Edwards Aquifer Application Cover Page

RANGER
ENVIRONMENTAL SERVICES, LLC

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: Leander Platinum						**2. Regulated Entity No.: 109247379**			
3. Customer Name: Leander Platinum Jubilee Investments Group, LLC						**4. Customer No.: 605170497**			
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):**		4.372	
9. Application Fee:	$650.00		**10. Permanent BMP(s):**			Previously approved with the WPAP			
11. SCS (Linear Ft.):	Previously approved		**12. AST/UST (No. Tanks):**			1-UST			
13. County:	Williamson		**14. Watershed:**			Brushy Creek			

Application Distribution

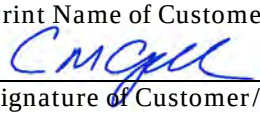
Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	__	__	_x_
Region (1 req.)	__	__	_x_
County(ies)	__	__	_x_
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 _x_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. Chad M. Copeland, P.G., PWS
Print Name of Customer/Authorized Agent  10/20/2025
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):	

Underground Storage Tank Facility Plan Application – Checklist

TCEQ-0583

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Underground Storage Tank Facility Plan Checklist

X **Edwards Aquifer Application Cover Page (TCEQ-20705)**

X **General Information Form (TCEQ-0587)**

Attachment A - Road Map
Attachment B - USGS / Edwards Recharge Zone Map
Attachment C - Project Description

Previously approved with the WPAP — **Geologic Assessment Form (TCEQ-0585)**

Attachment A - Geologic Assessment Table (TCEQ-0585-Table)
Attachment B - Stratigraphic Column
Attachment C - Site Geology
Attachment D - Site Geologic Map(s)

X **Underground Storage Tank Facility Plan (TCEQ-0583)**

Attachment A - Detailed Narrative of UST Facility
Attachment B – Manufacturer Information for Tanks
~~Attachment C - Alternative Design and Protection Method for Tanks (if proposed)~~
Attachment D – Manufacturer Information for Piping
~~Attachment E - Alternative Design and Protection Method for Piping (if proposed)~~
Attachment F - Tertiary Containment Method
~~Attachment G - Exception to the Geologic Assessment (if requested)~~
Attachment H - Profile Drawing(s)
Attachment I - Initial and Continuing Training
Attachment J - Release Detection Maintenance
Site Plan

Previously approved with the WPAP — **Temporary Stormwater Section (TCEQ-0602)**

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

X **Agent Authorization Form (TCEQ-0599), if application submitted by agent**

X **Application Fee Form (TCEQ-0574)**

X **Check Payable to the "Texas Commission on Environmental Quality"**

X **Core Data Form (TCEQ-10400)**

General Information Form

TCEQ-0587

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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: Chad M. Copeland, P.G., PWS

Date: 10/20/2025

Signature of Customer/Agent:

Project Information

1. Regulated Entity Name: Leander Platinum
2. County: Williamson
3. Stream Basin: Brushy Creek
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: Aly M. Hussaini
   Entity: Leander Platinum Jubilee Investments Group, LLC
   Mailing Address: 3604 Balcones Drive
   City, State: Leander, Texas Zip: 78731
   Telephone: 512-912-6374 FAX: _____
   Email Address: amhussaini@aol.com

8. Agent/Representative (If any):

   Contact Person: Chad M. Copeland, P.G., PWS
   Entity: Ranger Environmental Services, LLC
   Mailing Address: PO Box 201179
   City, State: Austin, Texas Zip: 78720
   Telephone: 512-335-1785x3 FAX: _____
   Email Address: chad@rangerenv.com

9. Project Location:

   ☒ The project site is located inside the city limits of Leander, Texas.
   ☐ 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.

    The site is located at 17680 W. Ronald Reagan Blvd., Leander, Texas 78641

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: Reportedly 7/1/2021

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

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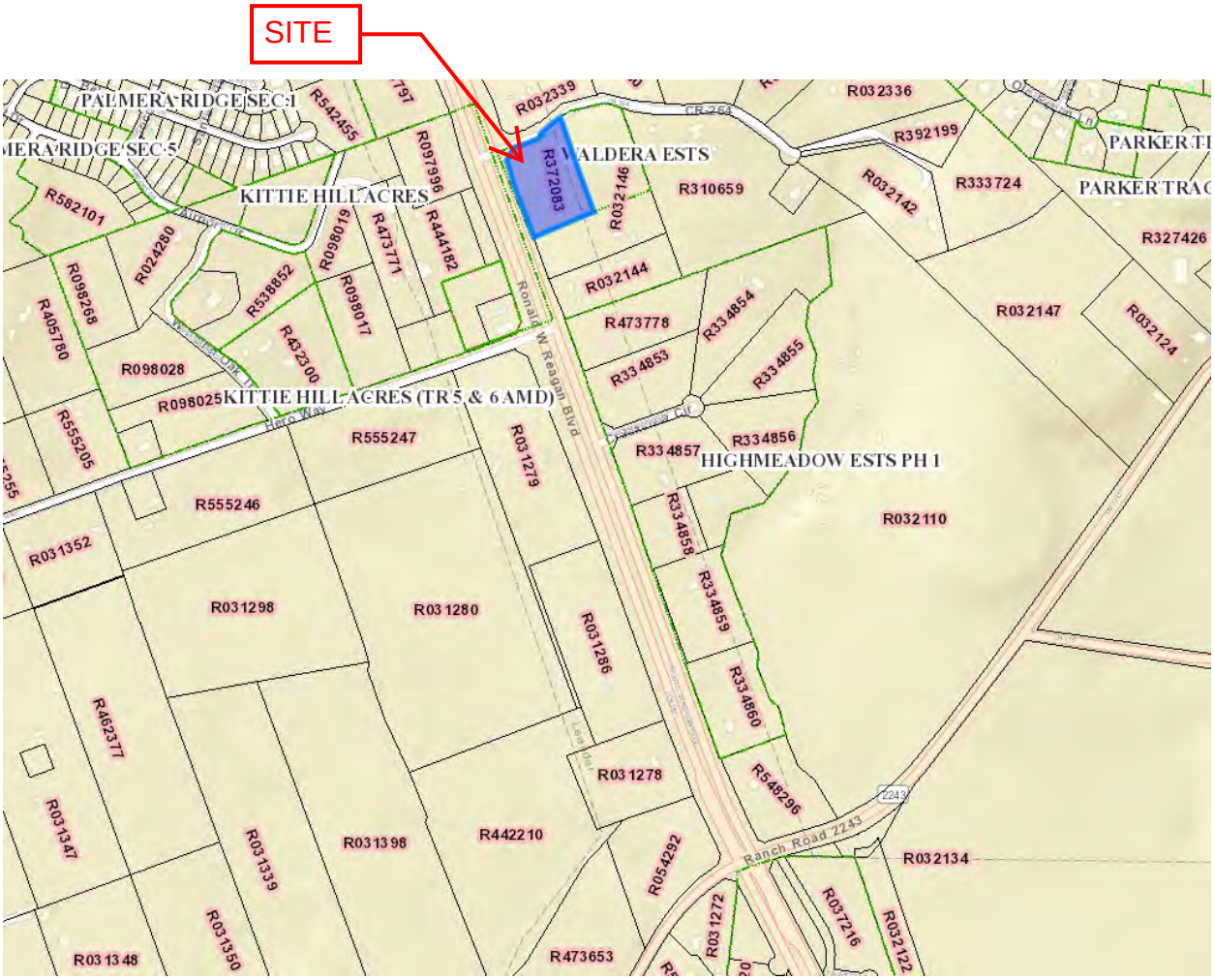
ENVIRONMENTAL SERVICES, LLC

NOTE: Previously approved with the WPAP. TCEQ Approval Letter dated October 15, 2021.

Road Map

General Information: Attachment A



ATTACHMENT B

USGS / Edwards Recharge Zone Map

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NOTE: Previously approved with the WPAP. TCEQ Approval Letter dated October 15, 2021.

USGS Quadrangle Map

General Information Form: Attachment B

USGS Quad Name: Leander
USGS Quad Number: 30097E7

ATTACHMENT C

Project Description

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PROJECT DESCRIPTION

Previously provide and approved as part of the WPAP

General Information

The site is located on Lot 1, Waldarra Estates, a subdivision of record in Cabinet D, Slide 88 of the Plat Records of Williamson County. The property is located within the full purpose jurisdiction of the City of Leander. The property is within the Brushy Creek Watershed, which is classified as Suburban. The property is located within the Recharge Zone of the Edwards Aquifer at the southeast corner of Ronald Reagan Boulevard and County Road 264. The property is not located within the 100 year floodplain as defined by the Federal Emergency Management Agency map, Panel Number 48491C0455F, Williamson County and Incorporated Areas, dated December 20, 2019. The lot is zoned GC-3-B. The property is held under single ownership by Leander Platinum Jubilee Investments Group, LLC as referenced in General Warranty deed number 2015023123.

Existing Conditions

The 4.71 (plat) acre site is bounded on the north by County Road 264, on the west by Ronald Reagan Boulevard, on the east by Lot 2 of Waldarra Estates, and on the south by a residential property. The site contains an existing single-family residence and driveway and existing tree cover as shown on the enclosed construction drawings. The site slopes predominantly from northeast to southwest. The existing structure and driveway are slated for removal as a part of the current development plan.

Proposed Project

The proposed improvements consist of the construction of a single-story convenience store with gas dispensers and canopy, a retail building and an office building, concrete pavement, sidewalk, utility and landscape improvements. The proposed improvements contain 2.43 AC of impervious cover (56% total gross site impervious cover). The proposed detention pond is located at the southwest corner of the site and will be constructed using earthen slopes. The detention pond outlet structure is sized in order to maintain developed peak site discharge flows at or below pre-developed flow rates. The drainage across the proposed improvements will be conveyed to the detention pond via a combination of onsite storm sewers and inlets that discharge to the splitter box separating the sedimentation/filtration pond from the detention pond. Water quality requirements are met by the onsite sed/fil pond meeting TCEQ requirements for construction over the Recharge Zone of the Edwards Aquifer. A Water Pollution Abatement Plan will be filed with the Texas Commission on Environmental Quality for the planned development. Access to the site will be by driveway connections to Ronald Reagan Blvd and County Road 264 as shown on the plan.

The following pertains specifically to the UST proposal

The proposed underground storage tank systems will include one (1) WATCO STI Permatank/FRP (triple wall) underground storage tank. The tank will be a 22,000-gallon compartmentalized tank (UL 58 & UL 1746). The compartments will store 12,000 gallons of gasoline (regular), 5,000 gallons of gasoline (super), and 5,000 gallons of diesel. Associated with these tanks will be five (5) new Gilbarco Encore 700 S dispensers along with double wall FRP piping.

Each compartment will be equipped with 1.54 hp FE Petro submersible pump. Overfill prevention for each tank compartment will be provided by a valve assembly which will be installed in the tank below the vapor recovery fitting and will be set to shut off flow into the tank when the volume of liquid in the tank reaches no more than 95% of the tank capacity.

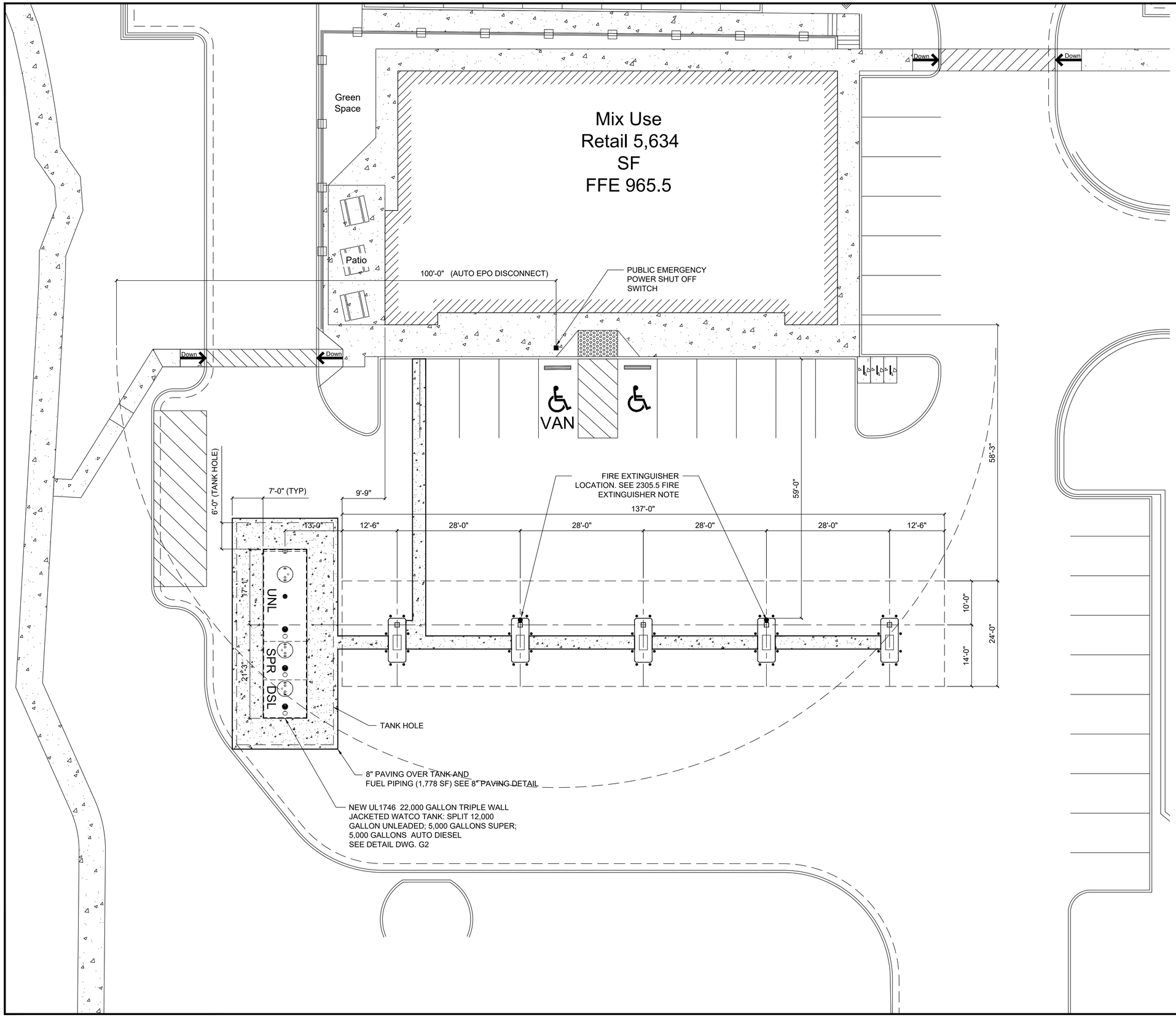
Product piping will be UL listed AO Smith Red Thread IIA fiberglass-reinforced plastic piping. Vent lines will be 2-inch diameter single-wall pipe. Under each dispenser for each product grade there will be a shear valve mounted to a rigid framework and installed at the dispenser island surface level to assure automatic shut-off of product flow during impact or fire emergencies. In addition, FLEX-ING flexible connectors

will be installed at both ends of each product line in isolation sumps to connect to the dispenser unit and submersible pump.

Corrosion protection for the metallic components of the underground storage systems will be provided by electrical isolation. The submersible pump housings and pump-end flexible connectors will be installed within single wall sumps, which will provide isolation from the backfill material. The dispenser-end flexible connector will be similarly isolated by enclosure within a PCI single wall fiberglass sumps under the dispenser. The vapor recovery riser and the fill tube riser will be installed within a PCI single wall sump and thoroughly wrapped with a suitable dielectric material and are isolated from the tank by the use of isolation bushings.

The proposed tank and piping will be monitored for leaks by means of inventory control, sump and interstitial leak detection, and mechanical line leak detection. The tank will be equipped with a liquid discrimination sensor which will be installed adjacent to the submersible pumps in the sumps and in all dispenser sumps. The tanks will also be equipped with an electronic automatic tank gauging inventory probe for inventory of the product volume in the tank.

The controller will use interstitial monitoring viewed by the Sensor Status Report to meet TCEQ release detection requirements. The tank interstitial is monitored with an interstitial sensor which will set off an alarm if liquid either enters the tank interstitial or is lost within the interstitial space. This central monitoring unit is designed to provide visual and audible alarms when the changes within the interstitials are detected. Each product piping line will be equipped with electronic line leak detection. The probes and sensors from all tanks will be connected to a Veeder-Root 450 TLS programmable control unit to be located in the store building.

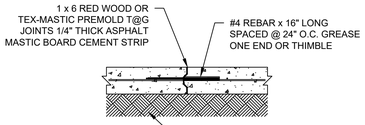


ALL CONSTRUCTION SHALL COMPLY WITH THE 2015 INTERNATIONAL FIRE CODE .

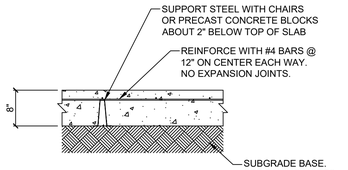
UNDERGROUND FUEL STORAGE TANKS:
DESIGN, FABRICATION, AND CONSTRUCTION OF TANKS SHALL COMPLY WITH NFPA 30. EACH TANK SHALL BEAR A PERMANENT NAMEPLATE OR MARKING INDICATING THE STANDARD USED AS THE BASIS OF DESIGN PER 2015 IFC SECTION 5704.2.7. DESIGN DATA SHALL IDENTIFY THE UL LISTING FOR EACH TANK, AND THE MANUFACTURERS INSTALLATION INSTRUCTIONS MUST BE INCLUDED IN THE PLANS. PROVIDE TANK MANUFACTURER SPECIFICATIONS VERIFYING COMPLIANCE WITH NFPA 30, UL LISTING AND DOUBLE WALL CONSTRUCTION. VERIFY COMPLIANCE FOR THE PROPOSED TANK INSTALLATION FOR THE RESUBMITTAL.

TANKS IN FLOOD ZONES:
PER SECTION 5704.2.7.8, 2015 IFC, WHERE A TANK IS LOCATED IN AN AREA WHERE IT IS SUBJECTED TO BUOYANCY BECAUSE OF A RISE IN THE WATER TABLE, FLOODING, OR ACCUMULATION OF WATER FROM FIRE SUPPRESSION OPERATIONS, UPLIFT PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS 22.14 AND 23.14 OF NFPA 30.

TANK LIDS:
TANK LIDS BELOW THE FLOOD PLAIN ELEVATION SHALL BE LIQUID TIGHT.



PAVING EXPANSION JOINT



FUEL TANK PAVING

DESIGNER
Taylor Made Designs
taylormadedesigns
@gmail.com
713-557-2537

CONTRACTOR

ENGINEER
Sarah Structural & Civil, LLC
13831Northwest Freeway
FIRM No. F-10808
HOUSTON TEXAS 77041
TEL: (832) 922-1145

ENGINEER SEAL

ISSUED FOR:
- ☐ DESIGN DEVELOPMENT
- ☐ PROGRESS 100 %
- ☐ BIDDING
- ☐ PERMIT
- ☐ CONSTRUCTION DOCUMENT
- ☐ CLIENT

DATE	REVISION
1	

LUMINARY C-STORE FUEL SYSTEM

SAN GABRIEL & HWY 183
LEANDER, TEXAS

SCALE: 1" = 20'-0"

ARCHITECTURAL FUEL SYSTEM SITE PLAN

SHEET: G0

SCARSDALE_USA

Geologic Assessment
TCEQ-0585

RANGER
ENVIRONMENTAL SERVICES, LLC

NOTE: Previously approved with the WPAP. TCEQ Approval Letter dated October 15, 2021.

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: Keith Copeland, P.G.

Telephone: 512/335-1785

Fax: 512/335-0527

Date: 6/10/16

Representing: Ranger Environmental Services, Inc. TBPG #1020 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

KL

Regulated Entity Name: Leander Platinum Jubilee

KL

6/10/16

Project Information

1. Date(s) Geologic Assessment was performed: May 24, 2016
2. Type of Project:
   - ☐ WPAP
   - ☐ SCS
   - ☐ AST
   - ☒ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone

☐ Contributing Zone within the Transition Zone

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

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
EaD	D	0.83-1.67

** Soil Group Definitions (Abbreviated)*

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

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

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

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

   Applicant's Site Plan Scale: 1" = 30'
   Site Geologic Map Scale: 1" = 30'
   Site Soils Map Scale (if more than 1 soil type): 1" = 1,160'

9. Method of collecting positional data:

   ☒ Global Positioning System (GPS) technology.
   ☐ Other method(s). Please describe method of data collection: _____

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

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

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

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

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

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

    ☒ There are 1 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☐ The wells are not in use and will be properly abandoned.
    - ☒ The wells are in use and comply with 16 TAC Chapter 76.

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

Administrative Information

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

ATTACHMENT A

Geological Assessment Table

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Leander Platinum Jubilee

LOCATION			FEATURE CHARACTERISTICS											EVALUATION			PHYSICAL SETTING			
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S-1	N30° 35' 48.12"	W097° 48' 47.91"	MB	30	Kc	unk	unk	unk					unk	5	35	x		x		Hilltop
S-2	N30° 35' 53.53"	W097° 48' 47.66"	MB	30	Kc	unk	unk	unk					unk	5	35	x		x		Hilltop
S-3	N30° 35' 50.13"	W097° 48' 46.69"	MB	30	Kc	0.5	0.5	unk					unk	5	35	x		x		Hilltop
S-4	N30° 35' 49.25"	W097° 48' 47.37"	MB	30	Kc	unk	unk	unk					unk	5	35	x		x		Hilltop

* DATUM: WGS 1984

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 6/10/16

Sheet 1 of 1

STATE OF TEXAS
KEITH COPELAND
GEOLOGY
1020
LICENSED
PROFESSIONAL GEOSCIENTIST

6/10/16

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

Comments to the Geologic Assessment Table

Global Positioning System (GPS)

Datum: WGS1984

Method of Collection: Handheld Garmen eTrex Summit HC GPS unit

Date Collected: May 24, 2016

Horizontal Accuracy: RMS < 25 meters

Collected by: Stephen Julian

ATTACHMENT B

Soil Profile And Narrative Of Soil Units

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Williamson County, Texas

May 26, 2016

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

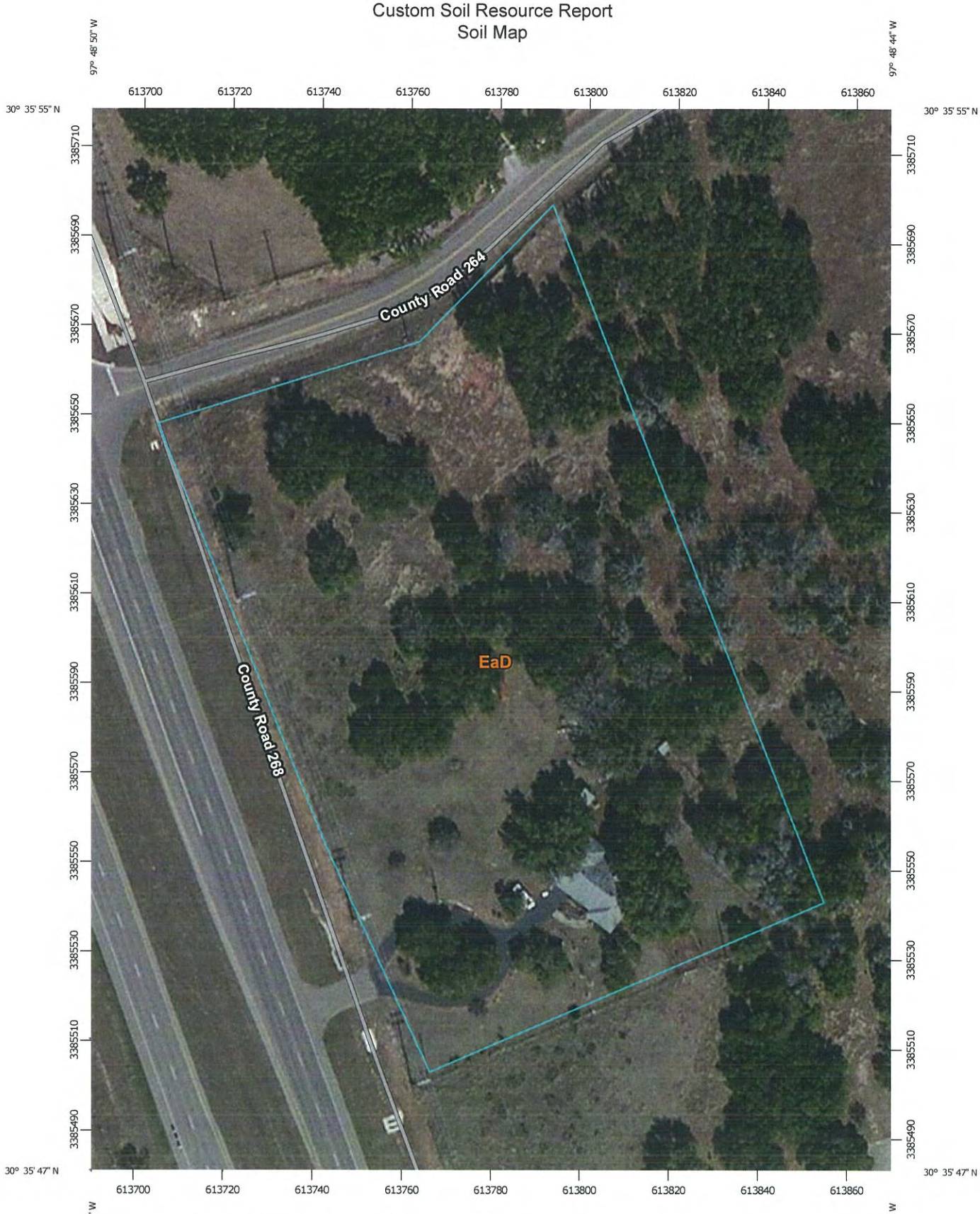
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,160 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Williamson County, Texas
Survey Area Data: Version 14, Sep 23, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2011—Feb 10, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Williamson County, Texas (TX491)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
EaD	Eckrant cobbly clay, 1 to 8 percent slopes	3.8	100.0%
Totals for Area of Interest		**3.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Williamson County, Texas

EaD—Eckrant cobbly clay, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: djpt
Elevation: 1,000 to 2,400 feet
Mean annual precipitation: 22 to 32 inches
Mean annual air temperature: 66 to 70 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Eckrant and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eckrant

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Typical profile

H1 - 0 to 4 inches: cobbly clay
H2 - 4 to 11 inches: very cobbly clay
H3 - 11 to 16 inches: bedrock

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 8 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Low Stony Hill 29-35" PZ (R081CY360TX)

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

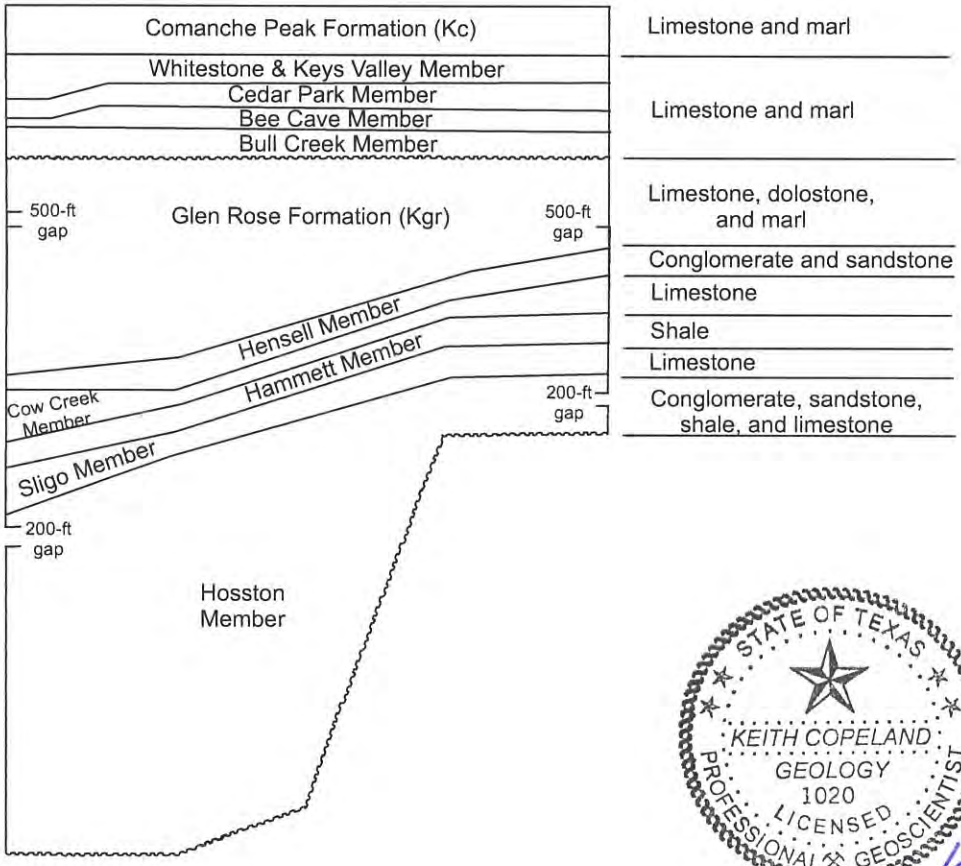
United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

ATTACHMENT C

Stratigraphic Column

STRATIGRAPHIC COLUMN

STRATIGRAPHIC UNIT LITHOLOGY



6/10/16

Adapted from the Bureau of Economic Geology, 1990, *Hydrogeology of the Northern Segment of the Edwards Aquifer, Austin Region, Report of Investigations No. 192,* Figure 4.

RANGER ENVIRONMENTAL SERVICES, INC.

STRATIGRAPHIC COLUMN

DATE: RANGER REFERENCE # 4934

COMMENTS:

ATTACHMENT D

Narrative of Site Specific Geology

GEOLOGIC ASSESSMENT
LEANDER PLATINUM JUBILEE
17680 RONALD REAGAN BOULEVARD
LEANDER, TEXAS
WILLIAMSON COUNTY
JUNE 2016

INTRODUCTION

Ranger Environmental Services, Inc. (Ranger) was contracted to conduct a Geologic Assessment of the referenced property. This location lies within the designated Edwards Aquifer Recharge Zone. Therefore, site development should adhere to the Texas Commission on Environmental Quality (TCEQ) Edwards Aquifer Protection Program Rules in accordance with Title 30 of the Texas Administrative Code, Section 213 (30 TAC§ 213).

This assessment follows general guidelines contained in Texas Commission on Environmental Quality (TCEQ) "*Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones*" (TCEQ Guidance 0585). The site is located on an area of the recharge zone that may contain karst features within the outcropping limestone. Karst features may be expressed as surface features but more commonly tend to persist with depth.

A field geologic assessment was conducted by Mr. Keith Copeland, P.G. and Mr. Stephen Julian on May 24, 2016. The site is consists of a vacant house and undeveloped land.

The walking geologic survey was conducted on 50-foot center transects, where possible. No intrusive testing was conducted. If present, features identified in the field were photographed and recorded with a hand held global positioning system (GPS). The geologic table, stratigraphic column, geologic, soils and topographic maps are included herein.

LOCATION

The subject site consists of one approximate 4.372-acre lot, more or less, located at 17680 Ronald Reagan Boulevard, Leander, in Williamson County, Texas at approximately N 30°35'51.50" and approximately W 97°48'47.76.

RESEARCH INFORMATION

Prior to conducting the geologic survey, Ranger conducted a review of existing geologic data and maps to prepare for the field survey. Reviewed references included, but are not limited to:

- The University of Texas Bureau of Economic Geology. Reprinted 1981. Geologic Atlas of Texas Austin Sheet.
- The University of Texas Bureau of Economic. 1990. Hydrogeology of the Northern Segment of the Edwards Aquifer, Austin Region. Report of Inv. 192.

- Texas Commission on Environmental Quality. 2004. Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones. TCEQ-0585.

- The University of Texas Bureau of Economic Geology. 1958. The Geology of Texas, Bulletin No. 3232. Volume 1.

- National Resources Conversation Services (www.nrcs.usda.gov)

- Texas Commission on Environmental Quality (www.tceq.state.tx.us)

- FEMA Flood Plain Maps

- Center for Geospatial Technology, Texas Tech University, obtained from the Texas Geologic Atlas of Texas

- USGS Topographic Maps – Terrain Navigator Pro 2015

DESCRIPTION OF SITE

The subject site consists of one approximate 4.372-acre lot, more or less, located at 17680 Ronald Reagan Boulevard, Leander, in Williamson County. A vacant house was noted in the southern portion of the property. The northern portion of the property is primarily undeveloped land supporting native grasses, shrubs, and trees. The property is bordered by Ronald Reagan Boulevard to the west and County Road 264 to the north. A residence is located directly south of the property and undeveloped/residential land is east of the property.

SOIL DESCRIPTION

Please see attached USDA NRCS Custom Soil Resource Report.

SITE GEOLOGY

The subject site is underlain by Lower Cretaceous sedimentary strata. In general, the Cretaceous strata dip regionally one degree towards the east-southeast. The area lies within the Balcones Fault Zone, a geologic province characterized in this region by north-northeast trending en echelon normal faults with the downthrown side most commonly to the east of the fault planes.

Referencing the Geologic Atlas of Texas, Austin Sheet, and The University of Texas Bulletin No. 3232, The Geology of Texas, Volume 1 the local stratigraphic section which outcrops at the site is the Comanche Peak Formation. The Lower Cretaceous Comanche Peak Formation is a member of the Fredericksburg Group and is conformably overlain by the Edwards Limestone. In the field, the contact between the Comanche Peak Formation and the overlying Edwards Limestone, where exposed, is typically presented as a change from a marly nodular limestone of the Comanche Peak Formation to a massive limestone of the overlying Edwards Limestone.

The Comanche Peak Formation is typically characterized as a white, irregularly bedded, nodular limestone interbedded with chalky marl. The limestone often is characterized by abundant large pelecypods and gastropods.

During the site inspection, most of the site supports a tan to dark gray silty, clayey soil. Weathered Comanche Peak outcrops were observed along the western portion of the site as well as a small outcrop near the center of the site.

No vugs, faults, or fractures were observed during the site geologic inspection.

SITE SPECIFIC GEOLOGIC FEATURES

The following geologic features, as defined in Texas Commission on Environmental Quality (TCEQ) "Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones" (TCEQ Guidance 0585), were observed at the site:

S-1(MB) Manmade Feature in Bedrock: Buried Utilities. Buried utilities were noted along the western portion of the site. No evidence of rapid infiltration was observed. The catchment area is less than 1.6 acres.

S-2(MB) Manmade Feature in Bedrock: Buried Utilities. Buried utilities were noted along the northern portion of the site. No evidence of rapid infiltration was observed. The catchment area is less than 1.6 acres.

S-3(MB) Manmade Feature in Bedrock: Water Well. A water well was observed adjacent to a small outbuilding near the vacant house. No cement base was observed. A six-inch tall PVC riser was noted. No evidence of rapid infiltration was observed. The catchment area is less than 1.6 acres.

S-4(MB) Manmade Feature in Bedrock: Septic Tank. A septic was not observed during the site inspection. However, the property owner reported that a septic tank system is located approximately 50 to 60 feet west of the house. The catchment area is less than 1.6 acres.

CONCLUSIONS AND RECOMMENDATIONS

Ranger Environmental Services, Inc. conducted a Geologic Assessment of the site in accordance with 30 TAC§ 213. Ranger concludes that no sensitive features as defined by the TCEQ (30 TAC§ 213) were observed at the site.

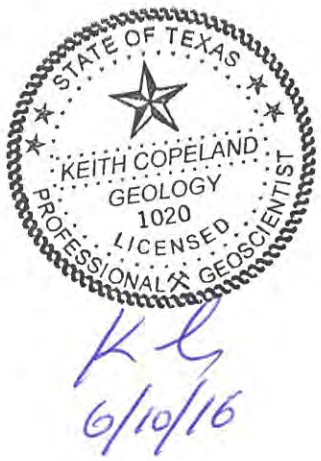
This assessment does not address the possible presence of subsurface conditions that may be exposed during future construction and/or development. Should solution features or conditions be exposed during site construction activities that indicate a potential for hydraulic interconnectedness between the surface and the Edwards Aquifer, operations in the vicinity of the feature should be halted and the Texas Commission on Environmental Quality (TCEQ) Edwards Aquifer Protection Program should be contacted immediately in accordance with 30 TAC §213.5(f)(2).

LIMITATIONS

It should be noted that only areas readily accessible were inspected. There may be geologic features present that were not identified as part of this study. This non-intrusive visual field assessment cannot wholly eliminate the possibility of sensitive features at the site.

Prepared by:

Keith Copeland, P.G.
Ranger Environmental Services, Inc.



Site Geologic Map(s)

BY THE ACT OF SUBMITTING A BID FOR THE PROPOSED CONTRACT, THE BIDDER WARRANTS THAT THE BIDDER, AND ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS HE INTENDS/WISHES TO USE HAVE CAREFULLY AND THOROUGHLY REVIEWED THE ENGINEERING DRAWINGS AND SPECIFICATIONS AND OTHER CONSTRUCTION CONTRACT DOCUMENTS AND HAVE FOUND THEM TO BE COMPLETE, ADEQUATE AND FREE FROM AMBIGUITY FOR THE PURPOSE INTENDED. THE BIDDER FURTHER WARRANTS THAT TO THE BEST OF HIS OR HIS SUBCONTRACTORS AND MATERIALS SUPPLIERS KNOWLEDGE, ALL MATERIALS AND PRODUCTS SPECIFIED OR INDICATED HEREIN ARE ACCEPTABLE FOR ALL APPLICABLE CODES AND AGENCIES.

RECORD DRAWING NOTE:
THIS RECORD DRAWING HAVE BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT WARRANT IT'S ACCURACY, AND IS THUS NOT RESPONSIBLE FOR THE ACCURACY OF THE RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THEM AS A RESULT.

CONTRACTOR NOTE:
THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THESE PLANS WAS BEEN BASED ON RECORD INFORMATION ONLY, AND MAY NOT SHOW LOCATIONS AS CONSTRUCTED. THE CONTRACTOR SHALL CONTACT THE AUSTIN AREA "ONE CALL" SYSTEM @ 474-2832, OR THE OWNER OF EACH INDIVIDUAL UTILITY, FOR ASSISTANCE IN DETERMINING EXISTING UTILITY LOCATIONS PRIOR TO BEGINING CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF UTILITY CROSSING PRIOR TO BEGINING CONSTRUCTION.

QUEUE SPACE
10'X20'

PARKING SUMMARY
REQUIRED PARKING:
CONVENIENCE STORE & RETAIL= 1 SPACE/250 S.F.
REQUIRED PARKING: (4585+1390)/250= 24 SPACES
TOTAL PARKING SPACE REQUIRED: 24 SPACES
REQUIRED DRIVE THRU QUEUE SPACE: 6 SPACES

PROVIDED PARKING:
REGULAR PARKING (9'x17.5'): 33 SPACES
HANDICAP: 2 VAN ACCESSIBLE
TOTAL PARKING SPACE PROVIDED: 35 SPACES
PROVIDED DRIVE THRU QUEUE SPACE: 6 SPACES

PUMP AREA COMPLIES WITH CITY OF AUSTIN TCM FIGURE 9-8
SERVICE STATION QUEUING.

LINE TABLE

LINE	DISTANCE	BEARING
L1	67.70'	N 14°25'36" W
L2	78.71'	N 31°22'34" E
L3	2.36'	N 19°09'02" W
L4	85.10'	N 73°05'41" E
L5	10.00'	N 40°39'39" W
L6	140.89'	N 49°15'11" E
(L6)	(140.74')	(N 49°24'37" E)

CURVE TABLE

CURVE	RADIUS	DELTA	ARC	BEARING	CHORD
C1	230.13	23°46'31"	95.49	N 61°13'38" E	94.81

EASEMENT NOTE:
ALL EASEMENTS OF RECORD AS INDICATED ON THE MOST RECENT TITLE RUN (DATED: MARCH 26, 2015 CONDUCTED BY WINDROSE LAND SERVICES AUSTIN FOR THIS PROPERTY ARE SHOWN ON THIS SITE PLAN.

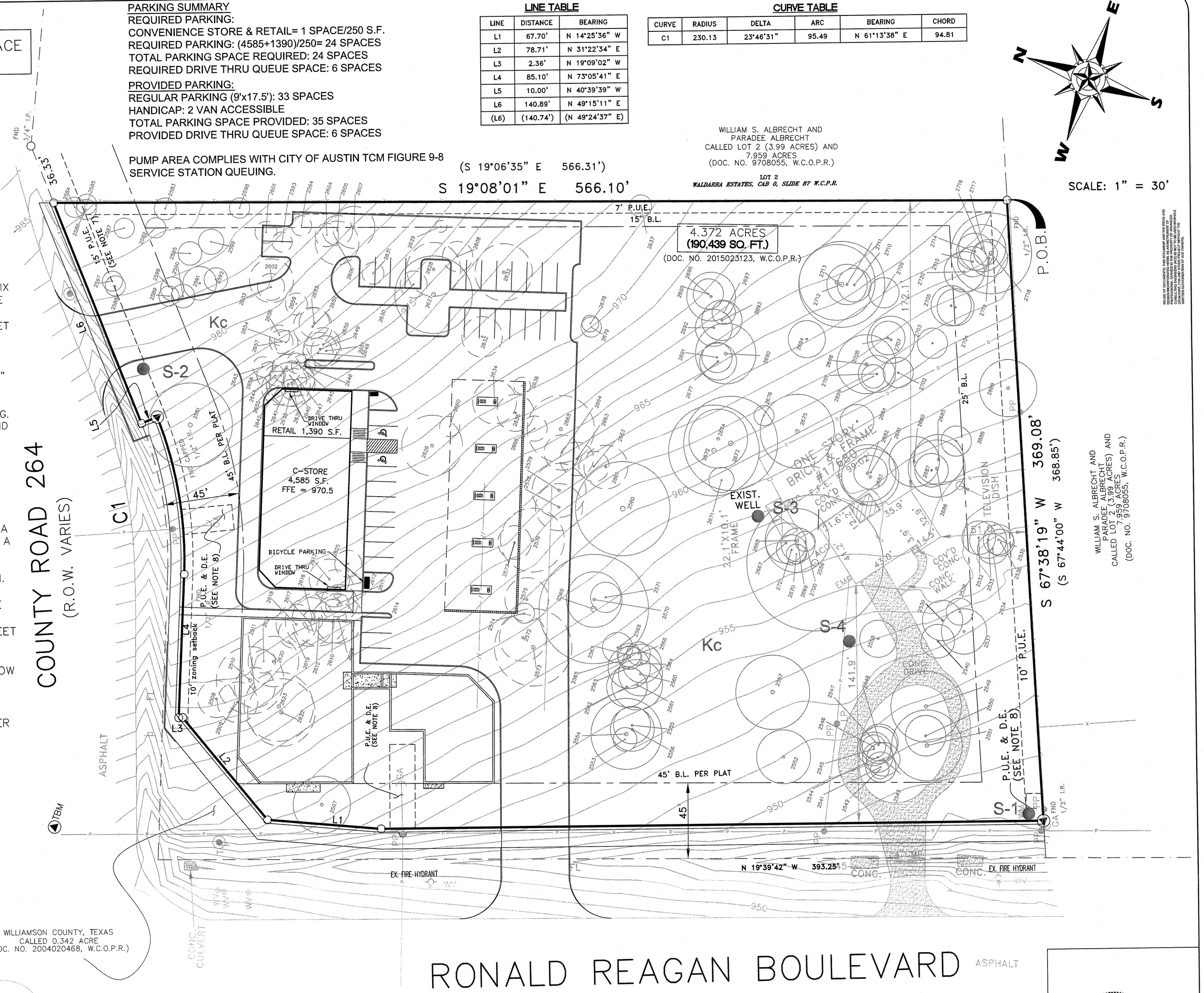
FIRE DEPARTMENT NOTE:
FIRE LANE STRIPING: FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE TOW AWAY ZONE" OR "FIRE ZONE TOW AWAY ZONE" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET INTERVALS OR LESS, ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.

FIRE LANE SIGNS: SIGNS SHALL READ "FIRE LANE TOW AWAY ZONE" OR "FIRE ZONE TOW AWAY ZONE" AND SHALL BE 12" WIDE AND 18" HIGH. SIGNS SHALL BE PAINTED ON A WHITE BACKGROUND WITH LETTERS AND BORDERS IN RED, USING NOT LESS THAN 2" LETTERING. SIGNS SHALL BE PERMANENTLY AFFIXED TO A STATIONARY POST AND THE BOTTOM OF THE SIGN SHALL BE SIX FEET, SIX INCHES (6'6") ABOVE FINISHED GRADE. SIGNS SHALL BE SPACED NOT MORE THAN THIRTY-FIVE FEET (35') APART. SIGNS MAY BE INSTALLED ON PERMANENT BUILDINGS OR WALLS OR AS APPROVED BY THE FIRE CODE OFFICIAL.

SITE PLAN RELEASE NOTES:
1. NO OUTDOOR SERVICE SPEAKER IS LOCATED WITHIN 75' OF A RESIDENTIAL DISTRICT UNLESS SUCH DISTRICT IS UTILIZED FOR A NON-RESIDENTIAL USE. NO DRIVE THROUGH SERVICE LANE IS WITHIN 50' OF A RESIDENTIAL DISTRICT UNLESS A NOTE IS SHOWN PROHIBITING OPERATING DURING THE HOURS OF 10 P.M. TO 6 A.M.
2. AIR CONDITIONING UNITS ARE NOT SHOWN FORWARD OF THE FRONT WALL OF THE BUILDING.
3. NO FENCING IS PROPOSED WITHIN THE FRONT OR SIDE STREET SETBACK.
4. EXTERIOR LIGHTING SHALL BE SHIELDED SUCH THAT THE LIGHT SOURCE IS NOT DIRECTLY VISIBLE FROM THE PUBLIC ROW OR ADJACENT RESIDENTIAL DISTRICTS OR USES AT THE PROPERTY LINE. UNSHIELDED "WALL PACK" LIGHTING IS NOT PROPOSED.
5. AL CLAWSON DISPOSAL, INC. SHALL BE THE SOLE PROVIDER OF WASTE HAULING FOR THIS SITE BOTH DURING AND AFTER CONSTRUCTION.

LEGEND

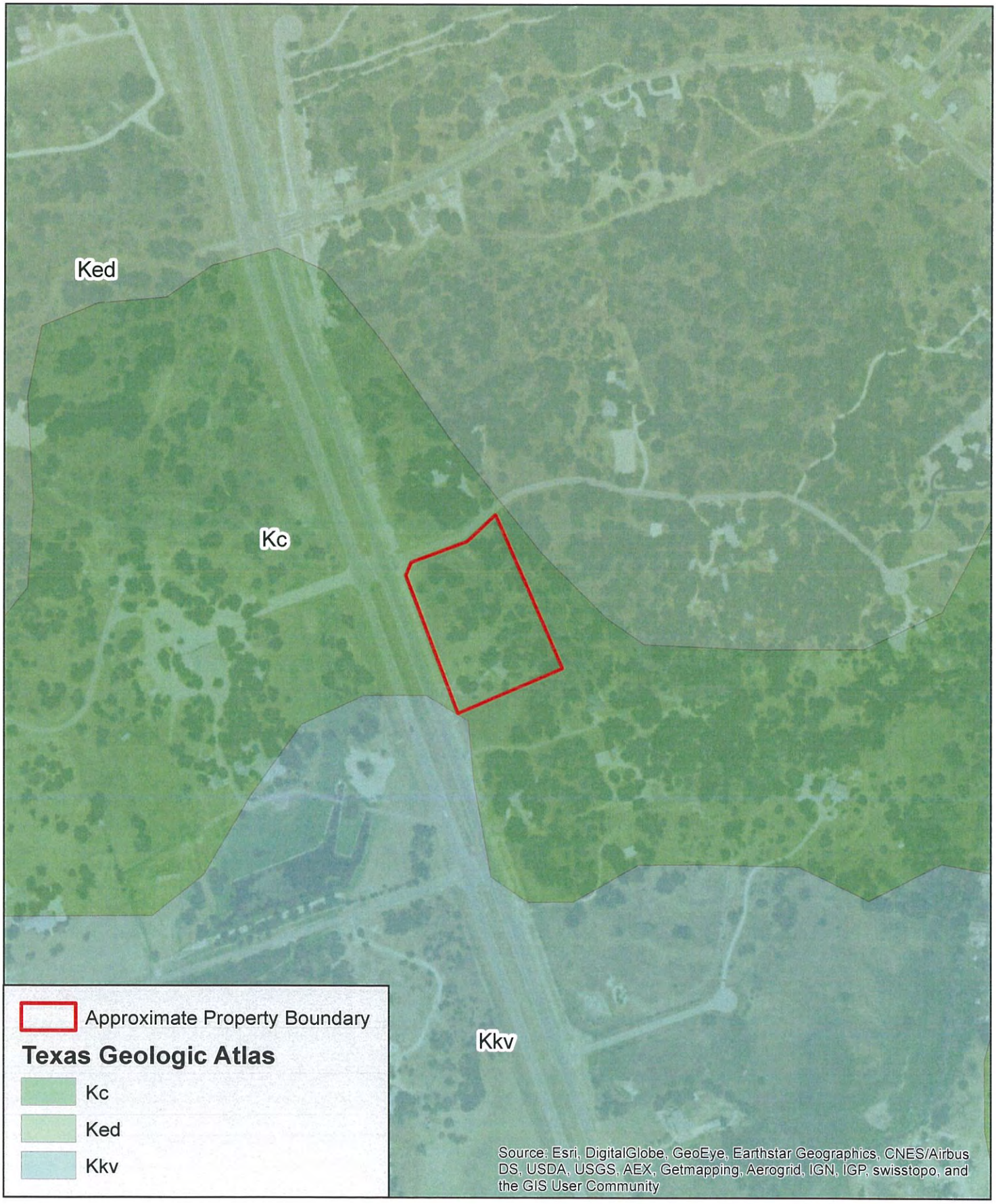
FH	– FIRE HYDRANT
EM	– ELECTRIC METER
LP	– LIGHT POLE
T	– TELEPHONE MANHOLE
PP	– POWER POLE
	– TELEPHONE MARKER
GA	– GUY ANCHOR
P	– OVERHEAD POWER LINE
WM	– WATER METER
WV	– WATER VALVE
x	– WIRE FENCE
o	– CHAINLINK FENCE
FL	– FLOW LINE
CMP	– CORRUGATED METAL PIPE
D.E.	– DRAINAGE EASEMENT
B.L.	– BUILDING LINE
P.U.E.	– PUBLIC UTILITY EASEMENT
	– CONTROL MONUMENT
TBM	– TEMPORARY BENCHMARK
( )	– RECORD



Notes:
Base map provided by Advanced Consulting Engineers, Inc.
Comanche Peak Formation: Kc
S-X: Geologic Feature
S-4: Septic Tank location provided by the property owner

STATE OF TEXAS
KEITH COPELAND
GEOLOGY
1000
LICENSED
PROFESSIONAL GEOSCIENTIST
6/10/16

TTU - Geologic Atlas of Texas Project



N

0 250 500 1,000 Feet

Base map referenced from the
Center for Geospatial Technology, Texas Tech University,
obtained from the Texas Geologic Atlas Project

EXPLANATION

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 15, 2021

Mr. Aly Hussaini
Leander Platinum Jubilee Investments Group, LLC
3604 Balcones Dr.
Austin, Texas 78731

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Leander Platinum; Located at 17680 Ronald W Reagan Blvd., Leander, Texas

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

Edwards Aquifer Protection Program ID Nos. 11002598 (WPAP) & 11002599 (SCS); Regulated Entity No. RN109247379

Dear Mr. Hussaini:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP and SCS applications for the above-referenced project submitted to the Austin Regional Office by Bleyl Engineering. on behalf of Leander Platinum Jubilee Investments Group, LLC on July 23, 2021. Final review of the WPAP and SCS was completed after additional material was received on September 24, 2021 and October 14, 2021. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213 and Chapter 217. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

WPAP PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 4.37 acres. It will include a convenience store with gas dispensers and canopy, a retail building, an office building, a right turn lane on Ronald W Reagan Blvd. (right of way), hike and bike trail, parking, utilities, and associated appurtenances. The total impervious cover will be 2.63 acres (60.18%).

SCS PROJECT DESCRIPTION

The proposed SCS will consist of a total of 154.5 linear feet of 8-inch diameter SDR-26 PVC ASTM D3034 pipe. The SCS will provide disposal service for the commercial development.

The system will be connected to the existing City of Leander wastewater line for conveyance to the Brushy Creek Wastewater Treatment Plant for treatment and disposal. The project is located within the City of Leander and will conform to all applicable codes, ordinances, and requirements of the City of Leander.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a sand filter system, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be utilized to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 2170 pounds of TSS generated from the 2.63 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, the property is surficially characterized by the Comanche Peak Formation. The site is located partially on the Edwards Aquifer Recharge Zone and partially on the Edwards Aquifer Contributing Zone. No sensitive geologic features were identified in the GA. The TCEQ Austin Regional Office site assessment conducted on September 16, 2021, revealed the site to be generally as described by the GA.

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP, SCS plan, and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP and SCS applications following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction, and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.

12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. There is one water well present on the project site. All water wells including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.
18. No part of the system shall be used as a holding tank for a pump-and-haul operation.

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

19. Certification by a Texas Licensed Professional Engineer of the testing of sewage collection systems required by 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office within 30 days of test completion and prior to the new sewage collection system being put into service. The certification should include the project name as it appeared on the approved application, the program ID number, and two copies of a site plan sheet(s) indicating the wastewater lines that were tested and are being certified as complying with the appropriate regulations.
20. Every five years after the initial certification, the sewage collection system shall be retested. Any lines that fail the test must be repaired and retested. Certification that the system continues to meet the requirements of 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office. The certification should include the project name as it appeared on the approved application, the program ID number and two copies of a site plan sheet(s) indicating the wastewater lines that were tested and are being certified as complying with the appropriate regulations. Should any test result fail to meet passing test criteria, and then subsequently pass testing, the result(s) and an explanation of what repair,

adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

21. If ownership of this organized sewage collection system is legally transferred (e.g., developer to city or Municipal Utility District), the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

22. Certification by a Texas Licensed Professional Engineer of the testing of sewage collection systems required by 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office within 30 days of test completion and prior to the new sewage collection system being put into service. The certification should include the project name as it appeared on the approved application, the program ID number, and two copies of a site plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. 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. Should any test result fail to meet passing test criteria and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

    Every five years after the initial certification, the sewage collection system shall be retested. Any lines that fail the test must be repaired and retested. Certification that the system continues to meet the requirements of 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office. The certification should include the project name as it appeared on the approved application, the program ID number and two copies of a site plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. Should any test result fail to meet passing test criteria, and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

23. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

24. An Edwards Aquifer protection plan approval or extension will expire, and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

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

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Ryan Soutter of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

Lillian Butler

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

LIB/rts

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

CC: Kenny Watkins, P.E., Bleyl Engineering

Underground Storage Tank Facility Plan Application

TCEQ-0583

RANGER
ENVIRONMENTAL SERVICES, LLC

Underground Storage Tank Facility Plan Application

Texas Commission on Environmental Quality

for Storage on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.5(d), 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. All components used for this facility are U.L. listed or certified by a 3rd party and are compatible and will function pursuant to 30 TAC §213.5(d) and 30 TAC Chapter 334 Subchapter C. This **Underground Storage Tank Facility Plan Application** is hereby submitted for TCEQ review and Executive Director approval. The application was prepared by:

Print Name of Customer/Agent: Chad M. Copeland, P.G., PWS

Date: 10/20/2025

Signature of Customer/Agent:

Regulated Entity Name: Leander Platinum

Underground Storage Tank (UST) System Information

1. ☒ **Attachment A – Detailed Narrative of UST Facility**. A detailed narrative description of the proposed UST Facility is attached. Note: Example descriptions are provided in the instructions (TCEQ-0583-Instructions)
2. Tanks and substance to be stored:

Table 1 - Tanks and Substances Stored

UST Number	*Size(Gallons)*	*Substance to be Stored*	*Double-wall Tank Material*
1	22,000	12,000-gasoline (reg); 5,000-gasoline (prem); 5,000-diesel	WATCO STI Permatank (Triple wall) UL 58 & UL 1746
2			
3			
4			
5			

3. Tanks:

   ☒ **Attachment B – Manufacturer Information for Tanks**. New or replacement systems for the underground storage of static hydrocarbons or hazardous substances must be double-walled or provide an equivalent method of protection approved by the executive director. Tanks must comply with technical standards as required by 30 TAC 334.45(b) relating to technical standards for new tanks. Manufacturer information is attached.

   ☐ **Attachment C – Alternative Design and Protection Method for Tanks**. Information required by 30 TAC 334.43, relating to variances and alternative procedures is attached.

4. Piping:

   ☒ **Attachment D – Manufacturer Information for Piping**. Piping must comply with technical standards as required by 30 TAC 334.45(c) relating to technical standards for new piping. Manufacturer information is attached.

   ☐ **Attachment E – Alternative Design and Protection Method for Piping**. Information required by 30 TAC 334.43, relating to variances and alternative procedures is attached.

5. ☒ Any new underground storage tank system that does not incorporate a method for tertiary containment shall be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature as required by 30 TAC §213.5(d)(1)(B).

   ☒ The UST system(s) will not be installed within 150 feet of a domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

   ☐ **Attachment F - Tertiary Containment Method**. The UST system(s) will be required to have tertiary containment provided. A description of the method proposed to provide tertiary containment is attached.

6. ☒ Corrosion protection equipment to be installed or type of non-corrodible materials:

Table 2 - Corrosion Protection

Equipment	*Corrosion Protection (Method)*
Tanks	WATCO STI Permatank (Triple wall) UL 58 & UL 1746
Product Delivery Piping	AO Smith Red Thread IIA (DW fiberglass piping)
Vapor Recovery Piping	NA
Submersible Pumps	Isolated in sump
Flex Connector (dispenser end)	Isolated in sump
Flex Connector (pump end)	Isolated in sump
Riser	Dielectric tape wrap

7. ☒ Overfill protection equipment to be installed:

   ☐ Overfill prevention restrictor positioned at 90% capacity.
   ☒ Overfill prevention valve positioned at 95% capacity.
   ☐ Overfill audible and visual alarm positioned at 90% capacity.

8. ☒ Methods for detecting leaks in the inside wall of a double-walled system must be included in the facility's design and construction. The leak detection system must provide continuous monitoring of the system and must be capable of immediately alerting the system's owner of possible leakages. Release detection equipment to be installed: (Check all that apply)

   ☒ Central on-site monitor
   ☒ Interstitial tank probes
   ☒ Automatic tank gauge
   ☒ Pump/manway sump probes
   ☐ Observation well probes
   ☒ Mechanical line leak detectors (for pressurized lines only)
   ☐ Automatic (electronic) line leak detectors

Excavation and Backfill

9. ☒ The depth of the tank excavation will be sufficient to accommodate piping fall requirements, tank diameter, bedding, and a minimum cover of three (3) feet [30 TAC §334.46].

   The depth of the tank excavation will be 15-16 feet.

10. ☒ The minimum thickness of the tank bedding will conform to 30 TAC §334.46(a)(5)(C and D).

    The tank bedding thickness will be 12 inches.

11. ☒ The material to be used as backfill will conform to 30 TAC §334.46(a)(5)(A and B) and will consist of:

- ☐ Clean washed non-corrosive sand
- ☐ Pea gravel
- ☒ Crushed rock
- ☐ Other: _____

12. ☒ The slope of the product delivery line(s) will conform to 30 TAC §334.46(c)(2) and will be 1/8" (1/8" per foot minimum).

Site Plan Requirements

Items 13 - 24 must be included on the Site Plan.

13. [X] The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = 20', 30'.

14. 100-year floodplain boundaries:

☒ The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA Floodplain Map 48491C0455F eff. date 12/20/2019

- ☐ 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.

15. ☒ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Show lots, recreation centers, buildings, roads, etc.

☐ The layout of the development is shown with existing contours. Finished topographic contours will not differ from the existing topographic configuration and are not shown.

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

☒ There are 1(#) 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.

17. 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 G - Exception to the Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

18. ☒ The drainage patterns and approximate slopes anticipated after major grading activities.
19. ☒ Areas of soil disturbance and areas which will not be disturbed.
20. ☒ Locations of major structural and nonstructural controls. These are the temporary best management practices.
21. ☒ Locations where soil stabilization practices are expected to occur.
22. ☐ Surface waters (including wetlands).

    ☒ N/A
23. ☐ Locations where stormwater discharges to surface water or sensitive features.

    ☒ There will be no discharges to surface water or sensitive features.
24. ☒ Legal boundaries of the site are shown.

UST System Profiles

25. ☒ **Attachment H - Profile Drawing(s)**. A profile drawing(s) of the proposed UST system with all components shown and labeled is attached.

Best Management Practices

26. ☒ **Attachment I - Initial and Continuing Training**. A description of the initial and continuing training of on-site personnel for operation of release detection equipment is attached. The description should include how personnel will respond to warning and alarm conditions of the leak detection monitoring system.
27. ☒ **Attachment J - Release Detection Maintenance**. A description of the program and schedule for maintaining release detection and cathodic protection equipment is attached. Any such equipment should be operated and maintained in accordance with the manufacturer's specifications and instructions.

Administrative Information

28. 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 project was approved by letter dated 10/15/2021. A copy of the approval letter is attached at the end of this application.

    ☐ The WPAP application for this project 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 will be no building or structure associated with this project. In the event a building or structure is needed in the future, the required WPAP will be submitted to the TCEQ.

    ☐ The proposed UST is located on the **Transition Zone** and a WPAP is not required. Information requested in 30 TAC 213.5 subsection (b)(4)(B) and (C) and (5) is

provided with this application. (Forms TCEQ-0600 Permanent Stormwater Section and TCEQ-0602 Temporary Stormwater Section or Stormwater Pollution Prevention Plan/SW3P).

29. ☒ UST systems must be installed by a person possessing a valid certificate of registration in accordance with the requirements of 30 TAC Chapter 334 Subchapter I.

30. ☒ This facility is subject to and must meet the requirements of 30 TAC Chapter 334, including but not limited to the 30 day construction notification and reporting and cleanup of surface spills and overfills.

31. ☒ Upon completion of the tankhold excavation, a geologist must certify that the excavation was inspected for the presence of sensitive features. The certification must be submitted to the appropriate regional office. If sensitive features are found, then excavation near the feature may not proceed until the methods to protect the Edwards Aquifer are reviewed and approved by the executive director.

32. ☒ 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.

33. [X] Any modification of this UST application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

ATTACHMENT A

Detailed Narrative of UST Facility

RANGER
ENVIRONMENTAL SERVICES, LLC

PROJECT DESCRIPTION

Previously provide and approved as part of the WPAP

General Information

The site is located on Lot 1, Waldarra Estates, a subdivision of record in Cabinet D, Slide 88 of the Plat Records of Williamson County. The property is located within the full purpose jurisdiction of the City of Leander. The property is within the Brushy Creek Watershed, which is classified as Suburban. The property is located within the Recharge Zone of the Edwards Aquifer at the southeast corner of Ronald Reagan Boulevard and County Road 264. The property is not located within the 100 year floodplain as defined by the Federal Emergency Management Agency map, Panel Number 48491C0455F, Williamson County and Incorporated Areas, dated December 20, 2019. The lot is zoned GC-3-B. The property is held under single ownership by Leander Platinum Jubilee Investments Group, LLC as referenced in General Warranty deed number 2015023123.

Existing Conditions

The 4.71 (plat) acre site is bounded on the north by County Road 264, on the west by Ronald Reagan Boulevard, on the east by Lot 2 of Waldarra Estates, and on the south by a residential property. The site contains an existing single-family residence and driveway and existing tree cover as shown on the enclosed construction drawings. The site slopes predominantly from northeast to southwest. The existing structure and driveway are slated for removal as a part of the current development plan.

Proposed Project

The proposed improvements consist of the construction of a single-story convenience store with gas dispensers and canopy, a retail building and an office building, concrete pavement, sidewalk, utility and landscape improvements. The proposed improvements contain 2.43 AC of impervious cover (56% total gross site impervious cover). The proposed detention pond is located at the southwest corner of the site and will be constructed using earthen slopes. The detention pond outlet structure is sized in order to maintain developed peak site discharge flows at or below pre-developed flow rates. The drainage across the proposed improvements will be conveyed to the detention pond via a combination of onsite storm sewers and inlets that discharge to the splitter box separating the sedimentation/filtration pond from the detention pond. Water quality requirements are met by the onsite sed/fil pond meeting TCEQ requirements for construction over the Recharge Zone of the Edwards Aquifer. A Water Pollution Abatement Plan will be filed with the Texas Commission on Environmental Quality for the planned development. Access to the site will be by driveway connections to Ronald Reagan Blvd and County Road 264 as shown on the plan.

