Oak trees. Slopes are generally within the 2% - 5% range. According to the Williamson County Soil Survey, site surface soils consist of 87% Georgetown clay loam (GeB), 10% Fairlie clay (FaB), and 3% Georgetown stoney clay loam (GsB), each of which are in Hydrologic Group D. The existing ground coverage is brush, weed, and grass mix in fair condition; therefore, the existing conditions Run-off Curve Numbers for the D-type soils is 77. Stormwater runs off from south to north as sheet flow and shallow concentrated flow before leaving the site at a natural low point along the northern property boundary at SH 29 right-of-way. Upon leaving the property, runoff continues in unnamed Tributary #1 of the Middle Fork San Gabriel River.

According to FEMA FIRM Panel 48491C0275E, dated September 26, 2008, the subject tract is located within Zone X and a 100-year floodplain does not encroach onto the property.

The site is located within the Edwards Aquifer Contributing Zone; therefore, the proposed development activities are subject to 30 TAC Chapter 213.

PROPOSED CONDITIONS

The 675 Kauffman Loop project will consist of 10.16-acres of commercial development and 14.84-acres of multi-family residential development. This report pertains only to Lot 1, Block A and Lots 1 - 5, Block B of the site's commercial development, and the utility easements running through Lot 6, Block B. The multi-family residential area in Lot 6, Block B, will have its own separate, independent stormwater control facility and will require a separate Water Pollution Abatement Plan and Organized Sewage Collection System Plan for its development. Furthermore, this report only pertains to retaining wall construction on Lot 1, Block A, of the commercial development area and does not represent any impervious cover associated with the development of that lot.

Lots 1- 4, Block B of the site's commercial area will be developed to the City of Leander's standards, which limits impervious cover to 85% of the site area. Lot 5, Block B of the site's commercial area is dedicated to the stormwater quality/detention pond, which will be constructed of earthen embankments, therefore, there is no impervious cover planned for Lot 5, Block B. The net impervious cover across the lots draining to the water quality pond is 74.14%.

STORM WATER CONTROL

On-site storm water drainage conveyance will consist of concrete/asphalt pavement with 6" concrete curb & gutter around the pavement perimeter so that storm water is captured and directed to storm inlets. The inlets connect to a 36" HDPE pipe that extends from the water quality/detention pond across the frontage of Lots 1-4, Block B. Future development of the commercial lots will connect to the storm pipe stubs and inlets to extend the system further into their respective sites as necessary.

The water quality control method chosen for this development is a batch detention system with additional detention capacity for the 2, 10, 25, and 100-yr storm events stacked on top of the water quality volume. The pond is designed to capture a water quality volume representing the maximum allowable impervious cover (268,665 ft^2/6.17 ac), which equates to Lm = 5,368 lbs. The water quality volume is calculated by Equation 3.3 of RG 348 and the TCEQ's TSS load calculation

spreadsheet to be of 27,504 ft^3. The splitter weir elevation is set to provide 27,618 ft^3 of water quality volume capture. The pond will have a trash rack with 6" perforated riser pipe leading to an electric actuated butterfly valve that regulates the release of the water quality volume over a 48-hour period. When the butterfly valve is open, flows are discharged to a 6" solid PVC pipe leading to the outfall location. Storm flows exceeding the water quality volume are controlled by the splitter weir so that the post development flow rates are less than or equal to the predevelopment flow rates for each of the design storm events and discharged through a 48" outlet pipe. The 6" low flow outlet and the 48" detention outlet lead to a concrete headwall followed by rock rip-rap for energy dissipation. Discharge flows are mitigated to below 2-fps before they are discharged to the existing drainage way passing beneath SH 29.

WASTEWATER COLLECTION

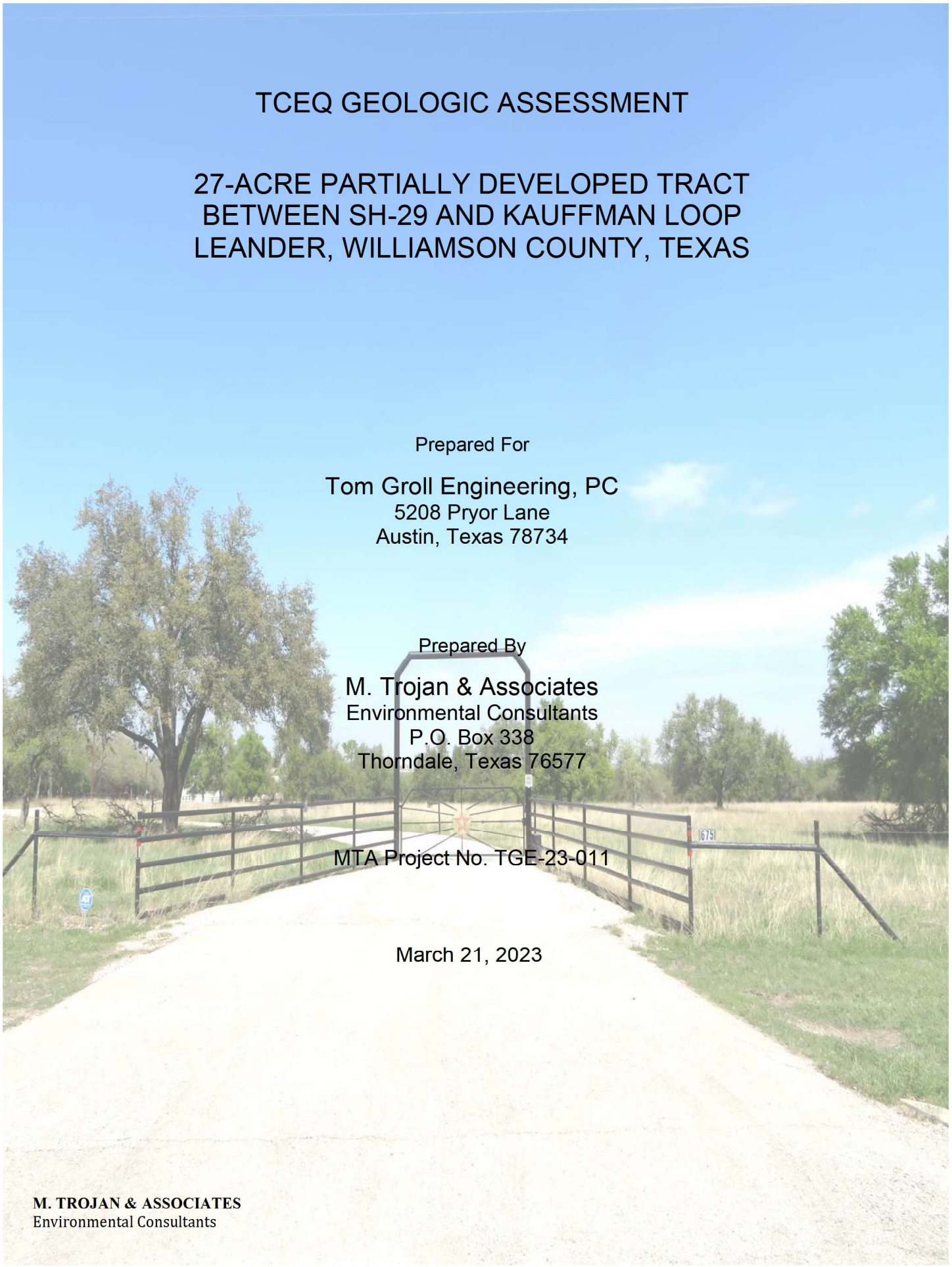
Wastewater collection occurs through an 8" SDR 26 PVC gravity flow pipe that traverses the frontage of the commercial lots. A wastewater stub is located at each property corner for future connection/extension into the commercial lots as necessary to accommodate the individual developments. The 8" gravity flow line leads to a private lift station located on Lot 5, Block B. The lift station will have dual AGP500 5-HP grinder pumps to provide the head necessary to discharge the domestic waste flows to a 2" Sch 40 PVC force main. Approximately 462 LF downstream of the lift station the force main line size is increased to 3" to accommodate flows from the townhome site. An E-One valve is located at this junction to prevent flows from coming back to the commercial lift station at times when the townhome lift station is pumping but the commercial lift station is not. The 3" Sch 40 PVC force main runs 1,520 LF southward to the Kauffman Loop right-of-way where it then becomes a public line. Once within the Kauffman Loop right-of-way, the 3" force main runs 1,635 ft west along the south side of Kauffman Loop and terminates at a wastewater manhole. From there, an 8" SDR 26 PVC pipe gravity flows to an existing City of Leander wastewater manhole on a 12" gravity flow line. The 12" gravity flow line leads to the public lift station #25 located at Prickly Pear Path and Armitas Terrace within the Bar W Ranch subdivision. Lift station #25 forces wastewater flows to the City of Liberty Hill's South San Gabriel Wastewater Treatment Plant located at 1633 US 183 N. in Leander.

PUBLIC WATER SYSTEM

A public water system will be extended into the site by connecting to the existing 12" water line on Kauffman Loop at the southeast corner of the Bar W Commercial development. The public water system will be constructed of 8" C-900 PVC pipe and fittings approved by the City of Leander for use in their system. The individual development will connect to the 8" waterline as necessary to extend service to their respective buildings for fire flow and domestic purposes.

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

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:

X	WPAP		AST
X	SCS		UST

3. Location of Project:

- [X] Recharge Zone
- [ ] Transition Zone
- [ ] Contributing Zone within the Transition Zone

4. [X] **Attachment A – Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

5. [X] 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. [X] **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. [X] **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. [X] **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:

   [X] 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. [X] Surface geologic units are shown and labeled on the Site Geologic Map.

12. [X] 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. [X] 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

GEOLOGIC ASSESSMENT TABLE			PROJECT NAME: 27-Acre Partially Developed Tract																	
LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	≥40	<1.6	>1.6	
ONSITE																				
MB-1	30.6379247	-97.824219	MB	30	Ked	375	unk	unk					X	≤5	≤35	≤35		N/A	N/A	hillside
MB-2	30.635739	-97.823259	MB	30	Ked	unk	unk	unk					X	≤5	≤35	≤35		N/A	N/A	hillside
MB-3	30.635005	-97.82324	MB	30	Ked	unk	unk	unk					X	≤5	≤35	≤35		N/A	N/A	hillside
OFFSITE																				
MB-4	30.637074	-97.825102	MB	30	Ked	140	70	6					X	≤5	≤35	≤35		unk	unk	drainage
MB-5	30.636124	-97.82467	MB	30	Ked	320	240	10					X	≤5	≤35	≤35		unk	unk	drainage
MB-6	N/A	N/A	MB	30	Ked	unk	unk	unk					X	≤5	≤35	≤35		N/A	N/A	hillside
MB-7	N/A	N/A	MB	30	Ked	unk	unk	unk					X	≤5	≤35	≤35		N/A	N/A	hillside
MB-8	30.637576	-97.821101	MB	30	Ked	85	20	unk					X	≤5	≤35	≤35		N/A	N/A	stream

* DATUM:_____

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

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

12 TOPOGRAPHY

Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

_____ Date: March 21, 2023

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
	LOWER CRETACEOUS (COMANCHEAN)	FREDERICKSBURG	DEL RIO	CLAY 40–70 FEET THICK
			GEORGETOWN	LIMESTONE AND MARL 30–80 FEET THICK
			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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P.O. Box 338
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(512) 917-3695

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

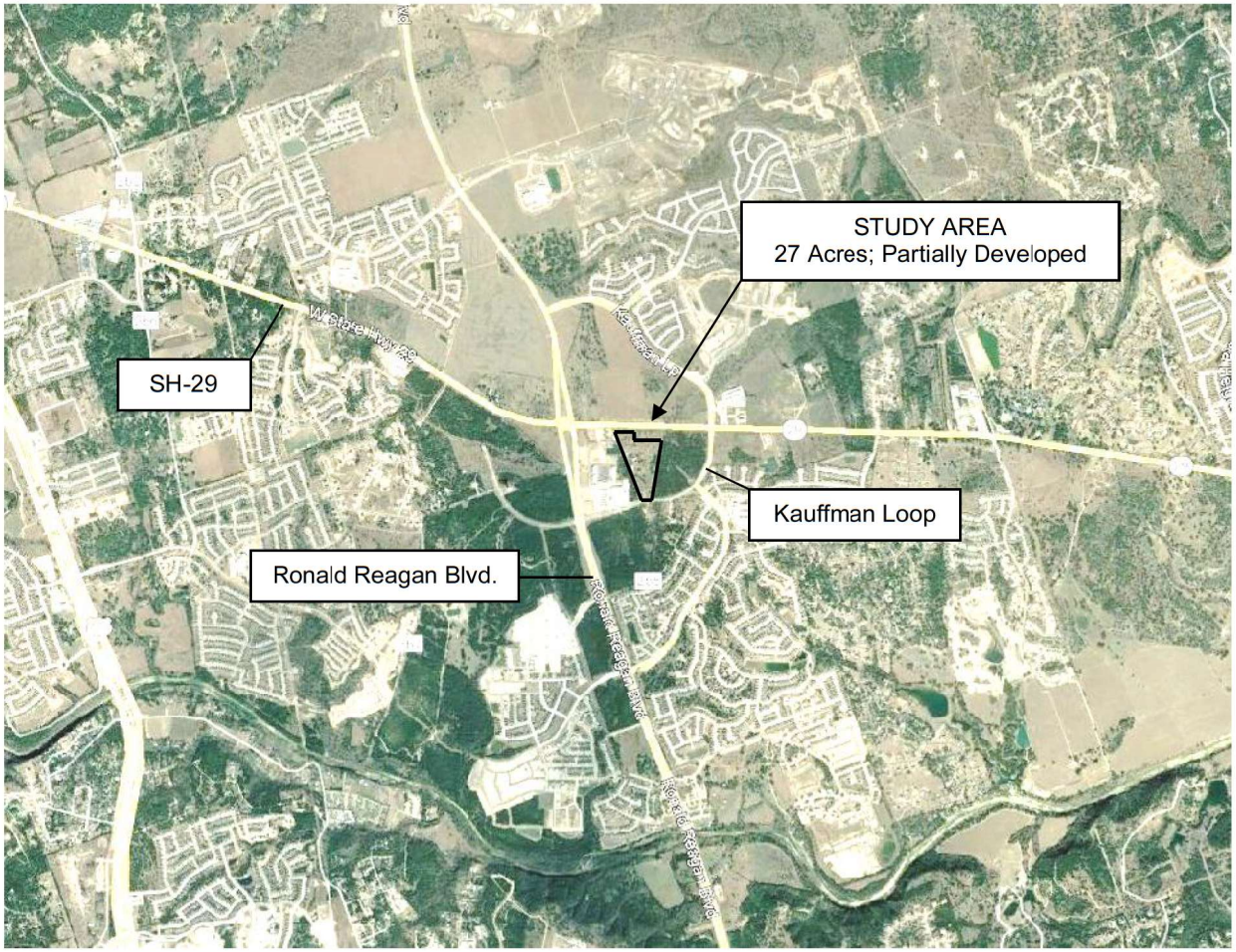
Based on review of available information and visual observations made during the field reconnaissance, this *Geologic Assessment* presents the following observations regarding the potential for recharge of the subsurface within the study area:

- 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



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P.O. Box 338
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(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
Environmental Consultants
P.O. Box 338
Thorndale, Texas 76577
(512) 917-3695

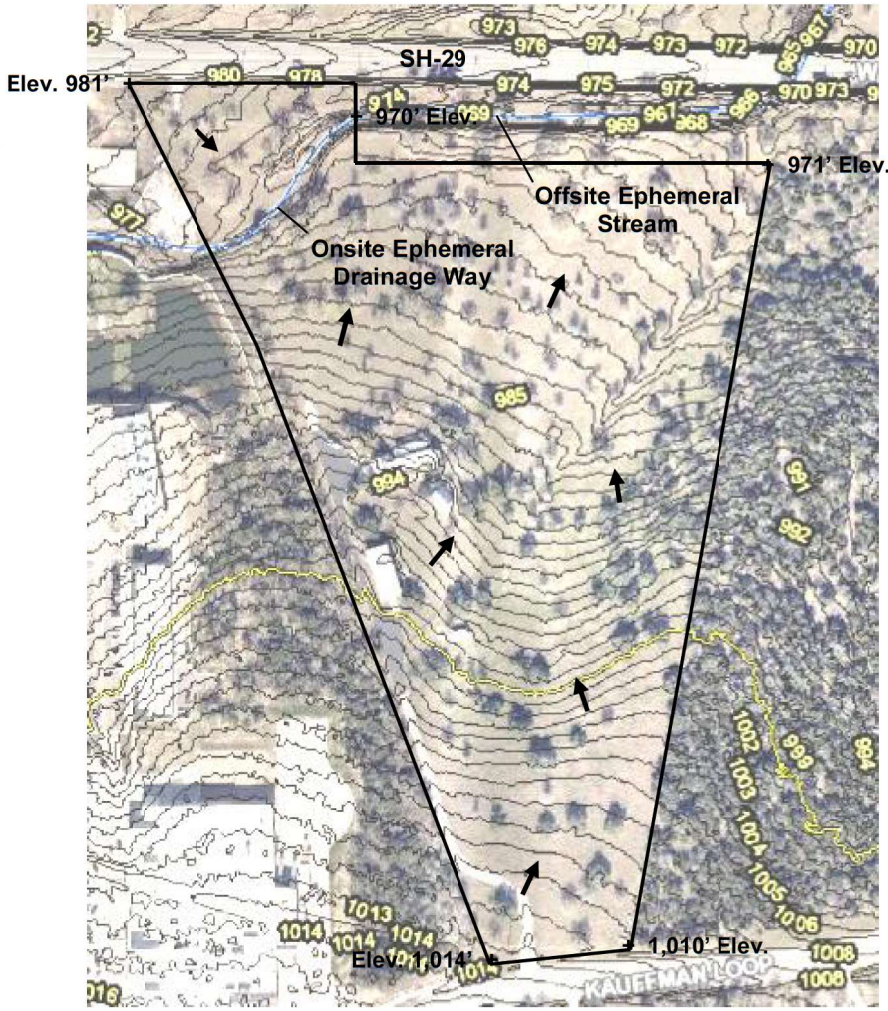
Scale: 1" = 400' (approx.)
Date: March 21, 2023
Project: TCEQ Geologic Assessment
MTA Project: TGE-23-011

FIGURE 2

SITE AERIAL PHOTOGRAPH

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

Middle Fork San Gabriel River Watershed



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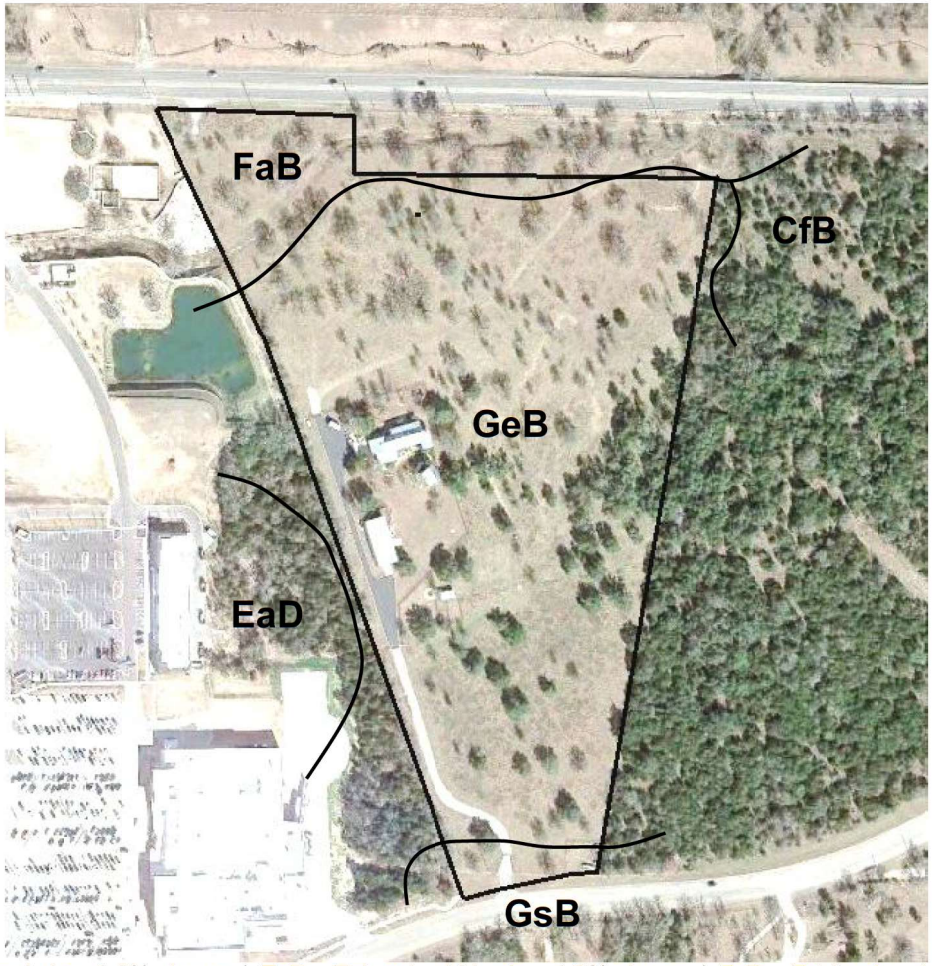
Scale:	No Scale
Date:	March 21, 2023
Project:	TCEQ Geologic Assessment
MTA Project:	TGE-23-011

FIGURE 3

SURFACE WATER HYDROLOGY

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



STATE OF TEXAS
MICHAEL TROJAN
GEOLOGY
No. 1109
LICENSED
PROFESSIONAL GEOSCIENTIST

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

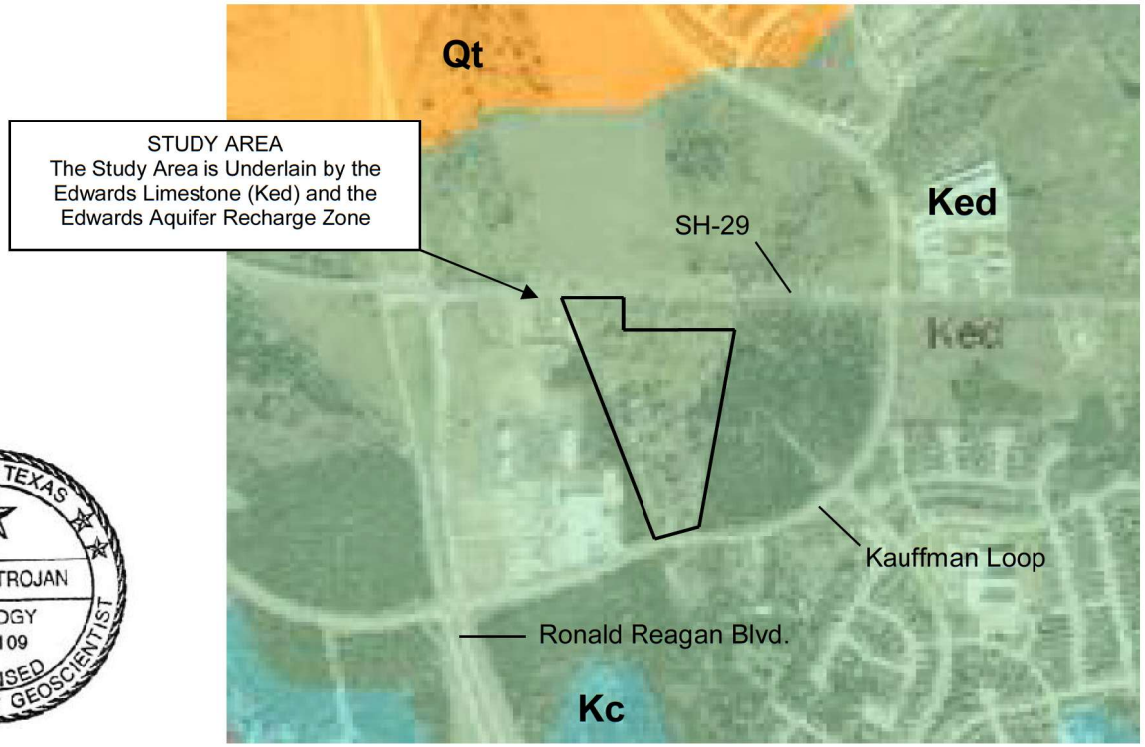
M. TROJAN & ASSOCIATES
Environmental Consultants
P.O. Box 338
Thorndale, Texas 76577
(512) 917-3695

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



STATE OF TEXAS
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PROFESSIONAL GEOSCIENTIST

Ked– Edwards Limestone / Kc – Comanche Peak Limestone / Qt – Fluviatile 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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Thorndale, Texas 76577
(512) 917-3695

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')

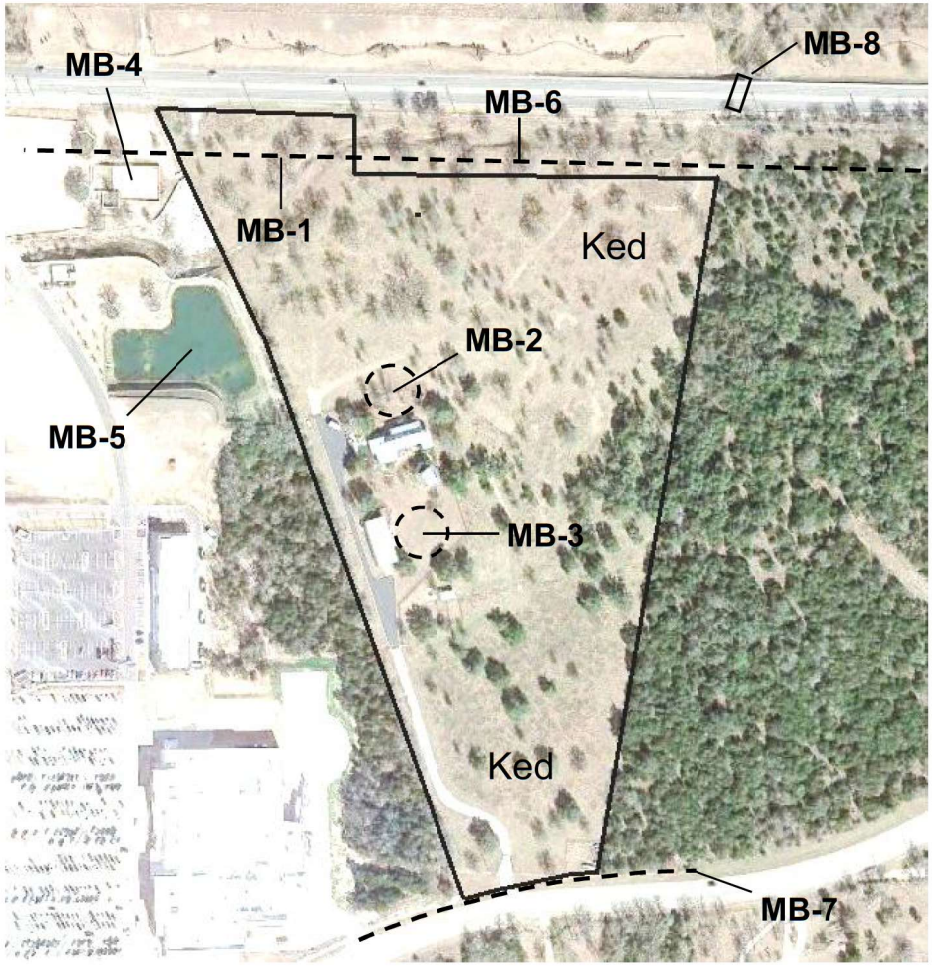
MB-4: Manmade feature in bedrock (water quality pond)

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)



NO ONSITE OR OFFSITE KARST FEATURES IDENTIFIED

N

NOTES

Ked – Edwards Limestone

Refer to Attachment C for feature details.

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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 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 Kauffman 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.

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

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

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

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

Signature

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

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

Date: 06/24/2025

Signature of Customer/Agent:

Thomas J Groll, P.E.

Regulated Entity Name: 675 Kauffman Loop

Regulated Entity Information

1. The type of project is:

   ☐ Residential: Number of Lots:_____
   ☐ Residential: Number of Living Unit Equivalents:_____
   ☒ Commercial
   ☐ Industrial
   ☐ Other:_____

2. Total site acreage (size of property):27.61

3. Estimated projected population:Unknown

4. The amount and type of impervious cover expected after construction are shown below:

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	0	÷ 43,560 =	0
Parking	0	÷ 43,560 =	0
Other paved surfaces	20,792	÷ 43,560 =	0.47
Total Impervious Cover	20,792	÷ 43,560 =	0.47

Total Impervious Cover 0.47 **÷ Total Acreage** 27.61 **X 100 =** 1.70**% Impervious Cover**

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

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

For Road Projects Only

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

7. Type of project:

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

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

☐ Concrete
☐ Asphaltic concrete pavement
☐ Other: _____

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

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

10. Length of pavement area: _____ feet.

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

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

100% Domestic	_____Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day _____	

15. Wastewater will be disposed of by:

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

- ☐ **Attachment C - Suitability Letter from Authorized Agent**. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.
- ☐ Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

☒ Sewage Collection System (Sewer Lines):

- ☐ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.
- ☒ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.

- ☐ The SCS was previously submitted on_____.
- ☒ The SCS was submitted with this application.
- ☐ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

☒ The sewage collection system will convey the wastewater to the _____ (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

16. ☒ All private service laterals will be inspected as required in 30 TAC §213.5.

Site Plan Requirements

Items 17 – 28 must be included on the Site Plan.

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

Site Plan Scale: 1" = 40'.

18. 100-year floodplain boundaries:

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☒ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): _____

19. ☒ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, open space, etc. are shown on the plan.

☐ The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, open space, etc. are shown on the site plan.

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

☒ There are 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 §76.

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

21. Geologic or manmade features which are on the site:

☐ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
☒ No sensitive geologic or manmade features were identified in the Geologic Assessment.
☐ **Attachment D - Exception to the Required Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

22. ☒ The drainage patterns and approximate slopes anticipated after major grading activities.

23. ☒ Areas of soil disturbance and areas which will not be disturbed.

24. ☒ Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.

25. ☒ Locations where soil stabilization practices are expected to occur.

26. ☐ Surface waters (including wetlands).

    ☒ N/A

27. ☐ Locations where stormwater discharges to surface water or sensitive features are to occur.

    ☒ There will be no discharges to surface water or sensitive features.

28. ☒ Legal boundaries of the site are shown.

Administrative Information

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

30. ☒ Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

Attachment A: Factors Affecting Water Quality

This project applies solely to the 675 Kauffman Loop project. Construction of this project includes excavation and grading, installation of water & wastewater lines, electric utilities, concrete or asphalt pavement with curb & gutter, installation of segmental block retaining walls, and a storm water quality and detention pond.

Construction activities including excavation, stockpiling and materials processing are of the greatest concern because of the amount of loose and un-stabilized soils generated. A Web Soil Survey indicates that Farley clay (FaB), Georgetown clay loam (GeB), and Georgetown stony clay loam (GsB) makeup the strata within the proposed construction area. The project will require the import of fill material to achieve the proposed grading plan. There will not be any materials stockpiles remaining at the end of the project.

Temporary and permanent Best Management Practices will be used on site to mitigate the impact of fugitive soils. Silt fence will line the perimeter of the site down gradient from all excavation and stockpiling activities. Stabilized construction entrances will be installed at the edge of the existing pavement to mitigate tracking. The proposed storm water quality is planned to be used as the temporary sediment trap during construction, and then as the permanent post construction water quality facility.

Post construction concerns for water quality include the capture and treatment of runoff from excavated and embanked areas prior to their final stabilization. Sediments will be captured within the proposed water quality basin.

Attachment B: Volume and Character of Storm Water

A hydrologic analysis of the site begins with establishing volumetric flow rate of storm water runoff for the undeveloped condition of the site for the 2, 10, 25, and 100-year storm events. A runoff curve number of 77 for the undeveloped condition is established by analyzing the surface soil conditions, topography and vegetative cover. The volume of run-off from this site is accounted for in the analysis and design of the proposed storm water batch detention pond serving the tract. Using TCEQ's criteria for 80% TSS removal, the water quality volume for this project is calculated to be 27,504 ft^3. The water quality pond is designed to capture 27,618 ft^3. Run-off in excess of the water quality volume is detained on top of the water quality volume and released at predevelopment rates for each of the design storm events.

The character of storm water runoff is typical of commercial construction projects. It is anticipated that there will be sediment laden run-off captured by the temporary stormwater basin. The contractor will be responsible for removing the sediment buildup during and after construction. At the end of construction, all disturbed areas will be revegetated. Once vegetation is re-established the character of the run-off should be the same as the existing condition.

During construction, the primary concern is the control of fugitive sediments, construction debris, and hydrocarbon releases. Post construction, the primary concern is treatment of runoff containing sediments. Storm water runoff from all excavated and embanked areas will be directed to the water quality basin shown in the construction plans.

The TCEQ's standards require removal of 80% of the increase in TSS. The TCEQ specifies runoff coefficients for impervious areas is 0.90 and for undisturbed areas is 0.03, however, a higher runoff coefficient of 0.95 is used for impervious surfaces, and values ranging between 0.32 to 0.47 are used for pervious surfaces, resulting in a more conservative design.

Attachment C – OSSF Suitability Letter

This site is served by the City of Leander public wastewater system and will not contain any OSSF's.

Attachment D – Exception to the Required Geologic Assessment

Not applicable. A Geologic Assessment has been prepared and is attached to this submittal.

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: 05/30/25

Signature of Customer/Agent:

Thomas J Groll, P.E.

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 of the 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 of the pipeline 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 from storm water run on during rainfall 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 watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.
10. Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
11. Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
12. Keep waste storage areas clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

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

Minor Spills

1. Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
2. Use absorbent materials on small spills rather than hosing down or burying the spill.
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 spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
5. Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

In the event of a reportable spill, the following Emergency Response Agencies can be contacted for assistance. Always inform your 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 (Shell Road) 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

This project will be constructed in a single phase of development totaling 13.82 acres. 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 (2-acres), 3) excavation of detention and water quality basin (~1-acre), 4) excavation and embankment to create subgrade (1-acre), 5) utility trenching and installation (1.5-acres, 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 upgradient of the site consists of an undeveloped portion of the Bar W Commercial site. The existing grade captures all up-gradient storm water run-off and diverts 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:

The proposed TBMPs, such as silt fence, rock berms, and stabilized construction entrances, will capture any fugitive sediments generated by the construction activity. 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, if 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 the proposed water quality and detention pond, silt fences, and stabilized construction entrances. All areas of the project where no grading activity is proposed to occur will be off limits to construction equipment and crews. The pond excavation will serve to provide storm water control during and after construction.

Attachment G – Drainage Area Map

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

Attachment H – Temporary Sediment Pond Plans and Calculations

There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sedimentation control other than sediment basins will be the primary TBMP's.

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.

(5) Silt Fence

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

(6) Rock Berms.

i. Inspection should be made weekly and after each rainfall by the responsible party. For installations in streambeds, additional daily inspections should be made.
ii. Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.
iii. Repair any loose wire sheathing.
iv. The berm should be reshaped as needed during inspection.
v. The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
vi. The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.

(7) Temporary Construction Entrance.

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

		Slit Fence			Rock Berms		Earthen Berms	Mulch Socks	Temporary Sedimentation Pond		
Date	Inspected By	>6" silt retained	Water flowing under silt fence	Fencing material torn or clogged	>6" slit retained	Rock berm clogged	Erosion of earthen berm	Ponding or silt accumulation	Embankment/spillway/outlet erosion or damage	Trash or Debris	Capacity reduced to 75% due to silt

If the answer to any of the above questions is *'yes'*, perform maintenance/repair/replacement as described below or In accordance with TCEQ Technical Guidance on BMPs.

Slit Fence

- >6" of slit retained behind fence - remove silt - place in protected area.
- Water flow under slit fence - bury bottom of fencing material on up-gradient side. Place clean rock on both sides of the fence in affected areas.
- Silt fence torn or clogged - replace fence material as needed if torn or water flow is stopped.

Rock Berm

- >6' of slit retained - remove silt - place in protected area.
- Rock berm clogged - the rock berm should be replaced when accumulated silt, washout or damage to berm occurs.

Earthen Berm

- Erosion of earthen berm - rebuild berm.

Mulch Socks

- Excessive ponding or sediment accumulation to top of sock - add additional mulch sock.

Temporary Sedimentation Pond

- Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement.
- Trash or debris - remove after rainfall to prevent clogging outlet.
- Capacity reduced to 75% - Remove accumulated silt and re-grade to original storage capacity.

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 temporary 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.

Permanent Stormwater Section

Texas Commission on Environmental Quality

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

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

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

Signature

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

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

Date: 05/30/25

Signature of Customer/Agent

Thomas J. Groll, P.E.

Regulated Entity Name: 675 Kauffman Loop

Permanent Best Management Practices (BMPs)

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

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

   ☐ N/A

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

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

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

☐ N/A

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

   ☐ N/A

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

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

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

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

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

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

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

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

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

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

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

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

☐ N/A

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

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

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

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

☒ Design calculations (TSS removal calculations)
☒ TCEQ construction notes
☒ All geologic features
☒ All proposed structural BMP(s) plans and specifications

☐ N/A

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

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

    ☐ N/A

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

    ☒ N/A

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

    ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

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

    ☐ N/A

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

    ☐ N/A

Attachment A – 20% or Less Impervious Cover Waiver

Not Applicable.

Attachment B – BMPs for Up-gradient Storm Water

A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or storm water that originates up-gradient from the site and flows across the site follows:

Stormwater that originates upgradient of this site is associated with existing developments (Bar-W Commercial). The Bar-W Commercial site has existing stormwater water quality controls and detention controls to treat and regulate the discharge prior to entering the 675 Kauffman Loop site.

Attachment C – BMPs for On-site Storm Water

A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated storm water runoff from the site follows:

Run-off from the currently undeveloped areas within the site will be controlled using silt fence, temporary diversion berms, rock berms, and stabilized construction entrances. These temporary BMP's will direct storm water to the sedimentation basin. Silt fence will be erected around the perimeter of the site to prevent pollutants from escaping the property. Stabilized construction entrances will be installed at the locations identified in the construction plan set to mitigate sediment tracking on to Kauffman Loop. Additional erosion controls are also available for use at the discretion of the design engineer, the contractor and/or the environmental inspector should the need arise during construction.

Attachment D – BMPs for Surface Streams

A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer follows:

There are no perennial streams in the vicinity of this site. The existing drainage conveys to the topographic low point at the northeast corner of the property. There are no sensitive features identified in the Geologic Assessment, and should any features be discovered during construction the contractor is required to stop work in that area and immediately install protective measures to prevent pollutants from entering the feature or aquifer.

Attachment E – Request to Seal Features

Not used – there is no request to seal and sensitive features identified in the Geologic Assessment.

Attachment F – Construction Plans

Please refer to the attached construction plan documents.

Attachment G – Inspection, Maintenance, Repair & Retrofit Plan

This Inspection, Maintenance, Repair & Retrofit Plan applies to the ongoing operation of the post construction vegetative cover proposed with this project. The inspection and maintenance of Structural BMP's will be addressed in subsequent WPAP applications as future development comes online.

Inspection of the post construction revegetation should occur at regular intervals and be performed by people knowledgeable with its purpose and proper function. The vegetation will be re-established at all locations such that all disturbed areas are stabilized as quickly as possible. Construction fencing, barricades, and signage may be used to protect the vegetation from vehicular traffic. The revegetation will provide the same protection as a Vegetative Filter Strip and will be addressed hereinafter accordingly.

The time between inspection intervals should be directly related to the aesthetics and function of the facilities. Since the aesthetics of the facilities are affected throughout the year by seasonal conditions, it follows that inspection of routine items should also be adjusted according to the season. Conversely, the proper function of a VFS may not be as readily apparent as its aesthetics and not necessarily dependent on seasonal changes, but rather on the severity of storm events experienced by the facility. Accordingly, routine inspection and maintenance items such as debris removal should occur more frequently during periods of higher activity and less frequently during the periods of lower activity. In this case, higher activity would be represented by future construction, which would have its own BMP's established, and lower activity will be the condition between the completion of this mass grading work and future development. Less routine inspection items such as checking for sediment accumulation, repair of eroded areas, and inspecting for deleterious vegetation should occur at least quarterly. Infrequent inspection items such as checking the proper function of barricades and signage should occur at least annually. Given the importance of the aesthetics of the VFS to the protection of the property, it is anticipated that inspection and maintenance will occur frequently.

The following outline provides the suggested inspection items and intervals, and the recommended maintenance activity:

Bi-weekly (during the growing season, less frequently during the winter months)

- Debris removal – pick up all trash and litter accumulated within or around the Vegetative filter Strip (VFS).
- Seasonal Mowing and maintenance. Since native grasses are proposed to be used for this VFS, less frequent mowing will be necessary, but should be mowed a minimum of twice annually. Grass clippings and brush debris should not be deposited on VFS area. Regular maintenance should also include weed control practices; however, herbicide use should be prohibited due to the nature of this site. Irrigation of the VFS should be accomplished by manual watering from a garden hose sufficient to get the native grasses established. After the grass is established irrigation should occur only as needed to keep the VFS alive and functioning properly.

Quarterly

- Inspect the VFS for erosion – repair rutting and replant any vegetation as needed.
- Inspect discharge point – verify that discharge is leaving the VFS as sheet flow and adjust as necessary to prevent scouring below discharge point.
- Inspect signage, fencing and barricading.

Annually

- Review record keeping insuring up to date records are maintained.
- Review maintenance responsibility ensuring that responsible party is aware of their obligations toward maintenance of the ponds.
- Review maintenance contracts to ensure that all required inspection and maintenance items are properly addressed.
- Engage in public education about the use of pesticides, herbicides, and fertilizers to minimize the adverse impact of these items on the environment.
- Review all action items noted during routine maintenance and develop a plan to address any major structural rehabilitation and grading activities in excess of normal routine maintenance.
- Notify TCEQ of any planned activities that will require major reconstruction of the storm water facilities. Any maintenance activity that makes the VFS non-functional during a storm event should be considered as a major activity.

As needed

- Make any major structural repairs necessary to insure proper operation and function of the VFS. All major structural repairs must be reviewed and approved by the TCEQ.
- Rejuvenate staging area, access drives, signage, fencing and barricades as necessary to maintain public awareness of restricted areas, and to provide maintenance access to the VFS in all weather conditions.

Record Keeping

A record of all inspection and maintenance activities must be kept and made available by the owner to the TCEQ upon request. A template of an inspection and maintenance activity log is attached and may be used. If ownership or maintenance responsibilities change subsequent to approval of the Water Pollution Abatement Plan for this development, the current responsible party shall require the new ownership entity to file a Deed Recordation Affidavit (TCEQ Form 0625) indicating the new ownership and responsibility for enacting the provisions of the WPAP with the Williamson County Clerk's office within thirty days of the change of ownership or change of responsibility for the provisions of the WPAP.

In the event that any major structural repairs or retro-fitting of the facilities becomes necessary, the entity with responsibility for enacting the provisions of the WPAP shall engage a Texas registered professional engineer to analyze the condition requiring major maintenance, produce a set of construction plans for the repair or retro-fit, and have those plans approved by the TCEQ prior to initiating any activities that would disrupt or hinder the proper function of the pond.

Inspection of Facilities by the Authorities Having Jurisdiction

The storm water facility addressed in this plan must be kept in a condition that always allows for inspection by the TCEQ or the City of Georgetown. The construction of fencing or barricades shall only occur in those areas where steep earthen slopes (> 3:1) or vertical grade changes (> 28") would require fencing or barricades as a matter of public protection.

Inspection and Maintenance Responsibility

It shall be the responsibility of the property owner to ensure that the Temporary Best Management Practices provisions of this Water Pollution Abatement Plan are adhered to by the contractor throughout the construction process. It shall be the responsibility of the party identified in the Deed Recordation Affidavit to ensure that the Permanent Best Management Practices provisions of this Water Pollution Abatement Plan are adhered to after the construction process in perpetuity.

I acknowledge the requirements of this Inspection, Maintenance, Repair and Retro-fit Plan.

Richard Gary 5-29-25

Richard Gary – Authorized Representative Date

FREQUENCY																							
Item		1st half										2nd half											
Sub-item		1st Quarter			2nd Quarter							3rd Quarter						4th Quarter					
Action		January		February		March		April		May		June		July		August		September		October		November	December
BI-WEEKLY																							
Routine Maintenance																							
Debris removal	Pick up all trash & debris																						
Vegetation control	Mowing, weeding & woody vegetation removal																						
QUARTERLY																							
Pond structures																							
Access drives & staging area	Rejuvenate driving surfaces to insure all-weather accessibility																						
Earthen slopes/grading	Repair erosion /eliminate unwanted ponding																						
Forebay	Monitor sediment accumulation - remove when > 6" accumulation																						
Inlet & outlet control structures	Check for blockage of inlet and outlet controls																						
	Repair level spreaders and gabions																						
Trash racks	Remove any trapped debris from trash rack																						
Sand filter bed	Remove sediment from sand filtration surface																						
	Remove vegetation from sand filtration bed																						
Under drain piping	Verify free flow of under drain piping																						
	Check clean out caps for proper operation																						
Concrete walls	Check structural integrity of concrete structures																						
Energy dissipaters	Check structural integrity of energy dissipaters																						
ANNUALLY																							
Record Keeping	Review record keeping																						
Public education	Issue notice to residents regarding use of fertilizers and pesticides																						
AS NEEDED																							
Structural rehabilitiation	Repair concrete structures																						
Maintain desired vegetation	Seeding or sodding installation, woody vegetation removal																						
Fences, barricades & signage	Repair or replace fencing, barricades & signage																						
Trash rack	Reconstruct trash rack with clean rock and filter fabric																						
Under drain piping	Flush out under drain piping																						
NOTES & ACTION ITEMS:																							

Attachment I – Measures for Minimizing Surface Stream Contamination

Measures for minimizing surface stream contamination consist of temporary measures to be implemented during the construction process and permanent measures to address post construction storm water run-off. The temporary measures are described in the Temporary Stormwater Section of this report. Permanent measures include the proposed batch detention pond, and any future water quality controls that will be required with future development.

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:

Applicant's Signature

3-20-25
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 21st day of March, 2025.

NOTARY PUBLIC

Martin Zaragoza
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 7/14/2027

MARTIN ZARAGOZA
Notary Public
STATE OF TEXAS
My Comm. Exp. 07-14-27
Notary ID # 13445587-3

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: 675 Kauffman Loop
Regulated Entity Location: 675 Kauffman Loop Leander, TX 78641
Name of Customer: 675 Kaufman LP
Contact Person: Richard Gary Phone: (512) 901-9800
Customer Reference Number (if issued):CN _____
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☒ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

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

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

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	*Size*	*Fee Due*
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	27.61 Acres	$ 6,500.00
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: Thomas J. Ball, P.E.

Date: March 27, 2025

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

TCEQ Use Only

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

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

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

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

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

SECTION II: Customer Information

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

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

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

675 KAUFMAN, LP

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
804005105	32078567123	86-3138180	

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

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

13. Independently Owned and Operated?
☒ Yes ☐ No

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

☐ Owner ☐ Operator ☒ Owner & Operator ☐ Other:
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant

15. Mailing Address: 7801 N. CAPITAL OF TEXAS HWY., SUITE 390

City	AUSTIN	State	TX	ZIP	78731	ZIP + 4	

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	richard@jwdevelopmentinc.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 901-9800		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

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

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

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

675 KAUFFMAN LOOP

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	675 KAUFFMAN LOOP							
	City	LEANDER	**State**	TX	**ZIP**	78641	**ZIP + 4**	
24. County	WILLIAMSON							

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

25. Description to Physical Location:	1/4 MILE EAST OF RONALD REAGAN BLVD. ON THE SOUTH SIDE OF SH 29 IN LEANDER, WILLIAMSON COUNTY, TEXAS				
26. Nearest City			**State**	**Nearest ZIP Code**	
LEANDER			TX	78642	

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).

27. Latitude (N) In Decimal:	N30.637183		**28. Longitude (W) In Decimal:**	W97.823375	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	38	13.86	97	49	24.15

29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)
6552		237210	

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

COMMERCIAL REAL ESTATE DEVELOPMENT

34. Mailing Address:	**7801 N. CAPITAL OF TEXAS HWY., SUITE 390**							
	City	**AUSTIN**	**State**	**TX**	**ZIP**	**78731**	**ZIP + 4**	

35. E-Mail Address:	**richard@jwdevelopmentinc.com**

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

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

SECTION IV: Preparer Information

40. Name:	Thomas J. Groll, P.E.	**41. Title:**	President
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(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.

Company:	675 Kaufman, LP	**Job Title:**	Partner
Name *(In Print)*:	Joe Williams	**Phone:**	(512) 901- **9800**
Signature:		**Date:**	6/24/2025

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

Complete the following form by adding the requested information in the fields below. The form must be notarized for it to be considered complete. Attach it to other programmatic submittals required by 30 Texas Administrative Code (30 TAC), Chapter 213, and provide it to TCEQ's Edwards Aquifer Protection Program (EAPP) as part of your application.

If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, JOE WILLIAMS of 675 KAUFMAN, LP

am the owner of the property located at:

10.166 ACRES RECORDED IN DOCUMENT #2021063860 OF THE OFFICAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 213.23(c)(2) and 213.23(d), relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize 675 KAUFMAN, LP
To conduct construction of access drives, utility lines, lift station & force main, stormwater lines, & stormwater pond
At the 10.166 acres described in Document #2021063860 of the Official Public Records of Williamson County, Texas.

Landowner Acknowledgement

I understand that 675 KAUFMAN, LP

Is ultimately responsible for the compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Signature
Landowner Signature

June 24, 2025

Date

THE STATE § OF TEXAS

County § of TRAVIS

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

JOE WILLIAMS

known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 24th day of June, 2025

Click or tap here to add ID

NOTARY PUBLIC

Sima Astaneh

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: Date

SIMA ASTANEH
Notary ID #126621011
My Commission Expires
September 29, 2028

Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☒ Other legally binding documents

ELECTRONICALLY RECORDED 2021063860
Williamson County, Texas Total Pages: 7

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM ANY INSTRUMENT THAT TRANSFERS AN INTEREST IN REAL PROPERTY BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

GF# 20060553

WARRANTY DEED WITH VENDOR'S LIEN

Date: April 29, 2021

Grantor: RONALD C. DIPPREY, INDIVIDUALLY AND AS TRUSTEE OF THE DOUBLE STAR IRREVOCABLE TRUST under the Trust Agreement dated December 20, 2016

Grantor's Mailing Address: P.O. Box 2595
Georgetown, Williamson County,
Texas 78627

Grantee: 675 KAUFMAN, LP, a Texas Limited Partnership

Grantees' Mailing Address: 7801 N. Capital of Texas Hwy, Suite 390
Austin, Travis County,
Texas 78731

Consideration:

TEN DOLLARS ($10.00), and other good and valuable consideration cash to Grantor paid by the Grantee hereinafter named, the receipt of which is hereby acknowledged and confessed, and for the payment of which no right or lien, expressed or implied, is retained; and for further consideration of the sum of TWO MILLION EIGHT HUNDRED EIGHTY-NINE THOUSAND FIVE HUNDRED AND NO/100 DOLLARS ($2,889,500.00), as evidenced by one certain promissory purchase money note, executed by Grantee and

payable to the order of FIRST UNITED BANK AND TRUST COMPANY , bearing interest as therein provided, being secured by the vendor's lien hereinafter retained and additionally secured by a Deed of Trust lien, with power of sale, to Greg Massey, Trustee.

Property (including any improvements):

Tract 1:
All that certain 24.91 acre tract of land out of the Greenlief Fisk Survey, Abstract No. 5 in Williamson County, Texas and being more particularly described by metes and bounds in Exhibit "A" attached hereto and made a part hereof for all purposes.

Tract 2:
All that certain .12 acre tract of land out of the Greenlief Fisk Survey, Abstract No. 5, in Williamson County, Texas, and being more particularly described by metes and bounds in Exhibit "B" attached hereto and made a part hereof for all purposes.

Reservations from Conveyance: None

Exceptions to Conveyance and Warranty:

Liens described as part of the Consideration and any other liens described in this deed as being either assumed or subject to which title is taken; validly existing easements, rights-of-way, and prescriptive rights, whether of record or not; all presently recorded and validly existing restrictions, reservations, covenants, conditions, oil and gas leases, mineral interests, and water interests outstanding in persons other than Grantor, and other instruments, other than conveyances of the surface fee estate, that affect the Property; validly existing rights of adjoining owners in any walls and fences situated on a common boundary; any discrepancies, conflicts, or shortages in area or boundary lines; any encroachments or overlapping of improvements; and

taxes for 2021, which Grantee assumes and agrees to pay, and subsequent assessments for that and prior years due to change in land usage, ownership, or both, the payment of which Grantee assumes.

Grantor, for the Consideration and subject to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty, grants, sells, and conveys to Grantee the Property, together with all and singular the rights and appurtenances thereto in any way belonging, to have and to hold it to Grantee and Grantee's successors and assigns forever. Grantor binds Grantor and Grantor's heirs, executors, administrators and successors to warrant and forever defend all and singular the Property to Grantee and Grantee's successors and assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof, except as to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty.

FIRST UNITED BANK AND TRUST COMPANY, at the request of Grantee, has paid in cash to Grantor that portion of the purchase price of the Property that is evidenced by the note. The first and superior vendor's lien against and superior title to the Property are retained for the benefit of FIRST UNITED BANK AND TRUST COMPANY and are transferred to FIRST UNITED BANK AND TRUST COMPANY without recourse against Grantor.

The vendor's lien against and superior title to the Property are retained until each note described is fully paid according to its terms, at which time this Deed will become absolute.

When the context requires, singular nouns and pronouns include the plural.

Grantee is purchasing the Property in an "as is" condition with no representations made or implied as to the quality, fitness, or condition of the Property by the Grantor. Grantee is purchasing the Property based solely upon its inspection and is not relying on any representations made by Grantor. No representations of the use, fitness, size, quality or any other matters concerning the Property have been made by Grantor to Grantee. Grantor warrants only title to the

Property as set forth in this Deed.

RONALD C. DIPPREY, INDIVIDUALLY AND AS AND AS TRUSTEE OF THE DOUBLE STAR IRREVOCABLE TRUST under the Trust Agreement dated December 20, 2016

STATE OF TEXAS,
COUNTY OF WILLIAMSON.

This instrument was acknowledged before me on this the 29th day of April, 2021, by Ronald C. Dipprey, Individually and as Trustee of the Double Star Irrevocable Trust under the Trust Agreement dated December 20, 2016.

JAMIE KAATZ
My Notary ID # 6145469
Expires July 31, 2022

Notary Public in and for
The State of Texas

EXHIBIT "A"

BEING 24.91 acres of the Greenlief Fisk Survey, Abstract No. 5, in Williamson County, Texas. This tract is a part of the property called 30.3 ac. which was described in a deed from Mildred Kauffman, et. al., to Virginia Carol Kauffman Dipprey of record in Doc. 9612227, of the Official Records of Williamson County, Texas (ORWCT); the same property that is described in a deed to Ronald C. Dipprey (partial interest) of record in Doc. 9874063 (ORWCT); less the right of way dedicated for State Highway 104, now State Highway 29 (264/79, as conveyed by A.P. Kauffman to the State of Texas in 1932); and less the 3.554 acre tract that was conveyed to Ironwood Real Estate LLC (Doc. 2006078782). This tract was surveyed on the ground in March of 2010, under the supervision of William F. Forest, Jr., Registered Professional Land Surveyor No. 1847. Survey note: The bearing basis for this survey is the Texas Coordinate System of 1983, Grid North, Texas Central Zone. Line codes herein relate to the survey drawing prepared this date.

BEGINNING at a concrete monument which was found in the South line of State Highwy 29, at the lower Northeast corner of the property of Virginia and Ronald Dipprey, as it now exists. This corner exists at a bend in the East line of the said 30.30 acres as described in the said deeds to Dipprey. As described in the Dipprey deeds, the Northeast corner of the 30.30 acres bears N 02°09'E 100.05 feet. This corner exists in the South line of State Highway 29 and in the South line of the R.O. W. as described in Vol. 264, Pg. 79, D/R.

THENCE along or near the fenced East line of Dipprey and the West boundary of the property that was conveyed to Rancho Sienna Ltd. (87 ac. Doc. 2004083179), S 10°21'43"W 1515.05 feet to an iron pin which was set South of the fence corner .

THENCE with the South line of the said tract called 30.3 acres as described in the said Dipprey deeds, and with the North line of County Road 268, following a line that departs from the existing fence, N 87°14'28"W 38.71 feet to an iron pin which was set in the North line of the roadway that is known as Kauffman Loop, continuing with the North line of County Road 268, N 87°15'11" W 293.73 feet to an iron pin set. An iron pin found (reference marker) stands (L1) N 23°39'29"W 6.30 feet. This boundary follows the North side of a 0.12 acre parcel (described this date) which exists in the former roadbed of County Road 268 at a location where the former County Road 268 has been reconfigured and is now known as Kauffman Loop.

THENCE N 19°24'51"W 1197.83 feet, along or near the general line of an existing fence, with the West line of the Dipprey property and the East boundary of the property that was conveyed to Edna Knauth as Independent Executrix of the Estate of Nora Wedemeyer, deceased (various heirs set out) see Probate Cause No. 14,100 (Co. Court at Law No. 2), and the property of Howard B. Wedemeyer (Quit Claim Deed for 973 ac. as described in Vol. 342, pg. 514 , prior 240/146 First Tract called 296 ac., to an iron pin found.

THENCE with the East boundary of the 3.554 acre property that is described in a deed to Ironwood Real Estate LLC (Doc. 2006078782), N 26°40'46"W 531.62 feet to an iron pin which was found .

THENCE with the North line of the said Dipprey 30.30 acre tract, with the South line of State Highway 29, S 88°39'15"E 406.42 feet to a concrete monument which was found at a widening of State Highway 29 as described in the said deed to the State of Texas (264/79 Tracts 1 and 2).

THENCE with the boundary of the property conveyed to the State of Texas (formerly known as Highway 104, now known as State Highway 29), S 01°23'22"W 99.35 feet to a concrete monument found; and S 88°35'31"E 799.10 feet to the POINT OF BEGINNING.

EXHIBIT "B"

BEING 0.12 ac. (5291 sq. feet area), situated in the Greenlief Fisk Survey, Abstract No. 5, in Williamson County, Texas. This parcel exists adjacent to the South boundary of a property called 30.3 ac. which was described in a deed from Mildred Kauffman, et. al., to Virginia Carol Kauffman Dipprey of record in Doc. 9612227, of the Official Records of Williamson County, Texas (ORWCT); the same property that is described in a deed to Ronald C. Dipprey (partial interest) of record in Doc. 9874063 (ORWCT). This tract was surveyed on the ground in March of 2010, under the supervision of William F. Forest, Jr., Registered Professional Land Surveyor No. 1847. Survey note: The bearing basis for this survey is the Texas Coordinate System of 1983, Grid North, Texas Central Zone. Line codes herein relate to the survey drawing prepared this date.

BEGINNING at an iron pin which was set in the South boundary of the 24.91 acre tract (remainder parcel of the above referenced Dipprey property) that was described as a part of a survey for Virginia and Ron Dipprey as prepared this date. An iron pin which was set South of a fence corner for the Southeast corner of the said 24.91 acre Dipprey tract, stands S 87°14'28"E 38.71 feet. This corner exists in the North line of County Road 268, where the existing roadway has been reconfigured and is now known as Kauffman Loop.

THENCE with the North line of the relocation of County Road 268 that is now known as Kauffman Loop, (C10) 240.51 feet with the arc of a curve to the left having a radius of 1250.0 feet, the chord bears S 81°02'16"W 240.14 feet to an iron pin which was set for the Southwest corner of this parcel. An iron pin which was found at the end of the curve stands (C11) S 75°05'20"W 19.06 feet.

THENCE (L2) N 19°24'51"W 52.62 feet with the East line of the property that was conveyed to Edna Knauth as Independent Executrix of the Estate of Nora Wedemeyer, deceased (various heirs set out) see Probate Cause No. 14,100 (Co. Court at Law No. 2), and the property of Howard B. Wedemeyer (Quit Claim Deed for 973 ac. as described in Vol. 342, pg. 514, prior 240/146 First Tract called 296 ac., to an iron pin which was set.

THENCE with the South boundary of the said Dipprey 24.91 acre tract, with a line that departs from the existing fence, S 87°15'11"E 293.73 feet to the POINT OF BEGINNING.

RETURN TO
Longhorn Title Co., Inc.

ELECTRONICALLY RECORDED
OFFICIAL PUBLIC RECORDS

2021063860

Pages: 7 Fee: $41.00
04/29/2021 03:45 PM

Nancy E. Rister, County Clerk
Williamson County, Texas

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

Complete the following form by adding the requested information in the fields below. The form must be notarized for it to be considered complete. Attach it to other programmatic submittals required by 30 Texas Administrative Code (30 TAC), Chapter 213, and provide it to TCEQ's Edwards Aquifer Protection Program (EAPP) as part of your application.

If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, RAVI KUMAR PULIMI of GREENFIELD AT KAUFFMAN, LLC

am the owner of the property located at:

14.843 ACRES RECORDED IN DOCUMENT # 2024103852 OF THE OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 213.23(c)(2) and 213.23(d), relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize 675 KAUFMAN, LP
To conduct construction of public water line and private force main line
At the 14.843 acres described in Document #2024103852 of the Official Public Records of Williamson County, Texas.

Landowner Acknowledgement

I understand that675 KAUFMAN, LP

Is ultimately responsible for the compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Signature
Landowner Signature

June 24, 2025

Date

THE STATE § OF TEXAS

County § of TRAVIS

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

RAVI KUMAR PULIMI

known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 24th day of June, 2025

Click or tap here to add ID

NOTARY PUBLIC

Sima Astaneh
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: Date

SIMA ASTANEH
Notary ID #126621011
My Commission Expires
September 29, 2028

Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☐ Other legally binding documents

ELECTRONICALLY RECORDED 2024103852
Williamson County, Texas Total Pages: 6

50/CTOT GF# 21-611672-AM/SC

Warranty Deed with Vendor's Lien

Notice of confidentiality rights: If you are a natural person, you may remove or strike any or all of the following information from any instrument that transfers an interest in real property before it is filed for record in the public records: your Social Security number or your driver's license number.

Date: **December 30, 2024**

Grantor: **675 Kaufman, LP, a Texas limited partnership**

Grantor's Mailing Address: 7801 N. Capital of Texas Highway, Suite 390, Austin, TX 78731

Grantee: **Greenfield at Kauffman LLC, a Texas limited liability company**

Grantee's Mailing Address: 9917 Whitley Bay Drive, Austin, TX 78717

Cash and other good and valuable consideration along with a note of even date executed by Grantee and payable to the order of Capstone Fund, LLC in the principal amount of $5,300,000.00 (Five Million Three Hundred Thousand and no/100 dollars). The note is secured by a first and superior vendor's lien and superior title retained in this deed in favor of Capstone Fund, LLC and by a first-lien deed of trust of even date from Grantee to Benjamin K. Williams or Benjamin H. Ha, Trustee.

Property (including any improvements):

BEING A 14.843 ACRE TRACT OF LAND, MORE OR LESS, LOCATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, WILLIAMSON COUNTY, TEXAS, SAID 14.843 ACRE TRACT, BEING A PORTION OF THAT CALLED 24.91 ACRE TRACT OF LAND, AND ALL OF THAT CALLED 0.12 ACRE TRACT OF LAND RECORDED IN DOCUMENT NO. 2021063860, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS; SAID 14.843 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a 1/2" iron rod located in the northwest right-of-way line of Kauffman Loop being the southwest corner of said 0.12 acre tract, the southeast corner of Lot 1, Block 1, of Bar W Ranch Commercial, according to the plat of record in Document No. 2020096319, Official Public Records, Williamson County, Texas, said point being the southwest corner of the herein described tract of land;

1. **Thence**, departing the northwest right-of-way line of Kauffman Loop, with the southwest line of said 0.12 acre tract, a northeast line of said Lot 1, Block 1, **N 20° 33' 29" W**, a distance of **52.09'** (Record: N 19° 24' 51" W, a distance of 52.63'), to a 1/2" iron rod located for the northwest corner of said 0.12 acre tract, the southwest corner of said 24.91 acre tract, being an angle point of said Lot 1, Block 1, said point being an angle point of the herein described tract of land;

2. **Thence**, with a southwest line of said 24.91 acre tract, the northeast line of said Lot 1, Block 1, the northeast line of Lot 10, Block 1, of said Bar W Ranch Commercial, **N 20° 42' 45" W**, a distance of **959.23'** (Record: N 19° 24' 51" W, a distance of 1197.83'), to a 1/2" iron rod with a blue "QUICK INC RPLS 6447" plastic cap set in a southwest line of said 24.91 acre tract, the northeast line of said Lot 10, Block 1, said point being an exterior corner of the herein described tract of land which bears S 20° 42' 45" E, a distance of 238.55' from a 1/2" iron rod located at an angle point of said 24.91 acre tract;

Thence, across said 24.91 acre tract, the following five (5) courses and distances:

3. **N 69° 17' 31" E**, a distance of **65.69'**, to a cotton spindle set in asphalt for an angle point of the herein described tract of land;

4. **N 00° 02' 43" E**, a distance of **52.66'**, to a 1/2" iron rod with a blue "QUICK INC RPLS 6447" plastic cap set for an exterior corner of the herein described tract of land;

5. **S 89° 58' 01" E**, a distance of **258.22'**, to a 1/2" iron rod with a blue "QUICK INC RPLS 6447" plastic cap set for an interior corner of the herein described tract of land;

6. **N 00° 08' 36" E**, a distance of **214.36'**, to a 1/2" iron rod with a blue "QUICK INC RPLS 6447" plastic cap set for an exterior corner of the herein described tract of land;

7. **S 89° 54' 18" E**, a distance of **502.91'**, to a 1/2" iron rod with a blue "QUICK INC RPLS 6447" plastic cap set in the southeast line of said 24.91 acre tract, the northwest line of that called 34.511 acre tract of land recorded in Document No. 2023007275, Official Public Records, Williamson County, Texas, said point being the northeast corner of the herein described tract of land which bears S 09° 03' 30" W, a distance of 305.90' from a TxDOT concrete monument located at the northeast corner of said 24.91 acre tract;

8. **Thence**, with the southeast line of said 24.91 acre tract, the northwest line of said 34.511 acre tract, **S 09° 03' 30" W**, a distance of **1209.08'** (Record: S 10° 21' 43" W, a distance of 1515.05'), to a 1/2" iron rod located in the north right-of-way line of Kauffman Loop, being the southeast corner of said 24.91 acre tract, said point being the southeast corner of the herein described tract of land;

9. **Thence**, with the north right-of-way line of Kauffman Loop, a south line of said 24.91 acre tract, **N 88° 25' 46" W**, a distance of **38.75'** (Record: N 87° 14' 28" W, a distance of 38.71'), to a 1/2" iron rod located for an angle point of said 24.91 acre tract, the easternmost corner of said 0.12 acre tract, said point being the beginning of curve to the left of the herein described tract of land;

10.with said curve to the left containing a radius of 1250.00', a central angle of 11°01'50", a chord which bears S 79° 51' 10" W, a chord distance of 240.28', a total **curve length** of **240.65'**, to the **POINT OF BEGINNING** containing **14.843 acres** of land, more or less.

Reservations from Conveyance: None

Exceptions to Conveyance and Warranty:

This Deed is executed, delivered and accepted subject to all and singular any liens securing the payment of any debt created or assumed in connection herewith if such liens are described herein, standby fees, ad valorem taxes for 2025 and all subsequent years, subsequent assessments for prior years due to changes in land usage or ownership, and all valid and subsisting easements, restrictions, reservations, covenants, conditions and other matters relating to the Property, to the extent that the same are valid and enforceable against the Property as shown by the records of the County Clerk of the County in which said real property is located and being more particularly described in the attached hereto Exhibit A.

Grantor, for the Consideration and subject to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty, grants, sells, and conveys to Grantee the Property, together with all and singular the rights and appurtenances thereto in any way belonging, to have and to hold it to Grantee and Grantee's heirs, successors, and assigns forever. Grantor binds Grantor and Grantor's heirs and successors to warrant and forever defend all and singular the Property to Grantee and Grantee's heirs, successors, and assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof, except as to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty.

The Vendor's Lien against and Superior Title to the Property are retained until the Note described is fully paid according to its terms, at which time this Deed will become absolute. The Vendor's Lien and Superior Title herein retained are hereby transferred, assigned, sold, and conveyed to the payee of the Note, and the successors and assigns of the payee.

When the context requires, singular nouns and pronouns include the plural.

EXECUTED this 30th of December, 2024.

675 KAUFMAN, LP,
a Texas limited partnership

By: 675 Kaufman Loop Management, LP, a Texas limited partnership, its General Partner

By: JW Development, Inc., a Texas corporation, its General Partner

By: _____
Joe Williams, President

THE STATE OF Louisiana §
Parish §
~~COUNTY~~ OF Rapides §

Before me, a Notary Public, the foregoing instrument was acknowledged on 30 h day of December, 2024 by Joe Williams, President of JW Development, Inc., a Texas corporation, General Partner of 675 Kaufman Loop Management, LP, a Texas limited partnership, General Partner of 675 Kaufman, LP, a Texas limited partnership who personally appeared before me, and who is known to me through Business to be the person(s) who executed it for the purposes and consideration expressed therein, and in the capacity stated.

JOY JUDERMAN
NOTARY PUBLIC NO. 18301
STATE OF LOUISIANA
RAPIDES PARISH

Joy Juderman
NOTARY PUBLIC, STATE OF Louisiana

AFTER RECORDING, RETURN TO:
Michael L. Robertson
Smith Robertson, LLP
1717 West Sixth Street, #220
Austin TX 78703

PREPARED IN THE LAW OFFICE OF
Shaddock & Associates, P. C.
2400 N. Dallas Parkway, Ste. 560
Plano, Texas 75093

EXHIBIT A

Undivided one-fourth (1/4) interest in all oil, gas and other mineral in Mineral Deed recorded in Volume 371, Page 157, Deed Records, Williamson County, Texas. Title to said interest has not been researched subsequent to the date of the above referenced instrument.

Terms, conditions and provisions of that certain Masonary Development Agreement Establishing Development Standards, dated October 10, 2022, filed October 17, 2022, recorded in Clerk's File No. 2022118699, Real Property Records, Williamson County, Texas.

Overhead electric, power poles, and power pole with guy wire outside of the boundaries of any apparent recorded easement(s), shown on a survey dated October 31, 2024, by Travis L. Quicksall, Registered Professional Land Surveyor No. 6447.

Rights or claims, if any, of adjoining property owner(s) in and to that portion of insured property, lying between fence and the property lines, shown on Survey prepared by Travis L. Quicksall, Registered Professional Land Surveyor No. 6447, dated October 31, 2024.

Protrusion of a portion of driveway or outside of the north boundary line(s), shown on a survey dated October 31, 2024, by Travis Quicksall, Registered Professional Land Surveyor No. 6447.

Propane tank, as shown on a survey dated October 31, 2024, by Travis L. Quicksall, Registered Professional Land Surveyor No. 6447.

Subject property lies within the boundaries of 675 KAUFMAN LOOP PUD.

ELECTRONICALLY RECORDED
OFFICIAL PUBLIC RECORDS

2024103852

Pages: 6 Fee: $41.00
12/31/2024 03:15 PM
KWEEMS

Nancy E. Rister, County Clerk
Williamson County,Texas

675 KAUFFMAN LOOP
LEANDER, TEXAS 78642
SITE DEVELOPMENT PLANS
SHARED IMPROVEMENTS
PROJECT #SD-24-0282

PREPARED FOR:
675 KAUFMAN LP
7801 N. CAPITAL OF TEXAS HWY., SUITE 390
AUSTIN, TX 78731

VICINITY MAP
1" = 2,000'

APPROVED BY:

ROBIN M. GRIFFIN, AICP, EXECUTIVE DIRECTOR OF DEVELOPMENT SERVICES	DATE
EMILY TRUMAN, P.E., CFM, CITY ENGINEER	DATE
ASHLEA BOYLE, CPRP, DIRECTOR OF PARKS AND RECREATION	DATE
CHIEF JOSHUA DAVIS, FIRE MARSHAL	DATE

CONTROL/BEARING BASIS INFORMATION

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, EAS"ING: 3086000.751, ELEV: 1014.33, MAG NAIL SET IN CONCRETE
POINT #5495, NORTHING: 10204497.854, EAS"ING: 3086563.187, ELEV: 973.56, MAG NAIL SET IN CONCRETE
POINT #5497, NORTHING: 10204490.352, EAS"ING: 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.

FLOODPLAIN INFORMATION:

ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP FOR WILLIAMSON COUNTY, TEXAS, MAP NUMBER 48491C0275E, EFFECTIVE DATE SEPTEMBER 26, 2008, THIS PROPERTY LIES IN ZONE "X", WHICH IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE OF THE 100 YEAR FLOOD PLAIN. THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP IS FOR USE IN ADMINISTERING THE NATIONAL FLOOD INSURANCE PROGRAM; IT DOES NOT NECESSARILY IDENTIFY ALL AREAS SUBJECT TO FLOODING, PARTICULARLY FROM LOCAL DRAINAGE SOURCES OF SMALL SIZE, OR ALL PLANIMETRIC FEATURES OUTSIDE SPECIAL FLOOD HAZARD AREAS. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR STRUCTURES LOCATED THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. THE FLOOD HAZARD AREA IS SUBJECT TO CHANGE AS DETAILED STUDIES OCCUR AND/OR WATERSHED OR CHANNEL CONDITIONS CHANGE. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

LAND USE SUMMARY:		ZONING
RIGHT-OF-WAY DEDICATION	0.092 ACRES	
BLOCK A, LOT 1 - COMMERCIAL	1.754 ACRES	PUD GC-2-A
BLOCK B, LOT 1 - COMMERCIAL	3.855 ACRES	PUD GC-2-A
BLOCK B, LOT 2 - COMMERCIAL	1.000 ACRES	PUD GC-2-A
BLOCK B, LOT 3 - COMMERCIAL	0.800 ACRES	PUD GC-2-A
BLOCK B, LOT 4 - COMMERCIAL	1.600 ACRES	PUD GC-2-A
BLOCK B, LOT 5 - DRAINAGE	1.063 ACRES	PUD GC-2-A
BLOCK B, LOT 6 - RESIDENTIAL	14.844 ACRES	PUD SFT-2-A
TOTAL	25.008 ACRES	

PROPOSED IMPERVIOUS COVER: 20,822 SF (SHARED ACCESS DRIVE)

FUTURE LAND USE: ACTIVITY CENTER

ASSOCIATED PROJECTS:

CONCEPT/PRELIMINARY PLAT	CP-23-0029
PUBLIC IMPROVEMENT PLANS	PICP-24-0176
FLOOD PLAIN DEVELOPMENT	FDP-24-0014
FINAL PLAT	FP-24-0196

WATER DEMAND:

MINIMUM PRESSURE:	75 PSI
MAXIMUM PRESSURE:	97 PSI
AVAILABLE FIRE FLOW:	3,236 GPM @ 20 PSI RESIDUAL

VALUES PROVIDED BY K. FRIESE & ASSOCIATES

PROJECT ENGINEER:	THOMAS J. GROLL, P.E. #90976
AGENT:	THOMAS J. GROLL, P.E. #90976
SURVEYOR:	TRAVIS QUICKSALL, RPLS #6447
FILING DATE:	01/28/2025

REVISIONS/CORRECTIONS

#	SHEETS AFFECTED	DESCRIPTION	BY	DATE

LEGAL DESCRIPTION:

25.008ACRE TRACT OF LAND, LOCATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, WILLIAMSON COUNTY, TEXAS, SAID 25.008 ACRE TRACT, BEING ALL OF THAT CALLED 24.91 ACRE TRACT OF LAND, AND ALL OF THAT CALLED 0.12 ACRE "RACT OF LAND RECORDED IN DOCUMENT NO. 2021063860, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS.

DESIGN ENGINEER/AGENT:
TOM GROLL ENGINEERING, PC
THOMAS J. GROLL, P.E.
5208 PRYOR LANE
AUSTIN TX, 78734
(512) 848-5796
TBPE FIRM # F-9799

GEOTECHNICAL ENGINEER:
MLA GEOTECHNICAL
2804 LONGHORN BLVD.
AUSTIN, TX 78758
(512) 837-8899
TBPE FIRM #F-2684

SURVEYOR:
QUICK INC.
TRAVIS QUICKSALL, RPLS
831 N. MAIN STREET
SALADO, TEXAS 76571
(512) 915-4950
FIRM # 10194104

OWNER:
675 KAUFMAN LP
7801 N CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TEXAS 78731
(512) 901-9800

FILING DATE: JANUARY 28, 2025

ASSOCIATED PROJECTS:
TxDOT DRIVEWAY & TURN LANE CONSTRUCTION PERMIT #24-45428
PUBLIC IMPROVEMENT CONSTRUCTION PLAN: PICP-24-0176
FLOODPLAIN DEVELOPMENT PERMIT: FPD-24-0014
CONCEPT PLAN/PRELIMINARY PLAT: CP-23-0029
FINAL PLAT: FP-24-0916
ZONING CASE Z-22-0005
ZONING CASE Z-24-0120

Sheet List Table

Sheet Number	Sheet Title
01	COVER SHEET
02	GENERAL NOTES
03	WPAP & SCS NOTES
04	PLAT SHEET 1
05	PLAT SHEET 2
06	PLAT SHEET 3
07	EXISTING CONDITIONS AND DEMOLITION PLAN
08	EROSION SEDIMENTATION CONTROL AND TREE PROTECTION 1 OF 2
09	EROSION SEDIMENTATION CONTROL AND TREE PROTECTION 2 OF 2
10	TREE PROTECTION PLAN 1 OF 3
11	TREE PROTECTION PLAN 2 OF 3
12	TREE PROTECTION PLAN 3 OF 3
13	SITE PLAN
14	GRADING PLAN
15	DRAINAGE PLAN
17	STORM LINE 'A' & 'A-2'
18	STORM LINE 'B' & 'C'
19	PROPOSED BATCH DETENTION AND WATER QUALITY POND
20	WASTEWATER LINE 'A'
21	FORCE MAIN LINE 1+00 - 8+50
22	FORCE MAIN LINE 8+50 - 16+25
23	FORCE MAIN LINE 16+25 - 24+50
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26	LIFT STATION PLAN DETAILS 1
27	LIFT STATION PLAN DETAILS 2
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29	EROSION CONTOL DETAILS
30	PAVING AND DRAINAGE DETAILS SHEET 1 OF 3
31	PAVING AND DRAINAGE DETAILS SHEET 2 OF 3
32	PAVING AND DRAINAGE DETAILS SHEET 3 OF 3
33	MASONRY WALL DETAILS
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36	LANDSCAPE CALCULATIONS & SPECIFICATIONS
37	LANDSCAPE & TREE PROTECTION DETAILS

Know what's below. Call before you dig.

TOM GROLL ENGINEERING
5208 PRYOR LANE, AUSTIN, TEXAS 78734 | (512) 848-5796 | TBPE FIRM # F-9799

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

No.	DATE	DESCRIPTION	BY

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFMAN LOOP
LEANDER, TEXAS 78642

COVER SHEET

THOMAS J. GROLL 90976 LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
5/21/25

Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No.: 01 of 37
Project No.: SD-24-0282

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 INCLEMENT 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:

SIEVE SIZE	PERCENT RETAINED BY WEIGHT
1/2"	0
3/8"	0-2
#4	40-85
#10	95-100

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 CONTRACTORS' 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 C900-DR14 MIN. 305 PSI PRESSURE RATING). WATER SERVICES (2" OR LESS) SHALL BE POLYETHYLENE TUBING (BLACK, 200PSI, AND SDR-(9)). 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 LEGISTATION RELATED TO ACCESSIBLITY WITHIN THE LIMITS OF CONSTRUCTION SHOWN IN THESE PLANS. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARS (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 ¼" 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 TRANSPORATION 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 DRVIEWAY 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.

Know what's below. Call before you dig.

TOM GROLL ENGINEERING
5208 PRYOR LANE, AUSTIN, TEXAS 78734 ◦ (512) 848-5796 ◦ TBPE FIRM # F-9799 ◦ WWW.TG-ENG.COM

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

NO.	DATE	DESCRIPTION	BY

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

GENERAL NOTES

THOMAS J. GROLL 90976 LICENSED PROFESSIONAL ENGINEER, STATE OF TEXAS

Date:	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	02 of 37
Project No.	SD-24-0282

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY ORGANIZED SEWAGE COLLECTION SYSTEM (SCS) GENERAL CONSTRUCTION NOTES

1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM MUST BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS AQUIFER RULES 30 TEXAS ADMINISTRATIVE CODE (TAC) §§213.5(C) AND 217.51 - 217.70 AND 30 TAC CHAPTER 217, SUBCHAPTER D, AND THE CITY OF GEORGETOWN STANDARD SPECIFICATIONS.

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

3. NO LATER THAN 48 HOURS PRIOR TO COMMENCING ANY REGULATED ACTIVITY, THE APPLICANT OR HIS AGENT MUST NOTIFY THE REGIONAL OFFICE, IN WRITING, OF THE DATE ON WHICH THE REGULATED ACTIVITY WILL BEGIN.

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

5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO CONSTRUCTION, MUST BE MAINTAINED DURING CONSTRUCTION, AND MUST BE REMOVED WHEN SUFFICIENT VEGETATION IS ESTABLISHED TO CONTROL THE EROSION AND SEDIMENTATION AND THE CONSTRUCTION AREA IS STABILIZED.

6. THE SEWER LINE TRENCH DETAILS SHOWING THE CROSS SECTION WITH THE DIMENSIONS, PIPE PLACEMENT, AND BACKFILL INSTRUCTIONS ARE INCLUDED ON PLAN SHEET ## OF ## OF THESE PLANS. ALL SEWER PIPES JOINTS MUST MEET THE REQUIREMENTS IN 30 TAC §§217.53(C) AND 217.65.

GRAVITY LINES MUST HAVE A SDR 35 OR LESS. PRESSURIZED SEWER SYSTEMS MUST HAVE PIPE WITH A MINIMUM WORKING PRESSURE RATING OF 150 PSI.

THE SPECIFICATION NUMBER FOR THE PIPE AND JOINTS IS ASTM D3034 & D2241.

THE PIPE MATERIAL, THE PRESSURE CLASSES, AND THE SDR DESIGNATIONS ARE SDR 26 PVC.

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

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

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

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

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

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

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

12. WHERE SEWERS LINES DEVIATE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE ALL CURVATURE OF SEWER PIPE MUST BE ACHIEVED BY THE FOLLOWING PROCEDURE WHICH IS RECOMMENDED BY THE PIPE MANUFACTURER: NA - NO CURVE SEWER ALIGNMENTS.

IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOINT MUST BE USED: NA - PIPE FLEXURE NOT PROPOSED.

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

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

IF NO STUB-OUT IS PRESENT AN ALTERNATE METHOD OF JOINING LATERALS IS SHOWN IN THE DETAIL ON PLAN SHEET __ OF __. NA - ALL STUB OUTS PROVIDED WHERE NECESSARY.

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

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

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

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

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

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

(B) FOR SECTIONS OF COLLECTION SYSTEM PIPE LESS THAN 36 INCH AVERAGE INSIDE DIAMETER, THE FOLLOWING PROCEDURE MUST APPLY, UNLESS A PIPE IS TO BE TESTED AS REQUIRED BY PARAGRAPH (2) OF THIS SUBSECTION.
(I) A PIPE MUST BE PRESSURIZED TO 3.5 POUNDS PER SQUARE INCH (PSI) GREATER THAN THE PRESSURE EXERTED BY GROUNDWATER ABOVE THE PIPE.

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

EQUATION C.3

$$T = \frac{0.085 \times D \times K}{Q}$$

WHERE:

T = TIME FOR PRESSURE TO DROP 1.0 POUND PER SQUARE INCH GAUGE IN SECONDS
K = 0.000419 X D X L, BUT NOT LESS THAN 1.0
D = AVERAGE INSIDE PIPE DIAMETER IN INCHES
L = LENGTH OF LINE OF SAME SIZE BEING TESTED, IN FEET
Q = RATE OF LOSS, 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SURFACE

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

Pipe Diameter (inches)	Minimum Time (seconds)	Maximum Length for Minimum Time (feet)	Time for Longer Length (seconds/foot)
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	100	13.676
27	1530	88	17.309
30	1700	80	21.369
33	1870	72	25.856

(D) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 25% OF THE CALCULATED TESTING TIME.
(E) IF ANY PRESSURE LOSS OR LEAKAGE HAS OCCURRED DURING THE FIRST 25% OF A TESTING PERIOD, THEN THE TEST MUST CONTINUE FOR THE ENTIRE TEST DURATION AS OUTLINED ABOVE OR UNTIL FAILURE.
(F) WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT EACH JOINT INSTEAD OF FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.
(G) A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMETER GREATER THAN 33 INCHES MUST BE APPROVED BY THE EXECUTIVE DIRECTOR.

(2) INFILTRATION/EXFILTRATION TEST.

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

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

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

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

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

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

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

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

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

(III) ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD.

(B) MANDREL DESIGN.

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

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

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

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

(C) METHOD OPTIONS.
(I) AN ADJUSTABLE OR FLEXIBLE MANDREL IS PROHIBITED.

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

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

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

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

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

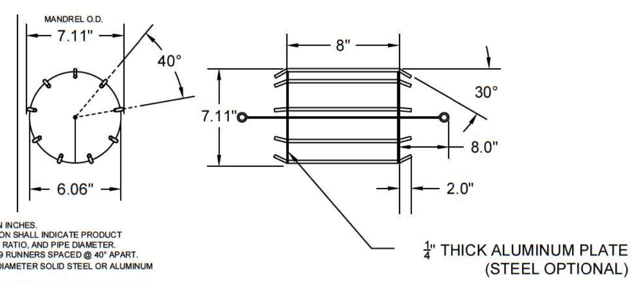
(5) GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%).

(6) IF A PIPE SECTION FAILS A DEFLECTION TEST, AN OWNER SHALL CORRECT THE PROBLEM AND CONDUCT A SECOND TEST AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.

17. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.
(A) ALL MANHOLES MUST PASS A LEAKAGE TEST.
(B) AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING) FOR LEAKAGE, SEPARATE AND INDEPENDENT OF THE COLLECTION SYSTEM PIPES, BY HYDROSTATIC EXFILTRATION TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE EXECUTIVE DIRECTOR.
(1) HYDROSTATIC TESTING.
(A) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHODS IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.
(B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL ALL WASTEWATER PIPES COMING INTO A MANHOLE WITH AN INTERNAL PIPE PLUG, FILL THE MANHOLE WITH WATER, AND MAINTAIN THE TEST FOR AT LEAST ONE HOUR.
(C) A TEST FOR CONCRETE MANHOLES MAY USE A 24-HOUR WETTING PERIOD BEFORE TESTING TO ALLOW SATURATION OF THE CONCRETE.
(2) VACUUM TESTING.
(A) TO PERFORM A VACUUM TEST, AN OWNER SHALL PLUG ALL LIFT HOLES AND EXTERIOR JOINTS WITH A NON-SHRINK GROUT AND PLUG ALL PIPES ENTERING A MANHOLE.
(B) NO GROUT MUST BE PLACED IN HORIZONTAL JOINTS BEFORE TESTING.
(C) STUB-OUTS, MANHOLE BOOTS, AND PIPE PLUGS MUST BE SECURED TO PREVENT MOVEMENT WHILE A VACUUM IS DRAWN.
(D) AN OWNER SHALL USE A MINIMUM 60 INCH/LB TORQUE WRENCH TO TIGHTEN THE EXTERNAL CLAMPS THAT SECURE A TEST COVER TO THE TOP OF A MANHOLE.
(E) A TEST HEAD MUST BE PLACED AT THE INSIDE OF THE TOP OF A CONE SECTION, AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
(F) THERE MUST BE A VACUUM OF 10 INCHES OF MERCURY INSIDE A MANHOLE TO PERFORM A VALID TEST.
(G) A TEST DOES NOT BEGIN UNTIL AFTER THE VACUUM PUMP IS OFF.
(H) A MANHOLE PASSES THE TEST IF AFTER 2.0 MINUTES AND WITH ALL VALVES CLOSED, THE VACUUM IS AT LEAST 9.0 INCHES OF MERCURY.

18. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.

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



NOTES:
- ALL DIMENSIONS ARE IN INCHES.
- STAMPED IDENTIFICATION SHALL INDICATE PRODUCT STANDARD, DIMENSION RATIO, AND PIPE DIAMETER.
- MANDREL SHALL HAVE 9 RUNNERS SPACED @ 40° APART.
- RUNNERS SHALL BE $\frac{1}{2}$" DIAMETER SOLID STEEL OR ALUMINUM ROD.
- CENTER PULL ROD SHALL BY $\frac{1}{2}$" DIAMETER OR LARGER SOLID STEEL OR ALUMINUM ROD.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER POLLUTION ABATEMENT PLAN GENERAL CONSTRUCTION NOTES

1. WRITTEN CONSTRUCTION NOTIFICATION MUST BE GIVEN TO THE APPROPRIATE TCEQ REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY. INFORMATION MUST INCLUDE THE DATE ON WHICH THE REGULATED ACTIVITY WILL COMMENCE, THE NAME OF THE APPROVED PLAN FOR THE REGULATED ACTIVITY, AND THE NAME OF THE PRIME CONTRACTOR AND THE NAME AND TELEPHONE NUMBER OF THE CONTACT PERSON.

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

3. IF ANY SENSITIVE FEATURE IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.

4. NO TEMPORARY ABOVE GROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEM IS INSTALLED WITHIN 150 FEET OF A DOMESTIC, INDUSTRIAL, IRRIGATION, OR PUBLIC WATER SUPPLY WELL, OR OTHER SENSITIVE FEATURE.

5. PRIOR TO COMMENCEMENT OF CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS' SPECIFICATIONS AND GOOD ENGINEERING PRACTICES. CONTROLS SPECIFIED IN THE TEMPORARY STORM WATER SECTION OF THE APPROVED EDWARDS AQUIFER PROTECTION PLAN ARE REQUIRED DURING CONSTRUCTION. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED.

6. 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).

7. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS NOT LATER THAN WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50%. A PERMANENT STAKE MUST BE PROVIDED THAT CAN INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME.

8. 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).

9. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.

10. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARY OR PERMANENTLY CEASE 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 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.

11. THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST: THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR; THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

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

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

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

Know what's below. Call before you dig.

TOM GROLL ENGINEERING
5208 PRYOR LANE, AUSTIN, TEXAS 78734 • (512) 848-5796 • TBPE FIRM # F-9799
WWW.TG-ENG.COM

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

NO.	DATE	DESCRIPTION	BY

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

WPAP & SCS NOTES

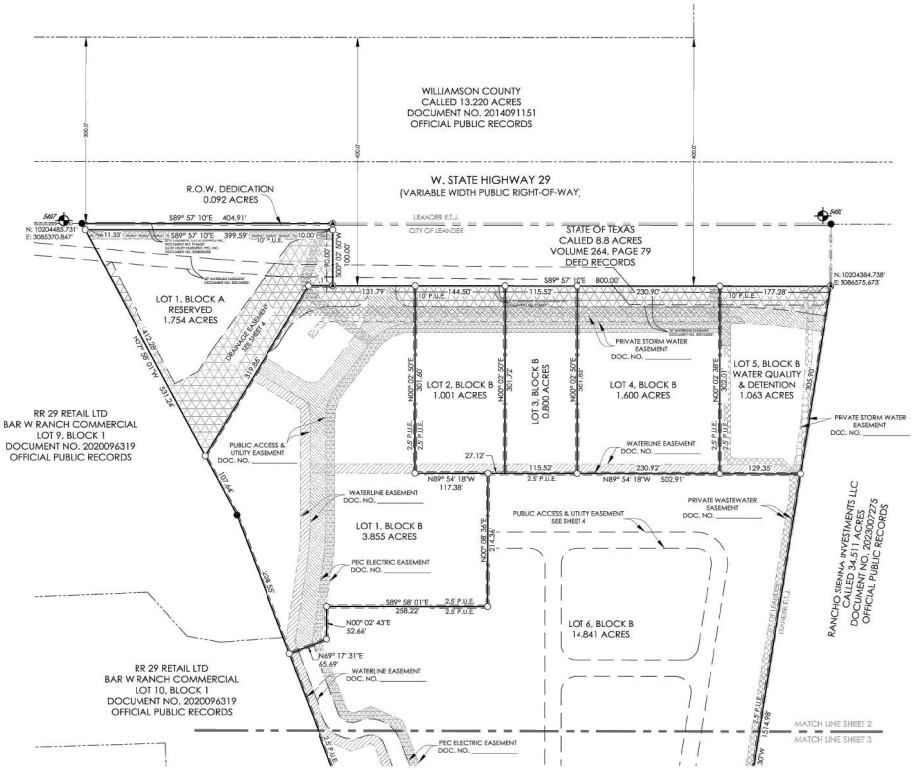
STATE OF TEXAS — THOMAS J. GROLL — 90976 — LICENSED PROFESSIONAL ENGINEER

Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 03 of 37
Project No. SD-24-0282

FINAL PLAT
675 KAUFFMAN LOOP

A SUBDIVISION IN THE CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS.

BEING A 25.008 ACRE TRACT OF LAND, LOCATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, WILLIAMSON COUNTY, TEXAS, SAID 25.008 ACRE TRACT, BEING ALL OF THAT CALLED 24.91 ACRE TRACT OF LAND, AND ALL OF THAT CALLED 0.12 ACRE TRACT OF LAND RECORDED IN DOCUMENT NO. 2021063860, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS.



SCALE: 1"=100'

LEGEND

- BENCHMARK
- 1/2" IRON ROD FOUND
- TxDOT CONCRETE MONUMENT FOUND

TAK TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
5493	10202825.791	3086000.751	1014.33	MAG NAIL SET IN CONCRETE
5495	10204497.854	3086563.187	973.56	MAG NAIL SET IN CONCRETE
5497	10204490.352	3085341.932	982.20	MAG NAIL SET IN CONCRETE

ENGINEER	OWNER/DEVELOPER		
THOMAS J. GROLL, P.E. TOM GROLL ENGINEERING, PC FIRM #9799 5208 PRYOR LANE AUSTIN, TEXAS 78734	675 KAUFFMAN LP 7801 N. CAPITAL OF TEXAS HWY SUITE 390 AUSTIN, TEXAS 78731	Quick Inc. Land Surveying. Development. Firm:10194104 • 512-915-6950 Physical Address: 851 N. Main Street, Salado 76571 Mailing Address: P.O. Box 798, Salado 76571	1ST SUBMITTAL: NOVEMBER 18, 2024 JOB NO. 23-0064 PROJECT NO. XXXXXXXX SHEET 2 OF 5

Know what's below. Call before you dig.

TOM GROLL ENGINEERING

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

PREPARED FOR:

No.	DATE	DESCRIPTION	BY

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

PLAT SHEET 1

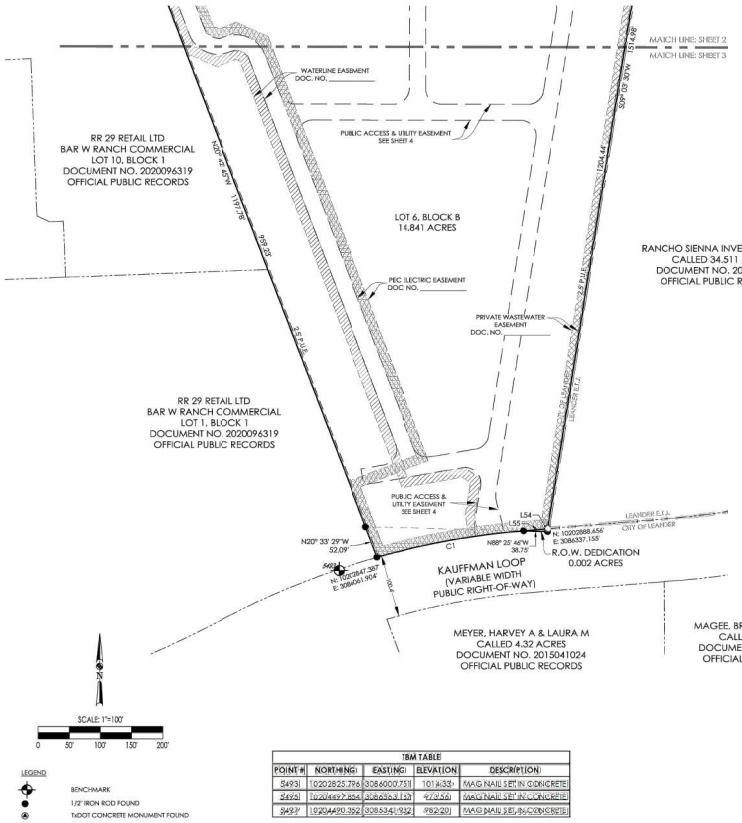
STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER

Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 04 of 37
Project No. SD-24-0282

FINAL PLAT
675 KAUFFMAN LOOP

A SUBDIVISION IN THE CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS.

BEING A 25.008 ACRE TRACT OF LAND, LOCATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, WILLIAMSON COUNTY, TEXAS, SAID 25.008 ACRE TRACT, BEING ALL OF THAT CALLED 24.91 ACRE TRACT OF LAND, AND ALL OF THAT CALLED 0.12 ACRE TRACT OF LAND RECORDED IN DOCUMENT NO. 2021063860, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS.



LEGEND

- BENCHMARK
- 1/2" IRON ROD FOUND
- TxDOT CONCRETE MONUMENT FOUND

TBM TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
S493	10202825.796	3086000.751	1014.33'	MAG NAIL SET IN CONCRETE
S495	10204692.854	3086636.367	972.56'	MAG NAIL SET IN CONCRETE
S497	10204490.392	3085341.932	982.20'	MAG NAIL SET IN CONCRETE

FIELD NOTES FOR A 25.008 ACRE TRACT OF LAND:

BEING A 25.008 ACRE TRACT OF LAND, LOCATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, WILLIAMSON COUNTY, TEXAS, SAID 25.008 ACRE TRACT, BEING ALL OF THAT CALLED 24.91 ACRE TRACT OF LAND, AND ALL OF THAT CALLED 0.12 ACRE TRACT OF LAND RECORDED IN DOCUMENT NO. 2021063860, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS; SAID 25.008 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A 1/2" IRON ROD LOCATED IN THE SOUTH RIGHT-OF-WAY LINE OF W. STATE HIGHWAY 29, BEING THE NORTHWEST CORNER OF SAID 24.91 ACRE TRACT, THE NORTHEAST CORNER OF LOT 9, BLOCK 1, OF BAR W RANCH COMMERCIAL, ACCORDING TO THE PLAT OF RECORD IN DOCUMENT NO. 2020096319, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS, A SOUTH LINE OF THAT CALLED 8.8 ACRE TRACT OF LAND DEEDED TO THE STATE OF TEXAS, RECORDED IN VOLUME 264, PAGE 79, DEED RECORDS, WILLIAMSON COUNTY, TEXAS, SAID POINT BEING THE NORTHWEST CORNER OF THE HEREIN DESCRIBED TRACT OF LAND;

THENCE, WITH THE SOUTH RIGHT-OF-WAY LINE OF W. STATE HIGHWAY 29, THE COMMON BOUNDARY LINES OF SAID 8.8 ACRE TRACT AND SAIC 24.91 ACRE TRACT, THE FOLLOWING THREE (3) COURSES AND DISTANCES:

1. **S 89° 57' 10" E**, A DISTANCE OF **404.91'**, TO A TXDOT CONCRETE MONUMENT LOCATED FOR AN EXTERIOR CORNER OF THE HEREIN DESCRIBED TRACT OF LAND;
2. **S 00° 02' 50" W**, A DISTANCE OF **100.00'**, TO A TXDOT CONCRETE MONUMENT LOCATED FOR AN INTERIOR CORNER OF THE HEREIN DESCRIBED TRACT OF LAND;
3. **S 89° 57' 10" E**, A DISTANCE OF **800.00'**, TO A TXDOT CONCRETE MONUMENT LOCATED IN THE SOUTH RIGHT-OF-WAY LINE OF W. HIGHWAY 29, BEING AN EXTERIOR CORNER OF SAID 8.8 ACRE TRACT, THE NORTHEAST CORNER OF SAID 24.91 ACRE TRACT, AN ANGLE POINT OF THAT CALLED 34.511 ACRE TRACT OF LAND RECORDED IN DOCUMENT NO. 2023007275, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS, SAID POINT BEING THE NORTHEAST CORNER OF THE HEREIN DESCRIBED TRACT OF LAND;
4. **THENCE**, DEPARTING THE SOUTH RIGHT-OF-WAY LINE OF W. HIGHWAY 29, WITH THE SOUTHEAST LINE OF SAID 24.91 ACRE TRACT, A NORTHWEST LINE OF SAID 34.511 ACRE TRACT, **S 09° 03' 30" W**, A DISTANCE OF **1514.98'**, TO A 1/2" IRON ROD LOCATED IN THE NORTH RIGHT-OF-WAY LINE OF KAUFFMAN LOOP, BEING THE SOUTHEAST CORNER OF SAID 24.91 ACRE TRACT, SAID POINT BEING THE SOUTHEAST CORNER OF THE HEREIN DESCRIBED TRACT OF LAND;
5. **THENCE**, WITH THE NORTH RIGHT-OF-WAY LINE OF KAUFFMAN LOOP, A SOUTH LINE OF SAID 24.91 ACRE TRACT, **N 88° 25' 46" W**, A DISTANCE OF **38.75'**, TO A 1/2" IRON ROD LOCATED IN THE NORTH RIGHT-OF-WAY LINE OF KAUFFMAN LOOP, BEING AN ANGLE POINT OF SAID 24.91 ACRE TRACT, THE EASTERNMOST CORNER OF SAID 0.12 ACRE TRACT, SAID POINT BEING AN ANGLE POINT OF THE HEREIN DESCRIBED TRACT OF LAND AND THE BEGINNING OF A CURVE TO THE LEFT;
6. WITH SAID CURVE TO THE LEFT CONTAINING A RADIUS OF 1250.00', A CENTRAL ANGLE OF 11°01'30", A CHORD WHICH BEARS S 79° 51' 10" W, A CHORD DISTANCE OF 240.28', A TOTAL **CURVE LENGTH** OF **240.65'**, TO A 1/2" IRON ROD LOCATED IN THE NORTH RIGHT-OF-WAY LINE OF KAUFFMAN LOOP, BEING THE SOUTHWEST CORNER OF SAID 0.12 ACRE TRACT, THE SOUTHEAST CORNER OF LOT 1, BLOCK 1, OF SAID BAR W RANCH COMMERCIAL, SAID POINT BEING THE SOUTHWEST CORNER OF THE HEREIN DESCRIBED TRACT OF LAND;
7. **THENCE**, DEPARTING THE NORTHWEST RIGHT-OF-WAY LINE OF KAUFFMAN LOOP, WITH THE SOUTHWEST LINE OF SAID 0.12 ACRE TRACT, A NORTHEAST LINE OF SAID LOT 1, BLOCK 1, **N 20° 33' 29" W**, A DISTANCE OF **52.09'**, TO A 1/2" IRON ROD LOCATED FOR THE NORTHWEST CORNER OF SAID 0.12 ACRE TRACT, THE SOUTHWEST CORNER OF SAID 24.91 ACRE TRACT, AN ANGLE POINT OF SAID LOT 1, BLOCK 1, SAID POINT BEING AN ANGLE POINT OF THE HEREIN DESCRIBED TRACT OF LAND;

THENCE, WITH THE SOUTHWEST LINES OF SAID 24.91 ACRE TRACT, THE NORTHEAST LINES OF SAID BAR W RANCH COMMERCIAL, THE FOLLOWING TWO (2) COURSES AND DISTANCES:

8. **N 20° 42' 45" W**, A DISTANCE OF **1197.78'**, TO A 1/2" IRON ROD LOCATED FOR AN ANGLE POINT OF THE HEREIN DESCRIBED TRACT OF LAND;
9. **N 27° 58' 01" W**, A DISTANCE OF **531.24'**, TO THE **POINT OF BEGINNING** CONTAINING **25.008 ACRES** OF LAND.

NOTE: 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.

ENGINEER
THOMAS J. GROLL, P.E.
TOM GROLL ENGINEERING, PC
FIRM #9799
5008 PRYOR LANE
AUSTIN, TEXAS 78734

OWNER/DEVELOPER
675 KAUFMAN LP
7801 N. CAPITAL OF TEXAS HWY
SUITE 390
AUSTIN, TEXAS 78731

Quick Inc.
Land Surveying. Development.
Firm:10194104 • 512-915-4930
Physical Adress: 831 N. Main Street, Salado 76571
Mailing Address: P.O. Box 798, Salado 76571

1ST SUBMITTAL: NOVEMBER 18, 2024
JOB NO. 23-0064
PROJECT NO. XXXXXXXX
SHEET 3 OF 5

Know what's below. Call before you dig.

TOM GROLL ENGINEERING
5008 PRYOR LANE, AUSTIN, TEXAS 78734 • (512) 568-9798 • TBPE FIRM # F-9799 • TBPLS FIRM # 10194104

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

No.	DATE	DESCRIPTION	BY

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

PLAT SHEET 2

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER

Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 05 of 37
Project No. SD-24-0282

FINAL PLAT
675 KAUFFMAN LOOP

A SUBDIVISION IN THE CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS.

BEING A 25.008 ACRE TRACT OF LAND, LOCATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, WILLIAMSON COUNTY, TEXAS, SAID 25.008 ACRE TRACT, BEING ALL OF THAT CALLED 24.91 ACRE TRACT OF LAND, AND ALL OF THAT CALLED 0.12 ACRE TRACT OF LAND RECORDED IN DOCUMENT NO. 2021063860, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS.

PLAT NOTES:
1. THIS SUBDIVISION IS WHOLLY CONTAINED WITHIN THE CITY LIMITS OF LEANDER, TEXAS.
2. NO LOT IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO THE CITY OF LEANDER WATER DISTRIBUTION AND WASTEWATER COLLECTION FACILITIES.
3. A BUILDING PERMIT IS REQUIRED FROM THE CITY OF LEANDER PRIOR TO CONSTRUCTION OF ANY BUILDING OR SITE IMPROVEMENTS ON ANY LOT IN THIS SUBDIVISION.
4. NO BUILDINGS, FENCES, LANDSCAPING OR OTHER STRUCTURES ARE PERMITTED WITHIN DRAINAGE EASEMENTS SHOWN EXCEPT AS APPROVED BY THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT.
5. PROPERTY OWNER SHALL PROVIDE ACCESS TO DRAINAGE EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY THE CITY OF LEANDER.
6. ALL EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY OWNER OR HIS OR HER ASSIGNS.
7. IN ADDITION TO THE EASEMENT SHOWN HEREON, A TEN (10') FOOT WIDE PUBLIC UTILITY EASEMENT IS DEDICATED ALONG AND ADJACENT TO ALL RIGHT-OF-WAY AND A TWO AND A HALF (2.5') FOOT WIDE PUBLIC UTILITY EASEMENT IS DEDICATED ALONG ALL SIDE LOT LINES.
8. NO PORTION OF THE TRACT IS WITHIN A FLOOD HAZARD AREA AS SHOWN ON THE FLOOD INSURANCE RATE MAP PANEL #48491C0273E FOR WILLIAMSON COUNTY, EFFECTIVE SEPTEMBER 26, 2008.
9. BUILDING SETBACKS NOT SHOWN HEREON SHALL COMPLY WITH THE MOST CURRENT ZONING ORDINANCE OF THE CITY OF LEANDER. ADDITIONAL RESIDENTIAL GARAGE SETBACKS MAY BE REQUIRED AS LISTED IN THE CURRENT ZONING ORDINANCE.
10. ALL UTILITY LINES MUST BE LOCATED UNDERGROUND.
11. THIS PLAT CONFORMS TO THE PRELIMINARY PLAT APPROVED BY THE PLANNING & ZONING COMMISSION ON SEPTEMBER 16, 2024.
12. APPROVAL OF THIS FINAL PLAT DOES NOT CONSTITUTE THE APPROVAL OF VARIANCES OR WAIVERS TO ORDINANCE REQUIREMENTS.
13. ALL DRIVE LANES, FIRE LANES, AND DRIVEWAYS WITHIN THIS SUBDIVISION SHALL PROVIDE FOR RECIPROCAL ACCESS FOR INGRESS AND EGRESS TO ALL OTHER LOTS WITHN THE SUBDIVISION AND TO ADJACENT PROPERTIES.

TRAFFIC IMPACT ANALYSIS NOTE:
AT THE TIME OF SITE DEVELOPMENT PERMIT, THE APPLICANT WILL PROVIDE A PAYMENT TO THE CITY IN LIEU OF A TRAFFIC IMPACT ANALYSIS (TIA), UNLESS A TIA FOR THE ENTIRE DEVELOPMENT INDICATES THAT AVERAGE DAILY TRIPS ARE ESTIMATED BELOW 2000.

GENERAL NOTES:
1) ADDRESS: 675 KAUFFMAN LOOP, LIBERTY HILL, TEXAS
2) HORIZONTAL DATUM: TEXAS STATE PLANE, CENTRAL ZONE, NAD83, GRID
3) VERTICAL DATUM: NAVD88
4) WILLIAMSON COUNTY APPRAISAL DISTRICT TAX PARCEL ID #R328207, R555049
5) THIS SURVEY IS BASED ON A TITLE COMMITMENT ISSUED BY LONGHORN TITLE COMPANY, INC. G.F. 20060553, ISSUED DATE OF APRIL 29, 2021, AND IS SUBJECT TO ALL TERMS, CONDITIONS, LEASES AND ENCUMBRANCES STIPULATED THEREIN. THERE MAY BE OTHER EASEMENTS, RESTRICTIONS, OR ENCUMBRANCES NOT SHOWN. THE SURVEYOR DID NOT COMPLETE AN ABSTRACT OF TITLE.

EVIDENCE OF MATTER: EASEMENTS ONLY:
f) VOLUME 833, PAGE 624, EASEMENT TO SEMINOLE PIPELINE COMPANY. (BLANKET YPE EASEMENT, THE SURVEYOR DID NOT RECOGNIZE ANY EVIDENCE OF A PIPELINE TRAVERSING THE PROPERTY)
g) VOLUME 988, PAGE 234, DEED RECORDS, RIGHT-OF-WAY EASEMENT TO CHISHOLM TRAIL WATER SUPPLY CORPORATION, (12' WIDE EASEMENT CENTERED ON THE INSTALLED LINE)
h) VOLUME 2565, PAGE 505, OFFICIAL RECORDS, EASEMENT TO GTE SOUTHWEST INCORPORATED, (DOES NOT APPLY)
i) DOCUMENT NO. 9746627, OFFICIAL RECORDS, EASEMENT TO GTE SOUTHWEST INCORPORATED, (APPLIES, SHOWN ON SURVEY)
j) DOCUMENT NO. 9753081, OFFICIAL RECORDS, EASEMENT TO CHISHOLM TRAIL SPECIAL UTILITY DISTRICT, (10' WIDE EASEMENT CENTERED ON THE INSTALLED LINE)
k) DOCUMENT NO. 9746627, OFFICIAL RECORDS, WATER LINE REPLACEMENT EASEMENT CHISHOLM TRAIL SPECIAL UTILITY DISTRICT. (APPLIES, SHOWN ON SURVEY)
o) DOCUMENT NO. 2008020408, OFFICIAL RECORDS, EASEMENT TO PEDERNALES ELECTRIC COOPERATIVE, INC. (APPLIES, SHOWN ON SURVEY)

KNOW ALL MEN BY THESE PRESENTS:

THAT I, TRAVIS QUICKSALL, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF LAND SURVEYING AND HEREBY STATE THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE ON-THE-GROUND SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION, IN ACCORDANCE WITH ALL CITY OF LEANDER ORDINANCE AND CODES, AND THAT ALL EXISTING EASEMENTS OF RECORD AS FOUND ON THE TITLE POLICY PROVIDED BY LONGHORN TITLE COMPANY, INC.,G.F. 20060553, ISSUED DATE OF APRIL 21, 2021.

_____ _____
TRAVIS L. QUICKSALL DATE:
REGISTERED PROFESSIONAL LAND SURVEYOR
REGISTRATION NO. 6447

KNOW ALL MEN BY THESE PRESENTS:

THAT I, THOMAS J. GROLL, A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF ENGINEERING, AND DO HEREBY STATE THAT THIS PLAT CONFORMS WITH THE APPLICABLE ORDINANCES OF THE CITY OF LEANDER, TEXAS.

_____ _____
THOMAS J. GROLL, P.E. DATE
PROFESSIONAL ENGINEER
REGISTRATION NO. 90976
FIRM REGISTRATION NO. F-9799

OWNER'S DEDICATION
STATE OF TEXAS)(
)(KNOW ALL MEN BY THESE PRESENTS;
COUNTY OF WILLIAMSON)(

THAT 675 KAUFMAN, LP, A TEXAS LIMITED PARTNERSHIP, AS THE OWNER OF THE CERTAIN 24.91 ACRE TRACT AND THAT CERTAIN 0.12 ACRE TRACT OF LAND RECORDED IN DOCUMENT NO. 2021063860, OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES HEREBY CERTIFY THAT THERE ARE NO LIEN HOLDERS AND DEDICATES TO THE PUBLIC FOREVER USE OF ALL ADDITIONAL ROW, STREETS, ALLEYS, EASEMENTS, PARKS, AND ALL OTHER LANDS INTENDED FOR PUBLIC DEDICATION, OR WHEN THE SUBDIVIDER HAS MADE PROVISION FOR PERPETUAL MAINTENANCE THEREOF, TO THE INHABITANTS OF THE SUBDIVISON AS SHOWN HEREON TO BE KNOWN AS 675 KAUFFMAN LOOP.

TO CERTIFY WHICH, WITNESS BY MY HAND THIS _____ DAY OF _____, 20___.

675 KAUFMAN, LP, A TEXAS LIMITED PARTNERSHIP

_____
BY: RICHARD GARY
TITLE: LIMITED PARTNER

STATE OF TEXAS)(
)(KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF WILLIAMSON)(

BEFORE ME, THE ABOVE AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS THE ____ DAY OF _____, 20____, PERSONALLY APPEARED _____, OF _____, A TEXAS LIMITED PARTNERSHIP, ON BEHALF OF SAID _____, A DULY AUTHORIZED AGENT WITH AUTHORITY TO SIGN SAID DOCUMENT, PERSONALLY KNOWN TO ME (AND PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON WHOSENAME IS SUBSCRIBED TO THIS FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT (S)HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS _____ DAY OF _____, 20___.

_____
NOTARY PUBLIC STATE OF _____

PRINTED NAME: _____
MY COMMISSION EXPIRES ON: _____

LIEN HOLDER
STATE OF TEXAS)(
)(KNOW ALL MEN BY THESE PRESENTS;
COUNTY OF WILLIAMSON)(

BY SIGNING THIS PLAT, FOR AND IN CONSIDERATION OF THE SUM OF TEN DOLLARS ($10.00) AND OTHER GOOD AND VALUABLE CONSIDERATION, THE SUFFICIENCY AND RECEIPT OF WHICH IS HEREBY ACINOWLEDGED, THE UNDERSIGNED HEREBY RELEASES THE RIGHT-OF-WAYS, STREETS, ALLEYS, EASEMENTS, PARKS, AND OTHER OPEN SPACES DEDICATED TO THE CITY OR TO PUBLIC USE SET FORTH ON THIS PLAT, FROM ANY DEED OF TRUST, VENDOR'S LIEN, OR OTHER TYPE OF IEN OR NOTE ON THE PROPERTY OWNED BY THE LIEN HOLDER, INCLUDING BUT NOT LIMITED TO THE NOTE AND LIEN DESCRIBED IN THE WARRANTY DEED WITH VENDOR'S LIEN, DATED 04/29/2021, FILED OF RECORD IN THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, IN DOCUMENT NO. 2021063860.

LIENHOLDER NAME:
FIRST UNITED BANK
4008 MEDICAL PARKWAY
AUSTIN, TEXAS 78756

_____
NAME: PILAR CASTILLO
TITLE: SENIOR VICE PRESIDENT

STATE OF TEXAS)(
)(KNOW ALL MEN BY THESE PRESENTS;
COUNTY OF WILLIAMSON)(

BEFORE ME, THE ABOVE AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS THE ____ DAY OF _____, 20____, PERSONALLY APPEARED _____, OF _____, A TEXAS LIMITED PARTNERSHIP, ON BEHALF OF SAID _____, A DULY AUTHORIZED AGENT WITH AUTHORITY TO SIGN SAID DOCUMENT, PERSONALLY KNOWN TO ME (AND PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON WHOSENAME IS SUBSCRIBED TO THIS FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT (S)HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS _____ DAY OF _____, 20___.

_____
NOTARY PUBLIC STATE OF _____

PRINTED NAME: _____
MY COMMISSION EXPIRES ON: _____

ROAD NAME AND ADDRESS ASSIGNMENTS VERIFIED THIS _____ DAY OF _____, 20___, A.D.

_____
WILLIAMSON COUNTY ADDRESSING COORDINATOR

BASED UPON THE REPRESENTATIONS OF THE ENGINEER OR SURVEYOR WHOSE SEAL IS AFFIXED HERETO, AND AFTER REVIEW OF THE PLAT AS REPRESENTED BY THE SAID ENGINEER OR SURVEYOR, I FIND THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF EDWARDS AQUIFER REGULATION-5 FOR WILLIAMSON COUNTY AND WILLIAMSON COUNTY ON SITE SEWAGE FACILITY REGULATIONS, THIS CERTIFICATION IS MADE SOLELY UPON SUCH REPRESENTATIONS AND SHOULD NOT BE RELIED UPON FOR VERIFICATIONS OF THE FACTS ILLEGED. THE WILLIAMSON COUNTY ENGINEER'S OFFICE AND WILLIAMSON COUNTY DISCLAIMS ANY RESPONSIBILTY TO ANY MEMBER OF THE PUBLIC FOR INDEPENDENT VERIFICATION OF THE REPRESENTATIONS, FACTUAL OR OTHERWISE CONTAINED IN THIS PLAT AND THE DOCUMENTS ASSOCIATED WITH IT.

_____ _____
J. TERRON EVERTSON, PE, DR, CFM DATE
COUNTY ENGINEER

STATE OF TEXAS)(
)(KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF WILLIAMSON)(

APPROVED THIS THE _____ DAY OF _____, 20_____A.D., AND AUTHORIZED TO BE FILED FOR RECORD BY THE COUNTY CLERK OF WILLIAMSON COUNTY, TEXAS.

_____ ATTEST: _____
ROBIN M. GRIFFIN, AICP DARA CRABTREE
EXECUTIVE DIRECTOR OF DEVELOPMENT SERVICES CITY SECRETARY
CITY OF LEANDER, TEXAS CITY OF LEANDER, TEXAS

STATE OF TEXAS)(
)(KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF WILLIAMSON)(

APPROVED THIS THE _____ DAY OF _____, 20_____A.D., AT A PUBLIC MEETING OF THE PLANNING AND ZONING COMMISSION OF THE CITY OF LEANDER, TEXAS AND AUTHORIZED TO BE FILED FOR RECORD BY THE COUNTY CLERK OF WILLIAMSON COUNTY, TEXAS.

_____ ATTEST: _____
LAURA LANTRIP, CHAIRMAN ELLEN COUFAL
PLANNING AND ZONING COMMISSION SECRETARY
CITY OF LEANDER, TEXAS CITY OF LEANDER, TEXAS

STATE OF TEXAS)(
)(KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF WILLIAMSON)(

I, NANCY E. RISTER, CLERK OF THE COUNTY COURT OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT IN WRITING, WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE ON THE _____ DAY OF _____, A.D., 20_____ A.D., AT _____O'CLOCK, ___M. AND DULY RECORDED THIS DAY OF _____, 20_____ A.D., AT _____ O'CLOCK ___M, IN THE OFFICIAL PUBLIC RECORDS OF SAID COUNTY IN INSTRUMENT NO. _____.

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL A' THE COUNTY COURT OF SAID COUNTY, AT MY OFFICE IN GEORGETOWN, TEXAS, THE DATE LAST SHOWN ABOVE WRITTEN.

NANCY RISTER, CLERK COUNTY COURT
OF WILLIAMSON COUNTY, TEXAS

BY: _____
DEPUTY

ENGINEER	OWNER/DEVELOPER		
THOMAS J. GROLL, P.E. TOM GROLL ENGINEERING, PC FIRM #9799 5208 PRYOR LANE AUSTIN, TEXAS 78734	675 KAUFMAN LP 7801 N. CAPITAL OF TEXAS HWY SUITE 390 AUSTIN, TEXAS 78731	Quick Inc. Land Surveying. Development. Firm:10194104 • 512-915-6950 Physical address: 831 N. Main Street, Salado 76571 Mailing Address: P.O. Box 798, Salado 76571	1ST SUBMITTAL: NOVEMBER 18, 2024 JOB NO. 23-0064 PROJECT NO. XXXXXXXX SHEET 5 OF 5

811 Know what's below. Call before you dig.

TOM GROLL ENGINEERING
5208 PRYOR LANE, AUSTIN, TEXAS 78734 • (512) 568-9798 • TBPE FIRM # 9799 • WWW.TOMGROLL.COM

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

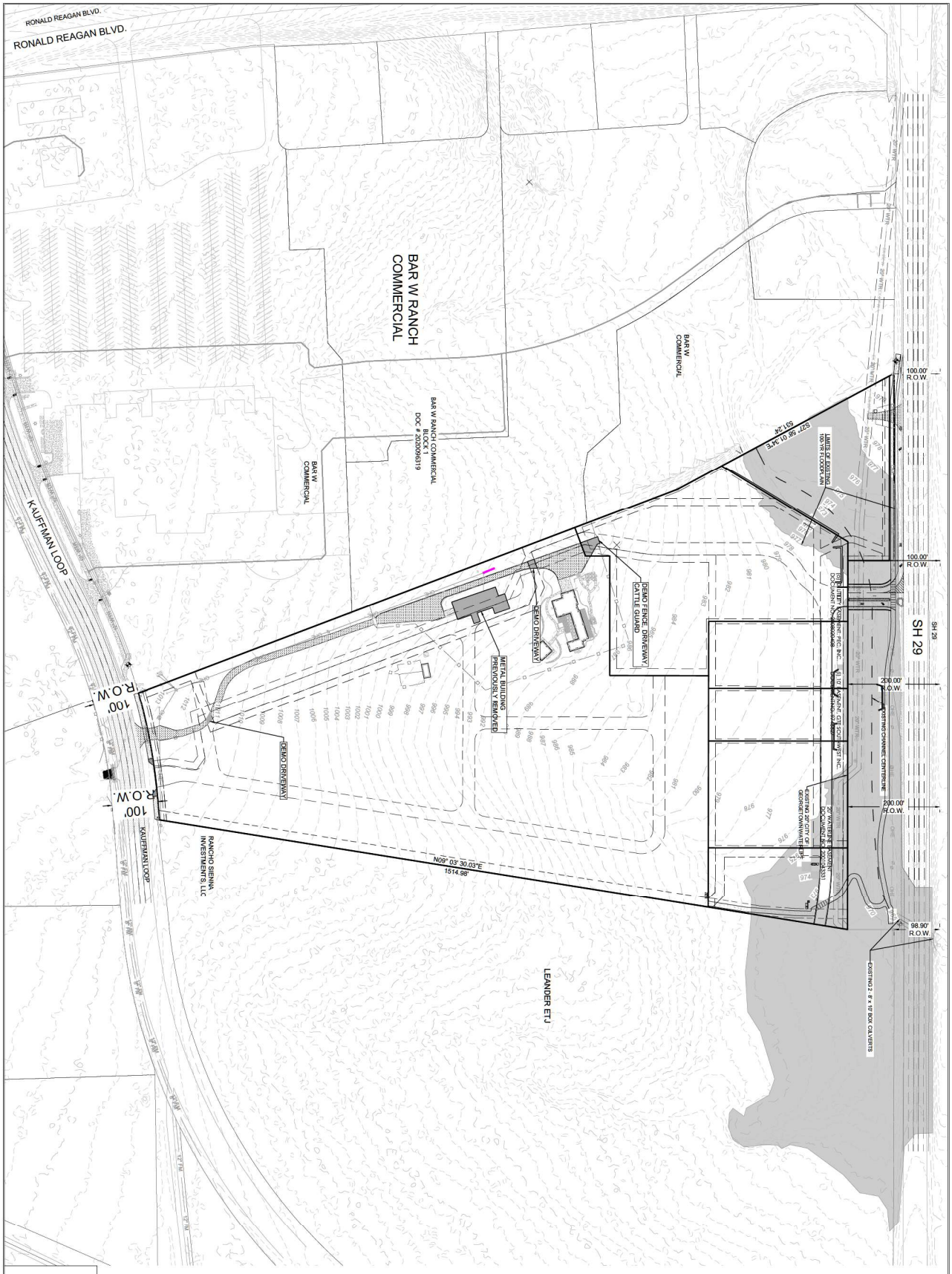
No.	DATE	DESCRIPTION	BY

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFMAN LOOP
LEANDER, TEXAS 78642

PLAT SHEET 3

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
5/21/2025

Date: 5/21/2025
Chec by: TJG
Drawn By: MBS/MRC
Sheet No. 06 of 37
Project No. SD-24-0282



Know what's below. Call before you dig. 811

SCALE: 1" = 100'

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

EXISTING CONDITIONS AND DEMOLITION PLAN

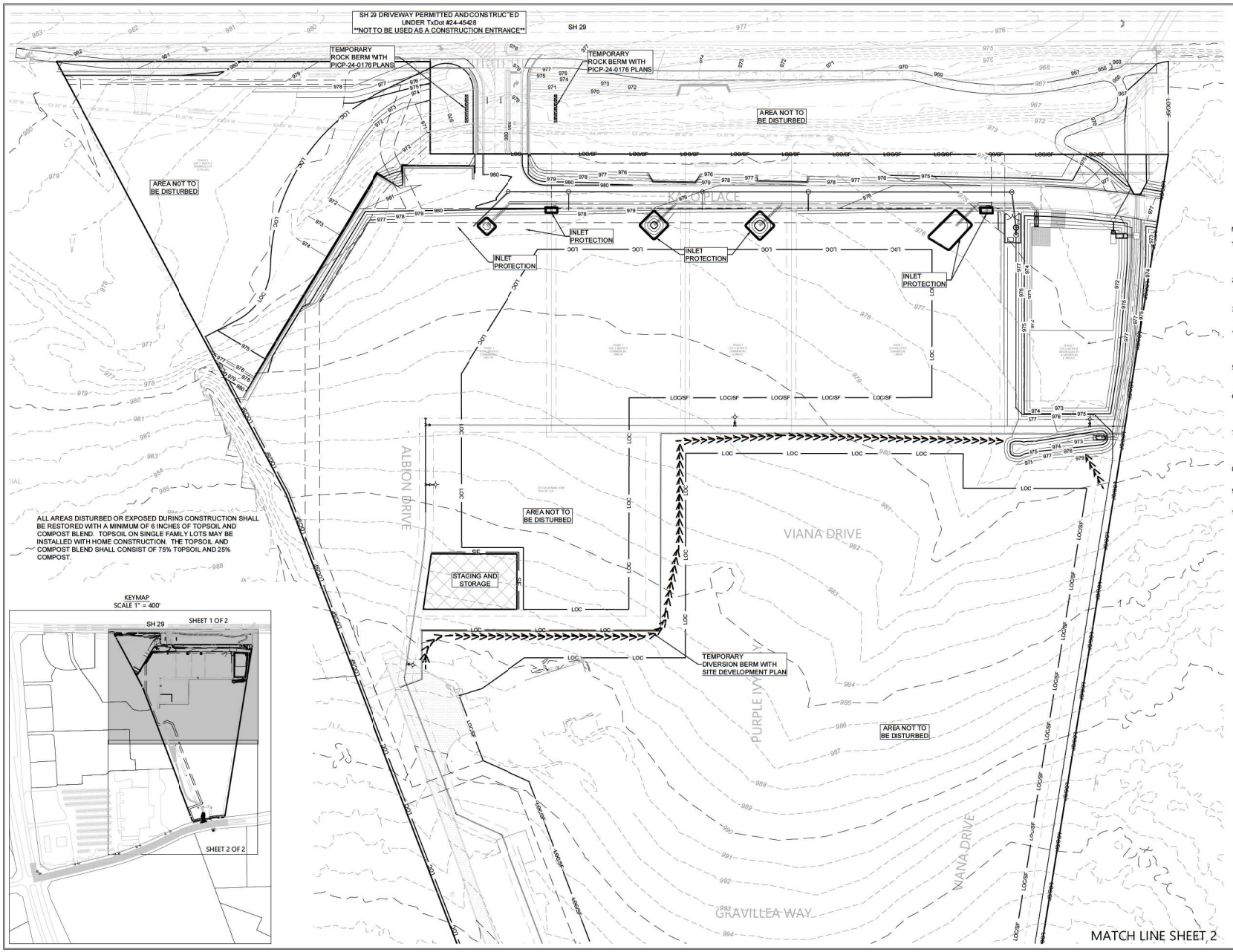
No.	DATE	DESCRIPTION	BY

PREPARED FOR:

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

TOM GROLL ENGINEERING
5200 PRYOR LANE, AUSTIN, TEXAS 78734 • (512) 848-5796 • TBPE FIRM # F-9799 •
WWW.TG-ENG.COM

Project No.: SD-24-0282
Sheet No.: 07 of 37
Drawn By: MBS/MRC
Check By: TJG
Date:



NOTES:

1. CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY & HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. ALL STORM WATER LEAVING THE SITE DURING CONSTRUCTION ACTIVITIES MUST PASS THROUGH THE SILT FENCE AND ROCK BERMS.
3. REFERENCE "GENERAL NOTES" SHEETS FOR EROSION CONTROL NOTES AND SEQUENCE OF CONSTRUCTION.
4. THE CITY ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
5. THE CONTRACTOR SHALL CLEAN UP SPOILS THAT MIGRATE INTO EXISTING R.O.W. A MINIMUM OF ONCE DAILY.
6. SILT FENCE AND ROCK BERMS TO BE REMOVED ONLY DURING ACTIVE CONSTRUCTION IN THIS AREA. SILT FENCE AND ROCK BERMS MUST BE REINSTALLED AT THE END OF EACH DAY.
7. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEED TO BE STABILIZED BY REVEGETATION, TARP OR REVEGETATION MATTING.
8. STABILIZED CONSTRUCTION ENTRANCES SHALL BE REQUIRED AT POINT OF ACCESS FROM PUBLIC R.O.W.
9. INLET PROTECTION IS REQUIRED AFTER INLET CONSTRUCTION.
10. ALL ROCK BERMS SHALL BE REMOVED BY THE CONTRACTOR.

Know what's below. Call before you dig.