The following pertains specifically to the UST proposal

The proposed underground storage tank systems will include one (1) WATCO STI Permatank/FRP (triple wall) underground storage tank. The tank will be a 22,000-gallon compartmentalized tank (UL 58 & UL 1746). The compartments will store 12,000 gallons of gasoline (regular), 5,000 gallons of gasoline (super), and 5,000 gallons of diesel. Associated with these tanks will be five (5) new Gilbarco Encore 700 S dispensers along with double wall FRP piping.

Each compartment will be equipped with 1.54 hp FE Petro submersible pump. Overfill prevention for each tank compartment will be provided by a valve assembly which will be installed in the tank below the vapor recovery fitting and will be set to shut off flow into the tank when the volume of liquid in the tank reaches no more than 95% of the tank capacity.

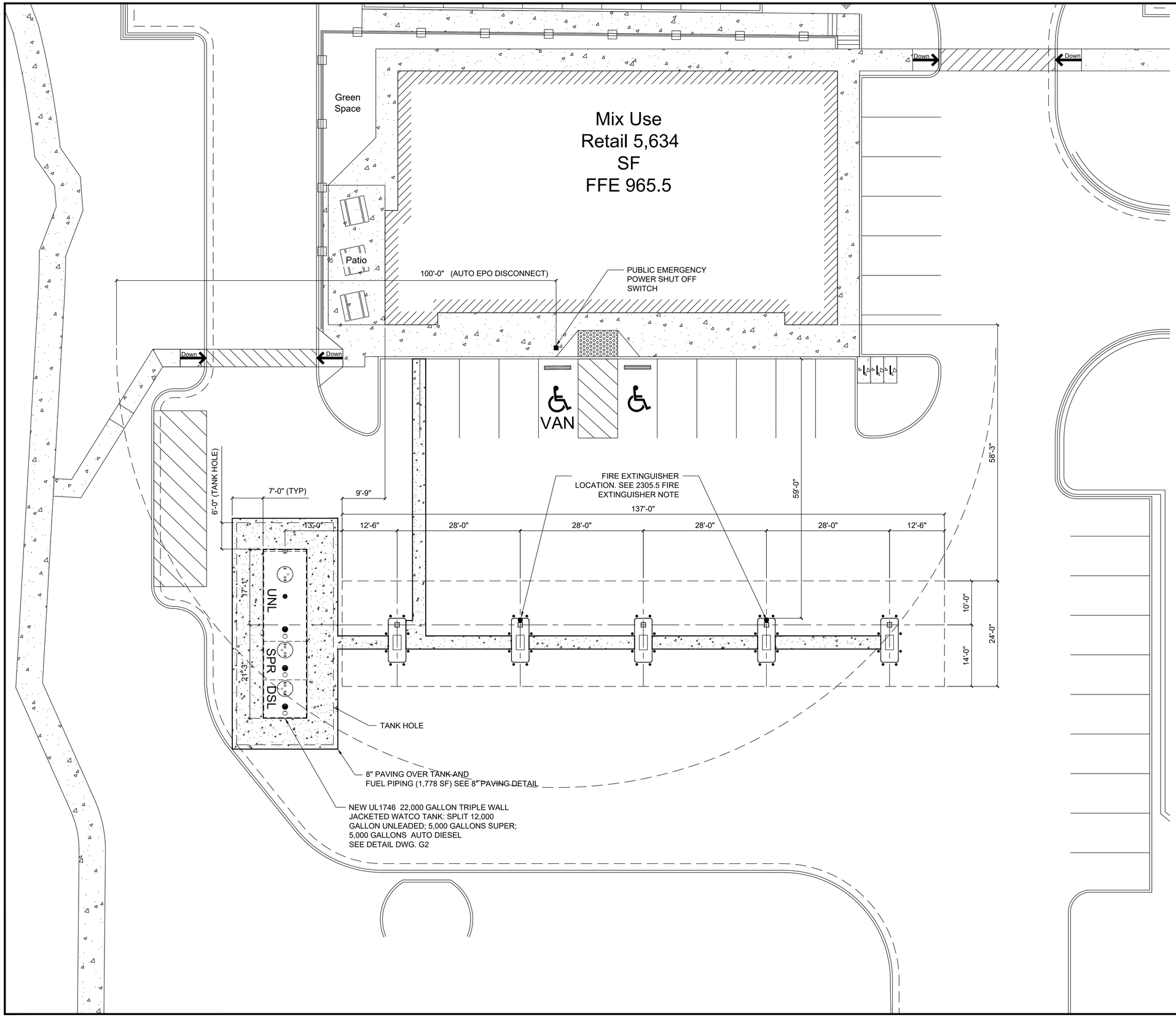
Product piping will be UL listed AO Smith Red Thread IIA fiberglass-reinforced plastic piping. Vent lines will be 2-inch diameter single-wall pipe. Under each dispenser for each product grade there will be a shear valve mounted to a rigid framework and installed at the dispenser island surface level to assure automatic shut-off of product flow during impact or fire emergencies. In addition, FLEX-ING flexible connectors

will be installed at both ends of each product line in isolation sumps to connect to the dispenser unit and submersible pump.

Corrosion protection for the metallic components of the underground storage systems will be provided by electrical isolation. The submersible pump housings and pump-end flexible connectors will be installed within single wall sumps, which will provide isolation from the backfill material. The dispenser-end flexible connector will be similarly isolated by enclosure within a PCI single wall fiberglass sumps under the dispenser. The vapor recovery riser and the fill tube riser will be installed within a PCI single wall sump and thoroughly wrapped with a suitable dielectric material and are isolated from the tank by the use of isolation bushings.

The proposed tank and piping will be monitored for leaks by means of inventory control, sump and interstitial leak detection, and mechanical line leak detection. The tank will be equipped with a liquid discrimination sensor which will be installed adjacent to the submersible pumps in the sumps and in all dispenser sumps. The tanks will also be equipped with an electronic automatic tank gauging inventory probe for inventory of the product volume in the tank.

The controller will use interstitial monitoring viewed by the Sensor Status Report to meet TCEQ release detection requirements. The tank interstitial is monitored with an interstitial sensor which will set off an alarm if liquid either enters the tank interstitial or is lost within the interstitial space. This central monitoring unit is designed to provide visual and audible alarms when the changes within the interstitials are detected. Each product piping line will be equipped with electronic line leak detection. The probes and sensors from all tanks will be connected to a Veeder-Root 450 TLS programmable control unit to be located in the store building.

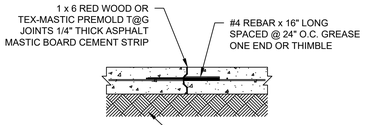


ALL CONSTRUCTION SHALL COMPLY WITH THE 2015 INTERNATIONAL FIRE CODE .

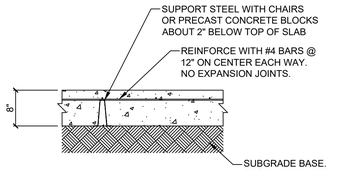
UNDERGROUND FUEL STORAGE TANKS:
DESIGN, FABRICATION, AND CONSTRUCTION OF TANKS SHALL COMPLY WITH NFPA 30. EACH TANK SHALL BEAR A PERMANENT NAMEPLATE OR MARKING INDICATING THE STANDARD USED AS THE BASIS OF DESIGN PER 2015 IFC SECTION 5704.2.7. DESIGN DATA SHALL IDENTIFY THE UL LISTING FOR EACH TANK, AND THE MANUFACTURERS INSTALLATION INSTRUCTIONS MUST BE INCLUDED IN THE PLANS. PROVIDE TANK MANUFACTURER SPECIFICATIONS VERIFYING COMPLIANCE WITH NFPA 30, UL LISTING AND DOUBLE WALL CONSTRUCTION. VERIFY COMPLIANCE FOR THE PROPOSED TANK INSTALLATION FOR THE RESUBMITTAL.

TANKS IN FLOOD ZONES:
PER SECTION 5704.2.7.8, 2015 IFC, WHERE A TANK IS LOCATED IN AN AREA WHERE IT IS SUBJECTED TO BUOYANCY BECAUSE OF A RISE IN THE WATER TABLE, FLOODING, OR ACCUMULATION OF WATER FROM FIRE SUPPRESSION OPERATIONS, UPLIFT PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS 22.14 AND 23.14 OF NFPA 30.

TANK LIDS:
TANK LIDS BELOW THE FLOOD PLAIN ELEVATION SHALL BE LIQUID TIGHT.



PAVING EXPANSION JOINT



FUEL TANK PAVING

DESIGNER
Taylor Made Designs
taylormadedesigns
@gmail.com
713-557-2537

CONTRACTOR

ENGINEER
Sarah Structural & Civil, LLC
13831Northwest Freeway
FIRM No. F-10808
HOUSTON TEXAS 77041
TEL: (832) 922-1145

ENGINEER SEAL

ISSUED FOR:
- ☐ DESIGN DEVELOPMENT
- ☐ PROGRESS 100 %
- ☐ BIDDING
- ☐ PERMIT
- ☐ CONSTRUCTION DOCUMENT
- ☐ CLIENT

DATE	REVISION
1	

LUMINARY C-STORE FUEL SYSTEM

SAN GABRIEL & HWY 183
LEANDER, TEXAS

SCALE: 1" = 20'-0"

ARCHITECTURAL FUEL SYSTEM SITE PLAN

SHEET: G0

SCARSDALE_USA

ATTACHMENT B

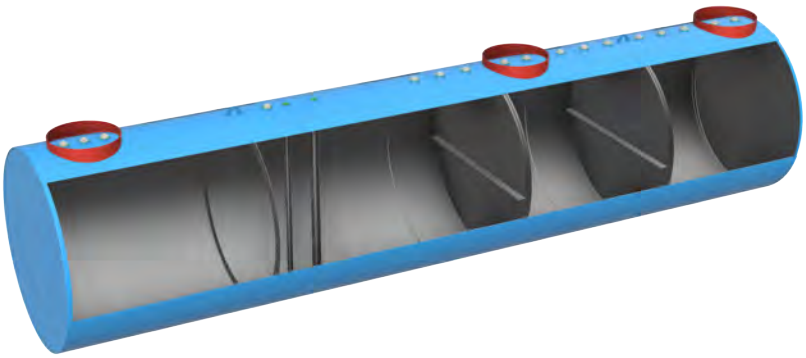
Manufacturer Information for Tanks

RANGER
ENVIRONMENTAL SERVICES, LLC

PERMATANK® TRIPLE WALL:

Unparalleled Protection for Environmentally Sensitive Areas

The **Permatank® Triple Wall** combines proven ACT-100® and Permatank® technologies to deliver unmatched protection. Featuring UL 58 secondary containment and a UL 1746-listed jacket for tertiary containment, this design sets the standard for advanced fuel storage. Approved by the Edwards Aquifer Authority and TCEQ since 2011, it meets the highest regulatory requirements for sensitive environments. Backed by STICO Mutual's 30-year limited warranty.



Permatank Triple Wall Advantages:

- **Primary steel tank:** For storing fuel and hazardous liquids.
- **Secondary steel wrap:** Built to UL 58 standards for added strength.
- **A tertiary wall:** Featuring STI's NextGen Permatank®, which integrates a superior corrosion-resistant coated steel in compliance with UL-1746 standards.
- **Independent secondary & tertiary monitoring pipes:** Prevent cross-communication for enhanced safety.
- **Opposing vacuum technology:** Ensures structural integrity.
- **Capacities up to 35,000 gallons:** With braced double bulkhead compartments for increased versatility.
- **Steel construction:** Ensures compatibility with all hydrocarbons and can be lined for DEF and JetA/AV Gas applications.
- **Sustainable steel construction:** Enables recycling, contributing to environmental sustainability.
- **Features a durable non-slip grip:** OSHA-level grip strength for superior safety.

(830) 947-0101 | www.watcotank.com | Scan to learn more:

Permatank® Triple Wall:

Length & Weight

Diameter	Capacity	Length +/- 2)	Weight +/- 5%
96”	8,000 gal	21’-9”	16,000 lbs
96”	10,000 gal	27’-2”	18,000 lbs
96”	12,000 gal	32’-7”	21,000 lbs
96”	15,000 gal	40’-8”	25,000 lbs
96”	20,000 gal	54’-5”	36,000 lbs
120”	10,000 gal	17’-4”	18,000 lbs
120”	12,000 gal	20’-10”	20,000 lbs
120”	15,000 gal	26’-0”	23,000 lbs
120”	20,000 gal	34’-8”	29,000 lbs
120”	24,000 gal	41’-8”	38,000 lbs
120”	26,000 gal	45’-2”	40,000 lbs
120”	30,000 gal	52’-1”	45,000 lbs
126”	30,000 gal	46’-9”	44,000 lbs
126”	32,000 gal	49’-11”	46,000 lbs
126”	34,000 gal	53’-0”	49,000 lbs
138”	30,000 gal	39’-0”	43,000 lbs
138”	35,000 gal	45’-6”	49,000 lbs

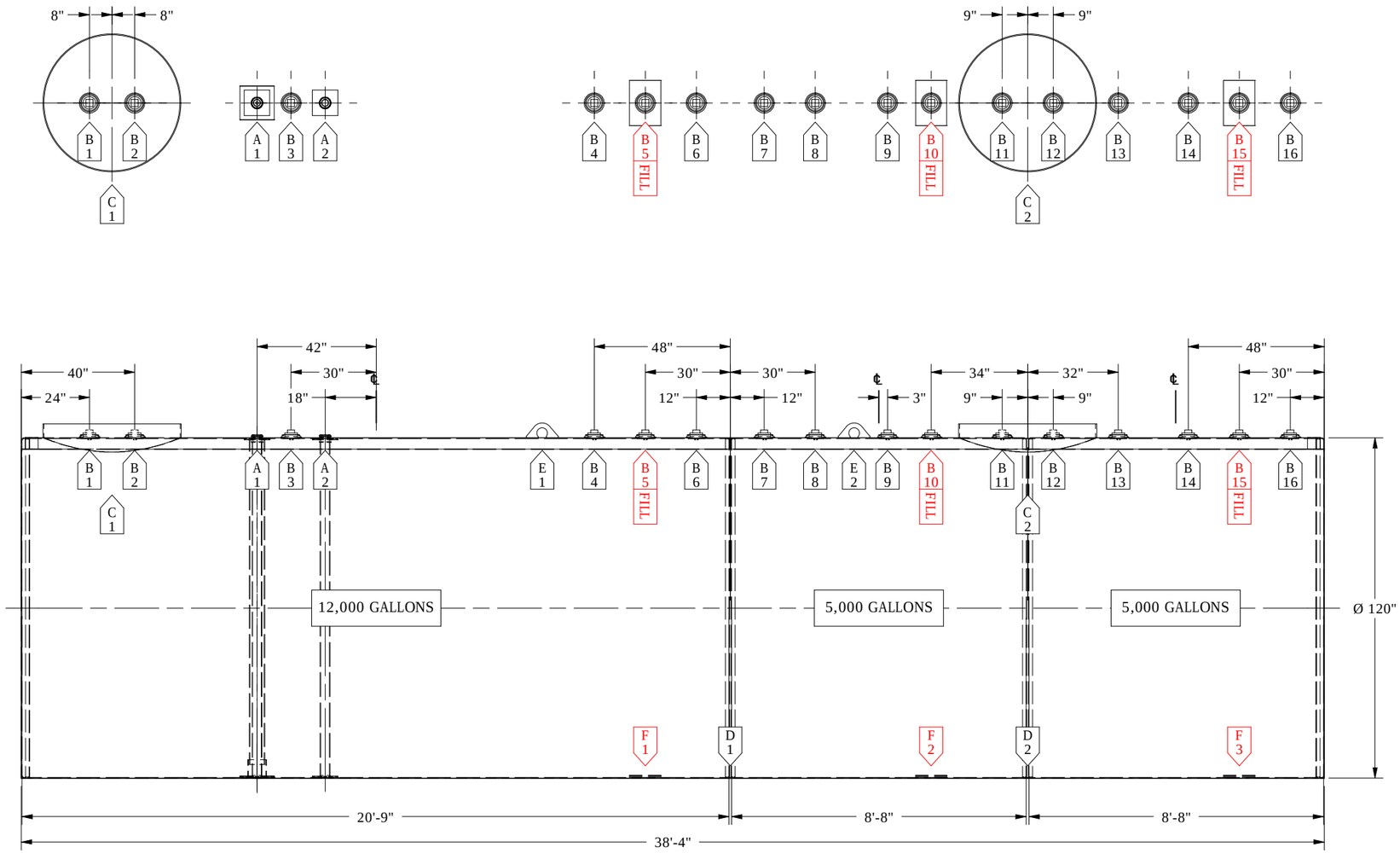
Additional Tank Options:

- 42” or 48” PCI Round Collars
- 48” Single-Wall & Double-Wall Bravo Ring Collars
- 24” or 30” Manways
- Watco Manufactured Deadman
- One-Piece Fiberglass Hold Down Straps
- Turnbuckles
- Rebar Anchor eyes
- Two-Piece Man-Out-Of-Hole Hold Down Straps

Choose the Permatank® Triple Wall for a reliable, compliant, and efficient underground storage solution that reflects our commitment to quality and customer satisfaction.
That’s The Watco Way.

Watco has been a leading manufacturer of storage tanks since 1964. Our products are known for their quality, durability, and safety. We are committed to providing our customers with the best products and services.

Proven Quality Through Independent Oversight
Watco Tanks undergoes rigorous third-party inspections by UL and STI, with eight unannounced audits each year. Since the inception of the inspection program over 25 years ago, Watco has maintained a flawless record—one of only three STI-certified manufacturers to do so.



LIST OF COMPONENTS		
ID	QTY	DESCRIPTION
A	2	2" INTERSTICE OPENING
B	16	4" ISOLATED FITTING
C	2	6" X 48" PCI SW Round Collar
D	2	BRACED DOUBLE BULKHEAD
E	2	LIFTING LUG
F	3	STRIKER PLATE

Approved 8/21/25

Cory Connally

ESTIMATED WEIGHT

31,000 LBS (± 5%)

22,000 GALLON TRIPLE-WALL

STI PERMATANK -TRIPLE-WALL UL 1746

120" X 38'-4"

(12,000/5,000/5,000)

CUST.: JF PETROLEUM GROUP

LOC.: LEANDER, TX

DWG NO: 42969

REV.	DATE	DWG BY	APP'D	DESCRIPTION

NOTES:

EXTERNAL: 100 MILS FIBERGLASS SHELL

INTERNAL: BARE METAL

TEST INNER: 5 PSIG SOAP & WATER

TEST OUTER: VACUUM

STRIKER PLATES UNDER "FILL" OPENINGS ONLY

E31IMATED WEIGHT: 31,000 LBS (± 5%)

WATCO TANKS INC. Est. 1964

ATTACHMENT D

Manufacturer Information for Piping

RANGER
ENVIRONMENTAL SERVICES, LLC

Red Thread™ IIA

(Product Data)

FUEL HANDLING

Applications

- Service Station
- Vent/Vapor Recovery
- Bulk Plant Terminals
- Fueling Terminals
- Central Fuel Oil Systems
- Marinas Terminals
- Ethanol Fuel Blends
- Biodiesel Fuel
- Diesel Exhaust Fluid
- UL/ULC Systems that require MV, HB, CT, A&M Fuels

Materials and Construction

All pipe is manufactured by filament winding process using amine-cured epoxy thermosetting resin to impregnate strands of continuous glass filaments with a resin-rich interior surface. The operating pressure of the pipe is up to 250 psig (17.2 bar) with continuous operating temperature to 150°F (66°C).

Red Thread IIA is Listed with Underwriters Laboratories Standard 971-2004 for non-metallic underground piping for motor vehicle (MV), high blend (HB), concentrated (CT) and aviation and marine (A&M) fuels. The pipe and fittings are also Listed with Underwriters Laboratories of Canada with both Listings under File MH9162.

Fittings

Fittings are manufactured with the same chemical and temperature capabilities as the pipe. Depending on the configurations and size, the fittings construction method will be compression molded, contact molded, fabricated or filament wound and are described in FH1250.

Testing

Installed pipe systems should be tested prior to use to assure soundness of all joints and connections. Locate pressure gauge in close proximity to the pressurizing equipment, not directly on the piping system. A pressure gauge with the test pressure at mid-scale is recommended.

Joining System

- **T.A.B.™** - The primary joining method for pipe joints promoting fast, positive make-up and prevents "backout" during curing.
- **Bell & Spigot** - The primary joining method for fitting joints.

These joints assist the installer and assures a fast trouble-free installation. Adhesive for this system is Series 8000. T.A.B. spigots can be bonded into tapered bells and tapered spigots can be Bonded into T.A.B. bells using standard bonding procedures for tapered joints.

ASTM D2996 Designation Code - RTRP-11AW13110

Nominal Dimensional Data

Pipe Size		Inside Diameter		Outside Diameter		Wall Thickness		Weight		Pressure/ Temperature Max. Rating at 150°F (66°C)		Mill Test Pressure		Minimum Bending Radius	
in	mm	in	mm	in	mm	in	mm	lbs.ft	kg/m	psig	MPa	psig	MPa	ft	m
2	50	2.238	57	2.371	60	0.067	1.70	0.42	0.63	250	1.72	376	2.59	102	31.0
3	80	3.363	85	3.559	90	0.098	2.49	0.92	1.37	175	1.21	300	2.07	153	46.5
4	100	4.364	111	4.553	116	0.095	2.41	1.10	1.64	125	0.86	265	1.83	195	59.5
6	150	6.408	163	6.686	170	0.139	3.53	2.47	3.68	20	0.14	265	1.83	287	87.4

View of Joint Illustrations

T.A.B.

Bell & Spigot

Typical Mechanical Properties

Pipe Property	75°F	24°C	200°F	93°C	Method
	psi	MPa	psi	MPa	
Axial Tensile					
Ultimate Stress	9,530	65.7	6,585	45.4	ASTM D2105
Modulus of Elasticity	1.68×10^6	11,584	1.42×10^6	9,791	ASTM D2105
Poisson's Ratio, ν_{ah} (ν_{ha})[1]	0.35 (0.61)				
Axial Compression					
Ultimate Stress	12,510	86.3	8,560	59.0	ASTM D695
Modulus of Elasticity	0.677×10^6	4,668	0.379×10^6	2,613	ASTM D695
Beam Bending					
Modulus of Elasticity (Long Term)	2.6×10^6	17,927	0.718×10^6	4,951	ASTM D2925
Hydrostatic Burst					
Ultimate Hoop Tensile Stress	40,150	277	36,480	252	ASTM D1599
Hydrostatic Hoop Design Stress					
Static 20 Year Life LTHS - 95% LCL	-	-	18,203 - 14,689	125.5 - 101.3	ASTM D2992 - Procedure B
Static 50 Year Life LTHS - 95% LCL	-	-	16,788 - 13,142	115.7 - 90.6	ASTM D2992 - Procedure B
Parallel Plate					
Hoop Modulus of Elasticity	3.02×10^6	20,822	-	-	ASTM D2412
Shear Modulus	1.36×10^6	9,343	1.15×10^6	7,895	-

Typical Physical Properties

Pipe Property	Value	Value	Method
Thermal Conductivity	0.23 BTU/hr•ft•°F	0.4 W/m°C	ASTM D177
Thermal Expansion	8.5×10^{-6} in/in °F	15.3×10^{-6} mm/mm °C	ASTM D696
Absolute Roughness	0.00021 in	0.00053 mm	
Specific Gravity	1.8		ASTM D792

[1] ν_{ha} = The ratio of axial strain to hoop strain resulting from stress in the hoop direction.
ν_{ah} = The ratio of hoop strain to axial strain resulting from stress in the axial direction.

[2] The differential pressure between internal and external pressure which causes collapse.

[3] A 0.67 design factor is recommended for short duration vacuum service. A full vacuum is equal to 14.7 psig (0.101 MPa) differential pressure at sea level.

[4] A 0.33 design factor is recommended for sustained (long-term) differential collapse pressure design and operation.

Ultimate Collapse Pressure

Size		Collapse Pressure[2][3][4]			
		psig		MPa	
in	**mm**	**75°F**	**150°F**	**24°C**	**66°C**
2	50	177	133	1.22	0.92
3	80	171	129	1.18	0.89
4	100	69	51	0.48	0.35
6	150	69	51	0.48	0.35

Pipe Length

Size		Standard		Random	
in	**mm**	**ft**	**m**	**ft**	**m**
2-6	50-150	15	4.57	22-25	6.7-7.62

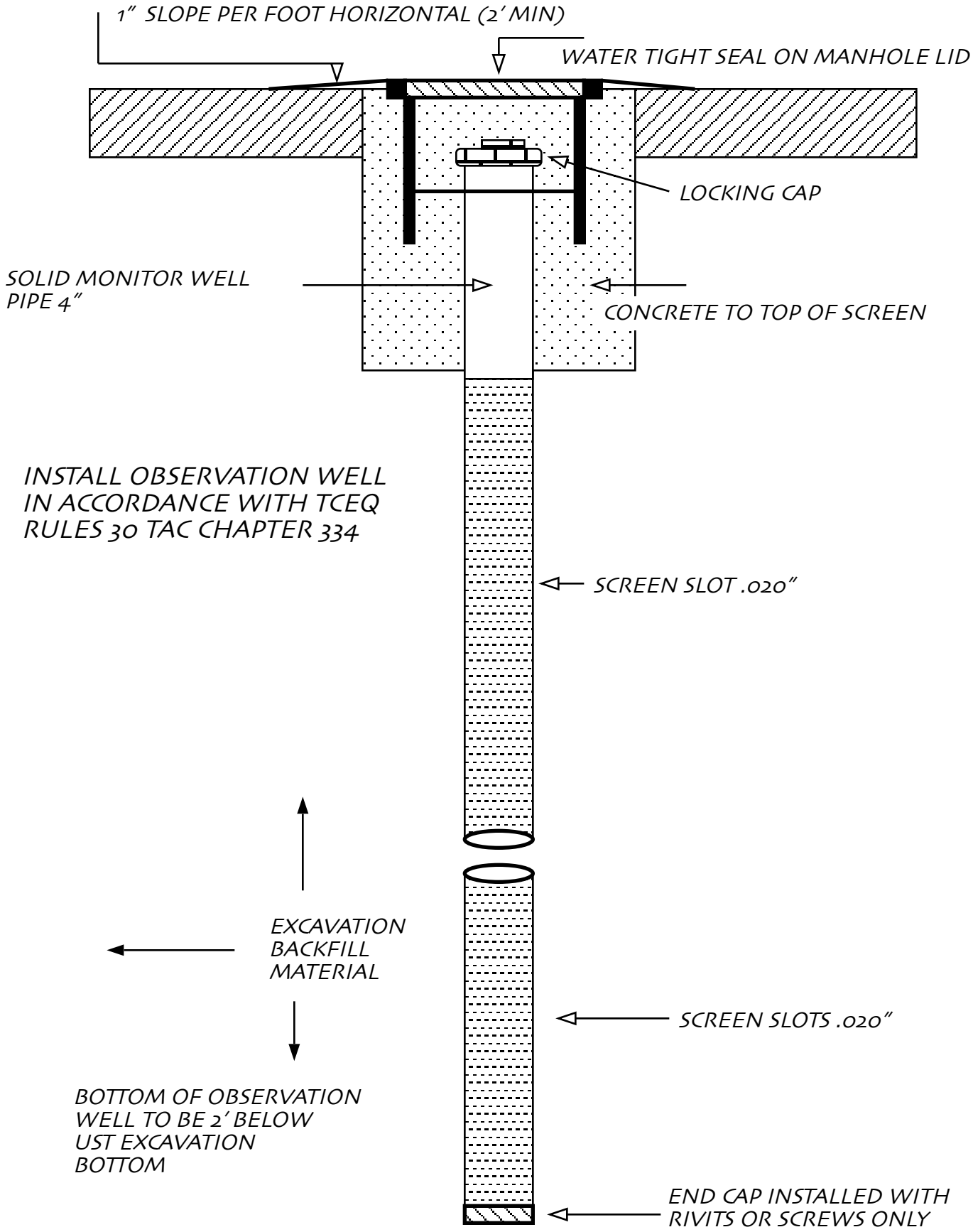
Fiber Glass Systems
17115 San Pedro Avenue, Ste 200
San Antonio, Texas 78232 USA
Phone: 210 477 7500
Fax: 210 477 7560

c UL us LISTED

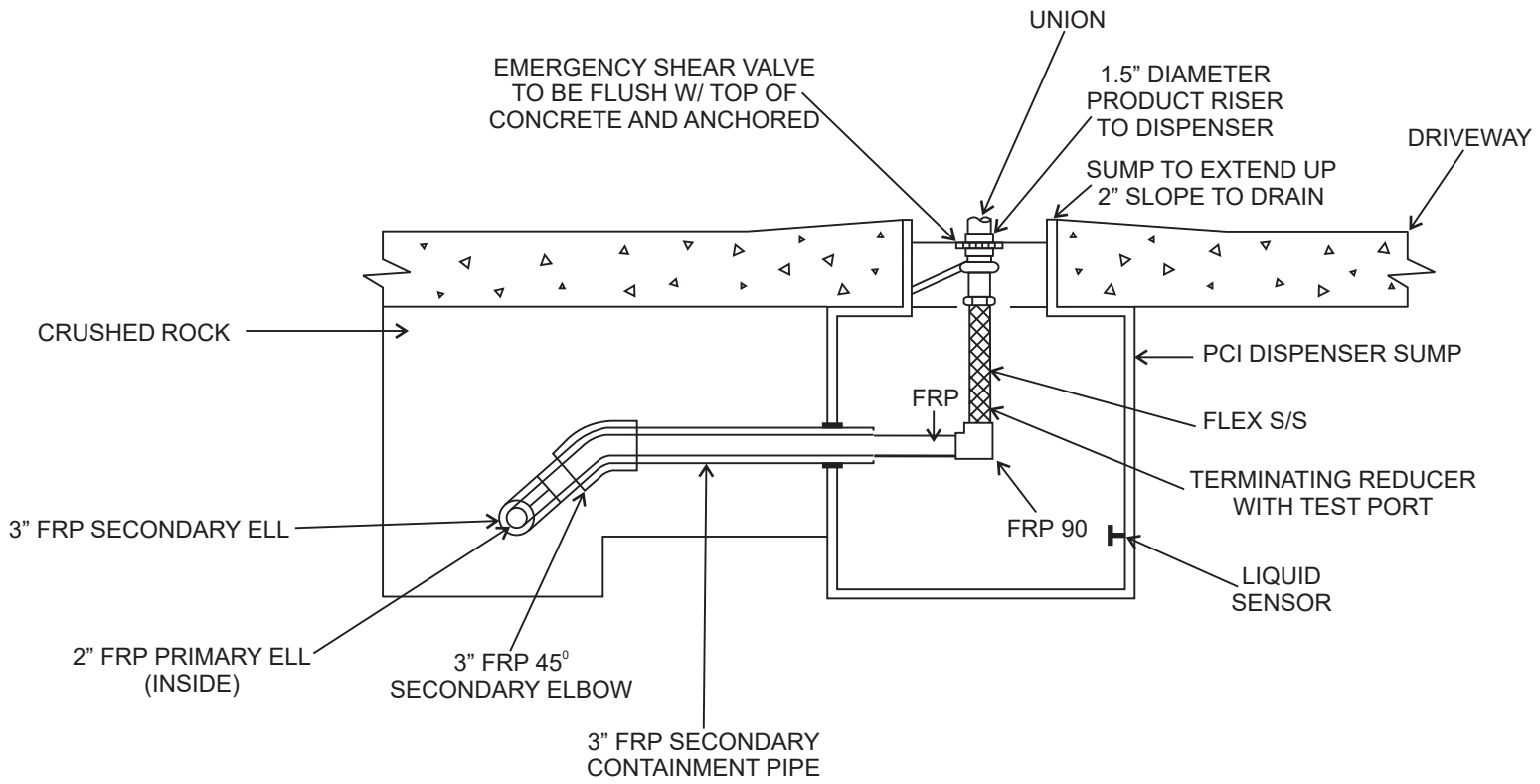
ATTACHMENT H

Profile Drawings

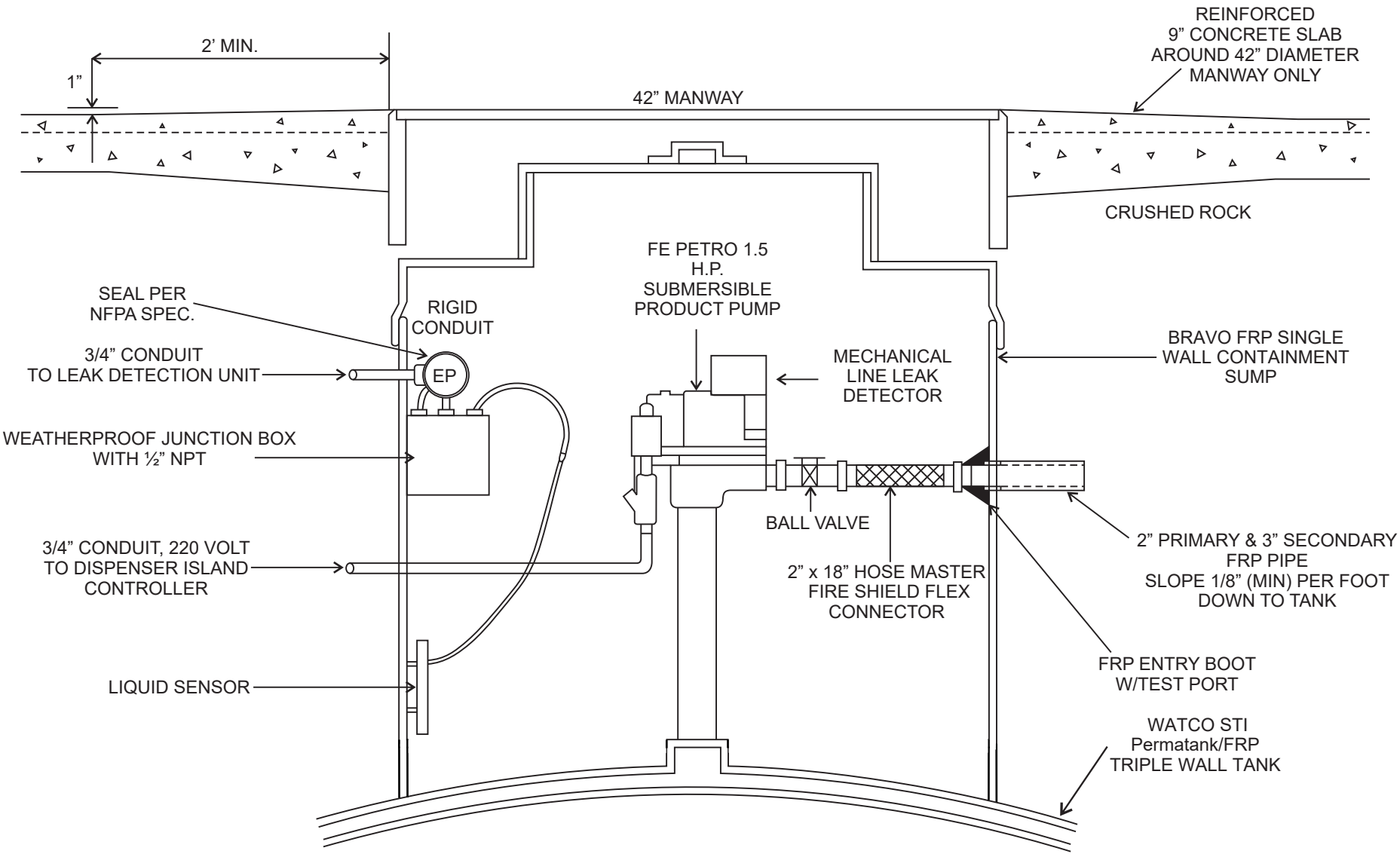
RANGER
ENVIRONMENTAL SERVICES, LLC



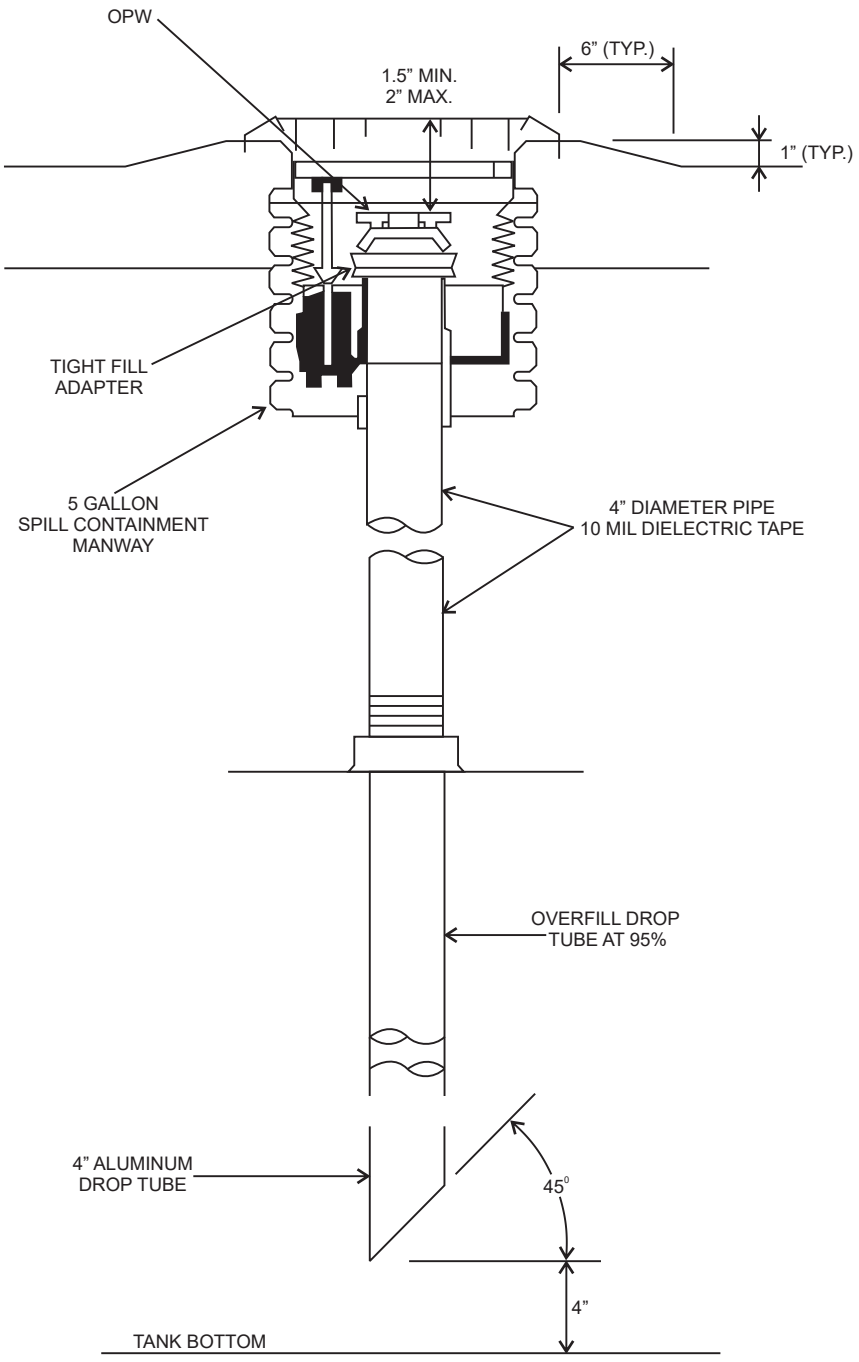
OBSERVATION WELL



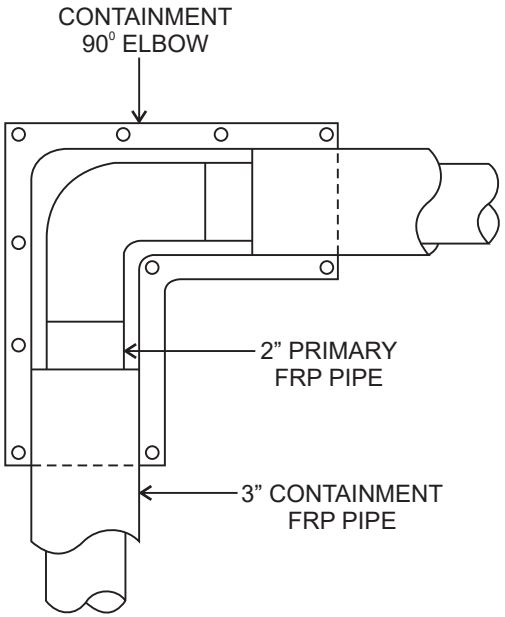
DISPENSER PIPING
NOT TO SCALE



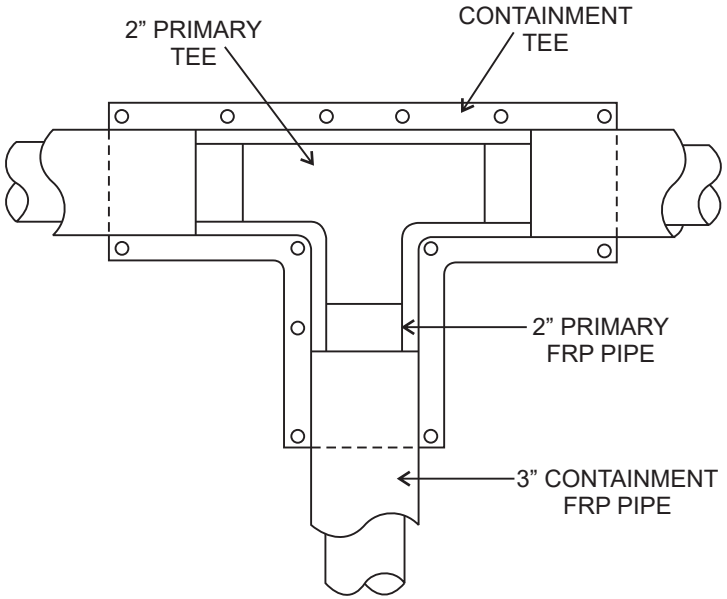
TYPICAL SUBMERSIBLE PUMP ASSEMBLY
NOT TO SCALE



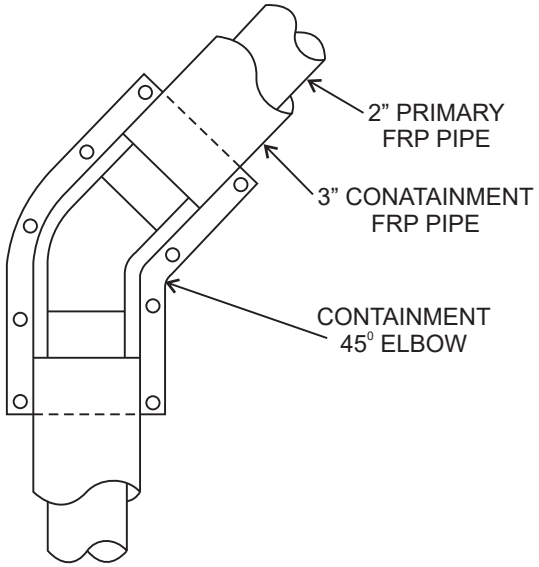
FILL RISER DETAIL
NOT TO SCALE



TYPICAL 90⁰ ELBOW



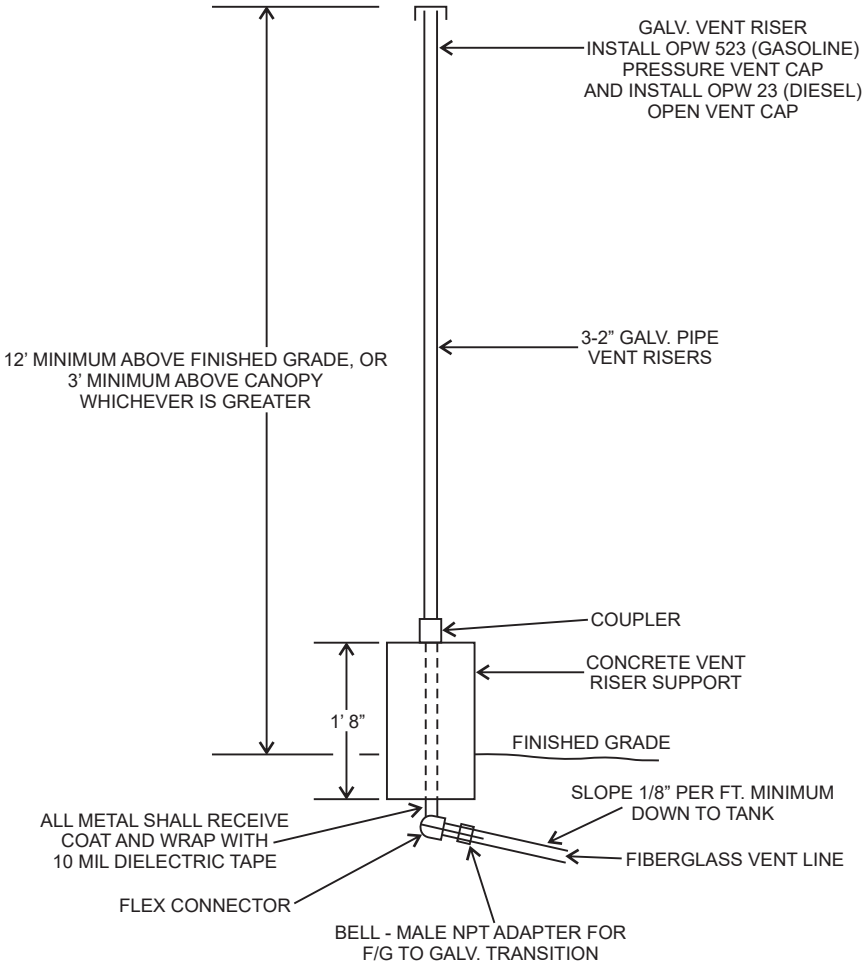
TYPICAL THREE WAY TEE



TYPICAL 45⁰ ELBOW

SMITH RED THREAD DOUBLE WALL FIBERGLASS PIPING

PIPING PLAN NOT TO SCALE



TANK VENT RISER
NOT TO SCALE

GILBARCO VEEDER-ROOT

ENCORE® 700 S

FUEL DISPENSERS

GILBARCO VEEDER-ROOT

TABLE OF CONTENTS

ENCORE® SERIES

FUEL DISPENSERS

As the market leader in retail fueling dispensers, Gilbarco Veeder-Root custom builds each and every fuel dispenser to deliver unmatched reliability and a familiar experience for consumers at the pump. In addition to the broad model assortment, Encore dispensers go through extended life cycle testing to ensure all fueling positions are operating as they should, 24/7/365.

On top of the quality performance, Encore also offers first-class blending with its precise blend control software and hydraulics that are designed to hit and hold target blend ratios, regardless of site conditions.

Encore's family of dispensers also provides a variety of options to deliver media while fueling, ultimately driving foot traffic in-store.

Encore is just one part of the full site solution that Gilbarco offers. From the forecourt, to the c-store, to underground or in the cloud, we have the product for you along with a seamless integration across all.

If you're looking to freshen up your forecourt with the latest in fueling technology, Gilbarco has the perfect solution for your c-store.

ENCORE OFFERING

Standard Flow

Flex Fuels

Ultra-Hi Flow

Diesel Exhaust Fluid (DEF)

ENCORE 700 S STANDARD FEATURES

Highest quality construction, backed by a 4-year corrosion warranty

High speed thermal printer accepts 3", 4", & 6" paper rolls and produces high-resolution graphics and barcodes

Tuxedo style side sheathing with Duramax™ finish

ADA and IBC Compliant*
Standard 2-year Limited Warranty

Choice of payment terminal

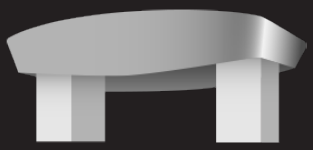
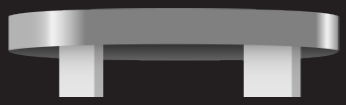
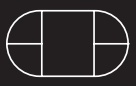
Interface via two-wire to Passport or third-party POS

Customized vinyl graphics on galvanized lower doors

* when mounted on a 6 in. island
Unions, hoses, and nozzles not included

OPTIONAL FEATURES

- Meter Upgrades
- Two Level Price Posting (Dual PPU)
- Security Add-ons
  - Reinforced Lower Panel
  - Door Sensors
  - Encrypted Pulsers (Standard Flow Only)
  - Pulser Security Cover (Ultra-Hi Only)
- Satellite Indicator Light (Ultra-Hi Only)
- Junction Box
- Heaters
  - Full Cabinet Heater*
- Sheathing Upgrades
  - Painted
  - Stainless Steel

CANOPY OPTIONS		
Style	**Kit Number**	**Description**
	**EN55010GAXXX** 	**Brand View™ Canopy** 56" W x 33" D x 9½" H
	EN55020GAXXX 	**Brand View™ DEF Canopy** 66" W x 37 ⅞" D x 10" H
	**EN01003GAXXX** 	**Oval Canopy** 62" W x 35" D x 9½" H
	**EN01001GAXXX** 	**Rectangular Canopy** 46½" W x 39½" D x 9½" H
	**EN01004GAXXX** 	**Rounded Corner DEF Canopy** 64.3" W x 32" D x 9.55" H
	EN01002GAXXX 	**Rounded Corner Canopy** 56" W x 33" D x 9½" H

* Recommended for sites that experience temperatures lower than 14°F (-10°C)

PAYMENT TERMINALS

FlexPay 6 Modular 15 in.

FlexPay 6 All-in-One 9 in.

OVERVIEW

Invenco by GVR offers best in class security, durability and user experience. Its product offering gives you the ability to select the outdoor payment terminal that best fits your business' needs. With a variety of options, compatible with nearly all standard dispensers, Invenco by GVR's all-in-one and modular Payment Terminals, offer endless possibilities.

The all-in-one payment terminals allow a fully customizable user experience with dynamic multi-media in a compact footprint. The incredibly durable, modular payment terminals, provide the ultimate customer experience with high-definition rich media and video, perfect for various media opportunities to drive your business.

FLEXPAY 6 PAYMENT TERMINALS

Designed from the bottom up, the new FlexPay 6 payment terminals from Invenco by GVR maximize customer engagement, have higher reliability, lower cost of ownership, best-in-class security, and reduce maintenance through remote terminal management.

FlexPay 6 features two distinct product lines: the All-in-One and Modular payment terminals. All FlexPay 6 outdoor payment terminals will be PCI 6 compliant with the latest EMV contactless standard, have native cloud connectivity, and include 2D bar code and contactless readers as standard features. Terminals are available as retrofit kits or as factory-installed kits in Encore 700S dispensers.

FlexPay 6
Modular 15 in.

- 15.6 in. HD color full touch screen display with 1200 nits rating
- Modular design offers the following as separate components:
  - Printer
  - Card Reader
  - Display
  - ADA Module
  - Contactless

FlexPay 6
All-in-One 9 in.

- 9 in. HD color full touch screen with HTML5
- All-in-One design offers card reader, contactless, PIN Pad, and printer
- Superior anti-skim design
- Capacitive PIN Pad
- Split card reader
- Backwards compatible to replace older models

PORTFOLIO AT A GLANCE

	Modular	All-in-One
	FlexPay 6 M1-15	**FlexPay 6 A2-09**
Display Size	15.6 in.	9 in.
OPT Configuration	Modular	All-In-One
EMV Contactless Certifications	3	3.x
PCI PTS x.x / SRED	PCI 5.x (PCI 6.x coming soon)	PCI 6.x
Temperature Range	-30° C to +70° C	-30° C to +70° C
Display Brightness	1250 nits	1200 nits
Media Ready	Yes	Yes
Available as Factory Installed Dispenser	Yes	Yes
Available as Retrofit Kit	Yes	Yes

Same trusted service network as other Gilbarco Veeder-Root Products.
Contact Your Local Sales Representative for More Information.

ENCORE STANDARD FLOW DISPENSER AND PUMPERS

Features:

- Single or two sided units available with up to 6 grades and 4 hoses per side
- 4-piston Positive displacement C+ Meters
- High capacity 10-micron water alert filters (one per grade)

Dispensing: Gasoline, Diesel, Flex Fuels, Biodiesel, and Kerosene

STANDARD FLOW DISPENSERS

Dispensed Grades	Model	Description	Products/Inlets	Hoses per side	Active Meters
One Grade	NA0*	MPD Dispenser 1-Grade - No Blending	1	1	1
Two Grades	NA1*	MPD Dispenser 2-Grade - No Blending	2	2	2
	NG4	MPD Dispenser 2-Grade, Shared Hose - No Blending	2	1	2
Three Grades	NA2*	MPD Dispenser 3-Grade - No Blending	3	3	3
	NL0	Blender Dispenser 2+1	3	2	3
	NN1	Blender Dispnser 3+0	2	1	2
Four Grades	NA3*	MPD Dispenser 4-Grade - No Blending	4	4	4
	NG1	MPD Dispenser 4-Grade, Shared Hose - No Blending	4	2	4
	NL1	Blender Dispenser 3+1	3	2	3
	NN2	Blender Dispenser 4+0	2	1	2
Five Grades	NL3	Blender Dispenser 3+1+1	4	3	4
	NL2	Blender Dispenser 4+1	3	2	3
Six Grades	NL8	Blender Dispenser 5+1	3	2	3

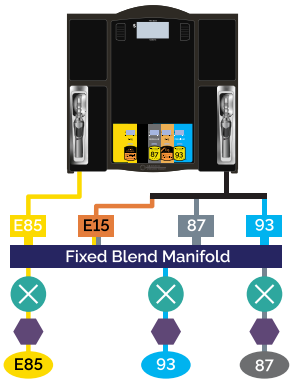
**Lever Activation*

STANDARD FLOW PUMPERS

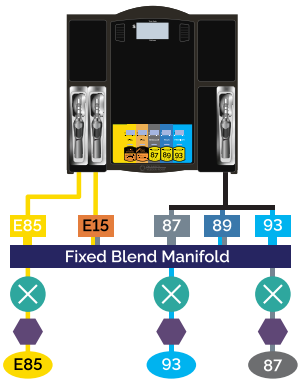
Dispensed Grades	Model	Description	Products/Inlets	Hoses per side	Active Meters
One Grade	NC0*	MPP Pump 1-Grade - No Blending	1	1	1
Two Grades	NC1*	MPP Pump 2-Grade - No Blending	2	2	2
Three Grades	NN5	Blender Pump 3+0	2	1	2
Four Grades	NL5	Blender Pump 3+1	3	2	3
Five Grades	NL6	Blender Pump 4+1	3	2	3

**Lever Activation*

STANDARD FLOW: FLEXIBLE FUEL DISPENSER CONFIGURATIONS



NF0



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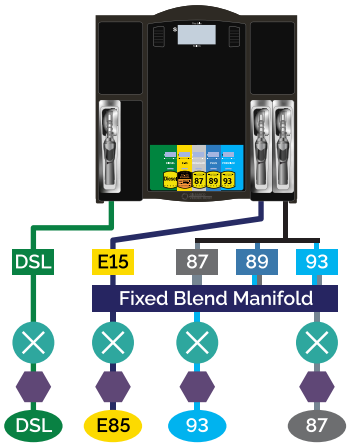

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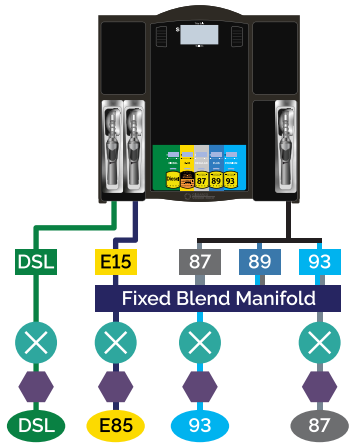
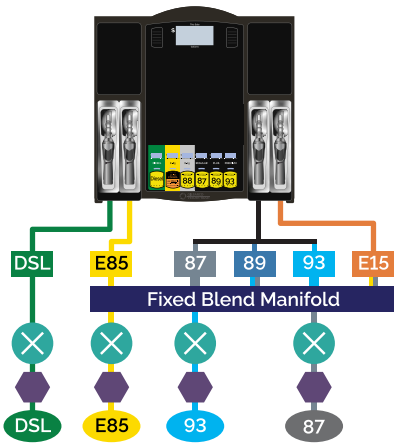
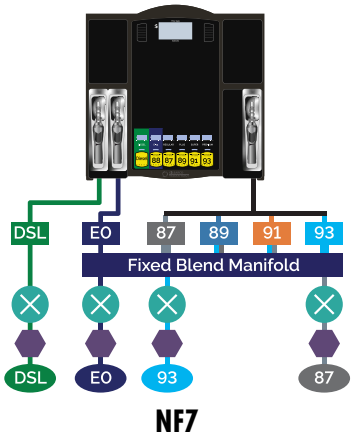


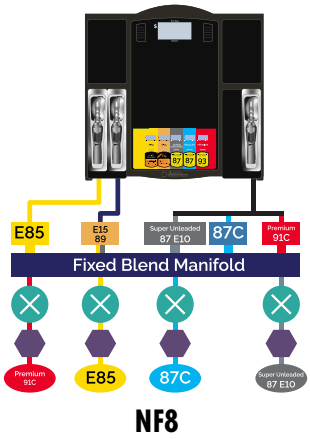
NF4



NF6



NF7



NF8

Valve

Meter

Underground Storage Tank

Hoses

STANDARD FLOW FLEX FUEL DISPENSERS

Dispensed Grades	Model	Description	Products/Inlets	Hoses per side	Active Meters
Five Grades	NF0	Universal Blender Dispenser 3-2+0	3	2	3
	NF1	Universal Blender Dispenser 3-1-1	3	3	3
	NF2[a]	Universal Blender Dispenser 3-1+1	4	3	4
	NF4[a]	Universal Blender Dispenser 3-1+1	4	3	4
	NF8	Universal Blender Dispenser 3-1-1	4	3	4
Six Grades	NF7	Universal Blender Dispenser 4-1+1	4	3	4
	NF6	Universal Blender Dispenser 3-1-1+1	4	4	4

a. NF2 and NF4 are similar configurations. NF2 allows two hoses on the right (3 and -1) and one on the left (+1). NF4 allows one hose on the right (3) and two on the left (-1 and +1)

ULTRA-HI FLOW DISPENSER

Features:

- Pump up to 60 gallons (227 liters) per minute* with a Master and Satellite simultaneously
- Lever Activation
- High Capacity 30-micron filters (one per inlet)

ULTRA-HI FLOW DISPENSERS					
Dispensed Grades	**Model**	**Description**	**Products/Inlets**	**Hoses per side**	**Active Meters**
One Grade	NP3	Master Dispenser 1-Grade	1/2**	1	1/2**
	NP4	Combo: Master/Satellite Dispenser 1-Grade	2	1	1
	NP5	Satellite Dispenser (No CRIND)	1/2**	1	0
Two Grades	NP6[a]	Master Dispenser 2-Grade	2	2	2
	NP8[a]	Satellite Dispenser 2-Grade (No CRIND)	2	2	0

a. Available Only as Single-Sided Dispensers
*** 2 Products/Inlets and Active Meters only*

ENCORE DEF DISPENSERS

DEF dispensing compatible with Standard Flow or Ultra-Hi Flow models

DEF valve access door

Magnetic Flapper cover helps keep heat in, preventing DEF nozzles & hoses from freezing

Thermostat-controlled cabinet protecting to -4°F (-20° C). Colder weather protection available.

- Single or Dual-sided
- Factory Installed or Retrofit Kits

DIESEL EXHAUST FLUID

With all diesel vehicle engines produced after 2010 requiring diesel exhaust fluid or DEF, providing customers an easier way to fill up their DEF tanks is becoming more and more important.

In addition to offering DEF from both sides of the dispenser, Encore has also brought DEF dispensing to the forecourt. Encore 700S DEF Standard Flow Dispensers provide the ability to add DEF dispensing from the same fueling position as your standard gasoline and diesel fuels, preventing retailers from giving up an entire spot dedicated to DEF.

STANDARD FEATURES:

- Stainless steel DEF-compatible hydraulics
- Highly accurate, magnetic flow meter
- ISO components to ensure DEF compatibility
- Crossover plumbing available to route DEF from one inlet to both cabinets

AVAILABLE OPTIONS:

- DEF cold weather upgrade or specialized upgrade option for protection to -40° F (-40° C)
- DEF temperature warning sensors
- 6 ft. DEF inlet hose
- Stainless steel DEF breakaway and swivel
- DEF nozzle with or without mis-fill magnetic adapter

FACTORY INSTALLED DEF DISPENSERS

	Model	Description	Products/Inlets	Hoses per side	DEF Hoses	Active Meters
Backcourt DEF	NA4	DEF Dispenser - Diesel Exhaust Fluid Only[a]	1	0	1	1
	NPA	UH Master Diesel 1-Grade + DEF 1-Side Only	2/3**	1	1	2/3**
	NPB	UH Master/Satellite Diesel Dispenser + DEF 1-Side Only	2	1	1	2
	NPC	UH Master Diesel 2-Grade, 1-Sided + DEF 1-Side Only[b]	3	2	1	3
Forecourt DEF Adder Options	-	NXX + DEF: Factory Installed DEF on Std flow Dispenser[c]	-	-	1	-
	-	NXX + Dual DEF: Factory Installed DEF on Std Flow Dispenser and 2nd Cabinet Field Installed[c,d]	-	-	2	-

a. NA4 includes only 1 DEF cabinet. If DEF is required on both sides, a two sided NA4 should be ordered along with an NPK RF-2 Kit that will need to be field installed.
b. NPC is only available single sided.
c. Available for models: NA0, NA1, NA2, NG0, NN1, NN2, NL0, NL1.
d. Second side cabinet should be ordered with NPK RF-4 Kit
*** 3 Products/Inlets and Active Meters only on Two-Sided NPA*

FACTORY INSTALLED DEF DISPENSERS

	Model	Description
Ultra-Hi Flow Dispensers	NPK RF Kit	To add 1 side DEF Cabinet to NP3, NP6, NP4
	NPK RF-2 Kit	To add 2nd side DEF cabinet to 2-sided NP3, NPA
Standard Flow Dispensers	NPK RF-3 Kit	To add DEF to one side of a standard flow unit (one- or two-sided)
	NPK RF-4 Kit	To add DEF to 2nd side of a 2-sided standard flow unit[c]

Note: DEF outlet hose required for all DEF dispensers/cabinets.

NOTES

GILBARCO VEEDER-ROOT

www.gilbarco.com

P-2793 | 1123 | Gilbarco Veeder-Root | 7300 W. Friendly Ave., Greensboro, NC 27410

RSC SERIES
DISPENSER SUMPS

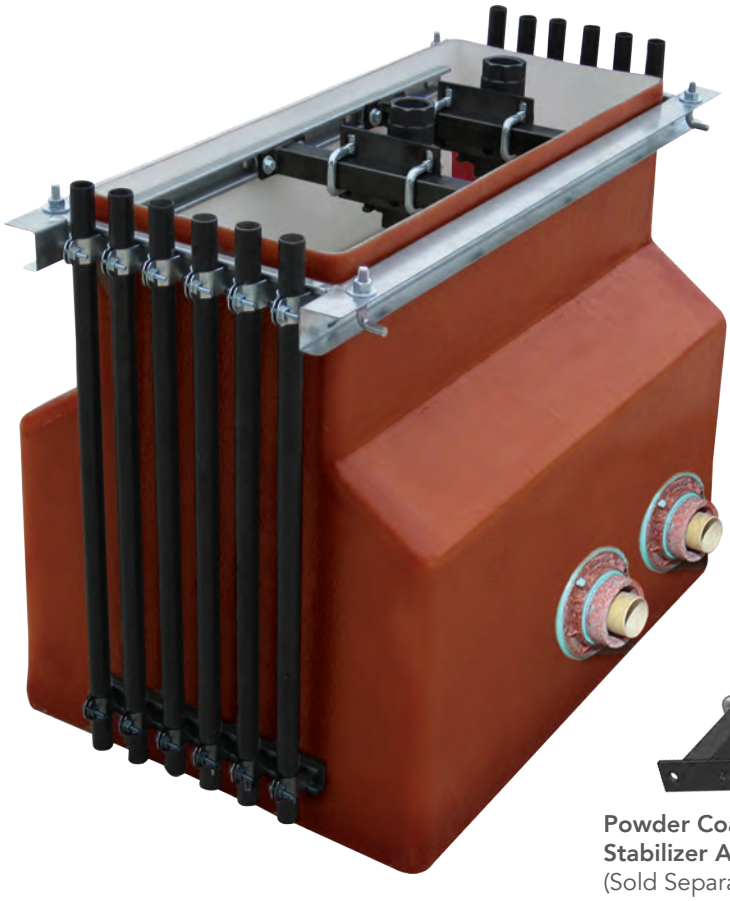
PCI's RSC (Reduced Steel Conduitless) dispenser sump offers our quality fiberglass in a cost-effective design. Our reduced galvanized steel frame offers excellent corrosion resistance.

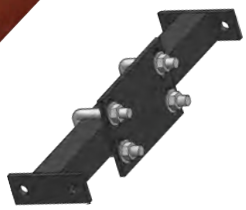
c UL us LISTED UL2447

Brite White INTERIOR

DUO-MOLDED TECHNOLOGY

Pre Plumbed Service





Powder Coated Shear Valve Stabilizer Assembly Kit
(Sold Separately)

ADJUSTABLE HEIGHT
Designed and engineered to allow up to 6" of field adjustment helps ensure proper slope once penetration fittings have been installed off location.

WIDE-BODY DESIGN
Allows ample space for up to 4 Pass-Thru plumbing configurations in a single sump while our tapered top fits inside the most narrow island forms.

DUAL CONDUITLESS ENTRY
Conduit mounting channel is engineered directly into both ends of the steel frame to allow electrical entry in the bottom of the dispenser without penetrating the sump wall.

SINGLE PIECE CONSTRUCTION
Eliminates any seams and provides less places for water penetration.

1" COMPOSITE RAINLIP
Prevents surface water from entering the sump and offers better protection against rust and corrosion than metallic rainlips.

UNIVERSAL STABILIZER BARS
Universal stabilizer bars with 3-axis adjustment accommodate multi-product dispensers without displacing product lines and ensure proper load transfer in case of an impact from any direction.

100% FIBERGLASS
100% high quality, non-corrosive fiberglass provides long-term reliable containment from fuel exposure without voiding warranty, warping, cracking or becoming brittle.

'BRITE-WHITE' INTERIOR
Our signature 'Brite-White' interior reflects light for better visibility and makes identifying leak points easier.

DUO-MOLDED TECHNOLOGY
Our fiberglass sumps utilizes Duo-Molded Technology. Using premium raw materials with a high glass content, we create two layers of fiberglass, offering superior strength and fuel resistance.

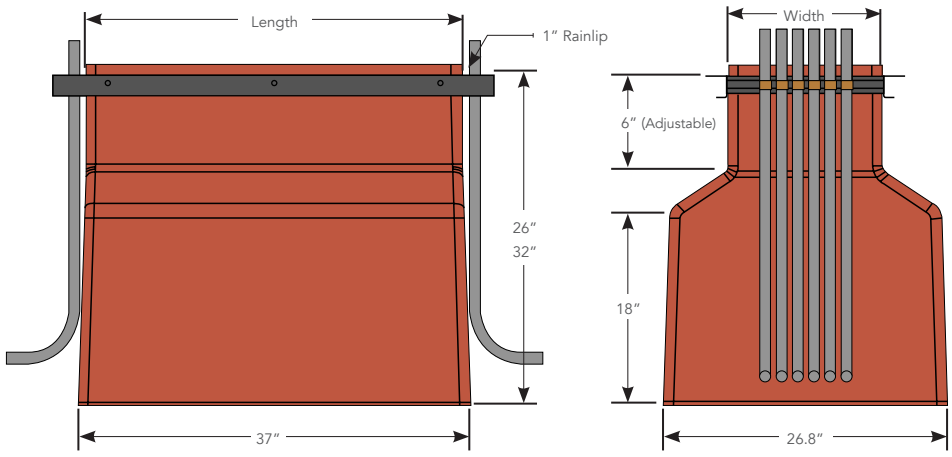
DOUBLE WALL OPTIONS
Available in double wall for a variety of monitoring options to satisfy local regulations and requirements. From dry fluid or fluid filled interstitial to vacuum interstice monitoring, PCI has all options to best fit your installation and compliance needs.

PCI PETROLEUM CONTAINMENT, INC.

8873 Western Way, Jacksonville, Fl 32256 | 904.358.1700 | pcisumps.com

RSC SERIES
DISPENSER SUMPS

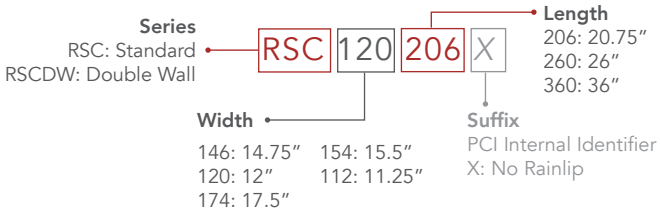
c UL us LISTED UL2447



Dispenser Model	RSC Series	Double Wall Models	Width	Length	Stabilizer Kit
Bennett Pacific	RSC146360B	RSCDW146360B	14.75"	36"	SVU-L
Bennett 3000	RSC120206	RSCDW120206	12"	20.75"	SVU-S
Gasboy Atlas	RSC120206A	RSCDW120206A	12"	20.75"	SVU-S
Gilbarco Encore	RSC174360	RSCDW174360	17.5"	36"	SVU-L
Gilbarco Legacy	RSC120206X	RSCDW120206X	12"	20.75"	SVU-S
Wayne Century	RSC154260	RSCDW154260	15.5"	26"	SVU-L
Wayne Reliance	RSC154260	RSCDW154260	15.5"	26"	SVU-L
Wayne Select	RSC154260	RSCDW154260	15.5"	26"	SVU-L
Wayne Ovation	RSC146360	RSCDW146360	14.75"	36"	SVU-L
Wayne Vista (UHC) HS3, HS4	RSC154260HV	RSCDW154260HV	15.5"	26"	SVU-L
Wayne Vista 48"	RSC112360	RSCDW112360	11.25"	36"	SVU-S

Note: Additional Models Available

PART NUMBER LEGEND



PETROLEUM CONTAINMENT, INC.
8873 Western Way, Jacksonville, Fl 32256 | 904.358.1700 | pcisumps.com

Red Thread™ IIA

(Product Data)

FUEL HANDLING

Applications

- Service Station
- Vent/Vapor Recovery
- Bulk Plant Terminals
- Fueling Terminals
- Central Fuel Oil Systems
- Marinas Terminals
- Ethanol Fuel Blends
- Biodiesel Fuel
- Diesel Exhaust Fluid
- UL/ULC Systems that require MV, HB, CT, A&M Fuels

Materials and Construction

All pipe is manufactured by filament winding process using amine-cured epoxy thermosetting resin to impregnate strands of continuous glass filaments with a resin-rich interior surface. The operating pressure of the pipe is up to 250 psig (17.2 bar) with continuous operating temperature to 150°F (66°C).

Red Thread IIA is Listed with Underwriters Laboratories Standard 971-2004 for non-metallic underground piping for motor vehicle (MV), high blend (HB), concentrated (CT) and aviation and marine (A&M) fuels. The pipe and fittings are also Listed with Underwriters Laboratories of Canada with both Listings under File MH9162.

Fittings

Fittings are manufactured with the same chemical and temperature capabilities as the pipe. Depending on the configurations and size, the fittings construction method will be compression molded, contact molded, fabricated or filament wound and are described in FH1250.

Testing

Installed pipe systems should be tested prior to use to assure soundness of all joints and connections. Locate pressure gauge in close proximity to the pressurizing equipment, not directly on the piping system. A pressure gauge with the test pressure at mid-scale is recommended.

Joining System

- **T.A.B.™** - The primary joining method for pipe joints promoting fast, positive make-up and prevents "backout" during curing.
- **Bell & Spigot** - The primary joining method for fitting joints.

These joints assist the installer and assures a fast trouble-free installation. Adhesive for this system is Series 8000. T.A.B. spigots can be bonded into tapered bells and tapered spigots can be Bonded into T.A.B. bells using standard bonding procedures for tapered joints.

ASTM D2996 Designation Code - RTRP-11AW13110

Nominal Dimensional Data

Pipe Size		Inside Diameter		Outside Diameter		Wall Thickness		Weight		Pressure/ Temperature Max. Rating at 150°F (66°C)		Mill Test Pressure		Minimum Bending Radius	
in	mm	in	mm	in	mm	in	mm	lbs.ft	kg/m	psig	MPa	psig	MPa	ft	m
2	50	2.238	57	2.371	60	0.067	1.70	0.42	0.63	250	1.72	376	2.59	102	31.0
3	80	3.363	85	3.559	90	0.098	2.49	0.92	1.37	175	1.21	300	2.07	153	46.5
4	100	4.364	111	4.553	116	0.095	2.41	1.10	1.64	125	0.86	265	1.83	195	59.5
6	150	6.408	163	6.686	170	0.139	3.53	2.47	3.68	20	0.14	265	1.83	287	87.4

View of Joint Illustrations

T.A.B.

Bell & Spigot

Typical Mechanical Properties

Pipe Property	75°F	24°C	200°F	93°C	Method
	psi	MPa	psi	MPa	
Axial Tensile					
Ultimate Stress	9,530	65.7	6,585	45.4	ASTM D2105
Modulus of Elasticity	1.68×10^6	11,584	1.42×10^6	9,791	ASTM D2105
Poisson's Ratio, ν_{ah} (ν_{ha})[1]	0.35 (0.61)				
Axial Compression					
Ultimate Stress	12,510	86.3	8,560	59.0	ASTM D695
Modulus of Elasticity	0.677×10^6	4,668	0.379×10^6	2,613	ASTM D695
Beam Bending					
Modulus of Elasticity (Long Term)	2.6×10^6	17,927	0.718×10^6	4,951	ASTM D2925
Hydrostatic Burst					
Ultimate Hoop Tensile Stress	40,150	277	36,480	252	ASTM D1599
Hydrostatic Hoop Design Stress					
Static 20 Year Life LTHS - 95% LCL	-	-	18,203 - 14,689	125.5 - 101.3	ASTM D2992 - Procedure B
Static 50 Year Life LTHS - 95% LCL	-	-	16,788 - 13,142	115.7 - 90.6	ASTM D2992 - Procedure B
Parallel Plate					
Hoop Modulus of Elasticity	3.02×10^6	20,822	-	-	ASTM D2412
Shear Modulus	1.36×10^6	9,343	1.15×10^6	7,895	-

Typical Physical Properties

Pipe Property	Value	Value	Method
Thermal Conductivity	0.23 BTU/hr•ft•°F	0.4 W/m°C	ASTM D177
Thermal Expansion	8.5×10^{-6} in/in °F	15.3×10^{-6} mm/mm °C	ASTM D696
Absolute Roughness	0.00021 in	0.00053 mm	
Specific Gravity	1.8		ASTM D792

[1] ν_{ha} = The ratio of axial strain to hoop strain resulting from stress in the hoop direction.
ν_{ah} = The ratio of hoop strain to axial strain resulting from stress in the axial direction.

[2] The differential pressure between internal and external pressure which causes collapse.

[3] A 0.67 design factor is recommended for short duration vacuum service. A full vacuum is equal to 14.7 psig (0.101 MPa) differential pressure at sea level.

[4] A 0.33 design factor is recommended for sustained (long-term) differential collapse pressure design and operation.

Ultimate Collapse Pressure

Size		Collapse Pressure[2][3][4]			
		psig		MPa	
in	**mm**	**75°F**	**150°F**	**24°C**	**66°C**
2	50	177	133	1.22	0.92
3	80	171	129	1.18	0.89
4	100	69	51	0.48	0.35
6	150	69	51	0.48	0.35

Pipe Length

Size		Standard		Random	
in	**mm**	**ft**	**m**	**ft**	**m**
2-6	50-150	15	4.57	22-25	6.7-7.62

Fiber Glass Systems
17115 San Pedro Avenue, Ste 200
San Antonio, Texas 78232 USA
Phone: 210 477 7500
Fax: 210 477 7560

c UL us LISTED

Collar Mount Single Wall Tank Sump

LISTED
UL 2447

Product Shown
B421-60-S-01

SIZES:

- 42” or 48” diameter
- 32” or 36” Snap-Lock Lid

*See page 2 for dimensions drawing and chart

MATERIALS:

- Tank-grade fiberglass material allows our product to be exposed to leaks without degradation
- No secondary protective gel coat needed

OVERVIEW:

The octagon-shaped Collar Mount Single Wall Tank Sump is ideally configured for piping laid out in 45- and 90-degree angles. It comes standard with a 32” snap-lock lid with imbedded O-ring seal to make it watertight. Optional 36” snap-lock and 32” twist-lock lids are available. It can be attached to any industry standard 42- or 48-inch single wall tank collar. The mid seam of this 2-piece sump uses an epoxy slurry to quickly seal the 2 halves together. Kits are available for connecting the sump base to the various industry collar configurations. If using a Bravo collar with pour channel, no field laminations are needed.

SPECIFICATIONS:

- Two-piece configuration is height-adjustable
- Easy slurry pour channel to join the sump base and top hat saves install time
- 30-year corrosion warranty
- UL2447 listed

**Available in 39” lids and 56” diameter. Please contact customer service for additional details.*

Collar Mount Single Wall Tank Sump

Recommended Parts and Accessories	
K-402	Fiberglass laminating kit for 1 interior and exterior joint, 2 gallons, 90" fiberglass mat (Catalyst: (2) Summer:(2) / (4) Winter) (Not returnable)
K-401	Fiberglass laminating kit for 1 interior and exterior joint 1 gallon, 45" fiberglass mat (Catalyst: (1) Summer / (2) Winter) (Not returnable)
K-410.5	Paste kit for interior and exterior joint, smooth transitions for laminations, ½ gallon (non-returnable)
K-410	Paste kit for interior and exterior joint, smooth transitions for laminations, 1 gallon (non-returnable)
EP-S1.0	1 gallon epoxy slurry kit. (non-returnable)
EP-S.75	¾ gallon epoxy slurry kit. (non-returnable)
T-400	FRP & Paint Rollers and mixing bucket; fiberglass lam, tool kit, includes rollers.

Additional Parts and Accessories	
SH-TS	Tank Sump Sensor Holder Kit.
VST-TS	VST, Vapor Stimulator Tube for Tank Sump, for Dri

42" Diameter, 42" Collar

Part # with 32" SL Lid	Part # with 36" SL Lid	Part # with 32" Twist-Lock Lid	Min	A	B	C	D
B421-42-S-01	B421-42-S-02	B421-42-S-50	24"	42"	26"	16"	42"
B421-48-S-01	B421-48-S-02	B421-48-S-50	32"	48"	26"	22"	42"
B421-60-S-01	B421-60-S-02	B421-60-S-50	36"	60"	38"	22"	42"
B421-72-S-01	B421-72-S-02	B421-72-S-50	36"	72"	50"	22"	42"
B421-84-S-01	B421-84-S-02	B421-84-S-50	36"	84"	62"	22"	42"

48" Diameter, 48" Collar

Part # with 32" SL Lid	Part # with 36" SL Lid	Part # with 32" Twist-Lock Lid	Min	A	B	C	D
B481-42-S-01	B481-42-S-02	B481-42-S-50	24"	42"	26"	16"	48"
B481-48-S-01	B481-48-S-02	B481-48-S-50	32"	48"	26"	22"	48"
B481-60-S-01	B481-60-S-02	B481-60-S-50	36"	60"	38"	22"	48"
B481-72-S-01	B481-72-S-02	B481-72-S-50	36"	72"	50"	22"	48"
B481-84-S-01	B481-84-S-02	B481-84-S-50	36"	84"	62"	22"	48"

48" Diameter, 42" Collar

Part # with 32" SL Lid	Part # with 36" SL Lid	Part # with 32" Twist-Lock Lid	Min	A	B	C	D
B487-42-S-01	B487-42-S-02	B487-42-S-50	24"	42"	26"	16"	42"
B487-48-S-01	B487-48-S-02	B487-48-S-50	32"	48"	26"	22"	42"
B487-60-S-01	B487-60-S-02	B487-60-S-50	36"	60"	38"	22"	42"
B487-72-S-01	B487-72-S-02	B487-72-S-50	36"	72"	50"	22"	42"
B487-84-S-01	B487-84-S-02	B487-84-S-50	36"	84"	62"	22"	42"

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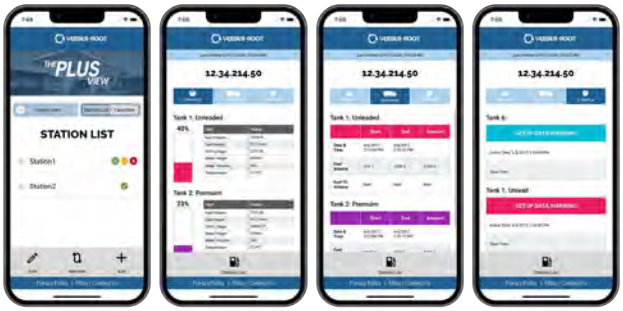
TLS-450PLUS Automatic Tank Gauge

The Fuel Management System to Grow Your Business

Why the TLS-450PLUS?

The TLS-450PLUS Automatic Tank Gauge (ATG) provides the most comprehensive site data for advanced fuel asset management. Combining industry leading algorithms with enhanced security, real-time notification, and anywhere anytime access, the TLS-450PLUS keeps your customer's site running profitably. The TLS-450PLUS is ideal for retail and commercial/industrial applications that have multiple tanks, requiring more than 12 probe and sensor inputs.



MAINTAIN CONTROL OF YOUR FUELING OPERATIONS

- **Inspection ready compliance** – easy access to all federal, state, and local agency reports
- **Remote connectivity** – monitor your site performance, receive real-time alerts, and access compliance data via web-enabled devices – anytime, anywhere, with a wide range of options including THE PLUS VIEW app, Web-Enabled Interface, and Managed Services, with cloud-based fuel management through Insite360
- **Data protection** – store up to 3 years data and protect it from power outages, battery replacements, or software upgrades
- **Security controls** – partitioned Ethernet networks, customized user access, and Secure Socket Layer (SSL) encrypted connectivity to keep your network safe

OPERATE AT PEAK EFFICIENCY

- **Remote software download** – hassle-free access to software updates
- **Logistics visibility** – increase inventory management awareness to avoid runouts and haulbacks
- **Faster problem resolution** – diagnose and troubleshoot issues remotely to understand ongoing situations better and avoid unnecessary dispatch
- **Customized alarms** – preprogram alarm alerts to provide scenario-specific information to predetermined individuals
- **Graphical User Interface (GUI)** – designed with features for ease of use, including workflow wizard, context sensitive help, and user-defined favorites

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Hardware *	
0860091-302	TLS-450PLUS 8" Color Touch Screen Console with Printer
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0332813-001	Universal Input/Output Interface Module
0333564-001	7-Amp Controller Module
Communication Modules	
0332812-006	USM/ATM Module Group for TLS-450PLUS (For SCVS Installations Only)
0332818-001	SiteFax™ Interface Module
0332866-001	Single RS-232 Interface Module
0332867-001	Single RS-485 Interface Module
0332868-001	RS-232 Dual Interface Module
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Feature Enhancement Software	
0332972-006	Continuous Statistical Leak Detection (CSLD)
0332972-007	Ultimate Testing Line Leak Detection for DPLLD
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0332972-018	Timed Sudden Loss Detection
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0333580-001	BIR/AccuChart TLS-450PLUS CDIM Factory Installed
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0333582-001	BIR/AccuChart TLS-450PLUS MDIM Factory Installed
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* *Includes a 2-port RS-232 Module, a 3-port Ethernet Module and a 2-port USB Module*

CAPABILITIES

- **AccuChart™ 3.0 Tank Calibration** – utilizes enhanced geometric tank chart modeling for the TLS-450PLUS with optional restricted tank ranges to perform calibration. Chart volumes are calculated using adjustable geometry parameters: diameter, capacity, end shape, tilt, and probe offset.
- **Business Inventory Reconciliation (BIR)** – improves business decisions by combining meter transaction sales with AccuChart 3.0 Tank Calibration to better understand the site variance. It includes automated reporting on: throughput thresholds, delivery thresholds, capacity thresholds, custom thresholds.
- **Digital Pressurized Line Leak Detection (DPLLD)** – provides advanced line leak detection to meet the capacity of growing fuel sites, certified up to 1,178 gallons (4,459 liters) of capacity. The DPLLD equipment performs a 3.0 Gallons Per Hour (GPH) line leak test following each dispense. With the proper software enhancement feature installed, the DPLLD equipment will also perform 0.2 and/or 0.1 GPH line tests to meet your regulatory needs, eliminating the need for separate annual line leak testing.
- **Built-in Data Logging** – enables approved data transfer for wet stock management
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- **Intelligent Pump Control (IPC)** – allows the TLS-450PLUS to display and report Submersible Turbine Pump (STP) activity through a direct communication link between a STP pump controller and the TLS-450PLUS via a RS-485 connection. This software feature is available only in the TLS-450PLUS platform.
- **Vapor Monitoring** – the TLS-450PLUS supports a wide variety of vapor monitoring solutions, including In-Station Diagnostics (ISD)

INTEGRATED SITE SOLUTIONS

The TLS-450PLUS ATG and STP control boxes act as the interface between the STP and the dispenser, while numerous sensors and probes monitor various conditions to ensure the fueling system remains healthy. If an abnormal state is detected, the TLS-450PLUS ATG will record a condition result and generate an audible and visual alarm to notify the store operator. Remote connectivity options for the TLS-450PLUS ATG ensure that critical site statuses, such as inventory and alarm activity are available to site managers when they are not on-site. Stay connected, secure, and compliant with Veeder-Root's Integrated Site Solutions.

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ATTACHMENT I

Initial and Continuing Training

RANGER
ENVIRONMENTAL SERVICES, LLC

Initial and Continuing Training

The release detection system at the facility will be Veeder-Root 450 TLS. The system will have sump sensors installed in the submersible sump containment area to monitor sub pump, sump sensors installed in the dispenser sumps and tank interstitial sensors. The system will be equipped with mechanical line leak detection for the product delivery lines. The system will be installed by a Veeder-Root certified technician. The system will be installed in accordance with Veeder-Root specifications and instructions. The system is UL listed and is third party certified for release detection under USEPA guidelines. The system has self- diagnostic programs to test and warn of failures of the external devices as well as internal electronics. The system has been tested by a Third Party and found to be compliant with USEPA requirements for release detection.

Annual maintenance of the system will be conducted to certify the function of all modules in the system.

On-site employees will monitor the system condition locally and remotely on a daily basis, with particular emphasis on any sensor alarms or release detection alarms as indicated on the panel of the system. In the case of any sensor or inventory alarm, employees will notify the Owner or General Manager who will make the determination of a proper course of action. Site employees are not authorized to reset of disable any alarm conditions on the system.

New facility employees will be trained in the proper operation and functional modes of the system. Ongoing reviews of the system operation will be presented to all employees to ensure operation and function status is understood.

Ongoing maintenance will be conducted by JF Petroleum personnel.

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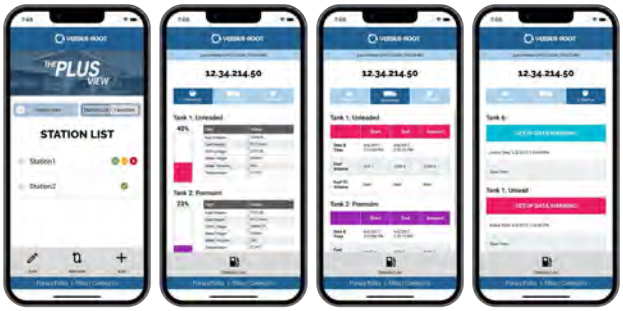

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VEEDER-ROOT

Operating And Maintaining Underground Storage Tank Systems

Practical Help And Checklists

Printed on Recycled Paper

Contents

DISCLAIMER

This document provides information on operating and maintaining underground storage tank (UST) systems. The document is not a substitute for U.S. Environmental Protection Agency regulations nor is it a regulation itself — it does not impose legally binding requirements.

For regulatory requirements regarding UST systems, refer to the federal regulations governing UST systems (40 CFR Part 280).

How To Use This Booklet

Who Should Read This Booklet?

This booklet is for owners and operators of underground storage tank systems (USTs).

You are responsible for making sure your USTs do not leak. This booklet can help you meet your UST responsibilities.

Key Terms Used In This Booklet

An **UST** is an **underground storage tank and underground piping connected to the tank** that has at least 10 percent of its combined volume underground. The federal regulations apply only to USTs storing petroleum or certain hazardous substances.

O&M stands for **operation and maintenance procedures** that must be followed to keep USTs from causing leaks and creating costly cleanups.

What Can This Booklet Help You Do?

- Identify and understand the operation and maintenance (O&M) procedures you need to follow routinely to make sure your USTs don't have leaks that damage the environment or endanger human health.
- Identify good O&M procedures you can use to avoid cleanup costs and liability concerns.
- Maintain useful records of your O&M.

Your UST System Is New Or Upgraded — Is That Enough?

Being new or upgraded is not enough. New and upgraded USTs are made of a complex collection of mechanical and electronic devices that can fail under certain conditions. These failures can be prevented or quickly detected by following routine O&M procedures. Having a new or upgraded UST system is a good start, but the system must be properly operated and continuously maintained to ensure that leaks are avoided or quickly detected.

What Should You Do With Each Section Of This Booklet?

Read through each section carefully and use the checklists to help you establish clear O&M procedures.

By identifying and understanding the O&M tasks you need to perform routinely, you will ensure timely repair or replacement of components when problems are identified.

How Can You Use The Following Checklists Effectively?

This booklet's pages are 3-hole punched and unbound so you can put all the materials in a handy 3-ring binder. You can easily remove any of the following checklists from the binder, reproduce them, and then fill them out.

You can select the specific mix of checklists that matches your UST facility. Once you have your select group of checklists together, make several copies that you can fill out periodically over time.

In this way you can keep track of your O&M activities and know that you've done what was necessary to keep your UST site safe and clean, avoiding any threats to the environment or nearby people as a result of costly and dangerous UST releases.

Use This Booklet Often — Effective O&M Requires Constant Vigilance.

Note: This booklet describes quality O&M practices put together by a work group of state and federal environmental regulators. This booklet is not a federal regulation nor legally binding, but it does provide useful information on effective O&M procedures. You should check with your state UST program for information on any additional or different O&M practices that may be required in your state.
See Section 7 for contact information.

Section 1 — Identifying The Equipment At Your UST Facility

Determine what UST equipment you have at your facility by completing the checklist below. Note that each part of the checklist below refers you to the appropriate section of this O&M booklet for relevant information. After you have identified your equipment, proceed to the following sections to identify the O&M actions necessary for your specific UST system.

General Facility Information (optional)

Facility Name	
Facility ID #	

Release Detection (See Section 2 for information on release detection)

A. Release Detection for Tanks

Check at least one for each tank:	Tank #1	Tank #2	Tank #3	Tank #4
Automatic Tank Gauging System				
Interstitial Monitoring (with secondary containment)				
Groundwater Monitoring				
Vapor Monitoring				
Inventory Control and Tank Tightness Testing (TTT)*				
Manual Tank Gauging Only **				
Manual Tank Gauging and Tank Tightness Testing (TTT)***				
Other Release Detection Method, such as SIR (please specify)				

* Allowed only for 10 years after upgrading or installing tank with corrosion protection. TTT required every 5 years.
** Allowed only for tanks of 1,000 gallon capacity or less.
*** Allowed only for tanks of 2,000 gallon capacity or less and only for 10 years after upgrading or installing tank with corrosion protection. TTT required every 5 years.

B. Release Detection for Pressurized Piping

Check at least one from A & B for each tank's piping:		Tank #1	Tank #2	Tank #3	Tank #4
A (Automatic Line Leak Detectors)	Automatic Flow Restrictor				
	Automatic Shutoff Device				
	Continuous Alarm				
B	Annual Line Tightness Test				
	Monthly Monitoring*				

* Monthly Monitoring for piping includes Interstitial Monitoring, Vapor Monitoring, Groundwater Monitoring, and other accepted methods (such as SIR and Electronic Line Leak Detectors)

C. Release Detection for Suction Piping

Check at least one for each tank's piping:	Tank #1	Tank #2	Tank #3	Tank #4
Line Tightness Testing Every Three Years				
Monthly Monitoring*				
No Release Detection Required For Safe Suction **				

* Monthly Monitoring for piping includes Interstitial Monitoring, Vapor Monitoring, Groundwater Monitoring, and SIR
** No release detection required only if it can be verified that you have a safe suction piping system with the following characteristics:

1) Only one check valve per line located directly below the dispenser;
2) Piping sloping back to the tank; and
3) System must operate under atmospheric pressure.

Spill and Overfill Protection (See Section 4 for more information)

Check for each tank:	Tank #1	Tank #2	Tank #3	Tank #4
Spill Catchment Basin/ Spill Bucket				
Check at least one overfill device for each tank:				
Automatic Shutoff Device				
Overfill Alarm				
Ball Float Valve				

Corrosion Protection (See Section 5 for more information)

A. Corrosion Protection for Tanks

Check at least one for each tank:	Tank #1	Tank #2	Tank #3	Tank #4
Coated and Cathodically Protected Steel				
Noncorrodible Material (such as Fiberglass Reinforced Plastic)				
Steel Jacketed or Clad with Noncorrodible Material				
Cathodically Protected Noncoated Steel*				
Internally Lined Tank*				
Cathodically Protected Noncoated Steel and Internally Lined Tank*				
Other Method Used to Achieve Corrosion Protection (please specify):				

* These options may be used only for tanks installed before December 22, 1988.

B. Corrosion Protection for Piping

Check at least one for each:	Tank #1	Tank #2	Tank #3	Tank #4
Coated and Cathodically Protected Steel				
Noncorrodible Material (such as Fiberglass Reinforced Plastic or Flexible Plastic)				
Cathodically Protected Noncoated Metal*				
Other Method Used to Achieve Corrosion Protection (please specify):				

* This option may be used only for piping installed before December 22, 1988.

Any Problems Filling Out This Checklist?

If you have trouble filling out this checklist or any following checklist, remember these sources of assistance you can contact:

- Your UST contractor, the vendor of your equipment, and the manufacturer of your UST equipment should be ready to help you. Look through your records for contact information. You may also want to use some of the industry contacts and other contact information provided in Section 7.

- Your state regulatory agency may be able to help you identify equipment or sources of information about your UST equipment. You should, in any event, make yourself aware of any ways in which your state may have additional or different O&M procedures than those presented in this booklet. See Section 7 for state agency contact information.

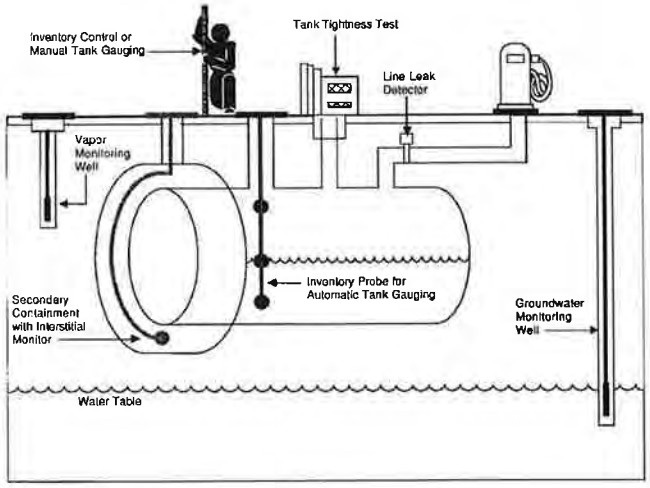
Section 2 — Release Detection

What Is Release Detection?

You must be able to determine at least every 30 days whether or not your tank and piping are leaking by using proper release detection methods.

Your release detection method must be able to detect a release from any portion of the tank and connected underground piping that routinely contains product.

Release detection must be installed, calibrated, operated, and maintained according to the manufacturer's instructions.



Do You Know If Your Release Detection Is Certified To Work At Your UST Site?

Release detection must meet specific performance requirements. You should have documentation from the manufacturer, vendor, or installer of your release detection equipment showing certification that it can meet performance requirements.

Some vendors or manufacturers supply their own certification, but more often an impartial "third party" is paid to test the release detection equipment and certify that performance requirements are met. An independent workgroup of release detection experts periodically evaluates all third-party certifications, thus providing a free and reliable list of evaluations of third-party certifications for various release detection equipment. Frequently updated, this list is available on the Internet at **http://www.nwglde.org/** (the publication's title is ***List Of Leak Detection Evaluations For Underground Storage Tank Systems***). If you can't find the certification anywhere, contact your state regulatory agency (see Section 7 for contact information).

By checking the certification, you may discover the method you use has not been approved for use with the type of tank or piping you have or the type of product being stored. For example, you may learn from the certification that your method won't work with manifolded tanks, certain products, high throughput, or with certain tank sizes.

That's why you need to make sure your release detection method has clear certification that it will work effectively at your site with its specific characteristics.

How Can You Make Sure Your Leak Detection Method Is Working At Your UST Site?

If you don't understand your O&M responsibilities and don't know what O&M tasks you must routinely perform, you may allow your UST site to become contaminated — then you will face cleanup costs and associated problems.

To avoid these problems use the checklists on the following pages that describe each type of leak detection method, discuss actions necessary for proper O&M, and note the records you should keep.

Locate the methods of release detection you are using at your facility, review these pages, and periodically complete the checklist. You might want to copy a page first and periodically fill out copies later.

If you have questions about your release detection system, review your owner's manual or call the vendor of your system. Your state or local regulatory agency may be able to provide assistance as well.

You will find leak detection recordkeeping forms in the following pages of this Section. Keeping these records increases the likelihood that you are conducting good O&M and providing effective release detection at your UST site. For example, see page 20 for a 30-Day Release Detection Monitoring Record.

If you ever suspect or confirm a leak, refer to Section 3. **Never ignore leak detection alarms or failed leak detection tests. Treat them as potential leaks**!

Automatic Tank Gauging (ATG) Systems (for tanks only)	
Description Of Release Detection	**An automatic tank gauging (ATG) system consists of a probe permanently installed in a tank and wired to a monitor to provide information on product level and temperature. ATG systems automatically calculate the changes in product volume that can indicate a leaking tank.**
Have Certification For Your Release Detection Method	❑ **Make sure your ATG system is certified for the types of tanks and stored contents on which the ATG system is used.** Most manufacturers have their leak detection devices tested and certified by a third party to verify that their equipment meets specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the manufacturer provide them to you.
Perform These O&M Actions	❑ **Use your ATG system to test for leaks at least every 30 days.** Most systems are already programmed by the installer to run a leak test periodically. If your system is not programmed to automatically conduct the leak test, refer to your ATG system manual to identify which buttons to push to conduct the leak test. Testing more often than monthly can catch leaks sooner and reduce cleanup costs and problems. ❑ **Make sure that the amount of product in your tank is sufficient to run the ATG leak test.** The tank must contain a minimum amount of product to perform a valid leak detection test. One source for determining that minimum amount is the certification for your leak detection equipment (as discussed above). ❑ **Frequently test your ATG system according to the manufacturer's instructions to make sure it is working properly.** Don't assume that your release detection system is working and never needs checking. Read your owner's manual, run the appropriate tests, and see if your ATG system is set up and working properly. Most ATG systems have a test or self-diagnosis mode that can easily and routinely run these checks. ❑ **If your ATG ever fails a test or indicates a release, see Section 3 of this booklet for information on what to do next.** ❑ **Periodically have a qualified UST contractor, such as the vendor who installed your ATG, service all the ATG system components according to the manufacturer's service instructions.** Tank probes and other components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually. ❑ **Check your ATG system owner's manual often to answer questions and to make sure you know the ATG's operation and maintenance procedures.** Call the ATG manufacturer or vendor for a copy of the owner's manual if you don't have one. ❑ **Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.** Develop and maintain regular training programs for all employees.
Keep These O&M Records	❑ **Keep results of your ATG system tests for at least 1 year.** Your monitoring equipment may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right. ❑ **Keep all records of calibration, maintenance, and repair of your release detection equipment for at least 1 year.** ❑ **Keep all performance claims supplied by the installer, vendor, or manufacturer for at least 5 years.** These records include the certification of your leak detection equipment described above.

Secondary Containment With Interstitial Monitoring (for tanks & piping)	
Description Of Release Detection	**Secondary containment is a barrier between the portion of an UST system that contains product and the outside environment. Examples of secondary containment include an outer tank or piping wall, an excavation liner, and a bladder inside an UST. The area between the inner and outer barriers — called the interstitial space — is monitored manually or automatically for evidence of a leak.**
Have Certification For Your Release Detection Method	❑ **Make sure your interstitial monitoring equipment and any probes are certified for the types of tanks, piping, and stored contents on which the release detection system is used.** Most manufacturers have their leak detection devices tested and certified by a third party to verify that their equipment meets specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the manufacturer provide them to you.
Perform These O&M Actions	❑ **Use your release detection system to test for leaks at least every 30 days.** Testing more often than monthly can catch leaks sooner and reduce cleanup costs and problems. ❑ **Frequently test your release detection system according to the manufacturer's instructions to make sure it is working properly.** Don't assume that your release detection system is working and never needs checking. Read your owner's manual, run the appropriate tests, and see if your system is set up and working properly. Some interstitial monitoring systems have a test or self-diagnosis mode that can easily and routinely run these checks. ❑ **If your interstitial monitoring ever fails a test or indicates a release, see Section 3 of this booklet for information on what to do next.** ❑ **Periodically have a qualified UST contractor, such as the vendor who installed your release detection system, service all the system components according to the manufacturer's service instructions.** Tank probes and other components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually. ❑ **Keep interstitial monitoring access ports clearly marked and secured.** ❑ **Check your interstitial monitoring system owner's manual often to answer questions and to make sure you know the system's O&M procedures.** Call the system's vendor or manufacturer for a copy of the owner's manual if you don't have one. ❑ **Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.** Develop and maintain regular training programs for all employees.
Keep These O&M Records	❑ **Keep results of your release detection system tests for at least 1 year.** Your monitoring equipment may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right. ❑ **Keep all records of calibration, maintenance, and repair of your release detection equipment for at least 1 year.** ❑ **Keep all performance claims supplied by the installer, vendor, or manufacturer for at least 5 years.** These records include the certification of your leak detection equipment described above.

Statistical Inventory Reconciliation (SIR) (for tanks & piping)	
Description Of Release Detection	**SIR is typically a method in which a trained professional uses sophisticated computer software to conduct a statistical analysis of inventory, delivery, and dispensing data. You must supply the professional with data every month. There are also computer programs that enable an owner/operator to perform SIR. In either case, the result of the analysis may be pass, inconclusive, or fail.**
Have Certification For Your Release Detection Method	❑ **Make sure your SIR vendor's methodology is certified for the types of tanks, piping, and product on which you use SIR.** Most vendors have their leak detection methodology tested and certified by a third party to verify that their equipment meets specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the vendor provide them to you.
Perform These O&M Actions	❑ **Supply daily inventory data to your SIR vendor (as required) at least every 30 days.** The vendor will provide you with your leak detection results after the statistical analysis is completed. Otherwise, use your computer software at least every 30 days to test your tank for leaks. ❑ **See Section 3 of this manual if your UST system fails a leak test.** ❑ **If you receive an inconclusive result, you must work with your SIR vendor to correct the problem and document the results of the investigation.** An inconclusive result means that you have not performed leak detection for that month. If you cannot resolve the problem, treat the inconclusive result as a suspected release and refer to Section 3. ❑ **If you use an ATG system to gather data for the SIR vendor or your software, periodically have a qualified UST contractor, such as the vendor who installed your ATG, service all the ATG system components according to the manufacturer's service instructions.** Tank probes and other components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually. Do this according to manufacturer's instructions. See the checklist for ATG systems on page 7. ❑ **If you stick your tank to gather data for the SIR vendor or your software, make sure your stick can measure to one-eighth of an inch and can measure the level of product over the full range of the tank's height.** You should check your measuring stick periodically to make sure you can read the markings and numbers and that the bottom of the stick is not worn. ❑ **Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.** Develop and maintain regular training programs for all employees.
Keep These O&M Records	❑ **Keep results of your SIR tests for at least 1 year.** Unless you are keeping records of the 30-day release detection results and maintaining those records for at least 1 year, you are not doing leak detection right. ❑ **Keep all vendor performance claims for at least 5 years.** This includes the certification of the SIR method discussed above. ❑ **If you use an ATG system, keep all records of calibration, maintenance, and repair of your release detection equipment for at least 1 year.** ❑ **Keep the records of investigations conducted as a result of any monthly monitoring conclusion of inconclusive or fail for at least 1 year.** This may include the results of a tightness test performed during the investigation or a re-evaluation based on corrected delivery or dispenser data.

Vapor Monitoring (for tanks & piping)	
Description Of Release Detection	**Vapor monitoring measures product vapors in the soil at the UST site to check for a leak. A site assessment must determine the number and placement of monitoring wells that make sure a release is detected. NOTE: vapor monitors will not work well with substances that do not easily vaporize (such as diesel fuel).**
Have Certification For Your Release Detection Method	❑ **Make sure your vapor monitoring equipment is certified for the types of stored contents on which the release detection system is used.** Most manufacturers have their leak detection devices tested and certified by a third party to verify that their equipment meets specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the manufacturer provide them to you.
Perform These O&M Actions	❑ **Use your release detection system to test for leaks at least every 30 days.** Testing more often than monthly can catch leaks sooner and reduce cleanup costs and problems. **Be sure you check all of your vapor monitoring wells.** ❑ **See Section 3 of this manual if your UST system fails a leak test.** ❑ **Frequently test your release detection system according to the manufacturer's instructions to make sure it is working properly.** Don't assume that your release detection system is working and never needs checking. Some electronic vapor monitoring systems have a test or self-diagnosis mode. If you have components (such as monitoring equipment, probes or sensors) for your vapor monitoring system, read your manual and test your equipment to see if it is working properly. ❑ **Periodically have a qualified UST contractor, such as the vendor who installed your release detection system, service all the system components according to the manufacturer's service instructions.** Probes and other components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually. ❑ **Keep your vapor monitoring wells clearly marked and secured.** ❑ **Check your vapor monitoring system owner's manual often to answer questions and to make sure you know the system's operation and maintenance procedures.** Call the system's vendor or manufacturer for a copy of the owner's manual if you don't have one. ❑ **Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.** Develop and maintain regular training programs for all employees.
Keep These O&M Records	❑ **Keep results of your release detection system tests for at least 1 year.** Your monitoring equipment may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right. ❑ **Keep all records of calibration, maintenance, and repair of your release detection equipment for at least 1 year.** ❑ **Keep all performance claims supplied by the installer, vendor, or manufacturer for at least 5 years.** These records include the certification of your leak detection equipment described above.

Groundwater Monitoring (for tanks & piping)	
Description Of Release Detection	**Groundwater monitoring looks for the presence of liquid product floating on the groundwater at the UST site. A site assessment must determine the number and placement of monitoring wells that make sure a release is detected. NOTE: this method cannot be used at sites where groundwater is more than 20 feet below the surface.**
Have Certification For Your Release Detection Method	❑ **Make sure any automated groundwater monitoring equipment is certified for the types of stored contents on which the release detection system is used.** Most manufacturers have their leak detection devices tested and certified by a third party to verify that their equipment meets specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the manufacturer provide them to you. (Manual devices such as bailers are not generally certified.)
Perform These O&M Actions	❑ **Use your release detection system to test for leaks at least every 30 days.** Testing more often than monthly can catch leaks sooner and reduce cleanup costs and problems. **Be sure you check all of your groundwater monitoring wells.** ❑ **See Section 3 of this manual if your UST system fails a leak test.** ❑ **Frequently test your automated release detection system according to the manufacturer's instructions to make sure it is working properly.** Don't assume that your release detection system is working and never needs checking. Some electronic groundwater monitoring systems have a test or self-diagnosis mode. If you have.components (such as monitoring equipment, probes or sensors) for your groundwater monitoring system, read your manual and test your equipment to see if it is working properly. Manual devices should be periodically checked to make sure they are working properly. ❑ **Periodically have a qualified UST contractor, such as the vendor who installed your release detection system, service all the system components according to the manufacturer's service instructions.** Probes and other components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually. ❑ **Keep your groundwater monitoring wells clearly marked and secured.** ❑ **Check your groundwater monitoring system owner's manual often to answer questions and to make sure you know the system's operation and maintenance procedures.** Call the system's vendor or manufacturer for a copy of the owner's manual if you don't have one. ❑ **Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.** Develop and maintain regular training programs for all employees.
Keep These O&M Records	❑ **Keep results of your release detection system tests for at least 1 year.** Your monitoring equipment may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right. ❑ **Keep all records of calibration, maintenance, and repair of your release detection equipment for at least 1 year.** ❑ **Keep all performance claims supplied by the installer, vendor, or manufacturer for at least 5 years.** These records include the certification of your leak detection equipment described above.

Inventory Control And Tank Tightness Testing (for tanks only)	
Description Of Release Detection	**This temporary method combines monthly inventory control with periodic tank tightness testing. Inventory control involves taking measurements of tank contents and recording the amount of product pumped each operating day, measuring and recording tank deliveries, and reconciling all this data at least once a month. This combined method also includes tightness testing, a sophisticated test performed by trained professionals.** ***NOTE: This combination method can only be used temporarily for up to 10 years after installing a new UST or for up to 10 years after your tank meets the corrosion protection requirements.***
Have Certification For Your Release Detection Method	❑ **Make sure your tank tightness testing method is certified for the types of tanks and stored contents on which the tightness test is used.** Most tightness test methods are certified by a third party to verify that they meet specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the tightness tester provide them to you.
Perform These O&M Actions	❑ **Take inventory readings and record the numbers at least each day that product is added to or taken out of the tank.** You may want to use the Daily Inventory Worksheet provided for you on the next page. ❑ **Reconcile the fuel deliveries with delivery receipts by taking inventory readings before and after each delivery.** Record these readings on a Daily Inventory Worksheet (see next page). ❑ **Reconcile all your data at least every 30 days.** Use a Monthly Inventory Record (see page 14 for an example). ❑ **Have a tank tightness test conducted at least every 5 years. This testing needs to be conducted by a professional trained in performing tank tightness testing.** ❑ **See Section 3 of this manual if your tank fails a tightness test or if fails two consecutive months of inventory control.** ❑ **Ensure that your measuring stick can measure to the nearest one-eighth inch and can measure the level of product over the full range of the tank's height.** You should check your measuring stick periodically to make sure that you can read the markings and numbers and that the bottom of the stick is not worn. ❑ **Ensure that your product dispenser is calibrated according to local standards or to an accuracy of 6 cubic inches for every 5 gallons of product withdrawn.** ❑ **Measure the water in your tank to the nearest one-eighth inch at least once a month and record the results on the reconciliation sheet.** You can use a paste that changes color when it comes into contact with water. ❑ **Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.** Develop and maintain regular training programs for all employees.
Keep These O&M Records	❑ **Keep results of your release detection system tests for at least 1 year.** Your monitoring equipment may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right. ❑ **Keep the results of your most recent tightness test.** ❑ **Keep all certification and performance claims for tank tightness test performed at your UST site for at least 5 years.**

Daily Inventory Worksheet

Facility Name: _____

Your Name: _____

Date: _____

Tank Identification					
Type Of Fuel					
Tank Size In Gallons					
End Stick Inches					
Amount Pumped	↓	↓	↓	↓	↓
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Today's Sum Of Totalizers					
Previous Day's Sum Of Totalizers					
Amount Pumped Today					
Delivery Record	↓	↓	↓	↓	↓
Inches of Fuel Before Delivery					
Gallons of Fuel Before Delivery (from tank chart)					
Inches of Fuel After Delivery					
Gallons of Fuel After Delivery (from tank chart)					
Gallons Delivered (Stick) [Gallons After - Gallons Before]					
Gross Gallons Delivered (Receipt)					

Monthly Inventory Record

Month/Year :_____/_____

Tank Identification & Type Of Fuel:_____

Facility Name:_____

Date Of Water Check: _____ Level Of Water (Inches):_____

Date	Start Stick Inventory (Gallons)		Gallons Delivered		Gallons Pumped		Book Inventory (Gallons)	End Stick Inventory (Inches)	End Stick Inventory (Gallons)	Daily Over (+) Or Short (-) [End - Book]	Initials
1		(+)		(-)		(=)					
2		(+)		(-)		(=)					
3		(+)		(-)		(=)					
4		(+)		(-)		(=)					
5		(+)		(-)		(=)					
6		(+)		(-)		(=)					
7		(+)		(-)		(=)					
8		(+)		(-)		(=)					
9		(+)		(-)		(=)					
7		(+)		(-)		(=)					
8		(+)		(-)		(=)					
9		(+)		(-)		(=)					
10		(+)		(-)		(=)					
11		(+)		(-)		(=)					
12		(+)		(-)		(=)					
13		(+)		(-)		(=)					
14		(+)		(-)		(=)					
15		(+)		(-)		(=)					
16		(+)		(-)		(=)					
17		(+)		(-)		(=)					
18		(+)		(-)		(=)					
19		(+)		(-)		(=)					
20		(+)		(-)		(=)					
21		(+)		(-)		(=)					
22		(+)		(-)		(=)					
23		(+)		(-)		(=)					
24		(+)		(-)		(=)					
25		(+)		(-)		(=)					
26		(+)		(-)		(=)					
27		(+)		(-)		(=)					
28		(+)		(-)		(=)					
29		(+)		(-)		(=)					
30		(+)		(-)		(=)					
31		(+)		(-)		(=)					

Total Gallons Pumped > _____ **Total Gallons Over Or Short >** _____

Leak Check:
Drop the last two digits from the **Total Gallons Pumped** number and enter here: _____ + 130 =

Compare these numbers

_____ gallons

Is the total gallons over or short **larger** than leak check result? **Yes** **No** (circle one)

If your answer is Yes for 2 months in a row, **notify the regulatory agency** as soon as possible.

Keep This Piece Of Paper On File For At Least 1 Year

Manual Tank Gauging (for tanks 1,000 gallons or less only)	
Description Of Release Detection	**<u>This method may be used only for tanks of 1,000 gallons or less capacity</u> meeting certain requirements. These requirements (tank size, tank dimension, and test time) are found in the manual tank gauging record on the next page. Manual tank gauging involves taking your tank out of service for the testing period (at least 36 hours) each week, during which time the contents of the tank are measured twice at the beginning and twice at the end of the test period. The measurements are then compared to weekly and monthly standards to determine if the tank is tight.**
Have Certification For Your Release Detection Method	**None required.**
Perform These O&M Actions	❑ **Once a week, record two inventory readings at the beginning of the test, allow the tank to sit undisturbed for the time specified in the Manual Tank Gauging Record on the next page, and record two inventory readings at the end of the test (use any form comparable to the one on the following page).** ❑ **Reconcile the numbers weekly and record them on a Manual Tank Gauging Record (see the next page).** ❑ **See Section 3 of this manual if your tank fails the weekly standard.** ❑ **At the end of 4 weeks, reconcile your records for the monthly standard and record the result on a Manual Tank Gauging Record (see the next page).** ❑ **See Section 3 of this manual if your tank fails the monthly standard.** ❑ **Ensure that your measuring stick can measure to the nearest one-eighth inch and can measure the level of product over the full range of the tank's height.** You should check your measuring stick periodically to make sure that you can read the markings and numbers and that the bottom of the stick is not worn. ❑ **Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.** Develop and maintain regular training programs for all employees.
Keep These O&M Records	❑ **Keep your manual tank gauging records for at least 1 year.** Unless you are recording actual release detection results weekly and at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right.

Manual Tank Gauging Record

Month _____ Year _____
Tank Identification: _____
Person Completing Form: _____
Facility Name: _____

Circle your tank size, test duration, and weekly/monthly standards in the table below:

Tank Size	Minimum Duration Of Test	Weekly Standard (1 test)	Monthly Standard (4-test average)
up to 550 gallons	36 hours	10 gallons	5 gallons
551-1,000 gallons (when tank diameter is 64")	44 hours	9 gallons	4 gallons
551-1,000 gallons (when tank diameter is 48")	58 hours	12 gallons	6 gallons
551-1,000 gallons (also requires periodic tank tightness testing)	36 hours	13 gallons	7 gallons
1,001-2,000 gallons (also requires periodic tank tightness testing)	36 hours	26 gallons	13 gallons

Compare your weekly readings and the monthly average of the 4 weekly readings with the standards shown in the table on the left.

If the calculated change exceeds the weekly standard, the UST may be leaking. Also, the monthly average of the 4 weekly test results must be compared to the monthly standard in the same way.

If either the weekly or monthly standards have been exceeded, the UST may be leaking. As soon as possible, call your implementing agency to report the suspected leak and get further instructions.

Start Test (month, day, and time)	First Initial Stick Reading	Second Initial Stick Reading	Average Initial Reading	Initial Gallons (convert inches to gallons) [a]	End Test (month, day, and time)	First End Stick Reading	Second End Stick Reading	Average End Reading	End Gallons (convert inches to gallons) [b]	Change In Tank Volume In Gallons + or (—) [a—b]	Tank Passes Test (circle Yes or No)
Date: Time: AM/PM					Date: Time: AM/PM						Y N
Date: Time: AM/PM					Date: Time: AM/PM						Y N
Date: Time: AM/PM					Date: Time: AM/PM						Y N
Date: Time: AM/PM					Date: Time: AM/PM						Y N
								To see how close you are to the monthly standard, divide the sum of the 4 weekly readings by 4 and enter result here >			Y N

Keep This Piece Of Paper On File For At Least 1 Year

Manual Tank Gauging And Tank Tightness Testing (for tanks 2,000 gallons or less only)	
Description Of Release Detection	**This temporary method combines manual tank gauging with periodic tank tightness testing. <u>It may be used only for tanks of 2,000 gallons or less capacity.</u> Manual tank gauging involves taking your tank out of service for the testing period (at least 36 hours) each week, during which the contents of the tank are measured twice at the beginning and twice at the end of the test period. The measurements are then compared to weekly and monthly standards to determine if the tank is tight. This combined method also includes tightness testing, a sophisticated test performed by trained professionals.** ***NOTE: This combination method can only be used temporarily for up to ten years after installing a new UST or for up to 10 years after your tank meets the corrosion protection requirements.***
Have Certification For Your Release Detection Method	❑ **Make sure your tank tightness testing is certified for the types of tanks and stored contents on which the tightness test is used.** Most tightness test methods are certified by a third party to verify that they meet specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the tightness tester provide them to you.
Perform These O&M Actions	❑ **Once a week, record two inventory readings at the beginning of the test, allow the tank to sit undisturbed for the time specified in the Manual Tank Gauging Record on page 16, and record two inventory readings at the end of the test (use any form comparable to the one on page 16).** ❑ **Reconcile the numbers weekly and record them on a Manual Tank Gauging Record (see page 16).** ❑ **See Section 3 of this manual if your tank fails the weekly standard.** ❑ **At the end of 4 weeks, reconcile your records for the monthly standard and record the result on a Manual Tank Gauging Record (see page 16).** ❑ **See Section 3 of this manual if your tank fails the monthly standard.** ❑ **Conduct a tank tightness test at least every 5 years.** This testing needs to be conducted by a professional trained in performing tank tightness testing. ❑ **See Section 3 of this manual if your tank fails the tightness test.** ❑ **Ensure that your measuring stick can measure to the nearest one-eighth inch and can measure the level of product over the full range of the tank's height.** You should check your measuring stick periodically to make sure that you can read the markings and numbers and that the bottom of the stick is not worn. ❑ **Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.** Develop and maintain regular training programs for all employees.
Keep These O&M Records	❑ **Keep your manual tank gauging records for at least 1 year.** Unless you are recording actual release detection results at least weekly and every 30 days and maintaining records for at least 1 year, you are not doing leak detection right. ❑ **Keep the results of your most recent tightness test.** ❑ **Keep all certification and performance claims for tank tightness test performed at your UST site for at least 5 years.**

Automatic Line Leak Detection (for pressurized piping only)	
Description Of Release Detection	**Automatic line leak detectors (LLDs) are designed to detect a catastrophic release from pressurized piping. Automatic LLDs must be designed to detect a leak at least as small as 3 gallons per hour at a line pressure of 10 psi within 1 hour. When a leak is detected, automatic LLDs must shut off the product flow, restrict the product flow, or trigger an audible or visual alarm. NOTE: Mechanical automatic LLDs need to be installed and operated as close as possible to the tank (LLDs are designed to detect a leak, restrict flow, etc. only between the detector and the dispenser).**
Have Certification For Your Release Detection Method	❑ **Make sure your release detection equipment is certified for the types of piping and stored contents on which the release detection system is used.** Most manufacturers have their leak detection devices tested and certified by a third party to verify that their equipment meets specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the manufacturer provide them to you.
Perform These O&M Actions	❑ **Frequently test your automatic LLDs according to the manufacturer's instructions to make sure it is working properly.** Don't assume that your release detection system is working and never needs checking. Some monitoring systems have a test or self-diagnosis mode. ❑ **Periodically have a qualified UST contractor, such as the vendor who installed your release detection system, service all the system components according to the manufacturers' service instructions.** Components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually. ❑ **See Section 3 of this manual if your LLD detects a leak.** ❑ **Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.** Develop and maintain regular training programs for all employees.
Keep These O&M Records	❑ **For at least a year, keep the annual test that demonstrates that the LLD is functioning properly.** ❑ **If used for monthly monitoring, keep results of your release detection system tests for at least 1 year.** Your monitoring equipment system may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right. ❑ **Keep all records of calibration, maintenance, and repair of your release detection equipment for at least 1 year.** ❑ **Keep all performance claims supplied by the installer, vendor, or manufacturer for at least 5 years.** These records include the certification of your leak detection equipment described above.

Line Tightness Testing (for piping only)	
Description Of Release Detection	**This method uses a periodic line tightness test to determine if your piping is leaking. Tightness testing can be performed by either a trained professional or by using a permanently installed electronic system (sometimes connected to an automatic tank gauging system).**
Have Certification For Your Release Detection Method	❑ **Make sure your line tightness testing or permanently installed electronic system is certified for the types of piping and stored contents on which the release detection system is used.** Most tightness test methods and release detection equipment have been tested and certified by a third party to verify that the equipment or services meet specific performance requirements set by regulatory agencies. If you don't have certified performance claims, have the tightness tester or equipment manufacturer provide them to you.
Perform These O&M Actions	❑ **If line tightness testing is used for pressurized piping, the test must be conducted at least annually.** ❑ **If line tightness testing is used for suction piping, the test must be conducted at least every three years.** Safe suction piping as described at the bottom of page 3 may not need release detection testing. ❑ **This tightness testing must be conducted by a professional trained in performing line tightness testing or by using a permanently installed electronic system.** ❑ **See Section 3 of this manual if your piping fails the tightness test or if the electronic system indicates a leak.** ❑ **Periodically have a qualified UST contractor, such as the vendor who installed your release detection system, service all the system components according to the manufacturers' service instructions.** Components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least annually. ❑ **Make sure employees who run, monitor, or maintain the release detection system know exactly what they have to do and to whom to report problems.** Develop and maintain regular training programs for all employees.
Keep These O&M Records	❑ **Keep results of your release detection system tests for at least 1 year.** Your monitoring equipment may provide printouts that can be used as records. Unless you are recording actual release detection results at least every 30 days and maintaining records for at least 1 year, you are not doing leak detection right. ❑ **If you use a permanently installed electronic system, keep all records of calibration, maintenance, and repair of your equipment for at least 1 year.** ❑ **Keep all performance claims supplied by the installer, vendor, or manufacturer for at least 5 years.** These records include the certification of your leak detection equipment described above.

30-Day Release Detection Monitoring Record

(May be used for monitoring wells, interstitial monitoring, and automatic tank gauging)

Release Detection Method: _____

Facility Name: _____

Date	Your Name	UST System (Tank & Piping) (Enter N for No Release Detected or Y for a Suspected Or Confirmed Release)			
		UST #	UST #	UST #	UST #

Keep This Piece Of Paper And Any Associated Printouts On File For At Least 1 Year From The Date Of The Last Entry

Section 3 — Suspected Or Confirmed Releases

You need to be fully prepared to respond to releases **before** they may occur. You need to know what to do when release detection methods indicate a suspected or confirmed release. Be ready to take the following steps, as appropriate.

Stop The Release

- Take immediate action to prevent the release of more product.
- Turn off the power to the dispenser and bag the nozzle.
- Make sure you know where your emergency shutoff switch is located.
- Empty the tank, if necessary, without further contaminating the site. You may need the assistance of your supplier or distributor.

Contain The Release

Contain, absorb, and clean up any surface spills or overfills. You should keep enough absorbent material at your facility to contain a spill or overfill of petroleum products until emergency response personnel can respond to the incident. The suggested supplies include, but are not limited to, the following:

- Containment devices, such as containment booms, dikes, and pillows.
- Absorbent material, such as kitty litter, chopped corn cob, sand, and sawdust. (Be sure you properly dispose of used absorbent materials.)
- Mats or other material capable of keeping spill or overfill out of nearby storm drains.
- Spark-free flash light.
- Spark-free shovel.
- Buckets.
- Reels of caution tape, traffic cones, and warning signs.
- Personal protective gear.

Also, identify any fire, explosion, or vapor hazards and take action to neutralize these hazards.

Call For Help

Contact your local fire or emergency response authority. Make sure you have these crucial telephone numbers prominently posted where you and your employees can easily see them. See the next page for a form you can copy and post.

Report To Authorities

If you observe any of the following, contact your state's underground storage tank regulatory authority to report a suspected or confirmed release as soon as possible (within 24 hours):

- Any spill or overfill of petroleum that exceeds 25 gallons or that causes a sheen on nearby surface water. (Spills and overfills under 25 gallons that are contained and immediately cleaned up do not have to be reported. If they can't be quickly cleaned up they must be reported to your regulatory agency.)

- Any released regulated substances at the UST site or in the surrounding area — such as the presence of liquid petroleum; soil contamination; surface water or groundwater contamination; or petroleum vapors in sewer, basement, or utility lines.

- Any unusual operating conditions you observe — such as erratic behavior of the dispenser, a sudden loss of product, or an unexplained presence of water in the tank. However, you are not required to report if:

    - The system equipment is found to be defective, but not leaking, and is immediately repaired or replaced.

- Results from your release detection system indicate a suspected release. However, you are not required to report if:

    - The monitoring device is found to be defective and is immediately repaired, recalibrated, or replaced and further monitoring does not confirm the initial suspected release, or

    - In the case of inventory control, a second month of data does not confirm the initial result.

The next page contains a blank list for names and phone numbers of important contacts. Fill out this information for your facility so that you will know who to call in case of an emergency. Remove this page from the manual, copy it, fill it out, and post it in a prominent place at your facility.

Copy the next page and update it often. Make sure everyone at your UST facility is familiar with this list of contacts.

Release Response
Important Contact Information

	Contact Name	Phone #
State UST Agency:		
Local UST Agency:		
Fire Department:		
Ambulance:		
Police Department:		
Repair Contractor:		
Other Contacts:		

✔ Release Response Checklist

- ❑ **Stop the release:** Take immediate action to prevent the release of more product. Turn off the power to the dispenser and bag the nozzle. Make sure you know where your emergency shutoff switch is located. Empty the tank, if necessary, without further contaminating the site.
- ❑ **Contain the release:** Contain, absorb, and clean up any surface releases. Identify any fire, explosion, or vapor hazards and take action to neutralize these hazards.
- ❑ **Call for help and to report suspected or confirmed releases:** Contact your local fire or emergency response authority. Contact your state's underground storage tank regulatory authority within 24 hours.

Section 4 — Spill And Overfill Protection

The purpose of spill and overfill protection equipment is to eliminate the potential for a release during fuel deliveries. The equipment must be in working order and used properly to provide adequate protection from spills and overfills.

Even the best spill and overfill protection equipment can become faulty over time if not properly operated and maintained.

Only one gallon of fuel leaking each week from a poorly maintained spill bucket can result in up to 195 tons of contaminated soil in a year.

Improper maintenance of the spill bucket at the UST site pictured below contributed to significant contamination of soil and groundwater.

What's The Difference?

Spill Protection:
A spill bucket is installed at the fill pipe to contain the drips and spills of fuel that can occur when the delivery hose is uncoupled from the fill pipe after delivery.

Overfill Protection:
Equipment is installed on the UST that is designed to stop product flow, reduce product flow, or alert the delivery person during delivery **before** the tank becomes full and begins releasing petroleum into the environment.

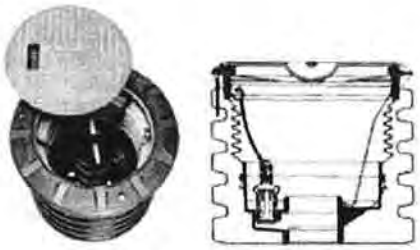
The following pages in this section focus on how you can routinely make sure your spill and overfill equipment is operating effectively.

What Are The Basics Of Spill Protection?

Your USTs must have catchment basins — also called spill buckets — installed at the fill pipe to contain spills that may occur as a result of fuel deliveries.

- The spill bucket is designed to temporarily contain product spills that might occur during fuel delivery. To contain a spill, the spill bucket must be liquid tight.
- **The spill bucket is not designed to contain fuel for long periods of time.** After each delivery, empty and dispose of contents properly.
- Spill buckets need to be large enough to contain any fuel that may spill when the delivery hose is uncoupled from the fill pipe. Spill buckets typically range in size from 5 gallons to 25 gallons.
- If you use a checklist for correct delivery practices (see page 33), spills should be eliminated or reduced to very small volumes that your spill bucket can easily handle.

If your UST ***never*** receives deliveries of more than 25 gallons at a time, the UST does not need to meet the spill protection requirements. Many used oil tanks fall into this category. Even though these USTs are not required to have spill protection, you should consider using spill protection as part of good UST system management.



Examples Of Spill Buckets

How Do You Maintain Your Spill Bucket?