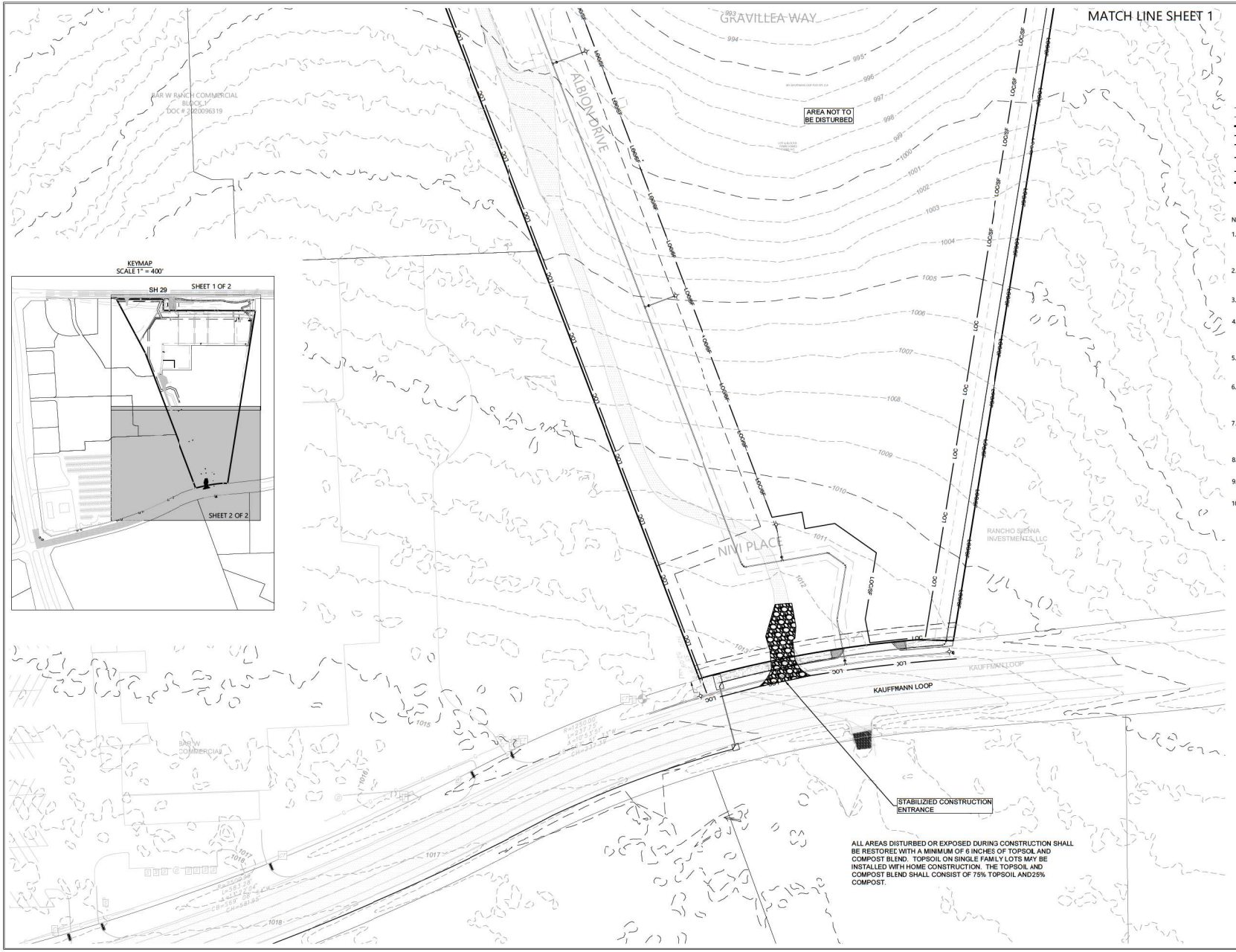
TOM GROLL ENGINEERING
1300 PITCH LANE, AUSTIN, TEXAS 78754 • (512) 346-5794 • TBPE FIRM # F-9999
PREPARED FOR:
675 KAUFFMAN, LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

EROSION SEDIMENTATION CONTROL AND TREE PROTECTION 1 OF 2

THOMAS J. GROLL 90976 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

Date:	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	08 of 37
Project No.	SD-24-0282



KEYMAP
SCALE 1" = 400'

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPERTY BOUNDARY
- LOC — LIMITS OF CONSTRUCTION
- SF — SILT FENCE
- LOC/SF — LIMITS OF CONSTRUCTION/ SILT FENCE
- TP — TREE PROTECTION
- TEMPORARY DIVERSION BERM
- STABILIZED CONSTRUCTION ENTRANCE

NOTES:

1. CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY & HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. ALL STORM WATER LEAVING THE SITE DURING CONSTRUCTION ACTIVITIES MUST PASS THROUGH THE SILT FENCE AND ROCK BERMS.
3. REFERENCE "GENERAL NOTES" SHEETS FOR EROSION CONTROL NOTES AND SEQUENCE OF CONSTRUCTION.
4. THE CITY ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
5. THE CONTRACTOR SHALL CLEAN UP SPOILS THAT MIGRATE INTO EXISTING R.O.W. A MINIMUM OF ONCE DAILY.
6. SILT FENCE AND ROCK BERMS TO BE REMOVED ONLY DURING ACTIVE CONSTRUCTION IN THIS AREA. SILT FENCE AND ROCK BERMS MUST BE REINSTALLED AT THE END OF EACH DAY.
7. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEED TO BE STABILIZED BY REVEGETATION, TARP OR REVEGETATION MATTING.
8. STABILIZED CONSTRUCTION ENTRANCES SHALL BE REQUIRED AT POINT OF ACCESS FROM PUBLIC R.O.W.
9. INLET PROTECTION IS REQUIRED AFTER INLET CONSTRUCTION.
10. ALL ROCK BERMS SHALL BE REMOVED BY THE CONTRACTOR.

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 AND25% COMPOST.

811 Know what's below. Call before you dig.

TOM GROLL ENGINEERING
1300 PITCH LANE, AUSTIN, TEXAS 78754 • (512) 344-5794 • TBPE FIRM # F-9999

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

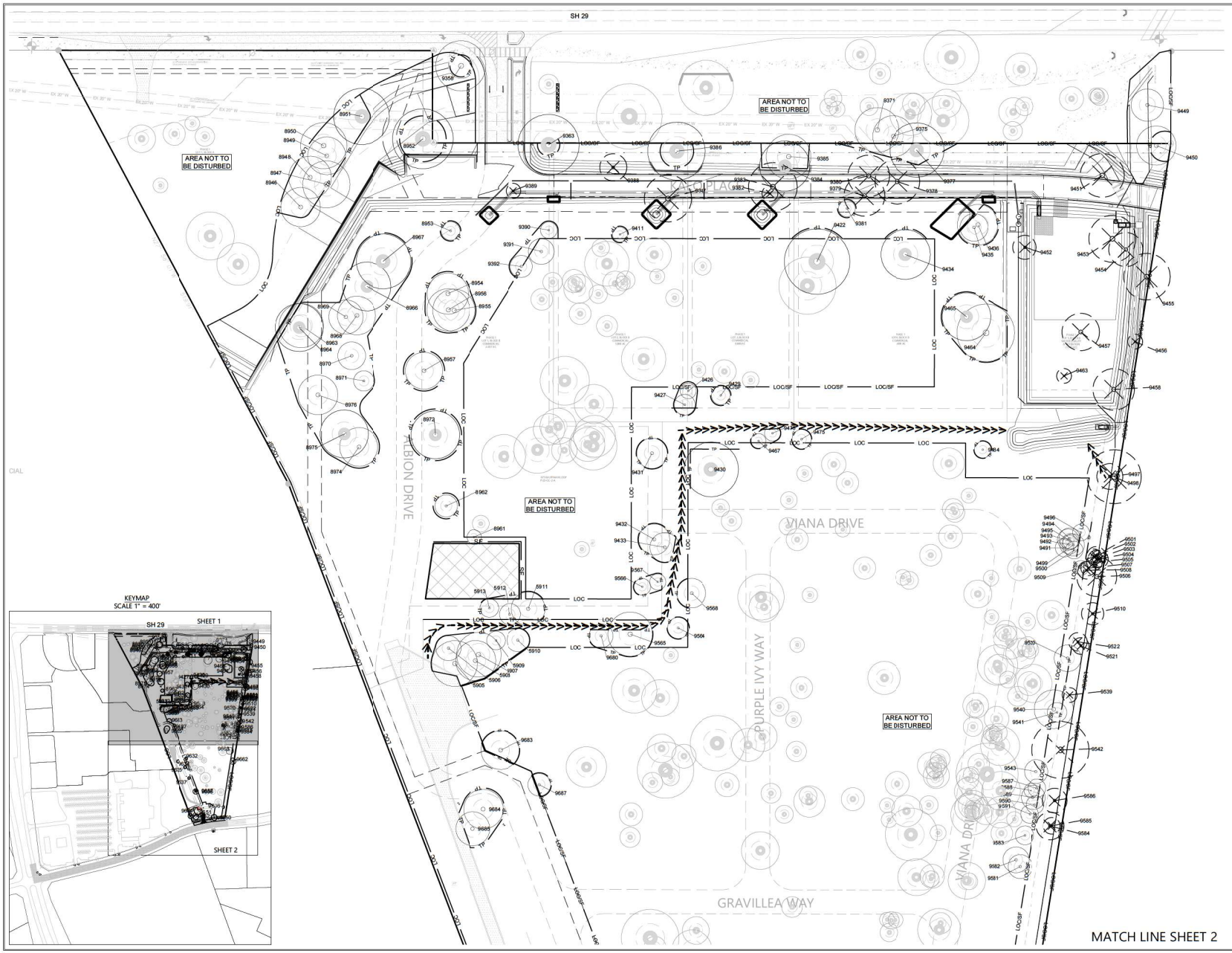
NO.	DESCRIPTION	DATE	BY

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

EROSION SEDIMENTATION CONTROL AND TREE PROTECTION 2 OF 2

THOMAS J. GROLL — 90976 — LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS

Date:	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	09 of 37
Project No.	SD-24-0282



KEYMAP
SCALE 1" = 400'

Know what's below. Call before you dig. 811

TOM GROLL ENGINEERING

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

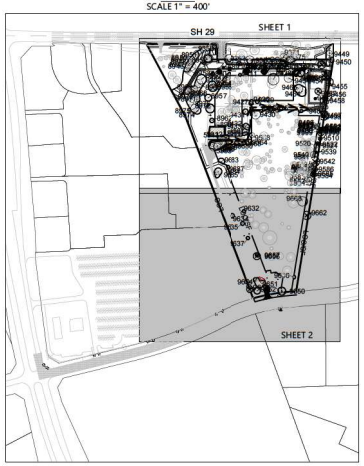
PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

TREE PROTECTION PLAN
1 OF 3

THOMAS J. GROLL 90976 LICENSED PROFESSIONAL ENGINEER

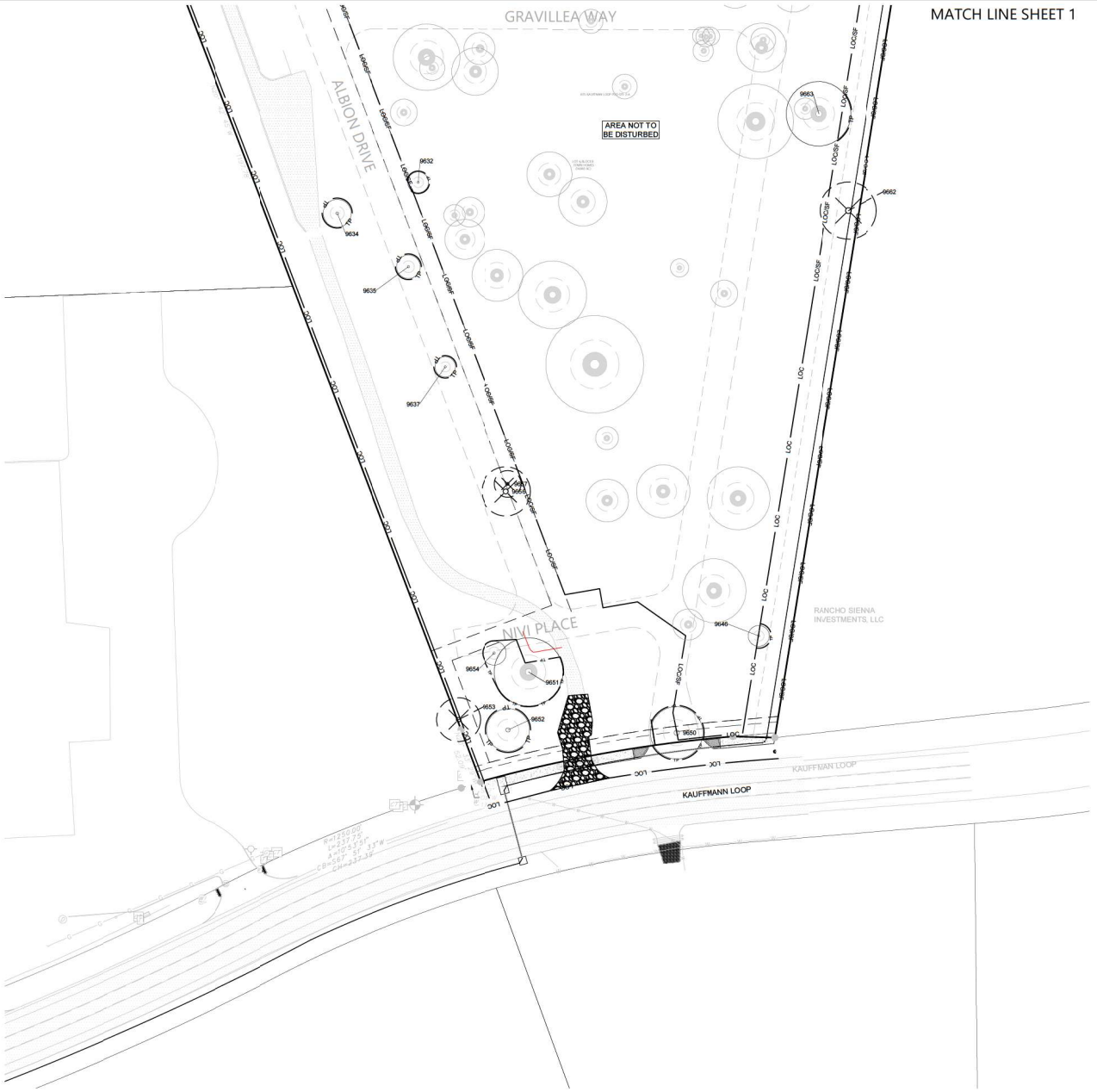
Date:	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No:	10 of 37
Project No.	SD-24-0282

KEYMAP
SCALE 1" = 400'



TREES IN PRIVATE PLAN

TREES STRUCK THROUGH TO BE REMOVED



MATCH LINE SHEET 1

0 50' 100'
SCALE: 1" = 50'

LEGEND

- PROPERTY BOUNDARY
- LOC — LIMITS OF CONSTRUCTION
- SF — SILT FENCE
- LOC/SF — LIMITS OF CONSTRUCTION/ SILT FENCE
- TP — TREE PROTECTION
- TREE TO BE REMOVED
- HERITAGE TREE TO BE REMOVED
- EXISTING TREE
- HERITAGE TREE
- TREE OUTSIDE WORK AREA

811 Know what's below. Call before you dig.

TOM GROLL ENGINEERING
1308 PITCHFORK LANE, AUSTIN, TEXAS 78754 • (512) 944-9794 • WWW.TOMGROLL.COM

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

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

TREE PROTECTION PLAN
2 OF 3

THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
5/21/2025

Date	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	11 of 37
Project No.	SD-24-0282

TREE LIST FOR TREES AFFECTED BY PRIVATE IMPROVEMENTS ON THE RESIDENTIAL SITE

Tree #	Species	Trunk	Caliper Inches		Reason for removal	Category
			Saved	Removed		
5905A	ELM	21.00	21.00			
5906	LO	13.50	13.50			
5907A	LO	14.50	14.50			
5907B	LO	12.00	12.00			
5908A	LO	15.25	15.25			
5908B	LO	13.25	13.25			
5909	PE	10.00	10.00			
5910	PE	12.50	12.50			
9433	ELM	16.00	16.00			
9467	LO	8.00	8.00			
9475	ELM	10.50	10.50			
9476	ELM	8.50	8.50			
9484	LO	9.00	9.00			
9491	LO	10.00	10.00			
9492	LO	10.25	10.25			
9493	LO	8.50	8.50			
9494	LO	11.50	11.50			
9495	LO	11.50	11.50			
9496	LO	9.00	9.00			
9497	LO	14.00		14.00	Force Main Construction	
9498A	LO	18.50		18.50	Force Main Construction	
9498B	LO	14.50		14.50	Force Main Construction	
9499	LO	12.00	12.00			
9500	LO	9.50	9.50			
9501	LO	8.50		8.50	Force Main Construction	
9502	LO	10.00		10.00	Force Main Construction	
9503	LO	9.50		9.50	Force Main Construction	
9504	LO	9.50		9.50	Force Main Construction	
9505	LO	8.50		8.50	Force Main Construction	
9506A	LO	15.75		15.75	Force Main Construction	
9506B	LO	11.50		11.50	Force Main Construction	
9507	LO	8.00		8.00	Force Main Construction	
9508	LO	9.50		9.50	Force Main Construction	
9509	LO	8.00	8.00			
9510	LO	12.00		12.00	Force Main Construction	
9520	LO	14.50	14.50			
9521	LO	9.00		9.00	Force Main Construction	
9522	LO	10.00		10.00	Force Main Construction	
9539	LO	8.00		8.00	Force Main Construction	
9540A	LO	15.00	15.00			
9540B	LO	12.00	12.00			8" - 26"
9541	LO	10.50	10.50			
9542A	LO	15.00		15.00	Force Main Construction	
9542B	LO	13.75		13.75	Force Main Construction	
9542C	LO	9.50		9.50	Force Main Construction	
9542D	LO	8.50		8.50	Force Main Construction	
9543	LO	13.00	13.00			
9564	ELM	11.50	11.50			
9565	LO	24.00	24.00			
9568	LO	16.00	16.00			
9581	LO	13.00	13.00			
9582A	LO	8.00	8.00			
9583	ELM	10.25	10.25			
9584A	LO	10.50		10.50	Force Main Construction	
9584B	LO	9.00		9.00	Force Main Construction	
9585	LO	9.00		9.00	Force Main Construction	
9586A	LO	9.25		9.25	Force Main Construction	
9586B	LO	8.25		8.25	Force Main Construction	
9587	LO	10.00	10.00			
9588	LO	8.00	8.00			
9589A	LO	10.50	10.50			
9590	LO	10.00	10.00			
9632	LO	9.75	9.75			
9634	LO	13.00	13.00			
9635	LO	11.00	11.00			
9637	ELM	9.50	9.50			
9646	ELM	9.75	9.75			
9650	LO	24.50	24.50			
9652	LO	20.00	20.00			
9653	LO	20.50		20.50	Electric/Gas Construction	
9654A	ELM	8.75	8.75			
9656	LO	23.00		23.00	Electric/Gas Construction	
9657	LO	12.50		12.50	Electric/Gas Construction	
9662A	LO	22.00		22.00	Force Main Construction	
9662B	LO	9.50		9.50	Force Main Construction	
9663A	LO	23.50	23.50			
9663B	LO	13.50	13.50			
9680	LO	13.00	13.00			
9683	ELM	21.00	21.00			
9687A	LO	8.00	8.00			
Total		982.75	625.75	357.00		

Tree #	Species	Trunk	Caliper Inches		Reason for removal	Category
			Saved	Removed		
9430	**LO**	**29.75**	**29.75**			
9651	**LO**	**32.00**	**32.00**			>26"
Total		**61.75**	**61.75**	**-**		

TREE LIST FOR TREES AFFECTED BY PRIVATE IMPROVEMENTS ON THE COMMERCIAL SITE

Tree #	Species	Trunk	Caliper Inches		Reason for removal	Category
			Saved	Removed		
5912	ELM	11.75	11.75			
5913	ELM	10.00	10.00			
8953	ELM	10.00	10.00			
8961	ELM	8.00	8.00			
8962	ELM	12.00	12.00			
8970	ELM	15.00	15.00			
8971A	ELM	8.00	8.00			
9358A	LO	11.00	11.00			
9358B	LO	10.00	10.00			
9358C	LO	8.00	8.00			
9381	LO	9.00	9.00			
9382	ELM	8.50		8.50	Access drive	
9383B	LO	10.50		10.50	Access drive	
9388	LO	14.75		14.75	Access drive	
9389	ELM	8.25		8.25	Access drive	
9390	ELM	9.00	9.00			8" -18"
9391	ELM	14.00	14.00			
9392	ELM	12.00	12.00			
9411	ELM	8.00	8.00			
9426	ELM	8.50	8.50			
9429	ELM	10.00	10.00			
9431	LO	16.50	16.50			
9432A	ELM	11.25	11.25			
9432B	ELM	11.00	11.00			
9435	LO	15.00	15.00			
9449	LO	17.50	17.50			
9452	ELM	13.00		13.00	Detention pond	
9456	LO	8.00		8.00	Detention pond	
9463	ELM	8.00		8.00	Detention pond	
9566	ELM	9.00	9.00			
9567	ELM	8.75	8.75			
Total		334.25	263.25	71.00		

Tree #	Species	Trunk	Caliper Inches		Reason for removal	Category
			Saved	Removed		
8951	**LO**	**30.50**	**30.50**			
8952	**LO**	**32.50**	**32.50**			
8964	**LO**	**26.00**	**26.00**			
8966	**LO**	**26.50**	**26.50**			
8967	**LO**	**29.75**	**29.75**			
8972	**LO**	**26.00**	**26.00**			
8975	**LO**	**26.00**	**26.00**			
9363	**LO**	**33.00**	**33.00**			>26"
9377	**LO**	**29.50**	**29.50**			
9384	**LO**	**27.25**	**27.25**			
9386	**LO**	**31.50**	**31.50**			
9422	**LO**	**35.50**	**35.50**			
9434	**LO**	**27.00**	**27.00**			
9465	**LO**	**26.00**	**26.00**			
Total		**407.00**	**407.00**	-		

Tree #	Species	Trunk	Caliper Inches		Reason for removal	Category
			Saved	Removed		
5911	PE	18.25	18.25			
8946	LO	21.25	21.25			
8947	LO	25.50	25.50			
8948	LO	23.00	23.00			
8949	LO	20.50	20.50			
8950	LO	25.00	25.00			
8954	LO	22.25	22.25			
8955	LO	23.00	23.00			
8956	LO	23.00	23.00			
8957	LO	20.00	20.00			
8963	LO	24.00	24.00			
8968	LO	21.00	21.00			
8969	LO	18.50	18.50			
8974	LO	21.00	21.00			
8976	LO	21.50	21.50			
9371	LO	24.25	24.25			
9375	LO	22.50	22.50			18' - 26"
9378	LO	24.50		24.50	Access drive	
9379	LO	22.00		22.00	Access drive	
9380	LO	22.50		22.50	Access drive	
9383A	LO	21.00		21.00	Access drive	
9385	LO	24.25	24.25			
9387	LO	25.50		25.50	Access drive	
9436	LO	22.00	22.00			
9450	LO	21.25	21.25			
9451	LO	23.75		23.75	Access drive	
9453	LO	25.50		25.50	Detention pond	
9454	LO	18.50		18.50	Detention pond	
9455	LO	25.25		25.25	Detention pond	
9457	LO	20.25		20.25	Detention pond	
9458	LO	22.50		22.50	Detention pond	
9464A	LO	21.00	21.00			
9464B	LO	20.50	20.50			
Total		734.75	483.50	251.25		

TREE PRESERVATION PLAN - PRIVATE IMPROVEMENTS ON COMMERCIAL SITE

TREE CALIPER INCHES - PUBLIC IMPROVEMENTS ON COMMERCIAL SITE

TREE SIZE (in caliper inches)	TOTAL INCHES	SAVED INCHES	SAVED INCHES %	REMOVED INCHES	REMOVED INCHES %
8" to 18"	334.25	263.25	79%	71.00	21%
>18" to 26"	734.75	483.50	66%	251.25	34%
SUBTOTAL 8" to 26"	1,069.00	746.75	70%	322.25	30%
>26"	407.00	407.00	100%	-	0%
TOTALS	1,476.00	1,153.75	78%	322.25	22%

TOTAL TREES - PRIVATE IMPROVEMENTS ON COMMERCIAL SITE

TREE SIZE (in caliper inches)	TOTAL TREES	SAVED TREES	SAVED TREES %	REMOVED TREES	REMOVED TREES %
8" to 18"	31	24	77%	7	23%
>18" to 26"	33	22	67%	11	33%
SUBTOTAL 8" to 26"	64	46	72%	18	28%
>26" HERITAGE	14	14	100%	-	0%
TOTALS	78	60	77%	18	23%

MITIGATION PLAN: 8" - 18" - PRIVATE IMPROVEMENTS ON COMMERCIAL SITE

TREE SIZE (in caliper inches)	>50% REMOVAL	1:1 REPLACEMENT	2:1 REPLACEMENT	3:1 REPLACEMENT	FEES
8" to 18"	0	0	-	-	-

MITIGATION PLAN: PROTECTED AND HERITAGE TREES - PRIVATE IMPROVEMENTS ON COMMERCIAL SITE

TREE SIZE (in caliper inches)	Removed (inches)	1:1 REPLACEMENT	2:1 REPLACEMENT	3:1 REPLACEMENT	FEES
>18" to 26"	251.25	-	502.50	-	$ 37,687.50
>26" HERITAGE	-	-	-	-	$ -

TREE PRESERVATION SUMMARY - PRIVATE IMPROVEMENTS ON COMMERCIAL SITE

TREE SIZE (in caliper inches)	TOTAL INCHES	TOTAL TREES	SAVED INCHES	SAVED TREES	SAVED INCHES %	REMOVED INCHES	REMOVED TREES	REMOVED INCHES %
8" to 18"	334.25	31	263.25	24	79%	71.00	7	21%
>18" to 26"	734.75	33	483.50	22	66%	251.25	11	34%
SUBTOTAL 8" to 26"	1,069.00	64	746.75	46	70%	322.25	18	30%
>26"	407.00	14	407.00	14	100%	-	-	0%
TOTALS	1,476.00	78	1,153.75	60	-	322.25	18	22%

TREE MITIGATION SUMMARY TABLE - PRIVATE IMPROVEMENTS ON COMMERCIAL SITE

Category	Caliper Inches			Removal		Mitigation		Fee
	Total	Removed	Saved	Allowed	Remaining	Inches	Ratio	
8" - 18"	334.25	71.00	263.25	167.13	96.13	-	1:1	$ -
18" - 26"	734.75	251.25	483.50	-	-	502.50	2:1	$ 37,687.50
>26"	407.00	-	407.00	-	-	-	3:1	$ -
Total	1,476.00	322.25	1,153.75					$ 37,687.50

TREE PRESERVATION PLAN - PRIVATE IMPROVEMENTS ON RESIDENTIAL SITE

TREE CALIPER INCHES

TREE SIZE (in caliper inches)	TOTAL INCHES	SAVED INCHES	SAVED INCHES %	REMOVED INCHES	REMOVED INCHES %
8" to 26"	982.75	625.75	64%	357.00	36%
>26"	61.75	61.75	100%	-	0%
TOTALS	1,044.50	687.50	66%	357.00	34%

TOTAL TREES - PRIVATE IMPROVEMENTS ON RESIDENTIAL SITE

TREE SIZE (in caliper inches)	TOTAL TREES	SAVED TREES	SAVED TREES %	REMOVED TREES	REMOVED TREES %
8" to 26"	80	50	63%	30	38%
>26" HERITAGE	2	2	100%	-	0%
TOTALS	82	52	63%	30	37%

MITIGATION PLAN: PROTECTED AND HERITAGE TREES - PRIVATE IMPROVEMENTS ON RESIDENTIAL SITE

TREE SIZE (in caliper inches)	Removed (total inches)	1:1 REPLACEMENT	2:1 REPLACEMENT	3:1 REPLACEMENT	FEES
>8" to 26"	357.00	-	-	-	-
>26" HERITAGE	-	-	-	-	$0

TREE PRESERVATION SUMMARY - PRIVATE IMPROVEMENTS ON RESIDENTIAL SITE

TREE SIZE (in caliper inches)	TOTAL INCHES	TOTAL TREES	SAVED INCHES	SAVED TREES	SAVED INCHES %	REMOVED INCHES	REMOVED TREES	REMOVED INCHES %
8" to 18"	764.75	70	491.75	44	64%	273.00	26	36%
>18" to 26"	218.00	10	134.00	3	61%	84.00	7	39%
SUBTOTAL 8" to 26"	982.75	80	625.75	47	64%	357.00	33	36%
>26"	61.75	2	61.75	2	100%	-	-	0%
TOTALS	1,044.50	82	687.50	49	66%	357.00	33	34%

TOM GROLL ENGINEERING
1300 PITOM LANE, AUSTIN, TEXAS 78754 • (512) 346-7794 • FIRM # 11999

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

NO.	DESCRIPTION	BY

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

Know what's below. Call before you dig.

THOMAS J. GROLL 90976 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

Date:
Check by: TJG
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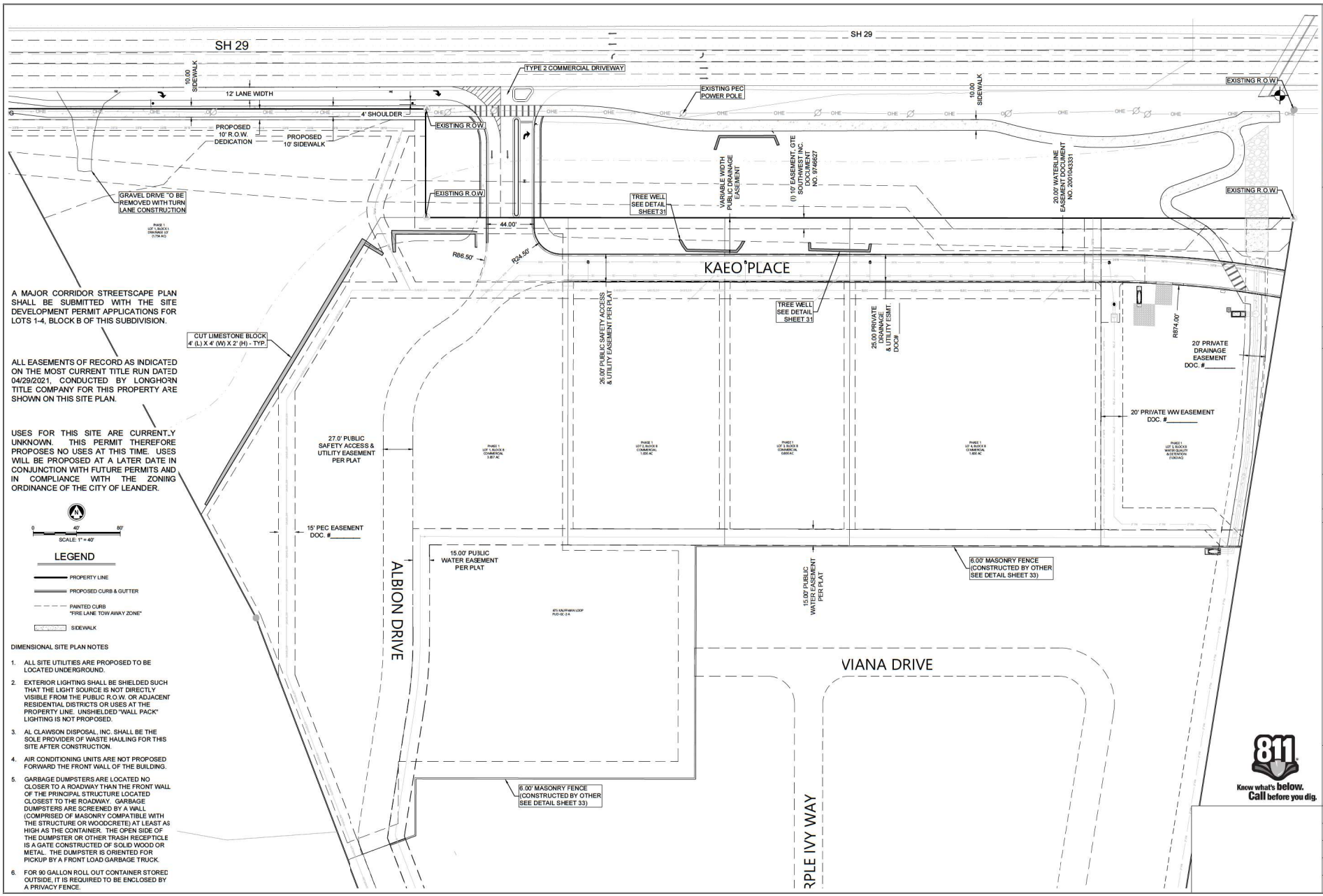

A MAJOR CORRIDOR STREETSCAPE PLAN SHALL BE SUBMITTED WITH THE SITE DEVELOPMENT PERMIT APPLICATIONS FOR LOTS 1-4, BLOCK B OF THIS SUBDIVISION.

ALL EASEMENTS OF RECORD AS INDICATED ON THE MOST CURRENT TITLE RUN DATED 04/29/2021, CONDUCTED BY LONGHORN TITLE COMPANY FOR THIS PROPERTY ARE SHOWN ON THIS SITE PLAN.

USES FOR THIS SITE ARE CURRENTLY UNKNOWN. THIS PERMIT THEREFORE PROPOSES NO USES AT THIS TIME. USES WILL BE PROPOSED AT A LATER DATE IN CONJUNCTION WITH FUTURE PERMITS AND IN COMPLIANCE WITH THE ZONING ORDINANCE OF THE CITY OF LEANDER.

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

LEGEND

- PROPERTY LINE
- PROPOSED CURB & GUTTER
- PAINTED CURB "FIRE LANE TOW AWAY ZONE"
- SIDEWALK

DIMENSIONAL SITE PLAN NOTES

1. ALL SITE UTILITIES ARE PROPOSED TO BE LOCATED UNDERGROUND.
2. EXTERIOR LIGHTING SHALL BE SHIELDED SUCH THAT THE LIGHT SOURCE IS NOT DIRECTLY VISIBLE FROM THE PUBLIC R.O.W. OR ADJACENT RESIDENTIAL DISTRICTS OR USES AT THE PROPERTY LINE. UNSHIELDED "WALL PACK" LIGHTING IS NOT PROPOSED.
3. AL CLAWSON DISPOSAL, INC. SHALL BE THE SOLE PROVIDER OF WASTE HAULING FOR THIS SITE AFTER CONSTRUCTION.
4. AIR CONDITIONING UNITS ARE NOT PROPOSED FORWARD THE FRONT WALL OF THE BUILDING.
5. GARBAGE DUMPSTERS ARE LOCATED NO CLOSER TO A ROADWAY THAN THE FRONT WALL OF THE PRINCIPAL STRUCTURE LOCATED CLOSEST TO THE ROADWAY. GARBAGE DUMPSTERS ARE SCREENED BY A WALL (COMPRISED OF MASONRY COMPATIBLE WITH THE STRUCTURE OR WOODCRETE) AT LEAST AS HIGH AS THE CONTAINER. THE OPEN SIDE OF THE DUMPSTER OR OTHER TRASH RECEPTICLE IS A GATE CONSTRUCTED OF SOLID WOOD OR METAL. THE DUMPSTER IS ORIENTED FOR PICKUP BY A FRONT LOAD GARBAGE TRUCK.
6. FOR 90 GALLON ROLL OUT CONTAINER STORED OUTSIDE, IT IS REQUIRED TO BE ENCLOSED BY A PRIVACY FENCE.

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TOM GROLL ENGINEERING
1308 PRYOR LANE, AUSTIN, TEXAS 78704 • (512) 940-9764 • 1307 S MAIN # 2 PFLUGERVILLE, TEXAS 78660
WWW.TGENGR.COM

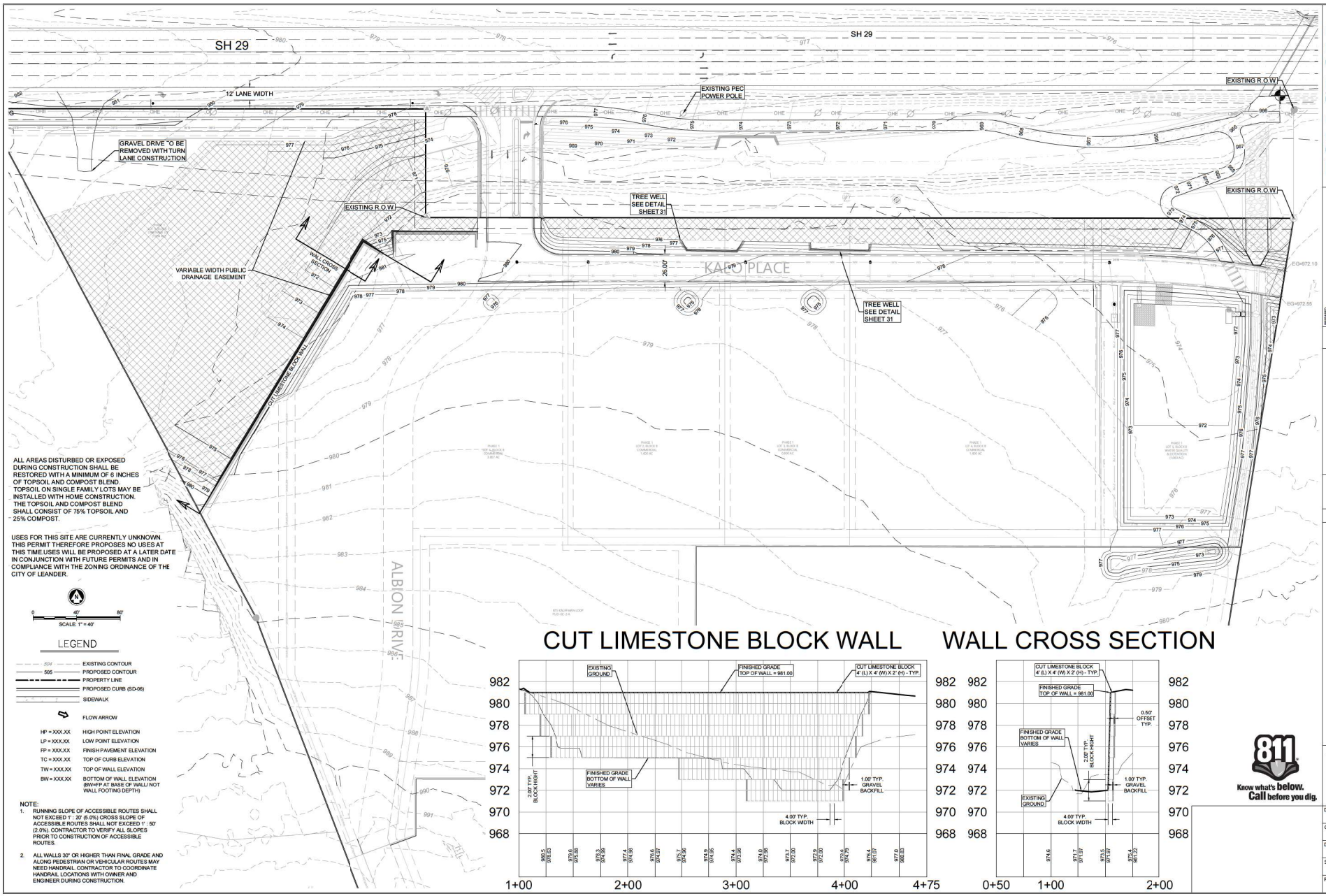
675 KAUFFMAN, LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

SITE PLAN

THOMAS J. GROLL 93976 LICENSED PROFESSIONAL ENGINEER 5/21/2025

Date	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	13 of 37
Project No.	SD-24-0282



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.

USES FOR THIS SITE ARE CURRENTLY UNKNOWN. THIS PERMIT THEREFORE PROPOSES NO USES AT THIS TIME USES WILL BE PROPOSED AT A LATER DATE IN CONJUNCTION WITH FUTURE PERMITS AND IN COMPLIANCE WITH THE ZONING ORDINANCE OF THE CITY OF LEANDER.

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

LEGEND

504	EXISTING CONTOUR
505	PROPOSED CONTOUR
	PROPERTY LINE
	PROPOSED CURB (SD-06)
	SIDEWALK
	FLOW ARROW
HP = XXX.XX	HIGH POINT ELEVATION
LP = XXX.XX	LOW POINT ELEVATION
FP = XXX.XX	FINISH PAVEMENT ELEVATION
TC = XXX.XX	TOP OF CURB ELEVATION
TW = XXX.XX	TOP OF WALL ELEVATION
BW = XXX.XX	BOTTOM OF WALL ELEVATION (BW=FP AT BASE OF WALL/ NOT WALL FOOTING DEPTH)

NOTE:
1. RUNNING SLOPE OF ACCESSIBLE ROUTES SHALL NOT EXCEED 1' : 20' (5.0%) CROSS SLOPE OF ACCESSIBLE ROUTES SHALL NOT EXCEED 1' : 50' (2.0%). CONTRACTOR TO VERIFY ALL SLOPES PRIOR TO CONSTRUCTION OF ACCESSIBLE ROUTES.
2. ALL WALLS 30" OR HIGHER THAN FINAL GRADE AND ALONG PEDESTRIAN OR VEHICULAR ROUTES MAY NEED HANDRAIL. CONTRACTOR TO COORDINATE HANDRAIL LOCATIONS WITH OWNER AND ENGINEER DURING CONSTRUCTION.

CUT LIMESTONE BLOCK WALL

WALL CROSS SECTION

811 Know what's below. Call before you dig.

TOM GROLL ENGINEERING
1308 PRYOR LANE, AUSTIN, TEXAS 78704 • (512) 944-9794 • TBPE F-9799
WWW.TGENGINEERING.COM

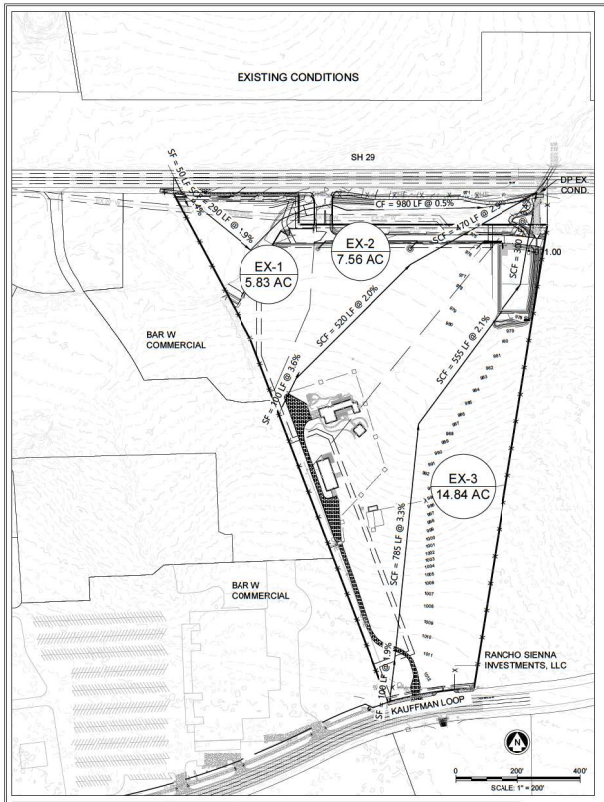
675 KAUFFMAN, LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

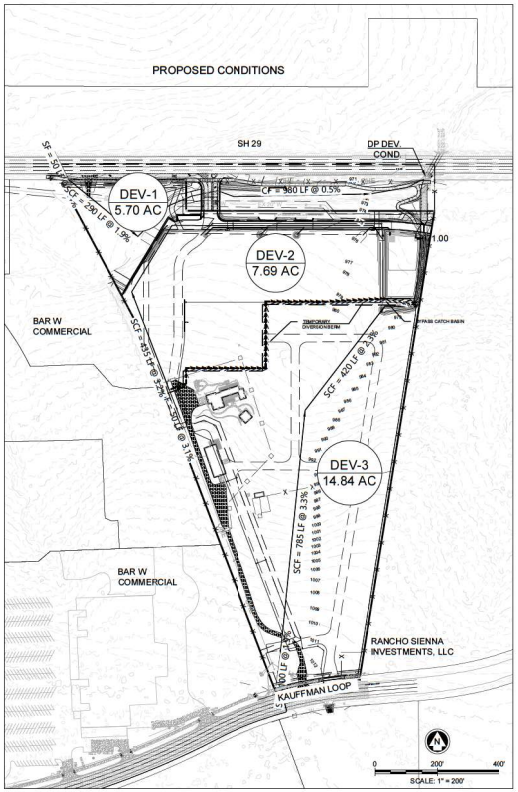
PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
CUT LIMESTONE WALL LOT
LEANDER, TEXAS 78642

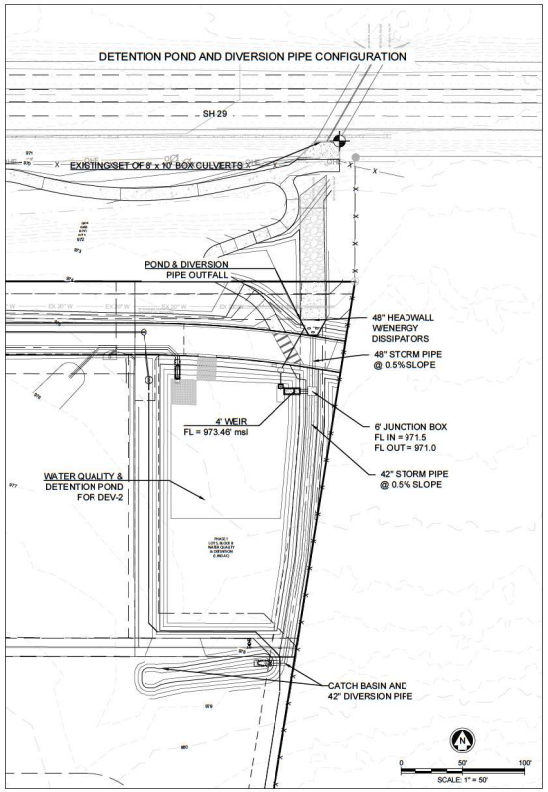
GRADING PLAN

THOMAS J. GROLL
93976
LICENSED PROFESSIONAL ENGINEER
5/21/2025

Date	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	14 of 37
Project No.	SD-24-0282







Event	24 hr depth (in)
2-yr	3.92
10-yr	6.36
25-yr	8.16
100-yr	11.50

DESCRIPTION		
Hydrologic soil group		D
Brush/weed/grass - fair condition		
CN =	77	

SCS method run-off calculation summary	DA			DA		
Basin Data	Ex-1	Ex-2	Ex-3	Dev-1	Dev-2	Dev-3
Drainage Area (ac)	5.83	7.56	14.84	5.70	7.69	14.84
Drainage Area (mi^2)	0.009102	0.011816	0.023192	0.008904	0.012012	0.023194
Curve number	77	77	77	77	77	77
Impervious Cover (%)	19.7%	12.1%	0.0%	20.1%	74.1%	0.0%
Tc (TR55) (min)	9.2	16.8	23.0	9.2	11.3	20.9
T_{lag} (min)	5.5	10.1	13.8	5.5	6.8	12.5
Sheet flow length (ft)	50	100	100	50	50	100
Manning's n	0.24	0.24	0.24	0.24	0.24	0.24
Slope (%)	6.4	3.6	1.9	6.4	3.1	1.9
2-yr 24 Hr rainfall (in)	3.92	3.92	3.92	3.92	3.92	3.92
Sheet flow Tc (min)	4.7	10.2	13.2	4.7	6.2	13.2
Shallow concentrated flow length (ft)	290	990	1,640	290	685	1,205
Slope (%)	1.90	2.43	2.96	1.90	2.21	3.02
Description	Unpaved	Unpaved	Unpaved	Unpaved	Paved	Unpaved
Shallow concentrated flow Tc (min)	2.2	6.6	9.8	2.2	3.8	7.2
Channel/Pipe Flow length (ft)	980	-	-	980.0	650.0	350.0
Slope (%)	0.5	-	-	1.1	0.5	0.5
Velocity (ft/sec)	7.0	0.0	0.0	7.0	8.1	9.9
Channel/Pipe Flow Tc (min)	2.3	-		2.3	1.3	0.6
2-yr storm (cfs)	16.8	16.6	25.3	16.5	29.7	23.6
10-yr storm (cfs)	31.1	31.9	51.6	30.5	47.1	54.0
25-yr storm (cfs)	41.2	42.7	70.3	40.3	59.0	73.6
100-yr storm (cfs)	58.8	61.3	102.4	57.6	79.8	107.4

Drainage area	(ft^2)	(ac)	(mi^2)	RCN	IC (%)	T_c	T_{lag}	2-yr	10-yr	25-yr	100-yr
EX-1	253,739	5.83	0.009102	77	19.7%	9.2	5.5	16.8	31.1	41.2	58.8
EX-2	329,412	7.56	0.011816	77	12.1%	16.8	10.1	16.6	31.9	42.7	61.3
EX-3	646,563	14.84	0.023192	77	0.0%	23.0	13.8	25.3	51.6	70.3	102.4
DP EX	1,229,713	28.23	0.044110		7.3%			52.4	103.4	139.5	201.7
DEV-1	248,226	5.70	0.008904	77	20.1%	9.2	5.5	16.5	30.5	40.3	57.6
DEV-2	334,864	7.69	0.012012	77	74.1%	11.3	6.8	29.7	47.1	59.0	79.8
DEV-3	646,623	14.84	0.023194	77	0.0%	20.9	12.5	23.6	54.0	73.6	107.4
COMBINED DETAINED	1,229,713	28.23	0.044110		24.2%			51.9	99.7	133.7	193.1
							Δ	(0.6)	(3.8)	(5.9)	(8.7)
Detention Pond WSEL (ft msl)								974.64	975.16	975.48	976.00

Elevation	Area		Total Volume		Detention Volume			Weir	Event	
			Incremental	Cumulative	Incremental	Cumulative		Discharge		
	ft^2	AC	ft^3	ft^3	ft^3	ft^3	Ac-ft	ft^3/s		
971.00	38	0.00		-						
972.00	10,405	0.24	3,914	3,914			-	0.6		WATER QUALITY
973.00	18,874	0.43	14,839	18,753						
973.46	19,687	0.45	8,866	27,618						
974.00	20,659	0.47	10,889	38,507	10,889	10,889	0.2500	4.8		
974.64	21,785	0.50	12,979	51,486	12,979	23,868	0.5479	15.4	2-YR	
975.00	22,513	0.52	8,594	60,080	8,594	32,462	0.7452	22.9		
975.16	22,703	0.52	2,267	62,347	2,267	34,728	0.7973	26.5	10-YR	DETENTION
975.48	23,280	0.53	6,961	69,308	6,961	41,689	0.9571	34.3	25-YR	
976.00	24,437	0.56	14,235	83,542	14,235	55,524	1.2838	48.6	100-YR	
977.00	26,430	0.61	25,421	108,963	25,421	81,345	1.8674	79.9		

DRAINAGE NOTES:

1. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.

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

PREPARED FOR:

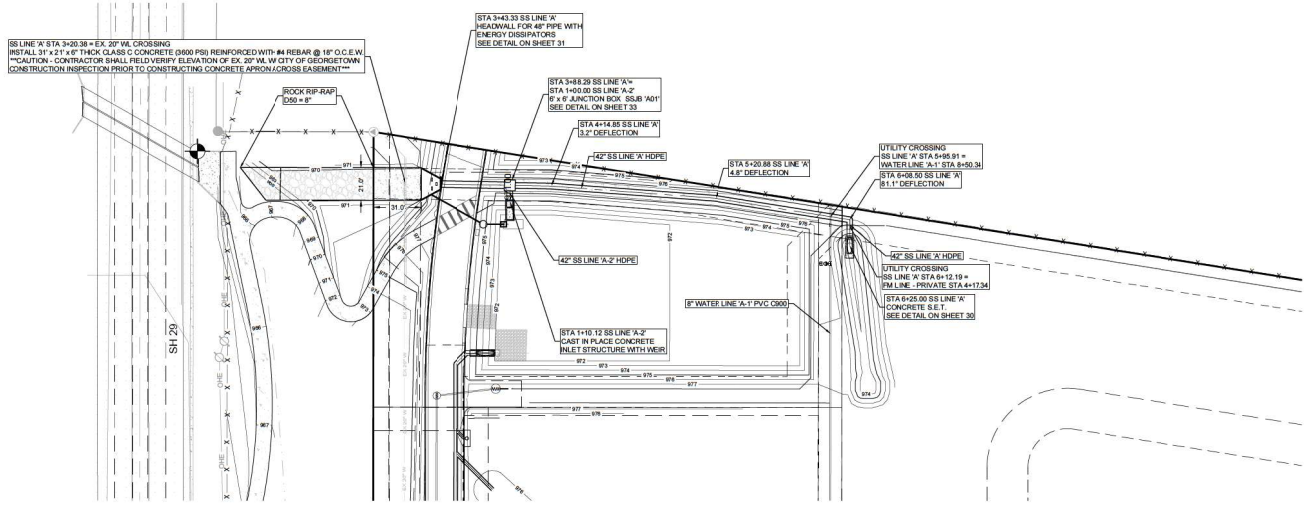
NO.	DESCRIPTION	DATE

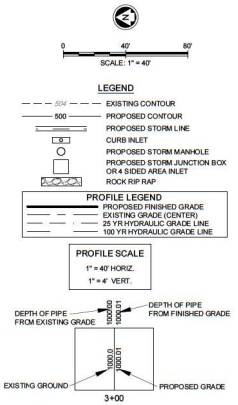
PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

DRAINAGE PLAN

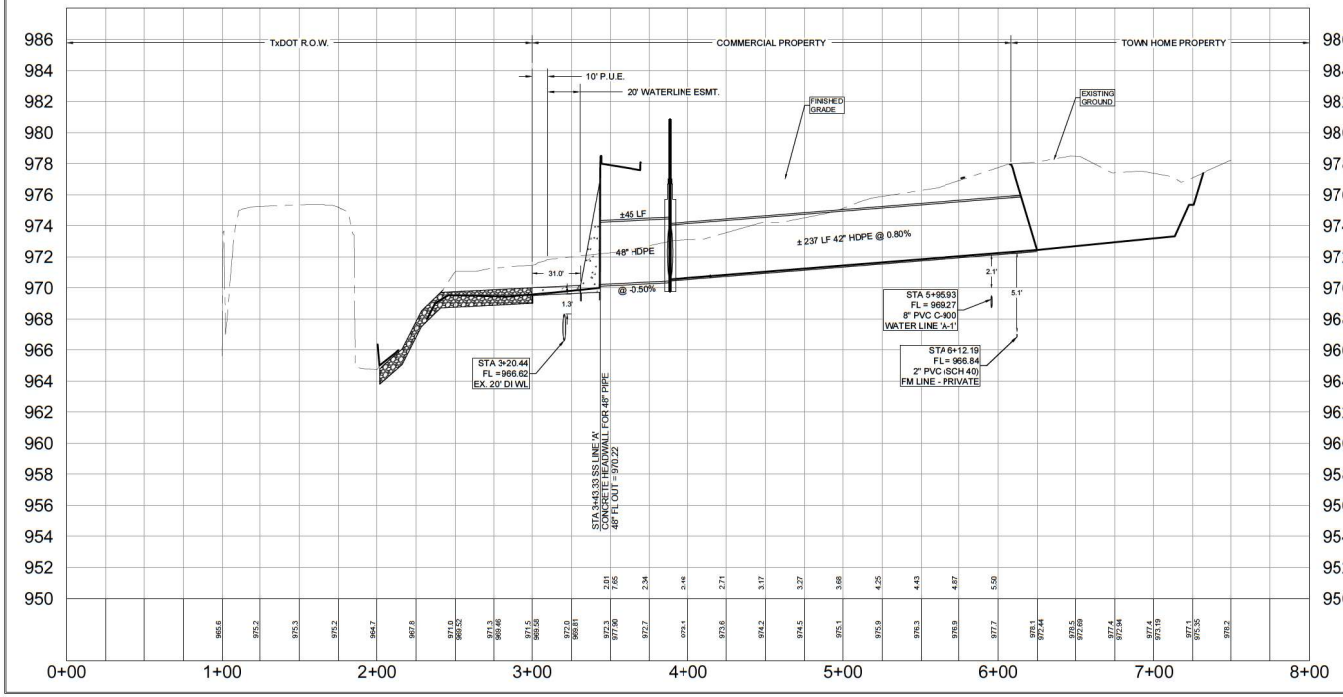
THOMAS J. GROLL 80976 LICENSED PROFESSIONAL ENGINEER

Date	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	15 of 37
Project No.	SD-24-0282

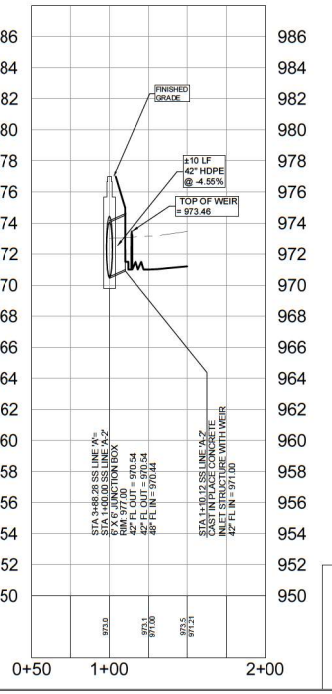




SS LINE 'A'



SS LINE 'A-2'



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1308 RIVER LANE, AUSTIN, TEXAS 78734 • (512) 944-9794 • TBPE FIRM # F-9999
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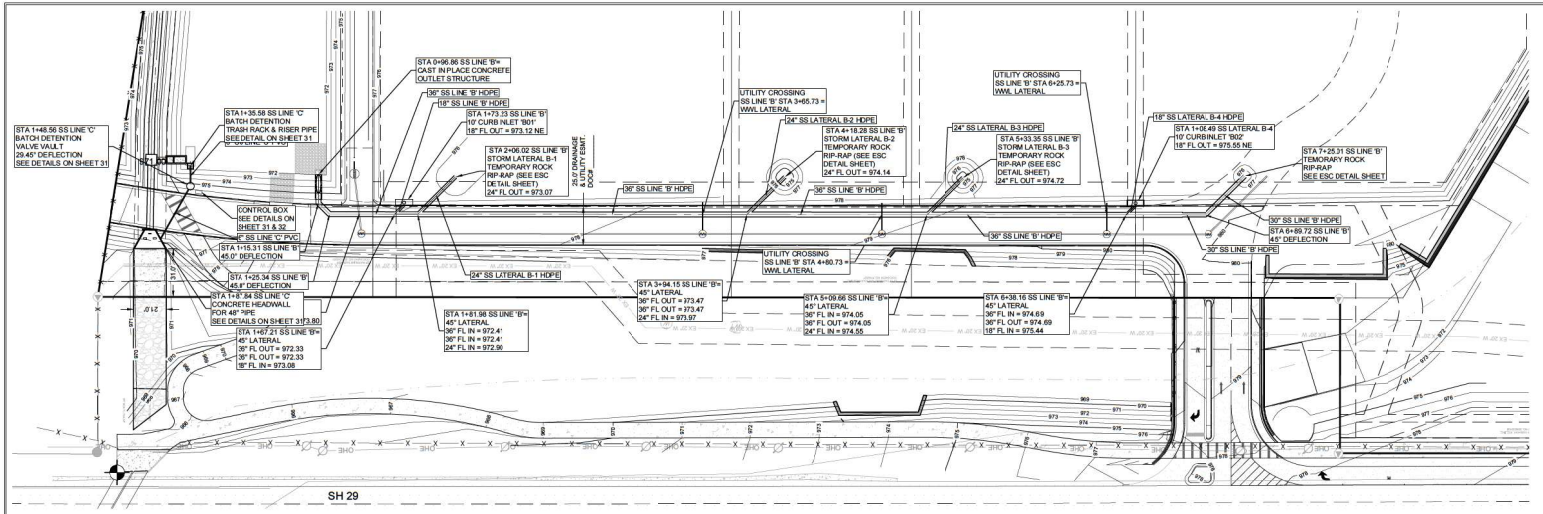
675 KAUFFMAN, LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

STORM LINE 'A' & 'A-2'

THOMAS J. GROLL
80976
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

Date	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	17 of 37
Project No.	SD-24-0282



SCALE: 1" = 40'

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM LINE
- CURB INLET
- PROPOSED STORM MANHOLE
- PROPOSED STORM JUNCTION BOX OR 4 SIDED AREA INLET
- ROCK RIP RAP

PROFILE LEGEND

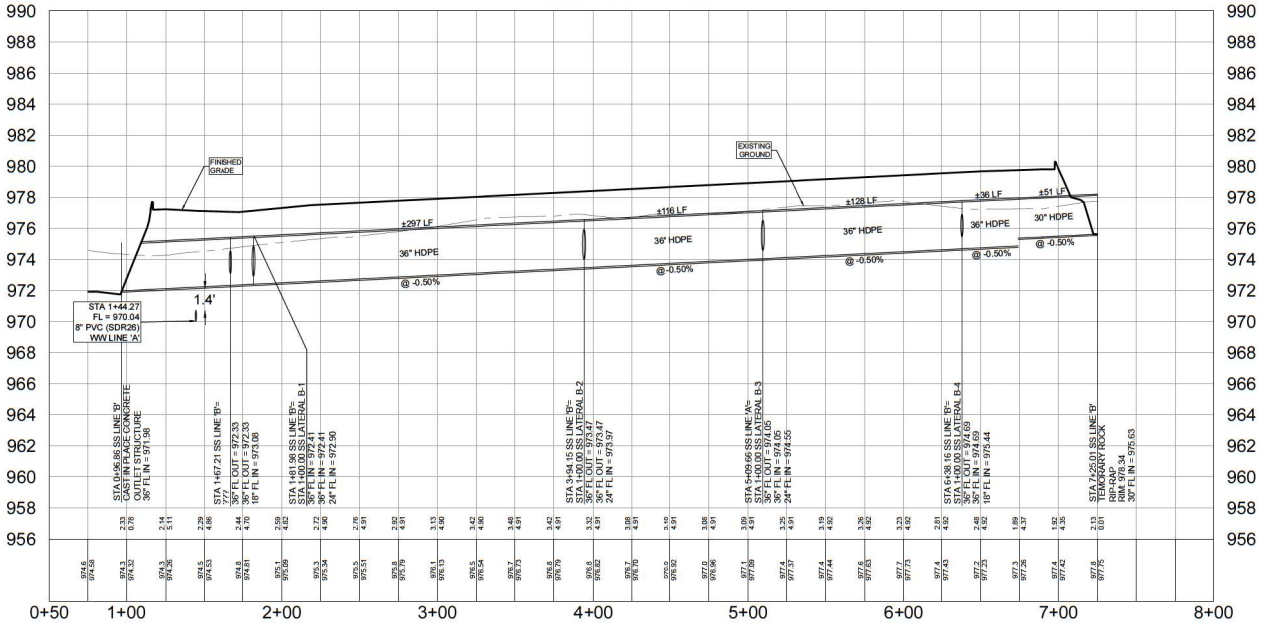
- PROPOSED FINISHED GRADE
- EXISTING GRADE (CENTER)
- 25 YR HYDRAULIC GRADE LINE
- 100 YR HYDRAULIC GRADE LINE

PROFILE SCALE
1" = 40' HORIZ.
1" = 4' VERT.

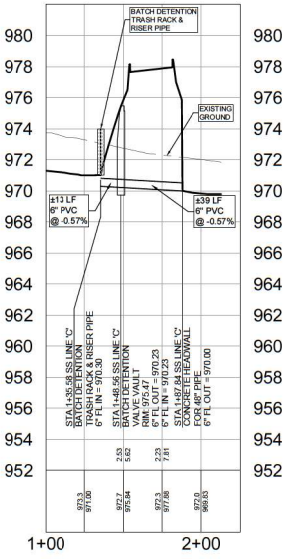
DEPTH OF PIPE FROM EXISTING GRADE
DEPTH OF PIPE FROM FINISHED GRADE
EXISTING GROUND
PROPOSED GRADE
3+00

NOTE:
1. ALL FILL AREAS SHALL BE COMPACTED TO 95% PROCTOR DENSITY PRIOR TO INSTALLATION OF UTILITIES
2. ALL WASTEWATER AND WATERLINE CROSSINGS SHALL COMPLY WITH THE CONSTRUCTION REQUIREMENTS DEFINED IN TABLE C.1 OF 30 TAC CHAPTER 217.53(d)(3).

SS LINE 'B'



SS LINE 'C'



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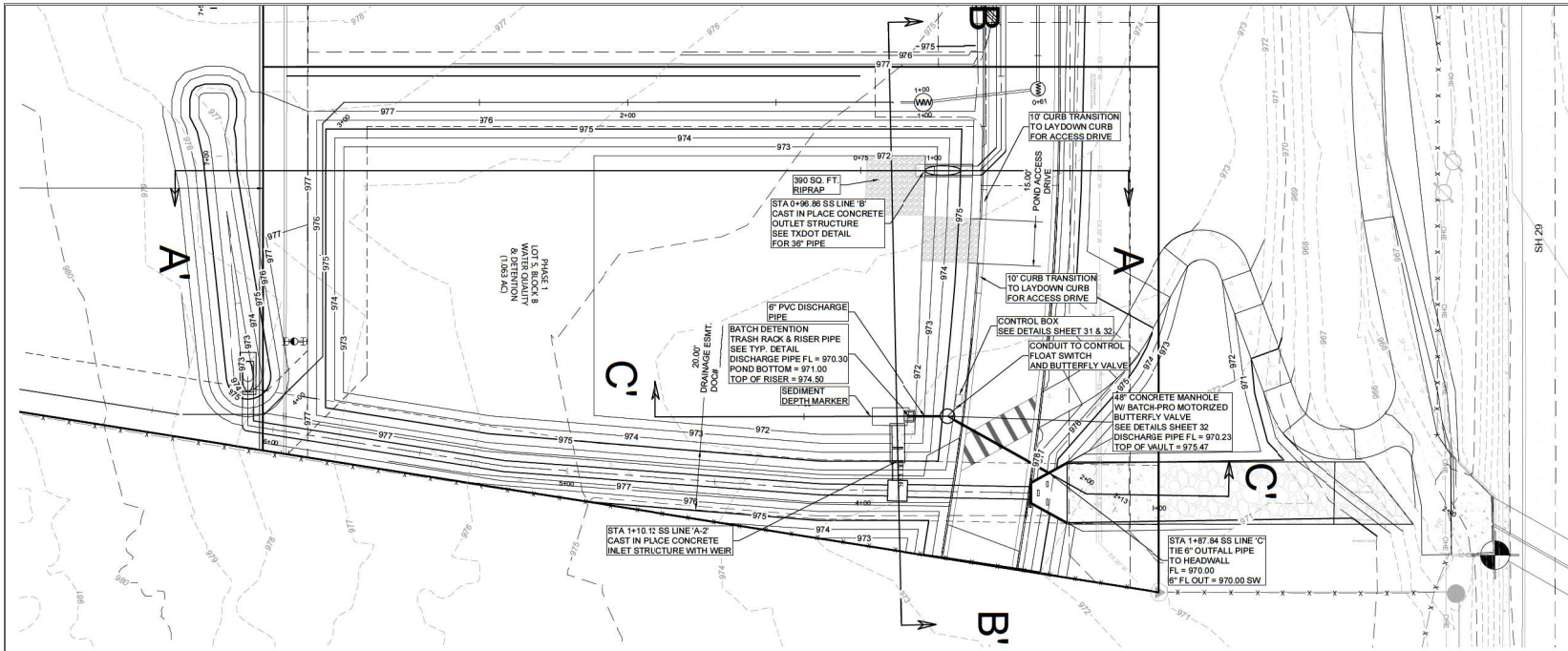
TOM GROLL ENGINEERING
1308 PATTON LANE, AUSTIN, TEXAS 78704 | (512) 944-9794 | WWW.TG-ENGR.COM
PREPARED FOR:
675 KAUFFMAN, LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

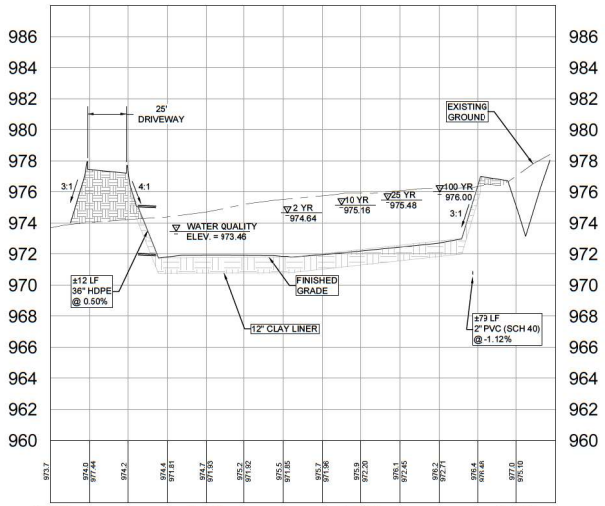
STORM LINE 'B' & 'C'

THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
5/21/2025

Date	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	18 of 37
Project No.	SD-24-0282



POND 'A' SECTION 'A'



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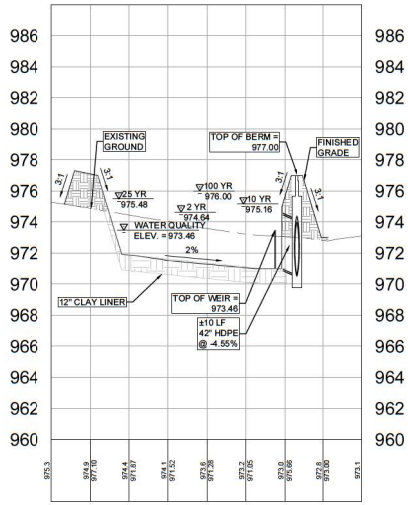
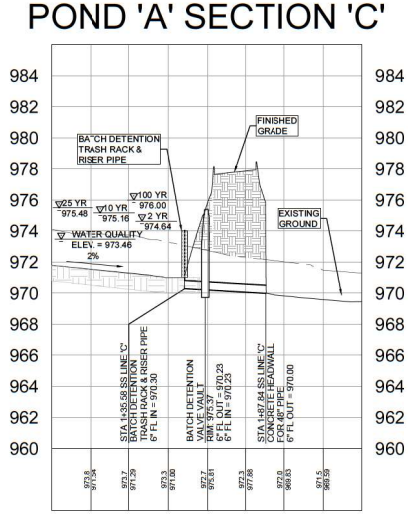


POND 'A' SECTION 'C'



SCALE: 1" = 20'

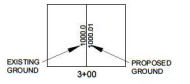
LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM LINE
- CURB INLET
- PROPOSED STORM MANHOLE
- PROPOSED STORM JUNCTION BOX
- ROCK RIP RAP

PROFILE LEGEND

- PROPOSED FINISHED GRADE
- EXISTING GRADE (CENTER)
- 25 YR HYDRAULIC GRADE LINE
- 100 YR HYDRAULIC GRADE LINE

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



NOTE:
1. ALL FILL AREAS SHALL BE COMPACTED TO 95% PROCTOR DENSITY PRIOR TO INSTALLATION OF UTILITIES.
2. ALL PIPE VELOCITIES ARE CONFIRMED LESS THAN 20 FPS.

NON-RESIDENTIAL AND MULTI-FAMILY DRAINAGE FACILITIES INCLUDE ALL DETENTION PONDS, WATER QUALITY PONDS, POND OUTLET STRUCTURES, BERMS, IMPROVED CHANNELS OR OTHER IMPROVEMENTS ASSOCIATED WITH THE DRAINAGE IMPROVEMENTS. ROADSIDE SWALES, STORM SEWER OUTFALLS UNLESS VISIBLE FROM A ROW, INLETS, AND AREAS OF CONCRETE THAT ARE NO MORE THAN ONE HUNDRED (100) SQUARE FEET IN SIZE ARE NOT INCLUDED.

NON-RESIDENTIAL AND MULTI-FAMILY DRAINAGE FACILITIES ARE NOT ALLOWED WITHIN TEN FEET (10') OF STREET ROW EXCEPT THOSE WHICH ARE NECESSARY TO CONVEY DRAINAGE IN THE SHORTEST POSSIBLE ROUTE TO OR FROM STREET ROW.

NON-RESIDENTIAL AND MULTI-FAMILY DRAINAGE FACILITIES LOCATED WITHIN THE FRONT SETBACK SHALL NOT EXCEED 25% OF THE AREA OF THE FRONT SETBACK.

ANY FENCING AROUND NON-RESIDENTIAL AND MULTI-FAMILY DETENTION PONDS SHALL BE CONSTRUCTED OF WROUGHT IRON OR DECORATIVE TUBULAR METAL OR OTHER SIMILAR PRODUCT.

STRUCTURAL STABILIZATION INCLUDING VERTICAL WALLS AND RIPRAP FOR NON-RESIDENTIAL AND MULTI-FAMILY DRAINAGE FACILITIES SHALL BE LIMITED TO NOT MORE THAN THIRTY (30%) PERCENT OF THE PERIMETER OF THE POND EXCLUDING OUTLET STRUCTURES. THE REMAINDER OF THE PERIMETER SHALL BE EARTHEN EMBANKMENT NO STEEPER THAN 3:1 SLOPE. ALL EXPOSED CONCRETE THAT IS VISIBLE IS REQUIRED TO BE MADE OF STONE OR CLAD IN STONE INCLUDING BUT NOT LIMITED TO LEDGESTONE, FIELDSTONE, CAST STONE, OR OTHER DECORATIVE MATERIALS SUCH AS STAMPED AND TINTED CONCRETE THAT RESEMBLES STONE OR BRICK AS APPROVED BY THE DIRECTOR OF PLANNING. ALL OTHER EXPOSED CONCRETE IS REQUIRED TO BE MADE OF STONE OR CLAD IN STONE AS LISTED ABOVE OR TEXTURED AND TINTED IN EARTHEN COLORS. IN THE EVENT THAT THE DRAINAGE FACILITY IS BELOW GRADE, STRUCTURAL STABILIZATION IS PERMITTED FOR THE FULL PERIMETER AND SCREENING REQUIREMENTS LISTED IN ARTICLE VI, SECTION 1 (D) OF THIS ORDINANCE SHALL APPLY.

811 Know what's below. Call before you dig.

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

PREPARED FOR:

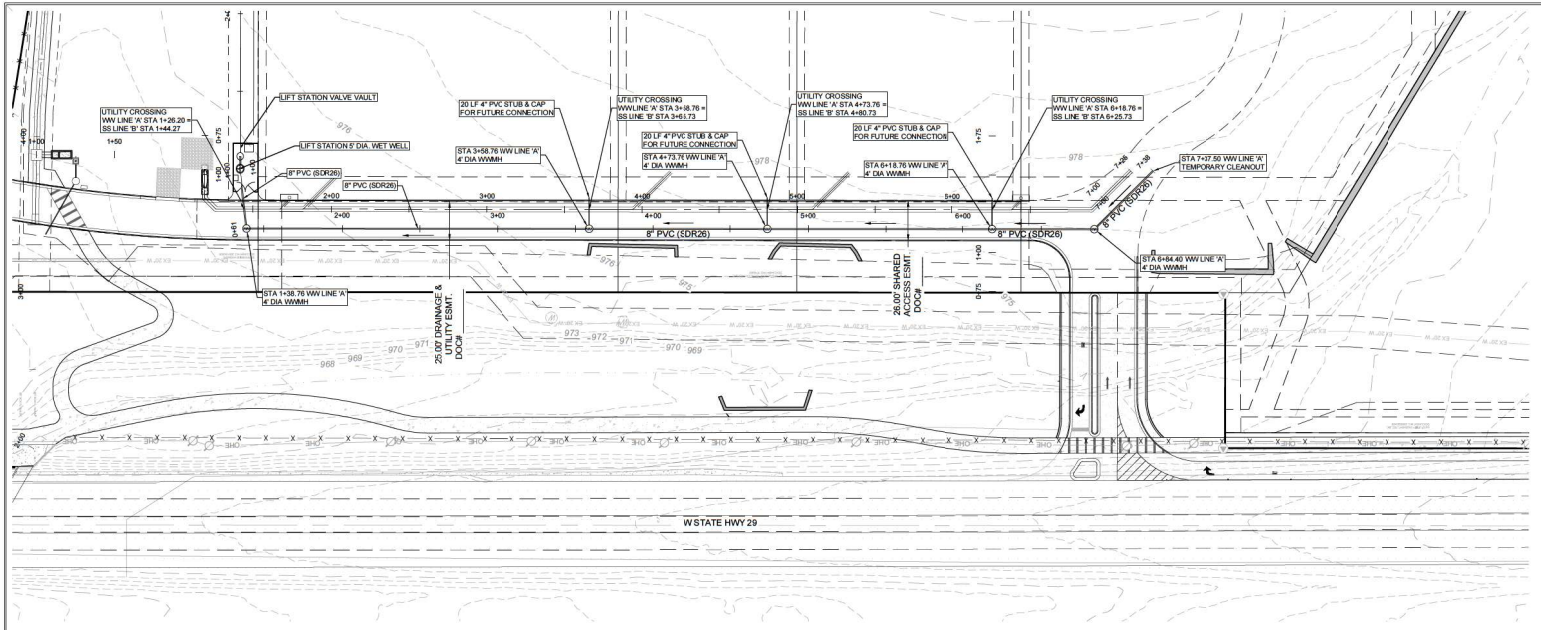
No.	DATE	DESCRIPTION

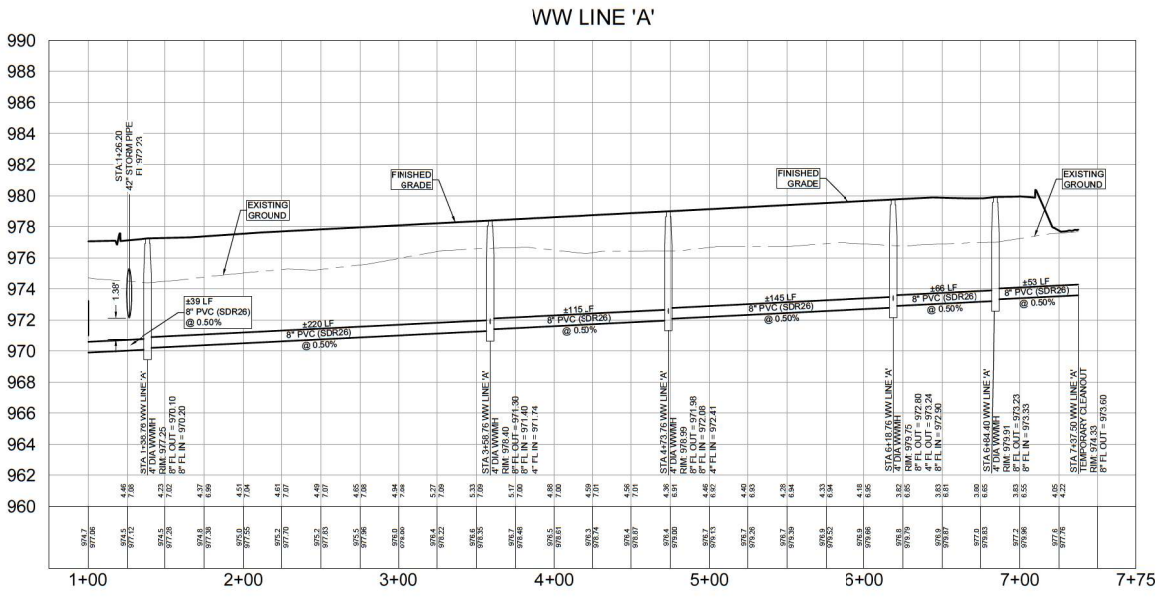
PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
FOR
KAUFFMAN LXXII
LEANDER, TEXAS 78642

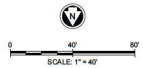
PROPOSED BATCH DETENTION AND WATER QUALITY POND

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
5/21/2025

Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 19 of 37
Project No. SD-24-0282







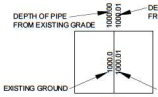
LEGEND

- EXISTING CONTOUR
- 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:

1. ALL GRAVITY WASTEWATER LINES SHALL BE PVC SDR 26 AND CONFORM TO ASTM D 3034 WITH A PIPE STIFFNESS OF 115 PSI.
2. 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.
3. 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.
4. ALL MANHOLES OUTSIDE OF PUBLIC RIGHT-OF-WAY AND MANHOLES OUTSIDE OF PAVED AREAS SHALL HAVE BOLTED AND GASKETED WATERTIGHT COVERS.
5. HORIZONTAL AND VERTICAL ALIGNMENT TO BE CHECKED AT NO GREATER THAN 50' INTERVALS.
6. ALL WASTEWATER SERVICES TO BE INSTALLED PER COA DETAIL 520-AW-01. NO CLEANOUTS ARE TO BE LOCATED WITHIN SIDEWALKS, DRIVEWAYS OR CURB RAMPS.
7. ALL WASTEWATER MANHOLES TO BE COATED (SPL WW-511).
8. REFER TO PROFILE SHEETS FOR THE LOCATION OF DEEP SERVICES AND 5% SERVICES.

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 =	42	12-hr flow	
Average Dry Weather Flow =	8,400	gpd	11.67 gpm
Peak Dry Weather Flow =	15,255	gpd	21.19 gpm
Site Area =	10.16	ac	
Inflow & Infiltration =	7,620	gpd	5.29 gpm
Peak Wet Weather Flow =	22,875	gpd	26.48 gpm

811 Know what's below. Call before you dig.

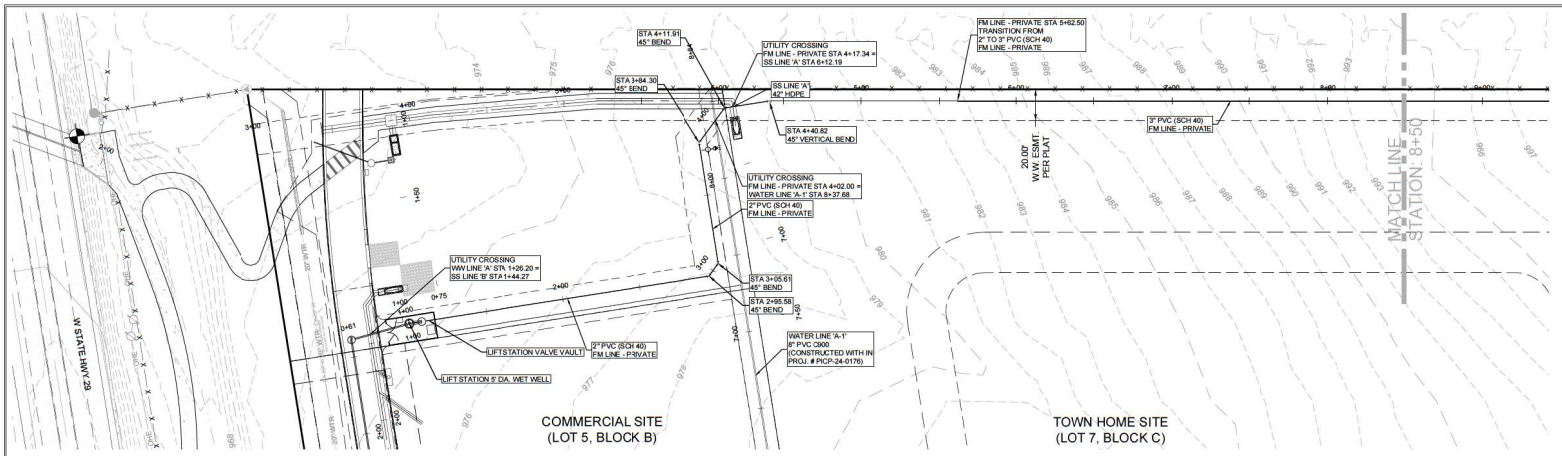
TOM GROLL ENGINEERING
1308 PATTON LANE, AUSTIN, TEXAS 78704 • (512) 944-9794 • TBPE FIRM # F-9799
PREPARED FOR:
675 KAUFFMAN, LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

WASTEWATER LINE 'A'

THOMAS J. GROLL, 90976, LICENSED PROFESSIONAL ENGINEER, STATE OF TEXAS

Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No.: 20 of 37
Project No.: SD-24-0282



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'

DEPTH OF PIPE FROM EXISTING GRADE
DEPTH OF PIPE FROM FINISHED GRADE
EXISTING GROUND
PROPOSED PIPE FLOW LINE
3+00

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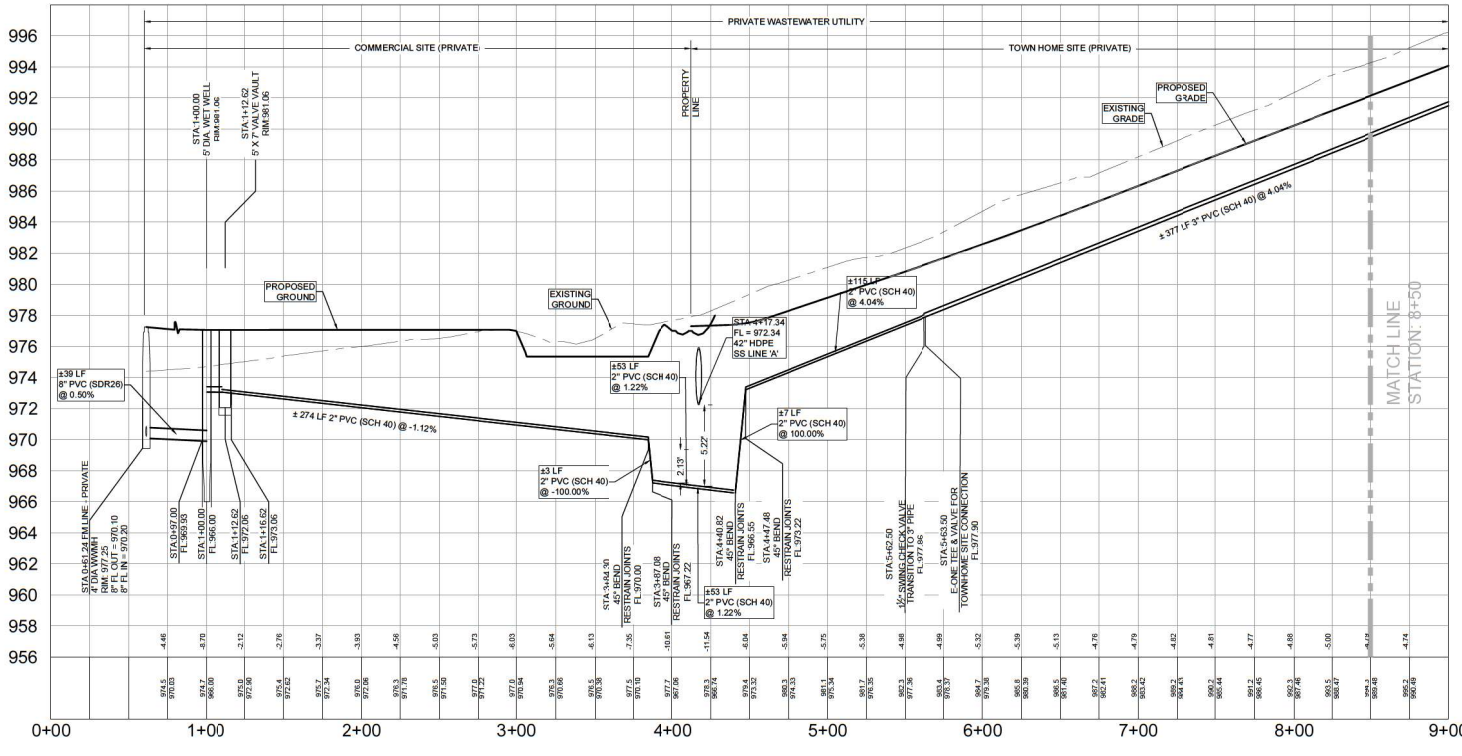
FM LINE - PRIVATE



Wastewater Determination Factors - Commercial		
Average Dry Weather Flow =	71.4	gal/person/day x population/1440
Peak Flow Factor =	4.C	
Inflow & Infiltration =	796.C	gal/acre/day
L.U.E. =	2.8C	people/L.U.E.
625 Kauffman Loop Wastewater Generation Calculations		
Total L.U.E.'s =	42	24-hr Flow
Average Dry Weather Flow =	8.40(	gpd	11.67	gpm
Peak Dry Weather Flow =	15,758	gpd	21.91	gpm
Site Area =	15.84	ac		
Inflow & Infiltration =	7.6(C	gpd	5.28	gpm
Peak Wet Weather Flow =	22,829	gpd	26.45	gpm

Wastewater Determination Factors - Residential		
Average Dry Weather Flow =	71.4	gal/person/day x population/1440
Peak Flow Factor =	4.C	
Inflow & Infiltration =	796.C	gal/acre/day
L.U.E. =	2.8C	people/L.U.E.
625 Kauffman Loop Wastewater Generation Calculations		
Total L.U.E.'s =	108	24-hr Flow
Average Dry Weather Flow =	21,60(	gpd	15.00	gpm
Peak Dry Weather Flow =	31,653	gpd	21.77	gpm
Site Area =	14.84	ac		
Inflow & Infiltration =	11,33(	gpd	7.73	gpm
Peak Wet Weather Flow =	44,783	gpd	31.30	gpm

Wastewater Determination Factors - Combined		
Average Dry Weather Flow =	71.4	gal/person/day x population/1440
Peak Flow Factor =	4.C	
Inflow & Infiltration =	796.C	gal/acre/day
L.U.E. =	2.8C	people/L.U.E.
625 Kauffman Loop Wastewater Generation Calculations		
Total L.U.E.'s =	15(	24-hr Flow
Average Dry Weather Flow =	30,00(	gpd	20.67	gpm
Peak Dry Weather Flow =	46,553	gpd	44.56	gpm
Site Area =	25.0C	ac		
Inflow & Infiltration =	18,75(	gpd	13.03	gpm
Peak Wet Weather Flow =	68,300	gpd	57.58	gpm

811 Know what's below. Call before you dig.

TOM GROLL ENGINEERING
1300 PITCHFORK LANE, AUSTIN, TEXAS 78754 • (512) 944-9794 • TBPE F-19990
CERTIFICATE OF AUTHORIZATION
675 KAUFFMAN, LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

PREPARED FOR:

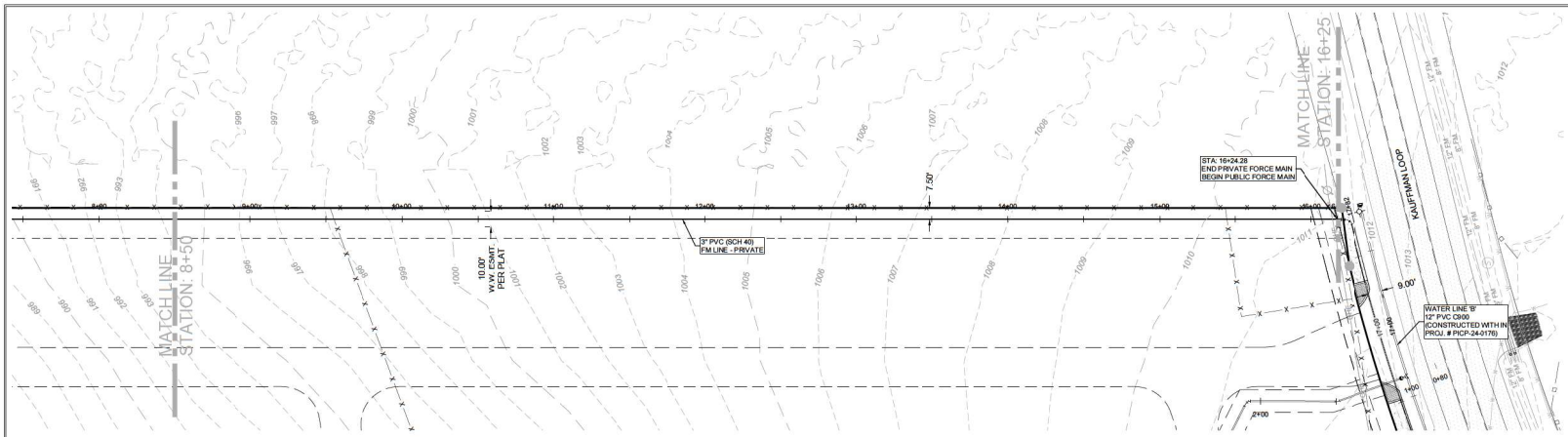
NO.	DESCRIPTION	BY	DATE

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

FORCE MAIN LINE
1+00 - 8+50

THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER

Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No.: 21 of 37
Project No.: SD-24-0282



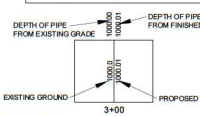
LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE

PROFILE LEGEND

- PROPOSED FINISHED GRADE
- EXISTING GRADE (CENTER)

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



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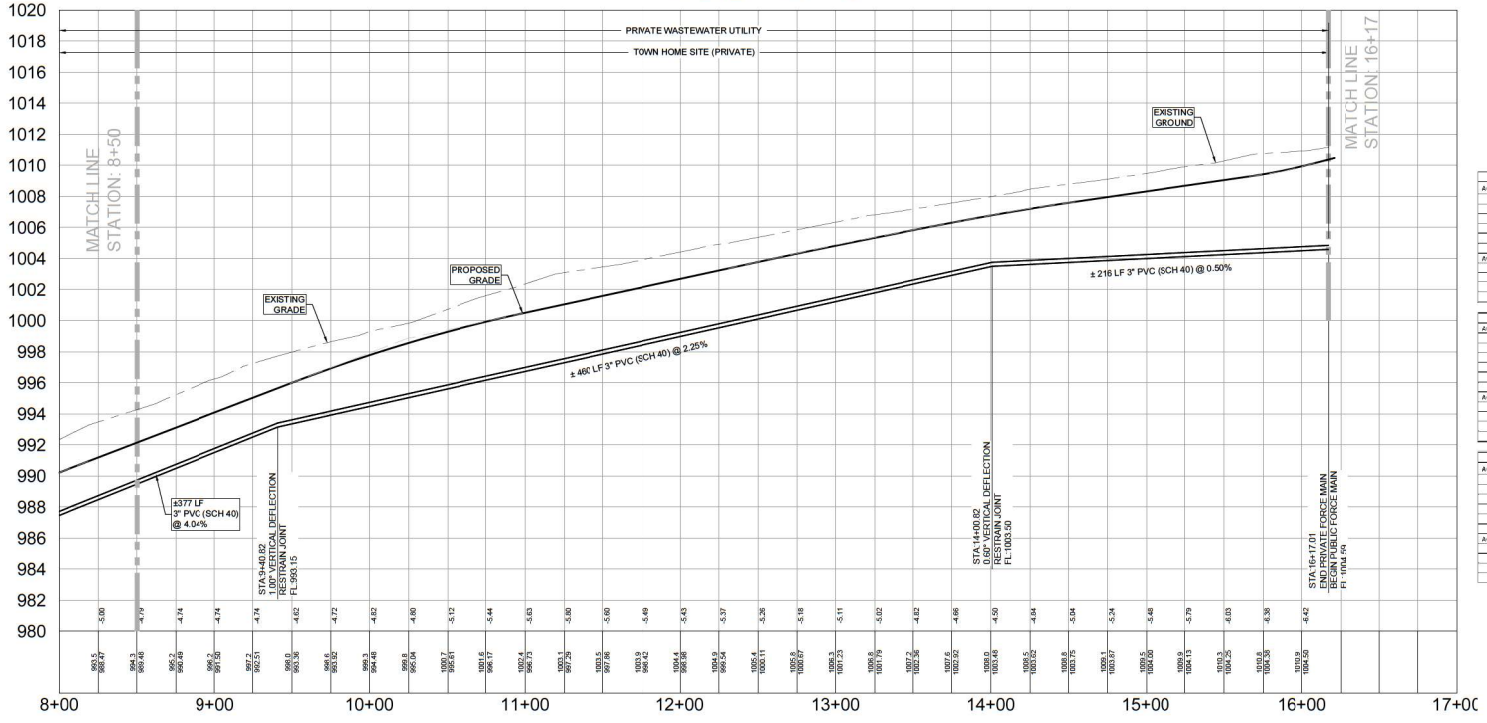
FM LINE - PRIVATE



Wastewater Determination factors - Commercial		
Average Dry Weather Flow =	71.4	gpl/person/day x population/1,440
Peak Flow Factor =	4.0	
Inflow & Infiltration =	750.0	gpl/acre/day
L.U.E. =	2.80	proposed L.U.E.

675 Kauffman Loop Wastewater Generation Calculations		
Total L.U.E.'s =	42	24-Hr Flow
Average Dry Weather Flow =	6,400	gpd 21.67 gpm
Peak Dry Weather Flow =	15,355	gpd 21.19 gpm
Site Area =	30.16	ac
Inflow & Infiltration =	7,820	gpd 5.29 gpm
Peak Wet Weather Flow =	22,875	gpd 26.48 gpm

Wastewater Determination factors - Residential		
Average Dry Weather Flow =	71.4	gpl/person/day x population/1,440
Peak Flow Factor =	4.0	
Inflow & Infiltration =	750.0	gpl/acre/day
L.U.E. =	2.80	proposed L.U.E.

675 Kauffman Loop Wastewater Generation Calculations		
Total L.U.E.'s =	108	24-Hr Flow
Average Dry Weather Flow =	21,600	gpd 15.00 gpm
Peak Dry Weather Flow =	33,851	gpd 23.97 gpm
Site Area =	34.84	ac
Inflow & Infiltration =	11,130	gpd 7.73 gpm
Peak Wet Weather Flow =	44,981	gpd 31.10 gpm

Wastewater Determination factors - Combined		
Average Dry Weather Flow =	71.4	gpl/person/day x population/1,440
Peak Flow Factor =	4.0	
Inflow & Infiltration =	750.0	gpl/acre/day
L.U.E. =	2.80	proposed L.U.E.

675 Kauffman Loop Wastewater Generation Calculations		
Total L.U.E.'s =	150	24-Hr Flow
Average Dry Weather Flow =	30,096	gpd 26.07 gpm
Peak Dry Weather Flow =	44,506	gpd 44.36 gpm
Site Area =	25.00	ac
Inflow & Infiltration =	18,750	gpd 13.02 gpm
Peak Wet Weather Flow =	63,306	gpd 57.58 gpm

811
Know what's below.
Call before you dig.

TOM GROLL ENGINEERING
1300 PITCH LANE, AUSTIN, TEXAS 78754 • (512) 944-9794 • WWW.TOMGROLL.COM
675 KAUFFMAN, LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

PREPARED FOR:

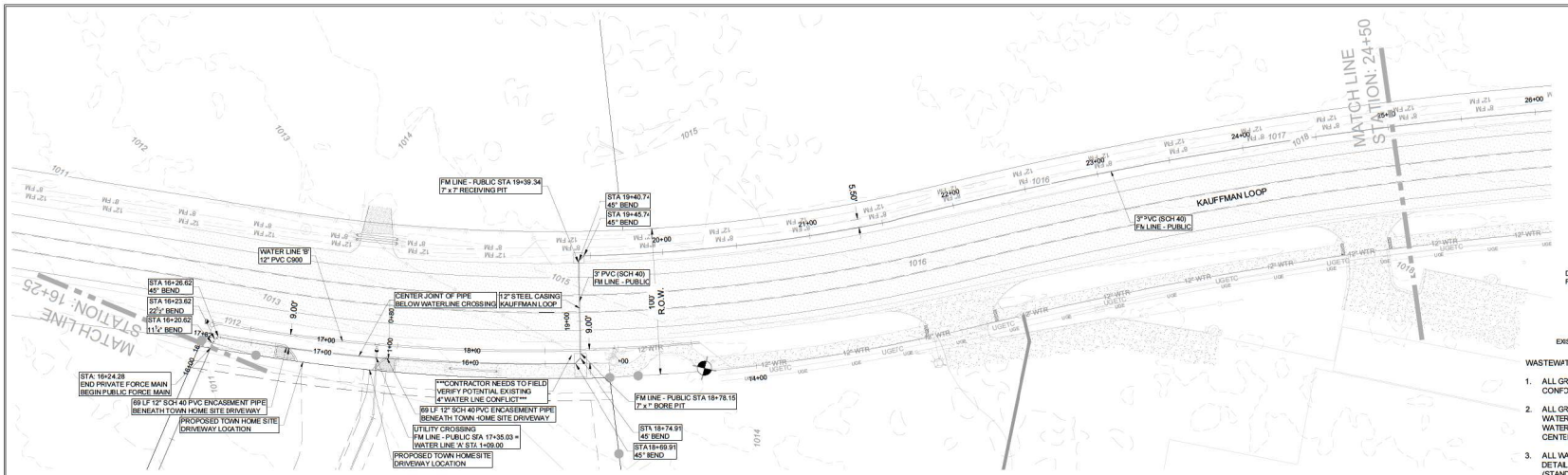
NO.	DESCRIPTION	DATE

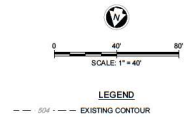
PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

FORCE MAIN LINE
8+50 - 16+25

THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
5/21/2025

Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No.: 22 of 37
Project No.: SD-24-0282





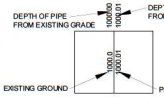
LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE

PROFILE LEGEND

- PROPOSED FINISHED GRADE
- EXISTING GRADE (CENTER)

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



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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.

625 Kauffman Loop Wastewate Generation Calculations		
Total L.U.E.'s =	42	12-hr flow
Average Dry Weather Flow =	6,430 gpd	11.57 gpm
Peak Dry Weather Flow =	15,755 gpd	21.78 gpm
Site Area =	10.16 ac	
Inflow & Infiltration =	7,620 gpd	5.29 gpm
Peak Wet Weather Flow =	23,375 gpd	26.46 gpm

Wastewater Determination Factors - Residential		
Average Dry Weather Flow =	71.4	gal/person/day x population/1440
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L.U.E. =	2.80	people/L.U.E.

675 Kauffman Loop Wastewate Generation Calculations		
Total L.U.E.'s =	128	24-hr flow
Average Dry Weather Flow =	31,000 gpd	15.70 gpm
Peak Dry Weather Flow =	33,051 gpd	23.37 gpm
Site Area =	14.84 ac	
Inflow & Infiltration =	11,130 gpd	7.73 gpm
Peak Wet Weather Flow =	44,781 gpd	31.10 gpm

Wastewater Determination Factors - Combined		
Average Dry Weather Flow =	71.4	gal/person/day x population/1440
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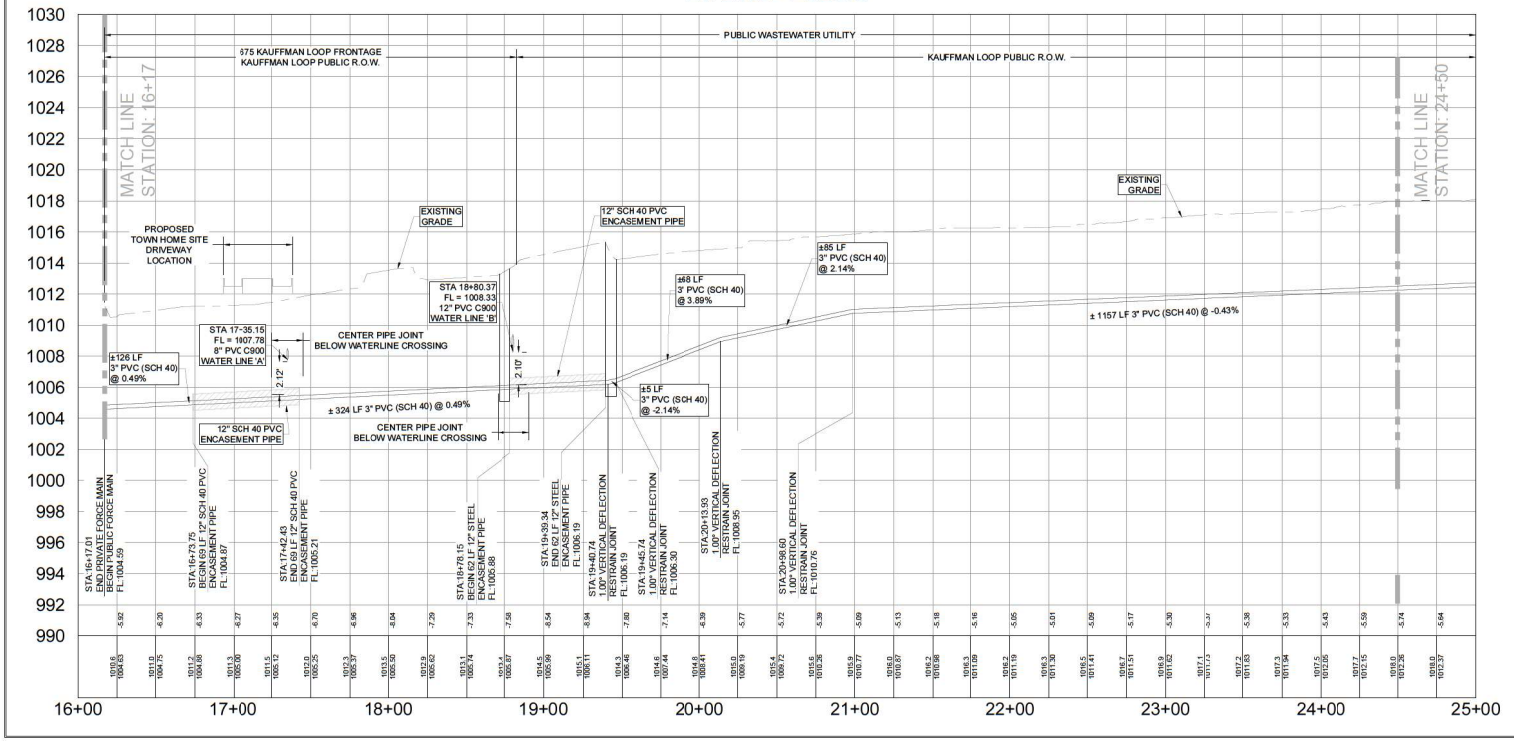
L.U.E. =	2.80	people/L.U.E.

675 Kauffman Loop Wastewate Generation Calculations		
Total L.U.E.'s =	130	24-hr flow
Average Dry Weather Flow =	31,000 gpd	26.57 gpm
Peak Dry Weather Flow =	44,753 gpd	61.56 gpm
Site Area =	25.00 ac	
Inflow & Infiltration =	18,750 gpd	13.02 gpm
Peak Wet Weather Flow =	66,818 gpd	57.58 gpm

Know what's below. Call before you dig.

FM LINE - PUBLIC

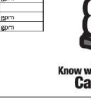


TOM GROLL ENGINEERING
1300 PITCHFORK LANE, AUSTIN, TEXAS 78754 • (512) 346-4794 • TBPE FIRM # F-9999
TBPELS CERTIFICATION

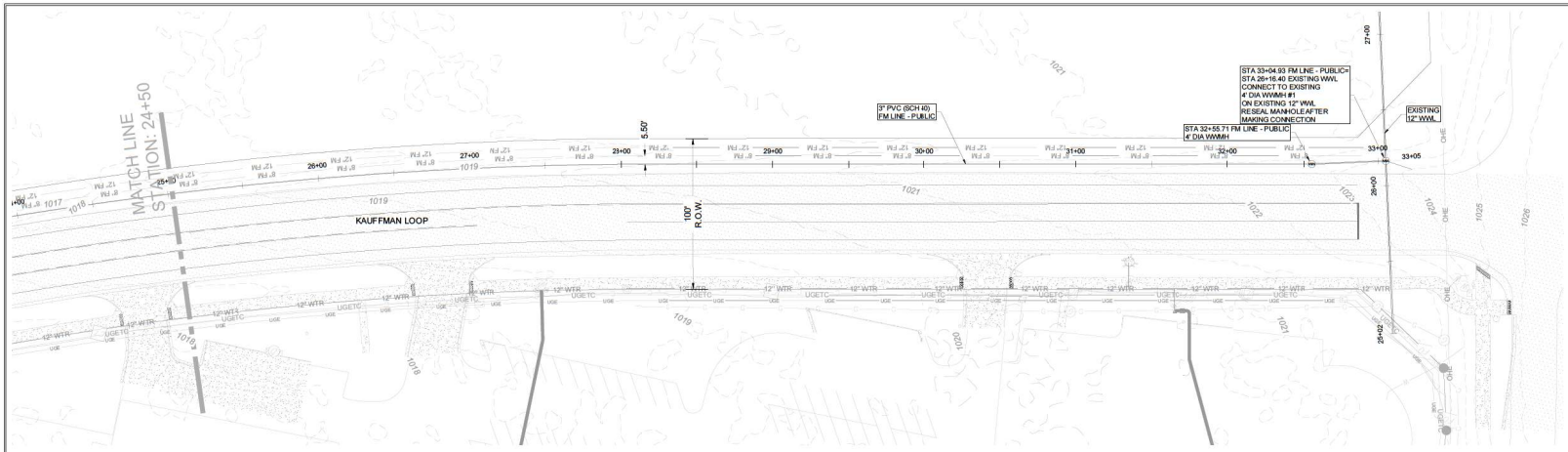
PREPARED FOR:
675 KAUFFMAN, LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

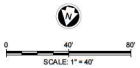
PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

FORCE MAIN LINE
16+25 - 24+50



Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No.: 23 of 37
Project No.: SD-24-0282





LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE

PROFILE LEGEND
PROPOSED FINISHED GRADE
EXISTING GRADE (CENTER)

PROFILE SCALE
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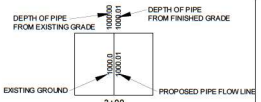

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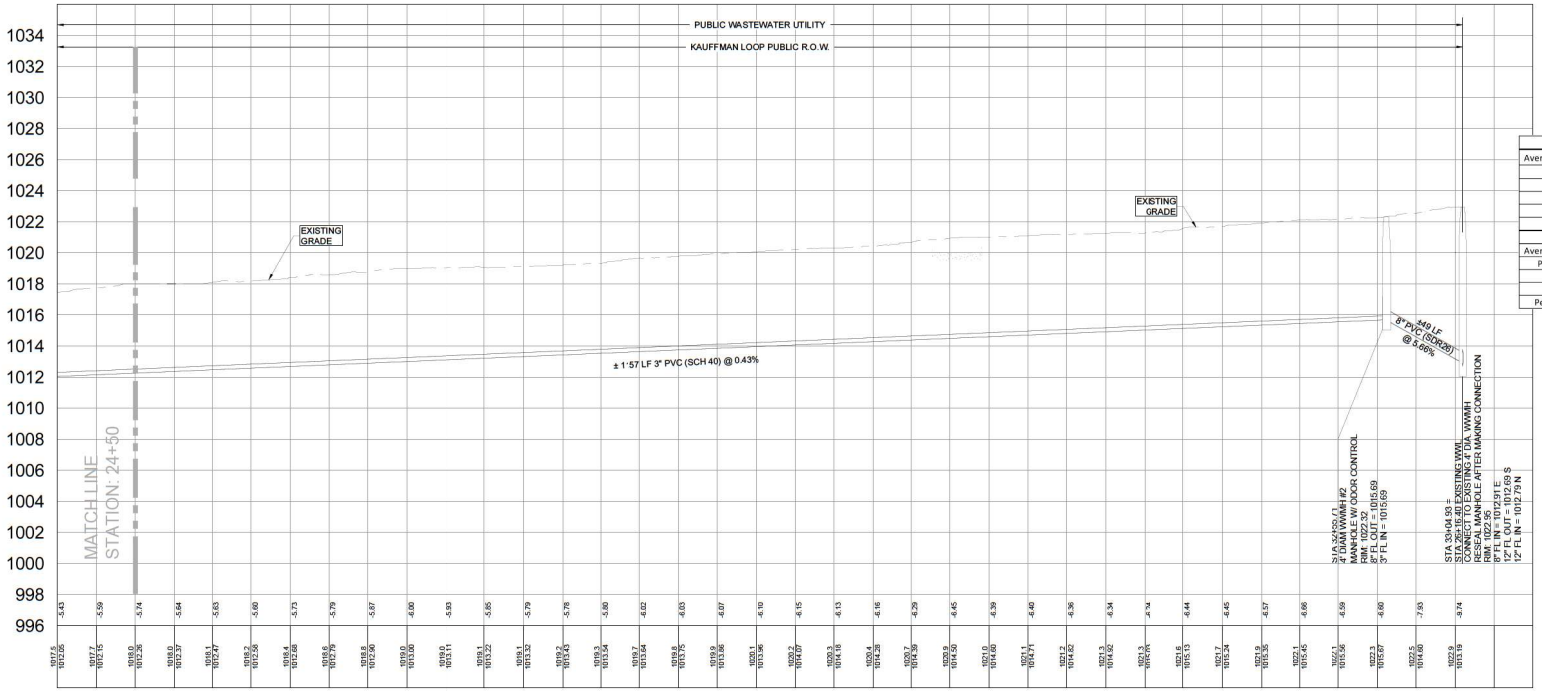

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1300 PITCH LANE, AUSTIN, TEXAS 78754 • (512) 944-9794 • TBPE FIRM # F-9999

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

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

FORCE MAIN LINE
24+50 - END

THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
5/21/2025

Date	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	24 of 37
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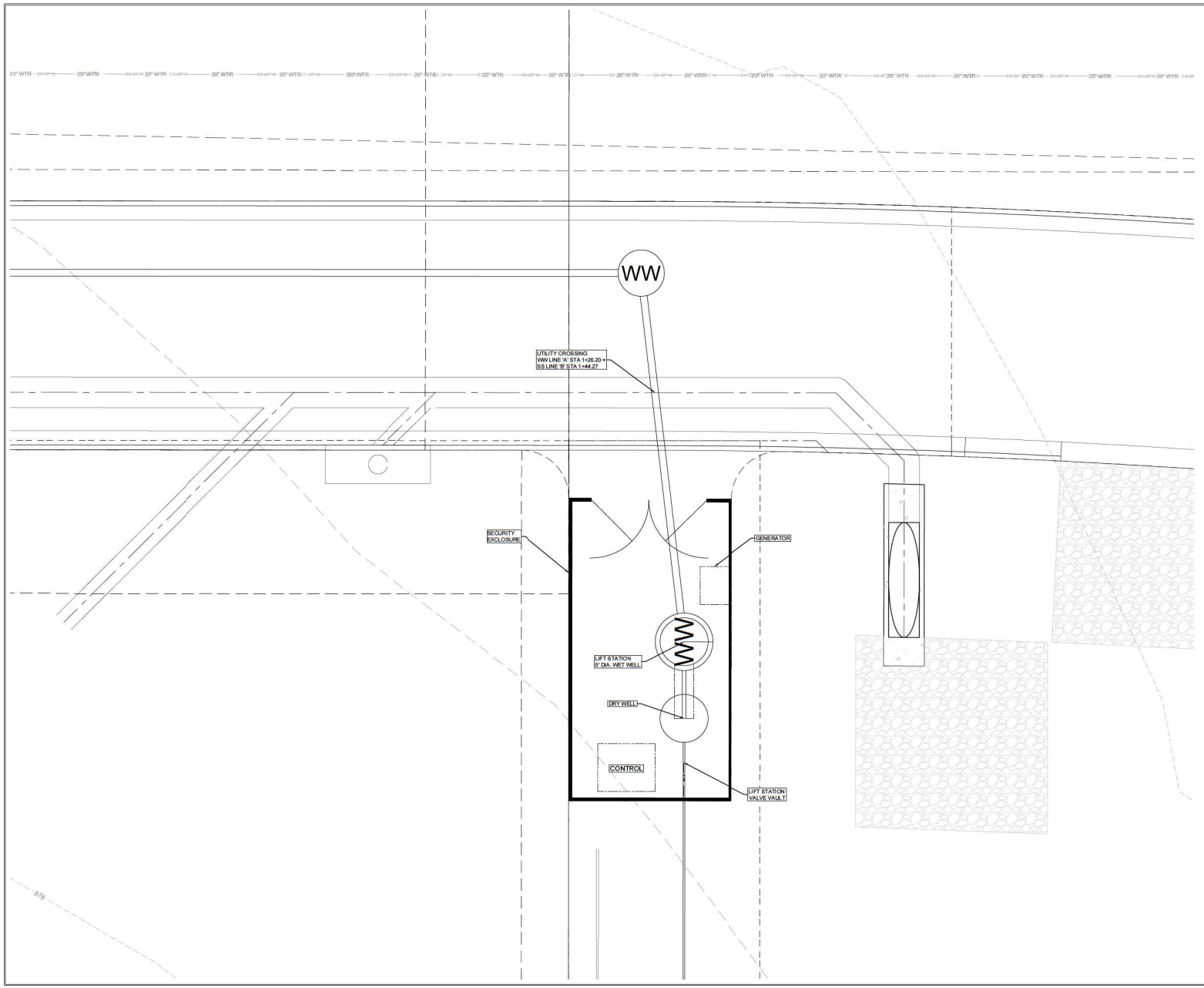


0 5' 10'
SCALE: 1" = 5'

LEGEND

- 804 — EXISTING CONTOUR
- 805 — PROPOSED CONTOUR
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE

WASTEWATER NOTES:

1. ALL GRAVITY WASTEWATER LINES SHALL BE PVC SDR 26 AND CONFORM TO ASTM D 3034 WITH A PIPE STIFFNESS OF 115 PSI.
2. 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.
3. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER COA DETAIL 505S-7 OR 506S-8 (DROP MANHOLE), 506S-9 OR 506S-10 (STANDARD MANHOLE), AND COA SPECIFICATION 506S.
4. ALL MANHOLES OUTSIDE OF PUBLIC RIGHT-OF-WAY AND MANHOLES OUTSIDE OF PAVED AREAS SHALL HAVE BOLTED AND GASKETED WATERTIGHT COVERS.
5. HORIZONTAL AND VERTICAL ALIGNMENT TO BE CHECKED AT NO GREATER THAN 50' INTERVALS.
6. ALL WASTEWATER SERVICES TO BE INSTALLED PER COA DETAIL 520-AW-01. NO CLEANOUTS ARE TO BE LOCATED WITHIN SIDEWALKS, DRIVEWAYS OR CURB RAMPS.
7. ALL WASTEWATER MANHOLES TO BE COATED (SPL WW-511).
8. REFER TO PROFILE SHEETS FOR THE LOCATION OF DEEP SERVICES AND 5% SERVICES.

811 Know what's below. Call before you dig.

TOM GROLL ENGINEERING
1309 PITCHFORK LANE, AUSTIN, TEXAS 78754 • (512) 944-9794 • TBPE FIRM # F-9799

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

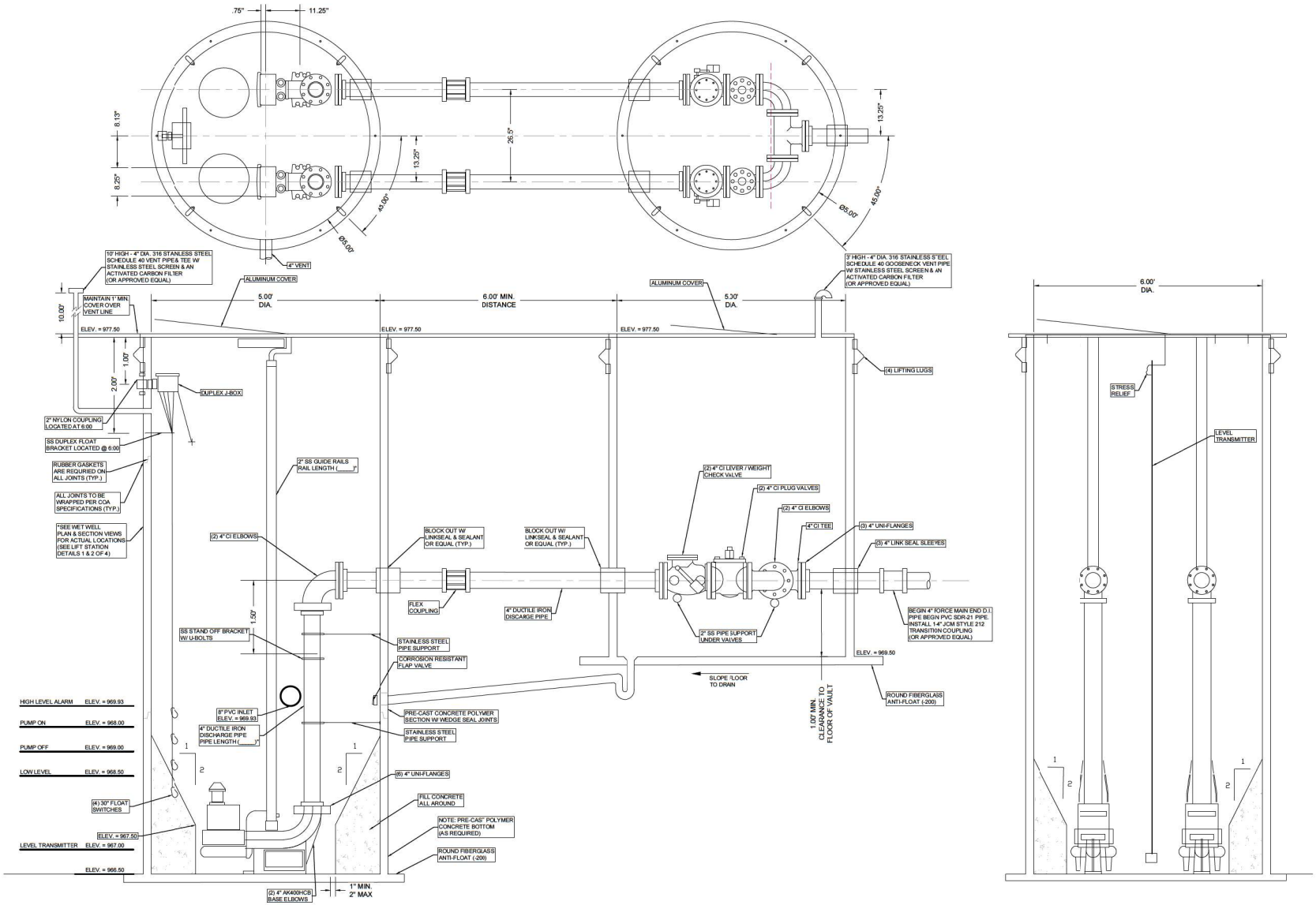
NO.	DESCRIPTION	DATE

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

LIFT STATION PLAN

THOMAS J. GROLL 90976 LICENSED PROFESSIONAL ENGINEER

Date	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	25 of 37
Project No.	SD-24-0282



LIFT STATION
ELEVATION SECTION

SCALE: 1" = 1' - 0"

SCALE: 1" = 1'

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TOM GROLL ENGINEERING
1308 PRYOR LANE, AUSTIN, TEXAS 78704 • (512) 944-9794 • WWW.TOMGROLL.COM

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

NO.	DESCRIPTION	DATE

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

LIFT STATION PLAN DETAILS 1

THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

Date:	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No:	26 of 37
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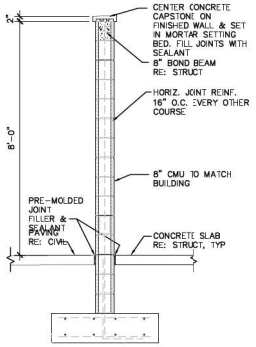
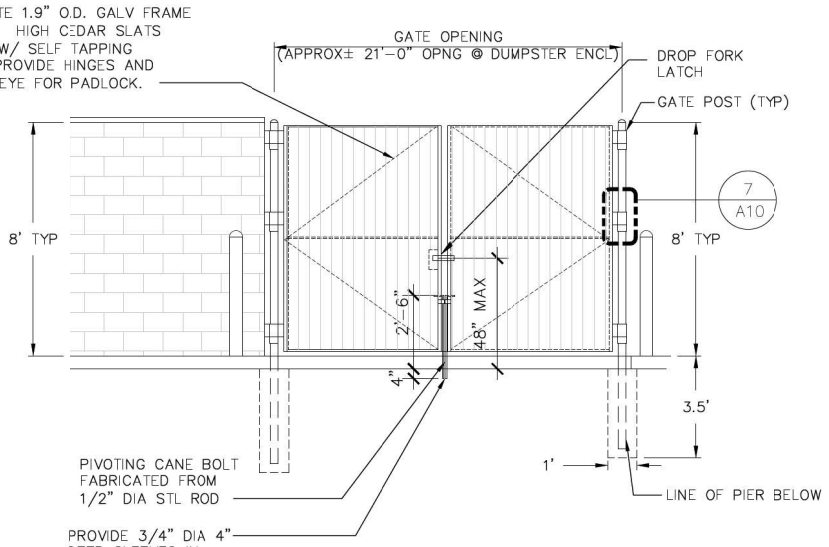
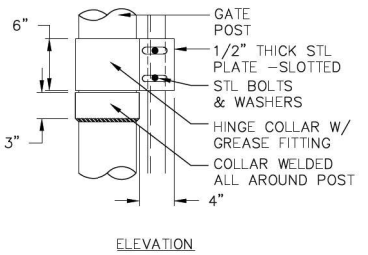
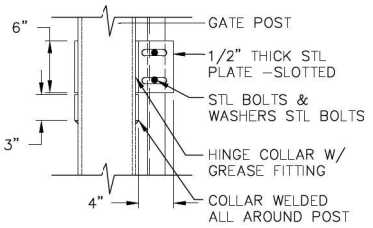


LIFT STATION ENCLOSURE
WALL SECTION
NOT TO SCALE



LIFT STATION ENCLOSURE
GATE ELEVATION
NOT TO SCALE





LIFT STATION ENCLOSURE
GATE HINGE
NOT TO SCALE

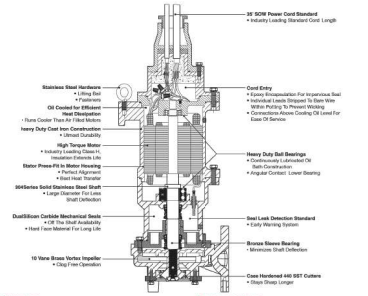
GRINDER PUMPS
Model: AGP500

Features
- Heavy duty cast iron construction
- Dual mechanical silicon carbide seals
- Cast iron, 3" vane vortex impeller
- Quick change power cords
- Viton o-rings
- Built-in Thermal Protector
- Moisture Probe Angular contact lower bearing
- Seal leak detection

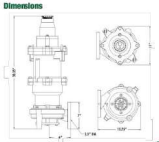
Specifications

Electrical Data	
CORD SIZE AWG	3-12/
CORD TYPE	10 Watt, Molten Brass
CABLE LENGTH	39'
Motor Construction	
50-60 HZ COMPENSATION	120°
IMPELLER - LIQUID TEMP	140°F - Intermittent 104°F - Continuous
ACCEPTABLE PH RANGE	6-9
Temperature	
WINDING INSULATION	180°C
INSULATION CLASS	H
Construction	
SEAL	Silicon Carbide
MOTOR HOUSING	Cast Iron
CASING	Cast Iron
SHELL LID	Brass
MOTOR SHAFT	304SS
FASTENERS	SS
O' RINGS	Viton
UPPER MECHANICAL SEALS	Buna
UPPER BEARING	NSK
LOWER BEARING	3207 Angular Contact (double row)
IMPELLER	440SST - Case Hardened
MOTOR WINDINGS	Copper
Performance Data	
RPM	3450
MOTOR TYPE	230/3 (TYP), Induction (3PH)
SEC INSULATION CLASS	H
STATOR WINDING CLASS	H
WINDING INSULATION TEMP	180°C
MOTOR TEMP SENSOR	1 TYP)
STARTS	9
MOTOR	230/3/60HS
Rated	1.5
SERVICE FACTOR	1.4

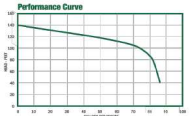
MODEL	HP	PH	VOLTS	RPM	FULL LOAD AMPS	HOWLER CODE	CORD SIZE	CORD TYPE	IMPELLER	CASING	SEAL
AGP503M2-35	5	60	230/1	3450	35.2	F	SOW	6AWG/4C	.86	SHELL LID, VOLUTE, DISCHARGE ADAPTER AND MOTOR HOUSING	270-324SF-350 MIC
AGP503M3-35	5	60	230/3	3450	20.7	K	SOW	12AWG/4C	.85	N/A	N/A
AGP503M4-35	5	60	460/3	3450	10.3	K	SOW	12AWG/4C	.68	N/A	N/A
AGP503M5-35	5	60	208/1	3450	37	F	SOW	6AWG/4C	.86	SHELL, DISCHARGE ADAPTER AND MOTOR HOUSING	270-324SF-350 MIC
AGP503M6-35	5	60	208/3	3450	25	K	SOW	12AWG/4C	.85	N/A	N/A



Dimensions



Performance Curve



Ashland
PUMP
Honest, Professional, Dependable
1899 Cottage Street, Ashland, Ohio 44805
Telephone: 866 281-6800 · Fax: 877 326-1494 · ashlandpump.com

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 Kaufman Loop Wastewater Generation Calculations			
Total L.U.E.'s =	42	12-hr flow	
Average Dry Weather Flow =	8,400	gpd	11.67 gpm
Peak Dry Weather Flow =	15,255	gpd	21.19 gpm
Site Area =	10.16	ac	
Inflow & Infiltration =	7,620	gpd	5.29 gpm
Peak Wet Weather Flow =	22,875	gpd	26.48 gpm

Wastewater Determination Factors - Residential		
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 Kaufman Loop Wastewater Generation Calculations			
Total L.U.E.'s =	108	24-hr flow	
Average Dry Weather Flow =	21,600	gpd	15.00 gpm
Peak Dry Weather Flow =	33,651	gpd	23.37 gpm
Site Area =	14.84	ac	
Inflow & Infiltration =	11,130	gpd	7.73 gpm
Peak Wet Weather Flow =	44,781	gpd	31.10 gpm

Wastewater Determination Factors - Combined		
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 Kaufman Loop Wastewater Generation Calculations			
Total L.U.E.'s =	150	24-hr flow	
Average Dry Weather Flow =	30,000	gpd	26.67 gpm
Peak Dry Weather Flow =	44,553	gpd	44.56 gpm
Site Area =	25.00	ac	
Inflow & Infiltration =	18,750	gpd	13.02 gpm
Peak Wet Weather Flow =	63,303	gpd	57.58 gpm

Headloss calculations - peak flow conditions for commercial site

Elemen.	Station			Flow Line Elevation			Slope	hl		
	Beginning	Ending	Length	Beginning	Ending	Dh	%	Line	K	Fitting
Wet well	1+00.00	1+02.00	2.00	967.00	973.06	6.06	303.00%	0.08	-	
90º Bend	1+02.00	1+02.00	0.00	973.06	973.06	-	0.00%	0.00	0.50	0.09
Valve vault	1+02.00	1+16.62	14.62	973.06	972.99	(0.07)	-0.48%	0.61	5.00	1.35
P1	1+16.62	3+84.30	267.68	972.99	970.00	(2.99)	-1.12%	11.20	-	
45º Bend	3+84.30	3+84.30	0.00	970.00	970.00	-	0.00%	0.00	0.35	0.09
P2	3+84.30	3+87.08	2.78	970.00	967.22	(2.78)	-100.00%	0.12	-	
45º Bend	3+87.08	3+87.08	0.00	967.22	967.22	-	0.00%	0.00	0.35	0.09
P3	3+87.08	4+40.82	53.74	967.22	966.55	(0.67)	-1.25%	2.25	-	
45º Bend	4+40.82	4+40.82	0.00	966.55	966.55	-	0.00%	0.00	0.35	0.09
P4	4+40.82	4+47.48	6.66	966.55	973.21	6.66	100.00%	0.28	-	
45º 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%	4.81	-	-
Check valve	5+62.50	5+62.50	0.00	977.86	977.86	-	0.00%	0.00	2.00	0.54
Expansion	5+62.50	5+62.50	0.00	977.86	977.86	-	0.00%	0.00	0.75	0.20
Commercial system line length =			462.5002	Static head loss =				10.86		19.35		2.48
				Total head loss =				32.69				

Headloss calculations - peak flow conditions for townhome site

Elemen.	Station			Flow Line Elevation			Slope	hl		
	Beginning	Ending	Length	Beginning	Ending	Dh	%	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	0.11
P6	5+63.50	9+40.82	377.32	977.90	993.15	15.25	4.04%	2.81	-	
1º Vert Bend	9+40.82	14+00.82	460.00	993.15	993.15	-	0.00%	3.42	0.01	0.00
P7	14+00.82	16+17.01	216.19	993.15	1004.59	11.44	5.29%	1.61	-	
11.25º Bend	16+17.01	16+23.62	3.61	1,004.59	1004.61	0.02	0.55%	0.03	0.12	0.03
22.5º Benc	16+20.62	16+23.62	3.00	1,004.61	1004.62	0.01	0.33%	0.02	0.18	0.05
45º Bend	16+23.62	16+26.62	3.00	1,004.62	1004.64	0.02	0.67%	0.02	0.35	0.09
P8	16+26.62	18+69.51	243.29	1,004.64	1005.84	1.20	0.49%	1.81	-	
45º Bend	18+69.51	18+69.51	0.00	1,005.84	1005.84		0.00%	0.00	0.35	0.09
P9	18+69.51	18+74.51	5.00	1,005.84	1005.86	0.02	0.49%	0.04	-	
45º Bend	18+74.91	19+40.74	65.83	1,005.86	1006.19	0.33	0.49%	0.49	0.35	0.09
P10	19+40.74	19+45.74	5.00	1,006.19	1006.30	0.11	2.20%	0.04	-	
45º Bend	19+45.74	19+45.74	0.00	1,006.30	1006.30	-	0.00%	0.00	0.35	0.09
P11	19+45.74	20+13.93	68.19	1,006.30	1008.95	2.65	3.89%	0.51	-	
1º Vert Bend	20+13.93	20+13.93	0.00	1,008.95	1008.95	-	0.00%	0.00	0.01	0.00
P13	20+13.93	20+98.60	84.67	1,008.95	1010.76	1.81	2.14%	0.63	-	
P14	20+98.60	32+55.71	1,157.11	1,010.76	1015.69	4.93	0.43%	8.61	-	
Combined system line length =			2693.2098	Static head loss =				37.83		20.03		0.57
				Total head loss =				58.43				