The checklist below provides information on properly maintaining your spill bucket.

✔ Spill Bucket O&M Checklist

- ❑ **Keep your spill bucket empty of liquids.**
  Some spill buckets are equipped with a valve that allows you to drain accumulated fuel into your UST. Others may be equipped with a manual pump so fuel can be put into your UST by pumping it through the fill pipe. However, keep in mind that when you pump out or drain your spill bucket into your UST, any water and debris may also enter the UST. If a basin is not equipped with drain valve or pump, then any accumulated fuel or water must be removed manually and disposed of properly.
- ❑ **Periodically check your spill bucket to remove any debris.**
  Debris could include soil, stones, or trash.
- ❑ **Periodically check to see if your spill bucket is still liquid tight.**
  Have a qualified UST contractor inspect your spill bucket for signs of wear, cracks, or holes. Based on this inspection, the contractor may suggest a test to determine if the spill bucket is tight or needs repair or replacement.

What Are The Basics Of Overfill Protection?

Your USTs must have overfill protection installed to help prevent the overfilling of tanks.

Three types of overfill protection devices are commonly used:

- Automatic shutoff devices
- Overfill alarms
- Ball float valves

Each of these forms of overfill protection is discussed in detail on the following pages.

If your UST ***never*** receives deliveries of more than 25 gallons at a time, the UST does not need to meet the overfill protection requirements. Many used oil tanks fall into this category. Even though these USTs are not required to have overfill protection, you should consider using overfill protection as part of good UST system management.

How Can You Help The Delivery Person Avoid Overfills?

To protect your business, you must make every effort to help the delivery person avoid overfilling your UST.

Use A Checklist On Correct Filling Practices

If correct filling practices are used, you will not exceed the UST's capacity — see page 33 for a checklist on correct filling procedures. Overfills are caused when the delivery person makes a mistake, such as ignoring an overfill alarm.

Use Signs, Alert Your Delivery Person

The delivery person should know what type of overfill device is present on each tank at your facility and what action will occur if the overfill device is triggered — such as a visual and/or audible alarm or that the product flow into the tank will stop or slow significantly.

Educate and alert your delivery person by placing a clear sign near your fill pipes, in plain view of the delivery person. An example of such a sign follows on the next page.

Delivery Person — Avoid Overfills

- An **overfill alarm** is used for overfill protection at this facility.
- Do not tamper with this alarm in any attempt to defeat its purpose.
- When the tank is 90% full, the overfill alarm whistles and a red light flashes.
- **If you hear the alarm whistle or see the red light flashing,**

Stop The Delivery Immediately!

Make Sure You Order The Right Amount Of Product

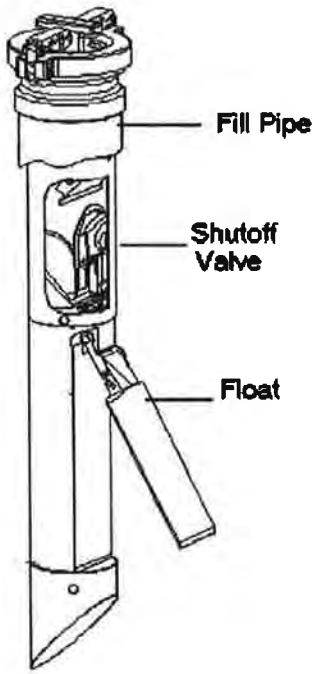
Also, you need to **make sure you've ordered the right amount of product for delivery**. Order only the quantity of fuel that will fit into 90% of the tank. For example, if you have a 10,000 gallon tank with 2,000 gallons already in the tank, you would order at the most a 7,000 gallon delivery (90% of 10,000 is 9,000 gallons; subtracting the 2,000 gallons already in the tank leaves a maximum delivery of 7,000 gallons). Use the checklist formula on page 33. Do your homework right and you reduce the chance of overfills.

What Should You Do To Operate And Maintain Your Automatic Shutoff Device?

The automatic shutoff device is a mechanical device installed in line with the drop tube within the fill pipe riser. It slows down and then stops the delivery when the product has reached a certain level in the tank. It should be positioned so that the float arm is not obstructed and can move through its full range of motion.

When installed and maintained properly, the shutoff valve will shut off the flow of fuel to the UST at 95% of the tank's capacity or before the fittings at the top of the tank are exposed to fuel.

You should not use an automatic shutoff device for overfill protection if your UST receives pressurized deliveries.



✔ Basic O&M Checklist For Automatic Shutoff Devices

- ❑ A qualified UST contractor periodically checks to make sure that the automatic shutoff device is functioning properly and that the device will shut off fuel flowing into the tank at 95% of the tank capacity or before the fittings at the top of the tank are exposed to fuel:
  - Make sure the float operates properly.
  - Make sure there are no obstructions in the fill pipe that would keep the floating mechanism from working.
- ❑ You have posted signs that the delivery person can easily see and that alert the delivery person to the overfill warning devices and alarms in use at your facility.

What Should You Do To Operate And Maintain Your Electronic Overfill Alarm?

This type of overfill device activates an audible and/or visual warning to delivery personnel when the tank is either 90% full or is within one minute of being overfilled. **The alarm *must* be located so it can be seen and/or heard from the UST delivery location.** Once the electronic overfill alarm sounds, the delivery person has approximately one minute to stop the flow of fuel to the tank.

Electronic overfill alarm devices have no mechanism to shut off or restrict flow. Therefore, the fuel remaining in the delivery hose after the delivery has been stopped will flow into the tank as long as the tank is not yet full.

✔ Basic O&M Checklist For Overfill Alarms

- ❑ A qualified UST contractor periodically checks your electronic overfill alarm to make sure that it is functioning properly and that the alarm activates when the fuel reaches 90% of the tank capacity or is within one minute of being overfilled:
  - Ensure that the alarm can be heard and/or seen from where the tank is fueled.
  - Make sure that the electronic device and probe are operating properly.
- ❑ You have posted signs that the delivery person can easily see and that alert the delivery person to the overfill warning devices and alarms in use at your facility.

What Should You Do To Operate And Maintain Your Ball Float Valve?

The ball float valve — also called a float vent valve — is installed at the vent pipe in the tank and restricts vapor flow in an UST as the tank gets close to being full. The ball float valve should be set at a depth which will restrict vapor flow out of the vent line during delivery at 90% of the UST's capacity or 30 minutes prior to overfilling.

As the tank fills, the ball in the valve rises, restricting the flow of vapors out of the UST during delivery. The flow rate of the delivery will decrease noticeably and should alert the delivery person to stop the delivery.

For ball float valves to work properly, the top of the tank must be air tight so that vapors cannot escape from the tank. Everything from fittings to drain mechanisms on spill buckets must be tight and be able to hold the pressure created when the ball float valve engages.

You should not use a ball float valve for overfill protection if any of the following apply:

- **Your UST receives pressurized deliveries.**
- **Your UST system has suction piping.**
- **Your UST system has single point (coaxial) stage 1 vapor recovery.**

✔ Basic O&M Checklist For Ball Float Valves

❑ A qualified UST contractor periodically checks to make sure that the ball float valve is functioning properly and that it will restrict fuel flowing into the tank at 90% of the tank capacity or 30 minutes prior to overfilling:

- Ensure that the air hole is not plugged.
- Make sure the ball cage is still intact.
- Ensure the ball still moves freely in the cage.
- Make sure the ball still seals tightly on the pipe.

❑ You have posted signs that the delivery person can easily see and that alert the delivery person to the overfill warning devices and alarms in use at your facility.

✔ Spill And Overfill O&M Checklist	
Spill Bucket	❑ **Keep your spill bucket empty of liquids.** Some spill buckets are equipped with a drainage valve which allows you to drain accumulated fuel into your UST. Others can be equipped with a manual pump so fuel can be put into your UST by pumping it through the fill pipe. However, keep in mind that when you pump out or drain your spill bucket into your UST, any water and debris may also enter the UST. If a spill bucket is not equipped with a drain valve or pump, then any accumulated fuel or water must be removed manually and disposed of properly. ❑ **Periodically check your spill bucket to remove any debris.** Debris could include soil, stones, or trash. ❑ **Periodically check to see if your spill bucket is still liquid tight.** Have a qualified UST contractor inspect your spill bucket for signs of wear, cracks, or holes. Based on this inspection, the contractor may suggest a test to determine if the spill bucket is tight or needs repair or replacement.
Automatic Shutoff Devices	❑ A qualified UST contractor periodically checks to make sure that the automatic shutoff device is functioning properly and that the device will shut off fuel flowing into the tank at 95% of the tank capacity or before the fittings at the top of the tank are exposed to fuel: • Make sure the float operates properly. • Make sure that there are no obstructions in the fill pipe that would keep the floating mechanism from working. ❑ You have posted signs that the delivery person can easily see and that alert the delivery person to the overfill warning devices and alarms in use at your facility.
Overfill Alarms	❑ A qualified UST contractor periodically checks your electronic overfill alarm to make sure that it is functioning properly and that the alarm activates when the fuel reaches 90% of the tank capacity or is within one minute of being overfilled: • Ensure that the alarm can be heard and/or seen from where the tank is fueled. • Make sure that the electronic device and probe are operating properly. ❑ You have posted signs that the delivery person can easily see and that alert the delivery person to the overfill warning devices and alarms in use at your facility.
Ball Float Valves	❑ A qualified UST contractor periodically checks to make sure that the ball float valve is functioning properly and that it will restrict fuel flowing into the tank at 90% of the tank capacity or 30 minutes prior to overfilling: • Ensure that the air hole is not plugged. • Make sure the ball cage is still intact. • Ensure the ball still moves freely in the cage. • Make sure the ball still seals tightly on the pipe. ❑ You have posted signs that the delivery person can easily see and that alert the delivery person to the overfill warning devices and alarms in use at your facility.

What Are Your Responsibilities For Correct Filling Practices?

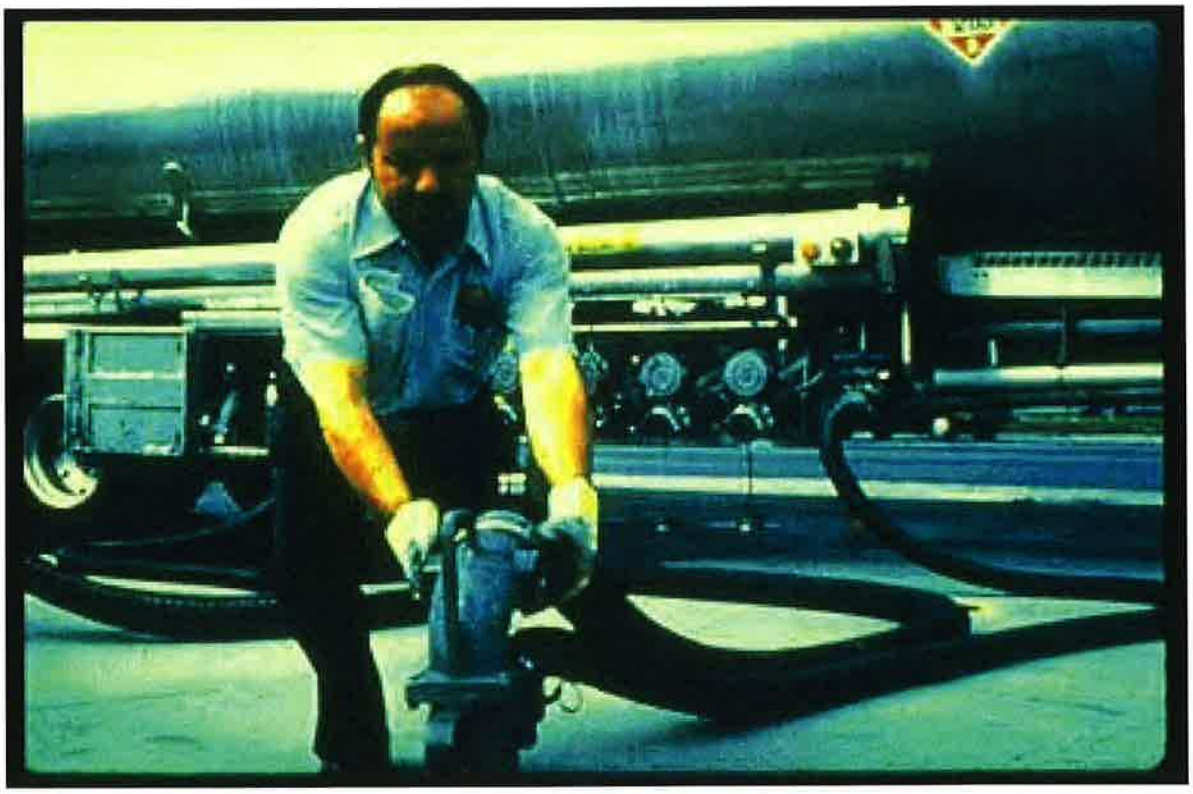
As an owner or operator you are responsible for ensuring that releases due to spilling or overfilling do not occur during fuel delivery.

As part of this responsibility, you must:

- Ensure the amount of product to be delivered will fit into the available empty space in the tank; and

- Ensure the transfer operation is monitored constantly to prevent overfilling and spilling.

One way help ensure the above requirements are met is to follow the checklist on the next page. The checklist describes activities to perform before, during, and after a fuel delivery.



✔ Correct Filling Checklist

What To Do Before Your USTs Are Filled	❑ Post clear signs that alert delivery persons to the overfill devices and alarms in use at your facility. ❑ Make and record accurate readings for product and water in the tank before fuel delivery. ❑ Order only the quantity of fuel that will fit into 90% of the tank. **Remember, the formula for determining the maximum amount of gasoline to order is:** (Tank capacity in gallons X 90%) — Product currently in tank = Maximum amount of fuel to order **Example:** (10,000 gal X 0.9) — 2,000 gal = 7,000 gal maximum amount to order ❑ Ensure fuel delivery personnel know the type of overfill device present at the tank and what actions to perform if it activates. For example, use sample sign on page 27 of this chapter. ❑ Review and understand the spill response procedures. ❑ Verify that your spill bucket is empty, clean, and will contain spills.
What To Do While Your USTs Are Being Filled	❑ Keep fill ports locked until the fuel delivery person requests access. ❑ Have an accurate tank capacity chart available for the fuel delivery person. ❑ The fuel delivery person makes all hook-ups. The person responsible for monitoring the delivery should remain attentive and observe the entire fuel delivery, be prepared to stop the flow of fuel from the truck to the UST at any time, and respond to any unusual condition, leak, or spill which may occur during delivery. ❑ Have response supplies readily available for use in case a spill or overfill occurs (see Section 3). ❑ Provide safety barriers around the fueling zone. ❑ Make sure there is adequate lighting around the fueling zone.
What To Do After Your USTs Are Filled	❑ Following complete delivery, the fuel delivery person is responsible for disconnecting all hook-ups. ❑ Return spill response kit and safety barriers to proper storage locations. ❑ Make and record accurate readings for product and water in the tank after fuel delivery. ❑ Verify the amount of fuel received. ❑ Make sure fill ports are properly secured. ❑ Ensure the spill bucket is free of product and clean up any small spills.

Section 5 — Corrosion Protection

To prevent leaks, all parts of your UST system that are underground and routinely contain product need to be protected from corrosion. The UST system includes the tank, piping, and ancillary equipment, such as flexible connectors, fittings, and pumps. Unprotected metal UST components can deteriorate and leak when underground electrical currents act upon them.

One way to protect UST components from corrosion is to **make them with nonmetallic, noncorrodible materials**, such as USTs made of (or clad or jacketed with) fiberglass reinforced plastic (FRP) or other noncorrodible materials — as illustrated by the FRP tank on the right. Noncorrodible USTs like these do not require O&M for corrosion protection.

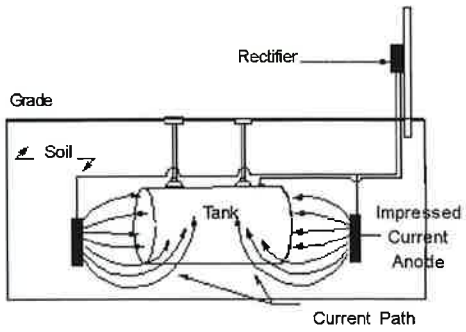
UST components made from metal, however, that routinely contain product and are in direct contact with the ground need corrosion protection provided by cathodic protection or (in some cases) lining the interior of the tank, as described below. These options require O&M.

Note: Metal tanks or piping installed after December 22, 1988 must have a dielectric coating (a coating that does not conduct electricity) in addition to the cathodic protection described below.

Cathodic Protection Using Sacrificial Anode Systems

Sacrificial anodes are buried and attached to UST components for corrosion protection — as illustrated on the right by an anode attached to a tank. Anodes are pieces of metal that are more electrically active than steel, and thus they suffer the destructive effects of corrosion rather than the steel they are attached to.

Cathodic Protection Using Impressed Current Systems



An impressed current system — as shown on the right — uses a rectifier to provide direct current through anodes to the tank or piping to achieve corrosion protection. The steel is protected because the current going to the steel overcomes the corrosion-causing current flowing away from it. **The cathodic protection rectifier must always be on and operating to protect your UST system from corrosion.**

Corrosion Protection Using Internal Lining Of The Tank

This corrosion protection option applies only to tanks installed before December 22, 1988. These older tanks can be internally lined by trained professionals to meet the corrosion protection requirements — as shown on the right, in which a professional follows industry codes to safely and effectively line a tank's interior.

It may help you to see your corrosion protection options displayed in the following table.

Corrosion Protection Choices	
Option	**Description**
Noncorrodible Material	The tank or piping is constructed of noncorrodible material.
Steel Tank Clad Or Jacketed With A Noncorrodible Material	Examples of cladding or jacket material include fiberglass and urethane. Does not apply to piping.
Coated And Cathodically Protected Steel Tanks Or Piping	Steel tank and piping is well-coated with a dielectric material and cathodically protected.
Cathodically Protected Noncoated Steel Tanks Or Piping	*This option is only for steel tanks and piping installed before December 22, 1988.* Cathodic protection is usually provided by an impressed current system.
Internal Lining Of Tanks	*This option is only for steel tanks installed before December 22, 1988.* A lining is applied to the inside of the tank. Does not apply to piping.
Combination Of Cathodically Protected Steel And Internal Lining Of Tanks	*This option is only for steel tanks installed before December 22, 1988.* Cathodic protection is usually provided by an impressed current system. Does not apply to piping.
Other Methods Used To Achieve Corrosion Protection	If you have tanks or piping that do not meet any of the descriptions above, check with your state UST agency to see if your UST system meets the requirements for corrosion protection. You also will need to ask about the operation, maintenance, and record keeping requirements applicable to this type of UST system.

Note: In addition to tanks and piping, all other metal components in direct contact with the ground that routinely hold product — such as flexible connectors, swing joints, fittings, and pumps — must also be cathodically protected.

Use the O&M checklist on the next page. Following the checklist look for record keeping forms and discussions of special corrosion protection situations.

✔ Basic O&M Checklist For Corrosion Protection

Sacrificial Anode Cathodic Protection Systems	**You need to have a periodic test conducted by a qualified corrosion tester to make sure your cathodic protection system is adequately protecting your UST system. This test needs to be conducted:** ❑ Within 6 months of installation. ❑ At least every 3 years after the previous test. ❑ Within 6 months after any repairs to your UST system. • Make sure the professional tester is qualified to perform the test and follows a standard code of practice to determine that test criteria are adequate. • If any test indicates your tanks are not adequately protected, you need to have a corrosion expert examine and fix your system. • Testing more frequently can catch problems before they become big problems. ❑ **You need to keep the results of at least the last two tests on file.** See the next page for a cathodic protection test record keeping form.
Impressed Current Cathodic Protection Systems	**You need to have a periodic test conducted by a qualified corrosion tester to make sure your cathodic protection system is adequately protecting your UST system. This test needs to be conducted:** ❑ Within 6 months of installation. ❑ At least every 3 years after the previous test. ❑ Within 6 months after any repairs to your UST system. • Make sure the professional tester is qualified to perform the test and follows a standard code of practice to determine that test criteria are adequate. • If any test indicates your tanks are not adequately protected, you need to have a corrosion expert examine and fix your system. • Testing more frequently can catch problems before they become big problems. ❑ **You need to keep the results of at least the last two tests on file.** See next page for a cathodic protection test record keeping form. ❑ **You need to inspect your rectifier at least every 60 days to make sure that it is operating within normal limits.** • This inspection involves reading and recording the voltage and amperage readouts on the rectifier. You or your employees can perform this periodic inspection. • Make sure your cathodic protection professional provides you with the rectifier's acceptable operating levels so you can compare the readings you take with an acceptable operating level. If your readings are not within acceptable levels, you must contact a cathodic protection professional to address the problem. ❑ **You need to keep records of at least the last 3 rectifier readings.** See page 39 for a 60-Day Inspection Results record keeping form. ❑ **You should have a trained professional periodically service your impressed current system.** ❑ **Never turn off your rectifier!**
Internally Lined Tanks	❑ Within 10 years after lining and at least every 5 years thereafter, the lined tank must be inspected by a trained professional and found to be structurally sound with the lining still performing according to original design specifications. Make sure the professional performing the inspection follows a standard code of practice. ❑ **Keep records of the inspection (as specified in industry standards for lining inspections).**

Record For Periodic Testing Of Cathodic Protection Systems

(for use by a qualified cathodic protection tester)

Test Date:____/____/____ Facility Name/ID:_____

Note: Provide site sketch as directed on the back of this page.

Cathodic Protection (CP) Tester Information:

Name: _____ Phone Number:_____

Address: _____

Testing must be conducted by a qualified CP tester. Indicate your qualifications as a CP tester:

Identify which of the following testing situations applies:

- ❑ Test required within 6 months of installation of CP system (installation date was __/__/__)
- ❑ Test required at least every 3 years after installation test noted above
- ❑ Test required within 6 months of any repair activity – note repair activity and date below:

Indicate which industry standard you used to determine that the cathodic protection test criteria are adequate: _____

	Cathodic Protection Test Method Used (check one)
	100 mV Cathodic Polarization Test
	-850 mV Test (Circle 1 or 2 below) 1) Polarized Potential (instant off) 2) Potential with CP Applied, IR Drop Considered **Note: All readings taken must meet the -850 mV criteria to pass**
	Other Accepted Method (please describe):

Is the cathodic protection system working properly? Yes No (circle one)

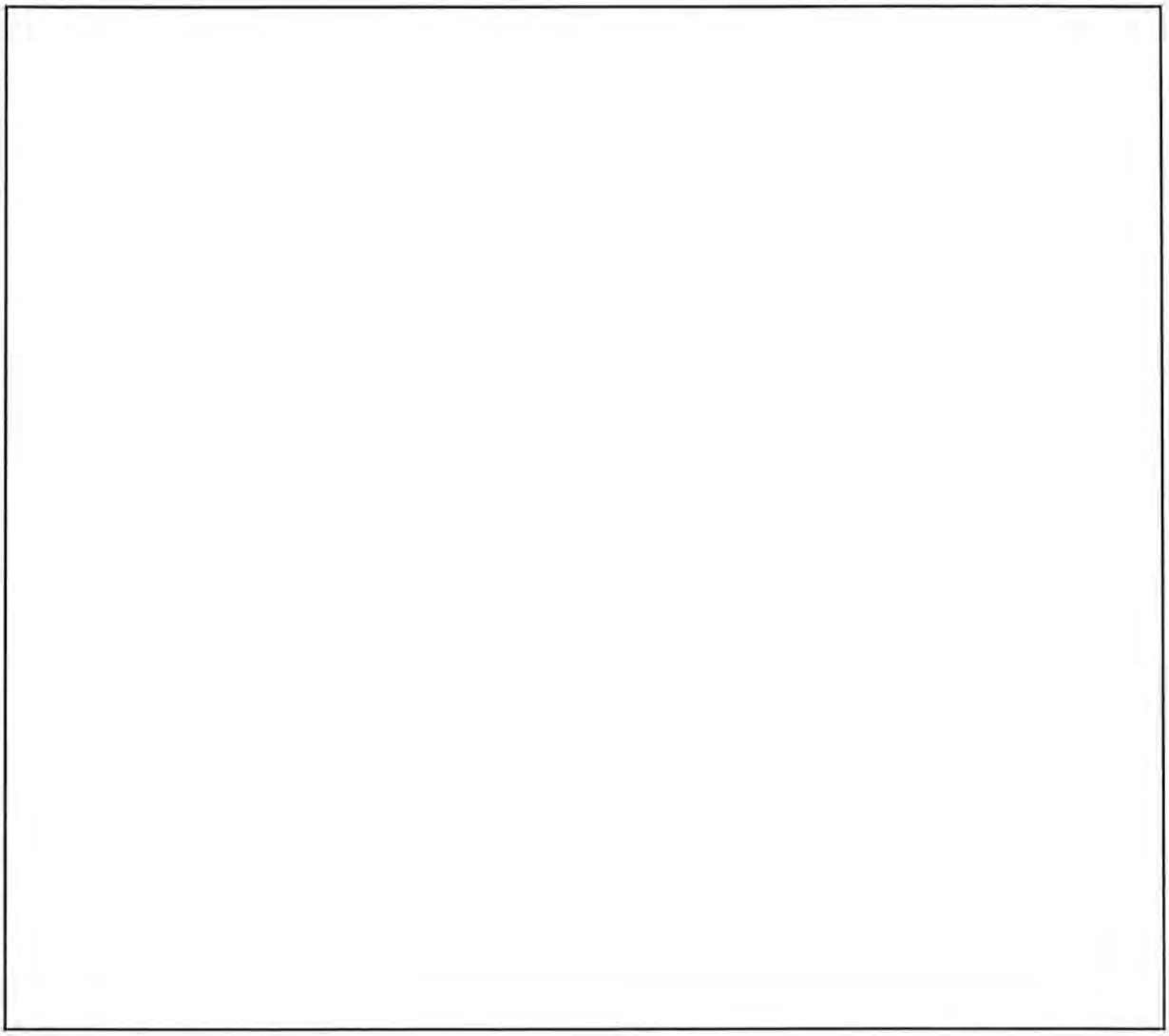
If answer is no, go to the directions at the bottom on the back of this page.

My signature below affirms that I have sufficient education and experience to be a cathodic protection tester; I am competent to perform the tests indicated above; and that the results on this form are a complete and truthful record of all testing at this location on the date shown.

CP Tester Signature: _____ Date:_____

Keep This Paper On File For At Least Six Years

Site Sketch: Provide a rough sketch of the tanks and piping, the location of each CP test, and each voltage value obtained (use space below or attach separate drawing). Voltage readings through concrete or asphalt do not provide accurate readings and are not acceptable. Perform sufficient testing to evaluate the entire UST system.



If CP system fails test, you must have a corrosion expert fix the system.

If the answer was no, indicating that your CP system is not working, you must have a ***corrosion expert*** investigate and fix the problem. A corrosion expert has additional training, skills, and certification beyond the corrosion tester who filled out the bulk of this form. A corrosion expert must be:

- Accredited/certified by NACE International (The Corrosion Society) as a corrosion specialist or cathodic protection specialist, or
- Be a registered professional engineer with certification or licensing in corrosion control.

As long as you have the UST, be sure you keep a record that clearly documents what the corrosion expert did to fix your CP system.

Keep This Paper On File For At Least Six Years

60-Day Inspection Results For Impressed Current Cathodic Protection Systems

Facility Name: _____

Amp Range Recommended: _____

Voltage Range Recommended: _____

Date	Your Name	Voltage Reading	Amp Reading	Is Your System Running Properly? (Yes/No)

- **If the rectifier voltage and/or amperage output(s) are outside the recommended operating levels, contact a cathodic protection expert to address the problem.**
- **Never turn off your rectifier.**
- **Keep this record for at least 6 months after the date of the last reading.**

Some Special Corrosion Protection Situations

What If You Have An STI-P3 Tank With A PP4 Test Station?

If you have a PP4 test station installed with an STI-P3 tank, you may perform the periodic testing of your cathodic protection system by using the meter provided to you with the PP4 test station.

- Don't forget to record the result of the reading and keep at least the last two results.
- If your test readings do not pass, you must take action to correct the problem. Call your installer and ask that the corrosion expert who designed the system examine it and correct the problem.

What If You Combine Internal Lining And Cathodic Protection?

If you chose the combination of internal lining and cathodic protection for meeting corrosion protection requirements on your UST, you may not have to meet the periodic inspection requirement for the lined tank. However, you must always meet the requirements for checking and testing your cathodic protection system as described in the basic O&M checklist for corrosion protection on page 36. The 10-year and subsequent 5-year inspections of the lined tank are not required if the integrity of the tank was ensured when cathodic protection was added. You should be able to show an inspector documentation of the passed integrity assessment.

Example 1:
If you have cathodic protection and internal lining applied to your tank at the same time, periodic inspections of the lined tank **are not** required because an integrity assessment of the tank is required prior to adding the cathodic protection and internal lining.

Example 2:
If you had cathodic protection added to a tank in 1997 that was internally lined in 1994 and the contractor did not perform an integrity assessment of the tank at the time cathodic protection was added (or you cannot show an inspector documentation of the passed integrity assessment), then periodic inspections of the lined tank **are** required because you cannot prove that the tank was structurally sound and free of corrosion holes when the cathodic protection was added. The lined tank needs to be periodically inspected because the lining may be the only barrier between your gasoline and the surrounding environment.

What If You Have A Double Walled Steel UST With Interstitial Monitoring And Cathodic Protection?

If you have a cathodically protected double walled steel tank and you use interstitial monitoring capable of detecting a breach in both the inner and outer wall or ingress of product and water as your method of leak detection, then you should monitor your cathodic protection system within six months of installation and following any activity that could affect the CP system.

If you are using impressed current cathodic protection, you still need to perform the 60-day checks of your rectifier to make sure it is operating within normal limits.

- Testing the cathodic protection system more frequently may help catch problems quicker.
- If your test readings do not pass, you must take action to correct the problem. Call your installer and ask that the corrosion expert who designed the system examine it and correct the problem.
- Don't forget to keep at least the last two results of your cathodic protection testing.

Do All UST Sites Need Corrosion Protection?

A corrosion expert may be able to determine the soil at an UST site is not conducive to corrosion and will not cause the tank or piping to have a release during its operating life. If so, you must keep a record of that corrosion expert's analysis for the life of the tank or piping to demonstrate why your UST has no corrosion protection.

Section 6 — Frequent Walk-Through Inspections

You should conduct basic walk-through inspections of your facility **at least monthly** to make sure your essential equipment is working properly and you have release response supplies on hand.

These inspections would not be as thorough as following the O&M checklists presented earlier in this booklet, but they can provide a quick overview you can do more often than the longer checklists. You might think of this level of inspection as similar to automobile dashboard indicators that provide us with status warnings like low battery.

When you perform your walk-through inspection you should quickly check at least the following:

- **Release Detection System:** Is your release detection equipment working properly? For example, did you run a quick self-test of the ATG to verify it's working properly? Or did you check your manual dip stick to make sure it's not warped or worn?
- **Spill Buckets:** Are spill buckets clean, empty, and in good condition?
- **Overfill Alarm (if you have one):** Is your overfill alarm working and easily seen or heard?
- **Impressed Current Cathodic Protection System (if you have one):** Is your cathodic protection system turned on? Are you checking your rectifier at least every 60 days?
- **Fill And Monitoring Ports:** Are covers and caps tightly sealed and locked?
- **Spill And Overfill Response Supplies:** Do you have the appropriate supplies for cleaning up a spill or overfill?

In addition, good UST site management should also include the following quick visual checks:

- **Dispenser Hoses, Nozzles, And Breakaways:** Are they in good condition and working properly?
- **Dispenser And Dispenser Sumps:** Any signs of leaking? Are the sumps clean and empty?
- **Piping Sumps:** Any signs of leaking? Are the sumps clean and empty?

If you find any problems during the inspection, you or your UST contractor need to take action quickly to resolve these problems and avoid serious releases.

A frequent walk-through checklist is provided for your use on the next page.

✔ Frequent Walk-Through Inspection Checklist						
Date Of Inspection						
Release Detection System: Inspect for proper operation.						
Spill Buckets: Ensure spill buckets are clean and empty.						
Overfill Alarm: Inspect for proper operation. Can a delivery person hear or see the alarm when it alarms?						
Impressed Current System: Inspect for proper operation.						
Fill And Monitoring Ports: Inspect all fill/monitoring ports and other access points to make sure that the covers and caps are tightly sealed and locked.						
Spill And Overfill Response Supplies: Inventory and inspect the emergency spill response supplies. If the supplies are low, restock the supplies. Inspect supplies for deterioration and improper functioning.						
Dispenser Hoses, Nozzles, And Breakaways: Inspect for loose fittings, deterioration, obvious signs of leakage, and improper functioning.						
Dispenser And Dispenser Sumps: Open each dispenser and inspect all visible piping, fittings, and couplings for any signs of leakage. If any water or product is present, remove it and dispose of it properly. Remove any debris from the sump.						
Piping Sumps: Inspect all visible piping, fittings, and couplings for any signs of leakage. If any water or product is present, remove it and dispose of it properly. Remove any debris from the sump.						

Your initials in each box below the date of the inspection indicate the device/system was inspected and OK on that date.

Section 7 — For More Information

This section identifies UST program contacts and other resources to help answer your questions and provide you with information about good UST management.

Internet Resources

Government Links

Directory of State UST Program Contacts: http://www.epa.gov/oust/states/statcon1.htm
Directory of State UST Program Internet Sites: http://www.epa.gov/oust/states/stateurl.htm
U.S. Environmental Protection Agency's Office of Underground Storage Tanks Home Page: http://www.epa.gov/oust. To go directly to the compliance assistance section of the Home page go to: http://www.epa.gov/swerust1/cmplastc/index.htm
Tanks Subcommittee of the Association of State and Territorial Solid Waste Management Officials (ASTSWMO): http://www.astswmo.org/programs_tanks.htm
New England Interstate Water Pollution Control Commission (NEIWPCC): http://www.neiwpcc.org

Professional And Trade Association Links

American Petroleum Institute (API): http://www.api.org
American Society of Testing and Materials (ASTM): http://www.astm.org
Fiberglass Tank and Pipe Institute (FTPI): http://www.fiberglasstankandpipe.com
NACE International - The Corrosion Society: http://www.nace.org
National Fire Protection Association (NFPA) : http://www.nfpa.org
Petroleum Equipment Institute (PEI): http://www.pei.org
Steel Tank Institute (STI): http://www.steeltank.com
Underwriters Laboratories (UL): http://www.ul.com

Free Informative Publications Available

The publications listed below are free and available from the U.S. Environmental Protection Agency (EPA). You can access these publications in the following ways.

Go to EPA's web site at http://www.epa.gov/oust/pubs/index.htm to order, read, or download documents online.
Write and ask for **free** publications by addressing your request to EPA's publication distributor: National Service Center for Environmental Publications (NSCEP), Box 42419, Cincinnati, OH 45242.
For **free** copies, call EPA's publication distributor's **toll-free** number at (800) 490-9198. Or go to http://www.epa.gov/nscep/ordering.htm for additional ordering methods.

Catalog Of EPA Materials On USTs
An annotated list of UST materials, including ordering information. Most of the leaflets, booklets, videos, and software items listed provide UST owners and operators with information to help them comply with federal UST requirements (32 pages).

Musts For USTs: A Summary Of Federal Regulations For Underground Storage Tank Systems
Plain language summary of federal UST requirements for installation, release detection, spill, overfill, and corrosion protection, corrective action, closure, reporting and recordkeeping. Updated & revised 1995 (36 pages).

Model Underground Storage Tank Environmental Results Program Workbook
Workbook, which states can modify to reflect their laws, helps improve owner and operator compliance with UST regulations. Contains general information about ERP; instructions on how to use the workbook; regulatory requirements, best management practices, and compliance checklists for USTs; and draft forms and worksheets in the appendices (164 pages). (Available on web only)

UST Systems: Inspecting And Maintaining Sumps And Spill Buckets – Practical Help And Checklist
Manual presents recommended inspection guidelines and best management practices for UST system sumps and spill buckets. Includes safety considerations; a general introduction to the kinds of sumps; basic maintenance procedures for sumps and spill buckets; and a sump and spill bucket inspection checklist (16 pages).

Straight Talk On Tanks: Leak Detection Methods For Petroleum Underground Storage Tanks
Explains federal regulatory requirements for leak detection and briefly describes allowable leak detection methods. Updated & revised 2005 (28 pages).

Getting The Most Out Of Your Automatic Tank Gauging System
Trifold leaflet provides UST owners and operators with a basic checklist they can use to make sure their automatic tank gauging systems work effectively and provide compliance with federal leak detection requirements.

Doing Inventory Control Right: For Underground Storage Tanks
Booklet describes how owners and operators of USTs can use inventory control and periodic tightness testing to temporarily meet federal leak detection requirements. Contains recordkeeping forms (16 pages).

Manual Tank Gauging: For Small Underground Storage Tanks
Booklet provides simple, step-by-step directions for conducting manual tank gauging for tanks 2,000 gallons or smaller. Contains recordkeeping forms (12 pages).

List Of Leak Detection Evaluations For UST Systems
A summary of specifications, based on third-party certifications, for over 275 systems that detect leaks from USTs and their piping. Each summary provides information on such items as certified detectable leak rate/threshold, test period duration, product applicability, calibration requirements, restrictions on the use of the device, and so on. (Available on web only)

List Of Integrity Assessment Evaluations For USTs
A list of integrity assessment procedures that have been successfully evaluated and certified by a qualified independent third party to meet specified performance criteria. (Available on web only)

Introduction To Statistical Inventory Reconciliation: For Underground Storage Tanks
Booklet describes how Statistical Inventory Reconciliation (SIR) can meet federal leak detection requirements (12 pages).

Closing Underground Storage Tanks: Brief Facts
Trifold leaflet presents "brief facts" on properly closing USTs in order to comply with federal closure requirements.

Underground Storage Tanks: Requirements And Options
Trifold leaflet alerts UST owners and operators who are "nonmarketers" (who do not sell stored petroleum) that they need either to find alternatives to managing their USTs or to make decisions about UST compliance.

Dollars And Sense: Financial Responsibility Requirements For Underground Storage Tanks
Booklet summarizes the "financial responsibility" required of UST owners and operators (16 pages).

List Of Known Insurance Providers For Underground Storage Tanks
Provides UST owners and operators with a list of insurance providers who may be able to help them comply with financial responsibility requirements by providing suitable insurance mechanisms (12 pages). (Available on web only)

Financing Underground Storage Tank Work: Federal And State Assistance Programs
Booklet identifies potential sources of financial assistance to cover the costs of upgrading, replacing, or closing an UST, or of cleaning up an UST release. Updated and revised March 1999 (23 pages).

State Regulatory Agency Contacts

See EPA's web site at http://www.epa.gov/oust/states/statcon1.htm for state underground storage tank program contact information.

United States
Environmental Protection
Agency

Solid Waste And
Emergency Response
5401G

EPA 510-B-05-002
September 2005
www.epa.gov

Getting The Most Out Of Your Automatic Tank Gauging System

As an owner or operator of an underground storage tank, you have invested a lot of money in your automatic tank gauging system to detect leaks—but are you getting your money's worth?

If you don't operate your automatic tank gauging system (ATGS) effectively, you may be letting stored product leak into the environment. If so, you may face costly cleanups and liability actions. Also, you can be cited and fined for not meeting the federal requirements for properly operating and maintaining an ATGS to detect leaks from underground storage tanks (USTs).

Note that a simple ATGS will detect leaks only from tanks. To detect leaks from piping, you will need an ATGS that supports connection to line leak detectors.

The checklist that follows can help you avoid some common problems and make sure your ATGS is working as required:

Know your ATGS. Insist that your ATGS installer trains you and provides clear instructions in the proper operation and maintenance of the ATGS.

Make sure your ATGS is constantly "on" and plugged into a power source. This may sound obvious, but inspectors have written many citations when they discovered that the ATGS was "off" and not monitoring for leaks.

Respond to alarms. Ignoring an alarm defeats the purpose for having the ATGS. Don't ignore the "FAIL" alarm. Large leaks have gone undetected when operators ignored an alarm or turned their ATGS off.

Run your ATGS in its "test mode" at least once a month. You must test when tank is relatively full. Since an ATGS does not detect leaks above the product level, test when the tank is as full as it typically gets (try testing soon after delivery, but after product settles). Also, you should test frequently. The more frequently you test, the greater the likelihood you will detect leaks as quickly as possible. The earlier you detect a leak, the easier and less costly the cleanup.

Have your ATGS maintained and calibrated according to manufacturers' instructions. Make sure you read the directions in the manual that came with your ATGS. Use the manufacturer or installer representative's phone number to get answers to any questions you have about using the ATGS correctly. Don't hesitate to contact the manufacturer or installer for help.

Report problems. You must report test results indicating a leak to your implementing agency (usually your state environmental agency), generally within 24 hours. You do not need to report if the ATGS is found to be defective, is repaired immediately, recalibrated or replaced, and subsequent monitoring shows tank is tight. You must immediately investigate and confirm all suspected leaks. When in doubt, report.

Keep records. Federal regulations require you to keep the following records:

Keep for at least one year:

- Monthly test results.
- Documentation of all calibration, maintenance, and repair.

Keep for at least five years:

- Any written performance claim for your ATGS. This will usually be an evaluation document signed by a third-party evaluator showing how a sample ATGS performed under test conditions.
- Manufacturer-supplied schedules for calibration and maintenance.

Keep records either at the UST site or at a readily available alternative site, and provide them for inspection upon request.

Put ATGS monitoring in the most responsible hands. Do not rely on the vigilance of part-time or under-trained employees. If necessary, have ATGS alarms go to a central, 24-hour contact or use other mechanisms that put ATGS monitoring in the most responsible hands.

Check state and local regulations. State or local regulations may differ from the federal requirements, so find out which requirements apply to your UST. Check with your implementing agency.

Please note: You may need to continue doing monthly inventory control as you use your ATGS. If your ATGS was installed after December 22, 1990 and does not meet performance standards for minimum leak detection rates, you must continue to perform proper inventory control. Check the third-party evaluation of your ATGS to see if it meets the performance standard requiring ATGS to detect a leak of 0.2 gallons per hour with 95% probability of detection and 5% probability of false alarm. ***If you are not sure, check with your implementing agency.***

Need More Information?

EPA can provide free, plain-English publications that concisely describe all aspects of federal UST requirements.

To order free publications, determine if your tanks need to meet federal UST requirements, get more information about UST requirements, or identify state regulatory authorities, please call **EPA's toll-free Hotline at 800-424-9346**. Remember, requirements and deadlines may be different in some states, so check with your state UST program office.

You can also find UST publications, links to state regulatory authorities, and other UST information at EPA's Office of Underground Storage Tanks Web site at **http://www.epa.gov/OUST/**

Remember, it's in your best interest that your ATGS works and detects leaks as soon as possible—

before leaks become big cleanup and liability problems.

Protect your ATGS investment by making sure your ATGS installer:

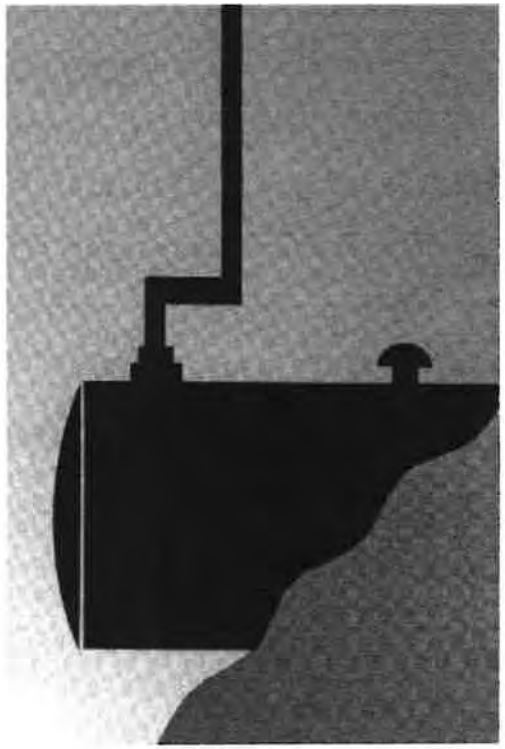
- Trains you in proper operation of the ATGS.
- Demonstrates that the ATGS has been correctly installed and programmed for the tank it monitors.
- Gives you an operation manual, schedules and documentation for calibration/maintenance, third-party evaluation, and phone numbers for technical support.
- Schedules maintenance with you as required by manufacturers' instructions.

United States Environmental Protection Agency
EPA 510-F-98-011
March 1998
www.epa.gov

Solid Waste and Emergency Response (5401G)

EPA

Getting The Most Out Of Your Automatic Tank Gauging System



Printed on Recycled Paper

UST Systems: Inspecting And Maintaining Sumps And Spill Buckets

Practical Help And Checklist

Printed on recycled paper

Contents

This document provides information on inspecting and maintaining sumps and spill buckets. The information provided in this manual is not intended to replace or contradict your specific manufacturer's instructions for maintaining your sumps. Nothing in this manual is intended to endorse or criticize any specific type of equipment or any manufacturer. Photographs of common sump problems are provided for instructional purposes only. This document does not replace existing federal or state regulations, nor is it a regulation itself - it does not impose legally binding requirements. For regulatory requirements regarding UST systems, refer to the federal regulations governing underground storage tank systems (40 CFR Part 280) or corresponding state regulations.

Additional copies of this manual are available at no cost by calling EPA's toll-free distribution center at 800-490-9198. Or you can download a color copy by going to OUST's World Wide Web Home Page at http://www.epa/gov/oust/pubs

Introduction

Who Should Read This Manual?

This manual is intended for owners and operators of underground storage tank (UST) systems; specifically, anyone who oversees the operation and maintenance of UST systems that contain and dispense petroleum products. UST owners/operators should ensure that only qualified personnel conduct inspection and maintenance activities.

After reading this manual, you should be able to identify the different types of sumps associated with your UST system and be familiar with how to identify some common sump-related problems.

How Will This Manual Help You?

This manual covers recommended inspection guidelines and best management practices for sumps associated with your UST system. This manual will:

- Help you identify and inspect the sumps associated with your UST system, including the equipment in your sumps.
- Explain some simple steps you can take to maintain your sumps and the equipment in your sumps, as well as identify potential problems.
- Provide you with tips for fixing common problems before they cause a release to the environment.

For more complete guidance on how to operate and maintain your UST system, refer to the U.S. Environmental Protection Agency (EPA) document, *Operating And Maintaining Underground Storage Tank Systems, Practical Help And Checklists (EPA 510-B-05-002, May 2005)*.

The average cleanup cost for a leaking UST is about $100,000. The cost can be more than $1,000,000 if groundwater is affected.

Why Should You Care About Sump Maintenance?

Despite advances that have greatly reduced the threat of petroleum releases from UST systems into the environment, some UST systems continue to experience releases. Inadequate operation and maintenance is one reason these systems continue to experience releases.

Sumps, including the sumps beneath dispensers, sumps around the submersible pump (turbine) head[1], transition/intermediate sumps, and spill buckets are common sources of releases. Releases of even small volumes of product can seep into the ground and contaminate soil and groundwater. Inspecting and maintaining your sumps is generally simple and can prevent or minimize such releases.

While this manual addresses a number of issues related to sump maintenance, it may not cover some details specific to your particular sumps. Keep in mind the information provided in this manual is not intended to replace or contradict your specific manufacturer's instructions for maintaining your sumps and the equipment in your sumps.

This manual presents practical help and a checklist for inspecting and maintaining sumps. State and local agencies may require these or other activities. Please check with your state or local agency to determine their specific requirements.

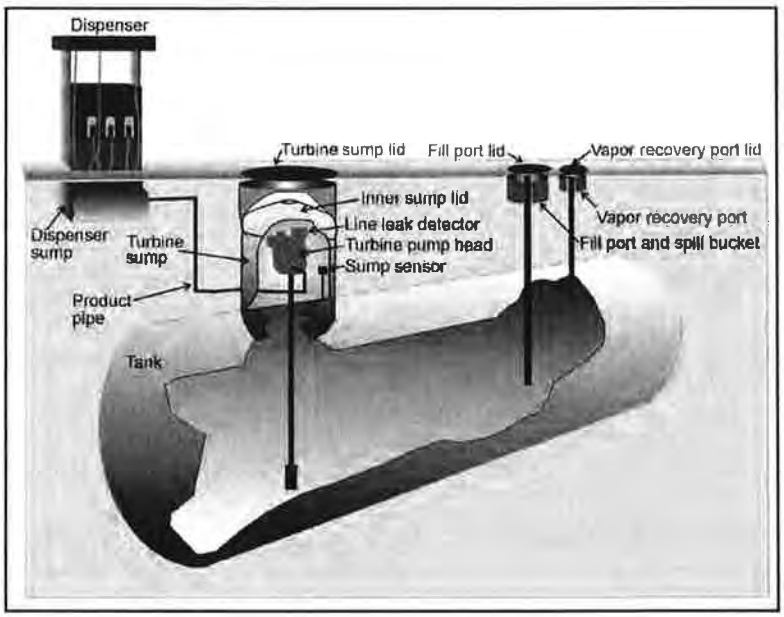


Diagram of an UST system

[1] Submersible turbine pumps are often known by their acronym STP.

Safety Considerations

If you perform sump inspection and maintenance activities, you should be experienced and aware of hazards and safety issues. Chances are you will be working in a high-traffic area, such as a gas station. You should properly mark off your work area and take appropriate steps to protect yourself. You should have the following items:

- Safety barriers, such as traffic cones or yellow plastic tape to mark off your work area
- Orange safety vest
- Hard hat (for construction sites)
- Steel-toed boots
- First-aid kit
- Chemical resistant gloves

Person wearing safety gear while inspecting a sump

You should consider these additional safety precautions:

- Sump lids may be large and very heavy and may require more than one person to lift. Use caution when lifting large steel lids.

- Be aware of the possibility of explosive or harmful vapors when inspecting and maintaining sumps. Avoid breathing in petroleum vapors.

- Please note that OSHA designates some sumps as confined spaces. See OSHA's standard on confined spaces in Title 29 of the *Code of Federal Regulations,* Part 1910.146. http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9797

Person removing a sump lid within a marked inspection area

Getting To Know Your Sumps

What Is A Sump?

A sump is a subsurface area (pit) designed to provide access to equipment located below ground and, when contained, to prevent liquids from releasing into the environment.


Uncontained turbine sump

Sumps may or may not be contained. Contained sumps have sides and a bottom, are designed to be liquid tight, and may have a special cover designed to keep out water. Uncontained sumps generally do not have a bottom and are not designed to prevent liquid from entering or exiting the sump. These sumps may use wooden or metal sheeting to restrict the slumping of soil or crushed rock onto the equipment and to prevent the surface pavement from buckling or caving.

What Kinds Of Sumps Are Associated With My UST System And Where Are They Located?

The types of sumps likely to be associated with your UST system are:

Turbine Sumps – Turbine sumps are designed to provide access to the turbine area above the tank. The turbine area may house the submersible turbine pump head, piping, line leak detectors, interstitial monitoring devices, wiring, and other equipment. You generally will find turbine sumps directly above your USTs. Turbine sump lids generally range from 3 to 4 feet in diameter and can be round, oval, square, or rectangular in shape.


Contained turbine sump

Dispenser Sumps – Dispenser sumps are designed to provide access to piping, flex connectors, shear valves, and other equipment located beneath the dispenser. Dispenser sumps are found directly under your dispensers.


Contained dispenser sump

Transition/Intermediate Sumps – Transition/intermediate sumps are less common than other sumps, but can be found along the piping runs that connect the tanks to the dispensers, and are designed to provide access to the piping. Transition sumps are used to transition from above-ground piping to below-ground piping or, in some cases, to transition between different types of piping. Intermediate sumps are located at key points in the piping system (e.g., low spots, branches, tees). Transition/intermediate sump lids generally range from 3 to 4 feet in diameter and can be round, oval, square, or rectangular in shape.

Transition/intermediate sump

Spill Buckets – Spill buckets are contained sumps installed at the fill and/or vapor recovery connection points to contain drips and spills of fuel that can occur during delivery. Spill buckets are located where the delivery driver connects the product and/or vapor recovery hoses to your tank. Spill buckets can be found directly above your UST, at a location that is away from your UST (remote), or both. They typically range in size from 5 to 25 gallons, and lids range from 1 to 2 feet in diameter. Spill buckets may also be installed within a larger sump, similar in construction to a turbine sump, for secondary containment. In this case, you will only need to open your smaller lids to access your spill buckets.

Spill bucket

Fill and vapor recovery lids installed within a larger sump lid

View of sump lids

Did You Know?
Most UST systems must have spill buckets at each fill pipe where fuel is delivered into the UST. Some facilities also may have a second spill bucket around the Stage I vapor recovery line.

How Do You Access Your Sumps And Spill Buckets?

Circular steel sump lid pulled back to show the inner lid covering the turbine sump

You may need tools such as a large screwdriver, pry bar, wrench, or hammer to open your sump lids. Composite lids may require a specialized tool that you probably have on site. Have someone help you in lifting large lids, as they may be very heavy. Use caution when opening the lids and be aware of the following:

- Square, rectangular, or oval sump lids can fall through the opening and damage the piping, submersible pump, or tank.
- Round lids, while not typically capable of falling into the sump, may swing down and damage the turbine head or line leak detector.
- If applicable, follow your equipment manufacturer's recommendations if special instructions are necessary to open the sump lids.
- You may need a key to remove the dispenser cover in order to access the dispenser sumps.

Square steel sump lid pulled up to show the inside of an uncontained turbine sump

Circular spill bucket lid pulled back to show the fill port with a spill bucket

Generally, sumps will have a traffic load rated lid, beneath which may be either direct access to the equipment or, if contained, an inner lid covering the contained area.

Dispenser cover pulled off to show the dispenser piping and equipment

Basic Maintenance Procedures For Sumps And Spill Buckets

What Can You Do To Ensure Your Sumps and Spill Buckets Are In Good Condition?

Maintaining your sumps and spill buckets will involve gaining access to them, inspecting them on a regular basis, assessing whether any problems exist, and ensuring any problems are addressed. For serious problems (e.g., obvious leaks occurring on the piping and equipment, cracked spill buckets or sidewalls, cracked or missing seal around the lid), it's best to contact your UST contractor or the manufacturer of your UST equipment to have the problem fixed. Appendix A contains a sample checklist you may want to use to guide your sump inspections.

Note: To avoid accumulation of surface water, you should check the seals of your sumps' lids more frequently if they are located at a low point on the property or in the path of surface water runoff.

If you identify or suspect a release of fuel to the environment, report this to your implementing agency. For a list of state UST websites, go to: http://www.epa.gov/oust/states/statcon1.htm

What Should You Look For When You Inspect Your Turbine, Dispenser, And Transition/Intermediate Sumps?

Are The Lids Tight And Sealed Correctly? Check to ensure the lids to the turbine, transition, and intermediate sumps create a tight seal when closed and are securely fastened. The seals of the sump lids often dry out, crack, and require replacement; so you need to ensure they are in good condition. Water in your sumps may be an indication of a bad seal.

Are The Sump Walls Intact? Check to ensure the walls of your sump are intact and are not slumping or warping. If your sump is not contained, check the sidewalls to ensure there is no caving.

Contained turbine sump full of liquid

Is The Sump Free Of Debris, Liquid, Or Ice? Debris, liquid, and ice can damage equipment, reduce capacity (if contained), and interfere with your equipment's ability to operate correctly. For example, water in your sump will reduce capacity and may cause metal equipment in your sump to corrode. Fuel in your sump will also reduce capacity and may damage some plastic sumps and other components not designed for long term contact with petroleum. Similarly, used dispenser filters may contain small amounts of petroleum, so they should not be left inside your sump. You should carefully remove and properly dispose of any debris, liquid, or ice in your sumps.

Did You Know?
Some sensors may alarm only when in contact with petroleum. If covered completely with water, they will not alarm, even in the event of a petroleum leak.

Dry, debris-free contained turbine sump

Contained sump with liquid and debris

Is The Sump Free Of Cracks Or Holes? Examine your contained sumps for signs of damage (e.g., cracks or holes). Check to ensure no cracks are present around the areas where components, such as wiring conduit and piping, enter your sumps. Cracks and holes mean your sump will no longer contain product or prevent releases to the environment.

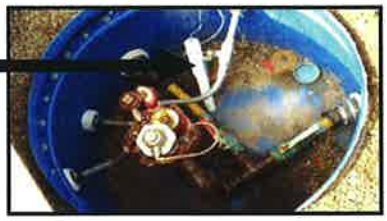
Are Sump Components Leak-Free? Check to ensure the piping, fittings, and connections in your sump are not leaking or dripping fuel.

Is The Sump Free Of Staining/New Staining? Check to ensure no new stains are present since your last inspection. New staining indicates a drip or spill has occurred.

Staining

Are The Sensors Positioned Correctly?[2] If you have sensors, check to ensure they are positioned properly in the lowest part of your sump and below the piping entry. Sensors should not be raised as the result of false alarms or for any other reason. Raised or disabled sensors will take longer or fail to detect a leak and could violate regulatory requirements.

Sump sensor



Sump sensor in contained turbine sump

Float sump sensor

Liquid sump sensor

Did You Know?
A crack or hole in your sump below the sump sensor will not allow liquid to accumulate in the sump to a level necessary to activate the sensor. As a result, liquid may be released undetected. Such cracks or holes need to be repaired immediately.

Are All Penetrations Into The Sump In Good Condition?[2]
Check to ensure all areas where electrical wires, conduits, and piping enter the sump are sealed. Cracked or loose seals around the penetrations can allow liquids to enter the sump and can allow fuel to be released into the surrounding soils if a release occurs inside the sump.

Sump penetration seals in poor condition

Sump penetration seals in good condition

Did You Know?
Some plastic flexible piping is installed within a larger pipe (or chase). There may be a seal between the primary pipe and the chase. Check with the piping maker to determine the proper position of the seal.

[2] Only for contained sumps

Are The Test Boots Positioned Correctly And In Good Condition?[3] A test boot is found on secondarily-contained piping and is a flexible sleeve usually made of rubber with a valve located either at the entry to the sump or on the piping in the sump. It is used to test the space between the inner and outer piping walls for tightness. Check to ensure the test boots are in good condition, not cracked or torn, and positioned correctly in the sump.

To ensure a leak can be detected by your leak detection equipment, test boots should be positioned so they allow product to enter your sump if a leak from the primary piping occurs. There are a variety of different configurations for test boots. If you are unsure of the appropriate configuration, check with your contractor.

Test boot located in a sump

Test boots positioned at sump wall, right test boot is torn

Is The Piping And Other Equipment In Good Condition? Sumps may contain various types of piping and equipment such as leak detection equipment, turbine motors, line leak detectors, sensors, conduits, and flex connectors.

Contained turbine sumps and equipment in good condition

Did You Know?
If your metal piping, including metal flex connectors, is in contact with the ground, it must be protected from corrosion.

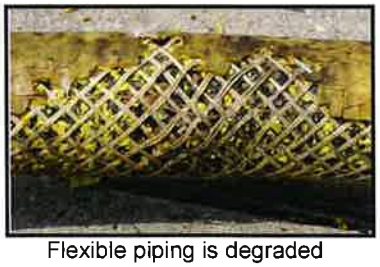
[3] Typically only for contained sumps

When inspecting the piping and equipment in your sumps, you should watch for the following conditions:

- For metal piping, check to ensure the piping is not severely corroded, in contact with the ground if it does not have corrosion protection, or otherwise degraded.
- For fiberglass piping, check to ensure the piping is not cracked, delaminated, or otherwise degraded.
- For flexible piping, check to ensure the piping does not have abnormal bends, breaks, cracks, or kinks; is not bulging, swelling, or growing; has not become soft, spongy, or discolored; and is not otherwise distorted or degraded.
- Check to ensure the fittings and flexible connectors are not twisted or misaligned and the flexible connectors are not cracked, kinked, etc.
- Check to ensure other pieces of equipment, including pump head, line leak detector, and sensors, are not visibly damaged, severely corroded, etc.

Equipment and metal piping covered with dirt in uncontained sump

Fiberglass piping is cracked



Flexible piping is degraded due to microbial growth

Flexible piping is cracked

Flexible piping is kinked

Metal flexible connector is twisted due to growth of flexible plastic piping

Flexible piping is bulging

What Should You Look For When You Inspect Your Spill Buckets?

Are The Lids To Your Spill Buckets In Good Condition? Check to ensure the lids to your spill buckets are in good condition so they will keep water out when the lid is closed. Ensure that when the lids to your spill buckets are in the closed position, they create a good seal and are secured tightly. Some spill buckets contain a rubber gasket inside the cover; check to ensure the rubber gasket is in good condition and creates a proper seal when the lid is closed.

A missing or damaged spill bucket lid may be a safety hazard. Replace it as soon as possible. Until the lid is replaced, cover and barricade the area to prevent potential accidents.

Cracked spill bucket lid

Spill bucket lid gasket

Check to ensure the lid is not touching the fill cap. This situation should be repaired because it could potentially damage the fill pipe and the tank if it is in an area where vehicles drive over the lid.

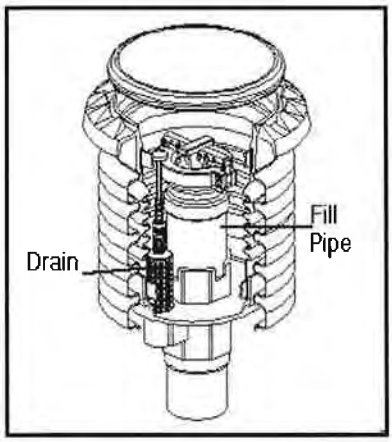
Is The Spill Bucket Free Of Debris, Liquid, Or Ice? Examine your spill buckets to determine whether they contain debris, liquid, or ice. For example, water in your spill bucket will reduce capacity and may cause metal equipment in your sump to corrode. Fuel in your spill bucket will also reduce capacity and may damage some plastic spill buckets not designed for long term contact with petroleum. You should carefully remove and properly dispose of any debris, liquid, or ice found in your spill buckets during your inspections. You should also check for and remove any liquid and debris present in your spill buckets before and after every delivery.

Spill bucket that contains liquid

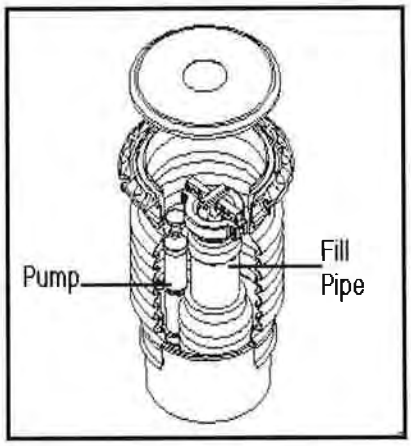
Some spill buckets are equipped with a valve that allows you to drain accumulated liquid into your UST. Others may be equipped with a manual pump so fuel can be transferred to your UST system by pumping it through the fill pipe or removing the fuel and disposing of it properly. However, keep in mind that when you pump out or drain your spill bucket into your UST, any water and debris present also will enter the UST. This could lead to internal corrosion, dispensing problems, and the need to remove contaminated water from the tank. If your spill bucket is not equipped with a drain valve or pump, you can still remove the liquid and debris and dispose of them appropriately. Liquid can be removed with a portable pump, such as the one on the right.

Portable pump

If your spill bucket is always dry, this may be an indication that it is not able to contain product. You may need to test to ensure it is liquid tight.



Spill bucket with a drain valve



Spill bucket with a manual pump

Is The Spill Bucket Free Of Cracks Or Holes? Examine the spill buckets for evidence of cracks or holes. If you have a metal bucket, check for corrosion and rust. Also check for deformations in the spill buckets or separation of the spill bucket from the fill pipe.

Spill bucket in poor condition – note the gap between the spill bucket and the fill pipe

Are The Drain Valves Operational? Some spill buckets have drain valves. Check to ensure the drain valve is free of debris and operational (e.g., it can close tightly and be opened to drain fuel in the spill bucket). If the drain valve is left open:

- It will act as a vent
  - Possibly affecting the ability of your overfill device to function properly;
  - Allowing potentially dangerous vapors to build up in the spill bucket or to be released to the soil or groundwater;
  - Possibly affecting the operation of the Stage II vapor recovery system.
- It can allow water and debris to enter your tank.

Spill bucket drain valve

***Never* pump fuel from your spill buckets into storm or sewer drains as a method of disposal. Improper disposal can contaminate surface and groundwater, result in vapor/explosion hazards, damage sewage treatment plants, and may be in violation of state or federal law.**

Where Can You Get More Information On This Topic?

Federal Agencies

U.S. EPA
Office of Underground Storage Tanks
http://www.epa.gov/oust

U.S. Department of Labor
Occupational Safety and Health Administration
http://www.osha.gov
1-800-321-OSHA (6742)

Organizations

API - American Petroleum Institute
www.api.org
(202) 682-8000

FTPI - Fiberglass Tank and Pipe Institute
www.fiberglasstankandpipe.com
(281) 568-4100

NACE International - Formerly National Association of Corrosion Engineers
www.nace.org
(281) 228-6200

NFPA - National Fire Protection Association
www.nfpa.org
(617) 770-3000

PEI - Petroleum Equipment Institute
www.pei.org
(918) 494-9696

STI - Steel Tank Institute
www.steeltank.com
(847) 438-8265

Publications

The publications listed below are free and available from the U.S. EPA. You can access these publications via EPA's website or you can call, write to, or fax EPA.