Hazen-Williams Equation for Pressure Loss in Pipes

Specified Data

l = length of pipe (ft)	463
c = Hazen-Williams roughness constant	150
q = volume flow (gal/min)	11.67
dh = inside or hydraulic diameter (inches)	1.61
Calculated Pressure Loss	
f = head loss per 100 feet of pipe (ft H20 per 100 ft pipe)	0.92
f = head loss per 100 feet of pipe (psi per 100 ft pipe)	0.39
Headloss/100 ft of pipe (ft H_2O)	4.24
Headloss/100 ft of pipe (psi)	1.84
Calculated Flow Velocity	
v = flow velocity (ft/s)	1.84

Specified Data

l = length of pipe (ft)	2,693
c = Hazen-Williams roughness constant	150
q = volume flow (gal/min)	26.67
dh = inside or hydraulic diameter (inches)	3.09
Calculated Pressure Loss	
f = head loss per 100 feet of pipe (ft H20 per 100 ft pipe)	0.18
f = head loss per 100 feet of pipe (psi per 100 ft pipe)	0.08
Headloss/100 ft of pipe (ft H_2O)	4.82
Headloss/100 ft of pipe (psi)	2.09
Calculated Flow Velocity	
v = flow velocity (ft/s)	1.14

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

PREPARED FOR:

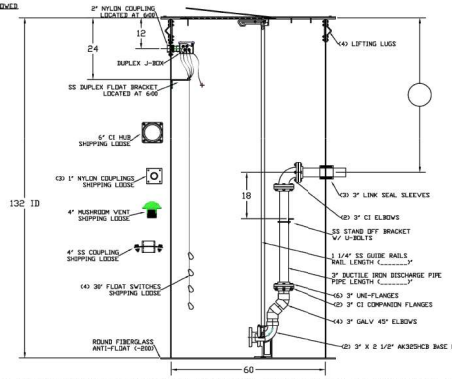
NO.	DESCRIPTION	BY

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

LIFT STATION PLAN
DETAILS 2

THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
5/21/2025

Date: 5/21/2025
Check By: TJG
Drawn By: MBS/MRC
Sheet No.: 27 of 37
Project No.: SD-24-0282



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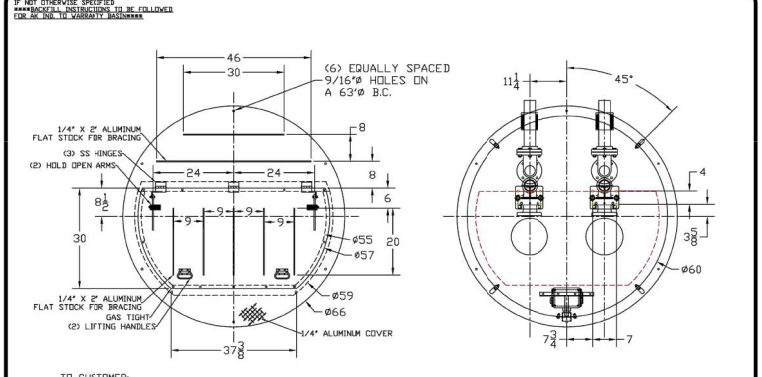
EXAMINE THIS DRAWING CAREFULLY. VERIFY ALL DIMENSIONS, LOCATIONS, AND ELEVATIONS FOR ACCURACY. SIGN AND DATE AT LINE. ANY MODIFICATIONS OR CHANGES TO THIS DRAWING OR FINISHED PRODUCT, AFTER IT HAS BEEN SIGNED, MAY RESULT IN ADDITIONAL CHARGES AND SHIPPING DELAYS. NO JOB WILL BE STARTED UNTIL CONFIRMATION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

<REQUESTED SIGNATURE & DATE PER ABOVE>

CONFIRMATION THROUGH SIGNATURE RELEASES ORDER FOR PRODUCTION

DRAWN FOR: HYDRO SOURCE	PO# ---	DISCONNECTS: AK325HCB	SHEET 1 OF 4	Revision 1
	QUOTE # 92333	PUMPS: AGP500	"THE BEST AROUND UNDERGROUND"	
JOB REFERENCE / Notes: KAUFFMAN LOOP	BASIN DESCRIPTION: 60 X 132-200	DRAWN BY: B.SNYDER DATE: 5/14/25	PH: (574)-936-6022 FX: (574)-936-5811 WWW.AKINDUSTRIES.COM	
	COVER DESCRIPTION: 1/4" ALUMINUM GAS TIGHT HDC	CHECKED BY: DATE CHECKED:		



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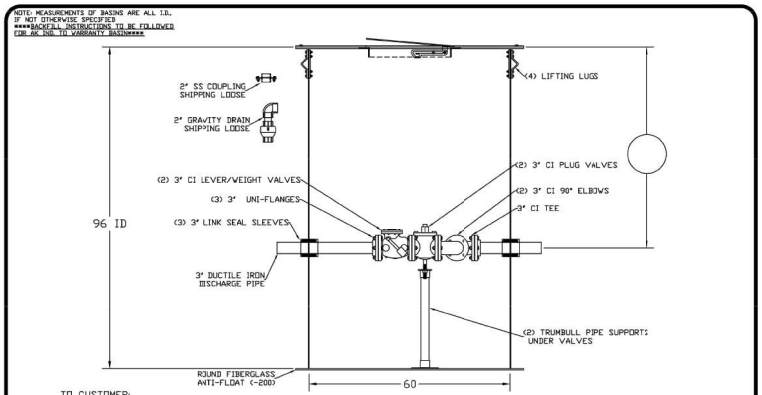
CONFIRMATION THROUGH SIGNATURE RELEASES ORDER FOR PRODUCTION

DRAWN FOR: HYDRO SOURCE	PO# ---	DISCONNECTS: AK325HCB	SHEET 2 OF 4	Revision 1
	QUOTE # 92333	PUMPS: AGP500	"THE BEST AROUND UNDERGROUND"	
JOB REFERENCE / Notes: KAUFFMAN LOOP	BASIN DESCRIPTION: 60 X 132-200	DRAWN BY: B.SNYDER DATE: 5/14/25	PH: (574)-936-6022 FX: (574)-936-5811 WWW.AKINDUSTRIES.COM	
	COVER DESCRIPTION: 1/4" ALUMINUM GAS TIGHT HDC	CHECKED BY: DATE CHECKED:		



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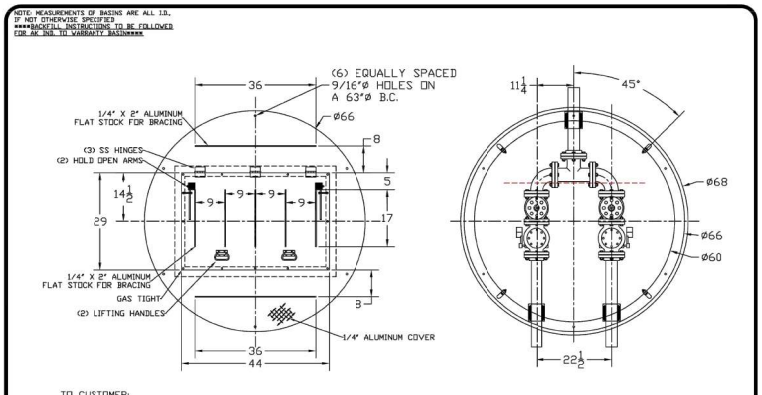
CONFIRMATION THROUGH SIGNATURE RELEASES ORDER FOR PRODUCTION

DRAWN FOR: HYDRO SOURCE	PO# ---	DISCONNECTS: AK325HCB	SHEET 3 OF 4	Revision 1
	QUOTE # 92333	PUMPS: AGP500	"THE BEST AROUND UNDERGROUND"	
JOB REFERENCE / Notes: KAUFFMAN LOOP	BASIN DESCRIPTION: 60 X 96-200 DETACHED VB	DRAWN BY: B.SNYDER DATE: 5/14/25	PH: (574)-936-6022 FX: (574)-936-5811 WWW.AKINDUSTRIES.COM	
	COVER DESCRIPTION: 1/4" ALUMINUM GAS TIGHT HDC	CHECKED BY: DATE CHECKED:		



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<REQUESTED SIGNATURE & DATE PER ABOVE>

CONFIRMATION THROUGH SIGNATURE RELEASES ORDER FOR PRODUCTION

DRAWN FOR: HYDRO SOURCE	PO# ---	DISCONNECTS: AK325HCB	SHEET 4 OF 4	Revision 1
	QUOTE # 92333	PUMPS: AGP500	"THE BEST AROUND UNDERGROUND"	
JOB REFERENCE / Notes: KAUFFMAN LOOP	BASIN DESCRIPTION: 60 X 96-200 DETACHED VB	DRAWN BY: B.SNYDER DATE: 5/14/25	PH: (574)-936-6022 FX: (574)-936-5811 WWW.AKINDUSTRIES.COM	
	COVER DESCRIPTION: 1/4" ALUMINUM GAS TIGHT HDC	CHECKED BY: DATE CHECKED:		

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SUITE 390
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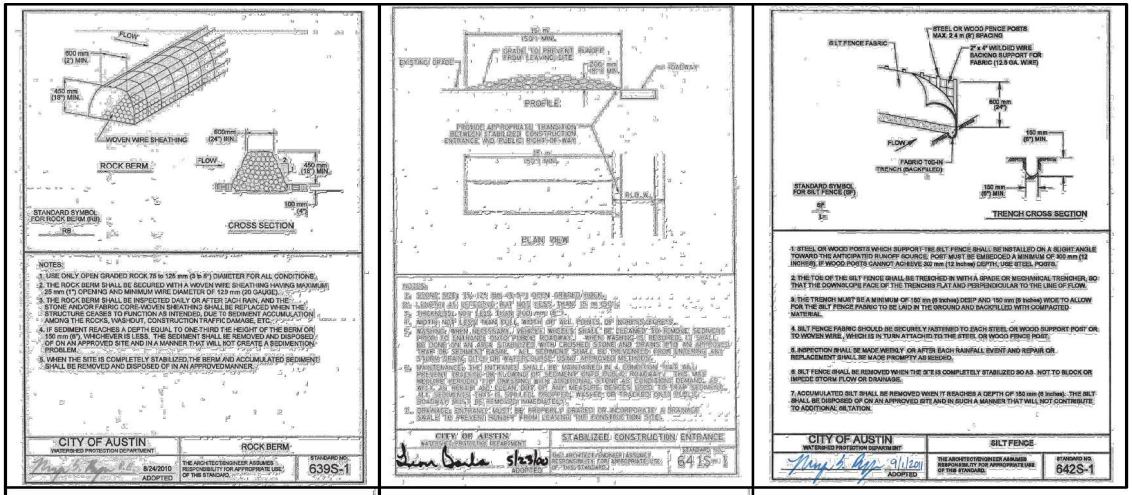
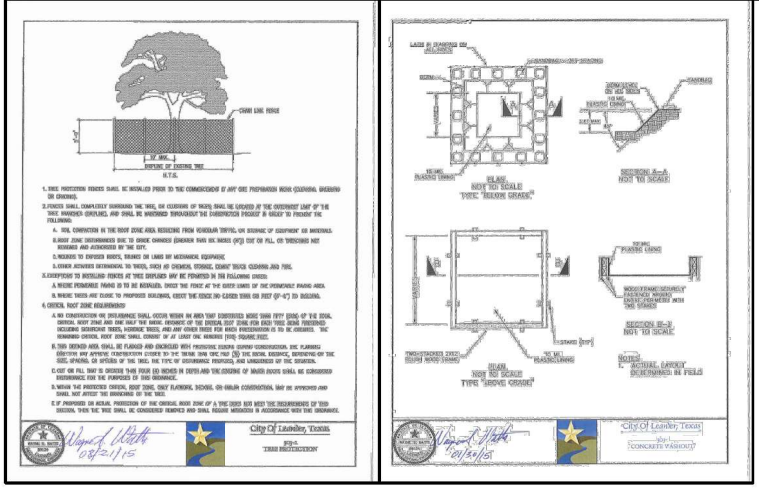
PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

LIFT STATION PLAN DETAILS 3

THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
5/21/2025

Date	5/21/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	28 of 37
Project No.	SD-24-0282





EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE PROTECTIVE FENCING PRIOR TO ANY WORK (CLEARING, GRUBBING OR EXCAVATION). CONTACT STORMWATER INSPECTOR FOR ON SITE INSPECTION PRIOR TO BEGINNING CONSTRUCTION.
2. 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 PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.
3. THE TEMPORARY SPOILS DISPOSAL SITE IS TO BE SHOWN IN THE EROSION CONTROL MAP.
4. 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.
5. 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.
6. 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.
7. 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.
8. TEMPORARY STOP SIGNS SHOULD BE INSTALLED AT ALL CONSTRUCTION ENTRANCES WHERE A STOP CONDITION DOES NOT ALREADY EXIST.
9. IN THE EVENT OF INCLEMENT WEATHER THAT MAY RESULT IN A FLOODING SITUATION, THE CONTRACTOR SHALL REMOVE INLET PROTETION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.

UPON COMPLETION OF CONSTRUCTION, SILT FENCE SHALL BE INSTALLED AND MAINTAINED BEHIND CURB UNTIL SUPERSEDED BY BUILDER'S EROSION CONTROL MEASURES.

811 Know what's below. Call before you dig.

TOM GROLL ENGINEERING
1308 RIPPLE LANE, AUSTIN, TEXAS 78733 • (512) 345-5796 • TBPE FIRM # F-9799 • TBPLS FIRM # 10194384

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

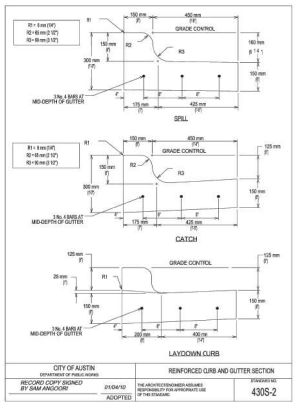
No.	DATE	DESCRIPTION	BY

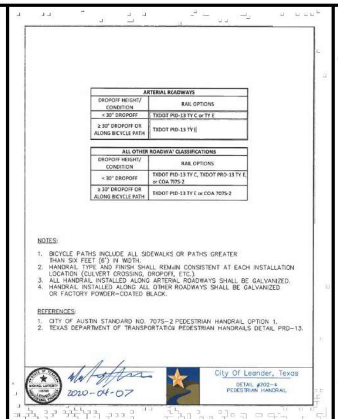
PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
6.0 KAUFFMAN LOOP
LEANDER, TEXAS 78642

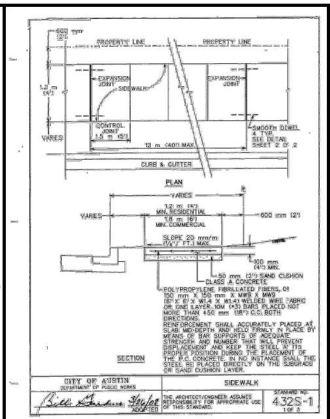
EROSION CONTOL DETAILS

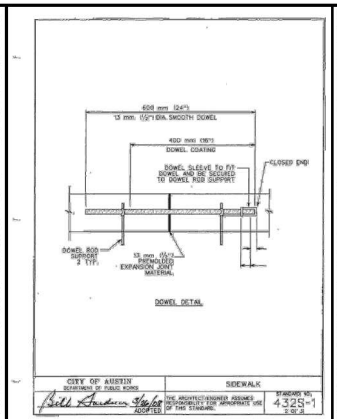
STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
5/21/2025

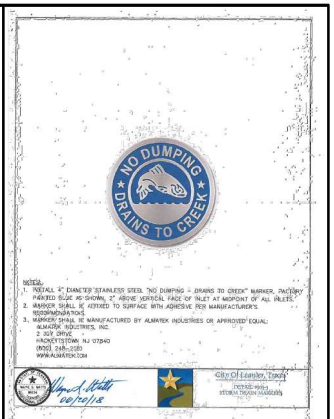
Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 29 of 37
Project No. SD-24-0282

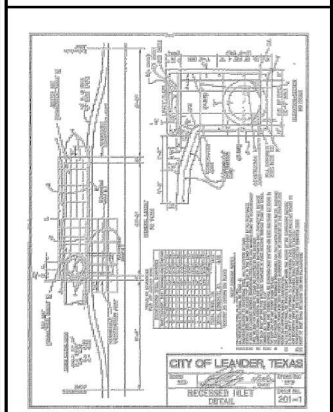


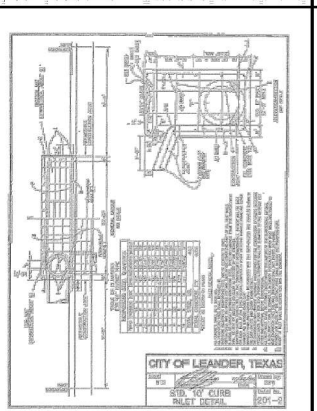


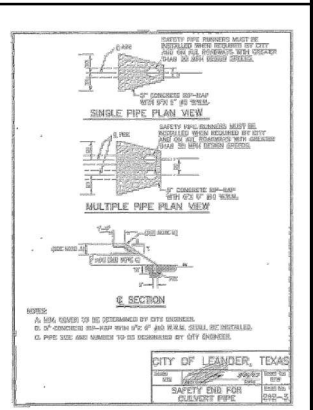


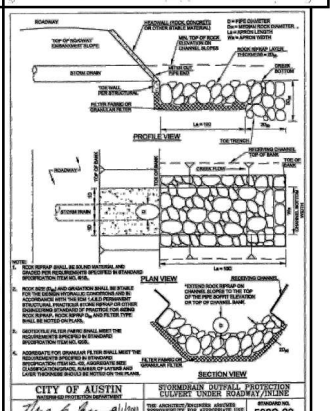


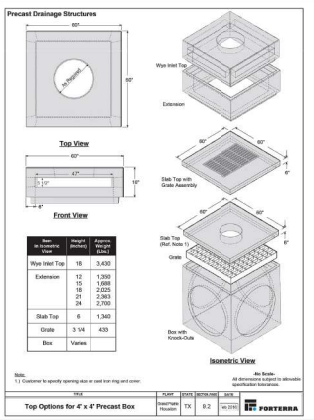


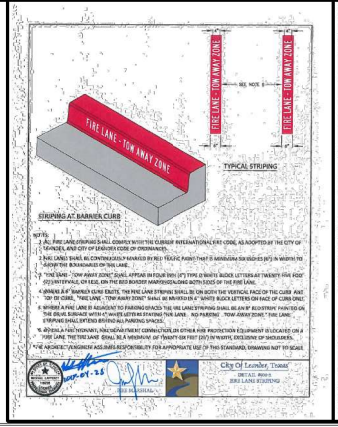


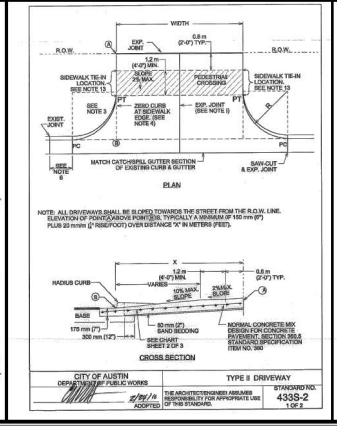


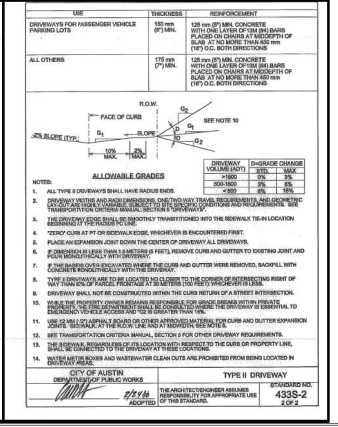












TOM GROLL
ENGINEERING
675 KAUFFMAN, LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

PREPARED FOR:

No.	DATE	DESCRIPTION	BY

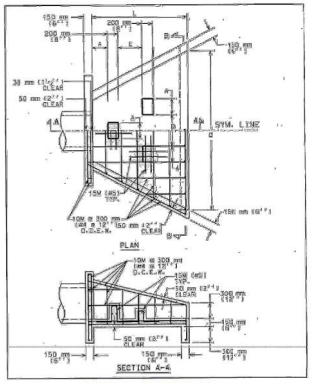
PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
6.72 KAUFMAN LOOP
LEANDER, TEXAS 78642

PAVING AND DRAINAGE DETAILS SHEET 1 OF 3

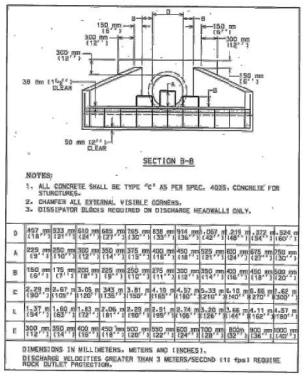
Know what's below. Call before you dig.

THOMAS J. GROLL 90976 LICENSED PROFESSIONAL ENGINEER

Date: 5/21/2025
Chec by: TJG
Drawn By: MBS/MRC
Sheet No. 30 of 37
Project No. SD-24-0282



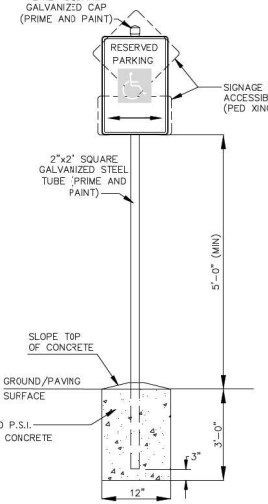
STANDARD HEADWALL AND ENERGY DISSIPATORS



	0	A	B	C	D	E
0	457 mm (18")	533 mm (21")	610 mm (24")	685 mm (27")	765 mm (30")	838 mm (33")
A	225 mm (9")	292 mm (11")	302 mm (12")	352 mm (14")	375 mm (15")	402 mm (16")
B	150 mm (6")	175 mm (7")	200 mm (8")	225 mm (9")	250 mm (10")	275 mm (11")
C	1.29 m (4'-3")	0.67 m (2'-2")	3.05 m (10')	1.83 m (6')	4.19 m (13'-9")	2.47 m (8'-1")
L	1.37 m (4'-6")	1.60 m (5'-3")	2.06 m (6'-9")	2.29 m (7'-6")	2.51 m (8'-3")	2.74 m (9'-0")
E	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")	550 mm (22")

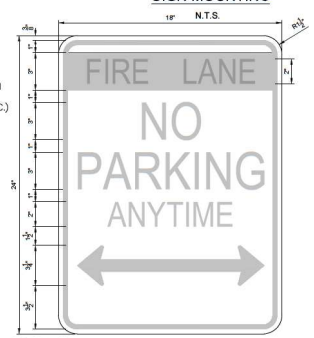
STANDARD HEADWALL AND ENERGY DISSIPATORS

NOTE: ALL SIGNS LOCATED INSIDE RIGHT-OF-WAYS MUST USE A TRIANGULAR SUPBASE SYSTEM. REFER TO TXDOT DETAIL SMD (SLIP-1)-02. SEE SHEET C-508.



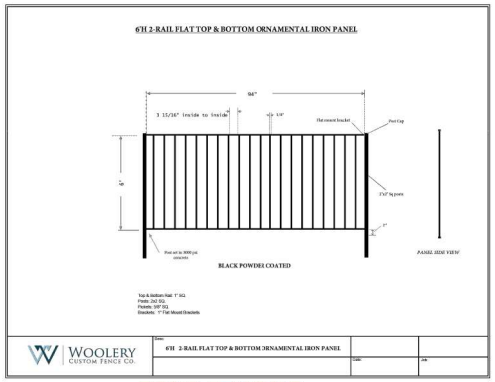
ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

SIGN MOUNTING



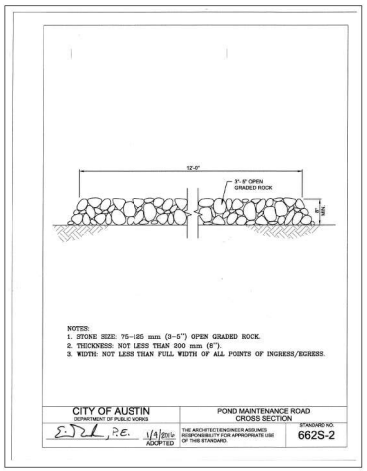
SIGN DETAILS:

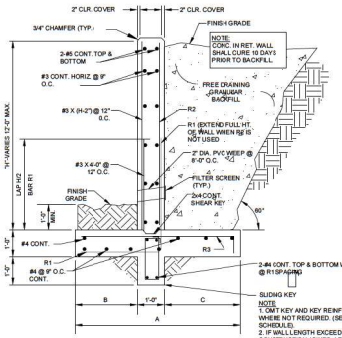
1. SIGNS SHALL BE STANDARD SIZE 18"x24" AND HAVE RED LETTERS AND BORDER ON A WHITE BACKGROUND.
2. SIGNS SHALL BE MOUNTED WITH THE BOTTOM EDGE OF THE SIGN AT LEAST SIX FEET 6 INCHES (6'-6") ABOVE GRADE AND AT LEAST TWO (2) FEET FROM CURB EDGE.
3. SIGNS SHALL BE PLACED AS FOLLOWS NO MORE THAN 50 FEET (50') APART ON BOTH SIDES OF FIRE LANE.



POND FENCING

N.T.S.

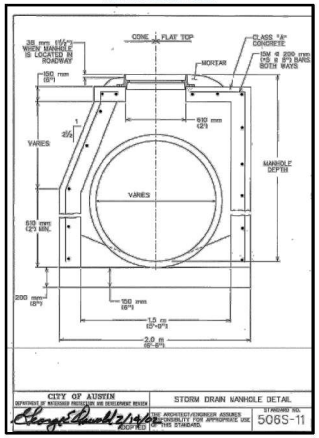


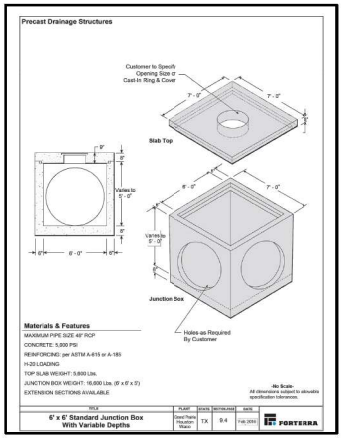


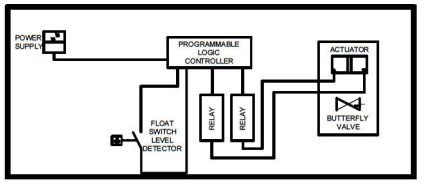
RETAINING WALL SCHEDULE							
H. MAX	A	B	C	R1	R2	R3	SLIDING KEY
2'-0"	2'-4"	8"	8"	#4 @ 9"	NOT USED	#4 @ 9"	NOT USED
4'-0"	3'-8"	8"	2'-0"	#4 @ 9"	NOT USED	#4 @ 9"	NOT USED
6'-0"	5'-0"	1'-4"	2'-8"	#4 @ 9"	#4 @ 9"	#4 @ 9"	YES
8'-0"	6'-0"	1'-8"	3'-4"	#4 @ 9"	#4 @ 16"	#4 @ 9"	YES
10'-0"	7'-4"	2'-4"	4'-0"	#5 @ 9"	#5 @ 16"	#5 @ 9"	YES
12'-0"	8'-4"	2'-8"	4'-8"	#6 @ 9"	#6 @ 16"	#6 @ 9"	YES

CONCRETE RETAINING WALL DETAIL

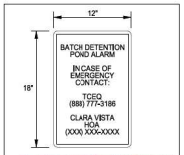
N.T.S.





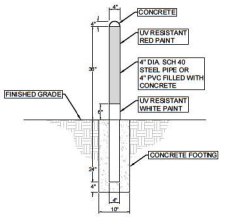


ACTUATOR VALVE POWER & CONTROLLER CIRCUIT BLOCK DIAGRAM



ALARM RESPONSE SIGN

N.T.S.



POND SEDIMENT DEPTH MARKER

N.T.S.

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

PREPARED FOR:

No.	DATE	DESCRIPTION

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

PAVING AND DRAINAGE DETAILS SHEET 2 OF 3

THOMAS J. GROLL 90976 LICENSED PROFESSIONAL ENGINEER 5/21/2025

Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 31 of 37
Project No. SD-24-0282

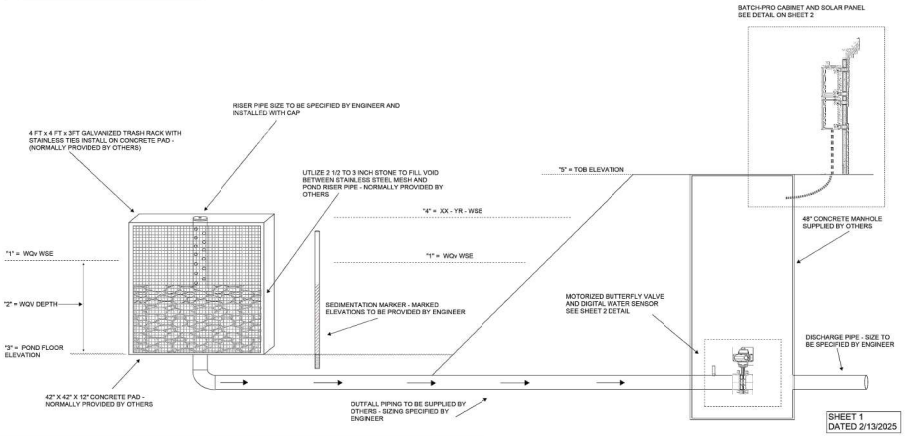
ELEVATIONS AND DEPTHS CHART		
1	WATER QUALITY SURFACE ELEVATION "WSE"	973.46
2	WATER QUALITY VOLUME (WQv) DEPTH (Ft)	
3	POND FLOOR ELEVATION	971.00
4	100 YEAR FLOOD ELEVATION (Ft)	978.00
5	TOP OF BERM (TOB) ELEVATION (Ft)	977.00
6	TOTAL DEPTH OF CONCRETE VAULT (Ft)	

DISCHARGE RATE AND DETENTION SPECIFIED SETTINGS		
1	ALLOWABLE DISCHARGE RATE ($Q_{Allowable}$)	
2	REQUIRED DETENTION VOLUME	
3	DETENTION POND VOLUME PROVIDED	
4	SPECIFIED HOLDING TIME FOR WATER QUALITY	

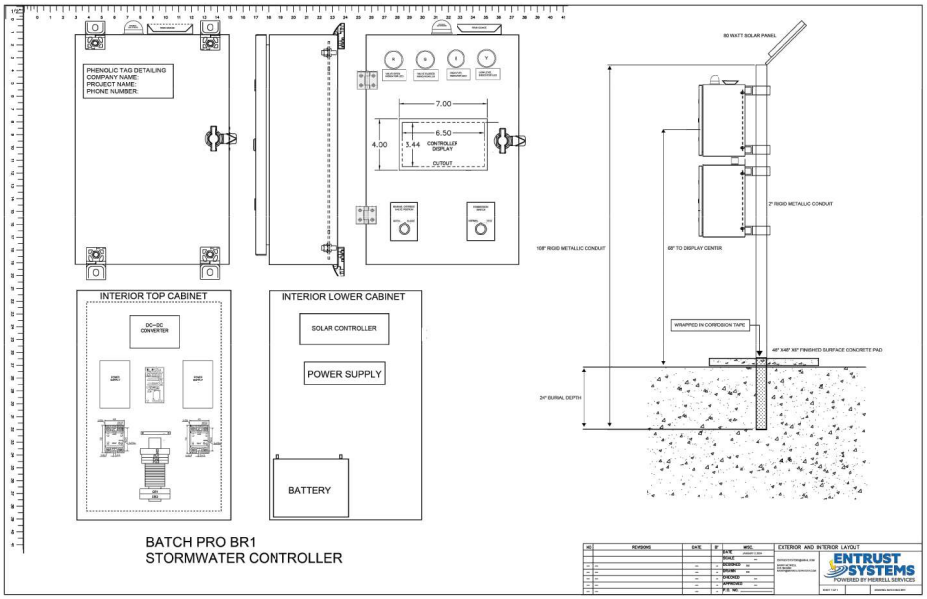
PROJECT NAME

BATCH-PRO MOTORIZED BUTTERFLY VALVE CONFIGURED IN CONCRETE MANHOLE IN EMBANKMENT

ENTRUST SYSTEMS
POWERED BY MERRELL SERVICES



SHEET 1
DATED 2/13/2025



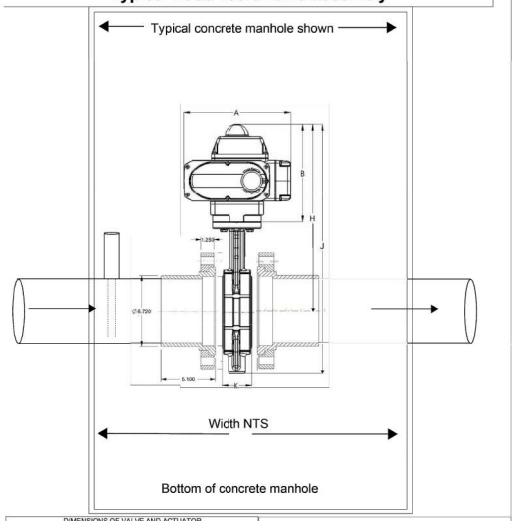
BATCH PRO BR1
STORMWATER CONTROLLER

NO.	REVISIONS	DATE	BY	MISC.
			DATE	
			DRAWN	
			CHECKED	
			APPROVED	
			P.E. NO.	

EXTERIOR AND INTERIOR LAYOUT

ENTRUST SYSTEMS
POWERED BY MERRELL SERVICES

Typical Base Vault Valve assembly



DIMENSIONS OF VALVE AND ACTUATOR					
A	DIMENSIONS	10.1"	J	DIMENSIONS	19.8"
B	DIMENSIONS	8.5"	K	DIMENSIONS	2.3"
C	DIMENSIONS	6.3"	M	DIMENSIONS	1.0"
D	DIMENSIONS	5.9"			
E	DIMENSIONS	8.4"			
H	DIMENSIONS	14.2			

Typical Control Panel Assembly

Design Requirements
- The valve is closed between storm events.
- Controller opens the valve and releases the captured runoff after a 12-hour detention time, and closes the valve after the basin has drained.
- Controller shall be programmed to open no less than 100 series.
- Controller consists of a level sensor in the basin, a valve (with a default closed position), an actuator and associated control logic. The controller detects water filling the basin from the level sensor and initiates a 12-hour detention time. At the end of the required detention time, the controller opens the valve and drains the basin. Subsequent rainfall events that occur prior to the basin reaching its design capacity will be detained for the remainder of the detention time that was initiated by filling the basin. Once the basin is drained the controller closes the valve. Thedetention time of the basin should not exceed 48 hours for a single storm event after the 12 hour required detention time. All settings for the controller shall be adjustable to accommodate site specific monitoring maintenance activities.
- The system is solar powered, and the voltage of the controller and actuator is _____ and _____ respectively.
- Identify model of controller and provide a general overview of cycles.
- The system should be programmed to have its valve remain open for six hours after the level sensor detects that the basin is full. The system shall be fitted with a low-battery-level warning, an on/off/reset switch, manual open/close switches (maintenance/grab), alarm visible external indicator to indicate a cycle is in progress without opening the box.
- Provide a general description of the lockable parts enclosure.
- Provide a block diagram of site-specific controller circuit.
- Identify the type of level sensor(s) and where they are used in the basin.
- Identify the model of valve proposed, size, type, pressures, and over-torque sensors. A manual override should be provided.
- Identify the NEMA rating for enclosure/weather
- Reliability at 40,000 hours (approximately x-if years)
- Safety precautions to include alarm system clearly visible to indicate system malfunction, with sign posted with phone number of owner and appropriate TCEQ regional office.
- Power consumption to include total wattage and 10 hours of actuator, controller, and relay.
- Inspection Requirements: Inspections should be performed by a trained individual after storm events so that manual operation of the valve and controller can be verified. The level sensor in the basin should be inspected and any debris or sediment in the area should be removed. The outlet pipe should be inspected and any debris or sediment in the area should be removed. The controller should be assessed from the curbox and cabinet(s). Debris obstructing the valve should be removed. During each inspection, erosion areas inside and downstream of this BMP should be identified and repaired/revegetated immediately.
- The logic controller should be inspected as part of the twice-yearly investigations. Verify that the controller is operating as it was originally programmed and that the 12-hour delay is working as it should be, and by initiating a cycle by triggering the level sensor in the basin. The valve should be manually opened and closed using the open/close switch to verify valve operation and to assist in inspecting the valve for debris. The solar panel should beinspected and any dust or debris on the panel should be carefully removed. The controller and all wiber circuitry and wiring should be inspected for signs of damage from animals, insects, water leaks, or other damage. All thereof of the inspection, the controller should be reset.

SHEET 2
DATED 2/13/2025

ENTRUST SYSTEMS
POWERED BY MERRELL SERVICES

Valworx

Electric Actuated Butterfly Valves
Ductile Iron Lug Body ASME 150#
2" to 6" Pipe

SERIES 5673

Features
- Direct mount lug butterfly valve with ISO5211 mount
- Epoxy coated ductile iron body with 316 SS disc
- Unique wave line seat reduces torque and extends seal life
- Visual valve position indicator
- Rugged aluminum Type 4X weatherproof actuator
- Heavy duty motors with overload protection
- Thermostatically controlled anti-condensation heater
- Manual override with end of travel mechanical stops
- Two auxiliary position confirmation limit switches
- EPS - Electronic Positioning System models available
- Actuators CSA Listed per UL429 and CSA C22.2

Applications
EPDM seals typically used for on-off control of water and other compatible media; NBR (Buna-N) seals typically used for air, oil, vacuum and other compatible media. FPM (Viton) seals typically used for on-off control of hydrocarbons, oils and other compatible chemicals/media. Suitable for use with ANSI/ASME Class 125/150 pipe flanges. Actuators designed for 70% duty cycle.

Operation
On-Off electric actuated valve uses power-to-open and power-to-close, stays in the last known position with loss of power. On receipt of a continuous voltage signal, the motor runs and via a rugged all metal gear system rotates the ball 90°. The motor is automatically stopped by internal cams striking limit switches. On receipt of a reversing continuous signal, the motor turns in the opposite direction reversing the valve position. Power connections direct to terminal strip via included cable connector, or optional 1/2" NPT conduit adapters.

Construction

Valve Body	Epoxy coated ductile iron
Disc	316 stainless steel CF8M
Disc Seat/Liner	EPDM, NBR (Buna-N) or FPM (Viton)
Stem/Stem Seals	420 stainless steel / (2) o-ring, same material as seat
Gear Drive	Heavy duty alloy steel and aluminum bronze, self locking
Actuator Enclosure	Aluminum, polyester powder painted, Type 4X, IP67
Visual Valve Position Indicator	Clear polycarbonate w/disc, red/yellow open/ closed
Fasteners	Stainless Steel
Auxiliary Limit Switches	2 x SPDT (T125/10/25A)

Description
Electric operated direct mount butterfly valves with epoxy- coated ductile iron lug body are designed for commercial and industrial applications. Valve mounts between two standard ANSI/ASME Class 150 flanges and includes integral rotated flange gaskets. Disc is precision machined 316SS. Two piece stem and disc design enhances the flow capacity and reduces turbulence. Rugged corrosion resistant electric actuator includes a manual override, valve position confirmation switches, thermostatically controlled anti-condensation heater, and over-torque protection.

Approvals

Actuators
- CSA Listed to:
  - UL429 and CSA C22.2 no 139
  - Type 4X, IP67 weatherproof enclosure
- CE conformance
  - ISO5211 Mounting

Valves
- Design complies with API-609, MSS SP-67
- Tests per API-598, AWWA C502-87
- CE according to PED 97/23/EC, ISO5208

Doc: 5673.0922 Cornelius, N.C. • USA www.valworx.com 1

Valworx

Electric Actuated Butterfly Valves
Ductile Iron Lug Body ASME 150#
Features and P/T Chart

SERIES 5673

Construction Features

Pressure Rating
PressureRating: 230 PSI (16 Bar), Vacuum 29in Hg

Temperature Rating
Actuator Temperature Rating:- 13 to 131° F (-25 to 55° C)
Valve Temperature Rating: EPDM seals 0 to 248° F (-18 to 120°C)
NBR (Buna-N) seals 5 to 185° F (-15 to 85°C)
FPM (Viton) seals 5 to 338° F (-15 to 170°C)

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TOM GROLL ENGINEERING
13306 PRYOR LANE, AUSTIN, TEXAS 78734 • (512) 644-5766 • TBPE FIRM # F-5766
OWNER'S REPRESENTATION

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

PREPARED FOR:

No.	DESCRIPTION	DATE	BY

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
6/0 KAUFMAN LOOP
LEANDER, TEXAS 78642

PAVING AND DRAINAGE
DETAILS SHEET 3 OF 3

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER

Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 32 of 37
Project No. SD-24-0282

FENCECRETE AMERICA, LTD.

manufacturers of precast concrete fencing and masonry wall systems

15089 tradesmen drive san antonio, texas 78249 210-492-7911 800-229-7811 www.fencecrete.com

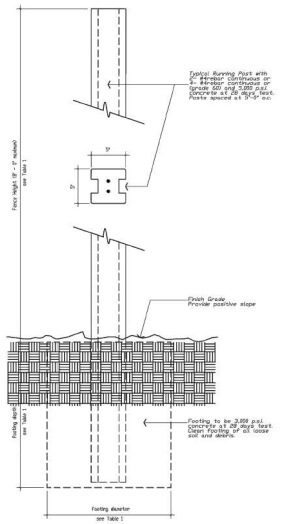
Contact Matt Booth 210-861-5210 matt@fencecrete.com

Structural Table One

Fence Post Embedment Depths and Footing Diameters for Lateral Load of 15.5 psf and Fence Posts Spaced at 5' - 0" o.c. (See detail)

FENCE HEIGHT (FT.)	FIRM TO STIFF CLAY 2.5 KSF ≤ C ≤ 4.0 KSF		VERY STIFF TO HARD CLAY C ≥ 4.0 KSF		LOOSE SAND 28° ≤ ϕ ≤ 34°		DENSE SAND ϕ ≥ 35°	
	FOOTING DEPTH (Ft)	FOOTING DIAMETER (in)	FOOTING DEPTH (Ft)	FOOTING DIAMETER (in)	FOOTING DEPTH (Ft)	FOOTING DIAMETER (in)	FOOTING DEPTH (Ft)	FOOTING DIAMETER (in)
4	2.0	12	2.(	12	3.0	12	2.5	12
5	2.0	12	2.(	12	3.5	18	3.5	12
6	2.5	12	2.(	12	4.0	18	3.5	18
7	3.0	18	3.(	12	4.5	18	4.0	18
8	3.5	18	3.(	18	4.5	18	4.0	18

Typical Fence Post Detail
with Structural Table One



Typical Fence Post Detail

scale: 1-1/2" = 1'-0"

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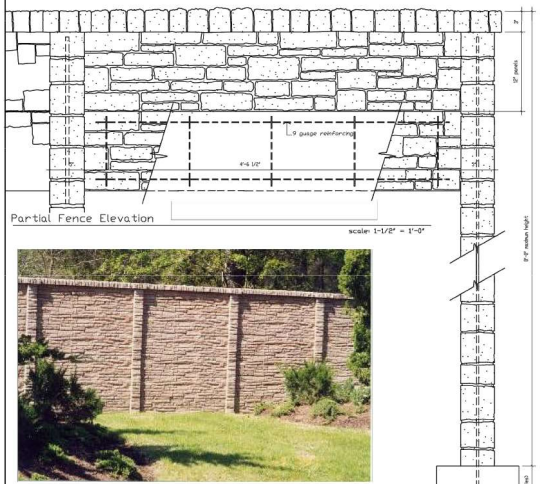
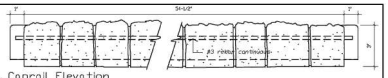


Partial Fence Elevation

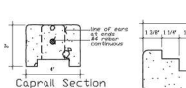
scale: 1-1/2" = 1'-0"

Rock Look Concrete Fence



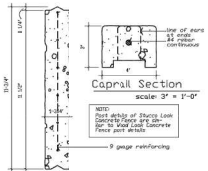
Caprail Elevation

scale: 3" = 1'-0"



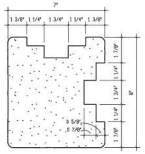
Caprail Section

scale: 3" = 1'-0"



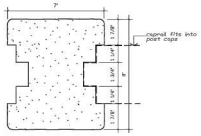
Typical Panel Section

scale: 3" = 1'-0"



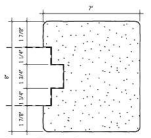
Corner Post Cap

scale: 3" = 1'-0"



Running Post Cap

scale: 3" = 1'-0"



Stop Post Cap

scale: 3" = 1'-0"

notes:

1. The column height can be from 1 to a maximum of 17'-0" - with 8'-0" above grade.
2. All concrete shall be 3000 psi.
3. All reinforcement shall be ASTM 615 grade 60. Special reinforcement is available upon special order.
4. Footing - 2 Feet deep footing minimum per column, 12" - 18" diameter. Depth and diameter can vary per local soil conditions.
5. Rock look concrete fence sides have rock-like texture.
6. Extra Tall have additional steel supports adjacent to concrete columns.
7. All steel reinforcement is provided with steel spacers so as to allow for maximum concrete coverage.
8. A special silicone sealant is used to lock the caprail and post caps in place. This sealant requires special tools for removal.

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

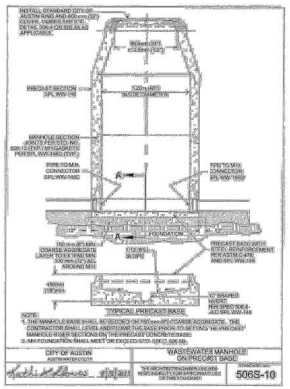
No.	DATE	DESCRIPTION	BY

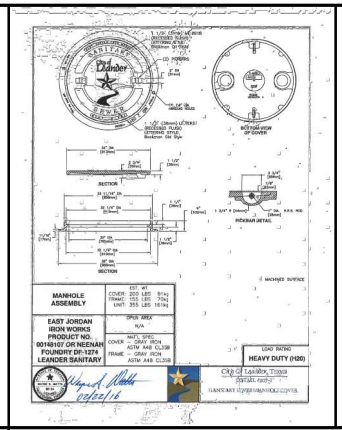
PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
6.0 KAUFFMAN LOOP
LEANDER, TEXAS 78642

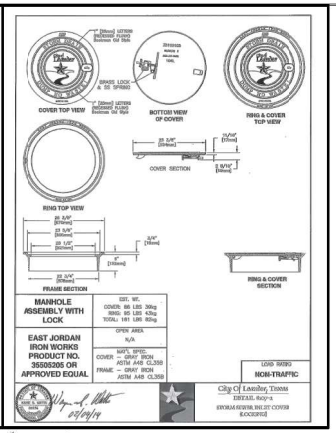
MASONRY WALL DETAILS

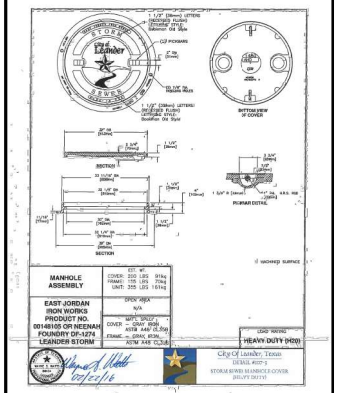
Know what's below. Call before you dig.

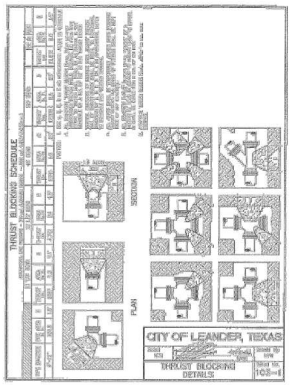
Date: 5/21/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 33 of 37
Project No. SD-24-0282

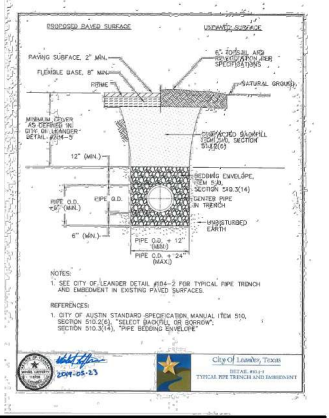


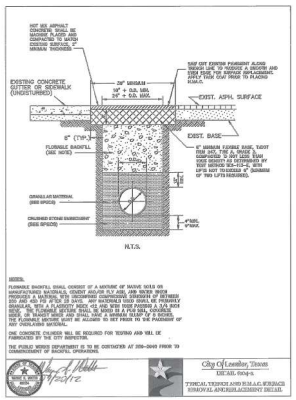


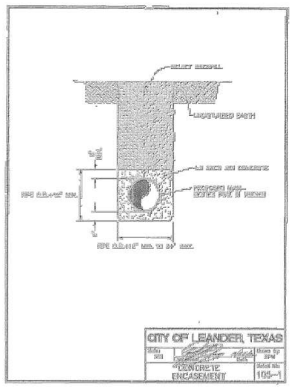


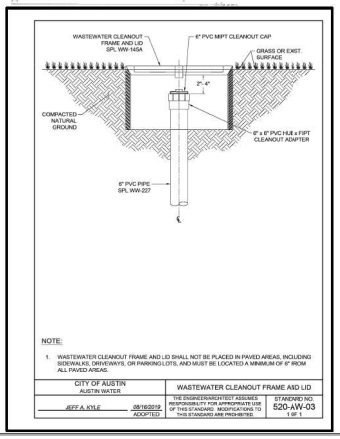


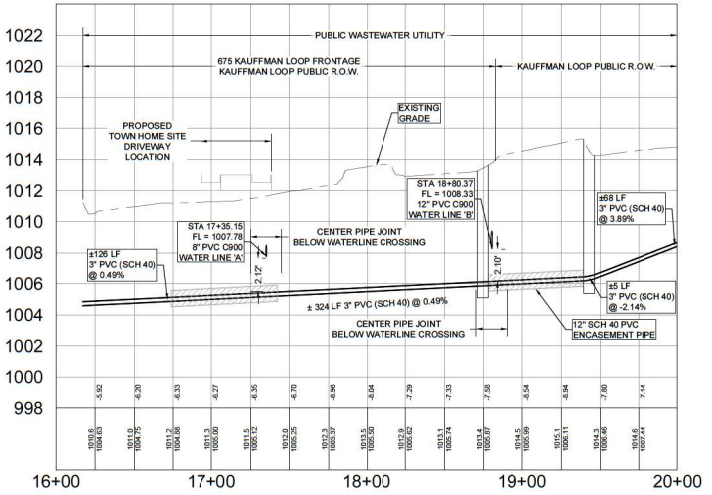






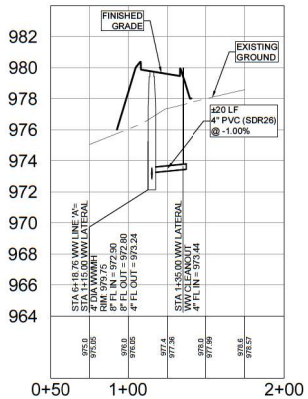






WASTEWATER LINE/ WATER LINE CROSSING DETAIL

SCALE: 1" = 40'



LATERAL STUB - OUT DETAIL - TYPICAL

SCALE: 1" = 40

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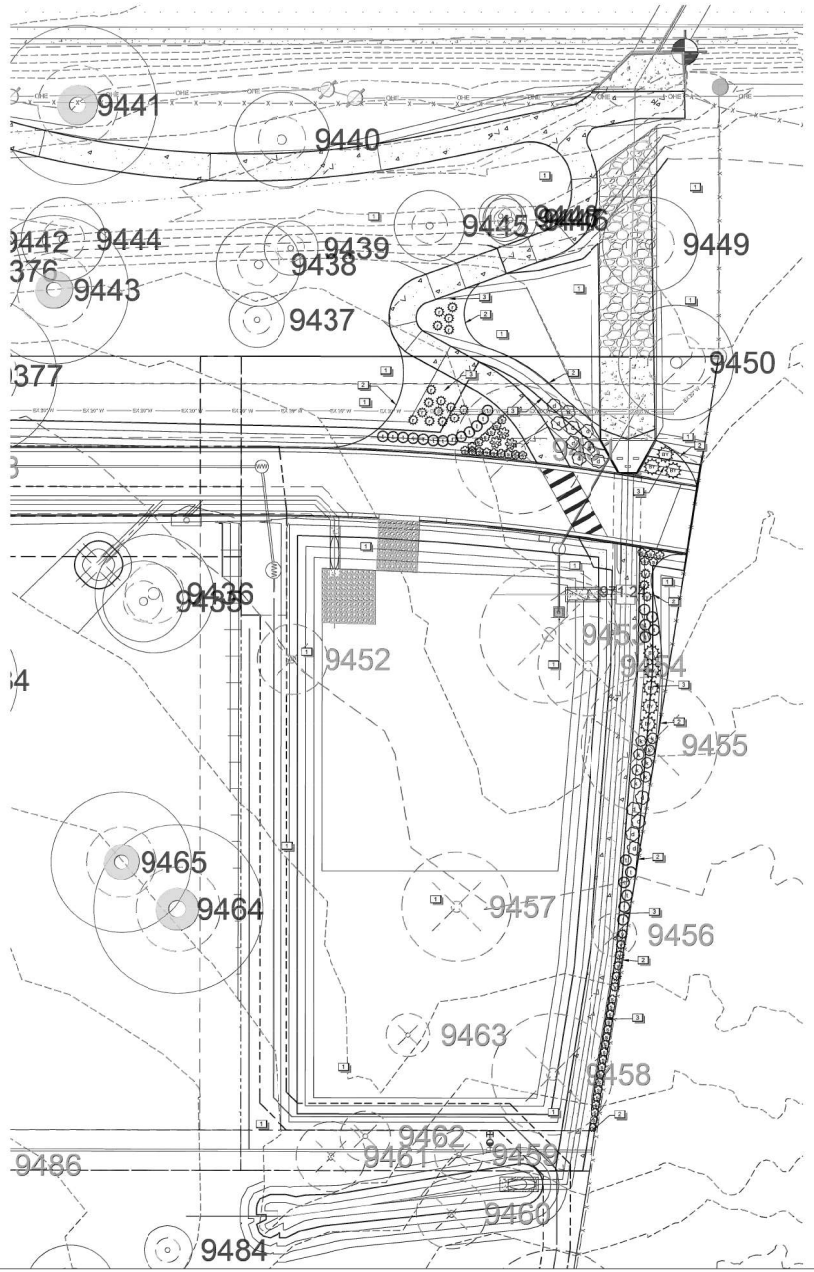
675 KAUFFMAN LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

PRIVATE INFRASTRUCTURE DEVELOPMENT PLANS
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

UTILITY DETAILS SHEET

THOMAS J. GROLL 90976 LICENSED PROFESSIONAL ENGINEER

Date: 5/21/2025
Chec by: TJG
Drawn By: MBS/MRC
Sheet No. 34 of 37
Projet No. SD-24-0282



PLANT SCHEDULE

SYMBOL	CODE	COMMON NAME	BOTANICAL NAME	CONT	QTY
SHRUBS					
by	by	Beaked Yucca, `Blue Velvet`	Yucca rostrata `Blue Velvet`	5 gal	8
d	d	Dwarf Palmetto	Sabal minor	5 gal	14
k	k	Knock Out Rose	Rosa acicularis `Knock Out`	5 gal	8
r	r	Red Yucca	Hesperaloe parviflora	3 gal	16
s	s	Pink Salvia Greggii	Salvia greggii `Pink`	5 gal	38
so	so	Sotol	Dasylirion texanum	5 gal	3
t	t	Texas Sage 'Silverado'	Leucophyllum frutescens `Silverado`	5 gal	24
y	y	Soft Leaf Yucca	Yucca pendula	5 gal	9

REFERENCE NOTES SCHEDULE

CODE	DESCRIPTION
1	Lawn, Zoysia "Palisades" Sod. Top of lawn 1" below top of adjacent concrete/hardscape. Flatten sod with lawn roller. Provide spray irrigation. Temporary irrigation only within septic fields or `Right of Way (R.O.W.). Pre emergent weed treatment recommended.
2	Steel edge, 3/16" x 4" landscape edging as manufactured by Ryerson, or equa, dark green and furnished with steel stakes. Install edging in smooth curves free of kinks. Final height of edging to be 1" above height of soil mat of sod.
3	River Cobble, "Brazos Brown" aka "Cafe". 70% 1-3" size mixed with 30% 3-8" size. 3" deep, weed barrier cloth beneath. If used in areas near plants provice irrigation butolers to plants and use the following bed prep: 6" of "Growers Mix" soil (40% compost, 40% loam, 10% sand) tilled into existing soil in allareas of the bed. Pocket planting acceptable where plant material s not massed or limestone is present.

CITY NOTES

- The developer and subsequent owners of the landscaped property, or the manager or agent of the owner, shall be responsible for the maintenance of all landscape areas. Said areas shall be maintained so as to present a healthy, neat and orderly appearanse at all times and shall be kept free of refuse and debris. All planted areas shall be provided with an automatic irrigation system and watered as necessary to ensure continuous healthy growth and development. Maintenance shall include the replacement of all dead pant material if that material was used to meet the requirements of the Landscape Ordinance.
- Tree caliper is the trunk diameter of a tree a one (1') foot above natural grade per the Composite Zoning Ordinance.
- All new landscapes (non-residential and residential) are required to have a minimum of six inches (6") of soil depth in areas planted with turfgrass. This six-inch (6") minimum soil depth will consist of 75 percent soil blended with 25 percent compost. The soil/compost blend shall be incorporated into the top two inches of the native soil. The six-inch (6") depth requirement does not apply to the area between the drip line and trunk of existing trees, shrub beds or wildscape areas. Areas with existing native vegetation that remain undisturbed shall be exempt from the soil depth provision; provided that native soil and vegetation in such area is fenced during construction and protected from disturbance and compaction during the construction process.
- All disturbed areas and ROW will be re-vegetated by the developer.
- All invasive species shall be removed from he property.
- No more than 50% of the same species may be planted to meet the tree planting requirements.
- A minimum pervious area 3 feet in radius and not less than 50% of the calculated drip line area is provided around the trunks of all existing and proposed trees.
- No landscaping over 3 feet high is located within 40 feet of the intersection of any street. (Measured from the edge of pavement as if the curbs or pavement edges are not rounded of and intersect at a right angle).
- In the event of a conflict with tree removal/preservation call outs on plan sheet(s) versus tree removal/preservation matrix, he tree removal/preservation matrix shall apply. It is the contractors responsibility to verify with City staff should any inconsistency exist within an approved plan set. No in-field changes are nade to approved plans, no exceptions.

NOTES

- Provide mulch tree ring for all trees outside of beds. Install per detail #1 on specifications sheet. Provide bubbler. Mulch is in addition to quantities listed.
- Contractor is responsible for verifying all plant and material quantities.
- Irrigation sleeves shall be run to all landscaped areas prior to concrete pour.
- Drip irrigation in all beds and spray irrigation in all lawn areas.

Any Irrigation plans at the site permit stage are for reference only.
Separate irrigation permits are required. Irrigation system will be reviewed under the irrigation application process

Mitigation for existing trees removed is to be found within Civil Engineering documents; reference sheet #12.

PROPOSED TREE CALIPER TO BE MEASURED 1.0' ABOVE TOP OF ROOT BALL
***TOP SOIL DEPTH TO BE 6" AS SPECIFIED**

NORTH

0 20 40 60 feet
SCALE: 1" = 20'

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Contractors:
email info@blairla.com with RFIs, submittals, & inspection scheduling
Schedule inspections at least 2 weeks in advance

Date
Description
Rev

Consultant Seal

Company Name and Address
William S. Blair
info@BlairLA.com
BlairLA.com
2028 E Ben White Blvd
#240-7873
Austin TX 78741

BLAIR LANDSCAPE ARCHITECTURE LLC
QUALITY. INTEGRITY. RELIABILITY.

LICENSED LANDSCAPE ARCHITECT
William S. Blair
April 30, 2025

Project Name and Address
Private Infrastructure Development Plans
675 Kauffman Loop
Leander, Texas

Sheet Title
Detention Pond Screening Landscape Plan

Design By: Will Blair
Checked By: xxxx
Issue Date: 04/15/2025
Project Number: 25015-LP

will blair 4/30/2025 2:17 PM c:\users\willb\dropbox\projects\675 kauffman loop, leander_3pm grid\675 kauffman loop, leander\675 kauffman loop, pond, leander.dwg

LANDSCAPE PLANTING SPECIFICATIONS

1) Guarantee - All labor, materials and plants will be guaranteed for a period of twelve (12) months after the final acceptance of work by Owner. All plants that have died or are unhealthy shall be replaced no later than 30 days from the anniversary date of the final acceptance. This guarantee does not apply to plant material that dies due to abnormal freezes, hail, abnormal high winds, or other acts of God, vandalism or lack of normal maintenance and watering. This guarantee does not apply to annual plantings.
2) Contractor is to verify all site dimensions and layout prior to the commencement of landscape construction. Any discrepancies between the drawings and the actual site conditions shall be brought to the attention of the owner's representative immediately.
3) Contractor is responsible for verification of the location of all underground utilities, repair to said utilities as a result of the work of the contractor shall be the responsibility of the contractor. Refer to the drawing for any additional information.
4) Contractor is responsible for maintaining positive drainage in all shrub and turf planting areas.
5) Tree pits are to be the same depth as the root ball and 24" wider. Prior to planting the tree pit should be filled with water to check for good drainage. If water does not drain the Contractor should check with the Landscape Architect to relocate the tree.
6) Trees should be positioned in the center of the tree pits, back filled with soil that was excavated from the pit until the surface is level with the surrounding area and the crown of the plant is at the finished grade. Build a water basin around the tree (36" dia.). Water until planting pit is soaked and soil has settled. Add soil necessary to bring soil level flush with surrounding ground. Fill the basin with three (3) inches of compost.
7) All plant material shall conform to the standards of the latest edition of "American Standard for Nursery Stock" by The American Association of Nurserymen and "Grades and Standards" by The Texas Association of Nurserymen. A plant shall be dimensioned as it stands in its natural position. All plants shall be at least the minimum size indicated. Larger stock is acceptable at no additional cost, and providing that the larger plants will not be cut back to size indicated.
8) It is the landscape contractor's responsibility to provide plants free of disease or pests.
9) Space specified quantity of plant materials to evenly fill designated areas, adjusting spacing indicated on the drawings as required. Landscape architect or owner to have final approval of locations of all trees, shrubs and groundcover beds.
10) Contractor is responsible for removing all clods, rocks, concrete, trash and any other debris from beds prior to adding soil ix or plant material.
11) All planting beds are to have six (6) inches of "Growers Mix" soil (40% compost, 40% loam, 10% sand) tilled at a depth of eight (8) inches in all areas of the bed. A two (2) inch layer of shredded hardwood bark mulch should be applied to all beds after planting is completed. Four (4) inch pots and ground cover may be planted through the mulch.
12) Contractor is responsible for removal of trash and repair of hazardous conditions (tools, open holes, et.) on a daily basis by the end of the work day.
13) Water all plantings in bed areas thoroughly on a daily basis until final acceptance.
14) To prepare turf areas treat them with a selective herbicide two weeks prior to sodding or seeding. Then rake area to remove stones, sticks and other debris. Add six (6) inches of "Landscape Mix" soil (25% compost, 75% soil) to the turf area. Rake area to a finish grade (1" below walks and curbs).
15) If sodding is to take place the sod should be gathered and planted within a 48 hour period Lay the sod to form a solid mass with tight fitting joints. Butt ends and sides of sod and offset joints in adjacent courses. Roll sod to ensure good contact with soil. If planting on a slope be sure to lay courses parallel to the contours and secure sod with pins if necessary. Site preparation and maintenance will be the same for hydromulching.
16) Water sod daily so as to not allow turf blades to wilt. If necessary water twice per day.
17) Apply slow release fertilizer 15-15-15 or equal at a rate of 2 lbs. per 100 s.f. to all turf or planted areas.
18) Contractor shall keep all construction areas and public streets free from accumulation of waste material. Upon completion of construction and prior to final approval contractor shall thoroughly clean the site of all trash, spilled soil, and litter, etc. that has resultec from landscape construction operations. Repair all damage to finish grade including tailings from excavations, wheel ruts, etc. caused from construction. All debris, trash and excess materials and equipment shall be removed from the site prior to final acceptance.
19) Remove all tags, ribbons and wires from all newly installed plant material.

LANDSCAPE MAINTENANCE REQUIREMENTS

The owner shall be responsible for:
1) Regular maintenance of all required landscape areas and plant materials in a vigorous and healthy condition, free from diseases, pests, weeds, and litter. This maintenance shall include weeding, watering, fertilization, pruning, mowing, edging, mulching or other needed maintenance, in accordance with generally accepted horticultural practice.
2) The repair or replacement of required landscape structures (walls, fences, etc.) to a structurally sound condition.
3) The regular maintenance, repair, or replacement, where necessary, of any required screening or buffering.
4) All open space areas that are to be preserved as natural plant communities shall be trimmed, at least once a year, of all exotic vegetation, lawn grasses, trash, or other debris. Natural area should be mulched, pruned and otherwise maintained so that plants are vigorous.

ADDITIONAL NOTES

1) Mechanical equipment shall be screened from view of at least sixty (60%) percent of any street or public right-of-way.
2) Tree caliper is the trunk diameter of a tree at twelve inches (1.0') above natural grade per the Composite Zoning Ordinance.
3) All new landscapes (non-residential and residential) are required to have a minimum of six inches (6") of soil depth in areas planted with turf grass. This six-inch (6") minimum soil depth will consist of 75 percent soil blended with 25 percent compost. The soil/compost blend shall be incorporated into the top two inches of the native soil. The six-inch (6") depth requirement does not apply to the area between the drip line and trunk of existing trees, shrub beds or wildscape areas. Areas with existing native vegetation that remain undisturbed shall be exempt from the soil depth provision; provided that native soil and vegetation in such area is fenced during construction and protected from disturbance and compaction during the construction process.
4) All disturbed areas and ROW will be re-vegetated by the developer. The developer and subsequent owners of the landscaped property, or the manager or agent of the owner, shall be responsible for the maintenance of all landscape areas. Said areas shall be maintained so as to present a healthy, neat and orderly appearance at all times and shall be kept free of refuse and debris. All planted areas shall be provided with an automatic irrigation system and watered as necessary to ensure continuous healthy growth and development. Maintenance shall include the replacement of all dead plant material if that material was used to meet the requirements of the Landscape Ordinance.
5) No more than 50% of the same species may be planted to meet the tree planting requirements.

Contractors:
email info@blairla.com with RFIs, submittals, & inspection scheduling
Schedule inspections at least 2 weeks in advance

William S. Blair
info@BlairLA.com
www.BlairLA.com
2029 E Ben White Blvd
#240-7873
Austin TX 78741

BLAIR LANDSCAPE ARCHITECTURE LLC
QUALITY. INTEGRITY. RELIABILITY.

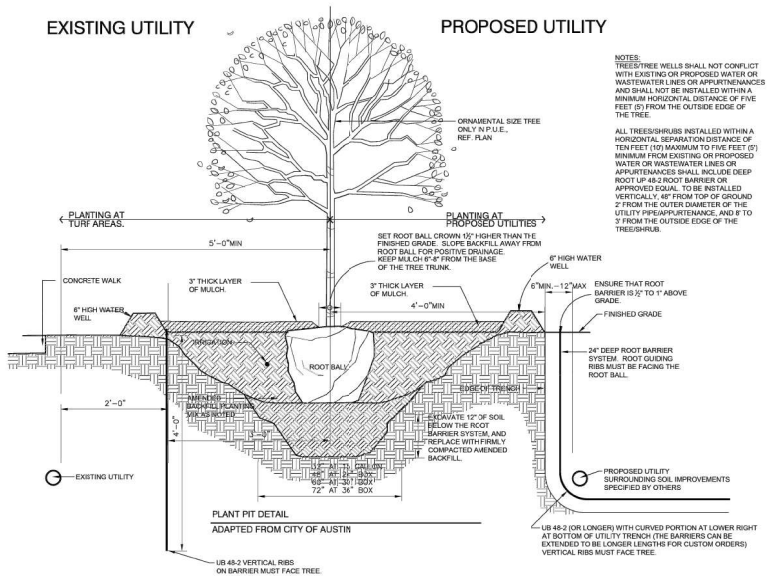
William S. Blair
April 30, 2025

Private Infrastructure Development Plans
675 Kauffman Loop
Leander, Texas

Landscape Calculations & Specifications

Design By: Will Blair
Checked By: xxxx
Issue Date: 04/15/2025
Project Number: 25015-LP

will blair 4/30/2025 2:18 PM C:\Users\willb\Box dropbox\projects\675 kauffman loop, leander_3pm grid\675 kauffman loop, leander-675 kauffman loop, pond, leander.dwg



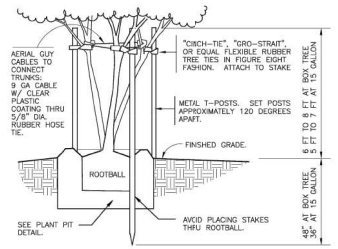
NOTES:
TREES/TREE WELLS SHALL NOT CONFLICT WITH EXISTING OR PROPOSED WATER OR WASTEWATER LINES OR APPURTENANCES AND SHALL NOT BE INSTALLED WITHIN A MINIMUM HORIZONTAL DISTANCE OF FIVE FEET (5') FROM THE OUTSIDE EDGE OF THE TREE.

ALL TREES/SHRUBS INSTALLED WITHIN A HORIZONTAL SEPARATION DISTANCE OF TEN FEET (10') MAXIMUM TO FIVE FEET (5') MINIMUM FROM EXISTING OR PROPOSED WATER OR WASTEWATER LINES OR APPURTENANCES SHALL INCLUDE DEEP ROOT UP 48-2 ROOT BARRIER OR APPROVED EQUAL, TO BE INSTALLED VERTICALLY, 48" FROM TOP OF GROUND 2' FROM THE OUTER DIAMETER OF THE UTILITY PIPE/APPURTENANCE, AND 8' TO 3' FROM THE OUTSIDE EDGE OF THE TREE/SHRUB.

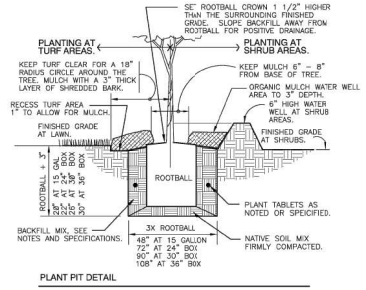
A DETAIL FOR DEEP ROOT (TM) ROOT BARRIER

1" = 1'-0" UB 48-2 (OR LONGER) 32 9343.33-01

APPLICABLE TO EXIST. & PROP. TREES / SHRUBS



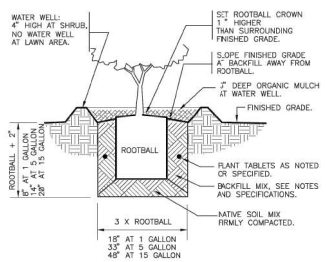
STAKING DETAIL



PLANT PIT DETAIL

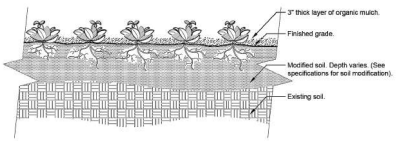
B TREE PLANTING MULTI-STAKE

1" = 1'-0" FX-PL-FX-TREE-15

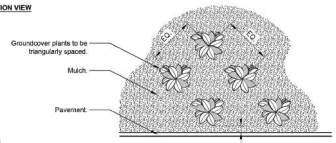


C SHRUB PLANTING

1" = 1'-0" FX-PL-FX-SHRB-07



SECTION VIEW



PLAN

Notes:
1- See planting legend for groundcover species, size, and spacing dimension.
2- Small roots (½" or less) that grow around, up, or down the root ball periphery are considered a normal condition in container production and are acceptable however they should se eliminated at the time of planting. Roots on the perpetry can be removed at the time of planting. (See root ball shaving container detail).
3- Settle soil around root ball of each groundcover prior to mulching.

D GROUNDCOVER

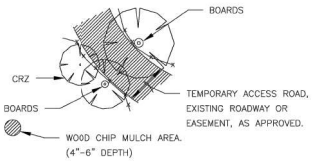
3/4" = 1'-0" FX-PL-FX-GROU-01

URBAN TREE FOUNDATION © 2014 OPEN SOURCE: FREE TO USE

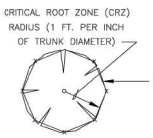
TREE PROTECTION FENCE LOCATIONS

NO SCALE

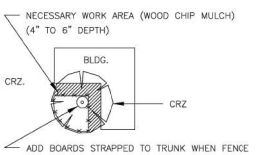
LINEAR CONSTRUCTION THROUGH TREES



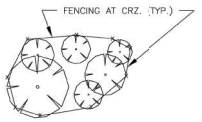
INDIVIDUAL TREE



TREES NEAR CONSTRUCTION ACTIVITY

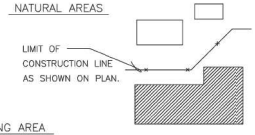


GROUP OF TREES

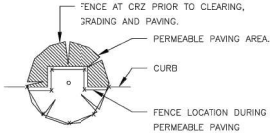


NOTE:
LIMITS OF MULCH AREAS AND DISTANCE FROM TRUNKS TO WORK/ PERMEABLE PAVING AREAS SHALL BE SUBJECT TC THE APPROVAL OF THE FORESTRY MANAGER.

NATURAL AREAS

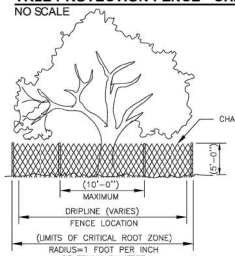


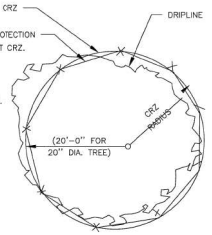
TREES IN PAVING AREA

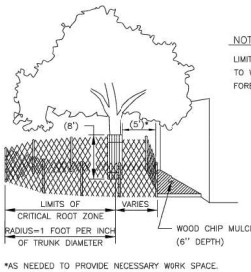


TREE PROTECTION FENCE - CHAIN LINK

NO SCALE

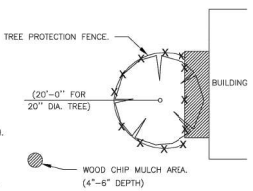






*AS NEEDED TO PROVIDE NECESSARY WORK SPACE. IF LESS THAN 5', THEN ADD BOARDS STRAPPED TO TRUNK.

NOTE:
LIMITS OF WOOD CHIP MULCH AREA AND DISTANCE FROM TRUNK TO WORK AREA SHALL BE SUBJECT TO THE APPROVAL OF THE FORESTRY MANAGER.



Contractors:
email info@blairla.com with RFIs, submittals, & inspection scheduling
Schedule inspections at least 2 weeks in advance

Date | Description | Rev

Consultant Seal

Company Name and Address
William S. Blair
info@BlairLA.com
BlairLA.com
2029 E Ben White Blvd
#240-7873
Austin TX 78741

BLAIR LANDSCAPE ARCHITECTURE LLC
QUALITY. INTEGRITY. RELIABILITY.

William S. Blair
April 30, 2025

Project Name and Address
Private Infrastructure Development Plans
675 Kauffman Loop
Leander, Texas

Sheet Title
Landscape & Tree Protection Details

Design By: Will Blair
Checked By: xxxx
Issue Date: 04/15/2025
Project Number: 25015-LP

37 of 37

4/30/2025 2:16 PM C:\Users\willb\Dropbox\projects\675 kauffman loop, leander_3pm.grid\675 kauffman loop, leander-0775 kauffman loop, leander-0775 kauffman loop, pond, leander.dwg
will blair

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with 30 TAC 213.

Administrative Review

1. Edwards Aquifer applications must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

   To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: http://www.tceq.texas.gov/field/eapp.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.

3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.

4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

   An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.

6. If the geologic assessment was completed before October 1, 2004 and the site contains "possibly sensitive" features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a "Mid-Review Modification". Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ's Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ's San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

1. Regulated Entity Name:675 Kauffman Loop						**2. Regulated Entity No.: TBD**			
3. Customer Name: 675 Kaufman LP						**4. Customer No.: TBD**			
5. Project Type: **(Please circle/check one)**	(New)		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	(SCS)	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		(Non-residential)			**8. Site (acres): 27.61**			
9. Application Fee:	$1,967.50		**10. Permanent BMP(s):**			Batch detention pond			
11. SCS (Linear Ft.):	3,935		**12. AST/UST (No. Tanks):**			Zero			
13. County:	Williamson		**14. Watershed:**			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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	___
Region (1 req.)	___	___	___
County(ies)	___	___	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	___	___	___	___
Region (1 req.)	___	___	___	___	___
County(ies)	___	___	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	___Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park ___San Antonio (SAWS) ___Shavano Park	___Bulverde ___Fair Oaks Ranch ___Garden Ridge ___New Braunfels ___Schertz	NA	___San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.
Thomas J. Groll, P.E. Print Name of Customer/Authorized Agent
Thomas J Groll, P.E. 6/25/25 Signature of Customer/Authorized Agent Date

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

General Information Form

Texas Commission on Environmental Quality

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

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

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

Signature

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

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

Date: March 20, 2025

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, TX 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: April 18, 2025

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:

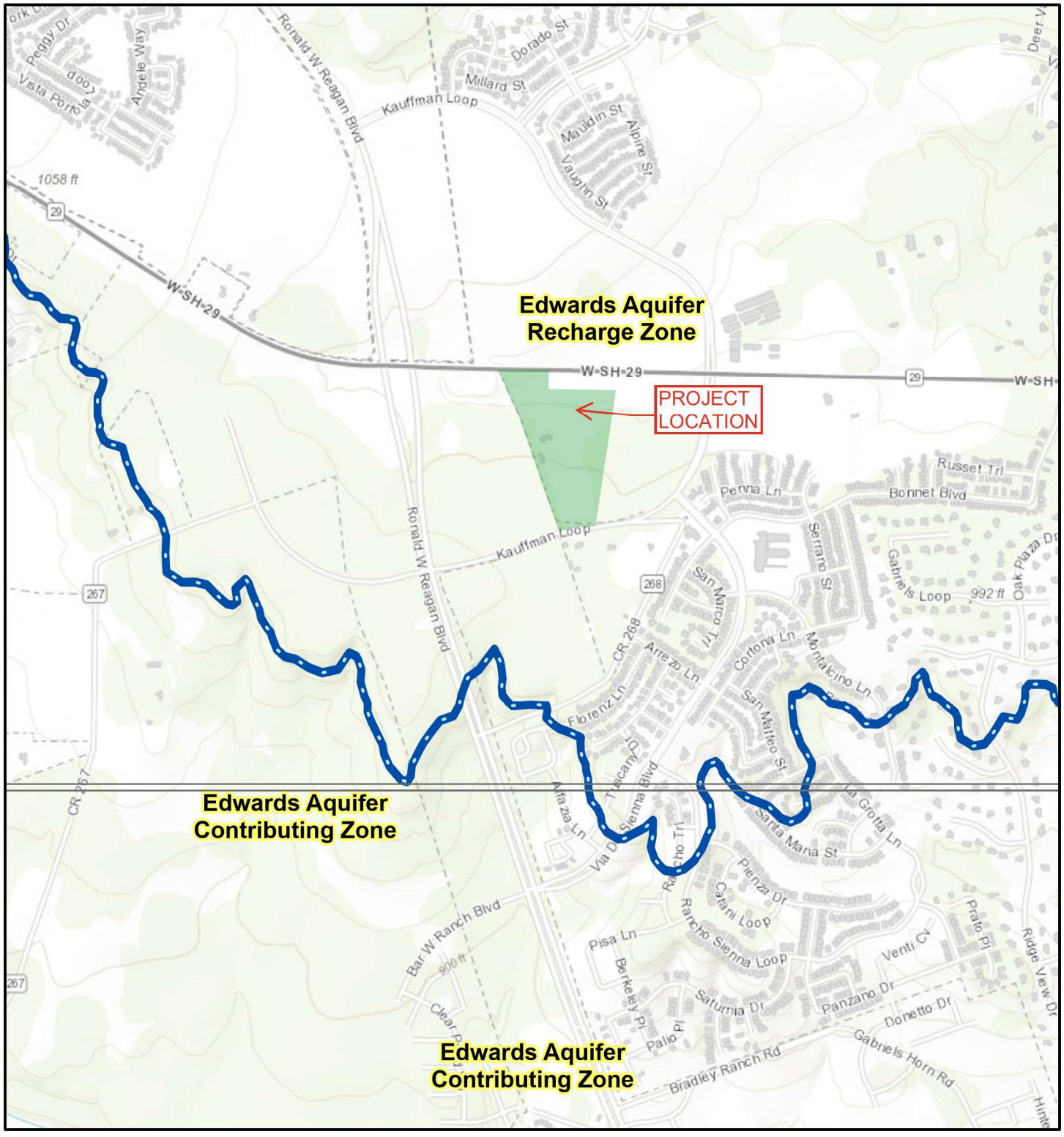
- ☐ TCEQ cashier
- ☒ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- ☐ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

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

ATTACHMENT B - EARZ MAP



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

1:21,120

0 500 1,000 2,000 ft

0 250 500 1,000 m

- 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

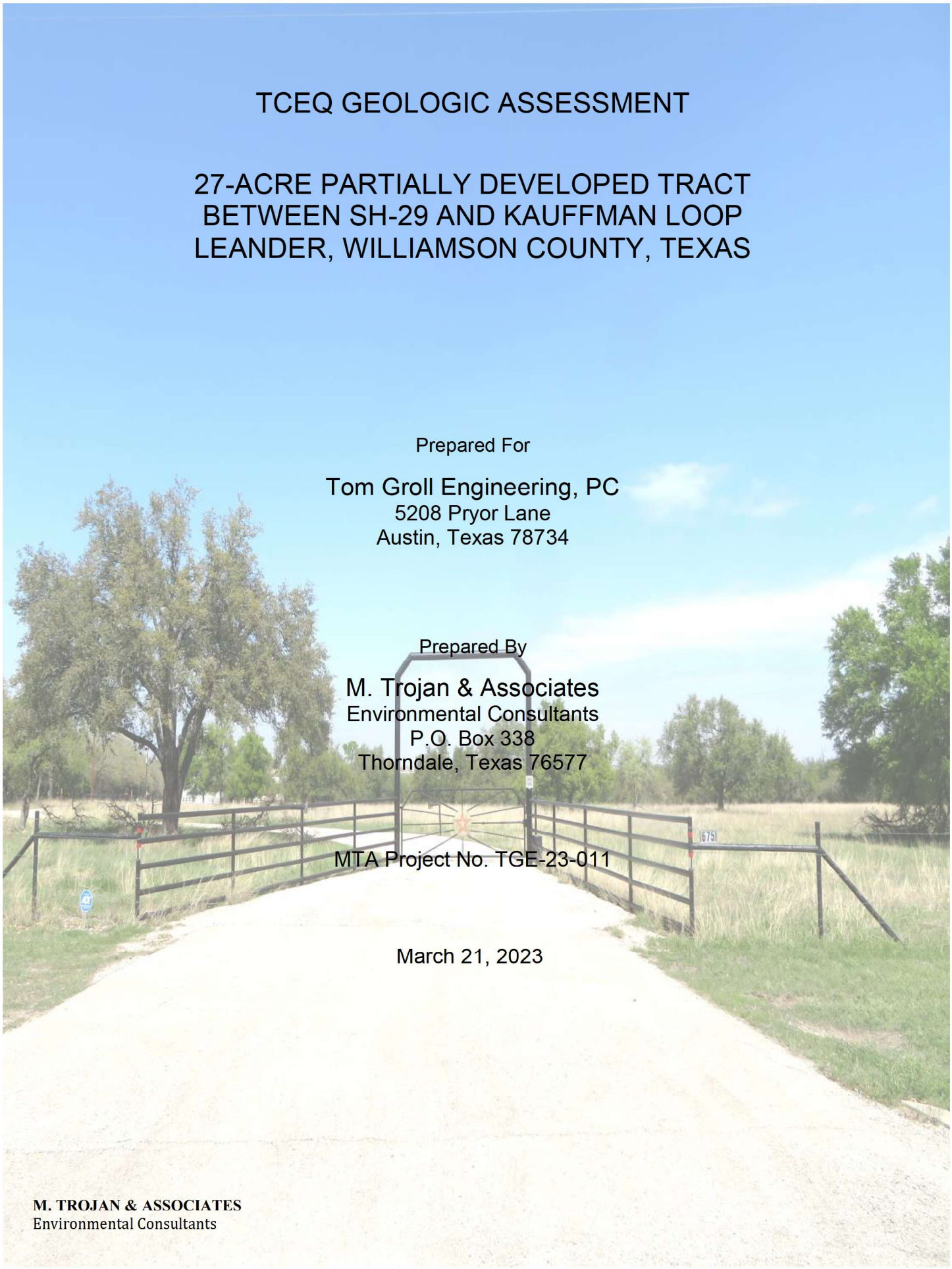
Tom Groll Engineering, PC
5208 Pryor Lane
Austin, Texas 78734

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

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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ATTACHMENT B: STRATIGRAPHIC COLUMN

ATTACHMENT C: SITE GEOLOGY AND FEATURES

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Figure 2 – Site Aerial Photograph
Figure 3 – Surface Water Hydrology
Figure 4 – Site Soils Map
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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:

X	WPAP		AST
X	SCS		UST

3. Location of Project:

- [X] Recharge Zone
- [ ] Transition Zone
- [ ] Contributing Zone within the Transition Zone

4. [X] **Attachment A – Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

5. [X] 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. [X] **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. [X] **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. [X] **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:

   [X] 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. [X] Surface geologic units are shown and labeled on the Site Geologic Map.

12. [X] 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. [X] 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

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: 27-Acre Partially Developed Tract

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	≥40	<1.6	>1.6	
ONSITE																				
MB-1	30.6379247	-97.824219	MB	30	Ked	375	unk	unk					X	≤5	≤35	≤35		N/A	N/A	hillside
MB-2	30.635739	-97.823259	MB	30	Ked	unk	unk	unk					X	≤5	≤35	≤35		N/A	N/A	hillside
MB-3	30.635005	-97.82324	MB	30	Ked	unk	unk	unk					X	≤5	≤35	≤35		N/A	N/A	hillside
OFFSITE																				
MB-4	30.637074	-97.825102	MB	30	Ked	140	70	6					X	≤5	≤35	≤35		unk	unk	drainage
MB-5	30.636124	-97.82467	MB	30	Ked	320	240	10					X	≤5	≤35	≤35		unk	unk	drainage
MB-6	N/A	N/A	MB	30	Ked	unk	unk	unk					X	≤5	≤35	≤35		N/A	N/A	hillside
MB-7	N/A	N/A	MB	30	Ked	unk	unk	unk					X	≤5	≤35	≤35		N/A	N/A	hillside
MB-8	30.637576	-97.821101	MB	30	Ked	85	20	unk					X	≤5	≤35	≤35		N/A	N/A	stream

* DATUM:_____

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

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

12 TOPOGRAPHY

Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Date: March 21, 2023

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
	LOWER CRETACEOUS (COMANCHEAN)		DEL RIO	CLAY 40–70 FEET THICK
			GEORGETOWN	LIMESTONE AND MARL 30–80 FEET THICK
		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

M. TROJAN & ASSOCIATES
Environmental Consultants
P.O. Box 338
Thorndale, Texas 76577
(512) 917-3695

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

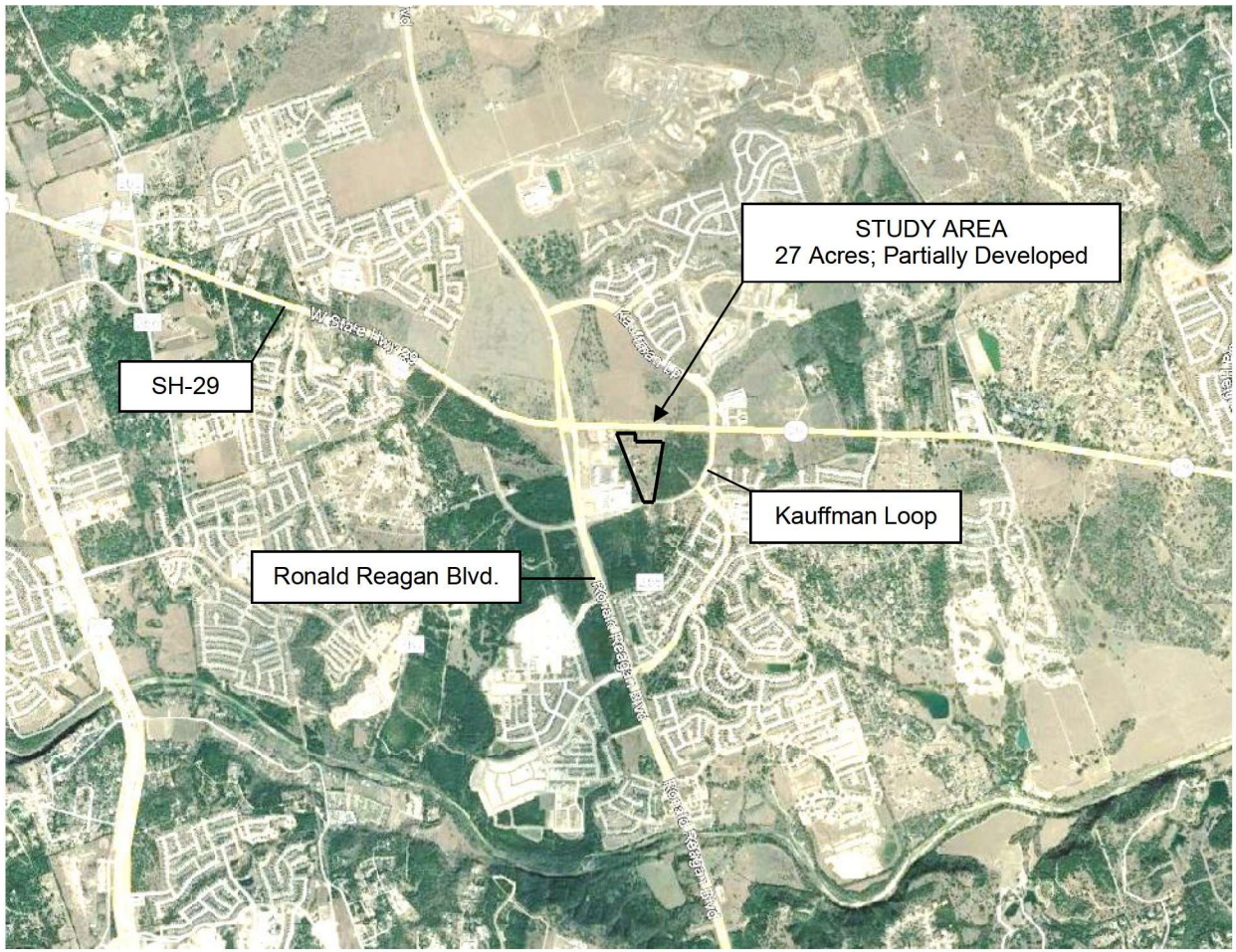
Based on review of available information and visual observations made during the field reconnaissance, this *Geologic Assessment* presents the following observations regarding the potential for recharge of the subsurface within the study area:

- 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
Environmental Consultants

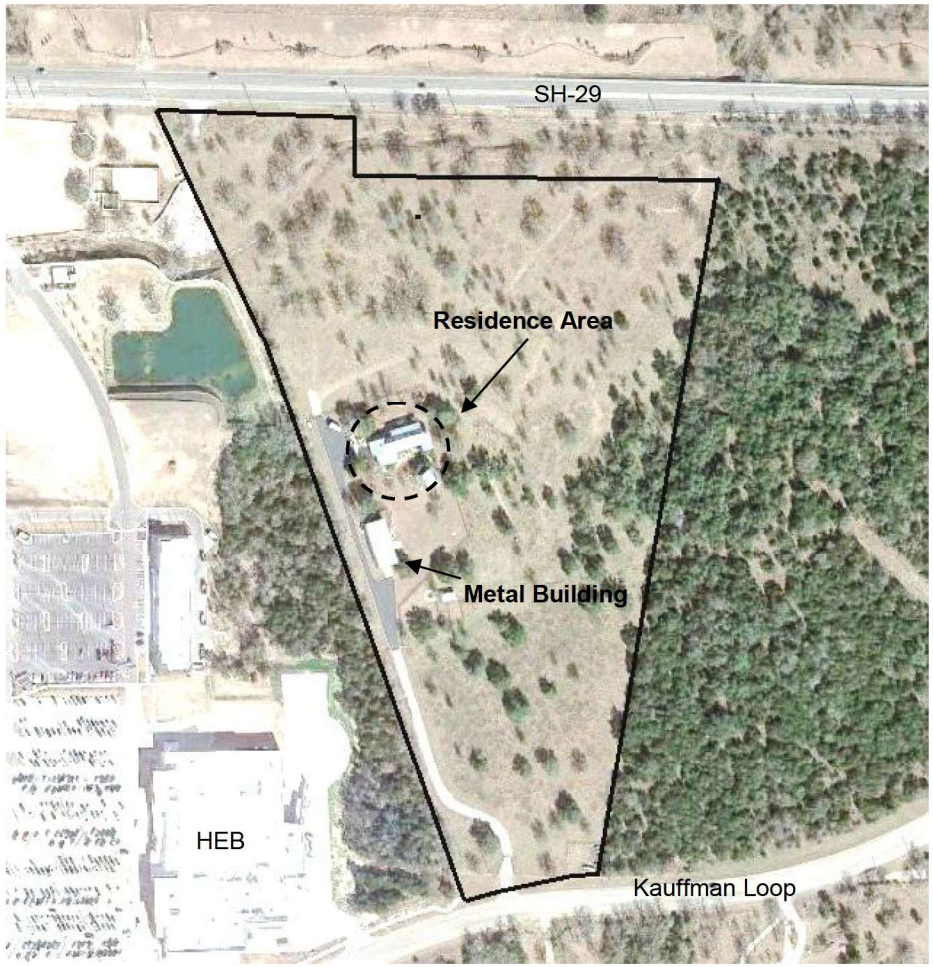
P.O. Box 338
Thorndale, Texas 76577
(512) 917-3695

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
Environmental Consultants
P.O. Box 338
Thorndale, Texas 76577
(512) 917-3695

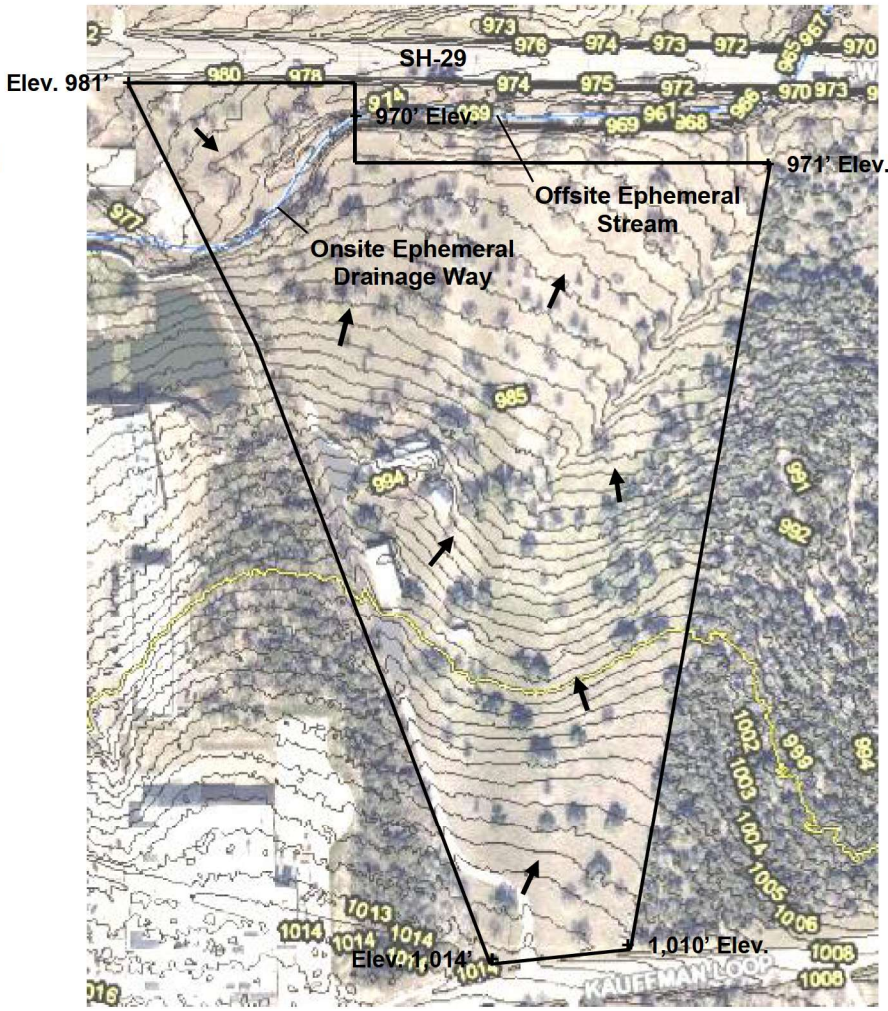
Scale: 1" = 400' (approx.)
Date: March 21, 2023
Project: TCEQ Geologic Assessment
MTA Project: TGE-23-011

FIGURE 2

SITE AERIAL PHOTOGRAPH

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

Middle Fork San Gabriel River Watershed



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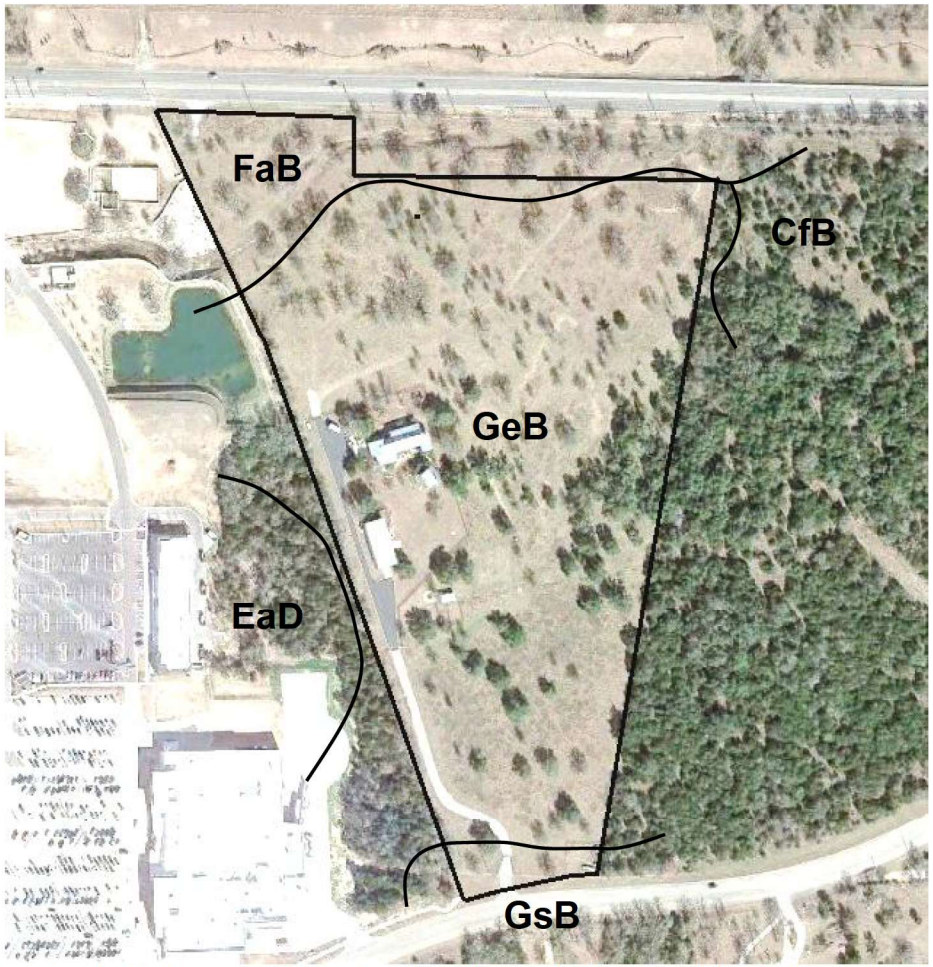
(512) 917-3695

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

FIGURE 3

SURFACE WATER HYDROLOGY

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



STATE OF TEXAS
MICHAEL TROJAN
GEOLOGY
No. 1109
LICENSED
PROFESSIONAL GEOSCIENTIST

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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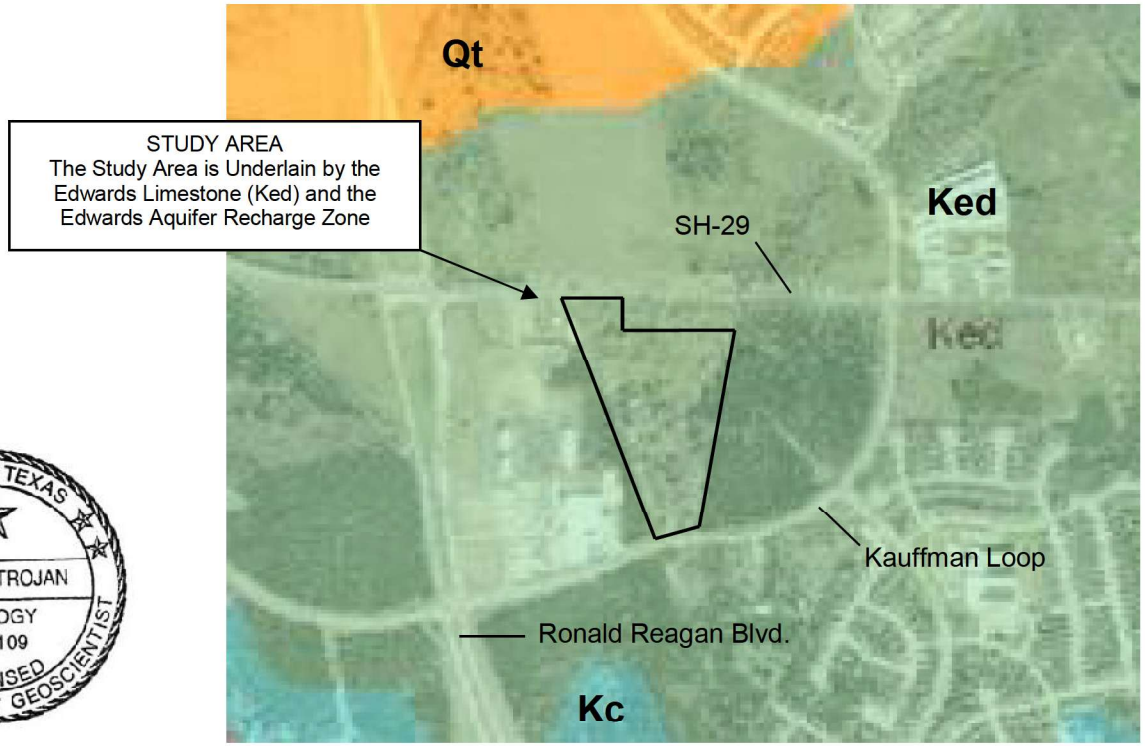
Project: TCEQ Geologic Assessment
MTA Project: TGE-23-011

FIGURE 4

SITE SOILS MAP

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



STATE OF TEXAS
MICHAEL TROJAN
GEOLOGY
No. 1109
LICENSED
PROFESSIONAL GEOSCIENTIST

Ked– Edwards Limestone / Kc – Comanche Peak Limestone / Qt – Fluviatile 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')

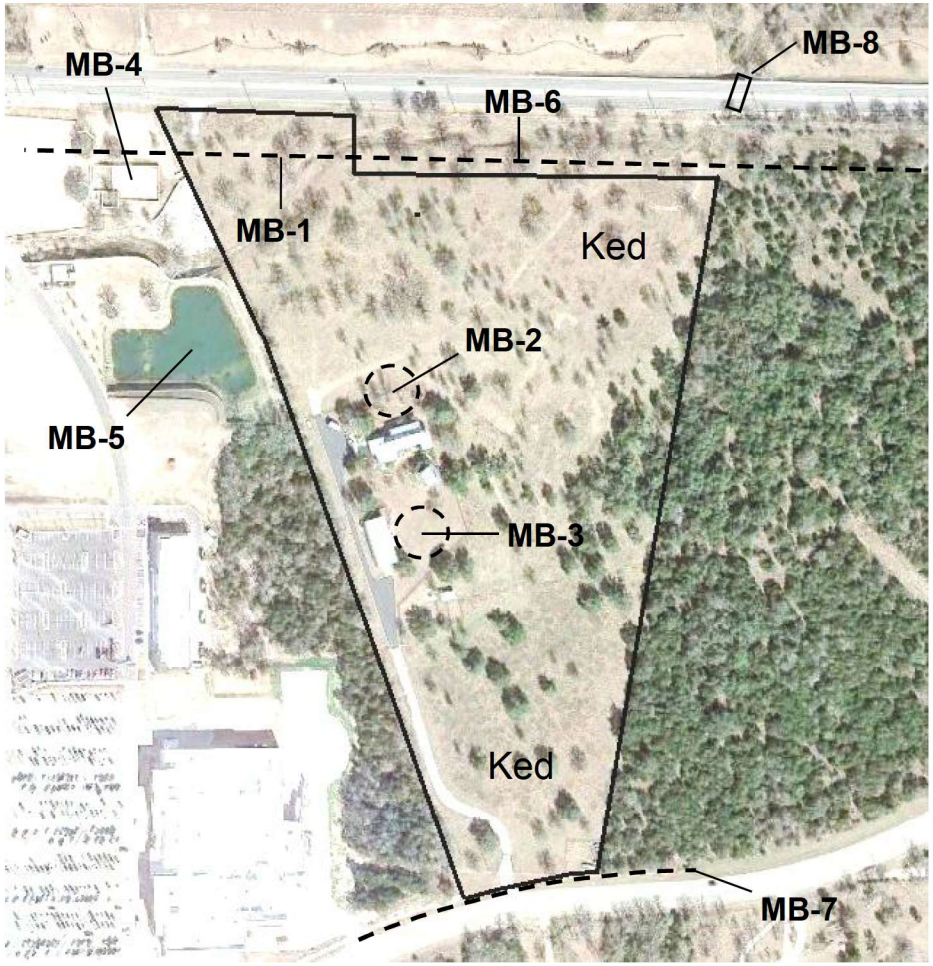
MB-4: Manmade feature in bedrock (water quality pond)

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)



NO ONSITE OR OFFSITE KARST FEATURES IDENTIFIED

N

NOTES

Ked – Edwards Limestone

Refer to Attachment C for feature details.

M. TROJAN & ASSOCIATES
Environmental Consultants

P.O. Box 338
Thorndale, Texas 76577
(512) 917-3695

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 Kauffman 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.

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

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

Customer Information

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

   Contact Person: 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.

3. 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 — 8,400 gallons/day
   _____% Industrial — _____ gallons/day
   _____% Commingled — _____ gallons/day

   Total gallons/day: 8,400

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

8. Pipe description:

Table 1 - Pipe Description

Pipe Diameter(Inches)	*Linear Feet (1)*	*Pipe Material (2)*	*Specifications (3)*
8"	748	SDR 26 PVC	D3034
4"	80	SDR26 PVC	D3034
2"	463	SCH 40 PVC	
3"	2,692	SCH40 PVC	

Total Linear Feet: 3,983

(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 Wastewater (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

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
A	9 Of 18	1+38.76	MH
A	9 Of 18	3+58.76	MH
A	9 Of 18	4+73.76	MH
A	9 Of 18	6+18.76	MH
A	9 Of 18	7+98.72	MH
FM	13 Of 18	32+55.71	MH
	Of		

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

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

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

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

☐ **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

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

23. 5-year floodplain:

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

Table 4 - 5-Year Floodplain

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

24. ☒ Legal boundaries of the site are shown.

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

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

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

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

Table 5 - Water Line Crossings

Line	*Station or Closest Point*	*Crossing or Parallel*	*Horizontal Separation Distance*	*Vertical Separation Distance*
FM	17+35.03	CROSSING	0	2.1'

27. Vented Manholes:

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

Table 6 - Vented Manholes

Line	*Manhole*	*Station*	*Sheet*

Line	*Manhole*	*Station*	*Sheet*

28. Drop manholes:

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

Table 7 - Drop Manholes

Line	*Manhole*	*Station*	*Sheet*

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

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

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

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

31. Minimum flow velocity (From Appendix A)

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

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

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

Table 8 - Flows Greater Than 10 Feet per Second

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

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

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

Administrative Information

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

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

Table 9 - Standard Details

Standard Details	*Shown on Sheet*
Lateral stub-out marking **[Required]**	18 of 18
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) **[Required]**	18 of 18
Alternate method of joining lateral to existing SCS line for potential future connections **[Required]**	NA of 18
Typical trench cross-sections **[Required]**	18 of 18
Bolted manholes **[Required]**	18 of 18
Sewer Service lateral standard details **[Required]**	18 of 18
Clean-out at end of line **[Required, if used]**	18 of 18
Baffles or concrete encasement for shock/erosion protection **[Required, if flow velocity of any section of pipe >10 fps]**	NA of 18
Detail showing Wastewater Line/Water Line Crossing **[Required, if crossings are proposed]**	18 of 18
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) **[Required, if Flexible Pipe is used]**	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: 04/18/25

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.

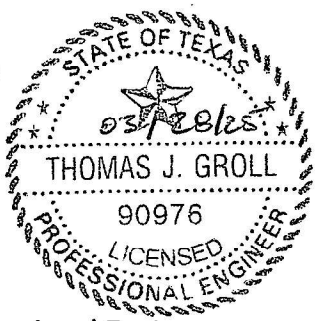
Signature

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: March 28, 2025

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

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

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

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

Figure 1 - Manning's Formula

Where:

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

Lift Station/Force Main System Application

Texas Commission on Environmental Quality

for Regulated Activities On the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(c)(3)(B)and(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

Customer Information

(If different than customer information provided on core data form)

1. The person(s) responsible for providing the engineering certification to the TCEQ pursuant to 30 TAC §213.5(f)(2)(C) during construction and 30 TAC §213.5 (c)(3)(D) upon completion of construction is:

   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

2. The engineer responsible for the design of this lift station and force main:

   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
   Texas Licensed Professional Engineer's Serial Number: 90976

Project Information

3. This project is for the construction or replacement of:

   ☐ Lift Station only.

☒ Lift Station and Force Main system.
☐ Lift Station, Force Main, and Gravity system.

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

   ☒ Existing
   ☐ Proposed

5. All components of this lift station/force main system will comply with:

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

Site Plan Requirements

Items 6-14 must be included on the Site Plan.

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

   Site Plan Scale: 1" = 40'.

7. ☒ Lift station/force main system layout meets all requirements of 30 TAC Chapter 217.

8. Geologic or Manmade Features:

   ☒ No geologic or manmade features were identified in the Geologic Assessment.
   ☐ All geologic or manmade features identified in the Geologic Assessment (caves, solution openings, sinkholes, fractures, joints, porous zones, etc.) which exist at the site of the proposed lift station and along the path(s) or within **50 feet of each side** of a proposed force main line are shown on the Site Plan and are listed in the table below. Designs used to protect the integrity of the sewer line crossing each feature are described and labeled on the attached page. A detailed design drawing for each feature is shown on Plan Sheet _____ of _____.
   ☐ No Geologic Assessment is required for this project.

Table 1 - Geologic or Manmade Features

Line	*Station to Station*	*Type of Feature*
	to	
	to	
	to	
	to	
	to	
	to	
	to	
	to	

9. ☒ Existing topographic contours are shown and labeled. The contour interval is 1 feet. (Contour interval must not be greater than 5 feet).

10. ☒ Finished topographic contours are shown and labeled. The contour interval is 1 feet. (Contour interval must not be greater than 5 feet).

☐ Finished topographic contours will not differ from the existing topographic configuration and are not shown.

11. 100-year floodplain boundaries

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.

☒ No part of the project site is located within the 100-year floodplain.

The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): _____

12. 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 manmade. (Do not include streets or concrete-lined channels constructed above sewer lines.)

☐ After construction is complete, all sections of the force main 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 2 - 5-Year Floodplain

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

13. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

If applicable, this must agree with Item No. 15 on the Geologic Assessment Form.

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

☐ The wells are not in use and have been properly plugged.

☐ The wells are not in use and will be properly plugged.

☐ 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.

14. ☒ Legal boundaries of the site are shown.

Plan and Profile Sheets

*The construction drawings and technical specifications will not be considered for review unless they are the **final plans and technical specifications** which will be used by the contractor for bidding and construction.*

Items 15 – 18 must be included on the Plan and Profile sheets.

15. ☒ The equipment installation construction plans must have a minimum scale of 1" = 10'.

    Plan sheet scale: 1" = 1 '.

16. ☒ Locations, descriptions and elevations of all required equipment and piping for the lift station and force main are shown and labeled.

17. ☒ Air Release/Vacuum Valves will be provided at all peaks in elevation of the proposed force main. These locations are listed in the table below and labeled on the appropriate plan and profile sheets.

Table 3 - Air Release/Vacuum Valves

Line	*Station*	*Sheet*
3" Public FM	32+55.71	13 of 18
		of
		of
		of
		of
		of

18. ☒ 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.

19. ☒ **Attachment A - Engineering Design Report**. An engineering design report with the following required items is attached:

    ☒ The report is dated, signed, and sealed by a Texas Licensed Professional Engineer.
    ☒ Calculations for sizing system.
    ☒ Pump head calculations, including, but not limited to, system head and pump capacity curves, head loss calculations, and minimum and maximum static head C values for normal and peak operational conditions.
    ☒ 100-year and 25-year flood considerations.
    ☒ Total lift station pumping capacity with the largest pump out of service.
    ☒ Type of pumps, including standby units.
    ☒ Type of pump controllers, including standby air supply for bubbler controllers, as applicable.

☒ Pump cycle time.
☒ Type of wet well ventilation; include number of air changes for mechanical ventilation.
☒ Minimum and maximum flow velocities for the force main.
☒ Lift station security.
☒ Lift station emergency provisions and reliability.

Administrative Information

20. ☒ Upon completion of the wet well excavation, a geologist must certify that the excavation was inspected for the presence of sensitive features and submit the signed, sealed, and dated certification to the appropriate regional office.

21. ☒ The TCEQ Lift Stations and Force Mains General Construction Notes (TCEQ-0591) are included on the General Notes Sheet of the Final Construction Plans for this lift station and/or force main system.

22. ☒ 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.

23. ☒ Any modification of this lift station/force main system 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 **Lift Station/Force Main 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)(3)(C) and 30 TAC Chapter 217, and prepared by:

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

Place engineer's seal here:

Date: March 28, 2025

Signature of Licensed Professional Engineer:

Thomas J. Groll, P.E.

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

May 30, 2025

Introduction

The 675 Kauffman Loop project is a 25-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 10.16-acres fronting SH 29, and townhome development on the southern 14.8-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.

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 42 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 150 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 42 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

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

A_{DDWF} = 200 x 42 = 8,400 gpd (11.67 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

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

$$Q_{peak\ (dry)} = \left[\frac{\left(18+\sqrt{0.0206\ x\ 8{,}400}\right)}{\left(4+\sqrt{0.0206\ x\ 8{,}400}\right)}\right]\ x\ 8{,}400\ = 15{,}255\ \text{gpd (21.19 gpm within a 12-hour period)}$$

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

$$I\&I = \ (750\ gpd)/Acre\ \ x\ acreage\ of\ contributing\ basin$$

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

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 22,875 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 (26.48 gpm). Due to the low pumping requirement, this system is anticipated to be a grinder pump system as allowed by 30 TAC 217.90.

Pump Head calculations

The lift station wet well will have a floor elevation of 966' msl. The pump discharge elevation will be set one foot above the floor at 967' 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	2.0	SCH 40 PVC
5+62.50	to	32+55.71	977.86	1,015.69	37.83'	2,693.21	3.0	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

$$h_l = 0.2083\, x \frac{\left(\frac{100}{C_H}\right)^{1.852} x\, (Q^{1.852})}{D_I{}^{4.8655}} \qquad \text{[feet } H_2O\text{/100' of pipe]}$$

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
90º bend	0.50
45º bend	0.35
22-1/2º bend	0.18
11-14º 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 (42 L.U.E.s). The remaining system head loss is calculated for the combined flows from the commercial (42 L.U.E.S) and residential (108 L.U.E.S) sites to the discharge end of the pipe system (150 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 58.07' when both lift stations are operating under peak conditions. The 3" 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 1036.58. The system head loss for the first 462.50 LF (Sta: 1+00.00 to 5+62.50) is 17.52' 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 75.59' of head to operate simultaneously with the townhome site lift station.

The commercial lift station is proposed to have dual Ashland Model AGP500 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^3 for a 6-minute cycle time. This system has the capacity to pump 83 gpm at 76' TDH. It is assumed that further analysis of the wastewater generation by the proposed commercial developers will result in greater flow than the 42 LUE's allocated to the site. Therefore, the pump capacity and wet well size are subject to change as more information about the end user waste generation becomes available.

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:

$$V = \frac{T\ x\ Q}{4\ x\ 7.48} = \frac{6\ x\ 26.48}{29.92} = 5.31\ ft^3$$

Where:
T = Pump cycle time (6 minutes)
Q = Q_{peak} (26.48 gpm)

Per 30 TAC 217.97(c)(5), the minimum allowable pipe size is 1-1/2" for this project. A 2" Sch 40 PVC pipe is selected to reduce system head loss. Based on the 42 LUE waste flow determination, the minimum and maximum velocity in the 2" pipe will be 1.12 and 2.53 fps, respectively. Downstream of the townhome site connection point where the force main is 3" diameter, and using the 150 LUE waste flow determination, the minimum and maximum velocity in the 3" pipe will be 1.14 and 2.47 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_L (ft H_2O)		
	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%	0.04	5.00	0.10
P1	1+16.62	3+84.30	267.68	972.99	970.00	(2.99)	-1.12%	0.73	-	
45° Bend	3+84.30	3+84.30	0.00	970.00	970.00	-	0.00%	0.00	0.35	0.01
P2	3+84.30	3+87.08	2.78	970.00	967.22	(2.78)	-100.00%	0.01	-	
45° Bend	3+87.08	3+87.08	0.00	967.22	967.22	-	0.00%	0.00	0.35	0.01
P3	3+87.08	4+40.82	53.74	967.22	966.55	(0.67)	-1.25%	0.15	-	
45° Bend	4+40.82	4+40.82	0.00	966.55	966.55	-	0.00%	0.00	0.35	0.01
P4	4+40.82	4+47.48	6.66	966.55	973.21	6.66	100.00%	0.02	-	
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%	0.31	-	-
Check valve	5+62.50	5+62.50	0.00	977.86	977.86	-	0.00%	0.00	2.00	0.04
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		1.26		0.18
				Total head loss =		12.30				

Head loss calculations – average flow conditions for combined site										
Element	Station			Flow Line Elevation			Slope	h_L (ft H_2O)		
	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	0.04
P6	5+63.50	9+40.82	377.32	977.90	993.15	15.25	4.04%	0.67	-	
1° Vert Bend	9+40.82	14+00.82	460.00	993.15	993.15	-	0.00%	0.82	0.01	0.00
P7	14+00.82	16+17.01	216.19	993.15	1,004.59	11.44	5.29%	0.39	-	
11.25° Bend	16+17.01	16+20.62	3.61	1,004.59	1,004.61	0.02	0.55%	0.01	0.12	0.01
22.5° Bend	16+20.62	16+23.62	3.00	1,004.61	1,004.62	0.01	0.33%	0.01	0.18	0.02
45° Bend	16+23.62	16+26.62	3.00	1,004.62	1,004.64	0.02	0.67%	0.01	0.35	0.03
P8	16+26.62	18+69.91	243.29	1,004.64	1,005.84	1.20	0.49%	0.44	-	
45° Bend	18+69.91	18+69.91	0.00	1,005.84	1,005.84	-	0.00%	0.00	0.35	0.03
P9	18+69.91	18+74.91	5.00	1,005.84	1,005.86	0.02	0.49%	0.01	-	
45° Bend	18+74.91	19+40.74	65.83	1,005.86	1,006.19	0.33	0.49%	0.12	0.35	0.03
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	0.03
P11	19+45.74	20+13.93	68.19	1,006.30	1,008.95	2.65	3.89%	0.12	-	
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%	0.15	-	
P14	20+98.60	32+55.71	1,157.11	1,010.76	1,015.69	4.93	0.43%	2.07	-	
Combined system line length =			2,693.21	Static head loss =		37.83		4.82		0.21
				Total head loss =		42.86				

Head loss calculations – peak flow conditions for commercial site										
Element	Station			Flow Line Elevation			Slope	h_L (ft H_2O)		
	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%	0.02	-	
90º Bend	1+02.00	1+02.00	0.00	973.06	973.06	-	0.00%	0.00	0.50	0.05
Valve vault	1+02.00	1+16.62	14.62	973.06	972.99	(0.07)	-0.48%	0.18	5.00	0.50
P1	1+16.62	3+84.30	267.68	972.99	970.00	(2.99)	-1.12%	3.32	-	
45º Bend	3+84.30	3+84.30	0.00	970.00	970.00	-	0.00%	0.00	0.35	0.03
P2	3+84.30	3+87.08	2.78	970.00	967.22	(2.78)	-100.00%	0.03	-	
45º Bend	3+87.08	3+87.08	0.00	967.22	967.22	-	0.00%	0.00	0.35	0.03
P3	3+87.08	4+40.82	53.74	967.22	966.55	(0.67)	-1.25%	0.67	-	
45º Bend	4+40.82	4+40.82	0.00	966.55	966.55	-	0.00%	0.00	0.35	0.03
P4	4+40.82	4+47.48	6.66	966.55	973.21	6.66	100.00%	0.08	-	
45º 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%	1.43	-	-
Check valve	5+62.50	5+62.50	0.00	977.86	977.86	-	0.00%	0.00	2.00	0.20
Expansion	5+62.50	5+62.50	0.00	977.86	977.86	-	0.00%	0.00	0.75	0.07
Commercial system line length =			462.50	Static head loss =		10.86		5.74		0.93
Total head loss =						17.52				

Head loss calculations – peak flow conditions for combined site										
Element	Station			Flow Line Elevation			Slope	h_L (ft H_2O)		
	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	0.04
P6	5+63.50	9+40.82	377.32	977.90	993.15	15.25	4.04%	2.81	-	
1º Vert Bend	9+40.82	14+00.82	460.00	993.15	993.15	-	0.00%	3.42	0.01	0.00
P7	14+00.82	16+17.01	216.19	993.15	1,004.59	1.44	5.29%	1.61	-	
11.25º Bend	16+17.01	16+20.62	3.61	1,004.59	1,004.61	0.02	0.55%	0.03	0.12	0.01
22.5º Bend	16+20.62	16+23.62	3.00	1,004.61	1,004.62	0.01	0.33%	0.02	0.18	0.02
45º Bend	16+23.62	16+26.62	3.00	1,004.62	1,004.64	0.02	0.67%	0.02	0.35	0.03
P8	16+26.62	18+69.91	243.29	1,004.64	1,005.84	1.20	0.49%	1.81	-	
45º Bend	18+69.91	18+69.91	0.00	1,005.84	1,005.84	-	0.00%	0.00	0.35	0.03
P9	18+69.91	18+74.91	5.00	1,005.84	1,005.86	0.02	0.49%	0.04	-	
45º Bend	18+74.91	19+40.74	65.83	1,005.86	1,006.19	0.33	0.49%	0.49	0.35	0.03
P10	19+40.74	19+45.74	5.00	1,006.19	1,006.30	0.11	2.20%	0.04	-	
45º Bend	19+45.74	19+45.74	0.00	1,006.30	1,006.30	-	0.00%	0.00	0.35	0.03
P11	19+45.74	20+13.93	68.19	1,006.30	1,008.95	2.65	3.89%	0.51	-	
1º 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%	0.63	-	
P14	20+98.60	32+55.71	1,157.11	1,010.76	1,015.69	4.93	0.43%	8.61	-	
Combined system line length =			2,693.21	Static head loss =		37.83		20.03		0.21
Total head loss =						58.07				

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. #2025xxxxxx) traversing the 675 Kauffman Loop tract has been agreed upon 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 42 LUE's assigned to the commercial development portion of the property. The commercial tracts are zoned C-1and 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 638 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. 150 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 stubs 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+58.76	971.40	90°00'00" LT	Lot 4, Block B
MH A03	4+73.76	972.08	90°00'00" LT	Lot 3, Block B
MH A04	6+18.76	972.90	90°00'00" LT	Lot 2, Block B
MH A05	6+84.40	973.33	45°00'00" LT	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 $\mathbf{P_{cr} = 2E/[(1-\nu^2)(DR-1)^3]}$ where:

P_{cr} = the critical buckling pressure in psi,
E = the Modulus of Elasticity (400,000 lbs/in^2),
ν = 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 $\mathbf{W_c = HwB_c}$; where

W_c = the load generated by the weight of soil column above the pipe,
W = the unit weight of soil, 120 lb/ft^3
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^3 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 $\mathbf{T = P_y * D_0/2}$ where:

T = wall thrust (lbs/in)
P_y = vertical soil pressure on the pipe,
D_0 = pipe outside diameter (8.4"),
θ_c = compressive stress due to soil pressure = T/A (1,000 lb/in^2),
A = area of pipe wall (in^2/in),
W = unit weight of soil (120 lbs/ft^3)
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:

$H = 2*\theta_c*A/(D_0*w) = [(2*1{,}000*0.323)/(8.4*120)]*144$ in^2/ft^2 = ~ **92 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 $\mathbf{\varepsilon_h = PD/2tE}$ where:

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

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

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

DR = the pipe dimension ratio (26),
ΔY = vertical decrease in diameter (in),
D = mean pipe diameter (in),

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

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

$\varepsilon_f + \varepsilon_h = 0.0112 - 0.00045 = 0.0108$ in/in

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

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

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

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, γ_d, is 120 lb/ft^3 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

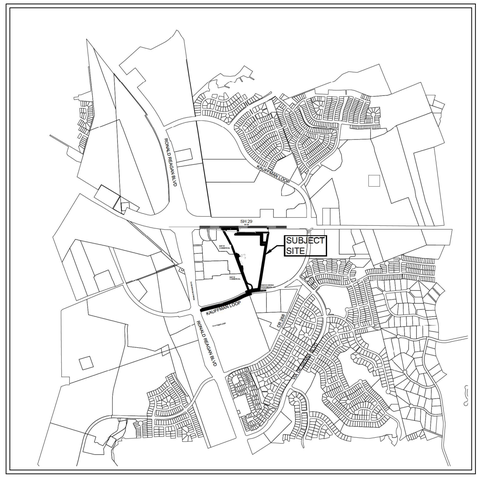
Per 30 TAC Chapter 217.53(d) provides separation distance requirements between water supply pipes and sewer pipes as follows:
(1) Collection system pipes must be installed in trenches separate from water supply trenches.
(2) Wherever possible, a collection system pipe must be located below a water supply 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.

675 KAUFFMAN LOOP
LEANDER, TEXAS 78642
WASTEWATER COLLECTION SYSTEM PLAN

PREPARED FOR:
675 KAUFMAN LP
7801 N. CAPITAL OF TEXAS HWY., SUITE 390
AUSTIN, TX 78731



VICINITY MAP
1" = 2,000'

LEGAL DESCRIPTION:

25.008ACRE TRACT OF LAND, LOCATED IN THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, WILLIAMSON COUNTY, TEXAS, SAID 25.008 ACRE TRACT, BEING ALL OF THAT CALLED 24.91 ACRE TRACT OF LAND, AND ALL OF THAT CALLED 0.12 ACRE TRACT OF LAND RECORDED IN DOCUMENT NO. 2021063860, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS.

DESIGN ENGINEER/AGENT:
TOM GROLL ENGINEERING, PC
THOMAS J. GROLL, P.E.
5208 PRYOR LANE
AUSTIN TX, 78734
(512) 848-5796
TBPE FIRM # F-9799

GEOTECHNICAL ENGINEER:
MLA GEOTECHNICAL
2804 LONGHORN BLVD.
AUSTIN, TX 78758
(512) 837-8899
TBPE FIRM #F-2684

SURVEYOR:
QUICK INC.
TRAVIS QUICKSALL, RPLS
831 N. MAIN STREET
SALADO, TEXAS 76571
(512) 915-4950
FIRM # 10194104

OWNER:
675 KAUFMAN LP
7801 N CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TEXAS 78731
(512) 901-9800

FILING DATE: JANUARY 28, 2025

ASSOCIATED CITY OF LEANDER PROJECTS:
CONCEPT PLAN/PRELIMINARY PLAT: CP-23-0029
PUBLIC IMPROVEMENT CONSTRUCTION PLAN: PICP-24-0176
FLOODPLAIN DEVELOPMENT PERMIT: FPD-24-0014
FINAL PLAT: FP-24-0916
ZONING CASE Z-22-0005
ZONING CASE Z-24-0120
PUBLIC WATERLINE EASEMENT: ESMT-24-0120
TxDOT DRIVEWAY & TURN LANE CONSTRUCTION PERMIT #24-45428
PROJECT #SD-24-0282

CONTROL/BEARING BASIS INFORMATION

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.

FLOODPLAIN INFORMATION:

ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP FOR WILLIAMSON COUNTY, TEXAS, MAP NUMBER 48491C0275E, EFFECTIVE DATE SEPTEMBER 26, 2008, THIS PROPERTY LIES IN ZONE "X", WHICH IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE OF THE 100 YEAR FLOOD PLAIN. THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP IS FOR USE IN ADMINISTERING THE NATIONAL FLOOD INSURANCE PROGRAM; IT DOES NOT NECESSARILY IDENTIFY ALL AREAS SUBJECT TO FLOODING, PARTICULARLY FROM LOCAL DRAINAGE SOURCES OF SMALL SIZE, OR ALL PLANIMETRIC FEATURES OUTSIDE SPECIAL FLOOD HAZARD AREAS. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR STRUCTURES LOCATED THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. THE FLOOD HAZARD AREA IS SUBJECT TO CHANGE AS DETAILED STUDIES OCCUR AND/OR WATERSHED OR CHANNEL CONDITIONS CHANGE. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

LAND USE SUMMARY:		ZONING
RIGHT-OF-WAY DEDICATION	0.092 ACRES	
BLOCK A, LOT 1 - COMMERCIAL	1.754 ACRES	PUD GC-2-A
BLOCK B, LOT 1 - COMMERCIAL	3.855 ACRES	PUD GC-2-A
BLOCK B, LOT 2 - COMMERCIAL	1.000 ACRES	PUD GC-2-A
BLOCK B, LOT 3 - COMMERCIAL	0.800 ACRES	PUD GC-2-A
BLOCK B, LOT 4 - COMMERCIAL	1.600 ACRES	PUD GC-2-A
BLOCK B, LOT 5 - DRAINAGE	1.063 ACRES	PUD GC-2-A
BLOCK B, LOT 6 - RESIDENTIAL	14.844 ACRES	PUD SFT-2-A
TOTAL	25.008 ACRES	

PROPOSED IMPERVIOUS COVER: 20,822 SF (SHARED ACCESS DRIVE)

FUTURE LAND USE: ACTIVITY CENTER

ASSOCIATED PROJECTS:
CONCEPT/PRELIMINARY PLAT CP-23-0029
PUBLIC IMPROVEMENT PLANS PICP-24-0176
FLOOD PLAIN DEVELOPMENT FDP-24-0014
FINAL PLAT FP-24-0196

WATER DEMAND:
MINIMUM PRESSURE: 75 PSI
MAXIMUM PRESSURE: 97 PSI
AVAILABLE FIRE FLOW: 3,236 GPM @ 20 PSI RESIDUAL
VALUES PROVIDED BY K. FRIESE & ASSOCIATES

PROJECT ENGINEER: THOMAS J. GROLL, P.E. #90976
AGENT: THOMAS J. GROLL, P.E. #90976
SURVEYOR: TRAVIS QUICKSALL, RPLS #6447
FILING DATE: 01/28/2025

REVISIONS/CORRECTIONS

#	SHEETS AFFECTED	DESCRIPTION	BY	DATE

Sheet List Table

Sheet Number	Sheet Title
01	COVER SHEET
02	GENERAL NOTES
03	WPAP & SCS NOTES
04	EROSION AND SEDIMENTATION CONTROL SHEET 1 OF 3
05	EROSION AND SEDIMENTATION CONTROL SHEET 2 OF 3
06	EROSION AND SEDIMENTATION CONTROL SHEET 3 OF 3
07	EROSION CONTOL DETAILS
08	DRAINAGE PLAN
09	PROPOSED OVERALL IMPROVEMENTS - PUBLIC & PRIVATE
10	WASTEWATER LINE 'A'
11	FORCE MAIN LINE 1+00 - 8+50
12	FORCE MAIN LINE 8+50 - 16+25
13	FORCE MAIN LINE 16+25 - 24+50
14	FORCE MAIN LINE 24+50 - END
15	LIFT STATION PLAN DETAILS 1
16	LIFT STATION PLAN DETAILS 3
17	LIFT STATION PLAN DETAILS 2
18	LIFT STATION PLAN
19	UTILITY DETAILS SHEET

TOM GROLL ENGINEERING
5208 PRYOR LANE, AUSTIN, TEXAS 78734 | (512) 848-5796 | TBPE FIRM # F-9799
WWW.TG-ENG.COM

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

NO.	DATE	DESCRIPTION	BY

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

COVER SHEET

Know what's below. Call before you dig.