- You can download, read, or order documents from http://www.epa.gov/oust/pubs/index.htm
- To order free copies or ask questions, call EPA's publication distribution toll-free number at 800-490-9198 or fax301-604-3408. You can also write and ask for free publications by addressing your request to EPA's publication distributor: National Service Center for Environmental Publications (NSCEP), Box 42419, Cincinnati, OH 45242.

Operating and Maintaining Underground Storage Tank Systems: Practical Help and Checklists, U.S. EPA, Office of Underground Storage Tanks, Washington DC, EPA 510-B-05-002, May 2005.

Musts for USTs: A Summary of the New Regulations for Underground Storage Tank Systems, U.S. EPA, Solid Waste and Emergency Response, Washington DC, EPA-510-K-95-002, July 1995.

Model Underground Storage Tank Environmental Results Program Workbook, U.S. EPA, Solid Waste and Emergency Response, Washington DC, EPA R-04-003, June 2004.

Other Sources

For additional information on UST system operation and maintenance, go to U.S. EPA Office of Underground Storage Tanks, List of Operation and Maintenance Tools
http://www.epa.gov/oust/ustsystm/tanko&m.htm

For links to state UST websites go to
http://www.epa.gov/oust/states/statcon1.htm

Appendix A

Note: Federal UST regulations do not require you to report your maintenance activities, use this form, or keep any specific records of your sump inspection and maintenance practices.

Sample Underground Storage Tank Sump And Spill Bucket Inspection Checklist

Name: _____ Date/Time Of Inspection: _____

Comments/Follow-Up Needed: _____

Choose yes or no for each question that applies.
Choosing no on any item indicates a problem that should be corrected.
When you have corrected the problem, check the fixed box.

Turbine/Transition/Intermediate Sumps	Sump No.: ____			Sump No.: ____			Sump No.: ____			Sump No.: ____		
	Yes	No	Fixed?	Yes	No	Fixed?	Yes	No	Fixed?	Yes	No	Fixed?
Are The Lids Tight And Sealed Correctly?			☐			☐			☐			☐
Are The Sump Walls Intact?			☐			☐			☐			☐
Is The Sump Free Of Debris, Liquid, Or Ice?			☐			☐			☐			☐
Is The Sump Free Of Cracks Or Holes?*			☐			☐			☐			☐
Are Sump Components Leak-Free (No Leak Or Drips)?			☐			☐			☐			☐
Is The Sump Free Of Staining/New Staining?			☐			☐			☐			☐
Are The Sensors Positioned Correctly?*			☐			☐			☐			☐
Are All Penetrations Into The Sump In Good Condition?*			☐			☐			☐			☐
Are The Test Boots Positioned Correctly And In Good Condition?*			☐			☐			☐			☐
Is The Piping And Other Equipment In Good Condition?			☐			☐			☐			☐
Dispenser Sumps	Dispenser No.: ___			Dispenser No.: ___			Dispense No.: ___			Dispenser No.:___		
	Yes	No	Fixed?	Yes	No	Fixed?	Yes	No	Fixed?	Yes	No	Fixed?
Is The Sump Free Of Debris, Liquid, Or Ice In The Sump?			☐			☐			☐			☐
Is The Sump Free Of Cracks Or Holes?			☐			☐			☐			☐
Are Sump Components Leak-Free (No Leak Or Drips)?			☐			☐			☐			☐
Is The Sump Free Of Staining/New Staining?			☐			☐			☐			☐
Are The Sensors Positioned Correctly?			☐			☐			☐			☐
Are All Penetrations Into The Sump In Good Condition?			☐			☐			☐			☐
Are The Test Boots Positioned Correctly And In Good Condition?			☐			☐			☐			☐
Is The Piping And Other Equipment In Good Condition?			☐			☐			☐			☐
Spill Buckets	Bucket No.: ____			Bucket No.: ____			Bucket No.: ____			Bucket No.: ____		
	Yes	No	Fixed?	Yes	No	Fixed?	Yes	No	Fixed?	Yes	No	Fixed?
Are The Lids To Your Spill Buckets In Good Condition?			☐			☐			☐			☐
Is The Spill Bucket Free Of Debris, Liquid, Or Ice?			☐			☐			☐			☐
Is The Spill Bucket Free Of Cracks Or Holes?			☐			☐			☐			☐
Are The Drain Valves Operational?			☐			☐			☐			☐

*Only for contained sumps

Helpful Hints For Maintaining Spill Buckets

United States Environmental Protection Agency
Solid Waste And Emergency Response 5401G
EPA 510-R-05-001
May 2005
www.epa.gov/oust/pubs

United States
Environmental Protection
Agency

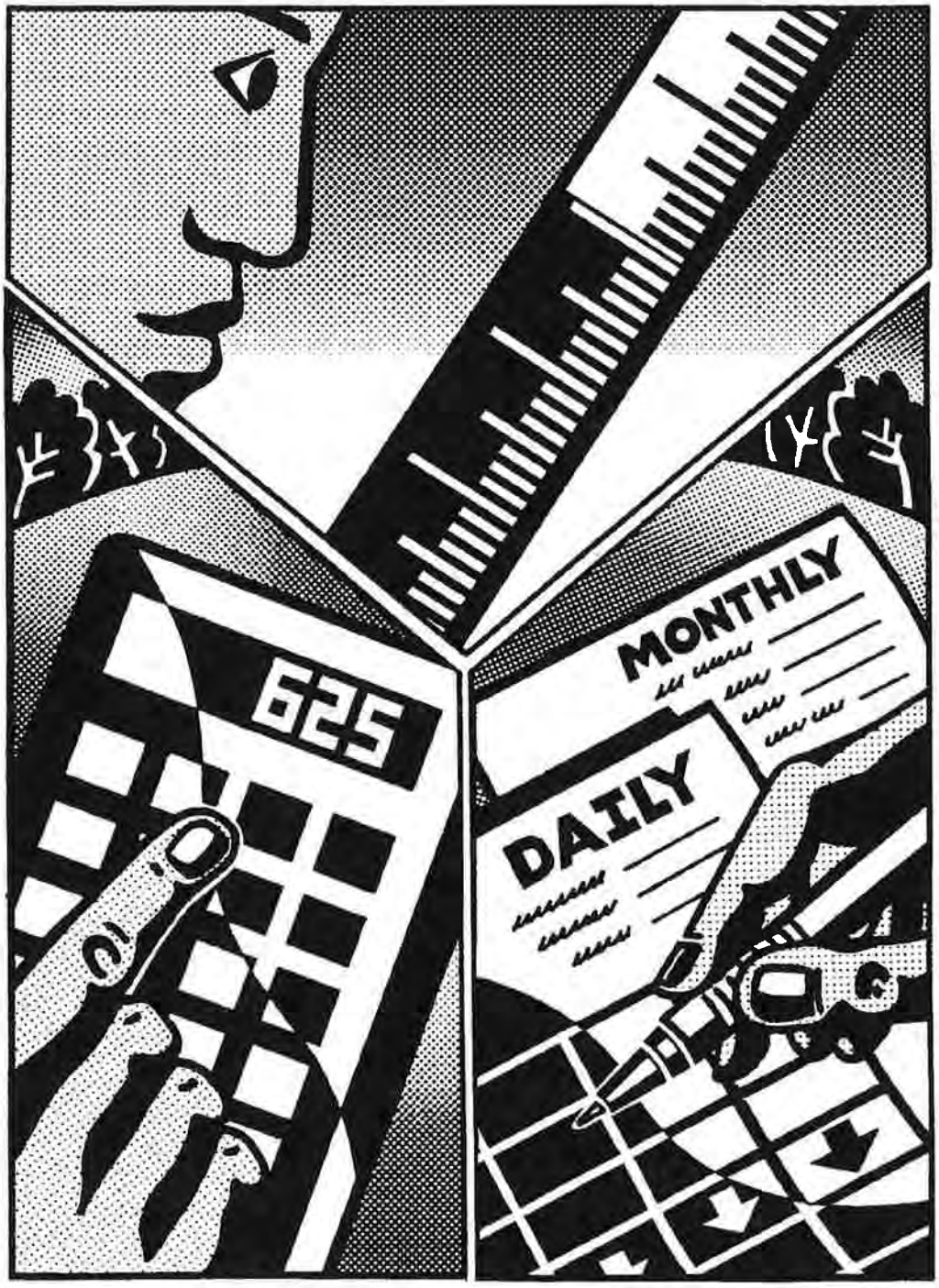
Solid Waste And
Emergency Response
5403W

EPA 510-B-93-004
November 1993

EPA

Doing Inventory Control Right

For Underground Storage Tanks



CONTENTS

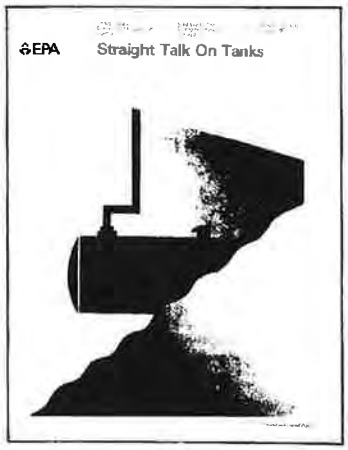
Why You Should Read This Booklet If You Use Inventory Control

Federal and state laws require underground storage tanks (USTs) to have leak detection.

If your USTs do not have leak detection, you can be cited for violations and fined. Leak detection violations can also keep you from getting legally required insurance coverage and reimbursement for cleanup costs. Without leak detection, you constantly risk discovering a leak only after it becomes a major financial burden for yourself and an environmental problem for everyone.

If inventory control is part of your leak detection, then this booklet can help you make sure you do inventory control correctly.

Inspections conducted nationwide indicate that most people who think they are doing inventory control are not doing it in a way that is likely to find leaks and meet the law's requirements for leak detection. So even if you are SURE you are doing inventory control right, read this booklet carefully—it could save you a lot of grief and money.



If you need information on federal leak detection requirements and the various methods of leak detection available to you, see "Straight Talk On Tanks." Call EPA's toll-free Hotline at 800 424-9346 and order this free publication by number: EPA 530/UST-90/012.

How Does Inventory Control Work?

This booklet helps you use inventory control to meet federal regulatory leak detection requirements by showing you how to do three important tasks:

- ! Good sticking
- ! Good math
- ! Good recordkeeping

Without these three, you may fail to meet the leak detection requirements. To do inventory control right, you have to spend time to make sure that you consistently measure the tank's contents correctly, that you don't let math errors creep into your daily and monthly calculations, and that you keep complete, easy-to-read records on file for at least a year.

Basically, inventory control requires daily measurements of tank contents and math calculations that let you compare your **"stick" inventory** (what you've measured) to your **"book" inventory** (what your recordkeeping indicates you should have). Some people call this process "inventory reconciliation." If the difference between your **"stick"** and **"book"** inventory is too large, your tank may be leaking.

Be sure you read about several important restrictions on the use of inventory control that are described on the next page.

To use INVENTORY CONTROL correctly,

follow Steps 1—5 starting on page 6.

Please note these important restrictions on the use of inventory control as leak detection:

- **Inventory control can never be used alone.** Inventory control must always be used in combination with tank tightness testing. Tanks must be tightness tested every 12 months if they do not have corrosion protection and spill/overfill devices. Tanks with corrosion protection and spill/overfill devices must be tested every 5 years.

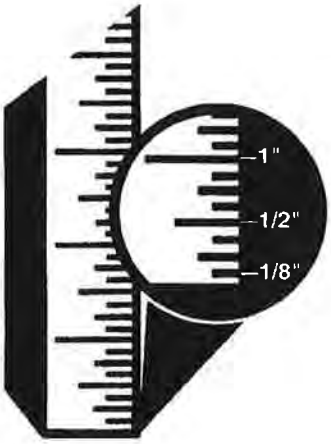
- **Inventory control is a TEMPORARY leak detection method.** You can use inventory control only for 10 years after installing a new tank that has corrosion protection and spill/overfill devices or for 10 years after upgrading an old tank with corrosion protection and spill/overfill devices. After the 10-year period, you must use a monthly monitoring method, such as groundwater monitoring or interstitial monitoring.

  Tanks without corrosion protection and spill/overfill devices can use inventory control only until December 1998, when these tanks must be upgraded or closed. (See "Straight Talk On Tanks.")

- **The combined use of inventory control and tank tightness testing does not meet your tank system's leak detection requirements for piping.** Pressurized and some suction piping must use other methods of leak detection, such as interstitial monitoring. (See "Straight Talk On Tanks.")

If you don't pay careful attention to these restrictions, you will fail to meet the leak detection requirements.

Do You Have The Right Equipment?



Gauge Stick Or Other Gauges

The gauge stick used to measure the depth of liquid in an underground tank must be marked or notched to the ⊂ inch, starting with zero at the bottom end. Check your stick to be sure the end has not been worn or cut off and that the stick is not warped. The stick should be made of non-sparking material, such as wood, and varnished to minimize the creeping of fuel above the actual fuel level in the tank. Instead of using a gauge stick, you may use a mechanical or electronic tank level monitor. Whatever measuring device you use must be capable of measuring the level of product over the full range of the tank's height to the nearest ⊂ inch.

Pastes For Finding Water Or Fuel

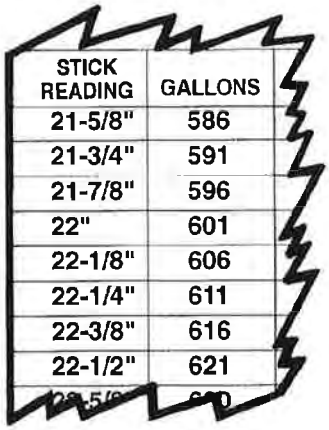
You must check for water in the bottom of the tank at least once each month by smearing a water-finding paste along the bottom of the gauge stick. The paste changes color when it comes in contact with water. Many operators improve their stick readings by smearing a fuel-finding paste on about 6 inches of the stick where they expect the fuel level to be. Fuel-finding paste changes color when it comes in contact with fuel.

Forms

The instructions in this booklet are keyed to two forms: the "DAILY INVENTORY WORKSHEET" and the "MONTHLY INVENTORY RECORD." You will find filled-in sample copies of these forms on the last two pages of this booklet. These samples are on perforated pages, so tear them out and refer to them while you read through the directions that are keyed alphabetically to the sample forms. Also, **near the back of the booklet, you will find "masters" you can copy repeatedly to provide forms for use in your recordkeeping.** If these forms are filled out according to the instructions in this booklet, you will be in compliance with federal regulations for inventory control. You should find out if state or local requirements have limitations on the use of inventory control or have requirements that are different from those presented in this booklet. You can use other standard recordkeeping forms, as long as they are clear, consistent, and contain all the information required by the federal and state leak detection regulations.

Tank Chart

A tank chart is a table that converts the number of inches of liquid in the tank into the number of gallons. You need a tank chart that exactly matches your storage tank (tank manufacturers usually provide charts for their tanks). If you have more than one tank, you will need a chart for each tank unless the tanks are identical. The tank chart must show conversion to gallons for each ⊂ inch stick reading. If your tank chart does not convert each ⊂ inch reading into gallons, contact the tank manufacturer, or, if you have a steel tank, the Steel Tank Association (708 438-8265) to get an appropriate chart.



STICK READING	GALLONS
21-5/8"	586
21-3/4"	591
21-7/8"	596
22"	601
22-1/8"	606
22-1/4"	611
22-3/8"	616
22-1/2"	621

You always need to convert inches into gallons in order to fill out the forms correctly and to do the necessary math. To convert inches into gallons, find your stick's reading to the nearest ⊂ inch on the tank chart, then simply read across to the gallons column to find the number of gallons. If you cannot get a tank chart showing conversion to gallons for each ⊂ inch reading, you must do the additional math explained on page 9.

Drop Tube

The fill pipe through which the fuel is delivered into the tank must have a drop tube extending to within 1 foot of the bottom of the tank. Stick measurements should be made through a drop tube in the fill pipe or gauging port. If your fill pipe does not have a drop tube, call your petroleum equipment supplier to have one installed.

Calibrated Dispensing Meters

Meters must be calibrated according to local standards.

Manifolded Tanks

If you have manifolded tanks or dispensers that blend fuel, consider these tanks as one tank system if they share a common inventory of stored fuel. As you follow the directions on the following pages, you will need to combine your measurements and calculations for all the tanks manifolded into one system.

Step 1—Measure The Tank's Contents

You must measure the tank every day that fuel is added or removed. You may take measurements using a gauge stick or a mechanical or electronic tank level monitor.

No fuel can be added or removed from the tank while you are performing Step 1 or Step 2.

Every day you measure the tank, you should fill out a "DAILY INVENTORY WORKSHEET." As you go through the following directions, refer to the sample DAILY INVENTORY WORKSHEET you will find on the last pages of this booklet. For easy reference, the sample is on a perforated page so you can tear it out and keep it handy as you read through the directions. Also, near the back of the booklet is a "master copy" on a perforated page you can tear out to make copies of the DAILY INVENTORY WORKSHEET for your recordkeeping.

Use the sample "DAILY INVENTORY WORKSHEET" from the last two pages of the booklet to see where you put the information from letters "A" through "M" in the following directions.

Ⓐ Fill in the identifying information at the top of the worksheet.

Ⓑ Next to the "TANK IDENTIFICATION" box are empty vertical columns. Each column represents one tank—consistently enter all information on that one tank in the same vertical column. NOTE: Once you have filled in the tank identification boxes, make copies of the worksheet so you won't have to repeatedly enter the same information.

USE GOOD STICKING PRACTICES: Slowly lower the gauge stick to the tank's bottom. Let the stick gently touch the bottom, then quickly bring it back up. Read the depth of fuel indicated by the wet mark to the closest ⅛ inch division on the stick. Use of fuel-finding paste will make your stick readings more accurate.

Ⓒ Write your measurement in the box labeled "END STICK INCHES" for the tank you measured.

NOTE: If your tank is equipped with an automatic tank gauge (ATG), you may record the inches of product and gallons of product directly from the ATG's printed tape or simply staple the tape with this information to the worksheet.

Step 2—Record The Amount Pumped

At the same time you measure the tank contents (Step 1), you must record on the DAILY INVENTORY WORKSHEET the amount of fuel pumped. **No fuel can be added or removed from the tank while you are sticking the tank and recording the amount pumped.**

D Locate the box labeled "AMOUNT PUMPED" on the left side of the worksheet. Copy the numbers from each dispenser's totalizer onto the worksheet. **Be very careful that you write all the meter readings for a tank in the same column**. You may have several dispensers and totalizers for one tank, so the worksheet provides boxes in which you can enter several readings in any order.

E Add up the totalizer meter readings in each column and write the result in the box labeled "TODAY'S SUM OF TOTALIZERS."

F Find the last DAILY INVENTORY WORKSHEET you completed. Copy "TODAY'S SUM OF TOTALIZERS" from that worksheet into the "Previous Day's Sum of Totalizers" box of the worksheet you are working on today.

G On today's worksheet, subtract "Previous Day's Sum of Totalizers" from "TODAY'S SUM OF TOTALIZERS" and write the result in the box labeled "AMOUNT PUMPED TODAY."

If you pumped fuel through a dispenser and back into a tank, for example during a test, subtract the number of gallons you pumped from "AMOUNT PUMPED TODAY."

You may have an alternative to reading totalizers. If you have a self-service fueling operation where the cashier can authorize fuel sales from inside the facility, you can probably print out a daily report that gives you the total sales for each type of fuel. **NOTE: You can use the sales volumes from this report instead of reading your totalizer meters only if no fuel sales are made between the time you print the report from the cash register and the time you measure your tanks (Step 1).**

H If you are using cash register reports to record the amount pumped, enter the amount of each type of fuel pumped in the box labeled "AMOUNT PUMPED TODAY" or staple the printout to the worksheet.

Step 3—Record Fuel Deliveries

You must check how much fuel has been delivered every time any amount of fuel is delivered to your tank. **NOTE: You should not pump any fuel during the time it takes to do items "I" and "J" below.**

Before the delivery begins, the liquid level in the tank must be measured. Always use good sticking practices: slowly lower the gauge stick, gently touch the stick to the bottom of the tank, then quickly bring the stick back up. Read the depth of fuel indicated by the wet mark to the nearest ⅛ inch division on the stick.

I Write your measurement in the box labeled "Inches of Fuel Before Delivery" for each tank you measured.

The delivery person can now deliver fuel into the tank. After the delivery, wait at least 5 minutes for the fuel level in the tank to stabilize, and then measure again as described above.

J Record fuel level in the box labeled "Inches of Fuel After Delivery."

K Using your tank chart with ⅛ inch readings, convert both delivery readings to the correct number of gallons. Record these numbers in the boxes labeled "Gallons of Fuel Before Delivery" and "Gallons of Fuel After Delivery." (If necessary, see page 9 on converting inches into gallons.)

An automatic tank gauge (ATG) can usually print a delivery report. If your tank has an ATG that prints such a report, you may simply staple the ATG's delivery report to the DAILY INVENTORY WORKSHEET.

L Subtract "Gallons of Fuel Before Delivery" from "Gallons of Fuel After Delivery." Record the result in the box labeled "GALLONS DELIVERED (STICK)."

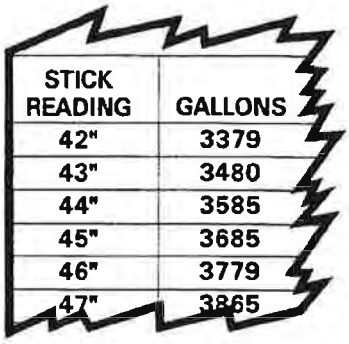
Now look at the delivery receipt and find the volume of each type of product that was delivered. If two volumes are given, one labeled "net" and the other "gross," use the gross gallons as the volume of product delivered.

M For each type of fuel delivered, copy the gross gallons delivered from the delivery receipt onto the worksheet in the box labeled "GROSS GALLONS DELIVERED (RECEIPT)." The gallons in items "L" and "M" should roughly match. If they don't, contact your supplier.

Using Tank Charts Without c Inch Conversions

If your tank chart does not list direct conversions from inches to gallons for every c inch, then you must **do the additional math described below every time you stick your tank**.

The easiest way to explain this procedure is with an example. Let's say you have a stick reading of 43d inches and you need to figure how many gallons are in your tank.



STICK READING	GALLONS
42"	3379
43"	3480
44"	3585
45"	3685
46"	3779
47"	3865

1. Look on your tank chart and find the inch measurements that are just above and below your stick reading and write down the number of gallons for these inch readings. Subtract the gallon readings to find the difference between the two readings:

   Chart reading at 44 inches: 3,585 gallons
   Chart reading at 43 inches: 3,480 gallons

   Difference: 105 gallons

2. Dividing 105 by 8 will give you the number of gallons per c inch, which in this example is 13. (More exactly it is 13.125, but do round off the number to the nearest whole number.) Because your fraction is d, multiply 13 gallons by 3, which gives you 39 gallons as the volume represented by d inch.

   CAUTION: The gallons represented by each c inch will vary from top to bottom of the tank and must be calculated for each conversion.

3. Take the number of gallons you have just calculated and add it to the inch reading just below your actual stick reading:

   Chart reading at 43 inches: 3,480 gallons
   Gallons at d inch: + 39 gallons

   Sum: 3,519 gallons

Thus, your stick reading of 43d inches converts to 3,519 gallons.

NOTE: If your tank chart is in half or quarter inches, you must still use this procedure so that your gallon readings are accurate to c inch.

After all of this math, you can see why it pays to have the correct tank chart that indicates gallons for each c inch.

Step 4—Calculate Daily Changes In Inventory

In this step, you will copy information from the DAILY INVENTORY WORKSHEET onto the **MONTHLY INVENTORY RECORD**. You will then do some math to determine your daily inventory. You need one MONTHLY INVENTORY RECORD for each tank that you have.

As you go through the following directions, refer to the sample MONTHLY INVENTORY RECORD you will find on the reverse side of the DAILY INVENTORY WORKSHEET sample you have already been using. For easy reference, the sample is on a perforated page so you can tear it out and keep it handy as you read through the directions. Also, near the back of the booklet is a "master copy" on a perforated page you can tear out to make copies of the MONTHLY INVENTORY RECORD for your recordkeeping.

Use the sample "MONTHLY INVENTORY RECORD" from the last two pages of the booklet to see where you put the information from letters "N" through "Z" in the following directions.

N Fill in the identifying information at the top of the MONTHLY INVENTORY RECORD.

If this is the very first day of your inventory recordkeeping, convert the "END STICK INCHES" from the DAILY WORKSHEET into gallons and enter on the MONTHLY RECORD under "END STICK INVENTORY (GALLONS)" for that starting date. (If necessary, see page 9 on converting inches into gallons.) This is all you can do today. Starting tomorrow, follow all of the instructions listed below.

O Find the line in the left column on the MONTHLY RECORD with today's date listed. Copy the previous day's "END STICK INVENTORY (GALLONS)" number into the box for today's "START STICK INVENTORY (GALLONS)."

P Enter the amount of fuel delivered from the DAILY INVENTORY WORKSHEET. If you were NOT pumping fuel during the time when the delivery was taking place, then use the "GALLONS DELIVERED (STICK)" number. However, if you had to pump fuel while the delivery was taking place, then use the "GROSS GALLONS DELIVERED (RECEIPT)" number as your delivery amount.

Q Copy the "AMOUNT PUMPED TODAY" number from the DAILY INVENTORY WORKSHEET into the "GALLONS PUMPED" column of the MONTHLY INVENTORY RECORD.

R Add the "START STICK INVENTORY (GALLONS)" and the "GALLONS DELIVERED" columns; then subtract the "GALLONS PUMPED" column. Enter the result in the column labeled "BOOK INVENTORY (GALLONS)."

S Copy the "END STICK INCHES" number from the DAILY WORKSHEET into the column labeled "END STICK INVENTORY (INCHES)" on the MONTHLY RECORD. Convert inches into gallons and enter the result in the column on the MONTHLY RECORD labeled "END STICK INVENTORY (GALLONS)." (If necessary, see page 9 on converting inches into gallons.)

GOOD ADVICE: If you are "over" for 5 days in a row (or "under" for 5 days in a row), you should check for problems with your math and your UST.

T Subtract the "BOOK INVENTORY (GALLONS)" from the "END STICK INVENTORY (GALLONS)." Enter the difference into today's "DAILY OVER OR SHORT" box. This number will usually be a positive or negative number (only rarely will it be zero).

U Enter your initials to show who entered today's information.

At least once each month, you must also measure for water in the tank. Smear water-finding paste on the bottom few inches of the gauge stick. Open the fill pipe and **slowly** lower the stick to the tank's bottom. Hold the stick on the bottom for 10 seconds for gasoline (30 seconds for diesel). Then remove the stick. If there is water in the bottom of the tank, the water-finding paste will change color. Read the depth of water indicated by the line where the water-finding paste has changed color to the closest ⅛ inch division on the stick. **Do not use this stick reading to measure the amount of fuel in the tank**, because the fuel will creep up the stick and will give you an inaccurate reading.

V If you checked the tank for water today, enter the number of inches of water in the tank on the line under "Facility Name" at the top of the monthly record. If there is no water present, enter a zero to indicate that you in fact checked for water but found none. If you find more than 1 inch of water, you should arrange for its immediate removal, notify the product supplier, and conduct further tests to ensure that the tank is not leaking.

Step 5—Calculate Monthly Changes In Inventory

At the end of each month, follow the directions below to see if the difference between "stick" and "book" inventory indicates a possible leak.

W Add all of the month's "GALLONS PUMPED" numbers and write this total at the bottom of the column in the box labeled "TOTAL GALLONS PUMPED."

X Add all the month's "DAILY OVER OR SHORT" numbers: pay careful attention to positive and negative numbers to get an accurate total. For example, adding +4 and +3 and -2 should equal +5. Enter the total at the bottom of the column in the box labeled "TOTAL GALLONS OVER OR SHORT."

Y Fill out the "LEAK CHECK" line at the bottom of the MONTHLY INVENTORY RECORD as follows:

- Take the "TOTAL GALLONS PUMPED" number and drop the last two digits to get 1% (for example: 6594 becomes 65).
- Add 130 (for example: 65 + 130 = 195).

Enter the result of this calculation at the end of the "LEAK CHECK" line. This number is the **maximum change in inventory allowed** by federal regulations (1% of throughput plus 130 gallons).

Z At the bottom of the MONTHLY INVENTORY RECORD, circle "YES" or "NO" to show whether your "TOTAL GALLONS OVER OR SHORT" number is **LARGER** than the "LEAK CHECK" number you identified in the previous item. Even if your "TOTAL GALLONS OVER OR SHORT" is a negative number, treat it as a positive number for the purpose of this comparison. For example, -74 would become +74.

If you circle "YES" for 2 months in a row, you must notify your regulatory agency as soon as possible (usually within 24 hours) that your tank may be leaking.

NOTE: Keep your inventory control records on file for at least 1 year. Your state, however, may have different rules about when you have to report a leak or how long you must keep the inventory records. Be sure you know the rules that apply to you.

DAILY INVENTORY WORKSHEET

FACILITY NAME: _____

YOUR NAME: _____

DATE: _____

TANK IDENTIFICATION					
Type of Fuel					
Tank Size in Gallons					
END STICK INCHES					
AMOUNT PUMPED	↓	↓	↓	↓	↓
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
TODAY'S SUM OF TOTALIZERS					
Previous Day's Sum of Totalizers					
AMOUNT PUMPED TODAY					
DELIVERY RECORD	↓	↓	↓	↓	↓
Inches of Fuel Before Delivery					
Gallons of Fuel Before Delivery (from tank chart)					
Inches of Fuel After Delivery					
Gallons of Fuel After Delivery (from tank chart)					
GALLONS DELIVERED (STICK) [Gallons "After" Gallons "Before"]					
GROSS GALLONS DELIVERED (RECEIPT)					

MONTHLY INVENTORY RECORD

TANK IDENTIFICATION & TYPE OF FUEL: _____

MONTH/YEAR: ____/____

FACILITY NAME: _____

DATE OF WATER CHECK: _____ LEVEL OF WATER (INCHES): _____

DATE	START STICK INVENTORY (GALLONS)	GALLONS DELIVERED	GALLONS PUMPED	BOOK INVENTORY (GALLONS)	END STICK INVENTORY (INCHES)	END STICK INVENTORY (GALLONS)	DAILY OVER (+) OR SHORT ( ) ["End" "Book"]	INITIALS
1	(+)	( )	(=)					
2	(+)	( )	(=)					
3	(+)	( )	(=)					
4	(+)	( )	(=)					
5	(+)	( )	(=)					
6	(+)	( )	(=)					
7	(+)	( )	(=)					
8	(+)	( )	(=)					
9	(+)	( )	(=)					
10	(+)	( )	(=)					
11	(+)	( )	(=)					
12	(+)	( )	(=)					
13	(+)	( )	(=)					
14	(+)	( )	(=)					
15	(+)	( )	(=)					
16	(+)	( )	(=)					
17	(+)	( )	(=)					
18	(+)	( )	(=)					
19	(+)	( )	(=)					
20	(+)	( )	(=)					
21	(+)	( )	(=)					
22	(+)	( )	(=)					
23	(+)	( )	(=)					
24	(+)	( )	(=)					
25	(+)	( )	(=)					
26	(+)	( )	(=)					
27	(+)	( )	(=)					
28	(+)	( )	(=)					
29	(+)	( )	(=)					
30	(+)	( )	(=)					
31	(+)	( )	(=)					

TOTAL GALLONS PUMPED > _____ **TOTAL GALLONS OVER OR SHORT >** _____

DROP THE LAST 2 DIGITS from the **PUMPED** number and enter on the **TOTAL GALLONS** line below

Compare these numbers

LEAK CHECK: _____ **+ 130 =** _____ **gallons**

Is "TOTAL GALLONS OVER OR SHORT" **LARGER** than "LEAK CHECK" result? **YES NO** (circle one)

If answer is "YES" for 2 MONTHS IN A ROW, **notify regulatory agency** as soon as possible.

KEEP THIS PIECE OF PAPER ON FILE FOR AT LEAST 1 YEAR

SAMPLE

DAILY INVENTORY WORKSHEET

A FACILITY NAME: LAST CHANCE #2

YOUR NAME: JUAN DOE

DATE: 9/22/93

	TANK IDENTIFICATION	1	2	3	4	
	Type of Fuel	REG UNL	PREM UNL	DIESEL	MID UNL	
	Tank Size in Gallons	6000	6000	6000	10,000	
C	END STICK INCHES	41 1/4	58 7/8	69	86 1/2	
D	AMOUNT PUMPED	↓	↓	↓	↓	↓
	Totalizer Reading	24383	30798	92485	44013	
	Totalizer Reading	55138	11017	70178	38974	
	Totalizer Reading					
	Totalizer Reading					
	Totalizer Reading					
	Totalizer Reading					
	Totalizer Reading					
	Totalizer Reading					
E	TODAY'S SUM OF TOTALIZERS	79521	41815	162663	82987	
F	Previous Day's Sum of Totalizers	78271	40260	161663	82584	
G H	AMOUNT PUMPED TODAY	1250	1555	1000	403	
	DELIVERY RECORD	↓	↓	↓	↓	↓
I	Inches of Fuel Before Delivery	13 7/8			49 7/8	
K	Gallons of Fuel Before Delivery (from tank chart)	537			5246	
J	Inches of Fuel After Delivery	41 1/4			86 1/2	
K	Gallons of Fuel After Delivery (from tank chart)	2672			9423	
L	GALLONS DELIVERED (STICK) (Gallons "After" – Gallons "Before")	2135			4177	
M	GROSS GALLONS DELIVERED (RECEIPT)	2100			4200	

SAMPLE

MONTHLY INVENTORY RECORD

(N) TANK IDENTIFICATION & TYPE OF FUEL: 4 MIDGRADE UNL

MONTH/YEAR: 9/93

FACILITY NAME: LAST CHANCE #2

DATE OF WATER CHECK: 9/1 LEVEL OF WATER (INCHES): 0 (V)

DATE	(O) START STICK INVENTORY (GALLONS)	(P) GALLONS DELIVERED	(Q) GALLONS PUMPED	(R) BOOK INVENTORY (GALLONS)	(S) END STICK INVENTORY (INCHES)	(S) END STICK INVENTORY (GALLONS)	(T) DAILY OVER (+) OR SHORT (−) ["End" − "Book"]	(U) INITIALS
1	4047 (+)	—	(−) 333	(=) 3714	38 1/4	3690	−24	JD
2	3690 (+)	—	(−) 44	(=) 3646	38	3658	+12	JD
3	3658 (+)	—	(−) 329	(=) 3329	35 3/8	3323	−6	JD
4	3323 (+)	—	(−) 60	(=) 3263	35	3275	+12	JD
5	3275 (+)	—	(−) 145	(=) 3130	33 3/4	3117	−13	JD
6	3117 (+)	—	(−) 238	(=) 2879	31 1/8	2790	−89	JD
7	2790 (+)	6134	(−) 117	(=) 8807	80	8844	+37	JD
8	8844 (+)	—	(−) 127	(=) 8717	78 7/8	8732	+15	JD
9	8732 (+)	—	(−) 182	(=) 8550	77 1/2	8591	+41	JD
10	8591 (+)	—	(−) 205	(=) 8386	75 1/2	8379	−7	JD
11	8379 (+)	—	(−) 204	(=) 8175	73 5/8	8173	−2	JD
12	8173 (+)	—	(−) 166	(=) 8007	72	7991	−16	JD
13	7991 (+)	—	(−) 320	(=) 7671	69 3/4	7730	+59	JD
14	7730 (+)	—	(−) 307	(=) 7423	67	7402	−21	JD
15	7402 (+)	—	(−) 76	(=) 7326	66 1/2	7342	+16	JD
16	7342 (+)	—	(−) 224	(=) 7118	64 1/8	7050	−68	JD
17	7050 (+)	—	(−) 390	(=) 6660	61	6657	−3	JD
18	6657 (+)	—	(−) 296	(=) 6361	58 5/8	6354	−7	JD
19	6354 (+)	—	(−) 78	(=) 6276	58 1/8	6290	+14	JD
20	6290 (+)	—	(−) 424	(=) 5866	54 3/8	5869	+3	JD
21	5869 (+)	—	(−) 205	(=) 5664	53 1/8	5639	−25	JD
22	5639 (+)	4177	(−) 403	(=) 9413	86 1/2	9423	+10	JD
23	9423 (+)	—	(−) 87	(=) 9336	85 1/2	9343	+7	JD
24	9343 (+)	—	(−) 311	(=) 9032	82	9036	+4	JD
25	9036 (+)	—	(−) 239	(=) 8797	79 1/8	8757	−40	JD
26	8757 (+)	—	(−) 256	(=) 8501	76 7/8	8526	+25	JD
27	8526 (+)	—	(−) 264	(=) 8262	74 1/2	8270	+8	JD
28	8270 (+)	—	(−) 263	(=) 8007	72	7991	−16	JD
29	7991 (+)	—	(−) 185	(=) 7806	69	7811	+5	JD
30	7811 (+)	—	(−) 116	(=) 7695	68	7690	−5	JD
31	(+)		(−)	(=)				

(W) TOTAL GALLONS PUMPED > 6594 TOTAL GALLONS OVER OR SHORT > −74 (X)

DROP THE LAST 2 DIGITS from the PUMPED number and enter on the TOTAL GALLONS line below

Compare these numbers

(Y) LEAK CHECK: 65 + 130 = 195 gallons

Is "TOTAL GALLONS OVER OR SHORT" LARGER than "LEAK CHECK" result? YES (NO) (circle one) (Z)

If answer is "YES" for 2 MONTHS IN A ROW, notify regulatory agency as soon as possible

KEEP THIS PIECE OF PAPER ON FILE FOR AT LEAST 1 YEAR

>>>Copy and post this reminder where employees who measure tanks can see it!<<<

GET GOOD INVENTORY CONTROL MEASUREMENTS!

- ! **Measure each tank every operating day**

- ! **Use gauge sticks that are**
  - ✓ **marked to the ⊂ inch**
  - ✓ **not cut off or worn off at the "0" end**
  - ✓ **varnished and not warped**

- ! **Measure through the same drop tube each time**

- ! **Use good sticking practices**
  - ✓ **SLOWLY lower stick**
  - ✓ **GENTLY touch stick on tank bottom**
  - ✓ **QUICKLY pull stick out**

- ! **Measure just before each delivery**

- ! **Wait at least 5 minutes after delivery, then measure again**

- ! **Read and record totalizer meters carefully**

- ! **Check for water at least once a month using water-finding paste**

Developed in cooperation with...

Fiberglass
Petroleum Tank & Pipe Institute

INTERNATIONAL ASSOCIATION OF TANK TESTING PROFESSIONALS

PEI
PETROLEUM EQUIPMENT INSTITUTE

PMAA
PETROLEUM MARKETERS ASSOCIATION OF AMERICA

SSDA
SERVICE STATION DEALERS OF AMERICA

SIGMA
SOCIETY OF INDEPENDENT GASOLINE MARKETERS OF AMERICA

STI
Steel Tank Institute

ATTACHMENT J

Release Detection Maintenance

RANGER
ENVIRONMENTAL SERVICES, LLC

Release Detection

The release detection system to be used at the facility is a Veeder-Root TLS 450. The system will have inventory probes installed in the tanks, sump sensors installed in the submersible sump containment areas to monitor sub pump, sump sensors installed in the dispenser sumps and tank interstitial sensors. The system will be installed by a Veeder-Root certified technician. The system will be installed in accordance with Franklin specifications and instructions. The system is UL listed and is third party certified for release detection under USEPA guidelines. The system has self- diagnostic programs to test and warn of failures of the external devices as well as internal electronics. The system has been tested by a Third Party and found to be compliant with USEPA requirements for release detection.

Ongoing maintenance will be conducted by JF Petroleum personnel.

VEEDER-ROOT

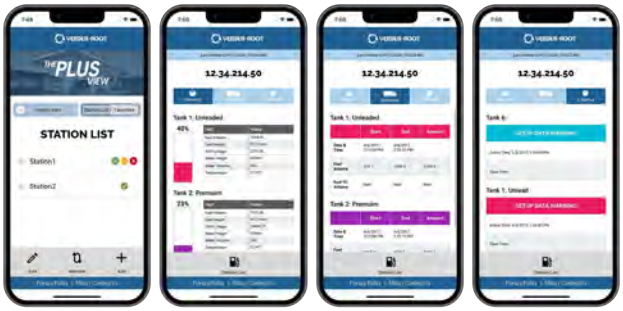
CONNECTED. SECURE. COMPLIANT.

TLS-450PLUS Automatic Tank Gauge

The Fuel Management System to Grow Your Business

Why the TLS-450PLUS?

The TLS-450PLUS Automatic Tank Gauge (ATG) provides the most comprehensive site data for advanced fuel asset management. Combining industry leading algorithms with enhanced security, real-time notification, and anywhere anytime access, the TLS-450PLUS keeps your customer's site running profitably. The TLS-450PLUS is ideal for retail and commercial/industrial applications that have multiple tanks, requiring more than 12 probe and sensor inputs.



MAINTAIN CONTROL OF YOUR FUELING OPERATIONS

- **Inspection ready compliance** – easy access to all federal, state, and local agency reports
- **Remote connectivity** – monitor your site performance, receive real-time alerts, and access compliance data via web-enabled devices – anytime, anywhere, with a wide range of options including THE PLUS VIEW app, Web-Enabled Interface, and Managed Services, with cloud-based fuel management through Insite360
- **Data protection** – store up to 3 years data and protect it from power outages, battery replacements, or software upgrades
- **Security controls** – partitioned Ethernet networks, customized user access, and Secure Socket Layer (SSL) encrypted connectivity to keep your network safe

OPERATE AT PEAK EFFICIENCY

- **Remote software download** – hassle-free access to software updates
- **Logistics visibility** – increase inventory management awareness to avoid runouts and haulbacks
- **Faster problem resolution** – diagnose and troubleshoot issues remotely to understand ongoing situations better and avoid unnecessary dispatch
- **Customized alarms** – preprogram alarm alerts to provide scenario-specific information to predetermined individuals
- **Graphical User Interface (GUI)** – designed with features for ease of use, including workflow wizard, context sensitive help, and user-defined favorites

TLS-450PLUS
Automatic Tank Gauge

TLS-450PLUS (UL/cUL) Part Numbers	
Application Software	
0333545-001	TLS-450PLUS Application Software
Hardware *	
0860091-302	TLS-450PLUS 8" Color Touch Screen Console with Printer
Interface Modules	
0332812-001	Universal Sensor/Probe Interface Module
0332813-001	Universal Input/Output Interface Module
0333564-001	7-Amp Controller Module
Communication Modules	
0332812-006	USM/ATM Module Group for TLS-450PLUS (For SCVS Installations Only)
0332818-001	SiteFax™ Interface Module
0332866-001	Single RS-232 Interface Module
0332867-001	Single RS-485 Interface Module
0332868-001	RS-232 Dual Interface Module
0332869-001	Dual RS-485 Interface Module
0332870-001	RS-232/RS-485 Dual Interface Module
Feature Enhancement Software	
0332972-006	Continuous Statistical Leak Detection (CSLD)
0332972-007	Ultimate Testing Line Leak Detection for DPLLD
0332972-008	Risk Management Line Leak Detection for DPLLD
0332972-009	Base Compliance Line Leak Detection for DPLLD
0332972-018	Timed Sudden Loss Detection
0333149-001	BIR/AccuChart TLS-450PLUS EDIM Factory Installed
0333580-001	BIR/AccuChart TLS-450PLUS CDIM Factory Installed
0333581-001	BIR/AccuChart TLS-450PLUS LVDIM Factory Installed
0333582-001	BIR/AccuChart TLS-450PLUS MDIM Factory Installed
0332972-101	Vapor Pressure Management Control (PMC for Carbon Canister Only) for TLS-450PLUS Console
0332972-102	In-Station Diagnostics (ISD)/PMC for TLS-450PLUS Console

* *Includes a 2-port RS-232 Module, a 3-port Ethernet Module and a 2-port USB Module*

CAPABILITIES

- **AccuChart™ 3.0 Tank Calibration** – utilizes enhanced geometric tank chart modeling for the TLS-450PLUS with optional restricted tank ranges to perform calibration. Chart volumes are calculated using adjustable geometry parameters: diameter, capacity, end shape, tilt, and probe offset.
- **Business Inventory Reconciliation (BIR)** – improves business decisions by combining meter transaction sales with AccuChart 3.0 Tank Calibration to better understand the site variance. It includes automated reporting on: throughput thresholds, delivery thresholds, capacity thresholds, custom thresholds.
- **Digital Pressurized Line Leak Detection (DPLLD)** – provides advanced line leak detection to meet the capacity of growing fuel sites, certified up to 1,178 gallons (4,459 liters) of capacity. The DPLLD equipment performs a 3.0 Gallons Per Hour (GPH) line leak test following each dispense. With the proper software enhancement feature installed, the DPLLD equipment will also perform 0.2 and/or 0.1 GPH line tests to meet your regulatory needs, eliminating the need for separate annual line leak testing.
- **Built-in Data Logging** – enables approved data transfer for wet stock management
- **Timed Sudden Loss Detection** – monitors unexpected changes in inventory, exposing possible issues including theft during quiet periods
- **Diesel Exhaust Fluid (DEF) Recirculation** – provides a recirculation and/or Temperature Control heat trace system to prevent DEF product from freezing or overheating in lines that utilize DEF in bulk dispensing systems
- **Intelligent Pump Control (IPC)** – allows the TLS-450PLUS to display and report Submersible Turbine Pump (STP) activity through a direct communication link between a STP pump controller and the TLS-450PLUS via a RS-485 connection. This software feature is available only in the TLS-450PLUS platform.
- **Vapor Monitoring** – the TLS-450PLUS supports a wide variety of vapor monitoring solutions, including In-Station Diagnostics (ISD)

INTEGRATED SITE SOLUTIONS

The TLS-450PLUS ATG and STP control boxes act as the interface between the STP and the dispenser, while numerous sensors and probes monitor various conditions to ensure the fueling system remains healthy. If an abnormal state is detected, the TLS-450PLUS ATG will record a condition result and generate an audible and visual alarm to notify the store operator. Remote connectivity options for the TLS-450PLUS ATG ensure that critical site statuses, such as inventory and alarm activity are available to site managers when they are not on-site. Stay connected, secure, and compliant with Veeder-Root's Integrated Site Solutions.

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VEEDER-ROOT

Temporary Stormwater Section

TCEQ-0602

RANGER
ENVIRONMENTAL SERVICES, LLC

NOTE: Previously approved with the WPAP. TCEQ Approval Letter dated October 15, 2021.

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: Kenny Watkins

Date: July 6, 2021

Signature of Customer/Agent:

Kenny Watkins

Regulated Entity Name: Leander Platinum

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: Brushy Creek

Temporary Best Management Practices (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.

7. ☒ **Attachment D – Temporary Best Management Practices and Measures**. TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

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

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

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

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

8. ☒ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

☐ **Attachment E - Request to Temporarily Seal a Feature**. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

☒ There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. ☒ **Attachment F - Structural Practices**. A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.

10. ☒ **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

☒ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.

11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations**. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

☒ N/A

12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.

13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ☒ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. ☒ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ☒ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. ☒ **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices**. A schedule of the interim and permanent soil stabilization practices for the site is attached.

18. ☒ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

19. ☒ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

20. ☒ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. ☒ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. ☒ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

Spill Response Actions

Temporary Stormwater Section - Attachment A

Spill response measures during construction are to be handled by the contractor and are as follows:

1. Any hazardous spill associated with construction that is five gallons or less is to be contained, cleaned and disposed of properly by the contractor in accordance to OSHA, municipal and state regulations. The Contractor shall verify the classification of materials in use with the appropriate manufacturer.

   Any hazardous spill associated with construction that is a Reportable Quantity (RQ) shall be reported to the TCEQ Environmental Response Hotline (1-800-832-8224) for containment, clean up, and disposal. RQ is determined as follows:

   (a) Hazardous substances. The reportable quantities for hazardous substances shall be:

   (1) for spills or discharges onto land--the quantity designated as the Final Reportable Quantity (RQ) in Table 302.4 in 40 CFR §302.4; or
   (2) for spills or discharges into waters in the state--the quantity designated as the Final RQ in Table 302.4 in 40 CFR §302.4, except where the Final RQ is greater than 100 pounds in which case the RQ shall be 100 pounds.

   (b) Oil, petroleum product, and used oil.

   (1) The RQ for crude oil and oil other than that defined as petroleum product or used oil shall be:
   (A) for spills or discharges onto land--210 gallons (five barrels); or
   (B) for spills or discharges directly into water in the state--quantity sufficient to create a sheen.
   (2) The RQ for petroleum product and used oil shall be:
   (A) except as noted in subparagraph (B) of this paragraph, for spills or discharges onto land--25 gallons;
   (B) for spills or discharges to land from PST exempted facilities--210 gallons (five barrels); or
   (C) for spills or discharges directly into water in the state--quantity sufficient to create a sheen.

   (c) Industrial solid waste or other substances. The RQ for spills or discharges into water in the state shall be 100 pounds.

2. Follow actions set by TAC 30.1.327.5:

   (a) The responsible person shall immediately abate and contain the spill or discharge and cooperate fully with the executive director and the local incident command system. The

responsible person shall also begin reasonable response actions which may include, but are not limited to, the following actions:

(1) arrival of the responsible person or response personnel hired by the responsible person at the site of the discharge or spill;

(2) initiating efforts to stop the discharge or spill;

(3) minimizing the impact to the public health and the environment;

(4) neutralizing the effects of the incident;

(5) removing the discharged or spilled substances; and

(6) managing the wastes.

(b) Upon request of the local government responders or the executive director, the responsible person shall provide a verbal or written description, or both, of the planned response actions and all actions taken before the local governmental responders or the executive director arrive. When the agency on-scene coordinator requests this information, it is subject to possible additional response action requirements by the executive director. The information will serve as a basis for the executive director to determine the need for:

(1) further response actions by the responsible person;

(2) initiating state funded actions for which the responsible person may be held liable to the maximum extent allowed by law; and

(3) subsequent reports on the response actions.

(c) Except for discharges or spills occurring during the normal course of transportation about which carriers are required to file a written report with the U.S. Department of Transportation under 49 CFR §171.16, the responsible person shall submit written information, such as a letter, describing the details of the discharge or spill and supporting the adequacy of the response action, to the appropriate TCEQ regional manager within 30 working days of the discovery of the reportable discharge or spill. The regional manager has the discretion to extend the deadline. The documentation shall contain one of the following items:

(1) A statement that the discharge or spill response action has been completed and a description of how the response action was conducted. The statement shall include the initial report information required by §327.3(c) of this title (relating to Notification Requirements). The executive director may request additional information. Appropriate response actions at any time following the discharge or

spill include use of the Texas Risk Reduction Program rules in Chapter 350 of this title (relating to Texas Risk Reduction Program).

(2) A request for an extension of time to complete the response action, along with the reasons for the request. The request shall also include a projected work schedule outlining the time required to complete the response action. The executive director may grant an extension up to six months from the date the spill or discharge was reported. Unless otherwise notified by the appropriate regional manager or the Emergency Response Team, the responsible person shall proceed according to the terms of the projected work schedule.

(3) A statement that the discharge or spill response action has not been completed nor is it expected to be completed within the maximum allowable six month extension. The statement shall explain why completion of the response action is not feasible and include a projected work schedule outlining the remaining tasks to complete the response action. This information will also serve as notification that the response actions to the discharge or spill will be conducted under the Texas Risk Reduction Program rules in Chapter 350 of this title (relating to Texas Risk Reduction Program).

Potential Sources of Contamination

Temporary Stormwater Section - Attachment B

Potential Sources of Contamination during construction are to be a concern of the contractor and are as follows:

1. After placement of asphalt, emulsion, or coatings the Contractor shall be responsible for immediate clean up should an unexpected rain occur during the curing period.

2. Any sediment build-up along the silt fences will need to be removed when it reaches a depth of six inches.

3. Dust from the construction site will be controlled by use of water.

4. Soil from construction vehicles will be removed from vehicles by having all vehicles drive over the stabilized construction entrance.

5. Oil leakage from vehicles and equipment.

6. Concrete washout water.

Sequence of Construction

Temporary Stormwater Section - Attachment C

The following is a list of construction sequencing:

1. Install temporary erosion/sedimentation control measures as shown in the plans prior to clearing, grading, excavating, etc.
2. The contractor shall contact the City of Leander Williamson County and TCEQ at least 72 hours prior to any construction to arrange a pre-construction meeting.
3. Pre-construction meeting at site.
4. Demo existing house, drives, and outbuildings
   (Disturbed Area ~ 0.3 acres)
5. Excavate water quality pond for use as temporary sediment basin as shown on the Water Quality Pond Plan, Profile and Details sheet.
   (Disturbed Area ~ 0.8 acres)
6. Install base material for access drive.
   (Disturbed Area ~ 0.3 acres, use silt fence, staging and spoils areas, and concrete truck washout)
7. Complete construction of water quality pond concrete walls as shown on the Water Quality Pond Plan, Profile and Details sheet.
   (Disturbed Area ~ 0.8 acres)
8. Install all underground utilities.
   (Disturbed Area ~ 0.3 acres, use silt fence, staging and spoils areas, and concrete truck washout)
9. Complete testing requirements for the Texas Commission on Environmental Quality and other agencies.
10. Clean site and revegetate all disturbed areas in accordance with restoration requirements of City of Leander, Williamson County, and TCEQ.
11. Remove all temporary erosion and sedimentation controls upon completion of permanent revegetation of all disturbed areas.
12. At all times, contractor shall inspect temporary erosion controls on a regular basis and remove any sediment build-up and comply with the National Pollutant Discharge Elimination System Stormwater Program.

Temporary Best Management Practices and Measures

Temporary Stormwater Section - Attachment D

The BMPs to be utilized by this site include:

-Silt Fence
-Rock Berm
-Temporary concrete washout area

Temporary erosion and sedimentation controls include Silt Fence, and Rock Berm. All temporary erosion controls shall be installed where shown on the Water Pollution Abatement Plan.

Silt Fence is to be installed immediately downstream of all disturbed areas to filter out any sediment from storm water flows due to construction.

Rock berms will be installed downgradient of the location of detention pond outfalls

A concrete washout area is to be installed to prevent concrete wash from entering the storm sewer system during construction.

Offsite flows from an adjacent residential area enter the site from the southeast. The geologic assessment confirms there are no critical environmental features.

Request to Temporarily Seal a Feature

Temporary Stormwater Section - Attachment E

This attachment is not applicable to this project.

Structural Practices

Temporary Stormwater Section - Attachment F

Temporary special structural practices that will be utilized during construction activity on this site include:

Silt Fence is to be installed immediately downstream of all disturbed areas to filter out any sediment from storm water flows due to construction.

Rock berms will be placed downstream of the proposed stormwater detention outfall locations.

Drainage Area Map

Temporary Stormwater Section - Attachment G

A drainage area map is included in the project. The map provides an analysis of stormwater runoff for the existing and developed condition.

Temporary Sedimentation Pond Plans and Calculations

Temporary Stormwater Section - Attachment H

This attachment is not applicable to this project.

Inspection and Maintenance for Temporary BMPs
Temporary Stormwater Section - Attachment I

Inspections of Controls

At least once every seven (7) days the SWP3 provides for a thorough inspection of disturbed areas of the construction site that have not been finally stabilized. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. The Contractor is required to inspect the temporary erosion controls, including silt fence and stabilized construction entrance at weekly intervals and after significant rainfall events to insure that they are functioning properly.

This site inspection will be performed by qualified personnel familiar with the site and with the authority to ensure necessary maintenance of controls. Documentation of the inspections and actions taken are provided on forms shown in the back of the SWP3.

Based on the results of the inspection, the SWP3 shall be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the SWP3 shall be completed within 7 calendar days following the inspection.

A report summarizing the scope of the inspection, name and qualification of personnel making the inspection, the date of the inspection and major observations relating to the implementation of the SWP3 shall be made and retained as part of the SWP3 for at least three years from the date the site is finally stabilized. Reports shall identify incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the SWP3. An authorized representative shall sign the report. Qualified personnel performing inspections are familiar with the BMPs, have knowledge to determine when a failed control is inadequate and needs to be replaced, have access to the construction schedule, have knowledge of stabilization, and have authority to make changes to the SWP3.

In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable.

Personnel provided by the permittee and familiar with the SWP3 must inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, and structural controls for evidence of, or the potential for, pollutants entering the drainage system. Sediment and erosion control measures identified in the SWP3 must be inspected to ensure that they are operating correctly. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking. Inspections must be conducted at least once every fourteen (14) calendar days and within twenty four (24) hours of the end of a storm event of 0.5 inches or greater.

Where sites have been finally or temporarily stabilized, where runoff is unlikely due to winter conditions (e.g. site is covered with snow, ice, or frozen ground exists), or during seasonal arid periods in arid areas (areas with an average annual rainfall of 0 to 10 inches) and semi-arid areas (areas with an average annual rainfall, of 10 to 20 inches), inspections must be conducted at least once every month.

As an alternative to the above-described inspection schedule of once every fourteen (14) calendar days and within twenty four (24) hours of a storm event of 0.5 inches, or greater, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur on a specifically defined day, regardless of whether or not there has been a rainfall event since the previous inspection.

As an alternative to the above-described inspection schedule of once every fourteen (14) calendar days and within twenty four (24) hours of a storm event of 0.5 inches or greater, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur on a specifically defined day, regardless of whether or not there has been a rainfall event since the previous inspection.

The SWP3 must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the SWP3 must be completed within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the SWP3 and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable.

A report summarizing the scope of the inspection, names and qualifications of personnel making the inspection, the dates of the inspection, and major observations relating to the implementation of the SWP3 must be made and retained as part of the SWP3. Major observations should include: The locations of discharges of sediment or other pollutants from the site; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.

Actions taken as a result of inspections must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports)

Maintenance

All erosion and sediment control measures and other protective measures identified in the SWP3 must be maintained in effective operating condition. If through inspections the permittee determines that BMPs are not operating effectively, maintenance must be performed before the next anticipated storm event or as necessary to maintain the continued effectiveness of storm water controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.

Silt accumulation at the silt fence must be removed when the depth reaches six inches.

Retention of Records

The permittee shall retain a copy of the SWP3 at the construction site (or other accessible location) from the date of project initiation to the date of final stabilization. The permittee shall retain copies of the NOI, SWP3, all reports, and records of all data covered by the permit for three years from the date the site is finally stabilized. All NOIs, SWP3, reports, certifications, NOTs, and information that this permit requires be maintained by the permittee shall be signed by a duly authorized representative.

Schedule of Interim and Permanent Soil Stabilization Practices

Temporary Stormwater Section - Attachment J

During Construction:

A minimum of 4" topsoil shall be placed in between the curb and right-of-way line of all areas that have been disturbed because of construction. Additionally, disturbed areas with slopes greater than 15% shall be stabilized with vegetative matting once the activity is complete. Bare soils should be seeded or otherwise stabilized where construction activity has temporarily ceased for more than 21 days.

After Construction:

All disturbed areas are to be revegetated within 14 days of completion of construction activities, or as directed by the City of Leander Inspector, Williamson County Inspector, or TCEQ. Areas that were not disturbed from construction will be left in their natural state.

Revegetation Methods:

Broadcast Seeding for Permanent Soil Stabilization:

1. From September 15 to March 1, seeding shall be with a combination of 2 pounds per 1000 SF of unhulled Bermuda and 7 pounds per 1000 SF winter rye with a purity of 95% with 90% germination.

2. From March 1 to September 14, seeding shall be with unhulled Bermuda at a rate of 2 pounds per 1000 SF with a purity of 95% and 85% germination.

Fertilizer:

3. Fertilizer shall be pelleted granular slow release with an analysis of 15-15-15. It is to be applied once at planting and once during the period of establishment at a rate of 1 pound per 1000 SF.

4. Mulch type used shall be hay, straw or mulch applied at a rate of 45 pounds per 1000 SF.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 15, 2021

Mr. Aly Hussaini
Leander Platinum Jubilee Investments Group, LLC
3604 Balcones Dr.
Austin, Texas 78731

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Leander Platinum; Located at 17680 Ronald W Reagan Blvd., Leander, Texas

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

Edwards Aquifer Protection Program ID Nos. 11002598 (WPAP) & 11002599 (SCS); Regulated Entity No. RN109247379

Dear Mr. Hussaini:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP and SCS applications for the above-referenced project submitted to the Austin Regional Office by Bleyl Engineering. on behalf of Leander Platinum Jubilee Investments Group, LLC on July 23, 2021. Final review of the WPAP and SCS was completed after additional material was received on September 24, 2021 and October 14, 2021. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213 and Chapter 217. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

WPAP PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 4.37 acres. It will include a convenience store with gas dispensers and canopy, a retail building, an office building, a right turn lane on Ronald W Reagan Blvd. (right of way), hike and bike trail, parking, utilities, and associated appurtenances. The total impervious cover will be 2.63 acres (60.18%).

SCS PROJECT DESCRIPTION

The proposed SCS will consist of a total of 154.5 linear feet of 8-inch diameter SDR-26 PVC ASTM D3034 pipe. The SCS will provide disposal service for the commercial development.

The system will be connected to the existing City of Leander wastewater line for conveyance to the Brushy Creek Wastewater Treatment Plant for treatment and disposal. The project is located within the City of Leander and will conform to all applicable codes, ordinances, and requirements of the City of Leander.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a sand filter system, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be utilized to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 2170 pounds of TSS generated from the 2.63 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, the property is surficially characterized by the Comanche Peak Formation. The site is located partially on the Edwards Aquifer Recharge Zone and partially on the Edwards Aquifer Contributing Zone. No sensitive geologic features were identified in the GA. The TCEQ Austin Regional Office site assessment conducted on September 16, 2021, revealed the site to be generally as described by the GA.

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP, SCS plan, and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP and SCS applications following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction, and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.

12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. There is one water well present on the project site. All water wells including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.
18. No part of the system shall be used as a holding tank for a pump-and-haul operation.

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

19. Certification by a Texas Licensed Professional Engineer of the testing of sewage collection systems required by 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office within 30 days of test completion and prior to the new sewage collection system being put into service. The certification should include the project name as it appeared on the approved application, the program ID number, and two copies of a site plan sheet(s) indicating the wastewater lines that were tested and are being certified as complying with the appropriate regulations.
20. Every five years after the initial certification, the sewage collection system shall be retested. Any lines that fail the test must be repaired and retested. Certification that the system continues to meet the requirements of 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office. The certification should include the project name as it appeared on the approved application, the program ID number and two copies of a site plan sheet(s) indicating the wastewater lines that were tested and are being certified as complying with the appropriate regulations. Should any test result fail to meet passing test criteria, and then subsequently pass testing, the result(s) and an explanation of what repair,

adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

21. If ownership of this organized sewage collection system is legally transferred (e.g., developer to city or Municipal Utility District), the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

22. Certification by a Texas Licensed Professional Engineer of the testing of sewage collection systems required by 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office within 30 days of test completion and prior to the new sewage collection system being put into service. The certification should include the project name as it appeared on the approved application, the program ID number, and two copies of a site plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. 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. Should any test result fail to meet passing test criteria and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

    Every five years after the initial certification, the sewage collection system shall be retested. Any lines that fail the test must be repaired and retested. Certification that the system continues to meet the requirements of 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office. The certification should include the project name as it appeared on the approved application, the program ID number and two copies of a site plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. Should any test result fail to meet passing test criteria, and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

23. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

24. An Edwards Aquifer protection plan approval or extension will expire, and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

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

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Ryan Soutter of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

Lillian Butler

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

LIB/rts

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

CC: Kenny Watkins, P.E., Bleyl Engineering

Permanent Stormwater Section

TCEQ-0600

RANGER
ENVIRONMENTAL SERVICES, LLC

NOTE: Previously approved with the WPAP. TCEQ Approval Letter dated October 15, 2021.

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: Kenny Watkins

Date: July 6, 2021

Signature of Customer/Agent

Kenny Watkins

Regulated Entity Name: Leander Platinum

Permanent Best Management Practices (BMPs)

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

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

   ☐ N/A

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

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

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

☐ N/A

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

   ☐ N/A

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

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

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

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

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

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

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

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

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

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

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

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

☐ N/A

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

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

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

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

☒ Design calculations (TSS removal calculations)

☒ TCEQ construction notes

☒ All geologic features

☒ All proposed structural BMP(s) plans and specifications

☐ N/A

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

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

    ☐ N/A

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

    ☒ N/A

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

    ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

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

    ☐ N/A

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

    ☐ N/A

20% or Less Impervious Cover Waiver

Permanent Stormwater Section - Attachment A

This attachment is not applicable to this project.