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED
PROFESSIONAL ENGINEER
SURVEYED

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 01 of 19
Project No.

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 RESPONSIBILITILY 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 SATISIFACTION 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 INCLEMENT 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:

SIEVE SIZE	PERCENT RETAINED BY WEIGHT
1/2"	0
3/8"	0-2
#4	40-85
#10	95-100

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 CONTRACTORS' 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). ADDITIONALL 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 C900-DR14 MIN. 305 PSI PRESSURE RATING). WATER SERVICES (2" OR LESS) SHALL BE POLYETHYLENE TUBING (BLACK, 200PSI, AND SDR-(9)). 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 LEGISTATION 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 STANDARS (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 ¼" 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 TRANSPORATION 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 DRVIEWAY 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.

TOM GROLL ENGINEERING
5308 RIVER LANE, AUSTIN, TEXAS 78744 | 512.284.5799 | TBPE FIRM # 9799
WWW.TG-ENG.COM

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

No.	DATE	DESCRIPTION	BY

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

GENERAL NOTES

811 Know what's below. Call before you dig.

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
6/25/2025

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 02 of 19
Project No.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ORGANIZED SEWAGE COLLECTION SYSTEM (SCS)
GENERAL CONSTRUCTION NOTES

1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM MUST BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS AQUIFER RULES 30 TEXAS ADMINISTRATIVE CODE (TAC) §§213.5(C) AND 217.51 - 217.70 AND 30 TAC CHAPTER 217, SUBCHAPTER D, AND THE CITY OF GEORGETOWN STANDARD SPECIFICATIONS.

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

3. NO LATER THAN 48 HOURS PRIOR TO COMMENCING ANY REGULATED ACTIVITY, THE APPLICANT OR HIS AGENT MUST NOTIFY THE REGIONAL OFFICE, IN WRITING, OF THE DATE ON WHICH THE REGULATED ACTIVITY WILL BEGIN.

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

5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO CONSTRUCTION, MUST BE MAINTAINED DURING CONSTRUCTION, AND MUST BE REMOVED WHEN SUFFICIENT VEGETATION IS ESTABLISHED TO CONTROL THE EROSION AND SEDIMENTATION AND THE CONSTRUCTION AREA IS STABILIZED.

6. THE SEWER LINE TRENCH DETAILS SHOWING THE CROSS SECTION WITH THE DIMENSIONS, PIPE PLACEMENT, AND BACKFILL INSTRUCTIONS ARE INCLUDED ON PLAN SHEET 18 OF 18 OF THESE PLANS. ALL SEWER PIPES JOINTS MUST MEET THE REQUIREMENTS IN 30 TAC §§217.53(C) AND 217.65.

GRAVITY LINES MUST HAVE A SDR 35 OR LESS. PRESSURIZED SEWER SYSTEMS MUST HAVE PIPE WITH A MINIMUM WORKING PRESSURE RATING OF 150 PSI.

THE SPECIFICATION NUMBER FOR THE PIPE AND JOINTS IS ASTM D3034 & D2241.

THE PIPE MATERIAL, THE PRESSURE CLASSES, AND THE SDR DESIGNATIONS ARE SDR 26 PVC.

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

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

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

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

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

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

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

12. WHERE SEWERS LINES DEVIATE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE ALL CURVATURE OF SEWER PIPE MUST BE ACHIEVED BY THE FOLLOWING PROCEDURE WHICH IS RECOMMENDED BY THE PIPE MANUFACTURER: NA - NO CURVE SEWER ALIGNMENTS.

IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOINT MUST BE USED: NA - PIPE FLEXURE NOT PROPOSED.

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

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

IF NO STUB-OUT IS PRESENT AN ALTERNATE METHOD OF JOINING LATERALS IS SHOWN IN THE DETAIL ON PLAN SHEET __ OF __. NA - ALL STUB OUTS PROVIDED WHERE NECESSARY.

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

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

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

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

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

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

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

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

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

EQUATION C.3

$$T = \frac{0.085 \times D \times K}{Q}$$

WHERE:

T = TIME FOR PRESSURE TO DROP 1.0 POUND PER SQUARE INCH GAUGE IN SECONDS
K = 0.000419 X D X L, BUT NOT LESS TH AN 1.0
D = AVERAGE INSIDE PIPE DIAMETER IN INCHES
L = LENGTH OF LINE OF SAME SIZE BEING TESTED, IN FEET
Q = RATE OF LOSS, 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SURFACE

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

Pipe Diameter *(inches)*	Minimum Time *(seconds)*	Maximum Length for Minimum Time *(feet)*	Time for Longer Length *(seconds/foot)*
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	100	13.676
27	1530	88	17.309
30	1700	80	21.369
33	1870	72	25.856

(D) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 25% OF THE CALCULATED TESTING TIME.
(E) IF ANY PRESSURE LOSS OR LEAKAGE HAS OCCURRED DURING THE FIRST 25% OF A TESTING PERIOD, THEN THE TEST MUST CONTINUE FOR THE ENTIRE TEST DURATION AS OUTLINED ABOVE OR UNTIL FAILURE.
(F) WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT EACH JOINT INSTEAD OF FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.
(G) A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMETER GREATER THAN 33 INCHES MUST BE APPROVED BY THE EXECUTIVE DIRECTOR.

(2) INFILTRATION/EXFILTRATION TEST.

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

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

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

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

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

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

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

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

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

(III) ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD.

(B) MANDREL DESIGN.

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

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

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

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

(C) METHOD OPTIONS.
(I) AN ADJUSTABLE OR FLEXIBLE MANDREL IS PROHIBITED.

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

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

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

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

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

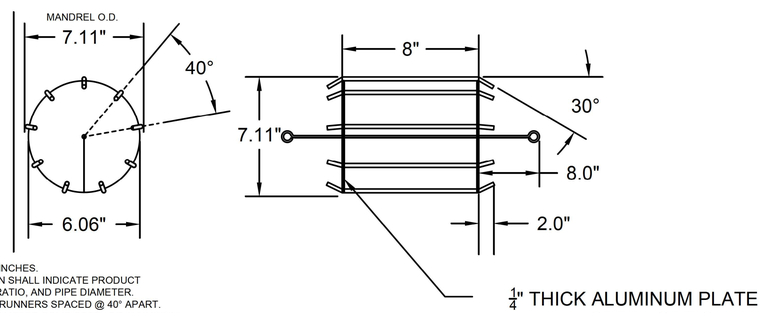
(5) GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%).

(6) IF A PIPE SECTION FAILS A DEFLECTION TEST, AN OWNER SHALL CORRECT THE PROBLEM AND CONDUCT A SECOND TEST AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.

17. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.
(A) ALL MANHOLES MUST PASS A LEAKAGE TEST.
(B) AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING) FOR LEAKAGE, SEPARATE AND INDEPENDENT OF THE COLLECTION SYSTEM PIPES, BY HYDROSTATIC EXFILTRATION TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE EXECUTIVE DIRECTOR.
(1) HYDROSTATIC TESTING.
(A) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHODS IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.
(B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL ALL WASTEWATER PIPES COMING INTO A MANHOLE WITH AN INTERNAL PIPE PLUG, FILL THE MANHOLE WITH WATER, AND MAINTAIN THE TEST FOR AT LEAST ONE HOUR.
(C) A TEST FOR CONCRETE MANHOLES MAY USE A 24-HOUR WETTING PERIOD BEFORE TESTING TO ALLOW SATURATION OF THE CONCRETE.
(2) VACUUM TESTING.
(A) TO PERFORM A VACUUM TEST, AN OWNER SHALL PLUG ALL LIFT HOLES AND EXTERIOR JOINTS WITH A NON-SHRINK GROUT AND PLUG ALL PIPES ENTERING A MANHOLE.
(B) NO GROUT MUST BE PLACED IN HORIZONTAL JOINTS BEFORE TESTING.
(C) STUB-OUTS, MANHOLE BOOTS, AND PIPE PLUGS MUST BE SECURED TO PREVENT MOVEMENT WHILE A VACUUM IS DRAWN.
(D) AN OWNER SHALL USE A MINIMUM 60 INCH/LB TORQUE WRENCH TO TIGHTEN THE EXTERNAL CLAMPS THAT SECURE A TEST COVER TO THE TOP OF A MANHOLE.
(E) A TEST HEAD MUST BE PLACED AT THE INSIDE OF THE TOP OF A CONE SECTION, AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
(F) THERE MUST BE A VACUUM OF 10 INCHES OF MERCURY INSIDE A MANHOLE TO PERFORM A VALID TEST.
(G) A TEST DOES NOT BEGIN UNTIL AFTER THE VACUUM PUMP IS OFF.
(H) A MANHOLE PASSES THE TEST IF AFTER 2.0 MINUTES AND WITH ALL VALVES CLOSED, THE VACUUM IS AT LEAST 9.0 INCHES OF MERCURY.

18. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.

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



NOTES:
- ALL DIMENSIONS ARE IN INCHES.
- STAMPED IDENTIFICATION SHALL INDICATE PRODUCT STANDARD, DIMENSION RATIO, AND PIPE DIAMETER.
- MANDREL SHALL HAVE 9 RUNNERS SPACED @ 40° APART.
- RUNNERS SHALL BE ½" DIAMETER SOLID STEEL OR ALUMINUM ROD.
- CENTER PULL ROD SHALL BY ½" DIAMETER OR LARGER SOLID STEEL OR ALUMINUM ROD.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
WATER POLLUTION ABATEMENT PLAN GENERAL CONSTRUCTION NOTES

1. WRITTEN CONSTRUCTION NOTIFICATION MUST BE GIVEN TO THE APPROPRIATE TCEQ REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY. INFORMATION MUST INCLUDE THE DATE ON WHICH THE REGULATED ACTIVITY WILL COMMENCE, THE NAME OF THE APPROVED PLAN FOR THE REGULATED ACTIVITY, AND THE NAME OF THE PRIME CONTRACTOR AND THE NAME AND TELEPHONE NUMBER OF THE CONTACT PERSON.

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

3. IF ANY SENSITIVE FEATURE IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.

4. NO TEMPORARY ABOVE GROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEM IS INSTALLED WITHIN 150 FEET OF A DOMESTIC, INDUSTRIAL, IRRIGATION, OR PUBLIC WATER SUPPLY WELL, OR OTHER SENSITIVE FEATURE.

5. PRIOR TO COMMENCEMENT OF CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS' SPECIFICATIONS AND GOOD ENGINEERING PRACTICES. CONTROLS SPECIFIED IN THE TEMPORARY STORM WATER SECTION OF THE APPROVED EDWARDS AQUIFER PROTECTION PLAN ARE REQUIRED DURING CONSTRUCTION. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED.

6. 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).

7. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS NOT LATER THAN WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50%. A PERMANENT STAKE MUST BE PROVIDED THAT CAN INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME.

8. 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).

9. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.

10. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARY OR PERMANENTLY CEASE 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 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.

11. THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST: THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR; THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.

12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

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

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

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

Know what's below. Call before you dig.

TOM GROLL ENGINEERING
5308 RIVER LANE, AUSTIN, TEXAS 78744 | 512.284.7794 | TBPE FIRM # F7919
WWW.TG-ENG.COM

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

NO.	DESCRIPTION	DATE

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

WPAP & SCS NOTES

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
6/25/25

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 03 of 19
Project No.

SH 29 DRIVEWAY PERMITTED AND CONSTRUCTED
UNDER TxDot #24-45428
NOT TO BE USED AS A CONSTRUCTION ENTRANCE

SH 29

AREA NOT TO BE DISTURBED

AREA NOT TO BE DISTURBED

AREA NOT TO BE DISTURBED

AREA NOT TO BE DISTURBED

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.

ALBION DRIVE

VIANA DRIVE

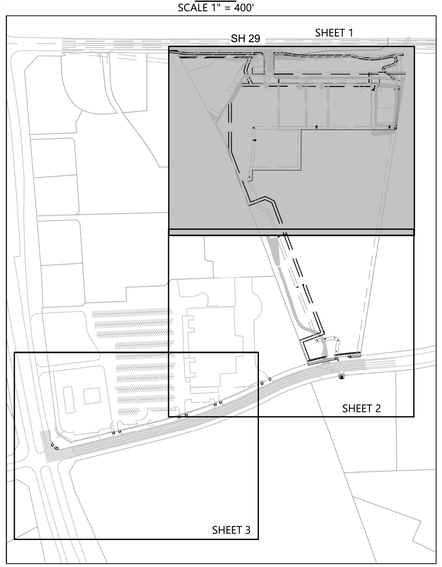
PURPLE IVY WAY

VIANA DRIVE

GRAVILLEA WAY

MATCH LINE SHEET 2

KEYMAP
SCALE 1" = 400'



N

0 50' 100'
SCALE: 1" = 50'

LEGEND

500	EXISTING CONTOUR
500	PROPOSED CONTOUR
	PROPERTY BOUNDARY
LOC	LIMITS OF CONSTRUCTION
SF	SILT FENCE
LOC/SF	LIMITS OF CONSTRUCTION/ SILT FENCE
TP	TREE PROTECTION
OCF	ORANGE CONSTRUCTION FENCE
	TEMPORARY DIVERSION BERM
	INLET PROTECTION
	STABILIZED CONSTRUCTION ENTRANCE
	CONCRETE WASHOUT AREA
	STAGING AND SPOILS AREA

NOTES:

1. CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY & HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. ALL STORM WATER LEAVING THE SITE DURING CONSTRUCTION ACTIVITIES MUST PASS THROUGH THE SILT FENCE AND ROCK BERMS.
3. REFERENCE "GENERAL NOTES" SHEETS FOR EROSION CONTROL NOTES AND SEQUENCE OF CONSTRUCTION.
4. THE CITY ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
5. THE CONTRACTOR SHALL CLEAN UP SPOILS THAT MIGRATE INTO EXISTING R.O.W. A MINIMUM OF ONCE DAILY.
6. SILT FENCE AND ROCK BERMS TO BE REMOVED ONLY DURING ACTIVE CONSTRUCTION IN THIS AREA. SILT FENCE AND ROCK BERMS MUST BE REINSTALLED AT THE END OF EACH DAY.
7. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEED TO BE STABILIZED BY REVEGETATION, TARP OR REVEGETATION MATTING.
8. STABILIZED CONSTRUCTION ENTRANCES SHALL BE REQUIRED AT POINT OF ACCESS FROM PUBLIC R.O.W.
9. INLET PROTECTION IS REQUIRED AFTER INLET CONSTRUCTION.
10. ALL ROCK BERMS SHALL BE REMOVED BY THE CONTRACTOR.

Know what's below.
Call before you dig.

TOM GROLL ENGINEERING
5308 PAYTON LANE, AUSTIN, TEXAS 78723 | (512) 848-9796 | TBPE FIRM # F-9799

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

NO.	DESCRIPTION	DATE
		BY

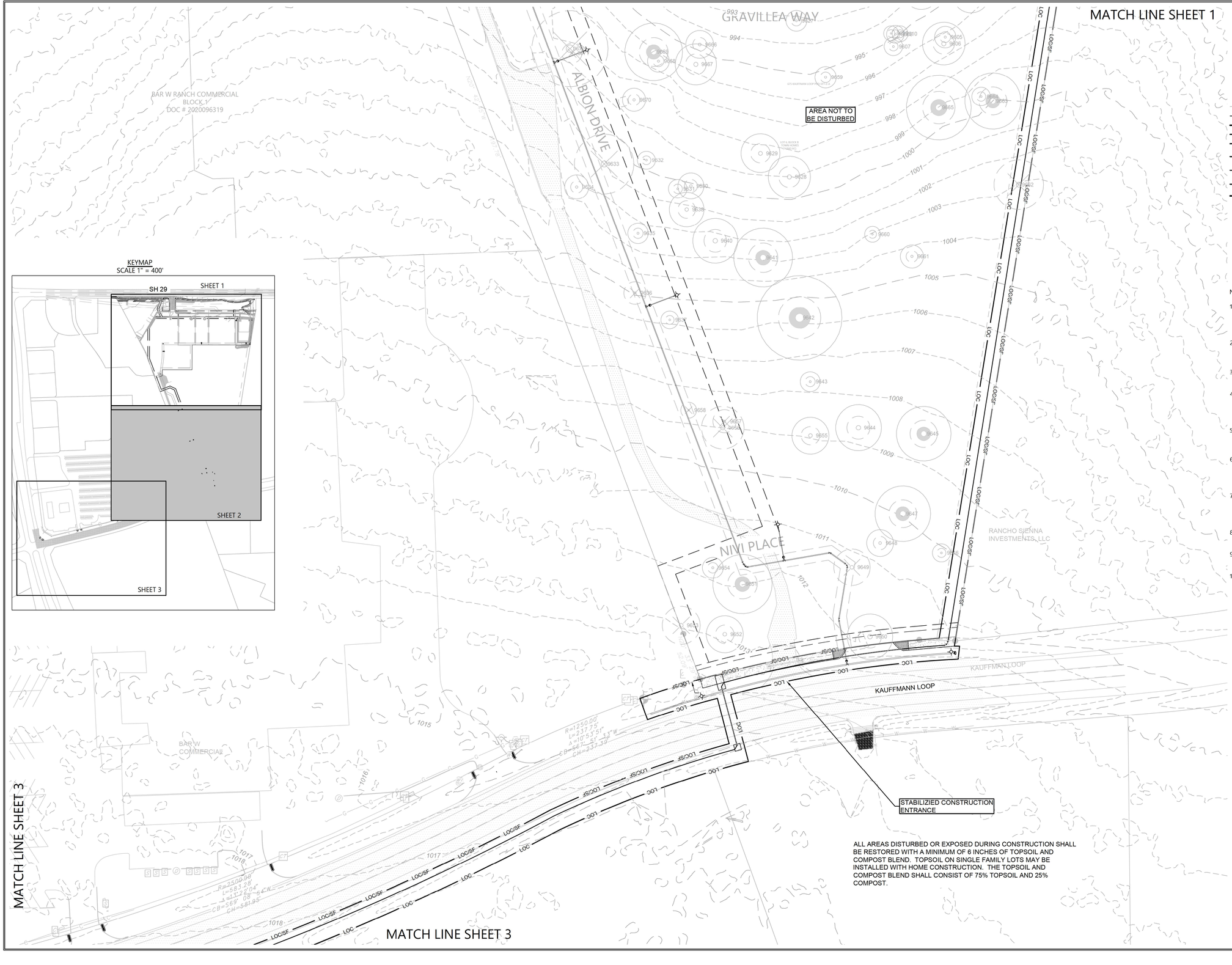
WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

EROSION AND SEDIMENTATION CONTROL
SHEET 1 OF 3

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 04 of 19
Project No.

MATCH LINE SHEET 1



N

0 50' 100'

SCALE: 1" = 50'

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPERTY BOUNDARY
- LIMITS OF CONSTRUCTION
- SILT FENCE
- LIMITS OF CONSTRUCTION/ SILT FENCE
- TREE PROTECTION
- ORANGE CONSTRUCTION FENCE
- TEMPORARY DIVERSION BERM
- INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT AREA
- STAGING AND SPOILS AREA

NOTES:

1. CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY & HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. ALL STORM WATER LEAVING THE SITE DURING CONSTRUCTION ACTIVITIES MUST PASS THROUGH THE SILT FENCE AND ROCK BERMS.
3. REFERENCE "GENERAL NOTES" SHEETS FOR EROSION CONTROL NOTES AND SEQUENCE OF CONSTRUCTION.
4. THE CITY ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
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8. STABILIZED CONSTRUCTION ENTRANCES SHALL BE REQUIRED AT POINT OF ACCESS FROM PUBLIC R.O.W.
9. INLET PROTECTION IS REQUIRED AFTER INLET CONSTRUCTION.
10. ALL ROCK BERMS SHALL BE REMOVED BY THE CONTRACTOR.

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.

811 Know what's below. Call before you dig.

TOM GROLL ENGINEERING
5308 PAYTON LANE, AUSTIN, TEXAS 78723 (512) 484-9796 TBPE FIRM # 17979

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

NO.	DESCRIPTION	DATE	BY

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

EROSION AND SEDIMENTATION CONTROL
SHEET 2 OF 3

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 05 of 19
Project No.

MATCH LINE SHEET 2

0 50' 100'
SCALE: 1" = 50'

LEGEND

- EXISTING CONTOUR (500)
- PROPOSED CONTOUR (500)
- PROPERTY BOUNDARY
- LIMITS OF CONSTRUCTION (LOC)
- SILT FENCE (SF)
- LIMITS OF CONSTRUCTION/ SILT FENCE (LOC/SF)
- TREE PROTECTION (TP)
- ORANGE CONSTRUCTION FENCE (OCF)
- TEMPORARY DIVERSION BERM
- INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT AREA
- STAGING AND SPOILS AREA

NOTES:

1. CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY & HORIZONTALLY PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. ALL STORM WATER LEAVING THE SITE DURING CONSTRUCTION ACTIVITIES MUST PASS THROUGH THE SILT FENCE AND ROCK BERMS.
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4. THE CITY ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
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KEYMAP
SCALE 1" = 400'

Know what's below. Call before you dig.

TOM GROLL ENGINEERING
5308 PAYTON LANE, AUSTIN, TEXAS 78723 (512) 848-9796 TBPE FIRM # 13999
WWW.TG-ENG.COM

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

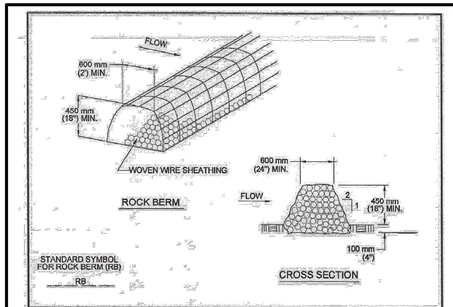
NO.	DATE	DESCRIPTION	BY

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

EROSION AND SEDIMENTATION CONTROL
SHEET 3 OF 3

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
GLOBAL POSITIONING SYSTEMS

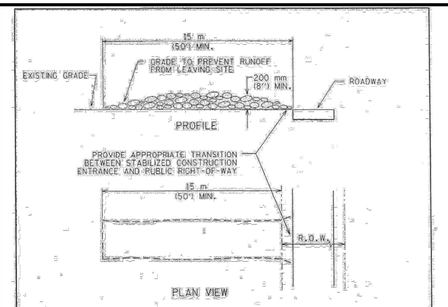
Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 06 of 19
Project No.



NOTES:

1. USE ONLY OPEN GRADED ROCK 75 to 125 mm (3 to 5") DIAMETER FOR ALL CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 25 mm (1") OPENING AND MINIMUM WIRE DIAMETER OF 12.9 mm (20 GAUGE).
3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE/WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION, AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. IF SEDIMENT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 150 mm (6"), WHICHEVER IS LESS. THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED,THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

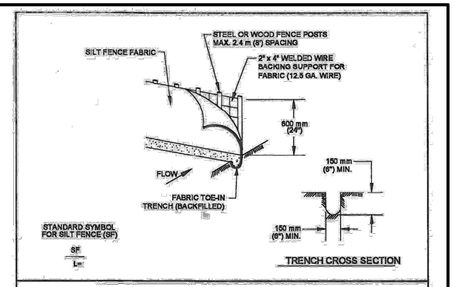
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	ROCK BERM	
8/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S-1



NOTES:

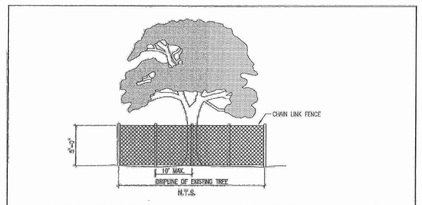
1. STONE SIZE: 75-125 mm (3"-5") OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8").
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLES WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	STABILIZED CONSTRUCTION ENTRANCE	
5/23/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1



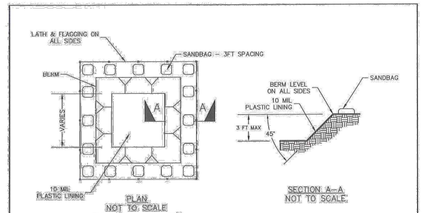
1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 inches) DEPTH, USE STEEL POSTS.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 inches) DEEP AND 150 mm (6 inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE , WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	SILT FENCE	
9/1/2011 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1



1. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING).
2. FENCES SHALL COMPLETELY SURROUND THE TREE, OR CLUSTERS OF TREES, SHALL BE LOCATED AT THE OUTERMOST LIMIT OF THE TREE BRANCHES CANOPIES, AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
   A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MATERIALS.
   B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN SIX INCHES (6") CUT OR FILL, OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY.
   C. WOUNDS TO EXPOSED ROOTS, TRUNKS OR LIMBS BY MECHANICAL EQUIPMENT.
   D. OTHER ACTIVITIES DETRIMENTAL TO TREES, SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING AND FIRE.
3. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIPLINES MAY BE PERMITTED IN THE FOLLOWING CASES:
   A. WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.
   B. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN SIX FEET (6'-0") TO BUILDING.
4. CRITICAL ROOT ZONE REQUIREMENTS
   A. NO CONSTRUCTION OR DISTURBANCE SHALL OCCUR WITHIN AN AREA THAT CONSTITUTES MORE THAN FIFTY (50%) OF THE TOTAL CRITICAL ROOT ZONE AND ONE HALF THE RADIAL DISTANCE OF THE CRITICAL ROOT ZONE FOR EACH TREE BEING PRESERVED INCLUDING SIGNIFICANT TREES, HERITAGE TREES, AND ANY OTHER TREES FOR WHICH PRESERVATION IS TO BE CREDITED. THE REMAINING CRITICAL ROOT ZONE SHALL CONSIST OF AT LEAST ONE HUNDRED (100) SQUARE FEET.
   B. THIS DEFINED AREA SHALL BE FLAGGED AND ENCIRCLED WITH PROTECTIVE FENCING DURING CONSTRUCTION. THE PLANNING DIRECTOR MAY APPROVE CONSERVATION EASING TO THE TRUNK THAN ONE HALF (½) THE RADIAL DISTANCE, DEPENDING ON THE SIZE, SPARSENESS OR SPECIES OF THE TREE, AND TYPE OF DISTURBANCE PROPOSED, AND UNEVENNESS OF THE SITUATION.
   C. CUT OR FILL THAT IS GREATER THAN FOUR (4) INCHES IN DEPTH AND THE SEVERING OF MAJOR ROOTS SHALL BE CONSIDERED DISTURBANCE FOR THE PURPOSES OF THIS ORDINANCE.
   D. WITHIN THE PROTECTED CRITICAL ROOT ZONE, ONLY PLANTERS, DECKING, OR SIMILAR CONSTRUCTION, MAY BE APPROVED AND SHALL NOT AFFECT THE BRANCHING OF THE TREE.
   E. IF PROPOSED OR ACTUAL PROTECTION OF THE CRITICAL ROOT ZONE OF A TREE DOES NOT MEET THE REQUIREMENTS OF THIS SECTION, THEN THE TREE SHALL BE CONSIDERED REMOVED AND SHALL REQUIRE MITIGATION IN ACCORDANCE WITH THIS ORDINANCE.

City Of Leander, Texas
309-1 TREE PROTECTION



City Of Leander, Texas
309-1 CONCRETE WASHOUT

EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE PROTECTIVE FENCING PRIOR TO ANY WORK (CLEARING, GRUBBING OR EXCAVATION). CONTACT STORMWATER INSPECTOR FOR ON SITE INSPECTION PRIOR TO BEGINNING CONSTRUCTION.
2. 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 PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.
3. THE TEMPORARY SPOILS DISPOSAL SITE IS TO BE SHOWN IN THE EROSION CONTROL MAP.
4. 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.
5. 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.
6. 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.
7. 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.
8. TEMPORARY STOP SIGNS SHOULD BE INSTALLED AT ALL CONSTRUCTION ENTRANCES WHERE A STOP CONDITION DOES NOT ALREADY EXIST.
9. IN THE EVENT OF INCLEMENT WEATHER THAT MAY RESULT IN A FLOODING SITUATION, THE CONTRACTOR SHALL REMOVE INLET PROTETION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.

UPON COMPLETION OF CONSTRUCTION, SILT FENCE SHALL BE INSTALLED AND MAINTAINED BEHIND CURB UNTIL SUPERSEDED BY BUILDER'S EROSION CONTROL MEASURES.

811 Know what's below. Call before you dig.

TOM GROLL ENGINEERING
5308 RYDER LANE, AUSTIN, TEXAS 78734 - (512) 845-5796 - TBPE FIRM # F-9919
WWW.TG-ENG.COM

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

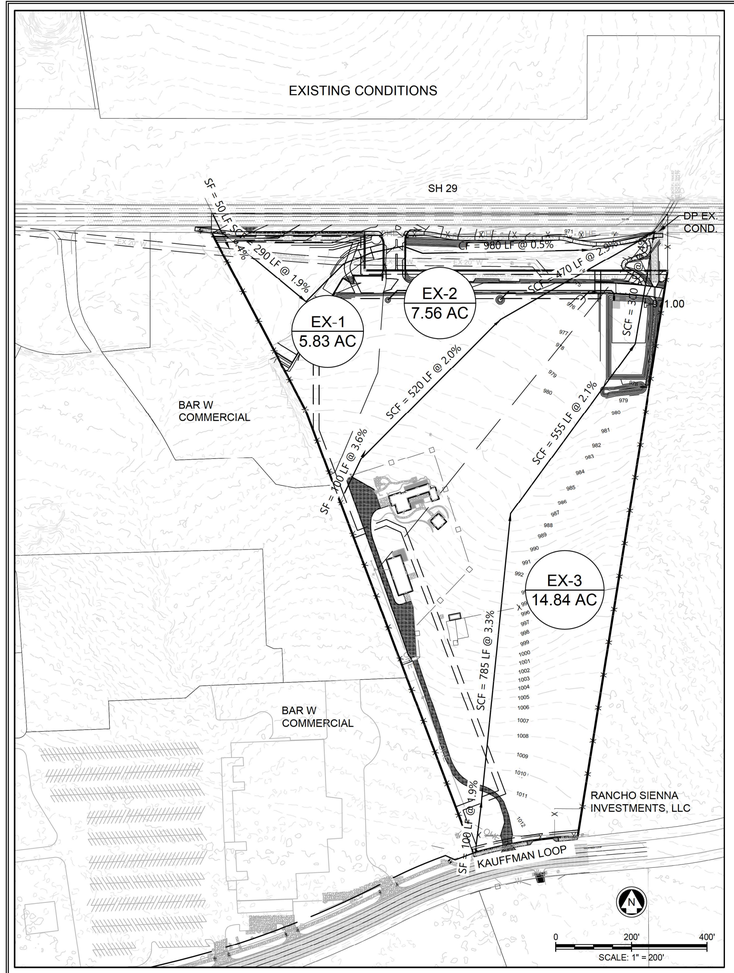
NO.	DESCRIPTION	DATE	BY

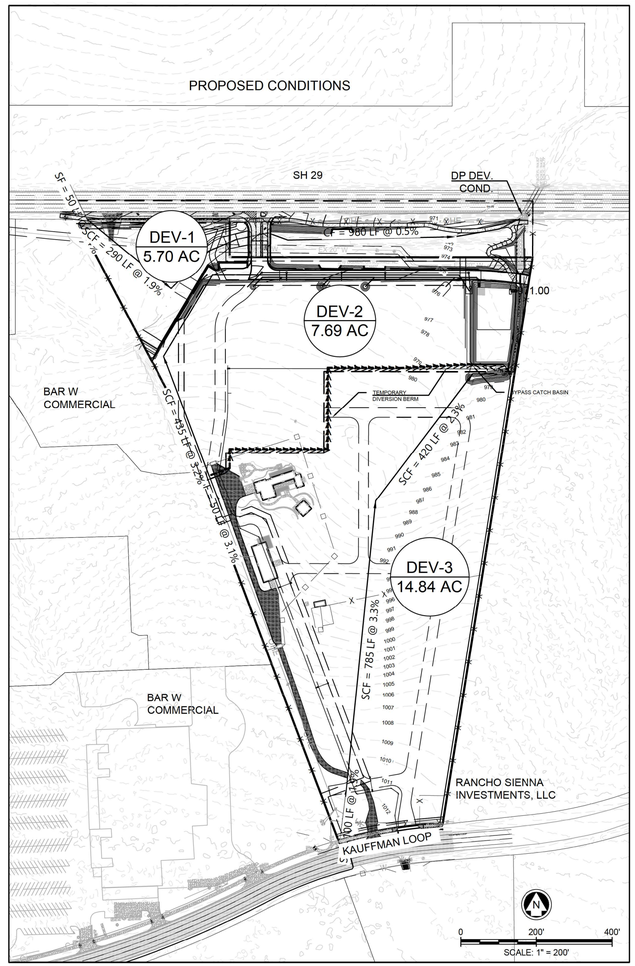
WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

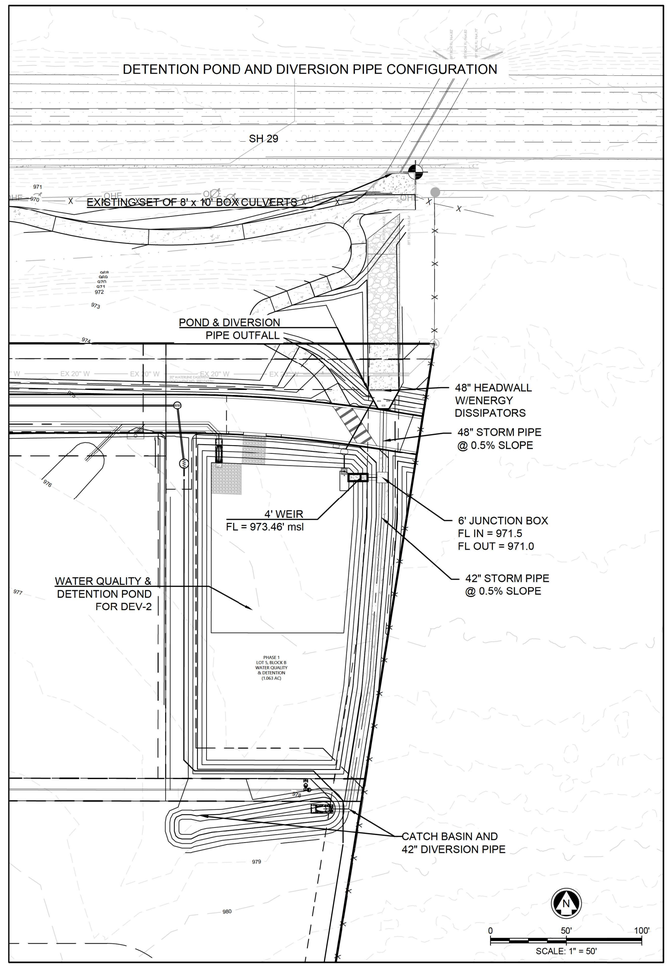
EROSION CONTOL DETAILS

STATE OF TEXAS — THOMAS J. GROLL — 90976 — LICENSED PROFESSIONAL ENGINEER — 6/25/25

Date:	6/25/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	07 of 19
Project No.	







Event	24 hr depth (in)
2-yr	3.92
10-yr	6.36
25-yr	8.16
100-yr	11.50

DESCRIPTION	
Hydrologic soil group	D
Brush/weed/grass - fair condition	
CN =	77

SCS method run-off calculation summary	DA			DA		
Basin Data	Ex-1	Ex-2	Ex-3	Dev-1	Dev-2	Dev-3
Drainage Area (ac)	5.83	7.56	14.84	5.70	7.69	14.84
Drainage Area (mi^2)	0.009102	0.011816	0.023192	0.008904	0.012012	0.023194
Curve number	77	77	77	77	77	77
Impervious Cover (%)	19.7%	12.1%	0.0%	20.1%	74.1%	0.0%
Tc (TR55) (min)	9.2	16.8	23.0	9.2	11.3	20.9
T_{lag} (min)	5.5	10.1	13.8	5.5	6.8	12.5
Sheet flow length (ft)	50	100	100	50	50	100
Manning's n	0.24	0.24	0.24	0.24	0.24	0.24
Slope (%)	6.4	3.6	1.9	6.4	3.1	1.9
2-yr 24 Hr rainfall (in)	3.92	3.92	3.92	3.92	3.92	3.92
Sheet flow Tc (min)	4.7	10.2	13.2	4.7	6.2	13.2
Shallow concentrated flow length (ft)	290	990	1,640	290	685	1,205
Slope (%)	1.90	2.43	2.96	1.90	2.21	3.02
Description	Unpaved	Unpaved	Unpaved	Unpaved	Paved	Unpaved
Shallow concentrated flow Tc (min)	2.2	6.6	9.8	2.2	3.8	7.2
Channel/Pipe Flow length (ft)	980	-	-	980.0	650.0	350.0
Slope (%)	0.5	-	-	1.1	0.5	0.5
Velocity (ft/sec)	7.0	0.0	0.0	7.0	8.1	9.9
Channel/Pipe Flow Tc (min)	2.3	-		2.3	1.3	0.6
2-yr storm (cfs)	16.8	16.6	25.3	16.5	29.7	23.6
10-yr storm (cfs)	31.1	31.9	51.6	30.5	47.1	54.0
25-yr storm (cfs)	41.2	42.7	70.3	40.3	59.0	73.6
100-yr storm (cfs)	58.8	61.3	102.4	57.6	79.8	107.4

Drainage area	(ft^2)	(ac)	(mi^2)	RCN	IC (%)	T_c	T_{lag}	2-yr	10-yr	25-yr	100-yr
EX-1	253,739	5.83	0.009102	77	19.7%	9.2	5.5	16.8	31.1	41.2	58.8
EX-2	329,412	7.56	0.011816	77	12.1%	16.8	10.1	16.6	31.9	42.7	61.3
EX-3	646,563	14.84	0.023192	77	0.0%	23.0	13.8	25.3	51.6	70.3	102.4
DP EX	1,229,713	28.23	0.044110		7.3%			52.4	103.4	139.5	201.7
DEV-1	248,226	5.70	0.008904	77	20.1%	9.2	5.5	16.5	30.5	40.3	57.6
DEV-2	334,864	7.69	0.012012	77	74.1%	11.3	6.8	29.7	47.1	59.0	79.8
DEV-3	646,623	14.84	0.023194	77	0.0%	20.9	12.5	23.6	54.0	73.6	107.4
COMBINED DETAINED	1,229,713	28.23	0.044110		24.2%			51.9	99.7	133.7	193.1
							A	(0.6)	(3.8)	(5.9)	(8.7)
Detention Pond WSEL (ft msl)								974.64	975.16	975.48	976.00

Elevation	Area		Total Volume		Detention Volume			Weir	Event	
			Incremental	Cumulative	Incremental	Cumulative		Discharge		
	ft^2	AC	ft^3	ft^3	ft^3	ft^3	Ac-ft	ft^3/s		
971.00	38	0.00		-						
972.00	10,405	0.24	3,914	3,914						WATER QUALITY
973.00	18,874	0.43	14,839	18,753			-	0.6		
973.46	19,687	0.45	8,866	27,618						
974.00	20,659	0.47	10,889	38,507	10,889	10,889	0.2500	4.8		
974.64	21,785	0.50	12,979	51,486	12,979	23,868	0.5479	15.4	2-YR	
975.00	22,513	0.52	8,594	60,080	8,594	32,462	0.7452	22.9		
975.16	22,703	0.52	2,267	62,347	2,267	34,728	0.7973	26.5	10-YR	DETENTION
975.48	23,280	0.53	6,961	69,308	6,961	41,689	0.9571	34.3	25-YR	
976.00	24,437	0.56	14,235	83,542	14,235	55,924	1.2838	48.6	100-YR	
977.00	26,430	0.61	25,421	108,963	25,421	81,345	1.8674	79.9		

DRAINAGE NOTES:

1. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.

Know what's below. Call before you dig.

TOM GROLL ENGINEERING
3328 PAYTON LANE, AUSTIN, TEXAS 78731 (512) 426-9779 | TBPE FIRM # F-9779
TOMGROLL@TG-ENG.COM

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

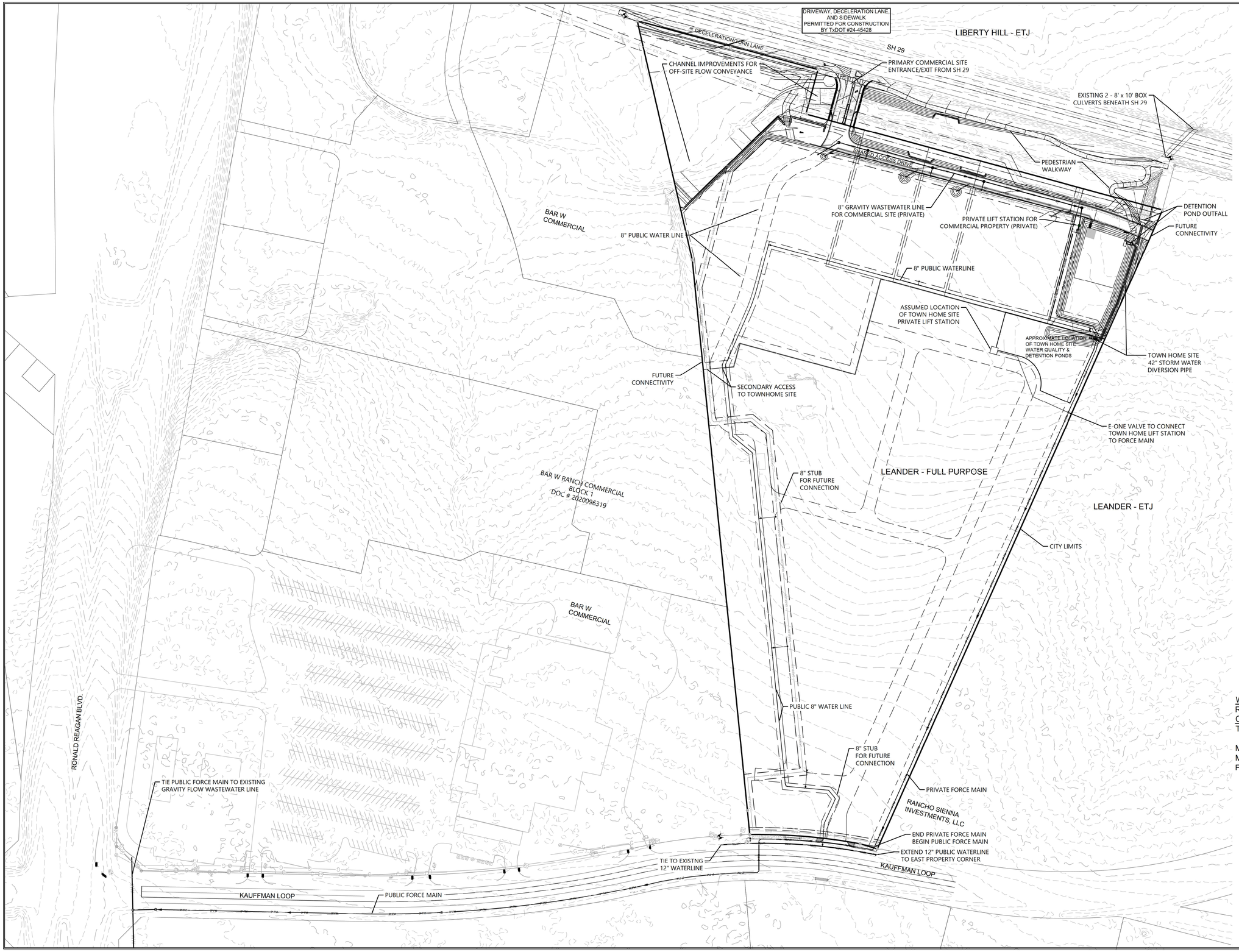
No.	DESCRIPTION	DATE

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

DRAINAGE PLAN

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
6/25/25

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 08 of 19
Project No.



WATER DEMAND DATA	
RESIDENTIAL LUE's	108
COMMERCIAL LUE's	42
TOTAL LUE"s	150

MINIMUM PRESSURE: 75 PSI
MAXIMUM PRESSURE: 97 PSI
FIRE FLOW:3,236 GPM @ 20 PSI RESIDUAL

Know what's below. Call before you dig.

TOM GROLL ENGINEERING
3308 PRYOR LANE, AUSTIN, TEXAS 78739 | (512) 736-3799 | TBPE FIRM # F-3799
WWW.TG-ENG.COM

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

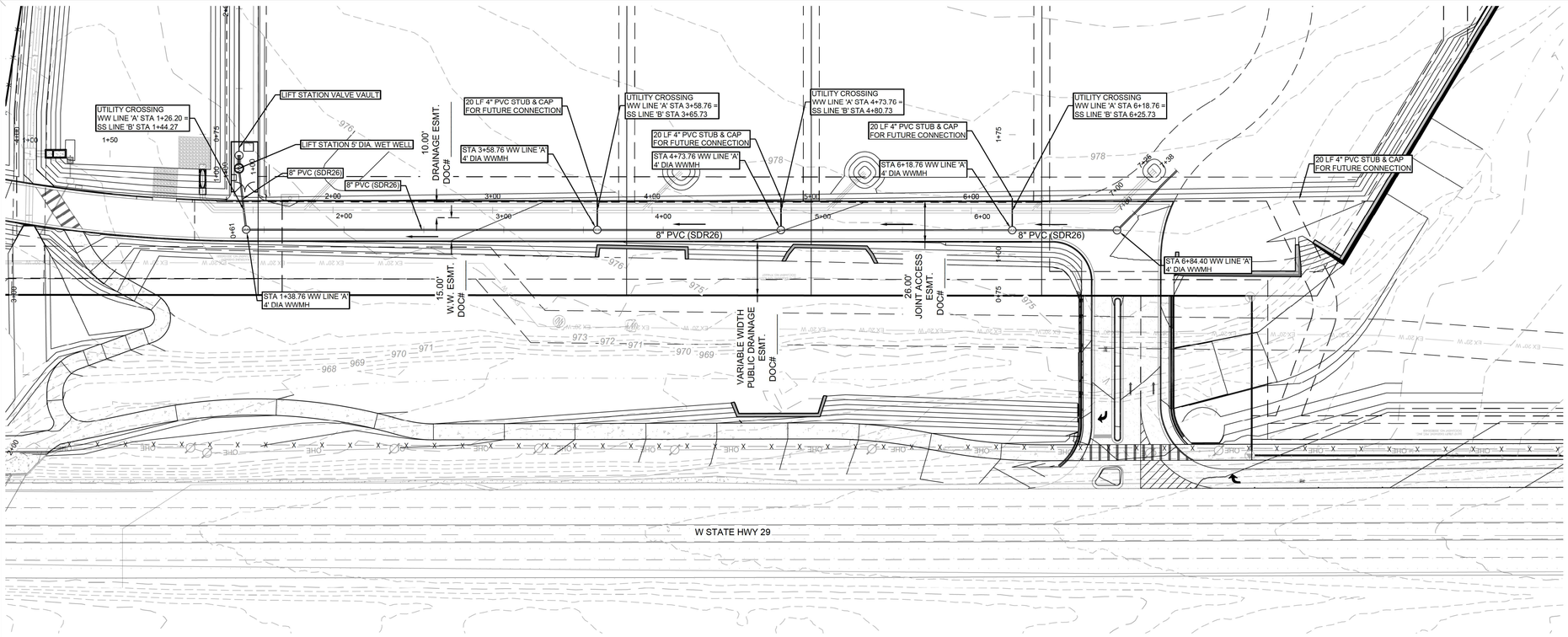
NO.	DATE	DESCRIPTION

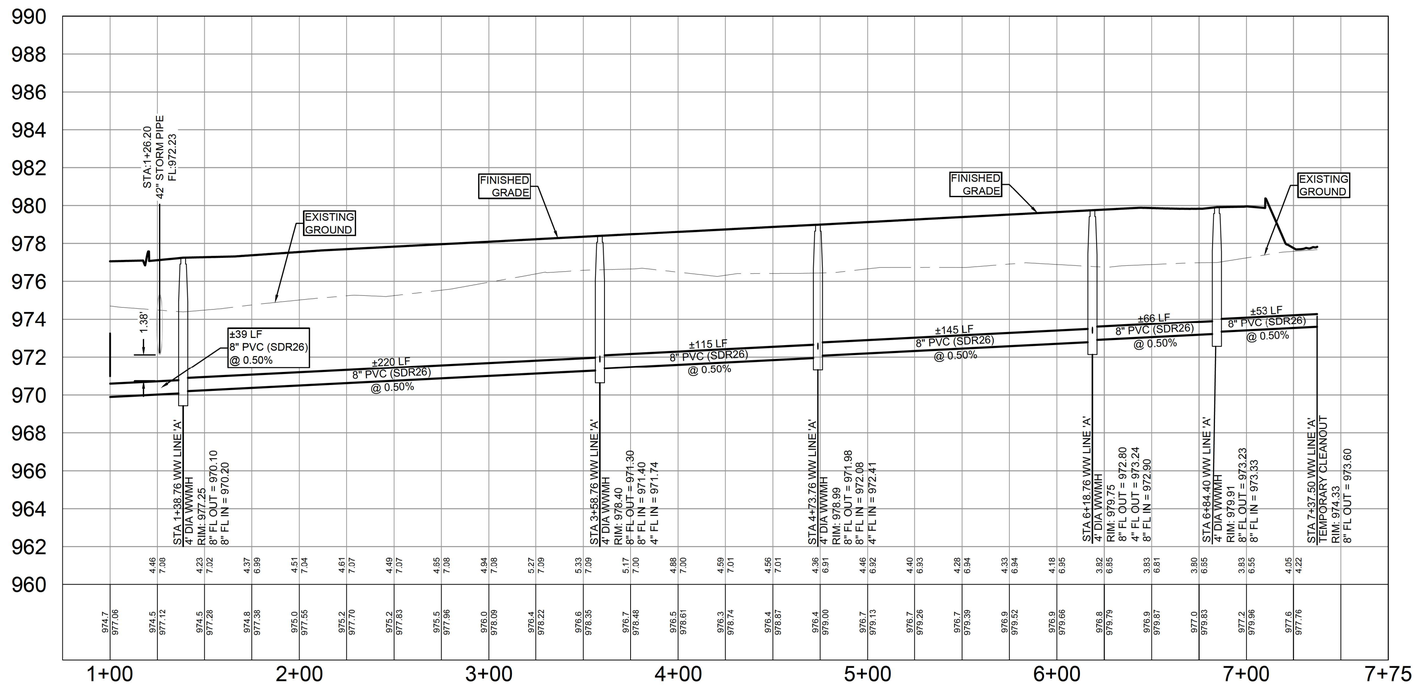
WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

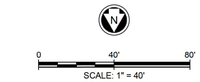
PROPOSED OVERALL IMPROVEMENTS - PUBLIC & PRIVATE

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
6/25/25

Date:	6/25/2025
Check by:	TJG
Drawn By:	MBS/MRC
Sheet No.	09 of 34
Project No.	





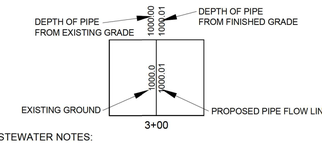


LEGEND

- EXISTING CONTOUR
- 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:

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7. ALL WASTEWATER MANHOLES TO BE COATED (SPL WW-511).
8. REFER TO PROFILE SHEETS FOR THE LOCATION OF DEEP SERVICES AND 5% SERVICES.

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 =	42		12-hr flow	
Average Dry Weather Flow =	8,400	gpd	11.67	gpm
Peak Dry Weather Flow =	15,255	gpd	21.19	gpm
Site Area =	10.16	ac		
Inflow & Infiltration =	7,620	gpd	5.29	gpm
Peak Wet Weather Flow =	22,875	gpd	26.48	gpm

Know what's below. Call before you dig.

TOM GROLL ENGINEERING
1309 PAYTON LANE, AUSTIN, TEXAS 78733 • (512) 636-9799 • TBPE FIRM # F-9799

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

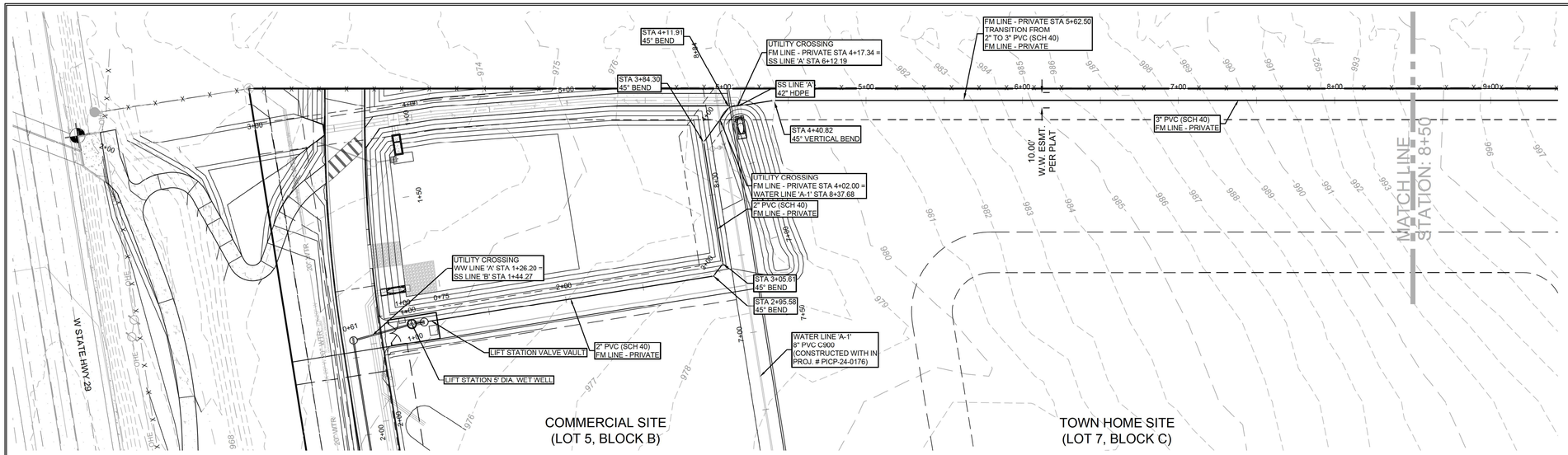
NO.	DESCRIPTION	DATE

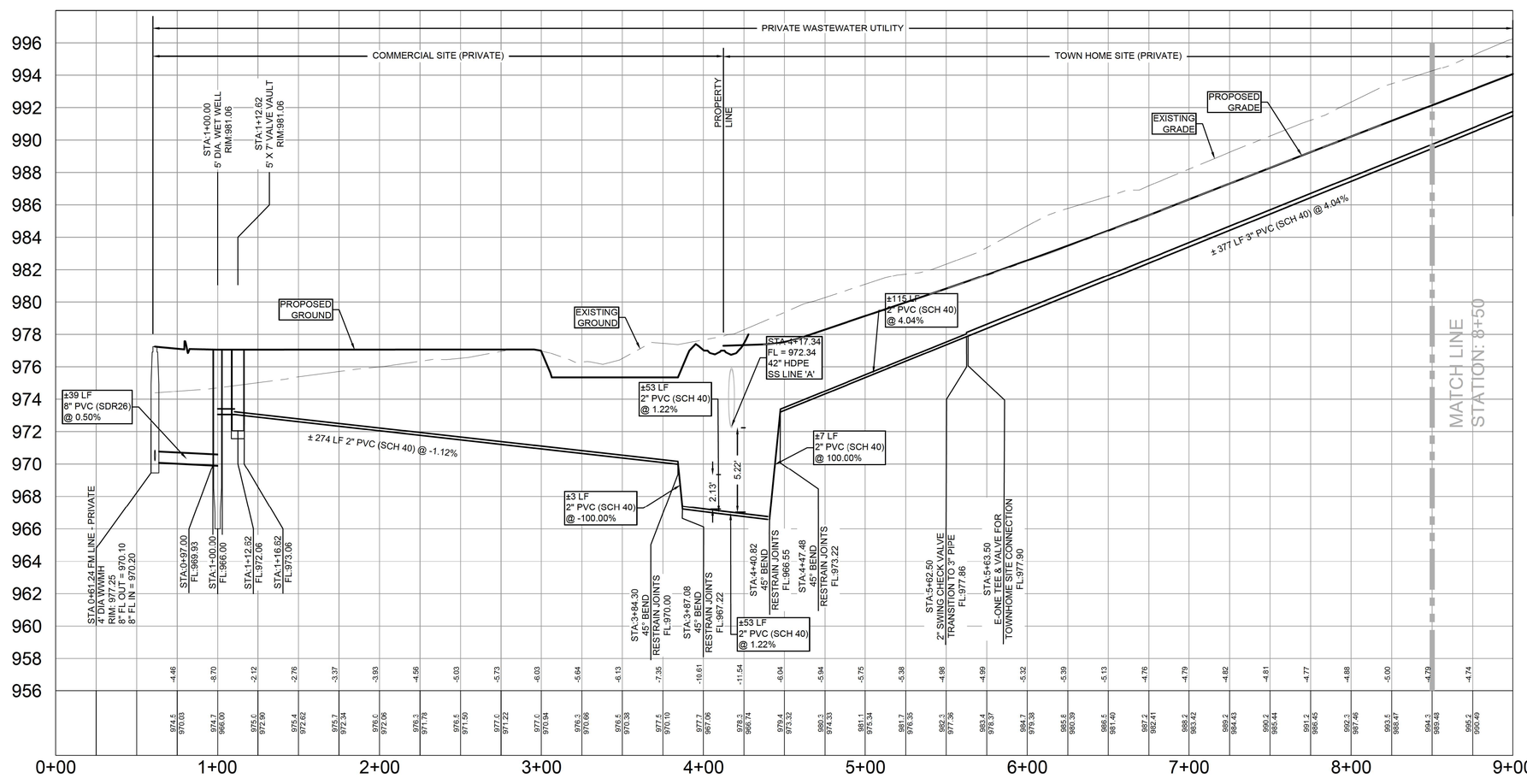
WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

WASTEWATER LINE 'A'

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED
PROFESSIONAL ENGINEER

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 10 of 19
Project No.



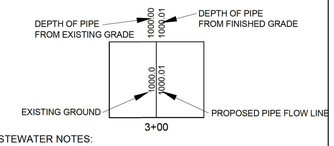


LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE

PROFILE LEGEND
- PROPOSED FINISHED GRADE
- EXISTING GRADE (CENTER)

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



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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 =	42	12-hr flow	
Average Dry Weather Flow =	8,400	gpd	11.67 gpm
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Site Area =	10.16	ac	
Inflow & Infiltration =	7,620	gpd	5.29 gpm
Peak Wet Weather Flow =	22,875	gpd	26.48 gpm

Wastewater Determination Factors - Residential		
Average Dry Weather Flow =	71.4	gal/person/day x population/1440
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675 Kauffman Loop Wastewater Generation Calculations			
Total L.U.E.'s =	108	24-hr flow	
Average Dry Weather Flow =	21,600	gpd	15.00 gpm
Peak Dry Weather Flow =	33,651	gpd	23.37 gpm
Site Area =	14.84	ac	
Inflow & Infiltration =	11,130	gpd	7.73 gpm
Peak Wet Weather Flow =	44,781	gpd	31.10 gpm

Wastewater Determination Factors - Combined		
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 =	150	24-hr flow	
Average Dry Weather Flow =	30,000	gpd	26.67 gpm
Peak Dry Weather Flow =	44,553	gpd	44.56 gpm
Site Area =	25.00	ac	
Inflow & Infiltration =	18,750	gpd	13.02 gpm
Peak Wet Weather Flow =	63,303	gpd	57.58 gpm

811 Know what's below. Call before you dig.

TOM GROLL ENGINEERING
1309 PAYTON LANE, AUSTIN, TEXAS 78733 | (512) 348-9796 | TBPE FIRM # F-9999

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

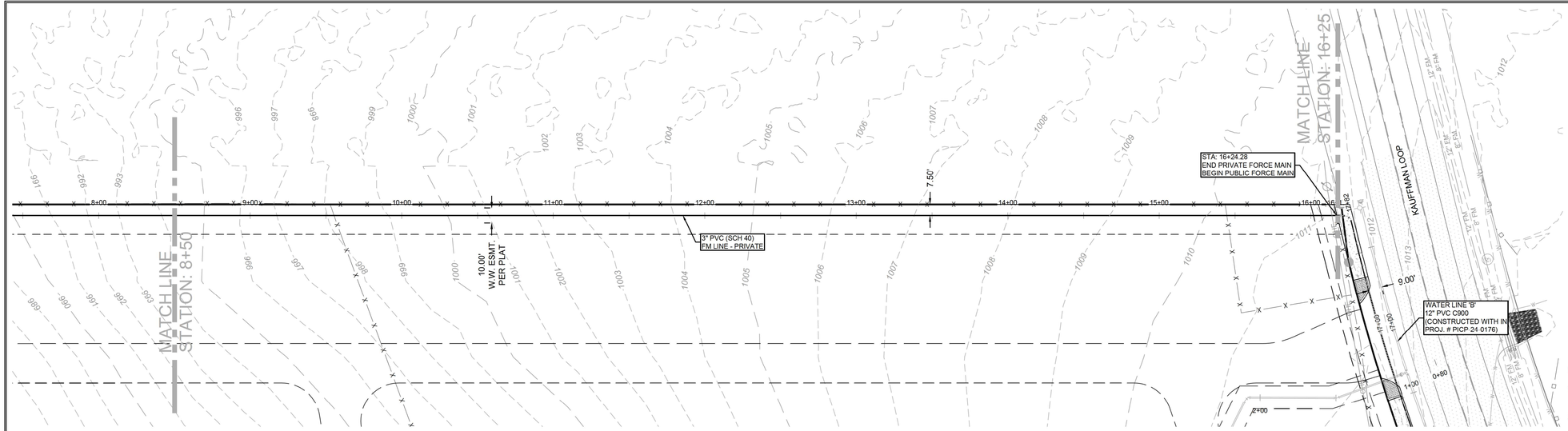
No.	DESCRIPTION	DATE

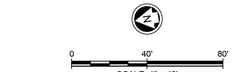
WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

FORCE MAIN LINE 1+00 - 8+50

STATE OF TEXAS
THOMAS J. GROLL
90376
LICENSED
PROFESSIONAL ENGINEER
6/25/2025

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 11 of 19
Project No.

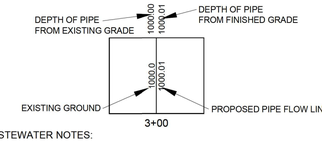




LEGEND

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

PROFILE LEGEND
PROPOSED FINISHED GRADE
EXISTING GRADE (CENTER)
PROFILE SCALE
HORIZONTAL: 1" = 40', VERTICAL: 1" = 4'



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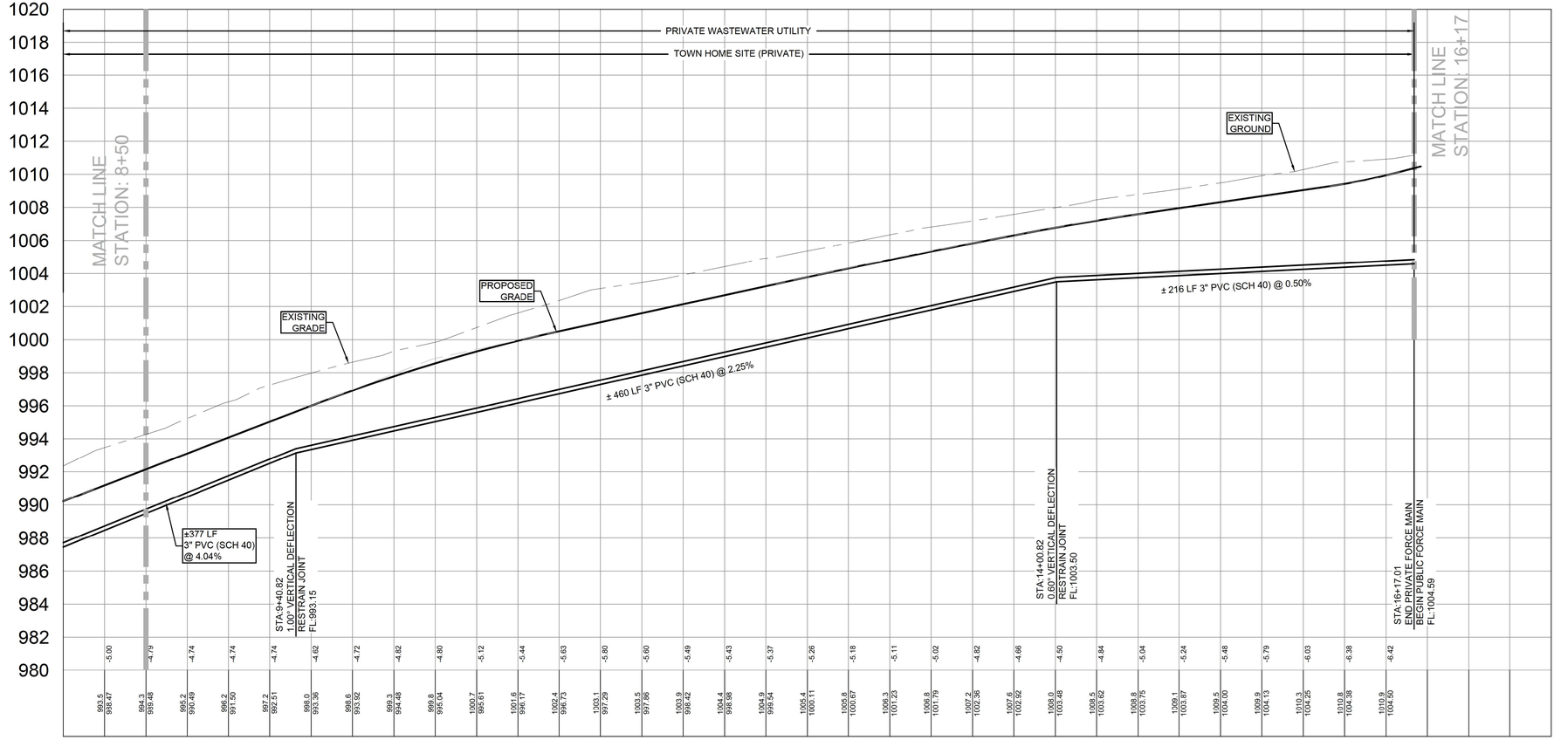
FM LINE - PRIVATE



Wastewater Determination Factors - Commercial			
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Average Dry Weather Flow =	8,400	gpd	11.67 gpm
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Site Area =	10.16	ac	
Inflow & Infiltration =	7,620	gpd	5.29 gpm
Peak Wet Weather Flow =	22,875	gpd	26.48 gpm

Wastewater Determination Factors - Residential			
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811 Know what's below. Call before you dig.