BMP's for Upgradient Stormwater

Permanent Stormwater Section - Attachment B

Permanent BMPs: A sedimentation-filtration pond will be used as a permanent BMP. It will capture a volume of stormwater in excess of the water quality volume of runoff produced by the proposed construction. The stormwater flows entering the site from outside the tract boundary within the Brushy Creek Watershed are collected within the development and conveyed to the proposed water quality facility. The offsite area and contributing flows are diverted around the site.

BMP's for On-site Stormwater

Permanent Stormwater Section - Attachment C

Permanent BMPs: A sedimentation-filtration pond will be used as a permanent BMP. It will capture a volume of stormwater in excess of the water quality volume of runoff produced by the proposed construction. The offsite flows entering the site are diverted around the site. The water quality facility is designed in accordance with the Technical Guidance Manual of the TCEQ.

BMP's for Surface Streams

Permanent Stormwater Section - Attachment D

Permanent BMPs: A sedimentation-filtration pond will be used as a permanent BMP. It will capture a volume of stormwater in excess of the water quality volume of runoff produced by the proposed construction.

Runoff typically associated with a development of this type includes oil and gasoline from vehicular traffic and petroleum distillates from the asphalt pavement. Another pollutant generated by the roof areas will be the dirt and silt produced by dust and falling from vehicles. Some pollutants will also be generated by fertilizers and pesticides from the landscaped areas.

Detention: A proposed onsite detention pond will be utilized to reduce stormwater flows from the site to their predeveloped rate for the 2, 10, 25, and 100-year storm events. Site discharges will be directed to a roadside swale on the east side of Ronald Reagan Blvd.

The following table summarizes the storm runoff flows being discharged from the limits of construction to the existing detention pond for the existing and proposed conditions:

Discharge Summary				
Analysis Point	**Atlas 14 - Storm Water Flows (cfs)**			
	2-yr	*10-yr*	*25-yr*	*100-yr*
Ex DP	47.80	79.60	101.30	138.40
Pro DP	47.80	79.60	99.20	138.20
Detention Pond Inflow/Outflow Summary				
	Atlas 14 - Storm Water Flows (cfs)			
	2-yr	*10-yr*	*25-yr*	*100-yr*
Inflow	16.60	27.20	34.40	46.60
Outflow	10.70	20.40	25.20	38.50

Request to Seal Features

Permanent Stormwater Section - Attachment E

This attachment is not applicable to this project.

Construction Plans

Permanent Stormwater Section - Attachment F

The appropriate construction plans for the project are included throughout the report.

Inspection, Maintenance, Repair and Retrofit Plan for the Water Quality Ponds

Permanent Stormwater Section - Attachment G

PROJECT NAME: Leander Platinum

ADDRESS: 17680 Ronald Reagan Blvd

CITY, STATE, ZIP: Leander, TX 78641

Routine Maintenance:

Mowing: The grass area in the sedimentation basin shall be mowed at least twice annually or as needed to maintain a height of less than 18 inches.

Trash and Debris: All trash and debris shall be removed from the pond during regular mowing operations and inspections.

Sediment: The level of accumulated silt in both basins shall be checked. If depth of silt exceeds 20% of the sedimentation volume, it shall be removed and disposed of properly. Silt in the filtration basin shall be removed when the depth of the silt exceeds 0.5 inch or has slowed the drainage time to more than 48 hours. All sediment shall be classified and removed according to current state and federal rules.

Media Replacement: If the drainage time of the Water Quality Pond exceeds 72 hours, the upper layer of geotechnical material and the rock gabion should be removed and replaced with new materials meeting the original specifications.

Filter Underdrain: The piping network in the filtration bed shall be cleaned every two years or as needed to maintain design drawdown time.

Inspections: The ponds shall be inspected at least twice a year in order to evaluate facility operation. An inspection must be scheduled after wet weather at least once a year in order to check drainage time of the pond. With each inspection, damage to structural elements within the storm sewer and water quality pond network must be evaluated and treated in order to maintain design specifications. Trees and root systems must be cut back and cracks, voids and undermining should be patched to prevent additional damage.

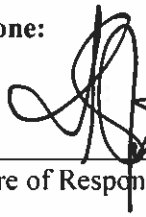
Record Keeping: Detailed records must be kept by the owner of the property. These records shall include information such as the name of the inspector used, the date and time of the inspection, and any maintenance performed. The owner must retain any such inspection records for a period of three years after the inspection date.

Responsible Party: Leander Platinum Jubilee Investments Group, LLC

Mailing Address: 3604 Balcones Drive

City, State, Zip: Austin, TX 78731

Telephone: 512-912-6374



7-15-2021

Signature of Responsible Party Date

Pilot-Scale Field Testing Plan

Permanent Stormwater Section - Attachment H

This attachment is not applicable to this project.

Measures for Minimizing Surface Stream Contamination

Permanent Stormwater Section - Attachment I

A sedimentation-filtration pond designed to TCEQ requirements will be used to minimize the pollutants associated with the proposed development. An onsite detention within the development will reduce the flows discharged from the site to their pre-developed condition for the 2, 10, 25 and 100-year storm events. Discharges from this pond will be directed ultimately to Brushy Creek through a system of storm sewers and open channels.

ORIGINAL LAYOUT SIZE - 24X36

Leander Platinum Public Improvements Construction Plans

17680 Ronald Reagan Blvd.

Leander, Texas 78641

Project Number 20-PICP-032

Approved By:

Robin M. Griffin, AICP, Planning Director	Date
Wayne S. Watts, P.E., CFM, City Engineer	Date
Mark Tummons, Director of Parks and Recreation	Date
Chief Joshua Davis, Fire Marshall	Date
Gina Ellison, P.E., Public Works Director	Date

This project is located within the Brushy Creek Watershed (Suburban Class). All storm flows from this site will be directed to the Brushy Creek Watershed. No portion of this tract is within the boundaries of the 100 year flood plain of any waterway that is within the limits of study of the Federal Flood Insurance Administration FIRM panel #48491C0455F, dated December 20, 2019 for Williamson County.

Contractor is responsible for filing all necessary forms with the Environmental Protection Agency for all projects involving 5 acres or more of disturbed area or part of a larger development which will eventually disturb 5 acres or more. Note: The contractor and the owner both must file a Notice of Intent.

Approval of these plans by the City of Leander indicated compliance with applicable City regulations only. Approval by other governmental entities may be required prior to the start of construction. The applicant is responsible for determining what additional approvals may be necessary.

Edwards Aquifer Note: This project is located within the Edwards Aquifer Recharge Zone

The Engineer of Record is solely responsible for the completeness, accuracy, regulatory compliance, and adequacy of these plans and/or specifications whether or not the plans and/or specifications were reviewed by the City Engineer(s).

Bleyl Engineering and its associates will not be held responsible for the accuracy of the survey or for design errors or omissions resulting from survey inaccuracies.

Sidewalks, Hike and Bike Trail, Public Storm Sewer and Water and Wastewater improvements within easements or ROWs will be dedicated to the City of Leander.

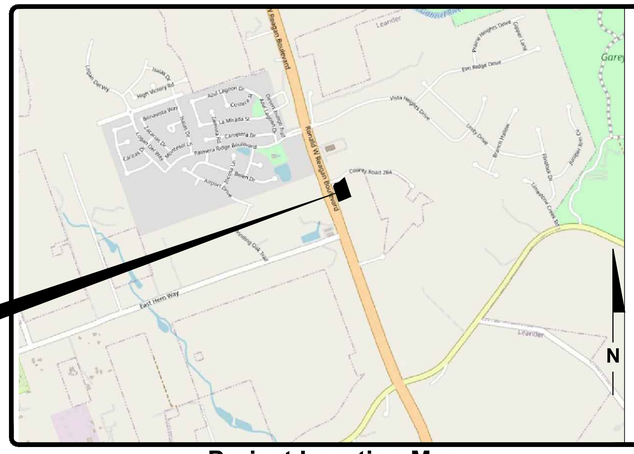
City Contacts

Engineering Main Line:	(512) 528-2766
Planning Department:	(512) 528-2750
Public Works Main Line:	(512) 259-2640
Stormwater Inspections:	(512) 258-0055
Utilities Main Line:	(512) 259-1149
Utilities On-Call:	(512) 690-4760

REVISIONS

NO.	DESCRIPTION	CITY OF LEANDER APPROVAL/DATE

PROJECT LOCATION



Project Location Map

1" = 2000'

Site Development Data

Submittal Date:	October 6, 2020
Legal Description:	Lot 1, Waldarra Estates, Recorded in Cab 0, Slide 87 W.C.P.R., 4.71 acres
Address:	17680 Ronald Reagan Blvd. Leander, Texas, 78641
Owner:	Leander Platinum Jubilee Investment Group, LLC 3604 Balcones Drive Austin, Texas 78731 Phone: (512) 912-6374
Engineer	Bleyl Engineering Contact Person: Kenny Watkins 12007 Technology Blvd, Suite 150 Austin, Texas 78727 Phone: (512) 454-2400 Email: kwatkins@bleyengineering.com
Architect:	TCHEN Architects 1109 Anderson Mill Road, Suite 325 Austin, Texas 78726 Email: tchenarch@gmail.com
Landscape Architect	MHB Landscape Architects 544 Military Drive Canyon Lake, Texas 78133 Phone: (512) 448-0137 Email: mhbla@gvtc.com
Land Surveyor:	Windrose Land Services 4120 Commercial Centere Drive, Suite 300 Austin, Texas 78744 Phone: (512) 326-2846
Limits of Construction:	5.45 acres

I Kenny Watkins, certify that these engineering documents are complete, accurate and adequate for the intended purposes, including construction, but are not authorized for construction prior to formal City approval.

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Index of Sheets

Revision	Date	By	App	Comment

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
12007 Technology Blvd, Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

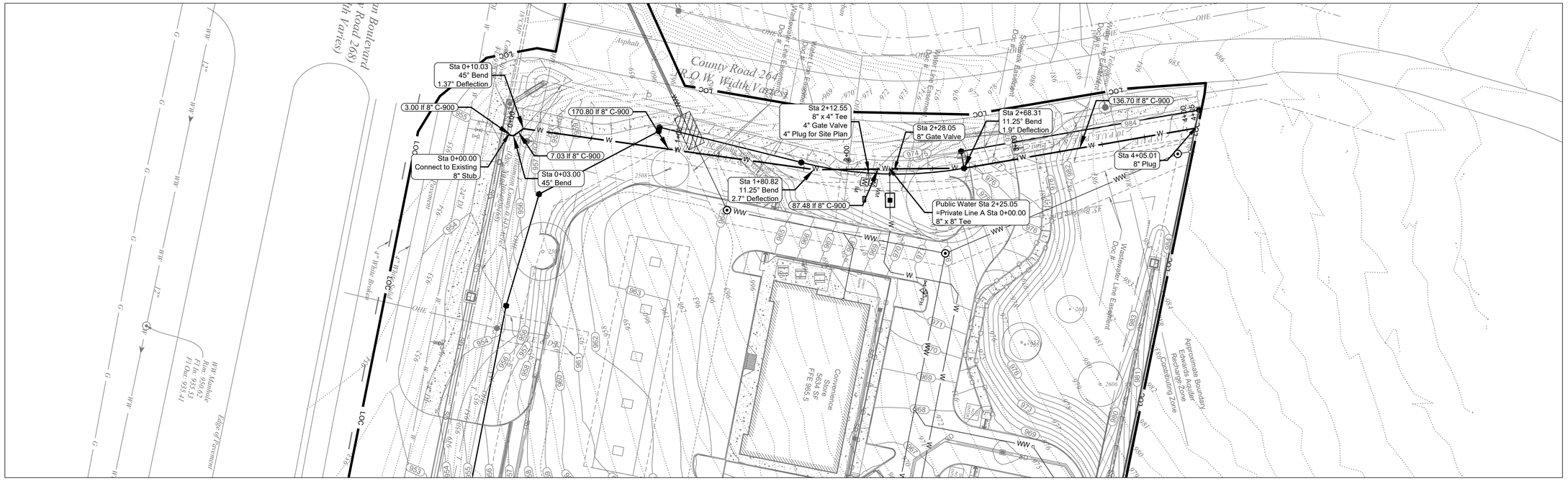
Cover Sheet

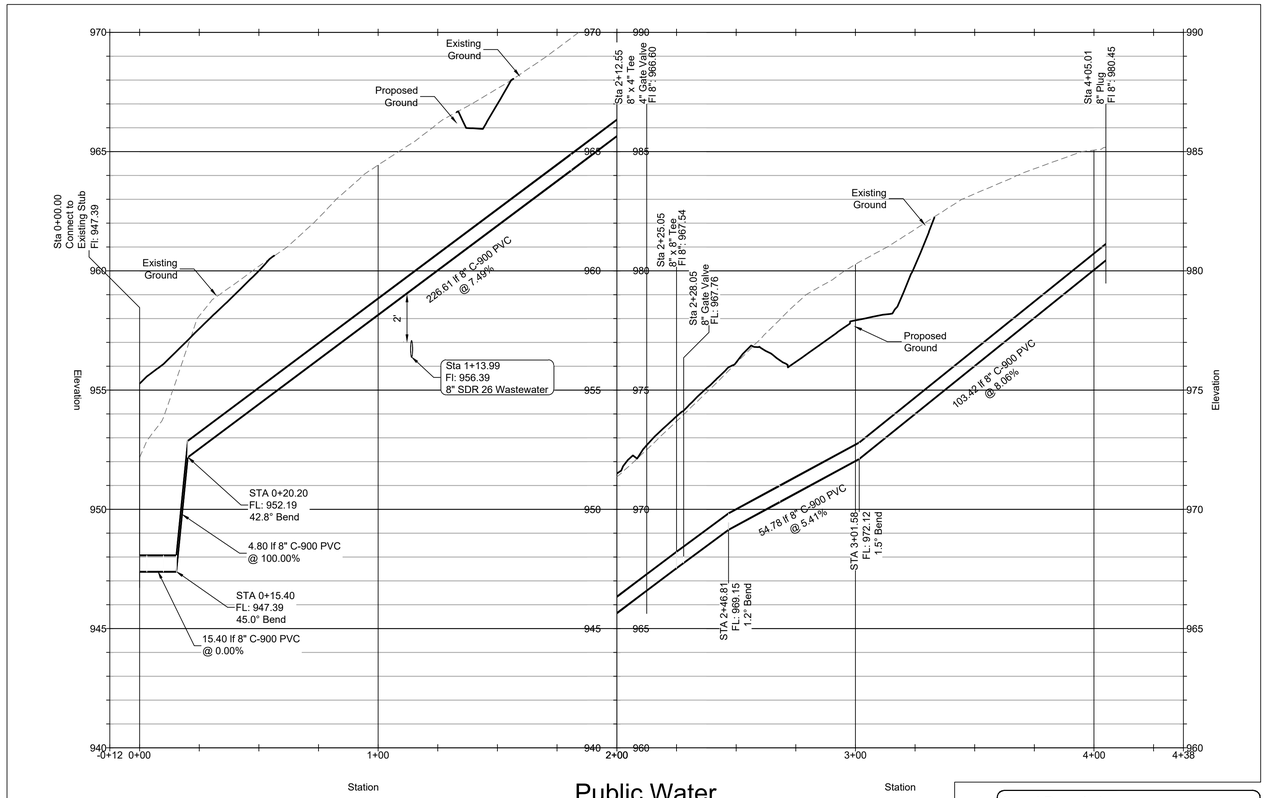
Leander Platinum PICP
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
WilliamsonCounty

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Design: JW
CAD: CS, AE | Review: KW
Project No: LPJ 12237
Sheet: 1 of 26
20-PICP-032

LPJ 12237 (LEANDER PLATINUM PICP)





Public Water
Sta 0+00 to Sta 4+38

Legal Description
Lot 1, Walderra Estates, Recorded in Cab 0, Slide 87 W.C.P.R.

Benchmarks
T.B.M. #1 - 60D Nail set in asphalt.
Elevation = 958.23'
N 10190256.37, E 3089137.85
GEOID: 12A

T.B.M. #2 - 60D Nail set in asphalt.
Elevation = 979.12'
N 10190336.46, E 3089404.66
GEOID: 12A

Call Before You Dig!!

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of his/her submittal, whether or not the application is reviewed for Code compliance by City engineers.

Revision	Date	By	App	Comment

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
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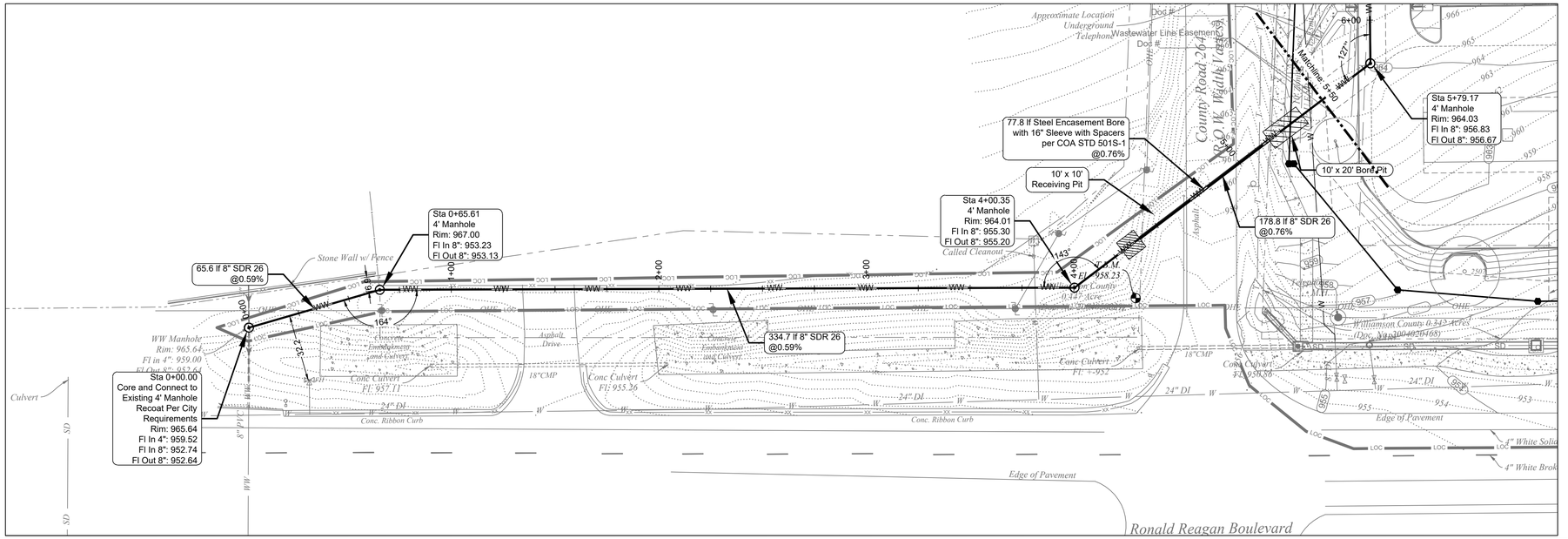
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

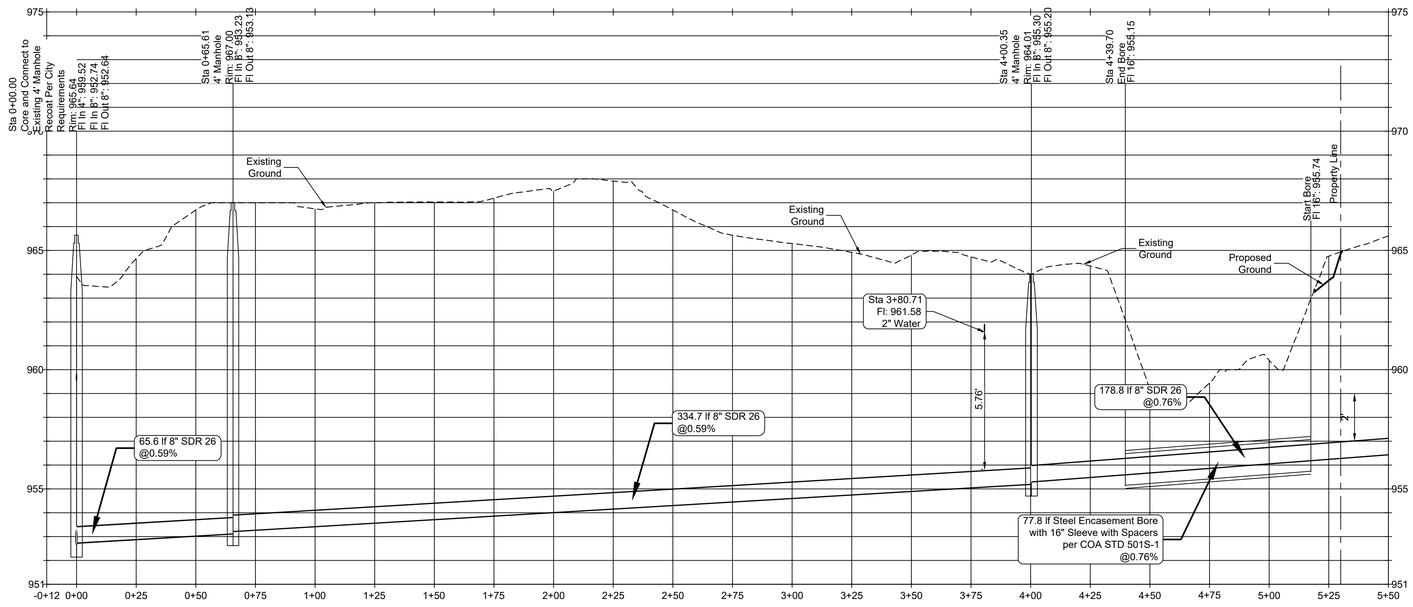
Water Line Plan & Profile

Leander Platinum PICP
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
WilliamsonCounty

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Design:	JW
CAD: CS, AE	Review: KW
Project No:	LPJ 12237
Sheet:	7 of 26
	20-PICP-032





Wastewater
Sta 0+00 to Sta 5+50

Scale 1" = 30'
Vertical 1" = 3'

Attention Contractor:
- Contractor to install traffic control plan per City of Leander specifications and details to ensure continuous traffic along Ronald Reagan Blvd.
- The City of Leander Environmental Inspector has the authority to add or modify erosion/sediment controls on site throughout the duration of the project.

Caution - Electricity Present
The general contractor and all subcontractors that enter or work on this project are responsible for locating, using One-Call or the electric utilities themselves, all overhead and underground electrical of any nature and for safeguarding all personnel on this project, including any off-site work areas shown on the plan, from any interference with the electric lines, getting a ladder in harms way or any other activity of any nature that could harm any individual in any manner. This responsibility hereby removes the Engineers and the owner from any liability of any nature.

Attention Contractor:
The contractor shall be responsible fro immediately notifying the Design Engineer of any apparent discrepancy or design conflicts, and resolution of such situations prior to proceeding with construction. Contractor to field verify location and depth of existing electrical, cable and telecommunication lines which may exist prior to beginning construction.

Manhole Note:
All manholes outside pavement to have bolted and gasketed manhole covers. COL SO Article III Section 44(b)(6)

By the act of submitting a bid for the proposed contract, the bidder warrants that the bidder, and all subcontractors and material suppliers he intends/wishes to use have carefully and thoroughly reviewed the engineering drawings and specifications and other construction contract documents and have found them to be complete adequate and free from any ambiguities and sufficient for the purpose intended. The bidder further warrants that to the best of his or his subcontractors and materials suppliers knowledge all materials and products specified or indicated herein are acceptable for all applicable codes and agencies.

Texas 811
Call Before You Dig!!

Legal Description
Lot 1, Walderra Estates, Recorded in Cab 0, Slide 87 W.C.P.R.

Benchmarks
T.B.M. #1 - 60D Nail set in asphalt.
Elevation = 958.23'
N 10190256.37, E 3089137.85
GEOID: 12A

T.B.M. #2 - 60D Nail set in asphalt.
Elevation = 979.12'
N 10190336.46, E 3089404.66
GEOID: 12A

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of his/her submittal, whether or not the application is reviewed for Code compliance by City engineers.

Revision	Date	By	App	Comment

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

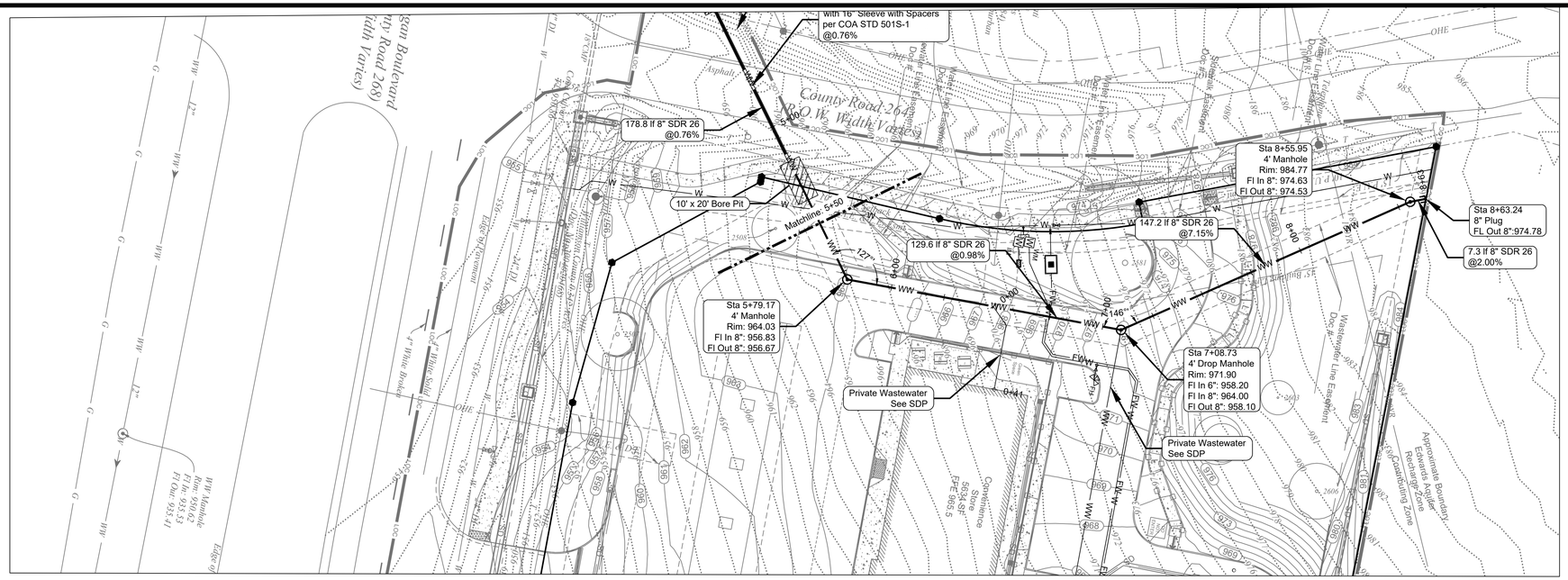
BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
12007 Technology Blvd, Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

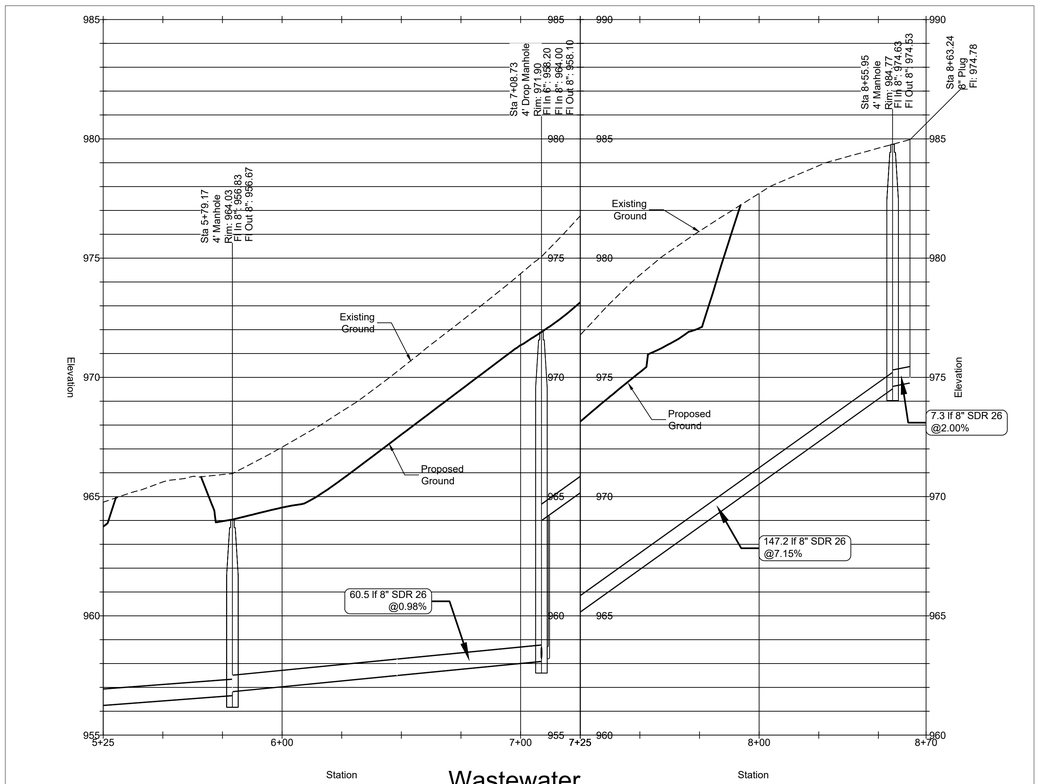
Public Wastewater Sheet 1

Leander Platinum PICP
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
WilliamsonCounty

KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
STATE OF TEXAS
7/16/21

Design: JW
CAD: CS, AE | Review: KW
Project No: LPJ 12237
Sheet: 8 of 26
20-PICP-032





Wastewater
Sta 0+00 to Sta 8+70

Caution - Electricity Present
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Attention Contractor:
The contractor shall be responsible fro immediately notifying the Design Engineer of any apparent discrepancy or design conflicts, and resolution of such situations prior to proceeding with construction. Contractor to field verify location and depth of existing electrical, cable and telecommunication lines which may exist prior to beginning construction.

Record Drawing Note:
This record drawing have been prepared, in part, based upon information furnished by others. while this information is believed to be reliable, the engineer cannot assure its accuracy, and is thus not responsible for the accuracy of the record drawing or for any errors or omissions which may have been incorporated into them as a result.

By the act of submitting a bid for the proposed contract, the bidder warrants that the bidder, and all subcontractors and material suppliers he intends/wishes to use have carefully and thoroughly reviewed the engineering drawings and specifications and other construction contract documents and have found them to be complete adequate and free from any ambiguities and sufficient for the purpose intended. The bidder further warrants that to the best of his or his subcontractors and materials suppliers knowledge all materials and products specified or indicated herein are acceptable for all applicable codes and agencies.

Manhole Note:
All manholes outside pavement to have bolted and gasketed manhole covers. COL SO Article III Section 44(b)(6)

Attention Contractor:
- Contractor to install traffic control plan per City of Leander specifications and details to ensure continuous traffic along Ronald Reagan Blvd.
- The City of Leander Environmental Inspector has the authority to add or modify erosion/sediment controls on site throughout the duration of the project.

Texas 811
Call Before You Dig!!

Legal Description
Lot 1, Walderra Estates, Recorded in Cab 0, Slide 87 W.C.P.R.

Benchmarks
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Elevation = 979.12'
N 10190336.46, E 3089404.66
GEOID: 12A

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AUSTIN BRYAN CONROE HOUSTON

Public Wastewater Sheet 2 & Profile

Leander Platinum PICP
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
WilliamsonCounty

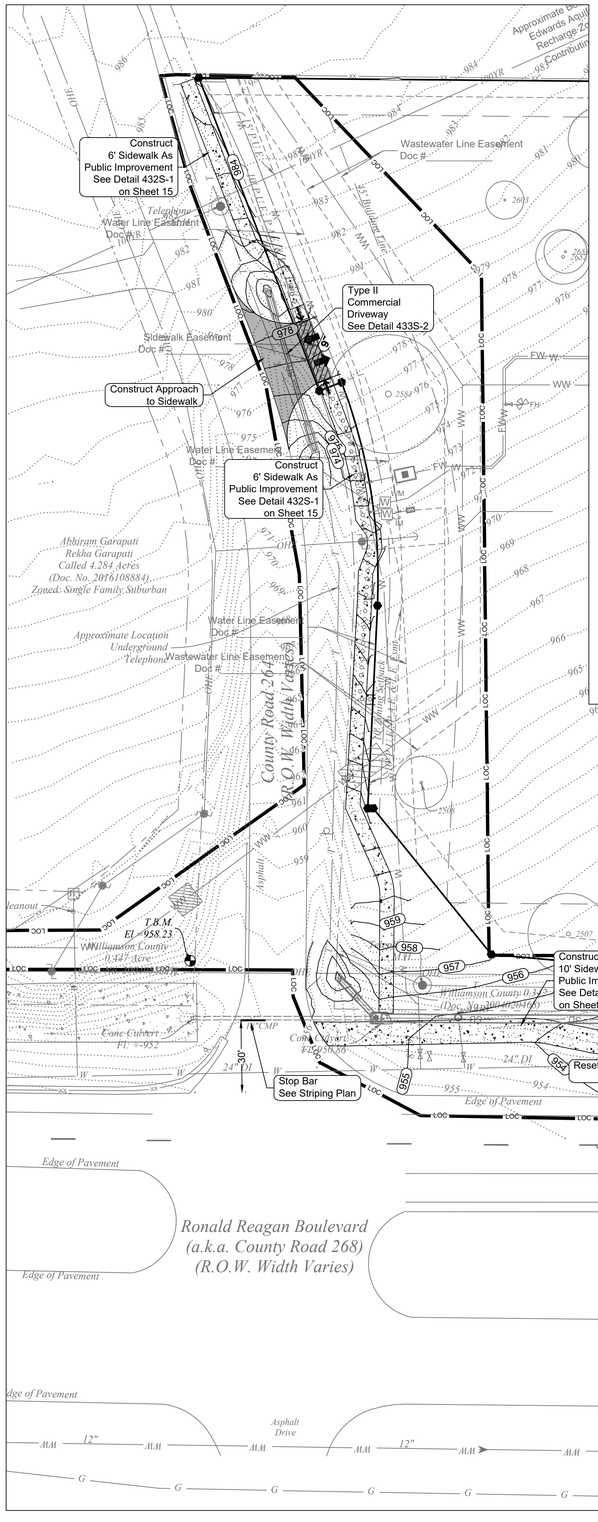
STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
9/21/21

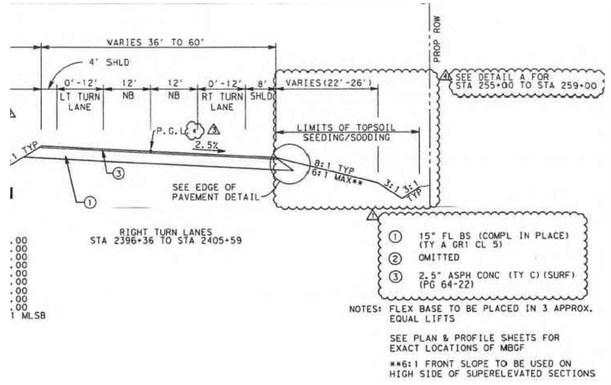
Design: JW
CAD: CS, AE | Review: KW
Project No: LPJ 12237
Sheet: 9 of 27
20-PICP-032

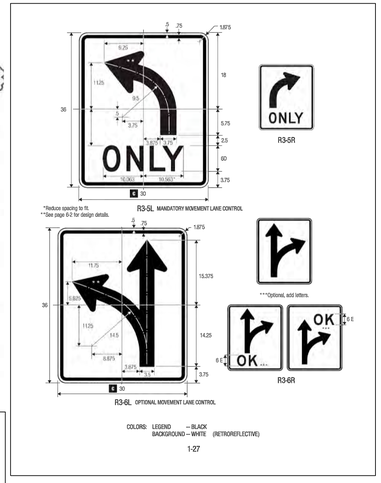
ORIGINAL LAYOUT SIZE - 24X36

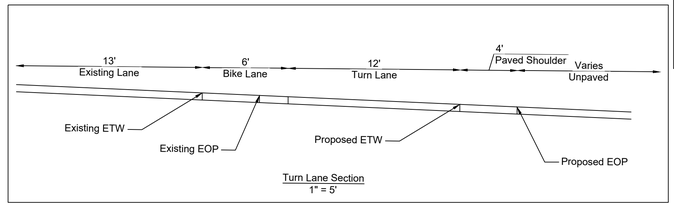
@2021 H:\JOBFILES\LPJ 12237 (RONALD REAGAN BLVD SITE PLAN)\PROJECT\PLOT SHEETS\UTILITY TAP PLAN.DWG 9/21/2021 Cwitzel

ORIGINAL LAYOUT SIZE - 24X36









Legend

	Benchmark		Property Line
	Property Pin	TBM	Temporary Benchmark
PUE	Existing Easement	PUE	Proposed Easement
( )	Record Information		Proposed Wastewater Cleanout
	Existing Concrete		Proposed Wastewater Double Cleanout
	Existing Light Pole		Proposed Wastewater Inspection Port
	Existing Area Light		Proposed Inlet
	Existing Power Pole & Down Guy		Proposed Curb Inlet
E	Existing Electric Meter		Proposed Trench Drain
P	Existing Transformer Pad	P	Proposed Transformer Pad
T	Existing Telephone Pedestal		Proposed Water AARV
TV	Existing Cable TV Pedestal		Proposed Water Tee
OHE	Existing Overhead Electric Line	OHE	Proposed Overhead Electric Line
T	Existing Telephone Line		ADA Accessible Route
FO	Existing Fiber Optic Line		ADA Ramp/Handrails
G	Existing Gas Riser	FL	Proposed Firelanes
G	Existing Gas Line	G	Proposed Gas Line
G	Existing Gas Meter	G	Proposed Gas Meter
WW	Existing Wastewater	WW	Proposed Wastewater
	Existing Sanitary Manhole		Proposed Sanitary Manhole
FM	Existing Force Main	FM	Proposed Force Main
W	Existing Water Line	W	Proposed Water Line
	Existing Water Valve		Proposed Water Valve
W	Existing Water Meter	WM	Proposed Water Meter
FH	Existing Fire Hydrant	FH	Proposed Fire Hydrant
IR	Existing Irrigation Box		Proposed Water Reducer
	Existing Water Plug		Proposed Water Plug
	Existing Sign		Proposed Water Flush Valve
100 yr	Existing 100 yr	100 yr	Proposed 100 yr
SD	Existing Storm Sewer Line	SD	Proposed Storm Sewer Line
924	Existing Contour	924	Proposed Contour
EHZ	Erosion Hazard Zone		
55	Tree	55	Tree to be Removed

For Single-family residential subdivisions that are not registered with TDLR, provide documentation form a Registered Accessibility Specialist (RAS) that the pedestrian infrasturcture withing the Public Right-Of-Way complies with the Texas Accessibility Standards.

Legal Description

Lot 1, Walderra Estates, Recorded in Cab 0, Slide 87 W.C.P.R.

Benchmarks

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GEOID: 12A

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GEOID: 12A

Scale 1" = 30'

Call Before You Dig!!

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AUSTIN BRYAN CONROE HOUSTON

Site Plan

Leander Platinum PICP

17680 Ronald W. Reagan Blvd
Leander, Texas 78641
WilliamsonCounty

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Design:	JW
CAD: CS, AE	Review: KW
Project No:	LPJ 12237

Sheet: 11 of 26

20-PICP-032

ORIGINAL LAYOUT SIZE - 24X36

Existing Drainage Area Calculations

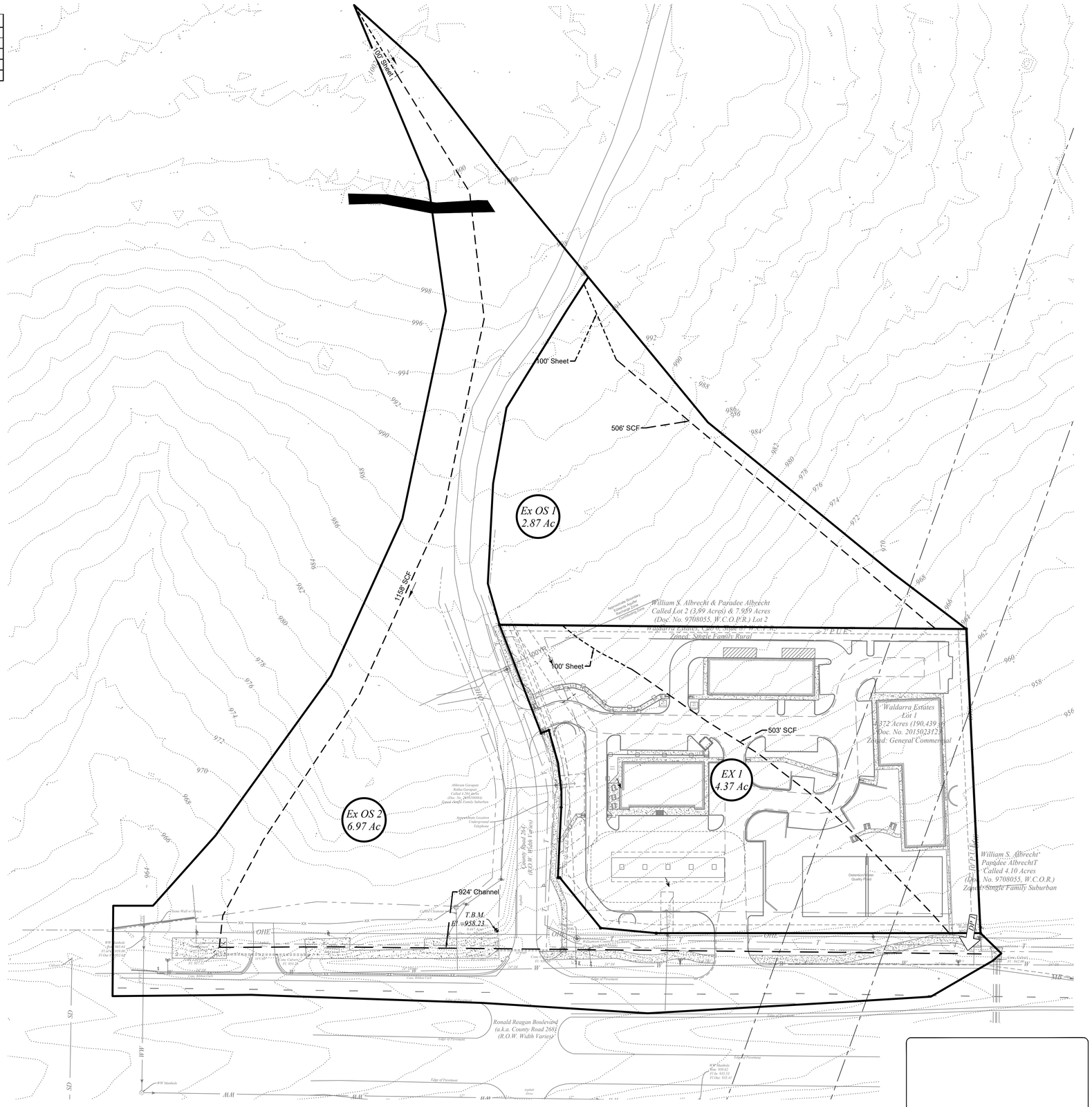
Label	Area	IC		SCS CN	Lag	Tc	SCS Type III, 24 hr Storm Water Flows (cfs)			
	acres	*acres*	*%*		*hours*	*hours*	*2-yr*	*10-yr*	*25-yr*	*100-yr*
Ex 1	4.37	0.31	7.0	80.00	0.077	0.129	13.40	25.60	34.10	48.70
OS 1	2.87	2.29	80.0	94.00	0.050	0.078	15.10	23.50	29.30	39.10
OS 2	6.97	5.57	80.0	94.00	0.159	0.266	25.70	40.20	50.00	66.60

Hydrologic Soil Group = D

Drainage Area	AREA (AC.) PER LAND USE (SOIL TYPE D)				Composite CN Value
	Total Area	Open Space (Lawns, Etc.) CN =80	Impervious (Paved) CN =98	Woods - Grass Combination CN = 79	
Ex 1	4.37	0.00	0.31	4.06	80
OS 1	2.87	0.00	2.29	0.57	94
OS 2	6.97	0.00	5.57	1.39	94

TIME OF CONCENTRATION

	OVERLAND SHEET FLOW					SHALLOW CONCENTRATED FLOW						CHANNEL FLOW			TOTAL	TOTAL	TOTAL
Drainage Area ID	n	Length	P [2]	Slope	Overland Travel Time	Slope	Distance	Surface ("Paved" or "Unpaved")	Velocity Coefficient[**]	Velocity	Shallow Concentrated Flow Travel Time	Velocity[***]	Distance	Channel Travel Time	Travel Distance	Time of Concentration	Lag Time
Name	none	ft	inches	ft/ft	min	ft/ft	ft	type	none	ft/s	min	ft/s	ft	min	ft	min	min
Ex 1	0.038	100.00	3.92	0.0400	2.24	0.0480	503.00	Unpaved	6.96	1.53	5.50	0.00	0.00	0.00	603.00	7.73	4.64
OS 1	0.041	100.00	3.92	0.0300	2.67	0.0420	506.00	Paved	20.33	4.17	2.02	0.00	0.00	0.00	606.00	4.69	3.00
OS 2	0.041	100.00	3.92	0.0100	4.14	0.0200	1158.00	Paved	20.33	2.87	6.71	3.00	924.00	5.13	2182.00	15.99	9.59



Existing Drainage Area Map

0 60' 120'

Scale 1" = 60'

Revision	Date	By	App	Comment

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AUSTIN BRYAN CONROE HOUSTON

Existing Drainage Areas

Leander Platinum PICP
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
WilliamsonCounty

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED PROFESSIONAL ENGINEER
7/16/21

Design: JW
CAD: CS, AE | Review: KW
Project No: LPJ 12237
Sheet: 12 of 26
20-PICP-032

@2021 HUGOBELES\LPJ 12237 (RONALD REAGAN BLVD SITE PLAN)\PRO_ECT\PLOT SHEETS\DRAINAGE AREA MAPS.DWG 7/16/2021 CWitzel

ORIGINAL LAYOUT SIZE - 24X36

Proposed Drainage Area Calculations

Label	Area	IC		SCS CN	Lag	Tc	SCS Type III, 24 hr Storm Water Flows (cfs)			
	acres	*acres*	*%*		*hours*	*hours*	*2-yr*	*10-yr*	*25-yr*	*100-yr*
Pro 1	2.98	1.609	54.0	90	0.050	0.064	14.20	23.30	29.50	39.90
Pro 2	1.40	1.120	80.0	94	0.043	0.072	4.70	9.10	12.10	17.30
Pro OS 1	2.86	2.288	80.0	94	0.051	0.084	15.00	23.40	29.10	38.90
Pro OS 2	7.05	5.640	80.0	94	0.142	0.236	27.20	42.50	52.80	70.50

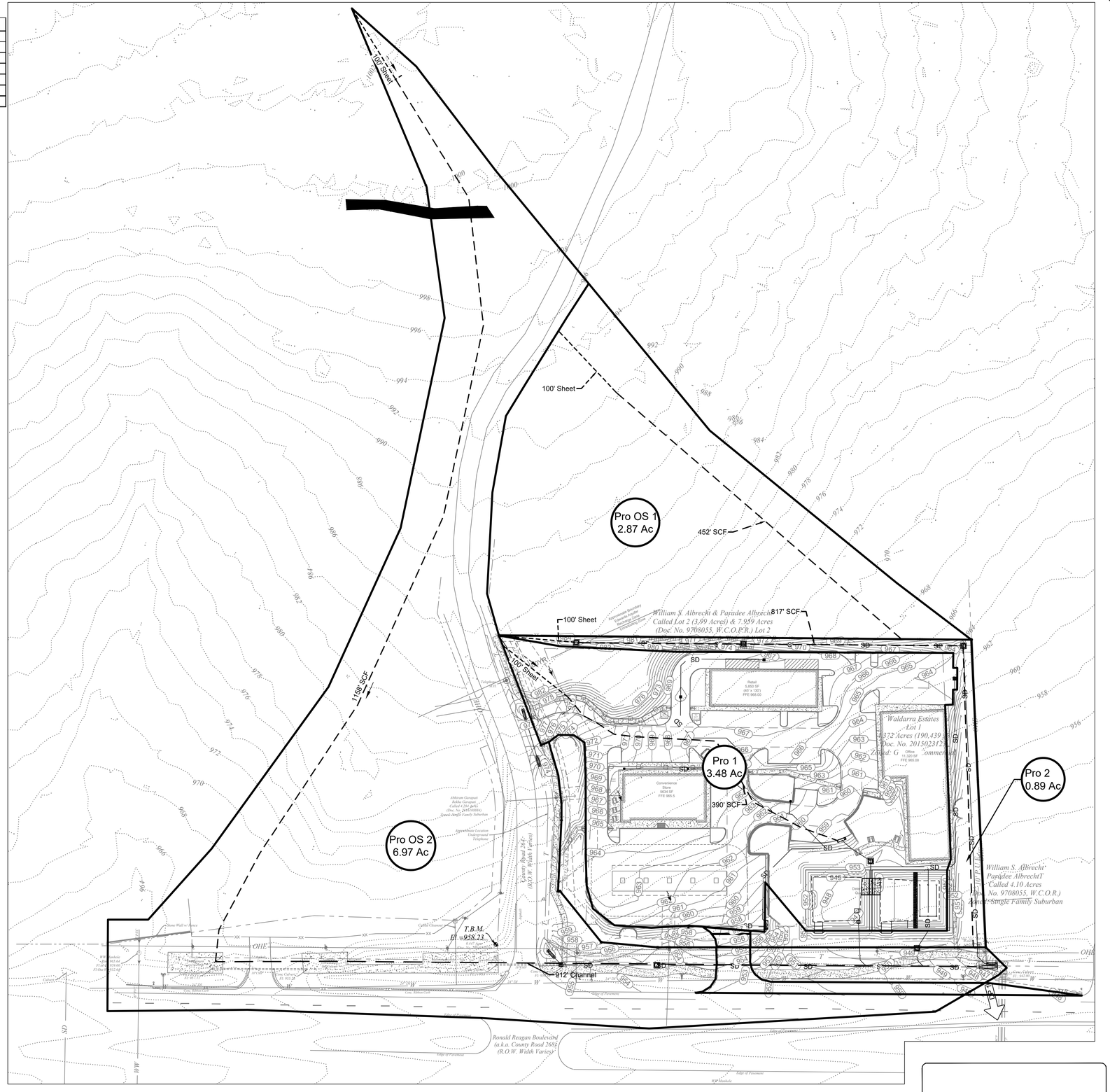
* Lag time for Pro 1 was assumed to be 3 minutes (.050 hrs). This is a conservative assumption.

Hydrologic Soil Group = D

Drainage Area	AREA (AC.) PER LAND USE (SOIL TYPE D)				Composite CN Value
	Total Area	Open Space (Lawns, Etc.) CN =80	Impervious (Paved) CN =98	Woods - Grass Combination CN = 79	
Pro 1	2.98	1.37	1.61	0.00	90
Pro 2	1.40	0.28	1.12	0.00	94
Pro OS 1	2.86	0.57	2.29	0.00	94
Pro OS 2	7.05	1.41	5.64	0.00	94

TIME OF CONCENTRATION

	OVERLAND SHEET FLOW					SHALLOW CONCENTRATED FLOW						CHANNEL FLOW			TOTAL	TOTAL	TOTAL
Drainage Area ID	n	Length	P2*	Slope	Overland Travel Time	Slope	Distance	Surface ("Paved" or "Unpaved")	Velocity Coefficient**	Velocity	Shallow Concentrated Flow Travel Time	Velocity***	Distance	Channel Travel Time	Travel Distance	Time of Concentration	Lag Time
Name	none	ft	inches	ft/ft	min	ft/ft	ft	type	none	ft/s	min	ft/s	ft	min	ft	min	min
Pro 1	0.052	100.00	3.92	0.0560	2.51	0.0560	390.00	Paved	20.33	4.81	1.35	0.00	0.00	0.00	490.00	3.86	3.00
Pro 2	0.041	100.00	3.92	0.0300	2.67	0.0500	455.00	Paved	20.33	4.55	1.67	3.00	361.00	2.01	916.00	6.34	3.80
Pro OS 1	0.041	100.00	3.92	0.0200	3.14	0.0370	452.00	Paved	20.33	3.91	1.93	0.00	0.00	0.00	552.00	5.06	3.04
Pro OS 2	0.041	100.00	3.92	0.0350	2.51	0.0200	1158.00	Paved	20.33	2.87	6.71	3.00	916.00	5.09	2174.00	14.31	8.59



Proposed Drainage Area Map

0 60' 120'

Scale 1" = 60'

Revision	Date	By	App	Comment

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Proposed Drainage Areas

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Leander, Texas 78641
WilliamsonCounty

KENNY WATKINS 64738 REGISTERED PROFESSIONAL ENGINEER STATE OF TEXAS 7/16/21

Design: JW
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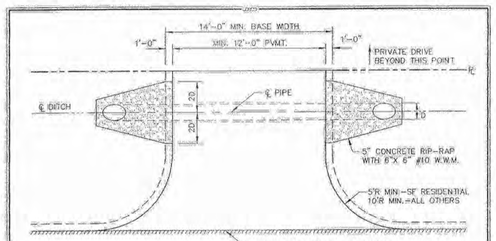
Sheet: 13 of 26
20-PICP-032

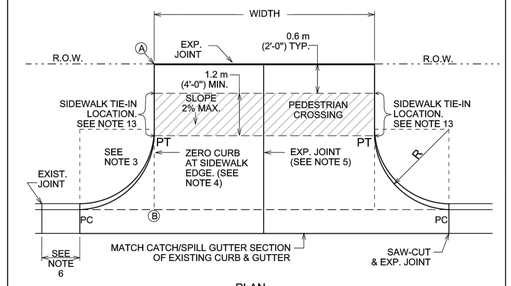


PLAN

℄ SECTION

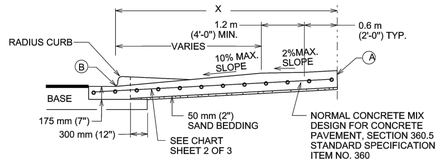
NOTES:
A. MIN. COVER TO BE DETERMINED BY CITY ENGINEER.
B. 5" CONCRETE RIP-RAP WITH 6"X 6" #10 W.W.M. SHALL BE INSTALLED.
C. PIPE SIZE AND NUMBER TO BE DESIGNATED BY CITY ENGINEER.
D. 6" CONCRETE WITH #4 BARS @ 18" C-C MAY BE INSTALLED IN LIEU OF ASPHALT PVMT. WHERE APPROPRIATE, OR AS DIRECTED BY CITY.

CITY OF LEANDER, TEXAS			
Scale: NTS	Approved 2/24/97 Date	Drawn by: RPW	
DRIVEWAY APRON WITH CULVERT PIPE		Detail No.	202-2



PLAN

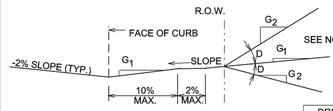
NOTE: ALL DRIVEWAYS SHALL BE SLOPED TOWARDS THE STREET FROM THE R.O.W. LINE. ELEVATION OF POINT Ⓐ ABOVE POINT Ⓑ IS, TYPICALLY A MINIMUM OF 150 mm (6") PLUS 20 mm/m (¼" RISE/FOOT) OVER DISTANCE "X" IN METERS (FEET).



CROSS SECTION

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN	02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 1 OF 2

USE	THICKNESS	REINFORCEMENT
DRIVEWAYS FOR PASSENGER VEHICLE PARKING LOTS	150 mm (6") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS
ALL OTHERS	175 mm (7") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS

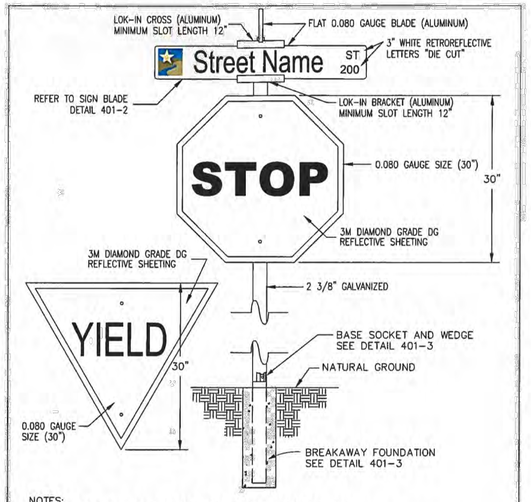


ALLOWABLE GRADES

DRIVEWAY VOLUME (ADT)	D=GRADE CHANGE STD.	MAX
>1500	0%	3%
500-1500	3%	6%
< 500	6%	15%

NOTES:
1. ALL TYPE II DRIVEWAYS SHALL HAVE RADIUS ENDS.
2. DRIVEWAY WIDTHS AND RADII DIMENSIONS, ONE/TWO WAY TRAVEL REQUIREMENTS, AND GEOMETRIC LAY-OUT ARE HIGHLY VARIABLE, SUBJECT TO SITE SPECIFIC CONDITIONS AND REQUIREMENTS. SEE TRANSPORTATION CRITERIA MANUAL. SECTION 5 "DRIVEWAYS".
3. THE DRIVEWAY EDGE SHALL BE SMOOTHLY TRANSITITIONED INTO THE SIDEWALK TIE-IN LOCATION BEGINNING AT THE RADIUS PC LINE.
4. "ZERO" CURB AT PT OR SIDEWALK EDGE, WHICHEVER IS ENCOUNTERED FIRST.
5. PLACE AN EXPANSION JOINT DOWN THE CENTER OF DRIVEWAY ALL DRIVEWAYS.
6. IF DIMENSION IS LESS THAN 1.5 METERS (5 FEET), REMOVE CURB AND GUTTER TO EXISTING JOINT AND POUR MONOLITHICALLY WITH DRIVEWAY.
7. IF THE BASE IS OVER-EXCAVATED WHERE THE CURB AND GUTTER WERE REMOVED, BACKFILL WITH CONCRETE MONOLITHICALLY WITH THE DRIVEWAY.
8. TYPE II DRIVEWAYS ARE TO BE LOCATED NO CLOSER TO THE CORNER OF INTERSECTING RIGHT OF WAY THAN 60% OF PARCEL FRONTAGE AT 30 METERS (100 FEET); WHICHEVER IS LESS.
9. DRIVEWAY SHALL NOT BE CONSTRUCTED WITHIN THE CURB RETURN OF A STREET INTERSECTION.
10. WHILE THE PROPERTY OWNER REMAINS RESPONSIBLE FOR GRADE BREAKS WITHIN PRIVATE PROPERTY, THE FIRE DEPARTMENT SHALL BE CONSULTED WHERE THE DRIVEWAY IS ESSENTIAL TO EMERGENCY VEHICLE ACCESS AND "G2 IS GREATER THAN 15%.
11. USE 12 MM (1/2") ASPHALT BOARD OR OTHER APPROVED MATERIAL FOR CURB AND GUTTER EXPANSION JOINTS. SIDEWALK, AT THE R.O.W. LINE AND AT MIDWIDTH, SEE NOTE 5.
12. SEE TRANSPORTATION CRITERIA MANUAL, SECTION 5 FOR OTHER DRIVEWAY REQUIREMENTS.
13. THE SIDEWALK, REGARDLESS OF ITS LOCATION WITH RESPECT TO THE CURB OR PROPERTY LINE, SHALL BE CONNECTED TO THE DRIVEWAY AT THESE LOCATIONS.
14. WATER METER BOXES AND WASTEWATER CLEAN OUTS ARE PROHIBITED FROM BEING LOCATED IN DRIVEWAY AREAS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN	02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 2 OF 2

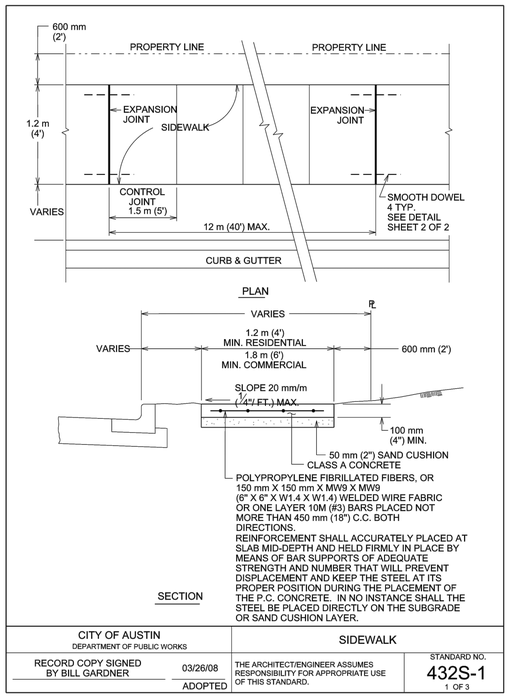


NOTES:
1. 7'-FOOT MIN. HEIGHT FROM GROUND TO BOTTOM OF SIGN.
2. ALL SIGNS TO BE IN CONFORMANCE WITH THE CURRENT EDITION OF THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
3. ALL SIGNAGE SHEETINGS SHALL BE 3M DIAMOND GRADE DG REFLECTIVE SHEETING.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

STATE OF TEXAS WAYNE S. WATTS 66124 LICENSED PROFESSIONAL ENGINEER
Wayne S. Watts 11/20/15

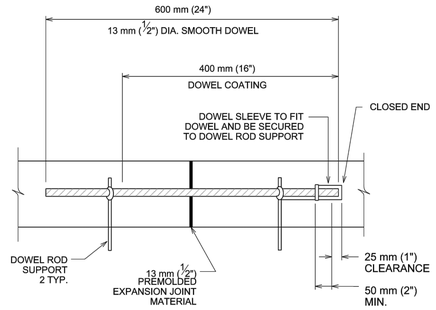
City Of Leander, Texas
DETAIL #401-1 STREET SIGNS



PLAN

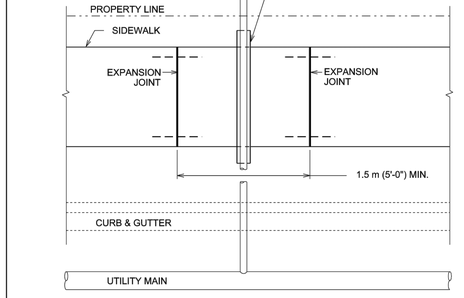
SECTION

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 1 OF 3

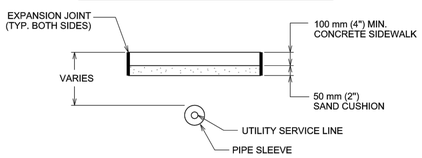


DOWEL DETAIL

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 2 OF 3



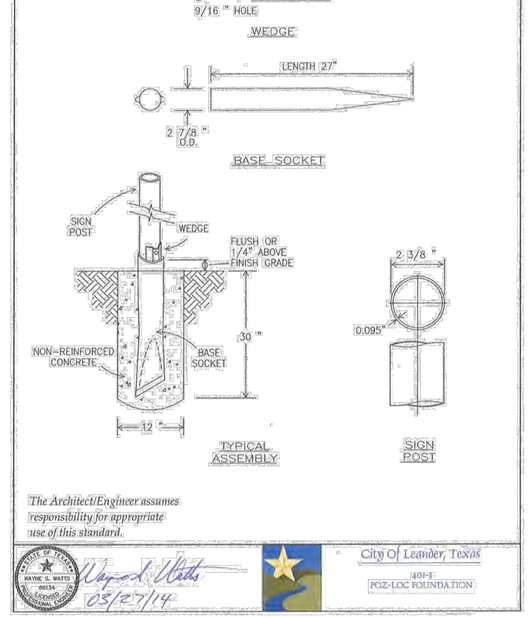
SIDEWALK OVER UTILITY SERVICE LINE PLAN



SECTION OF SIDEWALK OVER UTILITY SERVICE LINES

NOTES:
1. THIS STANDARD APPLIES TO THE INSTALLATION OF NEW UTILITIES OR UTILITIES BEING REPLACED BY A NEW LINE.
2. NO JOINTS IN UTILITY SERVICE PIPE TO BE LOCATED INSIDE PVC PIPE SLEEVE.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 3 OF 3



The Architect/Engineer assumes responsibility for appropriate use of this standard.