TOM GROLL ENGINEERING
5308 PAYTON LANE, AUSTIN, TEXAS 78723 | (512) 484-9796 | TBPE FIRM # F-9799

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

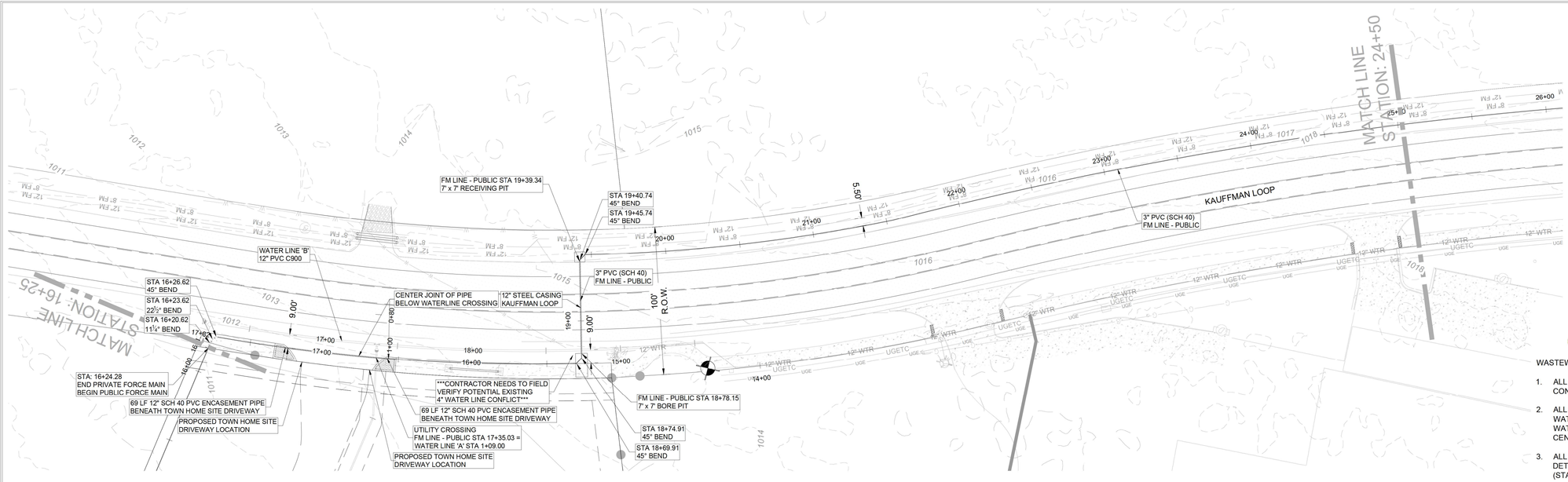
No.	DATE	DESCRIPTION
		BY

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

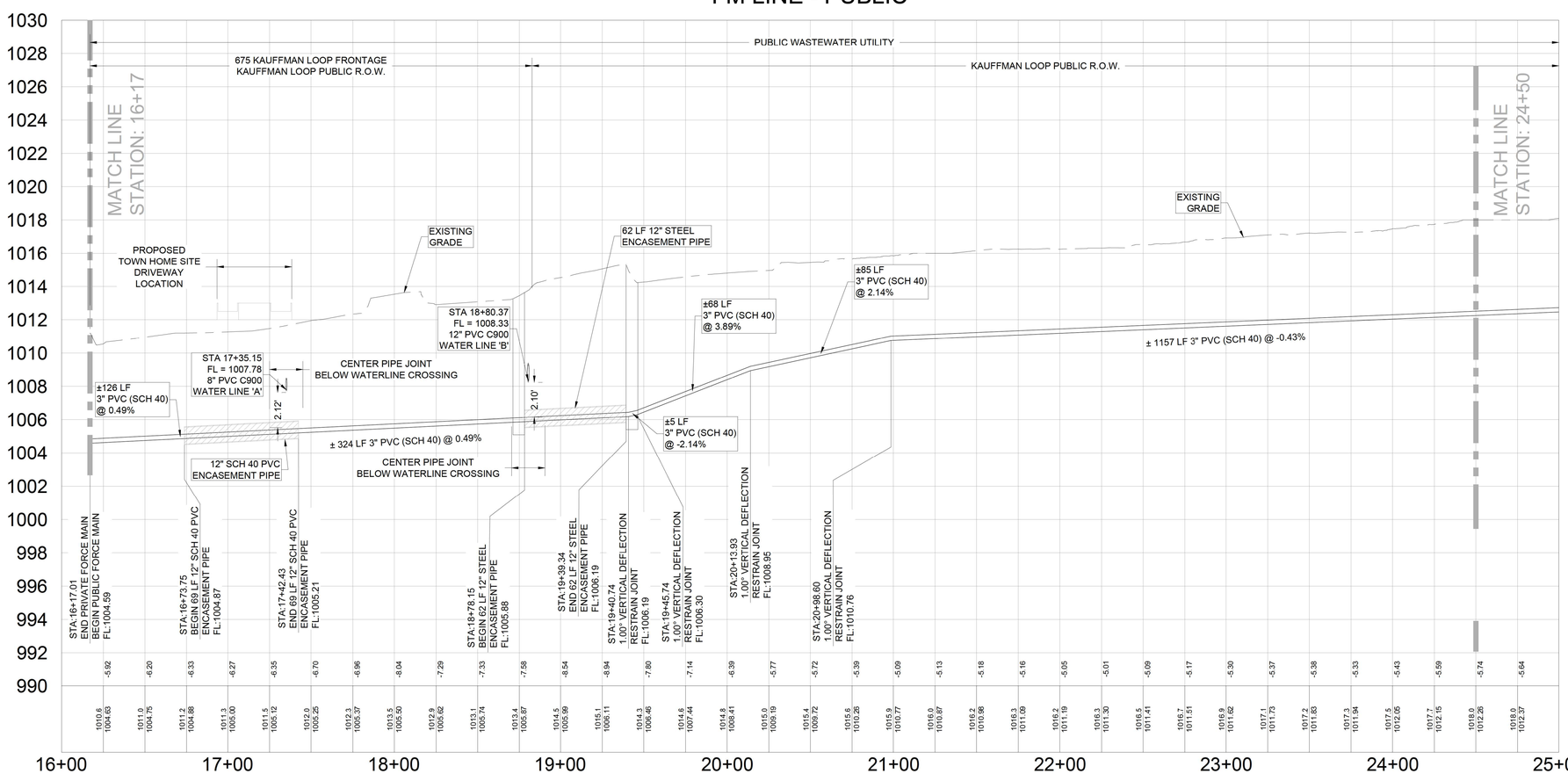
FORCE MAIN LINE 8+50 - 16+25

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED
PROFESSIONAL ENGINEER
6/25/25

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 12 of 19
Project No.



FM LINE - PUBLIC



LEGEND

- 504 — EXISTING CONTOUR
- 500 — PROPOSED CONTOUR
- PROPOSED WASTEWATER LINE
- (WW) PROPOSED WASTEWATER MANHOLE

PROFILE LEGEND

- PROPOSED FINISHED GRADE
- EXISTING GRADE (CENTER)

PROFILE SCALE
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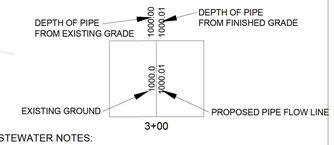

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L.U.E. =	2.80	people/L.U.E.

675 Kauffman Loop Wastewater Generation Calculations				
Total L.U.E.'s =	42		12-hr flow	
Average Dry Weather Flow =	8,400	gpd	11.67	gpm
Peak Dry Weather Flow =	15,255	gpd	21.19	gpm
Site Area =	10.16	ac		
Inflow & Infiltration =	7,620	gpd	5.29	gpm
Peak Wet Weather Flow =	22,875	gpd	26.48	gpm

Wastewater Determination Factors - Residential		
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 =	108		24-hr flow	
Average Dry Weather Flow =	21,600	gpd	15.00	gpm
Peak Dry Weather Flow =	33,651	gpd	23.37	gpm
Site Area =	14.84	ac		
Inflow & Infiltration =	11,130	gpd	7.73	gpm
Peak Wet Weather Flow =	44,781	gpd	31.10	gpm

Wastewater Determination Factors - Combined		
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 =	150		24-hr flow	
Average Dry Weather Flow =	30,000	gpd	26.67	gpm
Peak Dry Weather Flow =	44,553	gpd	44.56	gpm
Site Area =	25.00	ac		
Inflow & Infiltration =	18,750	gpd	13.02	gpm
Peak Wet Weather Flow =	63,303	gpd	57.58	gpm

Know what's below. Call before you dig.

TOM GROLL ENGINEERING
5308 PAYTON LANE, AUSTIN, TEXAS 78723 | 512-484-9796 | TBPE FIRM # F-9999

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

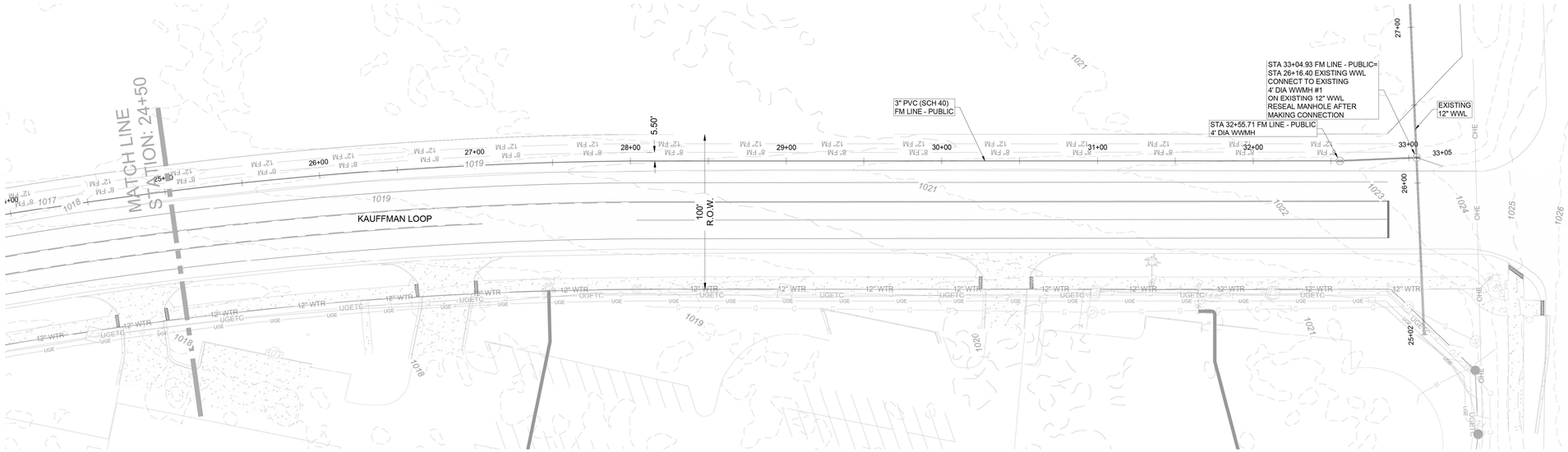
No.	DATE	DESCRIPTION	BY

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

FORCE MAIN LINE 16+25 - 24+50

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 13 of 19
Project No.

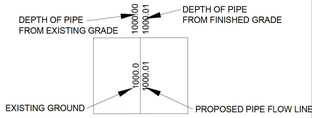


LEGEND

- EXISTING CONTOUR
- 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:

1. ALL GRAVITY WASTEWATER LINES SHALL BE PVC SDR 26 AND CONFORM TO ASTM D 3034 WITH A PIPE STIFFNESS OF 115 PSI.
2. 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.
3. 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.
4. ALL MANHOLES OUTSIDE OF PUBLIC RIGHT-OF-WAY AND MANHOLES OUTSIDE OF PAVED AREAS SHALL HAVE BOLTED AND GASKETED WATERTIGHT COVERS.
5. HORIZONTAL AND VERTICAL ALIGNMENT TO BE CHECKED AT NO GREATER THAN 50' INTERVALS.
6. ALL WASTEWATER SERVICES TO BE INSTALLED PER COA DETAIL 520-AW-01. NO CLEANOUTS ARE TO BE LOCATED WITHIN SIDEWALKS, DRIVEWAYS OR CURB RAMPS.
7. ALL WASTEWATER MANHOLES TO BE COATED (SPL WW-511).
8. REFER TO PROFILE SHEETS FOR THE LOCATION OF DEEP SERVICES AND 5% SERVICES.

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 =	42		12-hr flow	
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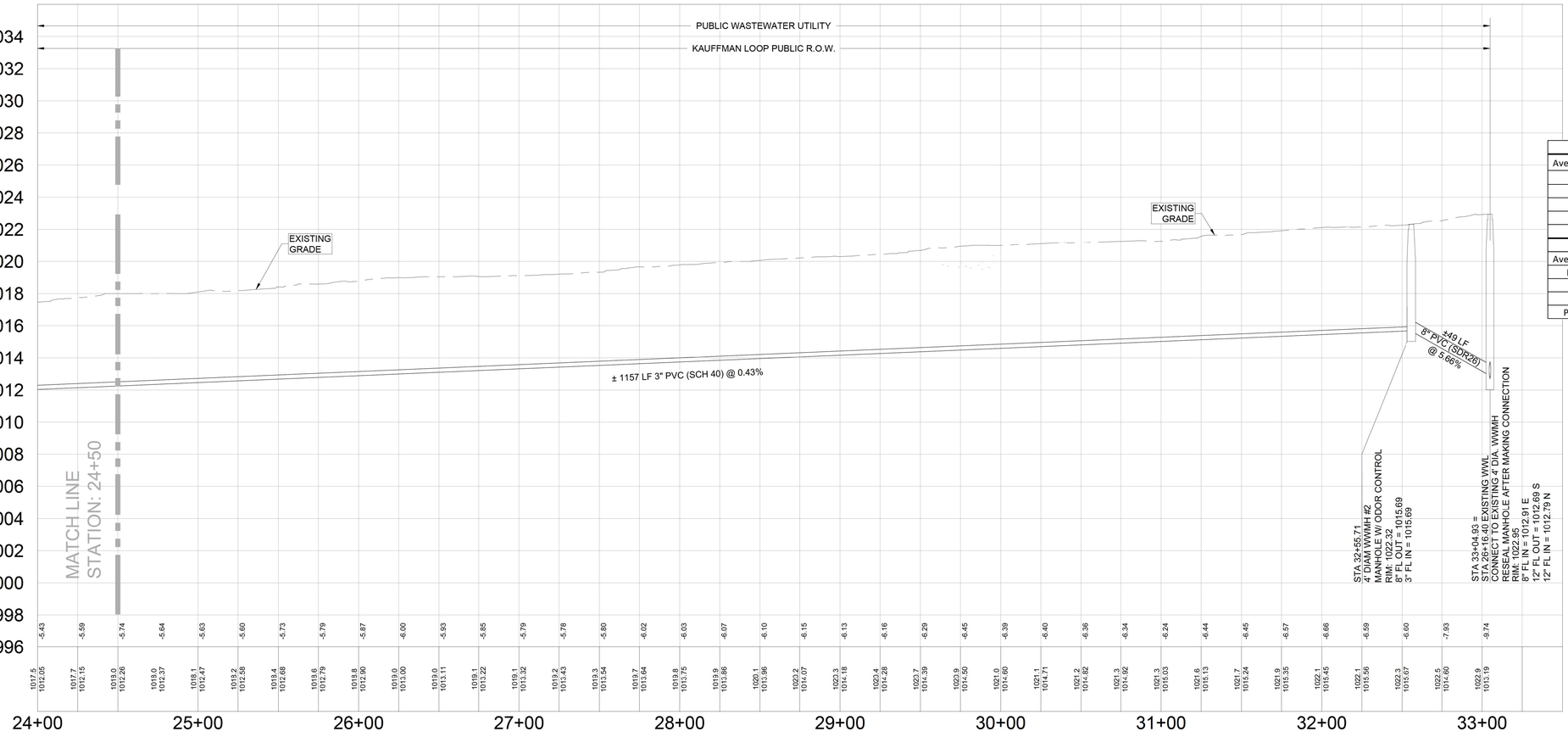
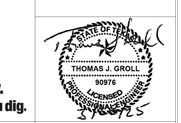
Inflow & Infiltration =	7,620	gpd	5.29	gpm
Peak Wet Weather Flow =	22,875	gpd	26.48	gpm

FM LINE - PUBLIC



811 Know what's below. Call before you dig.



TOM GROLL ENGINEERING
5308 PAYTON LANE, AUSTIN, TEXAS 78723 (512) 636-9796 TBPE FIRM # F-9799

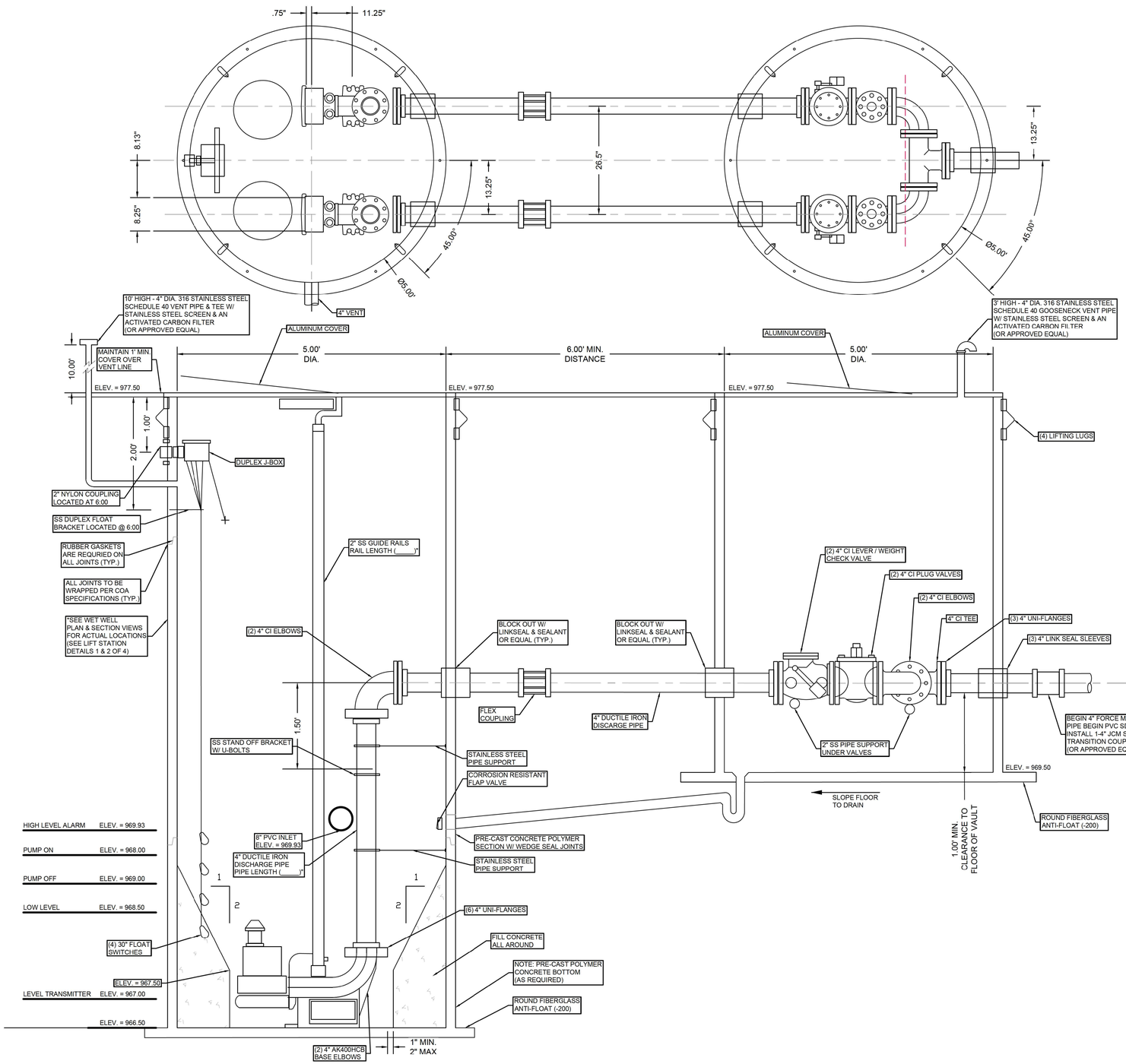
PREPARED FOR:
675 KAUFFMAN, LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

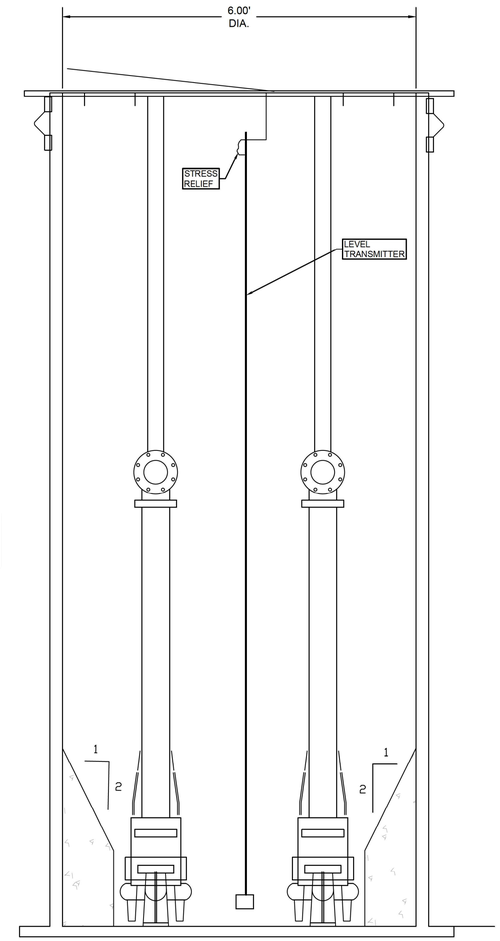
No.	DATE	DESCRIPTION	BY

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

FORCE MAIN LINE
24+50 - END

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 14 of 19
Project No.





0 1' 2'
SCALE: 1" = 1'

LIFT STATION ELEVATION SECTION

SCALE: 1" = 1' - 0"

TOM GROLL ENGINEERING
3309 PAYTON LANE, AUSTIN, TEXAS 78731 | PHONE: (512) 484-9799 | TBPE FIRM # F-9999

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

No.	DATE	DESCRIPTION
		BY

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

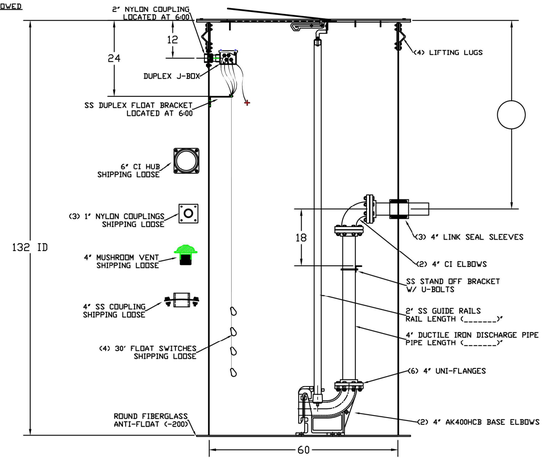
LIFT STATION PLAN DETAILS 1

Know what's below. Call before you dig.

STATE OF TEXAS
THOMAS J. GROLL
90376
LICENSED
PROFESSIONAL ENGINEER

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 15 of 19
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)

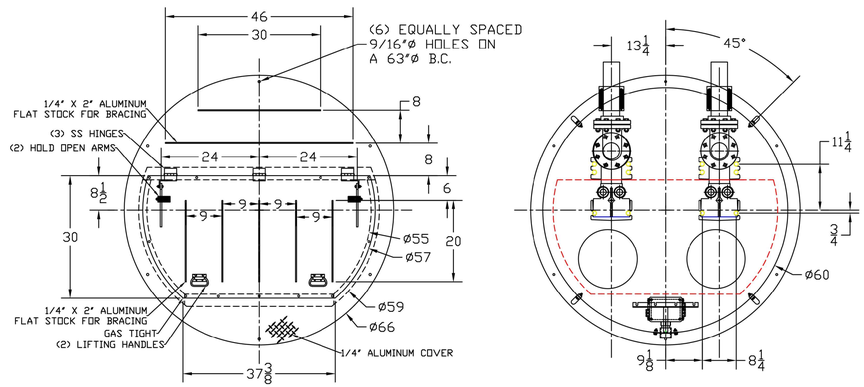
CONFIRMATION THROUGH SIGNATURE RELEASES ORDER FOR PRODUCTION

DRAWN FOR: HYDRO SOURCE	PO# ---	DISCONNECTS: AK400HCB	SHEET 1 OF 4	Revision 0
	QUOTE # 89356	PUMPS: ---		
JOB REFERENCE / Notes: KAUFFMAN LOOP	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:	

"THE BEST AROUND UNDERGROUND"

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: HYDRO SOURCE	PO# ---	DISCONNECTS: AK400HCB	SHEET 2 OF 4	Revision 0
	QUOTE # 89356	PUMPS: ---		
JOB REFERENCE / Notes: KAUFFMAN LOOP	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:	

"THE BEST AROUND UNDERGROUND"

PH: (574)-936-6022 FX: (574)-936-5811
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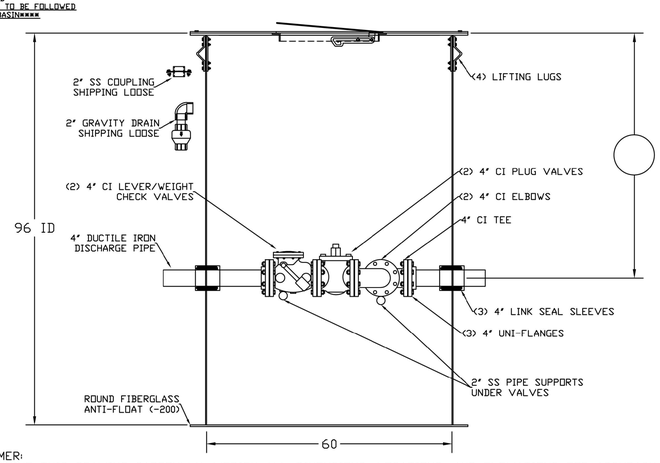

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(REQUESTED SIGNATURE & DATE PER ABOVE)

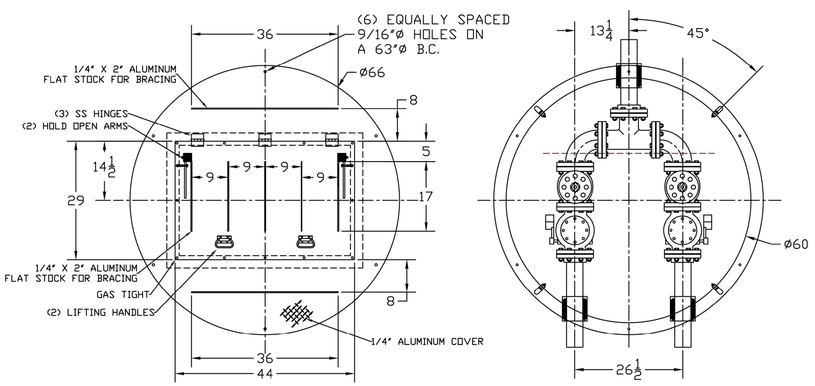
CONFIRMATION THROUGH SIGNATURE RELEASES ORDER FOR PRODUCTION

DRAWN FOR: HYDRO SOURCE	PO# ---	DISCONNECTS: AK400HCB	SHEET 3 OF 4	Revision 0
	QUOTE # 89356	PUMPS: ---		
JOB REFERENCE / Notes: KAUFFMAN LOOP	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:	

"THE BEST AROUND UNDERGROUND"

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: HYDRO SOURCE	PO# ---	DISCONNECTS: AK400HCB	SHEET 4 OF 4	Revision 0
	QUOTE # 89356	PUMPS: ---		
JOB REFERENCE / Notes: KAUFFMAN LOOP	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:	

"THE BEST AROUND UNDERGROUND"

PH: (574)-936-6022 FX: (574)-936-5811
WWW.AKINDUSTRIES.COM

TOM GROLL ENGINEERING
5309 PAYTON LANE, AUSTIN, TEXAS 78723 | 512-584-9796 | TBPE FIRM # 4-9999

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

No.	DATE	BY	DESCRIPTION

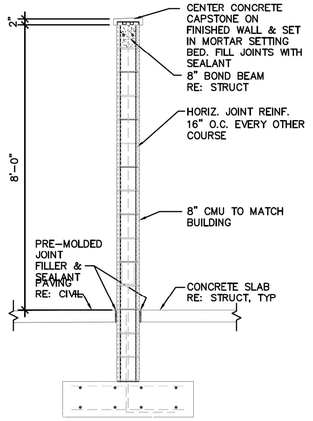
Know what's below. Call before you dig.

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

LIFT STATION PLAN DETAILS 3

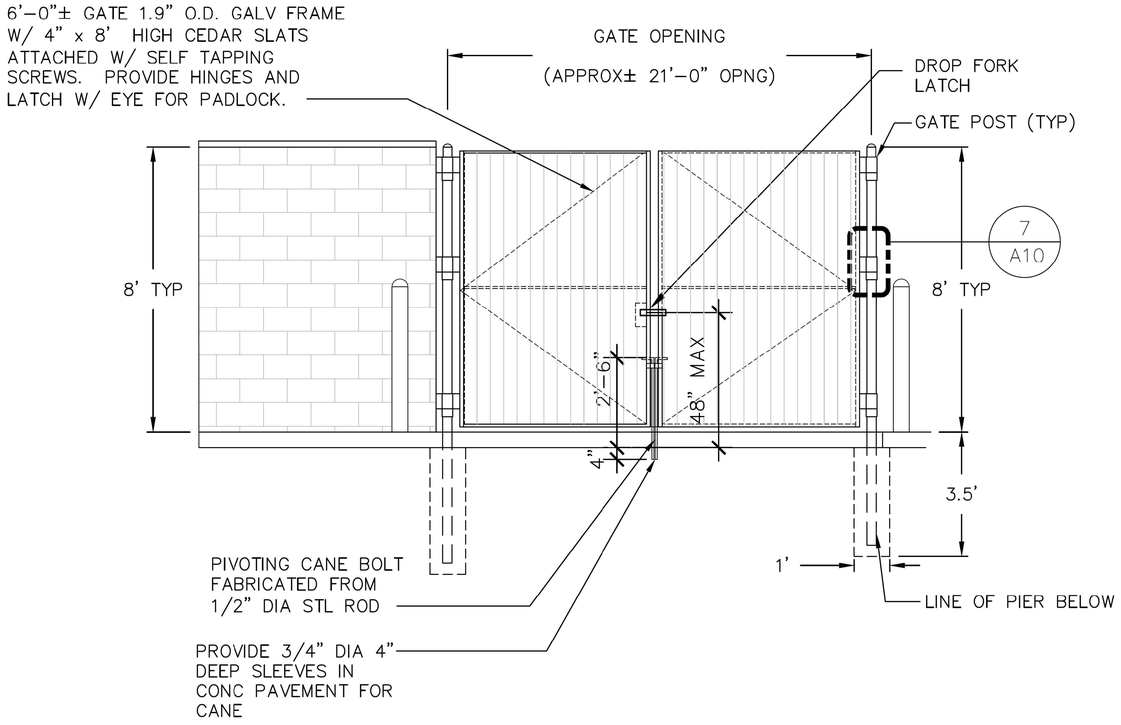
STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED
PROFESSIONAL ENGINEER
6/25/25

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 16 of 19
Project No.



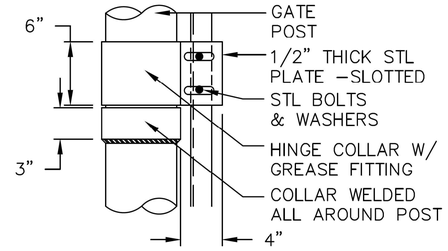
LIFT STATION ENCLOSURE WALL SECTION

NOT TO SCALE

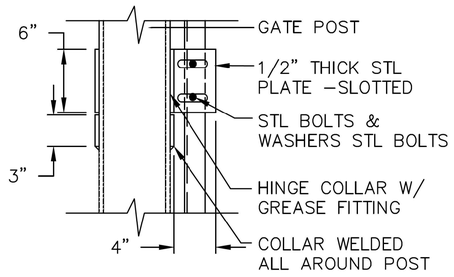


LIFT STATION ENCLOSURE GATE ELEVATION

NOT TO SCALE



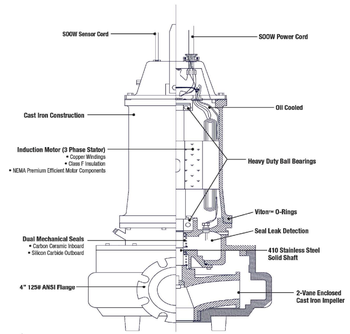
ELEVATION



LIFT STATION ENCLOSURE GATE HINGE

NOT TO SCALE

Features



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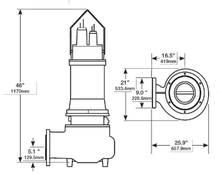

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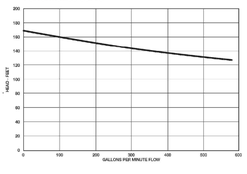

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TOM GROLL ENGINEERING
1309 PAYTON GINS, AUSTIN, TEXAS 78758 | PHONE (512) 436-9796 | TBPE FIRM # F-9799
PREPARED FOR:
675 KAUFFMAN, LP
7801 N. CAPITAL OF TEXAS HWY.
SUITE 390
AUSTIN, TX 78731

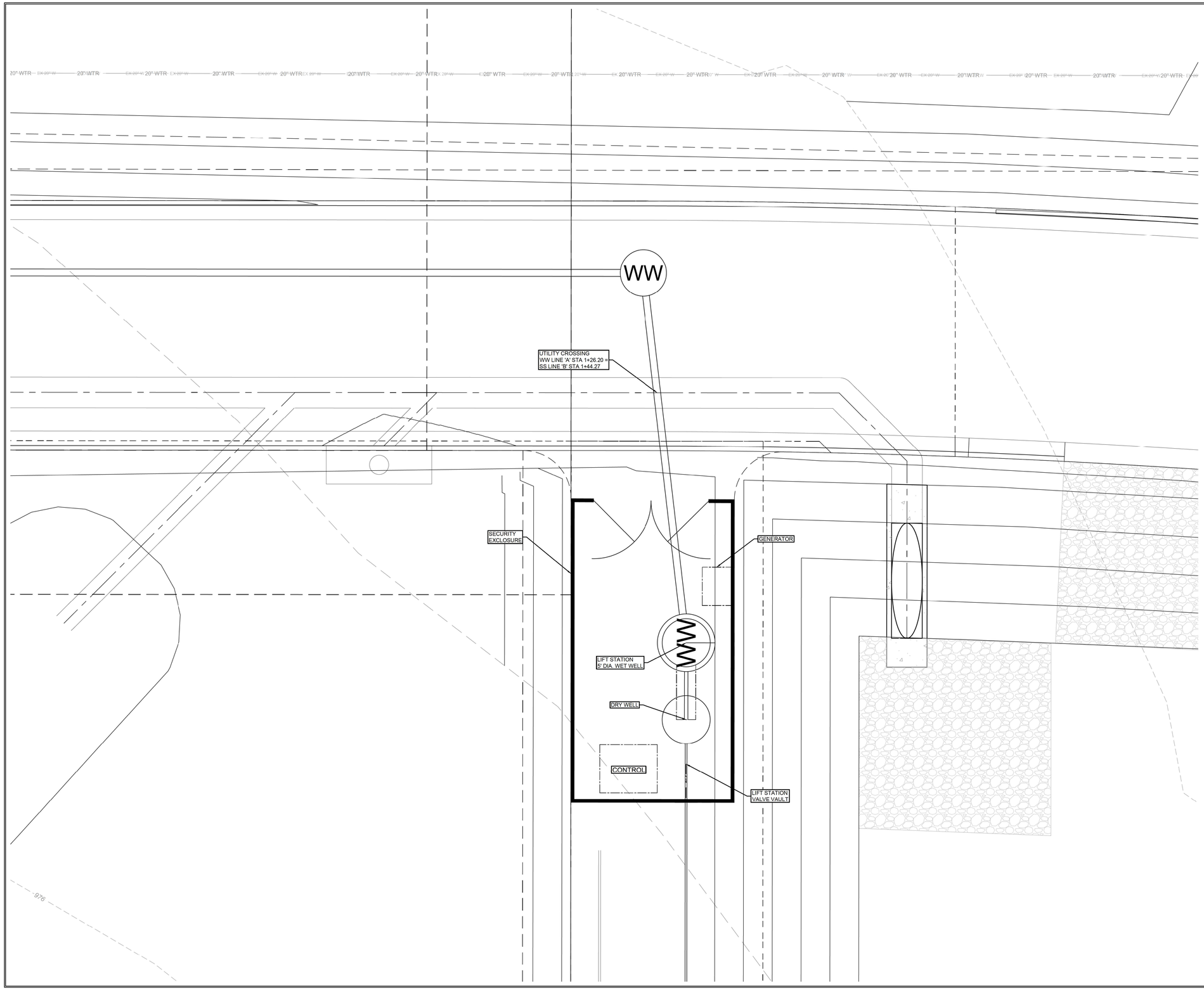
NO.	DESCRIPTION	BY	DATE

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

LIFT STATION PLAN DETAILS 2

STATE OF TEXAS — THOMAS J. GROLL — 90976 — LICENSED PROFESSIONAL ENGINEER — 6/25/2025

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 17 of 19
Project No.



0 5' 10'

SCALE: 1" = 5'

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE

WASTEWATER NOTES:

1. ALL GRAVITY WASTEWATER LINES SHALL BE PVC SDR 26 AND CONFORM TO ASTM D 3034 WITH A PIPE STIFFNESS OF 115 PSI.
2. 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.
3. 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.
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7. ALL WASTEWATER MANHOLES TO BE COATED (SPL WW-511).
8. REFER TO PROFILE SHEETS FOR THE LOCATION OF DEEP SERVICES AND 5% SERVICES.

Know what's below. Call before you dig.

TOM GROLL ENGINEERING
5309 PRYOR LANE, AUSTIN, TEXAS 78723 | 512.484.9799 | TBPE FIRM # F-9799
WWW.TG-ENG.COM

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

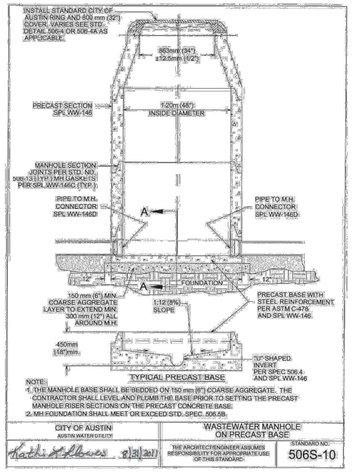
No.	DATE	DESCRIPTION
		BY

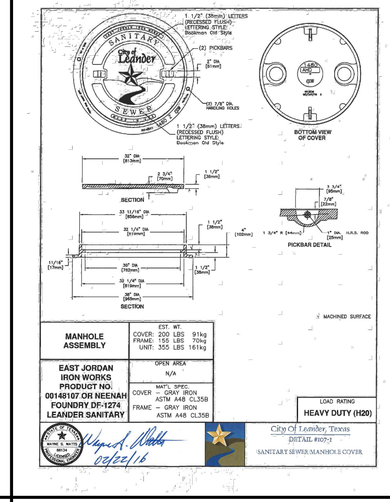
WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

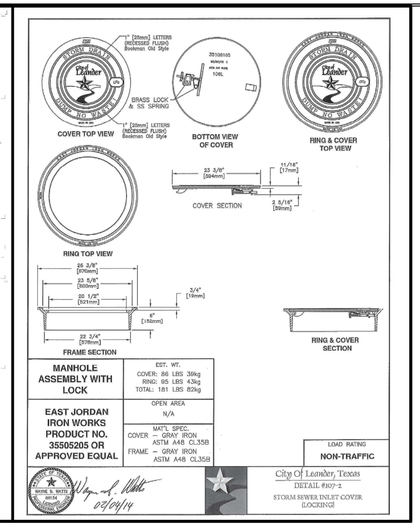
LIFT STATION PLAN

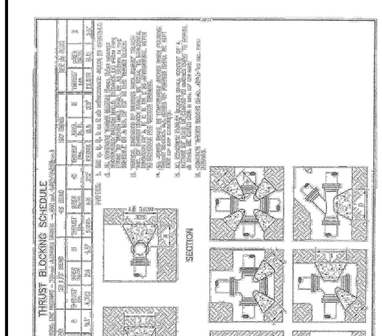
STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED
PROFESSIONAL ENGINEER

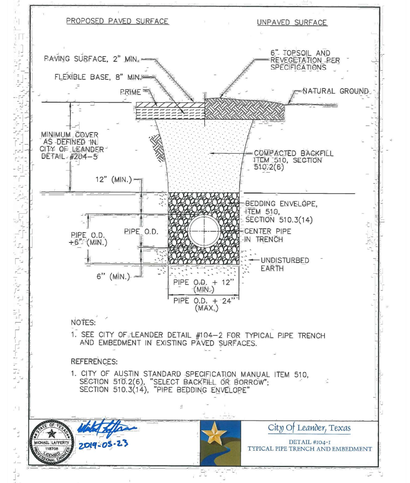
Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 18 of 19
Project No.

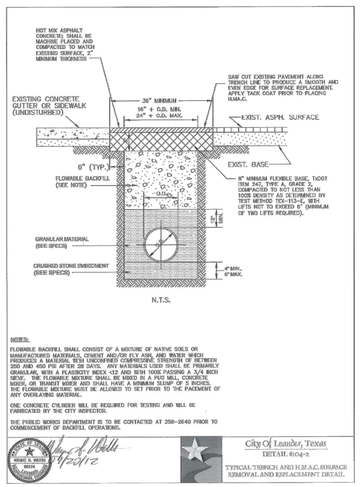


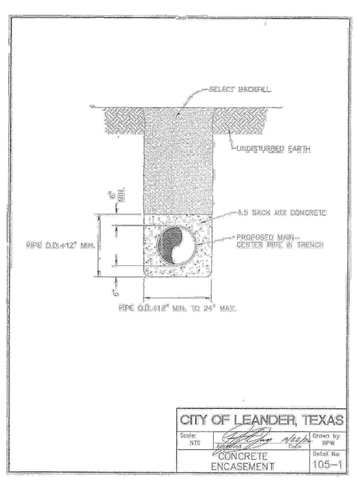


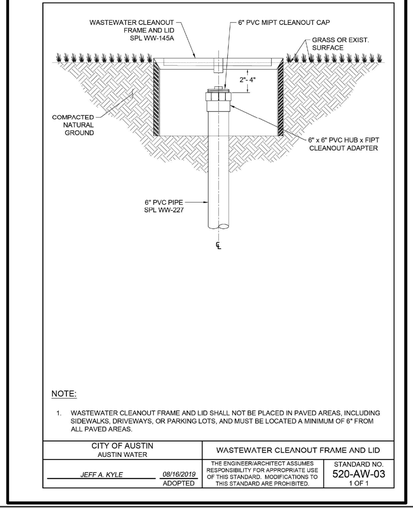


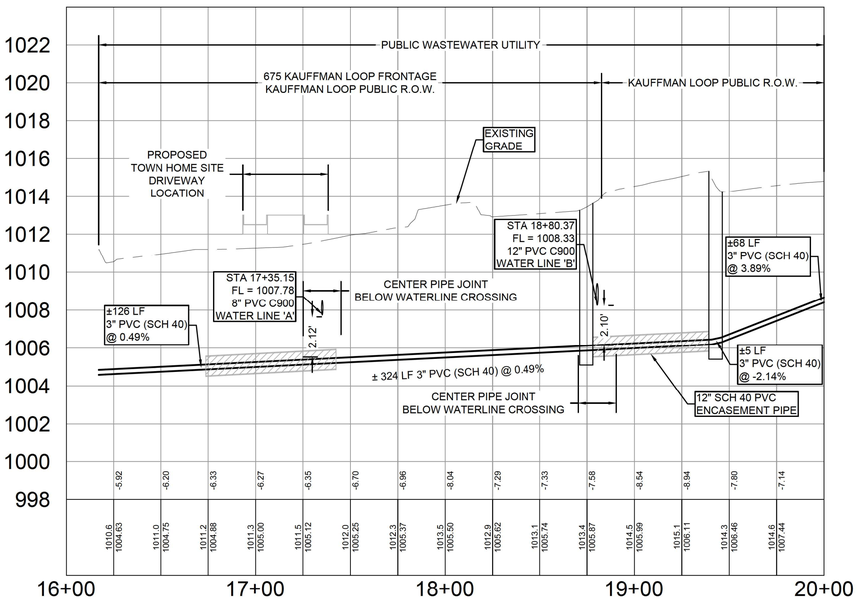






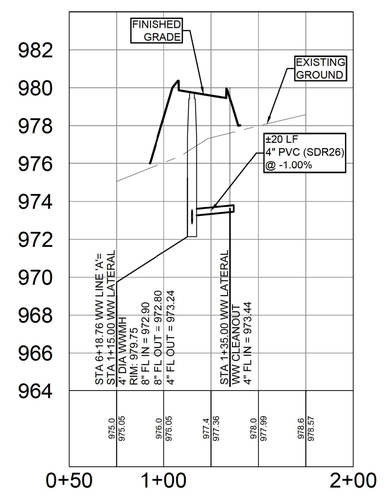






WASTEWATER LINE/ WATER LINE CROSSING DETAIL

SCALE: 1" = 40'



LATERAL STUB - OUT DETAIL - TYPICAL

SCALE: 1" = 40'

811 Know what's below. Call before you dig.

TOM GROLL ENGINEERING
2309 RIVER LANE, AUSTIN, TEXAS 78733 • (512) 264-5799 • WWW.TGENG.COM

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

NO.	DESCRIPTION	DATE	BY

WASTEWATER COLLECTION SYSTEM PLAN
675 KAUFFMAN LOOP
LEANDER, TEXAS 78642

UTILITY DETAILS SHEET

STATE OF TEXAS
THOMAS J. GROLL
90976
LICENSED PROFESSIONAL ENGINEER
6/25/2025

Date: 6/25/2025
Check by: TJG
Drawn By: MBS/MRC
Sheet No. 19 of 19
Project No.

ATTACHMENT C
675 KAUFFMAN LOOP
PROJECT NARATIVE

The 675 Kauffman Loop project consists of 25-acres of land situated east of and adjacent to the Bar W Commercial development located at the southeast corner of SH 29 and Ronald Reagan Blvd. in the City of Leander, Williamson County, Texas. The property is bound by SH 29 to the north and Kauffman Loop to the south. The site will obtain public water and wastewater service from the City of Leander, electric utility service from Pedernales Electric Cooperative, and natural gas service from Atmos Energy. The site is contained within the City of Leander full purpose jurisdiction, and within the Edwards Aquifer Recharge Zone.

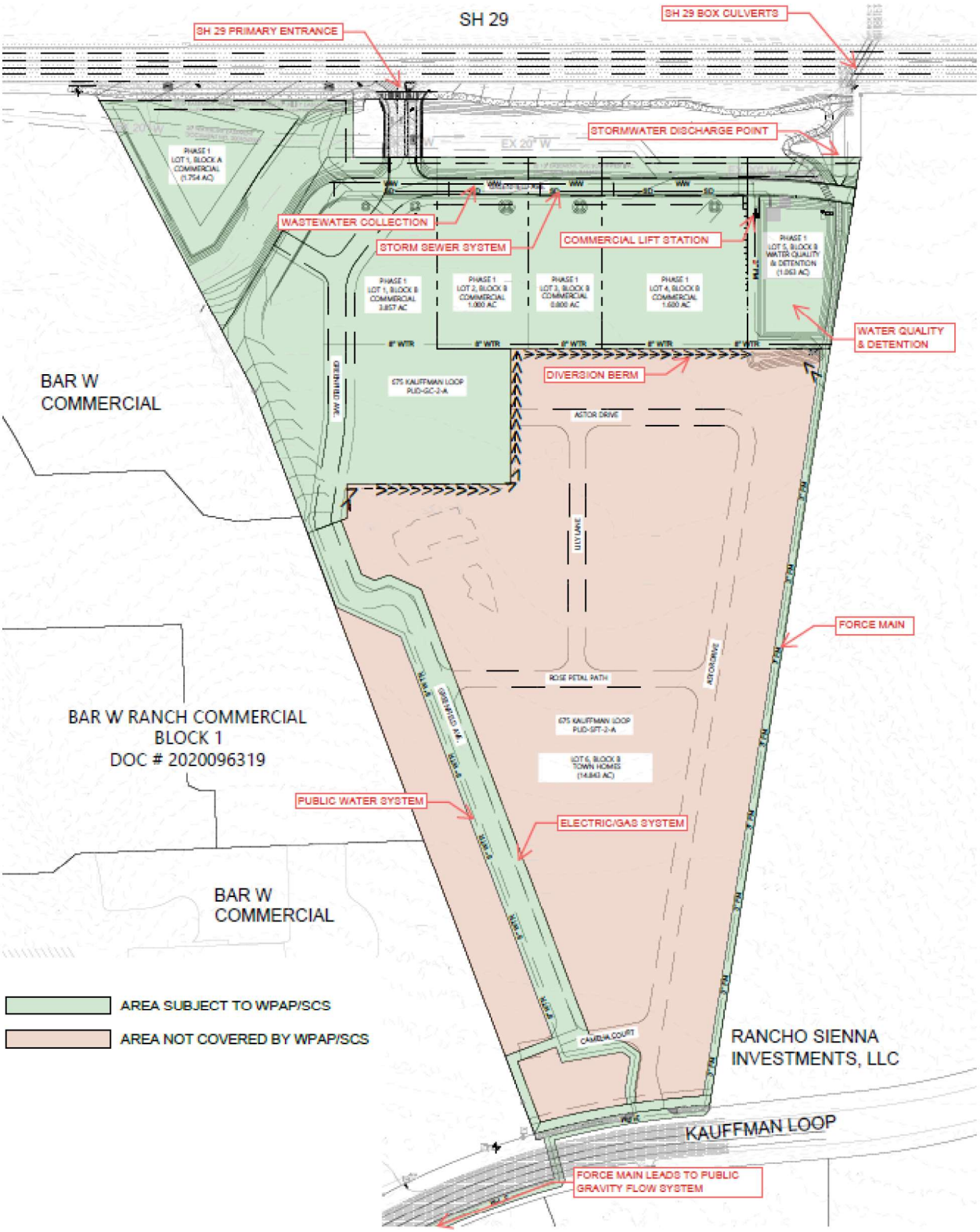
Prior to its sale in 2021 to 675 Kaufman, LP, the property was used as a single-family residence. A Preliminary Plat submitted by the developer depicting the northern 10.16-acres fronting SH 29 as commercial, and the southern 14.84-acres as multi-family residential was approved by the City of Leander in September 2024.

Per the approved Preliminary Plat, the site is to be subdivided into seven lots as follows: Lot 1, Block A, and Lots 1-6, Block B. Lot 1, Block A and Lots 1-5, Block B make up the 10.16-acres of commercial property. Lot 6, Block B represents the 14.84-acre multi-family residential property. Lot 1, Block A is hydraulically isolated from the remainder of the site by an existing drainageway paralleling the SH 29 frontage. Lots 1-5, Block B are contiguous. Lot 5, Block B is dedicated as a drainage lot and will provide water quality/detention capacity to Lots 1-4, Block B. Development of Lot 1, Block A will require its own independent water quality and detention facilities. Figure 1 shows the lot arrangement.

Per the approved Preliminary Plat, Lot 6, Block B will be subdivided as a single lot. The multi-family residential portion of the site will have 148 residential units and an amenity center. The residential development will have its own water quality/detention facilities and will not share the commercial development's stormwater pond. The developers of the townhome site will be responsible for gaining approval from the TCEQ for the WPAP and SCS for their development.

As the project developer, 675 Kaufman, LP is responsible for subdivision of the property and installation of the infrastructure necessary to support subsequent development of the individual commercial sites by the buyers of those sites. The infrastructure delivered by 675 Kaufman, LP to the buyers of the individual commercial lots includes the primary access driveway from SH 29 into the site, a shared internal access driveway, a public water distribution system, a private wastewater collection system with a private lift station and force main, electric and natural gas distribution systems, a private stormwater collection system leading to a water quality/detention facility, and public sidewalks as required by the City of Leander. The intent of this application is to obtain TCEQ approval of an Organized Sewage Collection System Plan (SCS) and a Water Pollution Abatement Plan (WPAP) for construction of the infrastructure deliverables required of 675 Kaufman, LP. This application is not intended to represent the specific development of each individual commercial lot and does not represent development of the multi-family residential lot. The subsequent buyers/developers of the subdivided lots are responsible for permitting their site development plans through the City of Leander and the TCEQ, as applicable.

Figure 1 - 675 Kauffman Loop site layout



EXISTING CONDITIONS

Vegetation on the tract consists of native grasses with clusters of Live Oak trees. Slopes are generally within the 2% - 5% range. According to the Williamson County Soil Survey, site surface soils consist of 87% Georgetown clay loam (GeB), 10% Fairlie clay (FaB), and 3% Georgetown stoney clay loam (GsB), each of which are in Hydrologic Group D. The existing ground coverage is brush, weed, and grass mix in fair condition; therefore, the existing conditions Run-off Curve Numbers for the D-type soils is 77. Stormwater runs off from south to north as sheet flow and shallow concentrated flow before leaving the site at a natural low point along the northern property boundary at SH 29 right-of-way. Upon leaving the property, runoff continues in unnamed Tributary #1 of the Middle Fork San Gabriel River.

According to FEMA FIRM Panel 48491C0275E, dated September 26, 2008, the subject tract is located within Zone X and a 100-year floodplain does not encroach onto the property.

The site is located within the Edwards Aquifer Contributing Zone; therefore, the proposed development activities are subject to 30 TAC Chapter 213.

PROPOSED CONDITIONS

The 675 Kauffman Loop project will consist of 10.16-acres of commercial development and 14.84-acres of multi-family residential development. This report pertains only to Lot 1, Block A and Lots 1 - 5, Block B of the site's commercial development, and the utility easements running through Lot 6, Block B. The multi-family residential area in Lot 6, Block B, will have its own separate, independent stormwater control facility and will require a separate Water Pollution Abatement Plan and Organized Sewage Collection System Plan for its development. Furthermore, this report only pertains to retaining wall construction on Lot 1, Block A, of the commercial development area and does not represent any impervious cover associated with the development of that lot.

Lots 1- 4, Block B of the site's commercial area will be developed to the City of Leander's standards, which limits impervious cover to 85% of the site area. Lot 5, Block B of the site's commercial area is dedicated to the stormwater quality/detention pond, which will be constructed of earthen embankments, therefore, there is no impervious cover planned for Lot 5, Block B. The net impervious cover across the lots draining to the water quality pond is 74.14%.

STORM WATER CONTROL

On-site storm water drainage conveyance will consist of concrete/asphalt pavement with 6" concrete curb & gutter around the pavement perimeter so that storm water is captured and directed to storm inlets. The inlets connect to a 36" HDPE pipe that extends from the water quality/detention pond across the frontage of Lots 1-4, Block B. Future development of the commercial lots will connect to the storm pipe stubs and inlets to extend the system further into their respective sites as necessary.

The water quality control method chosen for this development is a batch detention system with additional detention capacity for the 2, 10, 25, and 100-yr storm events stacked on top of the water quality volume. The pond is designed to capture a water quality volume representing the maximum allowable impervious cover (268,665 ft^2/6.17 ac), which equates to Lm = 5,368 lbs. The water quality volume is calculated by Equation 3.3 of RG 348 and the TCEQ's TSS load calculation

spreadsheet to be of 27,504 ft^3. The splitter weir elevation is set to provide 27,618 ft^3 of water quality volume capture. The pond will have a trash rack with 6" perforated riser pipe leading to an electric actuated butterfly valve that regulates the release of the water quality volume over a 48-hour period. When the butterfly valve is open, flows are discharged to a 6" solid PVC pipe leading to the outfall location. Storm flows exceeding the water quality volume are controlled by the splitter weir so that the post development flow rates are less than or equal to the predevelopment flow rates for each of the design storm events and discharged through a 48" outlet pipe. The 6" low flow outlet and the 48" detention outlet lead to a concrete headwall followed by rock rip-rap for energy dissipation. Discharge flows are mitigated to below 2-fps before they are discharged to the existing drainage way passing beneath SH 29.

WASTEWATER COLLECTION

Wastewater collection occurs through an 8" SDR 26 PVC gravity flow pipe that traverses the frontage of the commercial lots. A wastewater stub is located at each property corner for future connection/extension into the commercial lots as necessary to accommodate the individual developments. The 8" gravity flow line leads to a private lift station located on Lot 5, Block B. The lift station will have dual AGP500 5-HP grinder pumps to provide the head necessary to discharge the domestic waste flows to a 2" Sch 40 PVC force main. Approximately 462 LF downstream of the lift station the force main line size is increased to 3" to accommodate flows from the townhome site. An E-One valve is located at this junction to prevent flows from coming back to the commercial lift station at times when the townhome lift station is pumping but the commercial lift station is not. The 3" Sch 40 PVC force main runs 1,520 LF southward to the Kauffman Loop right-of-way where it then becomes a public line. Once within the Kauffman Loop right-of-way, the 3" force main runs 1,635 ft west along the south side of Kauffman Loop and terminates at a wastewater manhole. From there, an 8" SDR 26 PVC pipe gravity flows to an existing City of Leander wastewater manhole on a 12" gravity flow line. The 12" gravity flow line leads to the public lift station #25 located at Prickly Pear Path and Armitas Terrace within the Bar W Ranch subdivision. Lift station #25 forces wastewater flows to the City of Liberty Hill's South San Gabriel Wastewater Treatment Plant located at 1633 US 183 N. in Leander.

PUBLIC WATER SYSTEM

A public water system will be extended into the site by connecting to the existing 12" water line on Kauffman Loop at the southeast corner of the Bar W Commercial development. The public water system will be constructed of 8" C-900 PVC pipe and fittings approved by the City of Leander for use in their system. The individual development will connect to the 8" waterline as necessary to extend service to their respective buildings for fire flow and domestic purposes.

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:

Thomas J Groll, P.E.

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

Datc of Incidcnt:_____

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 8 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.

		Slit Fence			Rock Berms		Earthen Berms	Mulch Socks	Temporary Sedimentation Pond		
Date	Inspected By	>6" silt retained	Water flowing under silt fence	Fencing material torn or clogged	>6" slit retained	Rock berm clogged	Erosion of earthen berm	Ponding or silt accumulation	Embankment/spillway/outlet erosion or damage	Trash or Debris	Capacity reduced to 75% due to silt

If the answer to any of the above questions is *'yes'*, perform maintenance/repair/replacement as described below or In accordance with TCEQ Technical Guidance on BMPs.

Slit Fence

- >6" of slit retained behind fence - remove silt - place in protected area.
- Water flow under slit fence - bury bottom of fencing material on up-gradient side. Place clean rock on both sides of the fence in affected areas.
- Silt fence torn or clogged - replace fence material as needed if torn or water flow is stopped.

Rock Berm

- >6' of slit retained - remove silt - place in protected area.
- Rock berm clogged - the rock berm should be replaced when accumulated silt, washout or damage to berm occurs.

Earthen Berm

- Erosion of earthen berm - rebuild berm.

Mulch Socks

- Excessive ponding or sediment accumulation to top of sock - add additional mulch sock.

Temporary Sedimentation Pond

- Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement.
- Trash or debris - remove after rainfall to prevent clogging outlet.
- Capacity reduced to 75% - Remove accumulated silt and re-grade to original storage capacity.

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 temporary 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:

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 21st day of March, 2025.

NOTARY PUBLIC

Martin Zaragoza
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 7/14/2027

NOTARY PUBLIC STATE OF TEXAS
MARTIN ZARAGOZA
Notary Public
STATE OF TEXAS
My Comm. Exp. 07-14-27
Notary ID # 13445587-3

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: 675 Kauffman Loop
Regulated Entity Location: 675 Kauffman Loop Leander, TX 78641
Name of Customer: 675 Kaufman LP
Contact Person: Richard Gary Phone: (512) 901-9800
Customer Reference Number (if issued):CN _____
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☒ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

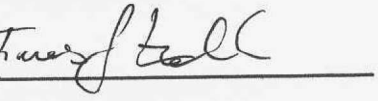
☒ Austin Regional Office
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

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

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	*Size*	*Fee Due*
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	$
Sewage Collection System	3,827 L.F.	$ 1,913.50
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: 

Date: JUNE 25, 2025

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

TCEQ Use Only

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

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

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

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

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

SECTION II: Customer Information

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

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

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

675 KAUFMAN, LP

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
804005105	32078567123	86-3138180	

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

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

13. Independently Owned and Operated?
☒ Yes ☐ No

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

☐ Owner ☐ Operator ☒ Owner & Operator ☐ Other:
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant

15. Mailing Address: 7801 N. CAPITAL OF TEXAS HWY., SUITE 390

City	AUSTIN	State	TX	ZIP	78731	ZIP + 4	

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	richard@jwdevelopmentinc.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 901-9800		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

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

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

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

675 KAUFFMAN LOOP

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	675 KAUFFMAN LOOP							
	City	LEANDER	**State**	TX	**ZIP**	78641	**ZIP + 4**	
24. County	WILLIAMSON							

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

25. Description to Physical Location:	1/4 MILE EAST OF RONALD REAGAN BLVD. ON THE SOUTH SIDE OF SH 29 IN LEANDER, WILLIAMSON COUNTY, TEXAS				
26. Nearest City			**State**	**Nearest ZIP Code**	
LEANDER			TX	78642	

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).

27. Latitude (N) In Decimal:	N30.637183		**28. Longitude (W) In Decimal:**	W97.823375	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	38	13.86	97	49	24.15

29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)
6552		237210	

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

COMMERCIAL REAL ESTATE DEVELOPMENT

34. Mailing Address:	**7801 N. CAPITAL OF TEXAS HWY., SUITE 390**							
	City	**AUSTIN**	**State**	**TX**	**ZIP**	**78731**	**ZIP + 4**	

35. E-Mail Address:	**richard@jwdevelopmentinc.com**

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

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

SECTION IV: Preparer Information

40. Name:	Thomas J. Groll, P.E.	**41. Title:**	President
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(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.

Company:	675 Kaufman, LP	**Job Title:**	Partner
Name *(In Print)*:	Joe Williams	**Phone:**	(512) 901- **9800**
Signature:		**Date:**	6/24/2025

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

Complete the following form by adding the requested information in the fields below. The form must be notarized for it to be considered complete. Attach it to other programmatic submittals required by 30 Texas Administrative Code (30 TAC), Chapter 213, and provide it to TCEQ's Edwards Aquifer Protection Program (EAPP) as part of your application.

If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, RAVI KUMAR PULIMI of GREENFIELD AT KAUFFMAN, LLC

am the owner of the property located at:

14.843 ACRES RECORDED IN DOCUMENT # 2024103852 OF THE OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 213.23(c)(2) and 213.23(d), relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize 675 KAUFMAN, LP
To conduct construction of public water line and private force main line
At the 14.843 acres described in Document #2024103852 of the Official Public Records of Williamson County, Texas.

Landowner Acknowledgement

I understand that675 KAUFMAN, LP

Is ultimately responsible for the compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Signature
Landowner Signature

June 24, 2025

Date

THE STATE § OF TEXAS

County § of TRAVIS

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

RAVI KUMAR PULIMI

known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 24th day of June, 2025

Click or tap here to add ID

NOTARY PUBLIC

Sima Astaneh
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: Date

SIMA ASTANEH
Notary ID #126621011
My Commission Expires
September 29, 2028

Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☐ Other legally binding documents

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

Complete the following form by adding the requested information in the fields below. The form must be notarized for it to be considered complete. Attach it to other programmatic submittals required by 30 Texas Administrative Code (30 TAC), Chapter 213, and provide it to TCEQ's Edwards Aquifer Protection Program (EAPP) as part of your application.

If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, JOE WILLIAMS of 675 KAUFMAN, LP

am the owner of the property located at:

10.166 ACRES RECORDED IN DOCUMENT #2021063860 OF THE OFFICAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 213.23(c)(2) and 213.23(d), relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize 675 KAUFMAN, LP
To conduct construction of access drives, utility lines, lift station & force main, stormwater lines, & stormwater pond
At the 10.166 acres described in Document #2021063860 of the Official Public Records of Williamson County, Texas.

Landowner Acknowledgement

I understand that 675 KAUFMAN, LP

Is ultimately responsible for the compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Signature
Landowner Signature

June 24, 2025

Date

THE STATE § OF TEXAS

County § of TRAVIS

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

JOE WILLIAMS

known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 24th day of June, 2025

Click or tap here to add ID

NOTARY PUBLIC

Sima Astaneh

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: Date

SIMA ASTANEH
Notary ID #126621011
My Commission Expires
September 29, 2028

Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☒ Other legally binding documents