STATE OF TEXAS WAYNE S. WATTS 66124 LICENSED PROFESSIONAL ENGINEER
Wayne S. Watts 03/27/14

City Of Leander, Texas
401-F POZ-LOC FOUNDATION

Revision	Date	By	App	Comment

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WASTEWATER DETAILS

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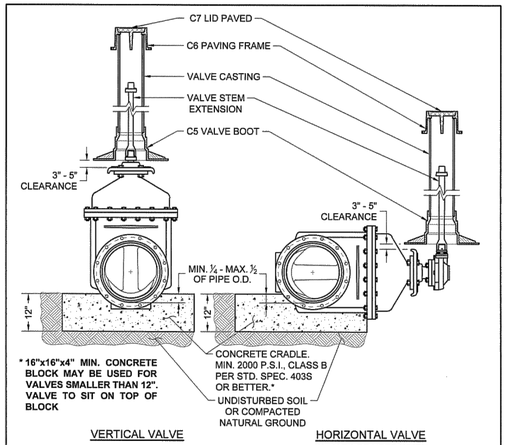
WilliamsonCounty

STATE OF TEXAS KENNY WATKINS 64738 REGISTERED PROFESSIONAL ENGINEER
7/16/21

Design: JW
CAD: CS, AE | Review: KW
Project No: LPJ 12237
Sheet: 15 of 26
20-PICP-032



*** 16"x16"x4" MIN. CONCRETE BLOCK MAY BE USED FOR VALVES SMALLER THAN 12". VALVE TO SIT ON TOP OF BLOCK**

VERTICAL VALVE

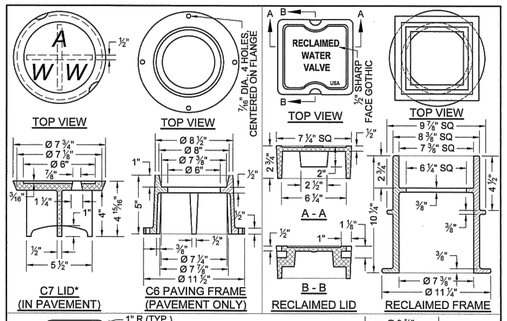
HORIZONTAL VALVE
ONLY TO BE USED WHEN CALLED OUT ON THE DRAWINGS.

NOTES:

1. WELD SOCKET 2½" x 2" DEEP TO 1" SCH. 40 CARBON STEEL ROUND STEM EXTENSION, FITTED ON OPERATING NUT, [SCH. 80 FOR LENGTHS OVER 10'.]
2. VALVE CASTING SHALL BE 6" DI PIPE WITH BELL OR COLLAR CENTERED OVER VALVE BOOT.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
4. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 12" AND 18" FROM FINISHED GRADE.

RECLAIMED WATER: ALL RECLAIMED PVC PIPE SHALL BE MANUFACTURED PURPLE PIPE. HDPE PIPE SHALL BE MANUFACTURED WITH PURPLE STRIPES. ALL OTHER PIPE AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL PIPE AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 1 OF 4



NOTES:

1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID, FRAME, COLLAR AND BASE.
3. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
4. CASTING FINISH BY MANUFACTURER SHALL INCLUDE REMOVAL OF FINS AND FLASHING, AND PAINT WITH BLACK ASPHALT COATING.

WEIGHTS:

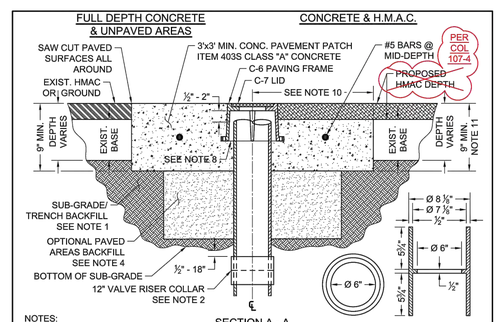
C7 LID: 13 LBS
RECLAIMED LID: 15 LBS
C6 FRAME: 23 LBS
RECLAIMED FRAME: 33 LBS
C5 BASE: 78 LBS

* LETTERING SHALL BE 1 ½" 2 PICK BAR SLOTS REQUIRED

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 2 OF 4

FULL DEPTH CONCRETE & UNPAVED AREAS

CONCRETE & H.M.A.C.



NOTES:

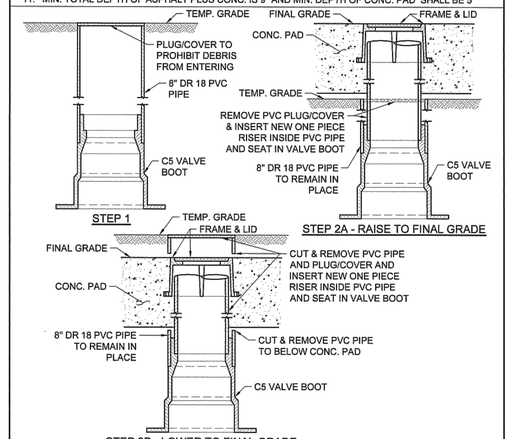
1. SUB-GRADE/TRENCH BACKFILL SHALL BE COMPACTED AS PER ITEM 201S, SUB-GRADE PREPARATION.
2. TO ADJUST VALVE CASTINGS TO FINAL GRADE, REMOVE RISER PIPE BELOW SUB-GRADE AND INSTALL APPROPRIATE LENGTH OF NEW RISER PIPE TO ACHIEVE FINAL GRADE. CONNECT THE TWO PIECES OF RISER PIPE WITH A 6" COLLAR MIN. 12" LENGTH APPROXIMATELY CENTERED ON THE JOINT WITH THE TOP OF SLEEVE LOCATED ½" - 18" BELOW SUB-GRADE. THE INSIDE "LIP" OF COLLAR TO BE PAINTED WITH FLUORESCENT WHITE PAINT OR COVERED WITH FLUORESCENT WHITE TAPE. ALTERNATE: FOR OPTIONAL SINGLE PIECE RISER INSTALLATION SEE SHEET 4 OF 4.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE NUT OF THE VALVE; NUT SHALL OPERATE WITH NO OBSTRUCTION.
4. WHERE CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20" DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL (SPEC. ITEM 402S) TO THE UNDERSIDE OF THE CONCRETE. PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
5. REINFORCING STEEL SHALL MEET SPEC. ITEM 406S.7.
6. NO MORE THAN 2 SECTIONS OF PIPE SHALL BE USED FROM VALVE TO FINAL GRADE.
7. BELL AND SPIGOT IS ACCEPTABLE FOR DEPTH OVER 18'.

SECTION A - A

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 3 OF 4

NOTES (CON'T):

8. PAVING FRAME SHALL BE FLUSH WITH THE CONC. PAD AND PLACED ½" - 2" ABOVE RISER PIPE (FRAME SHALL NOT REST ON RISER.)
9. IN UNPAVED AREAS, INSTALL ONE DELINEATOR STAKE IMMEDIATELY ADJACENT TO THE EDGE OF THE CONCRETE PAD. DELINEATOR SHALL BE BLUE FOR POTABLE WATER AND PURPLE FOR RECLAIMED WATER AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE IN COLOR, TYPE I REFLECTIVE TAPE MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES.
10. VALVE SHALL TYPICALLY BE CENTERED IN CONCRETE DIAMOND BUT MAY BE OFFSET WITH A MIN. OF 12" FROM CENTER OF VALVE LID TO EDGE OF CONCRETE IN ALL DIRECTIONS.
11. MIN. TOTAL DEPTH OF ASPHALT PLUS CONC. IS 9" AND MIN. DEPTH OF CONC. PAD SHALL BE 5"



OPTIONAL ONE PIECE VALVE CASTING INSTALLATION

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 4 OF 4

NOTES:

1. SEE CITY OF LEANDER DETAIL #104-2 FOR TYPICAL PIPE TRENCH AND EMBEDMENT IN EXISTING PAVED SURFACES.

REFERENCES:

1. CITY OF AUSTIN STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

ITEM	SIZE & DESCRIPTION	SPEC. OR EQUAL
1	1" X 1" ANGLE METER STOP, LOCKING	AS APPROVED
2	1" SDR9 POLYETHYLENE TUBING	CLASS 250
3	EPOXY COATED DUCTILE IRON TAPPING SADDLE	AS APPROVED
4	1" CORPORATION STOP	AS APPROVED
5	1 1/2" CORPORATION STOP	AS APPROVED
6	1 1/2" SDR9 POLYETHYLENE TUBING	CLASS 250
7	BRASS U-BRANCH, 1 1/2" X 1"	FORD, OR EQUAL
8	METER BOX, SINGLE	DFW3FF-12-1CA, OR EQUAL
9	METER BOX, DOUBLE	DFW3FF-12-1CA, OR EQUAL
10	3" SCH. 40 PVC SLEEVE FOR LONG SIDE SERVICES (TYP.)	

NOTES:

1. SERVICE SADDLE SHALL BE WRAPPED COMPLETELY WITH 8 MIL POLYETHYLENE FILM.
2. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR MATERIALS.
3. BRANCH CONNECTION AND BOTH ANGLE METER STOPS SHALL BE INSTALLED PRIOR TO FIRST METER INSTALLATION.
4. SLEEVES FOR LONG-SIDE SERVICE TO BEGIN AND TERMINATE 6" BEHIND BACK OF CURB.
5. TOP OF METER BOXES SHOULD BE 1" ABOVE GROUND.
6. METER BOX SHALL BE BEHIND CURB AT ROW/PROPERTY LINE OR EASEMENT. METER BOX SHALL NOT BE INSTALLED IN SIDEWALK, DRIVEWAY OR VEHICULAR TRAVEL AREA.
7. 1" X 3/4" BRASS METER BUSHING REQUIRED FOR 5/8" AND 3/4" METERS.
8. AXIS OF METER ASSEMBLY (LINE THROUGH METER STOP, METER, CHECK VALVE, PIPING AND OWNER'S CUTOFF) SHALL BE 1" BELOW TOP OF BOX. METER BOXES ARE SIZED TO ACCOMMODATE METER STOP, WATER METER AND CHECK VALVE.

ORIGINAL LAYOUT SIZE - 24X36

Revision	Date	By	App	Comment

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512-912-6374

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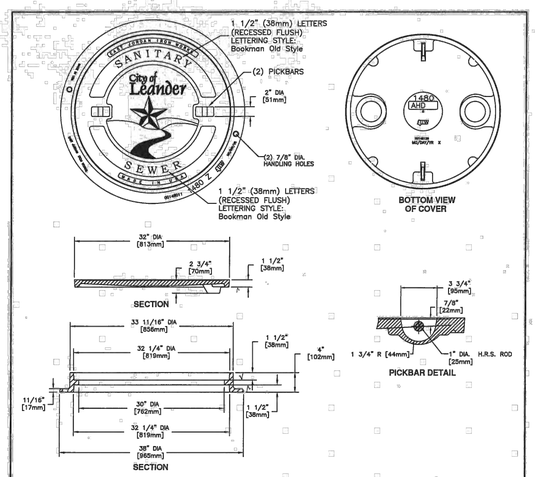
STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

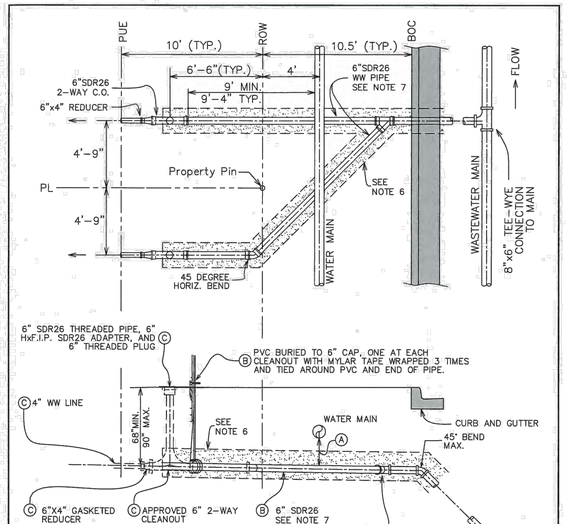
Design: JW
CAD: CS, AE | Review: KW
Project No: LPJ 12237
Sheet: 18 of 26
20-PICP-032



MANHOLE ASSEMBLY	EST. WT. COVER: 200 LBS 91kg FRAME: 155 LBS 70kg UNIT: 355 LBS 161kg
EAST JORDAN IRON WORKS PRODUCT NO. 00148107 OR NEENAH FOUNDRY DF-1274 LEANDER SANITARY	OPEN AREA N/A MAT'L SPEC. COVER – GRAY IRON ASTM A48 CL35B FRAME – GRAY IRON ASTM A48 CL35B
	LOAD RATING HEAVY DUTY (H20)

STATE OF TEXAS WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER
02/22/16

City Of Leander, Texas
DETAIL #107-1
SANITARY SEWER MANHOLE COVER



NOTES:

Ⓐ WATER MAIN SHALL CROSS ABOVE 6" WASTEWATER SERVICE, TWO-FOOT (2') MINIMUM VERTICAL SEPARATION.

Ⓑ TO BE INSTALLED AND INSPECTED DURING SUBDIVISION CONSTRUCTION. UTILITY CONTRACTOR INSTALLS SERVICE STUB WITH PLUG OR CAP.

Ⓒ 2-WAY CLEANOUTS, 6" HxF.I.P. ADAPTER, REDUCER, AND 4" SERVICE LINE INSTALLED BY BLDG. PLUMBER. PERMITS DEPARTMENT SHALL INSPECT CUSTOMER'S WASTEWATER LINE AND ALL APPURTENANCES INSTALLED BY BUILDING PLUMBER.

STATE OF TEXAS WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER
09/26/18

City Of Leander, Texas
DETAIL #101-2
1 OF 2
WASTEWATER SERVICE CONNECTIONS

NOTES

1. DURING SUBDIVISION CONSTRUCTION, UTILITY CONTRACTOR INSTALLS WASTEWATER CONNECTION TO MAIN, 6" HORIZONTAL WYE FOR DOUBLE SERVICES, 6" SERVICE BRANCH, AND PLUG(S) FOR 6" SERVICE BRANCH STUB. CONTRACTOR TIES MYLAR TAPE TO END OF 6" STUB, WRAPS 3 TIMES AROUND LENGTH OF PVC BURIED TO THE DEPTH OF THE 6" STUB AND TIES TO TOP OF PVC EXTENDING A MINIMUM OF 2 FEET ABOVE GROUND.

   ALL WASTEWATER PIPING SHALL HAVE ELASTOMERIC GASKET TYPE JOINTS AND SHALL SLOPE DOWNWARD TO MAIN 1% (1/8" PER FOOT) MINIMUM TO 45' MAXIMUM. DEPTH OF SERVICE STUB AT PROPERTY LINE WILL BE SHOWN ON PLANS BY ENGINEER. IF GREATER THAN 8', OTHERWISE THE INSTALLED DEPTH WILL TYPICALLY BE 6' TO 8'. IF WASTEWATER SERVICE LINE TO MAIN REQUIRES DEFLECTION EXCEEDING 45°, REFER TO DETAIL 520-6. ALL INSTALLATIONS SHALL BE MADE IN ACCORDANCE WITH INFORMATION SHOWN ON APPLICABLE STANDARD DRAWINGS AND WILL BE INSPECTED BY CITY OF LEANDER CONSTRUCTION INSPECTION PERSONNEL.

2. CUSTOMER REMOVES PLUG FROM 6" SERVICE LINE STUB, INSTALLS 6" 2-WAY CLEANOUT, 6" BY 4" REDUCER, RISER FOR CLEANOUT, 6" HxF.I.P. ADAPTER, 6" THREADED PLUG, AND 4" SERVICE LINE TO STRUCTURE. IF WASTEWATER WILL NOT SATISFACTORILY FLOW BY GRAVITY FROM STRUCTURE TO SEWER SERVICE STUB & WASTEWATER MAIN, PUMP EQUIPMENT MUST BE PROVIDED BY THE CUSTOMER AS PART OF CUSTOMER'S WASTEWATER SYSTEM.

3. CUSTOMER IS RESPONSIBLE FOR PUBLIC PIPING SYSTEM UNTIL WASTEWATER IS CONNECTED. ANY MISSING OR DAMAGED PARTS SHALL BE REINSTALLED BY CUSTOMER WHO SHALL GUARANTEE, FOR A PERIOD OF TWO (2) YEARS FROM DATE OF ACCEPTANCE, THAT CONNECTIONS TO CITY SYSTEMS ARE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIAL. CUSTOMER ALSO HAS THE RESPONSIBILITY TO ASSURE THAT ALL 2-WAY-CLEANOUTS REMAIN CLEAR OF SIDEWALKS AND OTHER OBSTRUCTIONS.

4. CITY OF LEANDER ACTIVITY IS LIMITED TO INSPECTION OF CONNECTIONS TO THE CITY'S WASTEWATER SYSTEM. FOR MAINTENANCE PURPOSES, THE CITY'S RESPONSIBILITY ENDS AT THE CUSTOMER'S WASTEWATER CONNECTION TO THE 2-WAY-CLEANOUT.

5. PIPING AND TUBING IN STREET RIGHT-OF-WAY AND IN EASEMENT AREA SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY CITY OF AUSTIN STANDARD SPECIFICATION SECTION 510.3 (14) UNLESS OTHERWISE NOTED ON THIS DETAIL. MATERIALS SHALL BE AS SPECIFIED IN 510.2 (2)(A) AND (3)(B); BACKFILL ABOVE THE GRANULAR BEDDING SHALL BE AS REQUIRED BY SECTION 510.3 (25). SERVICE LINES IN THESE AREAS SHALL HAVE A MINIMUM COVER BELOW FINAL STREET GRADE OF 42". ANY EXCEPTION MUST BE SPECIFICALLY APPROVED BY THE ENGINEER.

6. ALL SANITARY SEWER PIPE WITHIN 9' OF WATER MAINS SHALL BE BEDDED IN CEMENT STABILIZED SAND PER TCEQ CHAPTER 217 & 290 REQUIREMENTS. BEDDING SHALL EXTEND A MINIMUM OF 12" ABOVE PIPE, 4" BELOW PIPE, AND 12" BEYOND JOINTS AT EACH END.

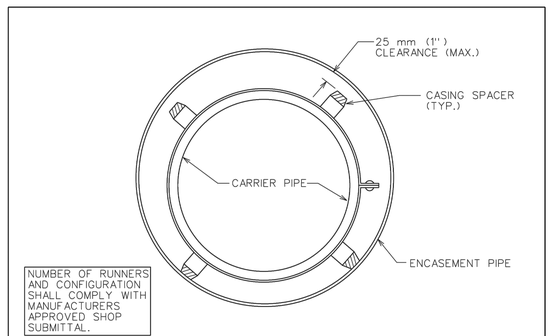
7. PIPE MATERIAL FOR WASTEWATER SERVICES SHALL BE 6" SDR-26 PVC D2241 160 PSI RATED.

8. NO METER BOX OR CLEAN OUT SHALL BE SET IN SIDEWALK OR DRIVEWAY AREA WITHOUT WRITTEN APPROVAL FROM THE CITY ENGINEERING DEPT.

9. NO JOINTS SHALL BE PERMITTED BETWEEN THE 6"x6" HORIZONTAL WYE AND THE 6" 2-WAY CLEANOUT EXCEPT FOR THE 6" 45-DEGREE BEND REQUIRED FOR DOUBLE SERVICES.

STATE OF TEXAS WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER
09/26/18

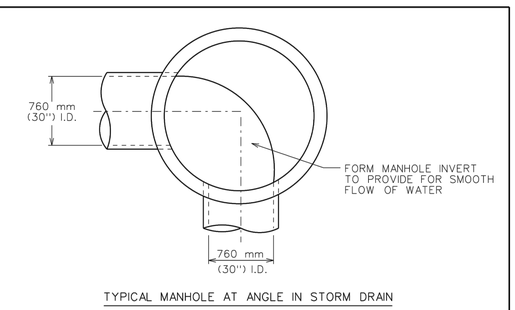
City Of Leander, Texas
DETAIL #101-2
2 OF 2
WASTEWATER SERVICE CONNECTIONS



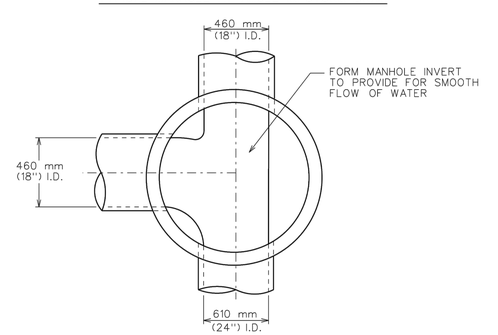
APPLICABLE REFERENCES

STANDARD SPECIFICATION: ITEM 510S.3 (19) W/WW STANDARD PRODUCTS LIST: SPLWW-575 FOR CASING SPACER AND SPLWW-575A FOR END SEAL.

CITY OF AUSTIN AUSTIN WATER UTILITY	ENCASEMENT DETAIL W/ CASING SPACERS	
RECORD COPY SIGNED BY KATHI L. FLOWERS 2/28/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 501S-1

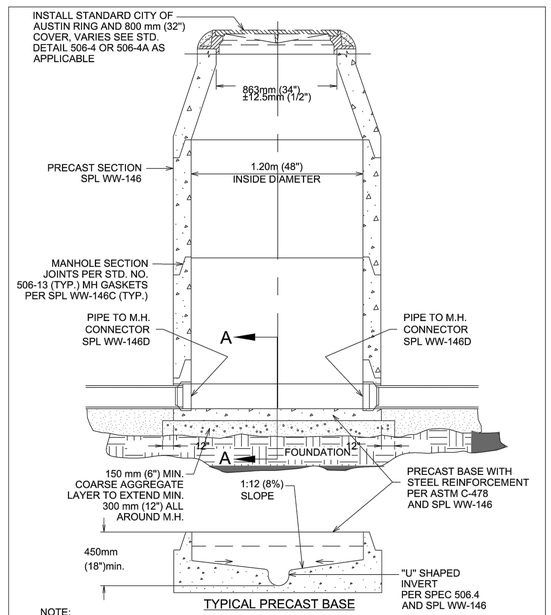


TYPICAL MANHOLE AT ANGLE IN STORM DRAIN



TYPICAL JUNCTION MANHOLE

CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	MANHOLE INVERT PLAN	
RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-1



TYPICAL PRECAST BASE

NOTE:
1. THE MANHOLE BASE SHALL BE BEDDED ON 150 mm (6") COARSE AGGREGATE. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE.
2. MH FOUNDATION SHALL MEET OR EXCEED STD. SPEC. 506.5B.

CITY OF AUSTIN AUSTIN WATER UTILITY	WASTEWATER MANHOLE ON PRECAST BASE	
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	STANDARD NO. 506S-10

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
12007 Technology Blvd. Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

Revision	Date	By	App	Comment

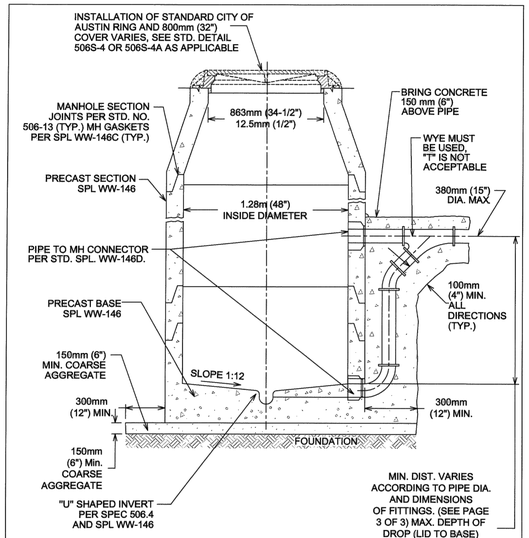
Wastewater Details

Leander Platinum PICP
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
WilliamsonCounty

STATE OF TEXAS KENNY WATKINS 64738 REGISTERED PROFESSIONAL ENGINEER
7/16/21

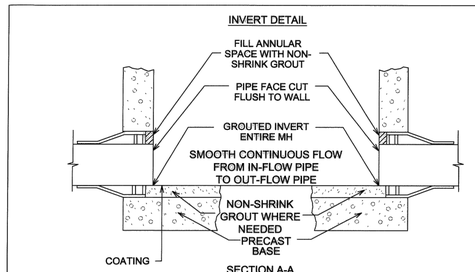
Design: JW
CAD: CS, AE | Review: KW
Project No: LPJ 12237
Sheet: 19 of 26
20-PICP-032

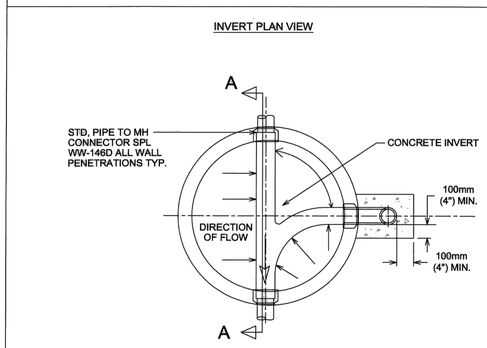
ORIGINAL LAYOUT SIZE - 24X36



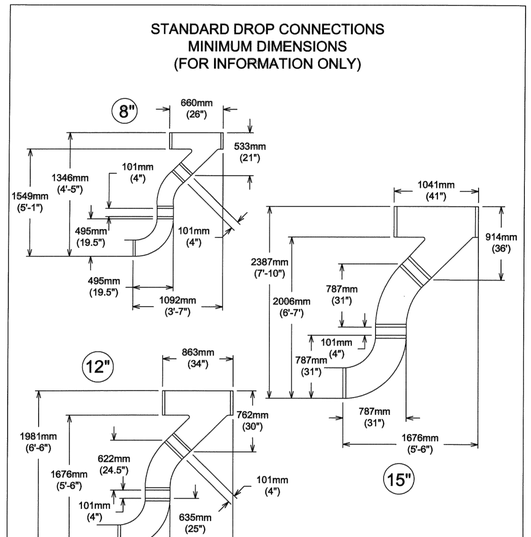
NOTES:
1. THE MANHOLE BASE SHALL BE BEDDED ON 150mm (6") COARSE AGGREGATE. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE.
2. MANHOLE FOUNDATION SHALL MEET OR EXCEED STD. SPEC 506.5B.

CITY OF AUSTIN AUSTIN WATER UTILITY	PRECAST MANHOLE WITH DROP INLET ON PRECAST BASE	
Kathi K Bowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-8 1 OF 3

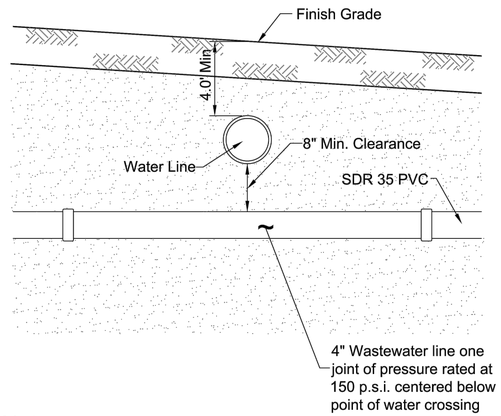




CITY OF AUSTIN AUSTIN WATER UTILITY	PRECAST MANHOLE WITH DROP INLET ON PRECAST BASE	
Kathi K Bowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-8 2 OF 3



CITY OF AUSTIN AUSTIN WATER UTILITY	PRECAST MANHOLE WITH DROP INLET ON PRECAST BASE	
Kathi K Bowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-8 3 OF 3



Note

If 4' cover over waterline cannot be achieved, then waterline must be routed under the conflicting utility while maintaining a 6" clearance.

Utility Crossing Detail

N.T.S.

Revision	Date	By	App	Comment

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

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AUSTIN BRYAN CONROE HOUSTON

Wastewater Details 2

Leander Platinum PICP
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
WilliamsonCounty

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED PROFESSIONAL ENGINEER
7/16/21

Design: JW	
CAD: CS, AE	Review: KW
Project No: LPJ 12237	
Sheet: 20 of 26	
20-PICP-032	

ORIGINAL LAYOUT SIZE - 24X36

Leander Platinum
Site Development Plans

17680 Ronald Reagan Blvd.
Leander, Texas 78641
Project Number 20-SD-026

Site Development Data

Submittal Date:	October 6, 2020
Legal Description:	Lot 1, Waldarra Estates, Recorded in Cab 0, Slide 87 W.C.P.R., 4.71 acres
Address:	17680 Ronald Reagan Blvd. Leander, Texas, 78641
Owner:	Leander Platinum Jubilee Investment Group, LLC 3604 Balcones Drive Austin, Texas 78731 Phone: (512) 912-6374
Engineer	Bleyl Engineering Contact Person: Kenny Watkins 12007 Technology Blvd, Suite 150 Austin, Texas 78727 Phone: (512) 454-2400 Email: kwatkins@bleyengineering.com
Architect:	TCHEN Architects 1109 Anderson Mill Road, Suite 325 Austin, Texas 78726 Email: tchenarch@gmail.com
Landscape Architect	MHB Landscape Architects 544 Military Drive Canyon Lake, Texas 78133 Phone: (512) 448-0137 Email: mhbla@gvtc.com
Land Surveyor:	Windrose Land Services 4120 Commercial Centere Drive, Suite 300 Austin, Texas 78744 Phone: (512) 326-2846
Limits of Construction:	5.45 acres

This project is located within the Brushy Creek Watershed (Suburban Class). All storm flows from this site will be directed to the Brushy Creek Watershed. No portion of this tract is within the boundaries of the 100 year flood plain of any waterway that is within the limits of study of the Federal Flood Insurance Administration FIRM panel #48491C0455F, dated December 20, 2019 for Williamson County.

Contractor is responsible for filing all necessary forms with the Environmental Protection Agency for all projects involving 5 acres or more of disturbed area or part of a larger development which will eventually disturb 5 acres or more. Note: The contractor and the owner both must file a Notice of Intent.

Approval of these plans by the City of Leander indicated compliance with applicable City regulations only. Approval by other governmental entities may be required prior to the start of construction. The applicant is responsible for determining what additional approvals may be necessary.

Edwards Aquifer Note: This project is located within the Edwards Aquifer Recharge Zone and the Edwards Aquifer Contributing Zone. No. 110011864

Land Use Summary:
Zoning: GC-3-B (General Commercial)
Proposed Use: Commercial Store, Office, Retail
Future Land Use: Activity Center
Acres: 4.372
Total Impervious Coverage: 105,915 sf (56%)
Building Impervious Coverage: 22,393 sf

The Engineer of Record is solely responsible for the completeness, accuracy, regulatory compliance, and adequacy of these plans and/or specifications whether or not the plans and/or specifications were reviewed by the City Engineer(s).

Bleyl Engineering and its associates will not be held responsible for the accuracy of the survey or for design errors or omissions resulting from survey inaccuracies.

Note: Al Clawson Disposal, Inc. shall be the sole provider of waste hauling for this site both during and after construction.

Pond Note: Ponds will be Privately Maintained.

Gasoline pumps may be located closer to the street than the primary structure if the exterior surface area of all primary structure walls and the fuel canopy columns are comprised of one hundred (100%) percent Masonry. See Masonry Development Agreement.

Refer to Masonry Development Agreement Establishing Developments Standards for the Leander Platinum Development For Development Standards.

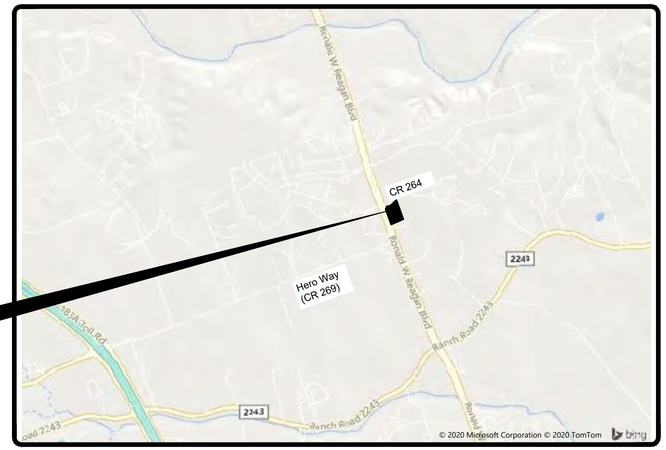
City Contacts

Engineering Main Line:	(512) 528-2766
Planning Department:	(512) 528-2750
Public Works Main Line:	(512) 259-2640
Stormwater Inspections:	(512) 258-0055
Utilities Main Line:	(512) 259-1149
Utilities On-Call:	(512) 690-4760

REVISIONS

	DESCRIPTION	CITY OF LEANDER APPROVAL/DATE
NO.		

PROJECT LOCATION



Project Location Map
1" = 2000'

Approved By:

Robin M. Griffin, AICP, Planning Director	Date
Wayne S. Watts, P.E., CFM, City Engineer	Date
Mark Tummons, Director of Parks and Recreation	Date
Chief Joshua Davis, Fire Marshall	Date

I Kenny Watkins certify that these engineering documents are complete, accurate and adequate for the intended purposes, including construction, but are not authorized for construction prior to formal City approval.

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Index of Sheets

Revision	Date	By	App	Comment

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

LPJ 12237 (LEANDER PLATINUM SITE DEV. PLANS)

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
12007 Technology Blvd. Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

Cover

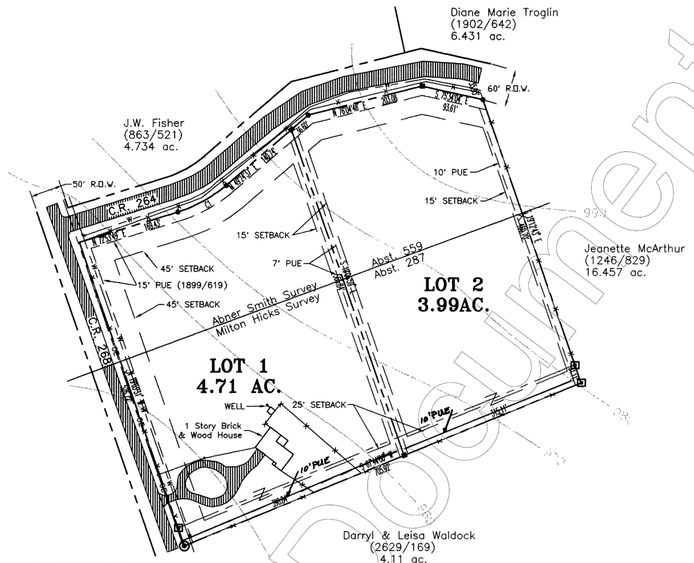
Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Design: JW
CAD: BKV, Laf | Review: KW
Project No: LPJ 12237
Sheet: 1 of 33
20-SD-026

DOC# 9703833

WALDARRA ESTATES



METES AND BOUNDS DESCRIPTION

A PORTION OF TRACT I AND ALL OF TRACT II AS DESCRIBED IN A GENERAL WARRANTY DEED RECORDED IN VOLUME 2189, PAGE 817 OF THE REAL PROPERTY RECORDS OF WILLIAMSON COUNTY, TEXAS, BEING A PORTION OF THAT CERTAIN 17.436 ACRE TRACT OF LAND OUT OF THE MILTON HICKS SURVEY, ABSTRACT NO. 287 AND THE ABNER SMITH SURVEY, ABSTRACT NO. 559 IN WILLIAMSON COUNTY, TEXAS, AS DESCRIBED IN A WARRANTY DEED RECORDED IN VOLUME 703, PAGE 186 OF THE REAL PROPERTY RECORDS OF WILLIAMSON COUNTY, TEXAS AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a fence corner set in concrete marking the northwest corner of the property herein described and located at the intersection of the East line of County Road 268 and the South line of County Road 264;

THENCE, along the South line of County Road 264 as described in deed to Williamson County, and recorded in Volume 1523, Page 702 of the Official Records of Williamson County, the following courses and distances:

NORTH 72°53'49" East (N 73°05' E – Record calls in parenthesis), a distance of 169.43 feet (169.73 feet) to the beginning of a curve to the left marked by a 1" outside diameter iron pipe found;

91.11 feet (92.29 feet) along the arc of a curve to the left, said curve having a radius of 220.13 feet (220.23 feet), a central angle of 23°42'48" (23°45') and a chord which bears NORTH 61°06'35" East, (N 61°12' E) a distance of 90.46 feet (90.64 feet) to the end of the curve marked by a 1" outside diameter iron pipe found;

NORTH 49°24'37 EAST (N 49°20' E) a distance of 177.34 feet (177.29 feet) to a 1" outside diameter iron pipe found;

NORTH 76°03'48" EAST (N 75°56' E) a distance of 203.08 feet (202.72 feet) to a 3/8" iron rod set;

SOUTH 75°34'04" EAST (S 75°54' E) a distance of 93.61 feet (94.06 feet) to a 1" diameter iron pipe found marking and located at the Northeast corner of the said tract of land herein described, same being the Northeast corner of the tract of land which is described in deed to Darryl and Leisa Waldock, and recorded in Volume 2189, Page 817, of the Official Records of Williamson County;

THENCE, leaving the south line of County Road 264, SOUTH 19°12'43" East (S 19°09 E), at about a distance of 194 feet passing the South line of the said Abner Smith Survey, the North line of the said Milton Hicks Survey, and continuing on a total distance of 460.70 feet (461.85 feet) to a 3/8" diameter iron rod marking and located at the Southeast corner of the aforementioned "Tract II", same being the Northeast corner of that tract of land which is described as "Tract I" in the said Waldock deed;

THENCE SOUTH 19°12'43" East (S 19°09' E) a distance of 31.11 feet (30.89 feet) to a 3/8" diameter iron rod found marking and located at the Southeast corner of the aforementioned "Tract II" for the Southeast corner of the tract of land herein described;

THENCE along and with the South line of the aforementioned "Tract II", SOUTH 67°44'00" WEST (S 67°44' W) a distance of 705.92 feet (706.18 feet);

THENCE along and with the East line of the said County Road No. 268 NORTH 19°03'31" West (N 19°04' W) a distance of 31.13 feet (30.89 feet) to a 3/8" diameter iron rod found marking and located at the Northwest corner of the said Waldock "Tract II", same being the Southwest corner of the aforementioned "Tract I";

THENCE along and with the East line of the said County Road No. 268 NORTH 19°03'31" WEST (N 19°04' W), at about a distance of 295 feet passing the aforementioned Hicks–Smith Survey line, continuing for a total distance of 495.59 feet to the POINT OF BEGINNING, and containing 8.70 acres of land.

These lots are subject to the land restrictions as recorded in Volume 1606, Page 655 of the Deed Records of Williamson County, Texas.

0 100 200
SCALE

LEGEND

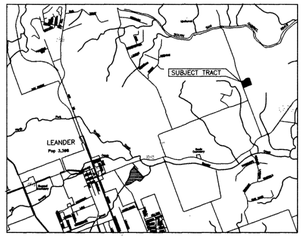
FOUND IRON PIPE	•
FOUND IRON ROD	▣
FOUND PK IN CONC.	⊙
SET IRON ROD	■
EXISTING WATER LINE	—W—
EXISTING OVERHEAD ELEC.	—OE—

CURVE 1

ARC	91.11'
RADIUS	220.13'
CENTRAL ANGLE	23°42'48"
CHORD BEARING	N61°06'35"E
CHORD DISTANCE	90.46'

Doc# 9703833
8 Pages: 6
Date : 01-29-1997
Time : 12:43:15 P.M.
Filed & Recorded in
Official Records
of WILLIAMSON County, TX.
ELAINE BIZZELL
COUNTY CLERK
Rec. $ 81.00

LOCATION MAP



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

I, Douglas C. Hearn, a Registered Professional Land Surveyor, authorized under the laws of the State of Texas to practice the profession of surveying, do hereby certify that this plat complies with the surveying related portion of the City of Leander Subdivision Ordinance, and is true and correct to the best of my knowledge and was prepared from a survey made on the ground under my direction and supervision.

TO CERTIFY WHICH, WITNESS my hand and seal at Round Rock, Williamson County, Texas, this 20 day of December, 1996, A.D.

Douglas C. Hearn, R.P.L.S. No. 4849
Hearn & Associates
5 Woodland Loop
Round Rock, TX 78664
(512) 310–0176

STATE OF TEXAS
REGISTERED
DOUGLAS C. HEARN
4849
PROFESSIONAL
LAND SURVEYOR

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

I, Douglas C. Hearn, a Registered Professional Engineer, do hereby certify that this subdivision is not within Zone A, a 100–year flood plain as defined by the Federal Emergency Management Agency Flood Insurance Rate Map for Williamson County, Texas dated September 27, 1991 on Community Panel Number 4810709 0216C, Map number 48491C0216C.

However, no drainage study has been performed by the undersigned on this property to determine the accuracy of the above–referenced Flood Insurance Rate Map.

TO CERTIFY WHICH, WITNESS my hand and seal this the 30 day of December, 1996, A.D.

Douglas C. Hearn, P.E.
Registered Professional Engineer No. 61477
Hearn & Associates
5 Woodland Loop
Round Rock, TX 78664

STATE OF TEXAS
DOUGLAS C. HEARN
61447
REGISTERED
PROFESSIONAL ENGINEER

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

That Darryl Waldock and Leisa Waldock, owners of that certain 8.70 acres of land out of the Milton Hicks Survey, Abstract No. 298, Williamson County, Texas, being a portion of that 9.22 acre tract of land as conveyed by deed recorded in Volume 2189, Page 817 of the Deed Records of Williamson County, Texas, do hereby subdivide the said 8.70 acres of land as shown hereon, subject to any easement or restrictions heretofore granted and do hereby dedicate to the public the easements shown hereon, to be known as WALDARRA ESTATES.

Witness the hand of Darryl Waldock, this 23 day of December, 1996, A.D.

Darryl Waldock
3701 County Road 268
Leander, TX 78741

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

That before me, the undersigned authority on this day personally appeared Darryl Waldock, acting in the capacity herein stated, known to me to be the persons whose names are subscribed to the foregoing instrument and acknowledged to me that they executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this 23rd day of December, 1996, A.D.

BECKY STATHOS
MY COMMISSION EXPIRES
March 10, 1999

Becky Stathos
Signature
Printed Name: Becky Stathos
Notary Public in and for the State of Texas
Commission Expires: 3-10-99

Witness the hand of Leisa Waldock, this 23 day of December, 1996, A.D.

Leisa Waldock
3701 County Road 268
Leander, TX 78741

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

That before me, the undersigned authority on this day personally appeared Leisa Waldock, acting in the capacity herein stated, known to me to be the persons whose names are subscribed to the foregoing instrument and acknowledged to me that they executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this 23rd day of December, 1996, A.D.

BECKY STATHOS
MY COMMISSION EXPIRES
March 10, 1999

Becky Stathos
Signature
Printed Name: Becky Stathos
Notary Public in and for the State of Texas
Commission Expires: 3-10-99

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

I, Sam Boyd, Planning and Zoning Chairman, City of Leander, Williamson County, Texas, do hereby certify that this plat, with written field notes shown hereon, and the surveyors certificate appearing hereon, that the plat of Waldarra Estates, having been duly presented to the Planning and Zoning Commission of the City of Leander, Texas, and by said commision duly considered, were on this day approved, and said plat is authorized to be registered and recorded in the Property Records of the County Clerk of Williamson County, Texas.

1-21-97
Date

Sam Boyd
Sam Boyd, Planning and Zoning Chairman
City of Leander, Texas

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

I, Charles Eaton, Mayor of the City of Leander, do hereby certify that this plat of Waldarra Estates, having been duly presented to the Planning and Zoning Commission of the City of Leander, and by said commission duly considered, was this day approved, and said plat is authorized to be registered and recorded in the Property Records of the County Clerk of Williamson County, Texas.

1-21-97
Date

Charles Eaton
Charles Eaton, Mayor
City of Leander, Texas

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

I, Delia Luna, City Secretary for the City of Leander, do hereby certify that the foregoing instrument, in writing, was filed for record in my office on the 20 day of December, 1996, A.D., at 10:00 o'clock A.M.

TO CERTIFY WHICH, WITNESS my hand and seal at the City Offices of the City of Leander, Texas, on the date shown above.

Delia Luna, City Secretary
City of Leander

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

I, Elaine Bizzell, Clerk of the County Court of said County, do hereby certify that the foregoing instrument in writing, with it's certificate of authentication was filed for record in my office on the ___ day of _____, 199_, A.D., at _____ o'clock ____M. in the Plat Records of said County, in Cabinet ____, Slide _____.

TO CERTIFY WHICH, WITNESS my hand and seal at the County Court of said county at my office in Georgetown, Texas, the date last shown above written.

Elaine Bizzell
Clerk, County Court, Williamson County, Texas

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

I, Elaine Bizzell, Clerk of the County Court of said County, do hereby certify that the foregoing instrument in writing, with it's certificate of authentication was filed for record in my office on the 28th day of January, 1997, A.D., at 12:00 o'clock P.M. and duly redorded this the 29th day of January, 1997, A.D., at 12:43 o'clock P.M. in the Plat Records of said County, in Cabinet J, Slide 87-88.

TO CERTIFY WHICH, WITNESS my hand and seal at the County Court of said county at my office in Georgetown, Texas, the date last shown above written.

Barbara Sacky, Deputy Clerk
Elaine Bizzell
Clerk, County Court, Williamson County, Texas

WILLIAMSON COUNTY TEXAS

Cabinet J, Slide 87

Doc# 9703833

Revision	Date	By	App	Comment

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

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AUSTIN BRYAN CONROE HOUSTON

Subdivision Plat
Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

Design: JW
CAD: BKV, Laf | Review: KW
Project No: LPJ 12237
Sheet: 2 of 33
20-SD-026

ORIGINAL LAYOUT SIZE - 24X36

GENERAL NOTES

REVISED FEBRUARY 25, 2020

ANY CHANGES TO THESE NOTES SHOULD BE CLOUDED ON THE PLAN SET.

CITY CONTACTS:

ENGINEERING MAIN LINE:	512-528-2766
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

1. THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES WITH CONSTRUCTION PLANS FOUND IN THE FIELD SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER.
2. THE CONTRACTOR SHALL CONTACT THE TEXAS EXCAVATION SYSTEM AT 1-800-344-8377 FOR EXISTING UTILITY LOCATIONS 48 HOURS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES THAT ARE TO BE EXTENDED, TIED TO, CROSSED, OR ALTERED; OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS.
3. CONTACT THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT FOR EXISTING WATER AND WASTEWATER, STREET LIGHT ELECTRICAL WIRING , AND TRAFFIC SIGNAL WIRING LOCATIONS A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION.
   a. LOCATE REQUESTS MUST INCLUDE A COPY OF YOUR 811 TICKET.
   b. **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.
   c. **REPORT ALL DAMAGE TO CITY INFRASTRUCTURE IMMEDIATELY** - IF YOU WITNESS OR EXPERIENCE EXCAVATION DAMAGE, PLEASE CONTACT THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT BY PHONE. IF DAMAGE IS WITNESSED OR EXPERIENCED AFTER HOURS, CALL THE CITY OF LEANDER UTILITIES ON-CALL LINE AT THE NUMBER LISTED ABOVE.
4. 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.
5. A TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, SHALL BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO ANY PARTIAL OR COMPLETE ROADWAY CLOSURES. TRAFFIC CONTROL PLANS SHALL BE SITE SPECIFIC AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER. LANE CLOSURES ON ARTERIALS AND ANY FULL ROAD CLOSURES REQUIRE MESSAGE BOARDS NOTIFYING THE PUBLIC ONE WEEK PRIOR TO THE CLOSURE.
6. NO WORK IS TO BE PERFORMED BETWEEN THE HOURS OF 6:00 P.M. AND 7:00 A.M. THE CITY INSPECTOR RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO UNCOVER ALL WORK PERFORMED WITHOUT INSPECTION. FURTHER, THERE IS A NOISE ORDINANCE IN EFFECT FOR CONSTRUCTION ACTIVITY BETWEEN THE HOURS OF 9 PM AND 7 AM. REQUESTS FOR EXCEPTIONS TO THE ORDINANCE MUST BE MADE TO LEANDER CITY COUNCIL.
7. CONTACT THE CITY INSPECTOR 4 DAYS PRIOR TO WORK TO SCHEDULE ANY INSPECTIONS ON WEEKENDS OR CITY HOLIDAYS.
8. NO STREET LIGHTS OR SIGNS OF ANY KIND ARE TO BE PLACED WITHIN ANY SIDEWALKS.
9. NO BLASTING IS ALLOWED.
10. ANY EXISTING UTILITIES, PAVEMENT, CURBS, SIDEWALKS, STRUCTURES, TREES, ETC., THAT ARE DAMAGED OR REMOVED SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.
11. THE CONTRACTOR SHALL GIVE THE CITY OF LEANDER 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION. CONTACT ASSIGNED CITY INSPECTOR.
12. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND THE CITY OF LEANDER REPRESENTATIVES PRIOR TO INSTALLATION OF EROSION/SEDIMENTATION CONTROLS AND TREE PROTECTION MEASURES AND PRIOR TO BEGINNING ANY WORK. THE CONTRACTOR SHALL NOTIFY THE CITY OF LEANDER PLANNING DEPARTMENT PLANNING COORDINATOR AT LEAST THREE (3) DAYS PRIOR TO THE MEETING DATE.
13. 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
14. 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.
15. 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 OWNER.
16. THE CONTRACTOR SHALL PROTECT ALL EXISTING FENCES. IN THE EVENT THAT A FENCE MUST BE REMOVED, THE CONTRACTOR SHALL REPLACE SAID FENCE OR PORTION THEREOF WITH THE SAME TYPE OF FENCING TO A QUALITY OF EQUAL OR BETTER THAN THE ORIGINAL FENCE.
17. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST CITY OF AUSTIN STANDARD SPECIFICATIONS. CITY OF AUSTIN STANDARDS SHALL BE USED UNLESS OTHERWISE NOTED IN DETAILS.
18. 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.
19. 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.
20. PROJECT SPECIFICATIONS TAKE PRECEDENCE OVER PLANS AND SPECIAL CONDITIONS GOVERN OVER TECHNICAL SPECIFICATIONS.
21. HOT MIX ASPHALTIC CONCRETE PAVEMENT SHALL BE MINIMUM THICKNESS OF 2 INCHES WITH NO RECYCLED ASPHALT SHINGLES CONTENT.
22. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY RISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR THE CONSTRUCTION OF THIS PROJECT.
23. CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION BETWEEN HIMSELF AND OTHER CONTRACTORS AND UTILITIES IN THE VICINITY OF THE PROJECT. THIS INCLUDES GAS, WATER, WASTEWATER, ELECTRICAL, TELEPHONE, CABLE TV AND STREET DRAINAGE WORK. ONCE THE CONTRACTOR BECOMES AWARE OF A POSSIBLE CONFLICT, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER WITHIN TWENTY-FOUR (24) HOURS.
25. 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.
26. 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. CONTRACTOR WILL BE RESPONSIBLE FOR DUST CONTROL FROM THE SITE.
27. THE CITY OF LEANDER SHALL NOT BE PETITIONED FOR ACCEPTANCE UNTIL ALL NECESSARY EASEMENT DOCUMENTS HAVE BEEN SIGNED AND RECORDED.
28. AN ENGINEER'S CONCURRENCE LETTER AND RECORD DRAWINGS SHALL BE SUBMITTED TO THE ENGINEERING DEPARTMENT PRIOR TO THE ISSUANCE OF CERTIFICATE OF COMPLETION OR SUBDIVISION ACCEPTANCE. THE ENGINEER AND CONTRACTOR SHALL VERIFY THAT ALL FINAL REVISIONS AND CHANGES HAVE BEEN MADE TO THE DIGITAL COPY PRIOR TO CITY SUBMITTAL. RECORD CONSTRUCTION DRAWINGS, INCLUDING ROADWAY AND ALL UTILITIES SHALL BE PROVIDED TO THE CITY IN DIGITAL FORMAT AS AUTOCAD ".DWG" FILES, MICROSTATION ".DGN" FILES OR ESRI ".SHP" FILES ON CD ROM. LINE WEIGHTS, LINE TYPES AND TEXT SIZE SHALL BE SUCH THAT IF HALF-SIZE PRINTS (11"X17") WERE PRODUCED, THE PLANS WOULD STILL BE LEGIBLE. ALL REQUIRED DIGITAL FILES SHALL CONTAIN A MINIMUM OF TWO CONTROL POINTS REFERENCED TO THE STATE PLANE GRID COORDINATE SYSTEM - TEXAS CENTRAL ZONE (4203), IN US SURVEY FEET AND SHALL INCLUDE ROTATION INFORMATION AND SCALE FACTOR REQUIRED TO REDUCE SURFACE COORDINATES TO GRID COORDINATES IN US SURVEY FEET
29. TREES IN EXISTING ROW SHOULD BE PROTECTED OR NOTED IN THE PLANS TO BE REMOVED.

CONSTRUCTION SEQUENCE NOTES

1. CONTACT STORMWATER INSPECTIONS (512-285-0055) AT LEAST THREE DAYS PRIOR TO PRE-CONSTRUCTION MEETING DATE.
2. INSTALL TEMPORARY EROSION/SEDIMENTATION CONTROLS ON THE SITE AS INDICATED ON THE EROSION/SEDIMENTATION CONTROL PLAN SHEET.
3. HOLD PRE-CONSTRUCTION MEETING.
4. EXECUTE DEMOLITION ACTIVITIES, AS SHOWN ON THE DEMO PLAN.
5. SITE CLEARING AND GRUBBING. MATERIAL SHALL BE REMOVED FROM AND DISPOSED OF AT AN APPROVED SPOIL SITE.
6. ROUGH SITE GRADING, MINIMUM EMBANKMENT PLACEMENT.
7. INSTALL ALL ON-SITE UTILITIES.
8. PREPARE SUBGRADE FOR FIRST COURSE OF BASE MATERIAL.
9. LAY FIRST COURSE OF BASE MATERIAL IN PARKING AND DRIVE AREAS.
10. INSTALL CURB AND GUTTERS, INSTALL TREE WELLS.
11. LAY FINAL BASE COURSE FOR ALL PARKING AND DRIVE AREAS.
12. LAY ASPHALT PAVEMENT.
13. COMPLETE ALL UNDERGROUND INSTALLATIONS WITHIN THE R.O.W.
14. COMPLETE FINAL GRADING AND RESTORATION OF WATER QUALITY POND AND LANDSCAPED AREAS.
15. REVEGETATE ALL DISTURBED AREAS.
16. THE PROJECT ENGINEER SHALL PROVIDED A CONCURRENCE LETTER CERTIFYING COMPLETION OF PROJECT PRIOR TO CONTRACTOR'S SCHEDULING FINAL INSPECTION WITH ENVIRONMENTAL INSPECTOR.
17. COMPLETE PERMANENT EROSION CONTROL AND SITE RESTORATION.
18. SCHEDULE FINAL INSPECTION WITH ENVIRONMENTAL INSPECTOR, PRIOR TO REMOVAL OF EROSION CONTROL.
19. HOLD FINAL INSPECTION.
20. REMOVE ALL TEMPORARY EROSION/SEDIMENTATION CONTROLS AND TREE PROTECTION. RESTORE ANY AREAS DISTURBED DURING REMOVAL OF EROSION/SEDIMENTATION CONTROLS.

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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 PROTECTION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.

WATER AND WASTEWATER NOTES

1. PRESSURE TAPS SHALL BE IN ACCORDANCE WITH CITY OF LEANDER STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION, ETC. 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 WILL NOT BE PERMITTED UNLESS MADE BY THE USE OF AN APPROVED FULL-CIRCLE GASKETED TAPPING SLEEVE. CONCRETE BLOCKING SHALL BE PLACED BEHIND AND UNDER ALL TAP SLEEVES A MINIMUM OF 24 HOURS PRIOR TO THE BRANCH BEING PLACED INTO SERVICE. BLOCKING SHALL BE INSPECTED PRIOR TO BACKFILL.
2. 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.
3. CURVILINEAR WASTEWATER DESIGN LAYOUT IS NOT PERMITTED.
4. THRUST BLOCKING 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 BLOCKING AND RESTRAINTS.
5. MANDREL TESTING WILL BE REQUIRED ON ALL WASTEWATER PIPE. PER TCEQ, THIS TEST MUST BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.
6. 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
7. IN ADDITION TO NORMAL COMPACTION METHODS DURING DRY WEATHER CONDITIONS, TRENCH AND MANHOLE BACKFILL IN AND/OR ADJACENT TO STREETS, STRUCTURES, DRIVEWAYS, ETC., SHOULD BE FLOODED TO PROVIDE ADDITIONAL CONSOLIDATION OF BACKFILL DURING CONSTRUCTION PERIODS THAT DO NOT EXPERIENCE SIGNIFICANT RAINFALL EVENTS PRIOR TO SUBGRADE PREPARATION, FLEXIBLE BASE PLACEMENT, PAVING OPERATIONS.
8. 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

9. TOOLS FOR STAMPING THE CURBS SHALL BE PROVIDED BY THE CONTRACTOR. OTHER APPROPRIATE MEANS OF STAMPING SERVICE AND VALVE LOCATIONS SHALL BE PROVIDED IN AREAS WITHOUT CURBS. SUCH MEANS OF STAMPING SHALL BE SPECIFIED BY THE ENGINEER AND ACCEPTED BY THE CITY OF LEANDER
10. ALL PLASTIC PIPES FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL (NSF-PW) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 200 PSI.
11. NO PIPE OR FITTING WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY.
12. TYPICAL DEPTH OF COVER FOR ALL WASTEWATER LINES SHALL BE 48" MINIMUM, WATER LINES SHALL BE 36" MINIMUM UNDER BOTH PAVEMENT AND NATURAL GROUND. STORM SEWER SHALL BE 24" MINIMUM UNDER NATURAL GROUND
13. THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY AWWA FORMULAS.
14. ALL WATER MAINS, DISTRIBUTION LINES AND SERVICE LINES SHALL BE INSTALLED IN ENCASEMENT PIPE UNDERNEATH EXISTING STREETS AND OTHER PAVED SURFACES UNLESS APPROVED WITH PLANS.
15. ALL MECHANICAL RESTRAINTS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
16. ALL DEAD-END WATER MAINS SHALL HAVE THRUST RESTRAINTS INSTALLED ON THE LAST THREE PIPE-LENGTHS (STANDARD 20' LAYING LENGTH), AT MINIMUM, AND THRUST BLOCKS INSTALLED ON THE PLUG. ADDITIONAL THRUST RESTRAINTS MAY BE REQUIRED BASED UPON THE MANUFACTURER'S RECOMMENDATIONS AND/OR CALCULATIONS BY THE ENGINEER OF RECORD.
17. WHERE WATER LINES CROSS WASTEWATER LINES AND THERE IS LESS THAN 9 FEET CLEARANCE BETWEEN LINES, THE WASTEWATER LINE SHALL BE PLACED SO THAT THE WASTEWATER PIPE SECTION IS CENTERED ON THE WATER LINE AND CONSTRUCTED IN ACCORDANCE WITH TCEQ CHAPTERS 217.53(b) AND 290.44(e).
18. PIPE MATERIAL FOR WATER MAINS SHALL BE PVC (AWWA C900-16 MIN. 235 PSI PRESSURE RATING). WATER SERVICES (2" OR LESS) SHALL BE POLYETHYLENE TUBING (BLACK, 200PSI, SDR-(9)). DUCTILE IRON PIPE (AWWA C115/C151, MIN. PRESSURE CLASS 250) MAY BE USED FOR WATER MAINS WITH THE EXPRESS APPROVAL OF CITY OF LEANDER ENGINEERING.
19. PIPE FOR PRESSURE WASTEWATER MAINS SHALL BE PVC (AWWA C900-16), GREEN AND MARKED FOR SEWER. PIPE MATERIAL FOR GRAVITY WASTEWATER MAINS SHALL BE PVC (ASTM D2241, D3034 MAX. SDR-26 OR PS115 F679) OR FIBERGLASS WITH PIPE STIFFNESS OF 72 PSI PER COA SPL WW-509.
20. ALL FIRE HYDRANT LEADS SHALL BE DUCTILE IRON PIPE (AWWA C115/C151 PRESSURE CLASS 350).
21. INTERIOR SURFACES OF ALL DUCTILE IRON POTABLE OR RECLAIMED WATER PIPE SHALL BE CEMENT-MORTAR LINED AND SEAL COATED AS REQUIRED BY AWWA C104.
22. ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM 8-MIL POLYETHYLENE.
23. THE CONTRACTOR SHALL CONTACT THE ENGINEERING DEPARTMENT INSPECTOR AT 528-2700 AT LEAST 48 HOURS PRIOR TO CONNECTING TO THE EXISTING WATER LINES.
24. ALL MANHOLES SHALL BE CONCRETE WITH CAST IRON RING AND COVER. TAPPING OF FIBERGLASS MANHOLES SHALL NOT BE ALLOWED.
25. EXISTING MANHOLES MODIFIED BY CONSTRUCTION ACTIVITY SHALL BE TESTED FOR LEAKAGE BY VACUUM. ANY EXISTING MANHOLE WHICH FAILS TO PASS THE VACUUM TEST SHALL BE CLOSELY EXAMINED BY THE INSPECTOR AND THE CONTRACTOR TO DETERMINE IF THE MANHOLE CAN BE REPAIRED. THEREAFTER, THE CONTRACTOR SHALL EITHER REPAIR OR REMOVE AND REPLACE THE MANHOLE AS DIRECTED.
26. PIPE CONNECTIONS TO EXISTING MANHOLES AND JUNCTION BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF AUSTIN SPECIFICATION 506.5.F.
27. LINE FLUSHING OR ANY ACTIVITY USING A LARGE QUANTITY OF WATER MUST BE COORDINATED WITH THE PUBLIC WORKS DEPARTMENT.
28. THE CONTRACTOR, AT HIS EXPENSE, SHALL PERFORM STERILIZATION OF ALL CONSTRUCTED POTABLE WATER LINES AND SHALL PROVIDE ALL EQUIPMENT (INCLUDING TEST GAUGES), SUPPLIES (INCLUDING CONCENTRATED CHLORINE DISINFECTING MATERIAL), AND NECESSARY LABOR REQUIRED FOR THE STERILIZATION PROCEDURE. THE STERILIZATION PROCEDURE SHALL BE MONITORED BY CITY OF LEANDER PERSONNEL. WATER SAMPLES WILL BE COLLECTED BY THE CITY OF LEANDER TO VERIFY EACH TREATED LINE HAS ATTAINED AN INITIAL CHLORINE CONCENTRATION OF 50 PPM. WHERE MEANS OF FLUSHING IS NECESSARY, THE CONTRACTOR, AT HIS EXPENSE, SHALL PROVIDE FLUSHING DEVICES AND REMOVE SAID DEVICES PRIOR TO FINAL ACCEPTANCE BY THE CITY OF LEANDER.
29. 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.
30. TESTING SHALL BE PERFORMED FOR ALL WASTEWATER PIPE INSTALLED AND PRESSURE PIPE HYDROSTATIC TESTING OF ALL WATER LINES CONSTRUCTED. THE OWNER'S CONTRACTOR SHALL PROVIDE ALL EQUIPMENT (INCLUDING PUMPS AND GAUGES), SUPPLIES AND LABOR NECESSARY TO PERFORM THE TESTS. THE CONTRACTOR SHALL NOTIFY THE CITY OF LEANDER ENGINEERING DEPARTMENT NO LESS THAN 48 HOURS PRIOR TO PERFORMING STERILIZATION, QUALITY TESTS, OR PRESSURE TESTS. A CITY OF LEANDER INSPECTOR SHALL BE PRESENT FOR ALL TESTS AND SHALL BE PAID FOR BY THE OWNER/CONTRACTOR. THESE SERVICES ARE PAID FOR AT THE TIME OF CONSTRUCTION PLAN SUBMITTAL.
31. THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVE UNLESS AUTHORIZED BY THE CITY OF LEANDER.
32. ALL VALVE BOXES AND COVERS SHALL BE CAST IRON.
33. ALL WATER VALVE COVERS ARE TO BE PAINTED BLUE.
34. 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
35. 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

36. 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.
37. ALL WASTEWATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) REGULATIONS, 30 TAC CHAPTER 213 AND 30 TAC CHAPTER 217, AS APPLICABLE. WHENEVER TCEQ AND CITY OF LEANDER SPECIFICATION CONFLICT, THE MORE STRINGENT SHALL APPLY.
38. MANHOLES SHALL BE COATED PER CITY OF AUSTIN SPL WW-511 (RAVEN 405 OR SPRAYWALL).
39. DENSITY TESTING FOR TRENCH BACKFILL LOCATED WITHIN THE LIMITS OF THE PAVED AREA IS TO BE DONE IN 12" LIFTS EVERY 500' AND AT LEAST ONCE PER LINE SEGMENT
40. ALL GRAVITY WASTEWATER MAINS TO BE TESTED BY CAMERA AND PAID FOR BY THE CONTRACTOR. CAMERA TESTING FOR WASTEWATER LINES IN ROADWAY SHALL OCCUR BEFORE PAVING. CONTRACTOR SHALL PROVIDE THE CITY WITH A DVD COPY OF THE FULL CAMERA INSPECTION.
41. RECLAIMED AND RECYCLED WATER LINE SHALL BE CONSTRUCTED OF "PURPLE PIPE." ALL RECLAIMED AND RECYCLED WATER VALVE COVERS SHALL BE SQUARE AND PAINTED PURPLE.

STREET AND DRAINAGE NOTES

1. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT. THE CITY OF LEANDER HAS NOT REVIEWED THESE PLANS FOR COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT, OR ANY OTHER ACCESSIBILITY LEGISLATION, AND DOES NOT WARRANTY OR APPROVE THESE PLANS FOR ANY ACCESSIBILITY STANDARDS.
2. PRIOR TO ACCEPTANCE THE ENGINEER SHALL SUBMIT DOCUMENTATION THAT THE IMPROVEMENTS WERE INSPECTED BY TDLR OR A REGISTERED ACCESSIBILITY SPECIALIST (RAS) AND ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE TABA.
3. CONTRACTOR SHALL PROVIDE QUALITY TESTING FOR ALL INFRASTRUCTURES TO BE ACCEPTED AND MAINTAINED BY THE CITY OF LEANDER AFTER COMPLETION. THE CONTRACTOR SHALL NOTIFY THE CITY OF LEANDER ENGINEERING DEPARTMENT AT 528-2700 NO LESS THAN 48 HOURS PRIOR TO ANY TESTING.
4. 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
5. 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.
6. DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT, INCLUDING GAS, ELECTRIC TELEPHONE, CABLE TV, ETC., SHALL BE A MINIMUM OF 36" BELOW SUBGRADE.
7. STREET RIGHT-OF-WAY SHALL BE GRADED AT A SLOPE OF ¼" PER FOOT TOWARD THE CURB UNLESS OTHERWISE INDICATED. HOWEVER, IN NO CASE SHALL THE WIDTH OF RIGHT-OF-WAY AT ¼" PER FOOT SLOPE BE LESS THAN 10 FEET UNLESS A SPECIFIC REQUEST FOR AN ALTERNATE GRADING SCHEME IS MADE TO AND ACCEPTED BY THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT.
8. BARRICADES BUILT TO THE CITY OF LEANDER STANDARDS SHALL BE ERECTED ON ALL DEAD-END STREETS AND AS NECESSARY DURING CONSTRUCTION TO MAINTAIN JOB AND PUBLIC SAFETY.
9. ALL REINFORCED CONCRETE PIPE SHALL BE MINIMUM CLASS III OF TONGUE AND GROOVE OR O-RING JOINT DESIGN.
10. THE CONTRACTOR IS TO NOTIFY THE ENGINEERING INSPECTOR 48 HOURS PRIOR TO THE FOLLOWING TESTING: 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.
11. THE CONTRACTOR MUST PROVIDE A PNEUMATIC TRUCK PER TXDOT SPEC FOR PROOF ROLLING.
12. AT INTERSECTIONS WHICH HAVE VALLEY DRAINAGE, THE CROWNS OF THE INTERSECTING STREETS WILL CULMINATE IN A DISTANCE OF 40 FEET FROM INTERSECTING CURB LINE UNLESS OTHERWISE NOTED.
13. AT THE INTERSECTION OF TWO 44' STREETS OR LARGER, THE CROWNS OF THE INTERSECTING STREETS WILL CULMINATE IN A DISTANCE OF 40 FEET FROM INTERSECTING CURB LINE UNLESS OTHERWISE NOTED.
14. A CURB LAYDOWN IS REQUIRED AT ALL POINTS WHERE THE PROPOSED SIDEWALK INTERSECTS THE CURB.
15. 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.
16. MANHOLE FRAMES, COVERS, VALVES, CLEAN-OUTS, ETC. SHALL BE RAISED TO GRADE PRIOR TO FINAL PAVEMENT CONSTRUCTION.
17. CONTRACTOR SHALL NOTIFY THE LEANDER ENGINEERING DEPARTMENT AT 528-2700 AT LEAST 48 HOURS PRIOR TO 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.
18. A STOP BAR SHALL BE PLACED AT ALL STOP SIGN LOCATIONS.
19. A MINIMUM OF SEVEN DAYS OF CURE TIME IS REQUIRED FOR HMAC PRIOR TO THE INTRODUCTION OF PUBLIC VEHICULAR TRAFFIC TO ANY STREETS.
20. 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 CONSTRUCTION PLANS.
21. GEOTECHNICAL INVESTIGATION INFORMATION AND PAVEMENT RECOMMENDATIONS WERE PROVIDED BY SEC Solutions, INC. PAVEMENT RECOMMENDATIONS ARE AS FOLLOWS: Flexible Pavement System 2" HMAC and 8" Compacted Base or Rigid Pavement system 6" Reinforced Concrete and 6" Compacted Base

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

T.B.M- 60D Nail set in asphalt.
Elevation = 958.23'

Legend

Existing	Proposed
Benchmark	Property Line
Property Pin	Temporary Benchmark
Existing Easement	Proposed Easement
Record Information	Proposed Wastewater Cleanout
Existing Concrete	Proposed Wastewater Double Cleanout
Existing Light Pole	Proposed Wastewater Inspection Port
Existing Area Light	Proposed Inlet
Existing Power Pole & Down Guy	Proposed Curb Inlet
Existing Electric Meter	Proposed Trench Drain
Existing Transformer Pad	Proposed Transformer Pad
Existing Telephone Pedestal	Proposed Water AARV
Existing Cable TV Pedestal	Proposed Water Tee
Existing Overhead Electric Line	Proposed Overhead Electric Line
Existing Telephone Line	ADA Accessible Route
Existing Fiber Optic Line	ADA Ramp/Handrails
Existing Gas Riser	Proposed Firelanes
Existing Gas Line	Proposed Gas Line
Existing Gas Meter	Proposed Gas Meter
Existing Wastewater	Proposed Wastewater
Existing Sanitary Manhole	Proposed Sanitary Manhole
Existing Water Line	Proposed Water Line
Existing Water Valve	Proposed Water Valve
Existing Water Meter	Proposed Water Meter
Existing Fire Hydrant	Proposed Fire Hydrant
Existing Irrigation Box	Proposed Water Reducer
Existing Water Plug	Proposed Water Plug
Existing Sign	Proposed Water Flush Valve
Existing 100 yr	Proposed 100 yr
Existing Storm Sewer Line	Proposed Storm Sewer Line
Existing Contour	Proposed Contour
Erosion Hazard Zone	
Tree	Tree to be Removed

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

Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer

The following/listed "construction notes" are intended to be advisory in nature only and do not constitute an approval or conditional approval by the Executive Director (ED), nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further actions may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code (TAC), Chapters 213 and 217, as well as local ordinances and regulations providing for the protection of water quality. Additionally, nothing contained in the following/listed "construction notes" restricts the powers of the ED, the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected surface waters. The holder of any Edwards Aquifer Protection Plan containing "construction notes" is still responsible for compliance with Title 30, TAC, Chapters 213 or any other applicable TCEQ regulation, as well as all conditions of an Edwards Aquifer Protection Plan through all phases of plan implementation. Failure to comply with any condition of the ED's approval, whether or not in contradiction of any "construction notes," is a violation of TCEQ regulations and any violation is subject to administrative rules, orders, and penalties as provided under Title 30, TAC § 213.10 (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. The following/listed "construction notes" in no way represent an approved exception by the ED to any part of Title 30 TAC, Chapters 213 and 217, or any other TCEQ applicable regulation

1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any regulated activities. This notice must include:
   - the name of the approved project;
   - the activity start date; and
   - the contact information of the prime contractor.
2. All contractors conducting regulated activities associated with this project must be provided with complete copies of the approved Water Pollution Abatement Plan (WPAP) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.
3. If any sensitive feature(s) (caves, solution cavity, sink hole, etc.) is discovered 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. Construction activities may not be resumed until the TCEQ has reviewed and approved the appropriate protective measures in order to protect any sensitive feature and the Edwards Aquifer from potentially adverse impacts to water quality.
4. No temporary or permanent hazardous substance storage tank shall be installed within 150 feet of a water supply source, distribution system, well, or sensitive feature.
5. Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the approved plans and manufacturers specifications. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. These controls must remain in place until the disturbed areas have been permanently stabilized.
6. Any sediment that escapes the construction site must be collected and properly disposed of before the next rain event to ensure it is not washed into surface streams, sensitive features, etc.
7. Sediment must be removed from the sediment traps or sedimentation basins not later than when it occupies 50% of the basin's design capacity.
8. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from being discharged offsite.
9. All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.
10. If portions of the site will have a temporary or permanent cease in construction activity lasting longer than 14 days, soil stabilization in those areas shall be initiated as soon as possible prior to the 14th day of inactivity. If activity will resume prior to the 21st day, stabilization measures are not required. If drought conditions or inclement weather prevent action by the 14th day, stabilization measures shall be initiated as soon as possible.
11. The following records shall be maintained and made available to the TCEQ upon request:
   - the dates when major grading activities occur;
   - the dates when construction activities temporarily or permanently cease on a portion of the site; and
   - the dates when stabilization measures are initiated.
12. The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:
   A. any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
   B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
   C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

Austin Regional Office	San Antonio Regional Office
12100 Park 35 Circle, Building A Austin, Texas 78753-1808 Phone (512) 339-2929 Fax (512) 339-3795	14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 490-3096 Fax (210) 545-4329

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

Revision	Date	By	App	Comment

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

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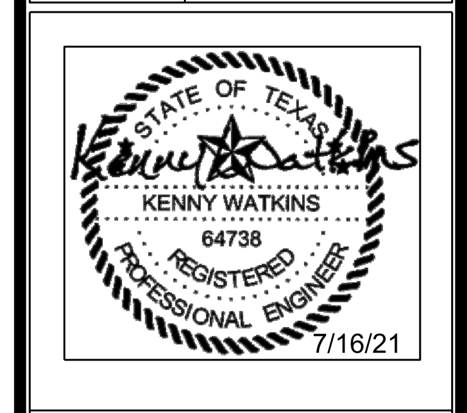
AUSTIN BRYAN CONROE HOUSTON

General Notes

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County



Design: JW
CAD: BKV, Laf | Review: KW
Project No: LPJ 12237
Sheet: **3** of **33**
20-SD-026

ORIGINAL LAYOUT SIZE - 24X36

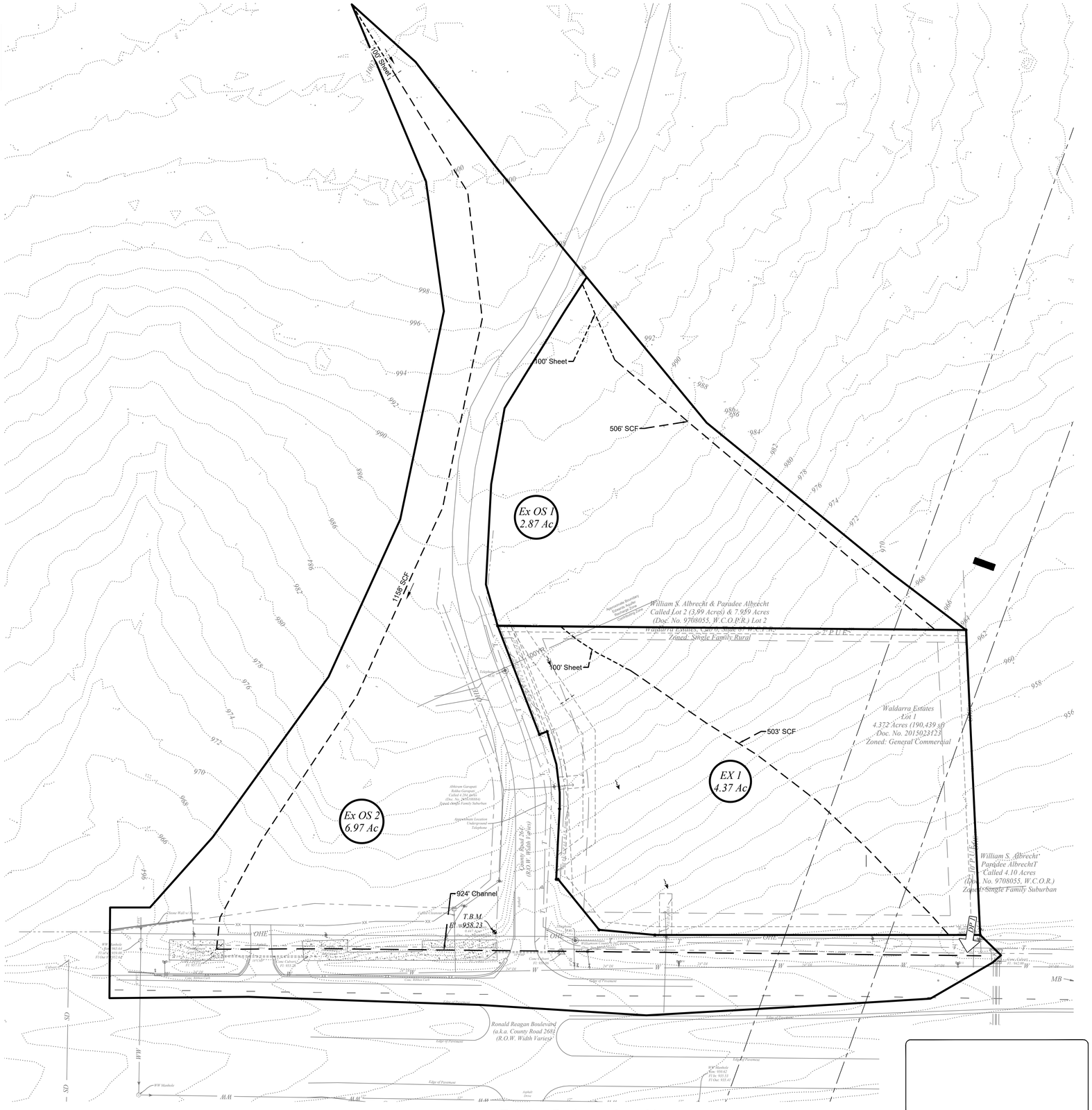
Existing Drainage Area Calculations

Label	Area	IC		SCS CN	Lag	Tc	SCS Type III, 24 hr Storm Water Flows (cfs)			
	acres	*acres*	*%*		*hours*	*hours*	*2-yr*	*10-yr*	*25-yr*	*100-yr*
Ex 1	4.37	0.31	7.0	80.00	0.077	0.129	13.40	25.60	34.10	48.70
Ex OS 1	2.87	2.29	80.0	94.00	0.050	0.078	15.10	23.50	29.30	39.10
Ex OS 2	6.97	5.57	80.0	94.00	0.159	0.266	25.70	40.20	50.00	66.60

Drainage Area	AREA (AC.) PER LAND USE (SOIL TYPE D)				Composite CN Value
	Total Area	Open Space (Lawns, Etc.) CN =80	Impervious (Paved) CN =98	Woods - Grass Combination CN = 79	
Ex 1	4.37	0.00	0.31	4.06	80
OS 1	2.87	0.00	2.29	0.57	94
OS 2	6.97	0.00	5.57	1.39	94

TIME OF CONCENTRATION

	OVERLAND SHEET FLOW					SHALLOW CONCENTRATED FLOW						CHANNEL FLOW			TOTAL	TOTAL	TOTAL
Drainage Area ID	n	Length	P_2*	Slope	Overland Travel Time	Slope	Distance	Surface ("Paved" or "Unpaved")	Velocity Coefficient**	Velocity	Shallow Concentrated Flow Travel Time	Velocity***	Distance	Channel Travel Time	Travel Distance	Time of Concentration	Lag Time
Name	none	ft	inches	ft/ft	min	ft/ft	ft	type	none	ft/s	min	ft/s	ft	min	ft	min	min
Ex 1	0.038	100.00	3.92	0.0400	2.24	0.0480	503.00	Unpaved	6.96	1.53	5.50	0.00	0.00	0.00	603.00	7.73	4.64
OS 1	0.041	100.00	3.92	0.0300	2.67	0.0420	506.00	Paved	20.33	4.17	2.02	0.00	0.00	0.00	606.00	4.69	3.00
OS 2	0.041	100.00	3.92	0.0100	4.14	0.0200	1158.00	Paved	20.33	2.87	6.71	3.00	924.00	5.13	2182.00	15.99	9.59
Pro 1	0.052	100.00	3.92	0.0560	2.51	0.0560	390.00	Paved	20.33	4.81	1.35	0.00	0.00	0.00	490.00	3.86	3.00
Pro 2	0.041	100.00	3.92	0.0300	2.67	0.0400	817.00	Paved	20.33	4.07	3.35	0.00	0.00	0.00	917.00	6.02	3.61
Pro OS 1	0.041	100.00	3.92	0.0200	3.14	0.0370	452.00	Paved	20.33	3.91	1.93	0.00	0.00	0.00	552.00	5.06	3.04
Pro OS 2	0.041	100.00	3.92	0.0350	2.51	0.0200	1158.00	Paved	20.33	2.87	6.71	3.00	916.00	5.09	2174.00	14.31	8.59



Existing Drainage Area Map

Revision	Date	By	App	Comment

Prepared For:

Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

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AUSTIN BRYAN CONROE HOUSTON

Existing Drainage Area Plan

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED PROFESSIONAL ENGINEER
7/16/21

Design: JW
CAD: BKV, Laf | Review: KW
Project No: LPJ 12237
Sheet: 8 of 33
20-SD-026

ORIGINAL LAYOUT SIZE - 24X36

Proposed Drainage Area Calculations

Label	Area	IC		SCS CN	Lag	Tc	SCS Type III, 24 hr Storm Water Flows (cfs)			
	acres	*acres*	*%*		*hours*	*hours*	*2-yr*	*10-yr*	*25-yr*	*100-yr*
Pro 1	3.48	1.879	54.0	90	0.050	0.064	16.60	27.20	34.40	46.60
Pro 2	0.89	0.022	2.5	80	0.043	0.072	2.90	5.60	7.40	66.60
Pro OS 1	2.87	2.296	80.0	94	0.051	0.084	15.10	23.50	29.20	46.60
Pro OS 2	6.97	5.576	80.0	94	0.142	0.236	25.70	40.20	50.00	10.60

* Lag time for Pro 1 was assumed to be 3 minutes (.050 hrs). This is a conservative assumption.

Drainage Area	AREA (AC.) PER LAND USE (SOIL TYPE D)				Composite CN Value
	Total Area	Open Space (Lawns, Etc.) CN =80	Impervious (Paved) CN =98	Woods - Grass Combination CN = 79	
Ex 1	4.37	0.00	0.31	4.06	80
OS 1	2.87	0.00	2.29	0.57	94
OS 2	6.97	0.00	2.57	1.39	94
Pro 1	3.48	1.60	1.88	0.00	90
Pro 2	0.89	0.87	0.02	0.00	80
Pro OS 1	2.87	0.57	2.30	0.00	94
Pro OS 2	6.97	1.39	5.58	0.00	94

TIME OF CONCENTRATION

	OVERLAND SHEET FLOW					SHALLOW CONCENTRATED FLOW						CHANNEL FLOW			TOTAL	TOTAL	TOTAL
Drainage Area ID	n	Length	P_2*	Slope	Overland Travel Time	Slope	Distance	Surface ("Paved" or "Unpaved")	Velocity Coefficient**	Velocity	Shallow Concentrated Flow Travel Time	Velocity***	Distance	Channel Travel Time	Travel Distance	Time of Concentration	Lag Time
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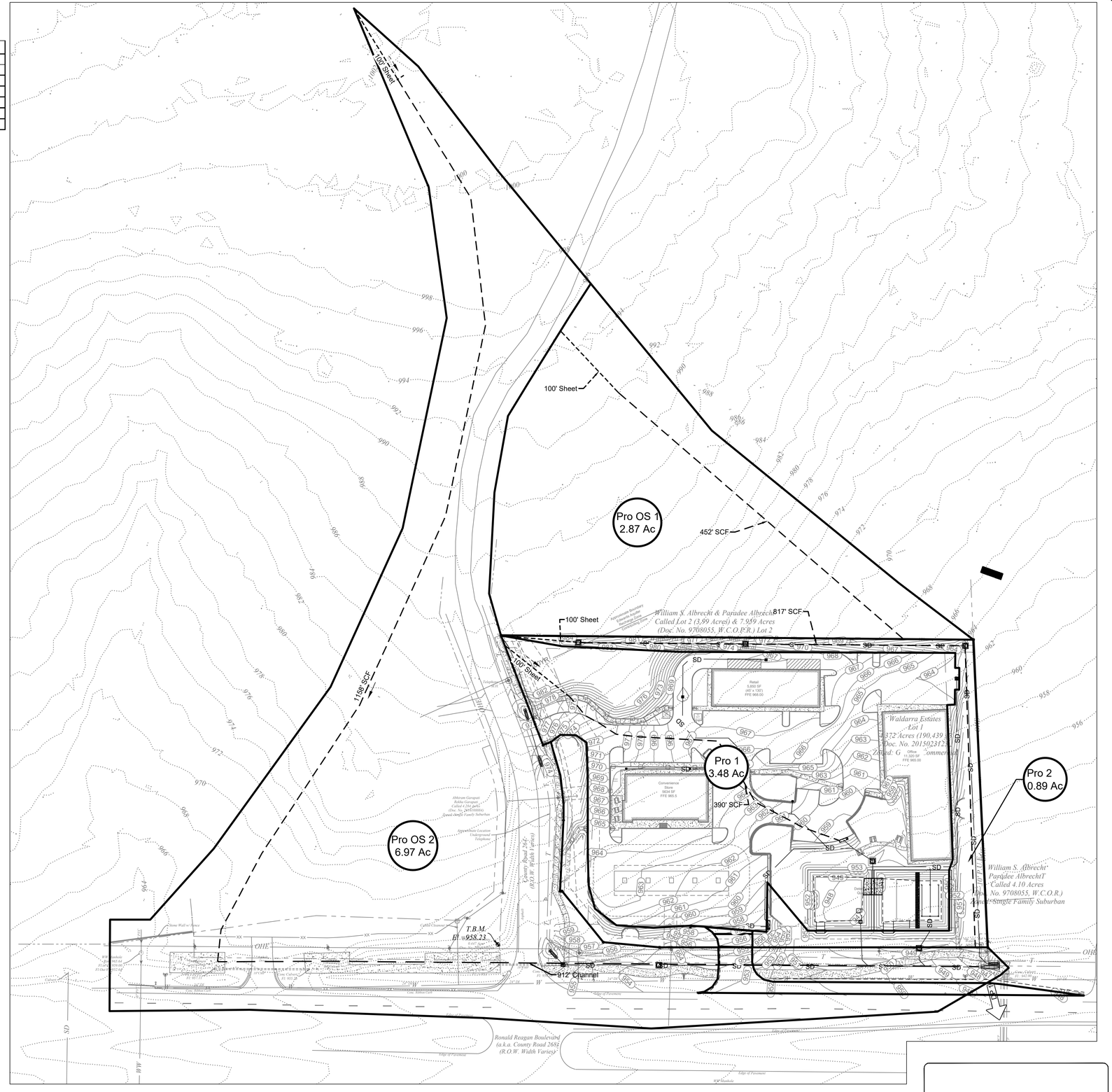
Pro OS 2	0.041	100.00	3.92	0.0350	2.51	0.0200	1158.00	Paved	20.33	2.87	6.71	3.00	916.00	5.09	2174.00	14.31	8.59



Proposed Drainage Area Map

0 60' 120'

Scale 1" = 60'

Revision	Date	By	App	Comment

Prepared For:
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c/o Aly Hussaini
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Proposed Drainage Area Map

Site Development Plan
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17680 Ronald W. Reagan Blvd
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STATE OF TEXAS
KENNY WATKINS
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Design:	JW
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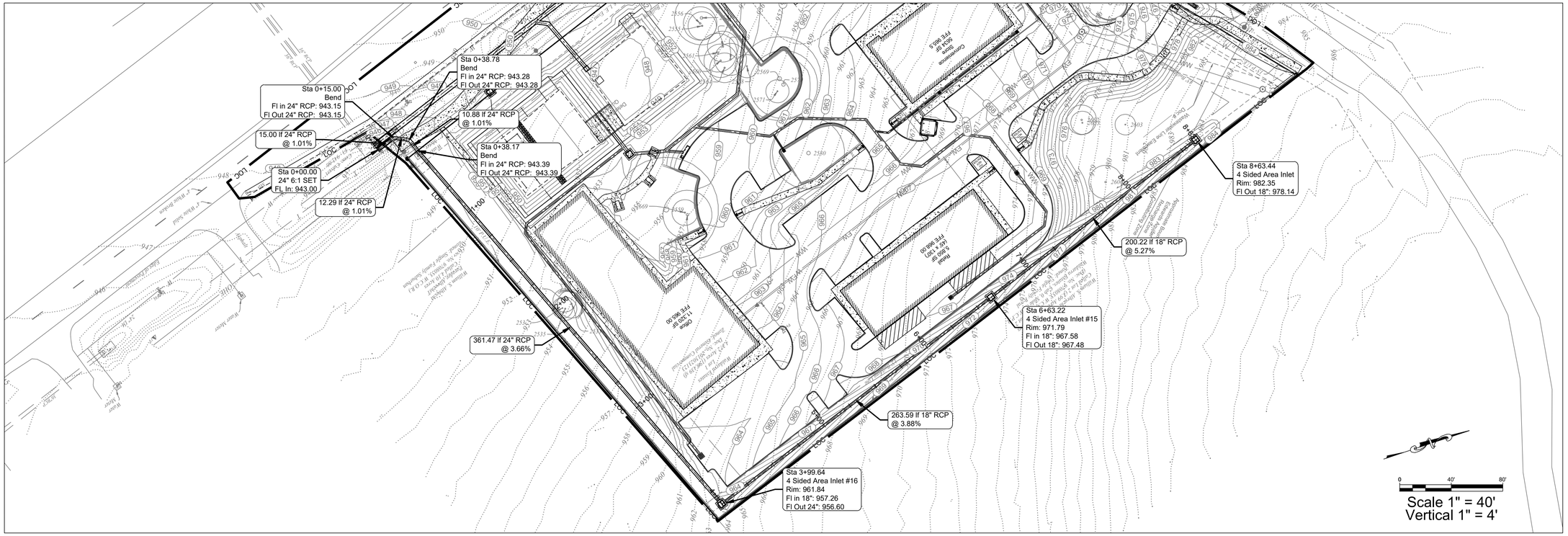

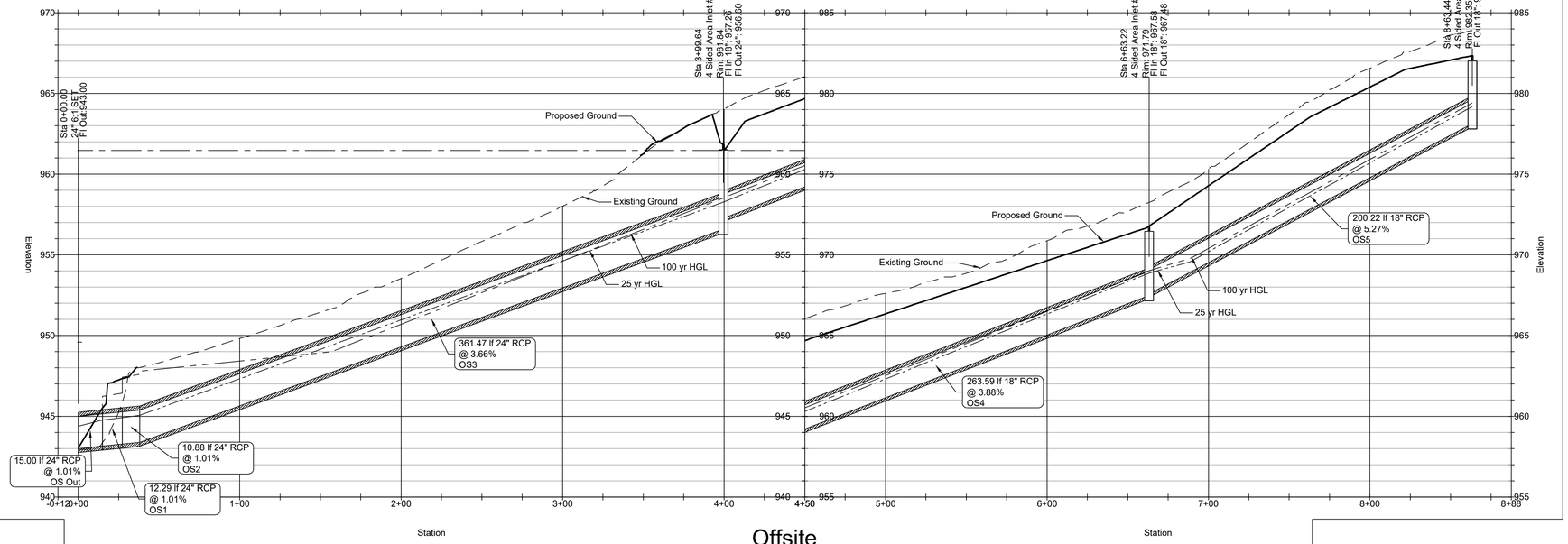

Offsite

Name	Size (in)	Q100 (cfs)	Q25 (cfs)	V100 (ft/s)	V25 (ft/s)	D100 (ft)	D25 (ft)
OS Out	24	28.89	21.84	9.20	8.90	2.00	1.46
OS1	24	28.89	21.84	9.20	7.80	2.00	1.67
OS2	24	28.89	21.84	9.20	7.80	2.00	1.67
OS3	24	28.89	21.84	9.20	7.80	2.00	1.67
OS4	18	19.26	14.56	12.88	11.52	1.18	1.01
OS5	18	9.63	7.28	5.71	4.49	1.36	1.29

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of his/her submittal, whether or not the application is reviewed for Code compliance by City engineers.

Texas 811
Call Before You Dig!!

Legal Description
Lot 1, Waldarra Estates, 4.372 acres, Recorded in Cab O, Slide 87 W.C.P.R.

Benchmarks
T.B.M. #1 - 60D Nail set in asphalt.
Elevation = 958.23'
N 10190256.37, E 3085137.85
GEOID: 12A

T.B.M. #2 - 60D Nail set in asphalt.
Elevation = 979.12'
N 10190336.46, E 3089404.66
GEOID: 12A

Legend
- Existing Contour (700)
- Proposed Contour (700)
- Proposed Spot Elevation (698.25)
- Top of Curb / Bottom of Curb (700.00 / 699.50)
- Proposed Limits of Construction (LOC)
- Proposed Storm Sewer Line
- Level Landing (Not to exceed 2% in any Direction)
- Down — ADA Ramp (Not to exceed 8.33%)

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c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

Revision	Date	By	App	Comment

Offsite Storm Sewer Plan

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Design: JW
CAD: BKV, Laf | Review: KW
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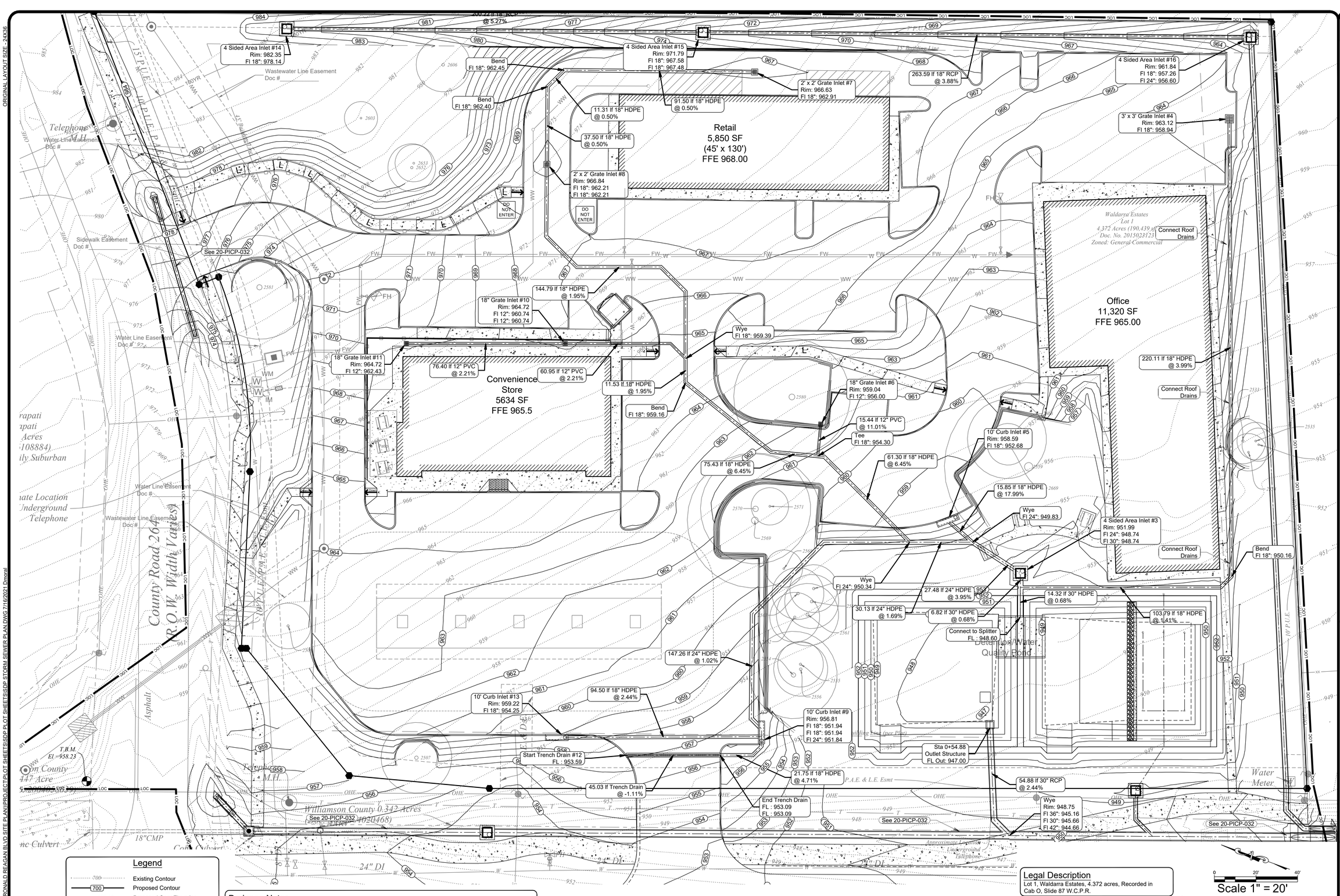

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- Level Landing (Not to exceed 2% in any Direction)
- Down — ADA Ramp (Not to exceed 8.33%)

Drainage Notes

1. Upon completion of the proposed site improvements, and prior to the release of the Certificate of Occupancy by the Watershed Protection and Development Review Department, the Design Engineer shall certify in writing that the proposed detention and filtration facilities were constructed in conformance with the approved plans.
2. Contractor shall call One Call Center (472-2822) for utility locations prior to any work in City easements or street R.O.W.

Curb Note:

Grading lines that indicate flows toward the curb shall be constructed as a catch curb. Grade lines that indicate flows away from curb shall be constructed as a spill curb.

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of his/her submittal, whether or not the application is reviewed for Code compliance by City engineers.

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Private Storm Sewer Plan

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

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64738
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7/16/21

Design: JW
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Sheet: 12 of 33
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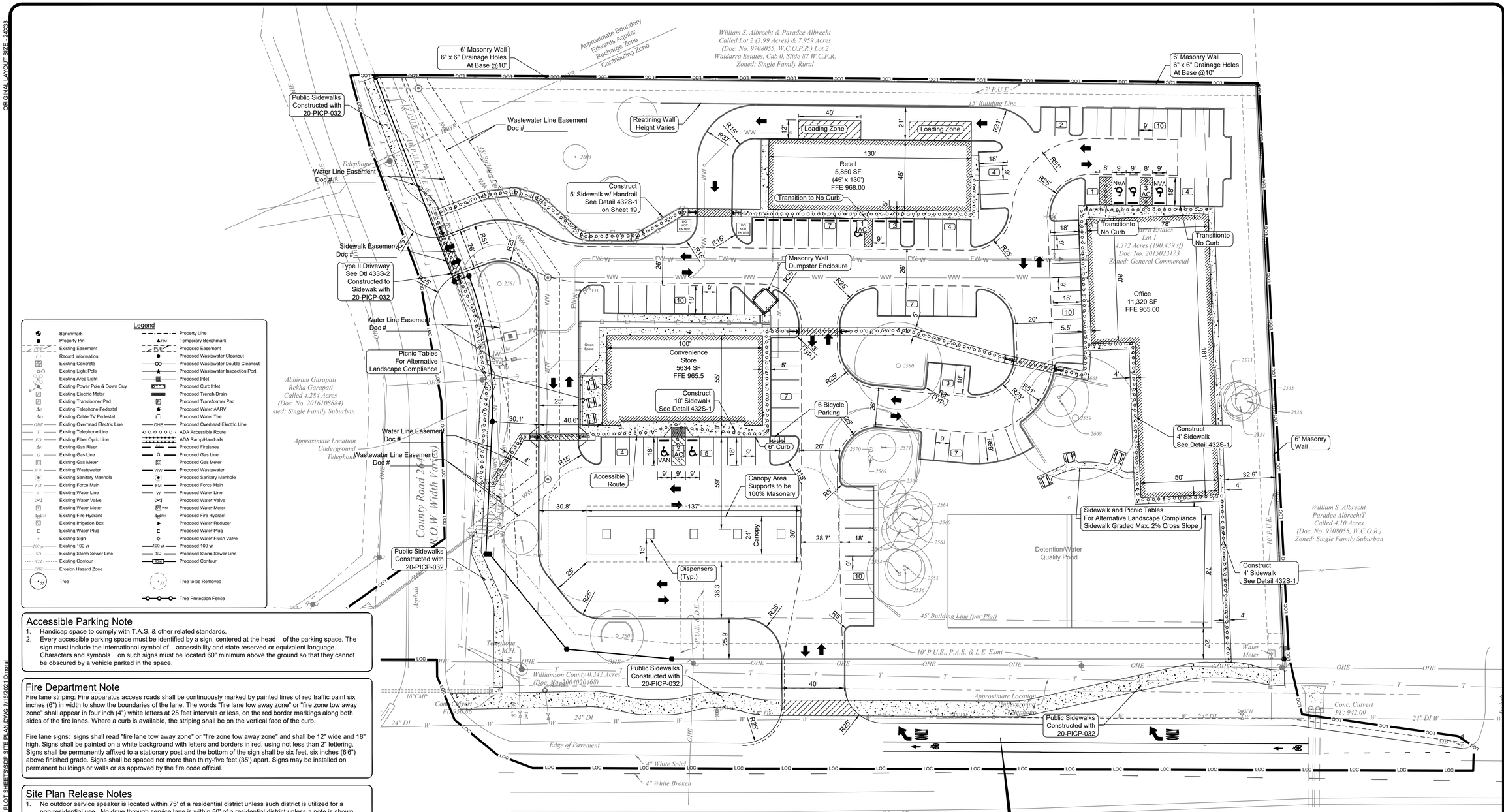
ORIGINAL LAYOUT SIZE - 24X36



Legend

Benchmark	Property Line
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Existing Force Main	Proposed Force Main
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Existing Storm Sewer Line	Proposed Storm Sewer Line
Existing Contour	Proposed Contour
Erosion Hazard Zone	
Tree	Tree to be Removed
	Tree Protection Fence

Accessible Parking Note

1. Handicap space to comply with T.A.S. & other related standards.
2. Every accessible parking space must be identified by a sign, centered at the head of the parking space. The sign must include the international symbol of accessibility and state reserved or equivalent language. Characters and symbols on such signs must be located 60" minimum above the ground so that they cannot be obscured by a vehicle parked in the space.

Fire Department Note

Fire lane striping: Fire apparatus access roads shall be continuously marked by painted lines of red traffic paint six inches (6") in width to show the boundaries of the lane. The words "fire lane tow away zone" or "fire zone tow away zone" shall appear in four inch (4") white letters at 25 feet intervals or less, on the red border markings along both sides of the fire lanes. Where a curb is available, the striping shall be on the vertical face of the curb.

Fire lane signs: signs shall read "fire lane tow away zone" or "fire zone tow away zone" and shall be 12" wide and 18" high. Signs shall be painted on a white background with letters and borders in red, using not less than 2" lettering. Signs shall be permanently affixed to a stationary post and the bottom of the sign shall be six feet, six inches (6'6") above finished grade. Signs shall be spaced not more than thirty-five feet (35') apart. Signs may be installed on permanent buildings or walls or as approved by the fire code official.

Site Plan Release Notes

1. No outdoor service speaker is located within 75' of a residential district unless such district is utilized for a non-residential use. No drive through service lane is within 50' of a residential district unless a note is shown prohibiting operating during the hours of 10 p.m. to 6 a.m.
2. Air conditioning units are not shown forward of the front wall of the building.
3. No fencing is proposed within the front or side street setback.
4. Exterior lighting shall be shielded such that the light source is not directly visible from the public row or adjacent residential districts or uses at the property line. Unshielded "wall pack" lighting is not proposed.
5. Al Clawson disposal, inc. Shall be the sole provider of waste hauling for this site both during and after construction.
6. All site utility lines are proposed to be located underground.
7. 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 to the dumpster or other trash receptacle is a gate constructed of solid wood or metal. The dumpster is oriented for pickup by a rear load garbage truck.
8. For 90 gallon roll out containers stored outside, it is required to be enclosed by a privacy fence.

Gasoline pumps may be located closer to the street than the primary structure if the exterior surface area of all primary structure walls and the fuel canopy columns are comprised of one hundred (100%) percent Masonry.

All Public Improvements are constructed with 20-PICP-032

All easements of record as indicated on the most recent title run dated July 25, 2019 by Chicago Title Insurance Company for this property are shown on this site plan.

Utilities and sidewalks within the Right of Way will be dedicated to the City of Leander.

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Parking Table

Landuse	Building Area	Parking Ratio		Parking Required	
Retail	5,634	1	225	26	
Professional Office	11,240	1	275	41	
Mixed Use Retail	5,850	1	200	30	

	Required	Provided	Bicycle Parking Required	Bicycle Parking Provided	ADA Required	ADA Provided
Total	97	103	5	6	5	6

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Texas 811
Call Before You Dig!!

Legal Description

Lot 1, Waldarra Estates, 4.372 acres, Recorded in Cab O, Slide 87 W.C.P.R.

Benchmarks

T.B.M. #1 - 60D Nail set in asphalt.
Elevation = 958.23'
N 10190256.37, E 3085137.85
GEOID: 12A

T.B.M. #2 - 60D Nail set in asphalt.
Elevation = 979.12'
N 10190336.46, E 3089404.66
GEOID: 12A

Scale 1" = 30'

Revision	Date	By	App	Comment

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
12007 Technology Blvd. Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
BRYAN CONROE HOUSTON AUSTIN

Site Plan

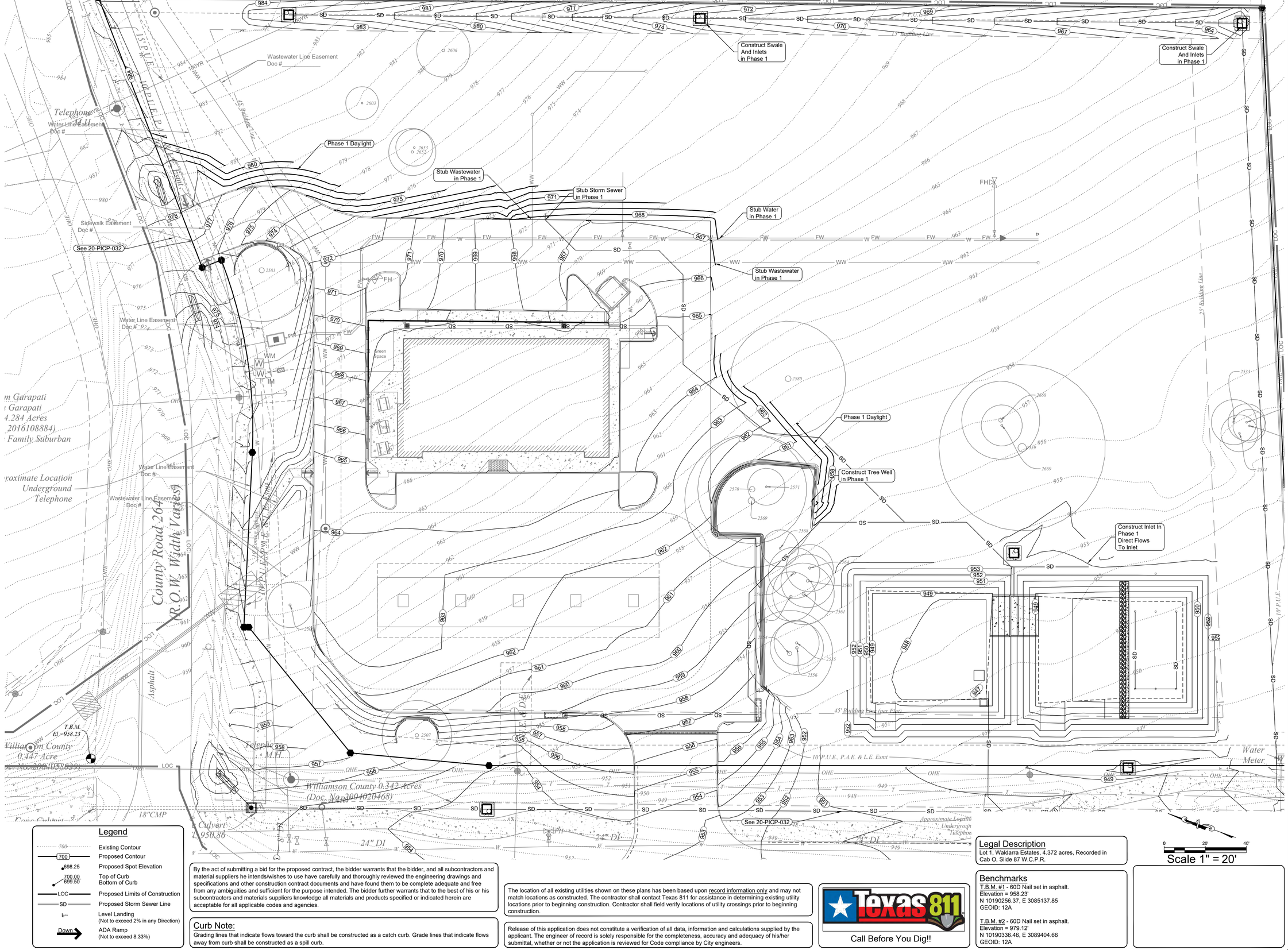
Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Design: JW
CAD: BKV, Laf | Review: KW
Project No: LPJ 12237

Sheet: 13 of 33
20-SD-026

ORIGINAL LAYOUT SIZE - 24X36



Legend

- Existing Contour (700)
- Proposed Contour (700)
- Proposed Spot Elevation (698.25)
- Top of Curb / Bottom of Curb (700.00 / 699.50)
- Proposed Limits of Construction (LOC)
- Proposed Storm Sewer Line (SD)
- Level Landing (Not to exceed 2% in any Direction)
- ADA Ramp (Not to exceed 8.33%) (Down)

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Curb Note:
Grading lines that indicate flows toward the curb shall be constructed as a catch curb. Grade lines that indicate flows away from curb shall be constructed as a spill curb.

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Tel. 512-454-2400
www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

Phase 1 Grading

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Design: JW
CAD: BKV, Laf | Review: KW
Project No: LPJ 12237

Sheet: 15 of 33
20-SD-026

Retail
5,850 SF
(45' x 130')
FFE 968.00

Convenience
Store
5634 SF
FFE 965.5

Connect to Stub Constructed in in Phase 1

Construct Water and Install Fire Hydrant in Phase 2

Construct Wastewater in Phase 2

Phase 2 Daylight

For Phase 3 Grading See Grading Plan

For Phase 3 Grading See Grading Plan

15' PUE
10' PUE
Wastewater Line Easement Doc #
Water Line Easement Doc #
Sidewalk Easement Doc #
Telephone
Water Line Easement Doc #
Water Line Easement Doc #
Wastewater Line Easement Doc #
Approximate Location Underground Telephone
County Road 264 (R.O.W. Width Varies)
Asphalt
T.B.M. El.=958.23
Williamson County 0.447 Acre (Doc. No. 2004058932)
Telephone M.H.
Williamson County 0.342 Acres (Doc. No. 2004020468)
18"CMP Conc Culvert
24" DI
Water Meter
45' Building Line (per Plat)
15' Building Line
10' P.U.E., P.A.E. & L.E. Esmt
Green Space
NOT ENTER
ENTER

Legend

- Existing Contour
- Proposed Contour
- Proposed Spot Elevation
- Top of Curb / Bottom of Curb
- Proposed Limits of Construction
- Proposed Storm Sewer Line
- Level Landing (Not to exceed 2% in any Direction)
- ADA Ramp (Not to exceed 8.33%)

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Texas 811
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GEOID: 12A

0 20' 40'
Scale 1" = 20'

Revision	Date	By	App	Comment

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AUSTIN BRYAN CONROE HOUSTON

Phase 2 Grading

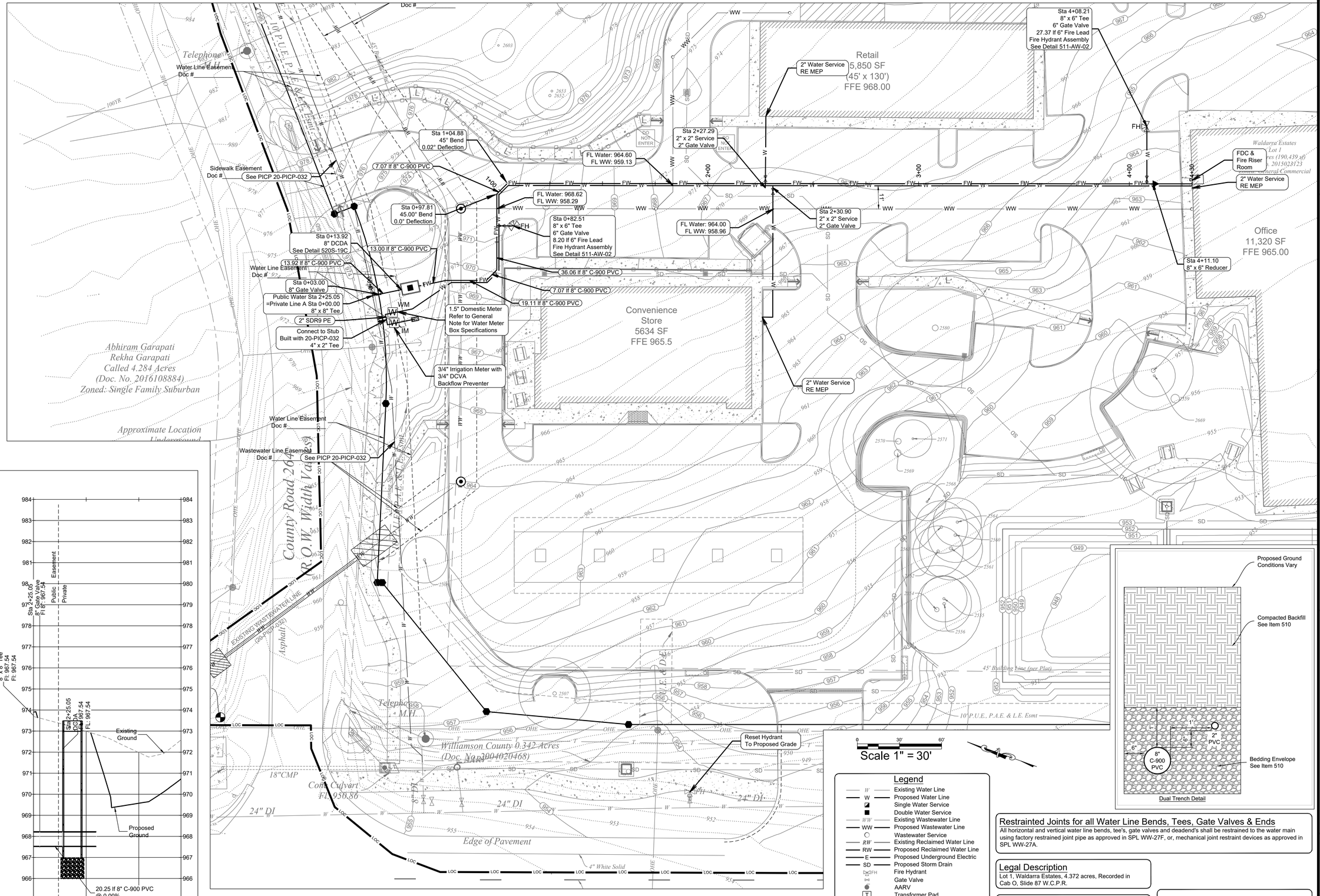
Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

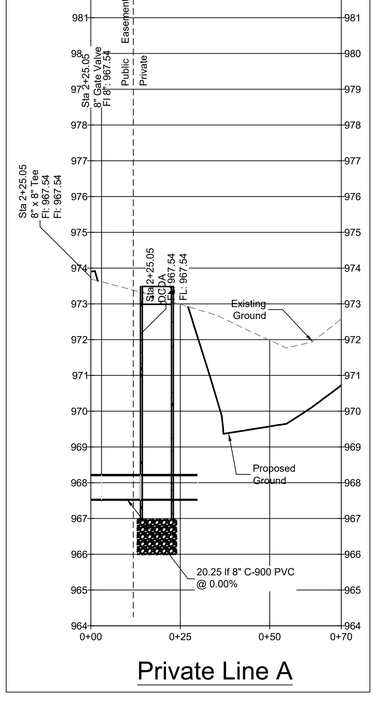
STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Design: JW
CAD: BKV, Laf | Review: KW
Project No: LPJ 12237

Sheet: 16 of 33
20-SD-026

ORIGINAL LAYOUT SIZE - 24X36





Private Line A

Scale 1" = 20'
Vertical 1" = 2'

Scale 1" = 30'

Dual Trench Detail

Legend

- Existing Water Line
- Proposed Water Line
- Single Water Service
- Double Water Service
- Existing Wastewater Line
- Proposed Wastewater Line
- Wastewater Service
- Existing Reclaimed Water Line
- Proposed Reclaimed Water Line
- Proposed Underground Electric
- Proposed Storm Drain
- Fire Hydrant
- Gate Valve
- AARV
- Transformer Pad

Restrained Joints for all Water Line Bends, Tees, Gate Valves & Ends

All horizontal and vertical water line bends, tee's, gate valves and deadend's shall be restrained to the water main using factory restrained joint pipe as approved in SPL WW-27F, or, mechanical joint restraint devices as approved in SPL WW-27A.

Legal Description

Lot 1, Waldarra Estates, 4.372 acres, Recorded in Cab O, Slide 87 W.C.P.R.

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AUSTIN BRYAN CONROE HOUSTON

Private Water Distribution

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Design:	JW
CAD: BKV, Laf	Review: KW
Project No:	LPJ 12237

Sheet: 18 of 33
20-SD-026

ORIGINAL LAYOUT SIZE - 24X36

@2021 H:\JOBFILES\LPJ 12237 (RONALD REAGAN BLVD SITE PLAN)\PROJECT\PLOT SHEETS\SDP PLOT SHEETS\SDP UTILITY TAP PLAN.DWG 7/16/2021 Dmcal

Approximate Boundary
Edwards Aquifer
Recharge Zone
Contributing Zone

William S. Albrecht & Paradee Albrecht
Called Lot 2 (3.99 Acres) & 7.959 Acres
(Doc. No. 9708055, W.C.O.P.R.) Lot 2
Waldarra Estates, Cab 0, Slide 87 W.C.P.R.
Zoned: Single Family Rural

Abhiram Garapati
Rekha Garapati
Called 4.284 Acres
(Doc. No. 2016108884)
Zoned: Single Family Suburban

Waldarra Estates
Lot 1
4.372 Acres (190,439 sf)
Doc. No. 2015023123
Zoned: General Commercial

Approximate Location
Underground
Telephone

Called Cleanout

Telephone M.H.

County Road 264 (Ronald Reagan Blvd)
R.O.W. Width Varies

Retail
5,850 SF
(45' x 130')
FFE 968.00

Convenience
Store
5634 SF
FFE 965.5

Office
11,320 SF
FFE 965.00

Detention/Water
Quality Pond

Green Space

15' P.U.E.

10' P.U.E., P.A.E. & L.E. Esmt

45' Building Line (per plat)

Wastewater Line Easement
Doc #

Water Line Easement
Doc #

Sidewalk Easement
Doc #

Public Wastewater
Constructed with 20-PICP-032

Sta 7+08.73
Connect to 4' Drop Manhole
Constructed with 20-PICP-032
Rim: 971.90
FI In 6": 958.20
FI In 8": 964.00
FI Out 8": 958.10

Wye
FL Out 8":957.51

Bend
FL Out 6":958.15

Service RE MEP
FL Out 6":960.00

30.4 lf 6" SDR 26
@6.07%

10.6 lf 6" SDR 26
@6.07%

Public Wastewater
Constructed with 20-PICP-032

Water Line Easement
Doc #

Wastewater Line Easement
Doc #

EXISTING WASTEWATER LINE
(20-PICP-032)

Vertical Bend
FL Out 6":961.73

34.4 lf 6" SDR 26
@6.59%

Service RE MEP
FL Out 6":964.00

6" Cleanout Traffic Bearing
FL Out 6":960.87

105.1 lf 6" SDR 26
@2.90%

Sta 0+00.00
6" Cleanout Traffic Bearing
FL Out 6":958.68

92.5 lf 6" SDR 26
@0.52%

254.3 lf 6" SDR 26
@0.52%

Sta 7+08.52
Service RE MEP
FL Out 6":960.00

143°

0 20' 40'
Scale 1" = 20'

Legend

W	Existing Water Line
W	Proposed Water Line
	Single Water Service
	Double Water Service
WW	Existing Wastewater Line
WW	Proposed Wastewater Line
	Wastewater Service
RW	Existing Reclaimed Water Line
RW	Proposed Reclaimed Water Line
E	Proposed Underground Electric
SD	Proposed Storm Drain
FH	Fire Hydrant
	Gate Valve
	AARV
T	Transformer Pad

Legal Description

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AUSTIN BRYAN CONROE HOUSTON

Private Wastewater Collection Plan

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Design: JW
CAD: BKV, Laf | Review: KW
Project No: LPJ 12237

Sheet: 19 of 33
20-SD-026

ORIGINAL LAYOUT SIZE - 24X36

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Ronald Reagan Blvd
Date Prepared: 4/5/2021

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

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

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

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

County =	Williamson	
Total project area included in plan * =	4.37	acres
Predevelopment impervious area within the limits of the plan * =	0.14	acres
Total post-development impervious area within the limits of the plan* =	2.63	acres (Includes .280 Acres of Hike and Bike and Tum Lane)
Total post-development impervious cover fraction * =	60%	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	2170	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	1	

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

Drainage Basin/Outfall Area No. =	1	
Total drainage basin/outfall area =	2.98	acres
Predevelopment impervious area within drainage basin/outfall area =	0.14	acres
Post-development impervious area within drainage basin/outfall area =	2.63	acres
Post-development impervious fraction within drainage basin/outfall area =	0.88	
$L_{M\ THIS\ BASIN}$ =	2170	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Sand Filter	
Removal efficiency =	89	percent

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

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

A_C =	2.98	acres
A_I =	2.63	acres
A_P =	0.35	acres
L_R =	2600	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	2250	lbs.
F =	0.87	

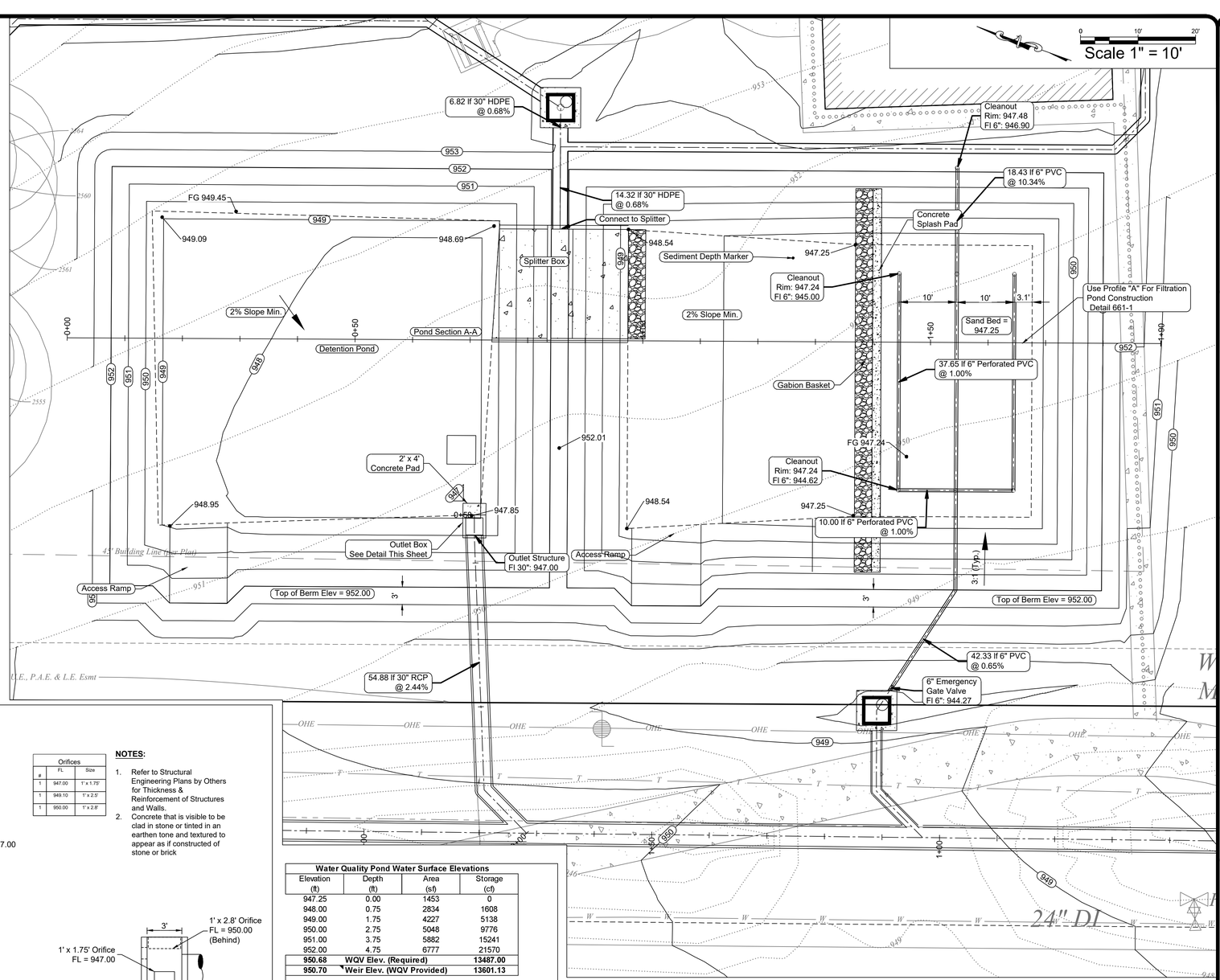
6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

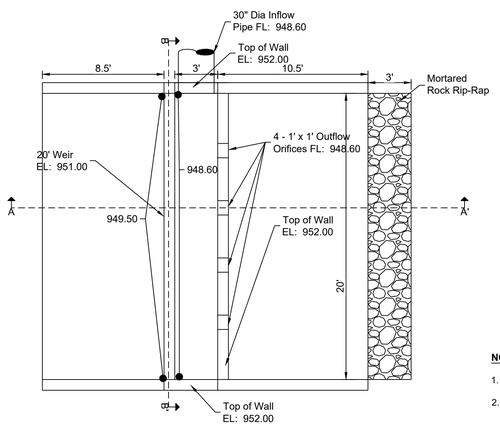
Rainfall Depth =	1.44	inches
Post Development Runoff Coefficient =	0.72	
On-site Water Quality Volume =	11239	cubic feet
Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	2248	
Total Capture Volume (required water quality volume(s) x 1.20) =	13487	cubic feet

9. Filter area for Sand Filters Designed as Required in RG-348 Pages 3-58 to 3-63

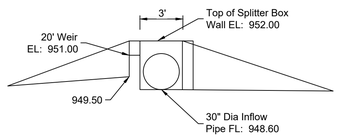
9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	13487	cubic feet
Minimum filter basin area =	1124	square feet
Maximum sedimentation basin area =	4496	square feet For minimum water depth of 2 feet
Minimum sedimentation basin area =	281	square feet For maximum water depth of 8 feet

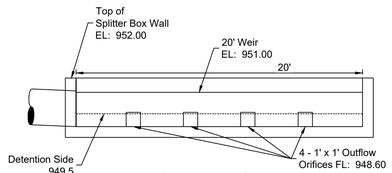




Splitter Box Plan View
Scale: 1" = 5'

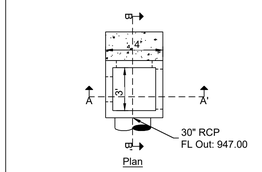


Splitter Box Section A-A'
Scale: 1" = 5'



Splitter Box Section B-B'
Scale: 1" = 5'

All exposed concrete that is visible to be clad in stone or tinted in an earthen tone and textured to appear as if constructed of stone or brick.

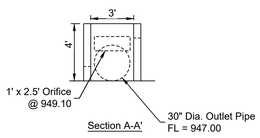


Plan

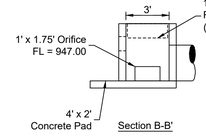
Orifices		
#	FL	Size
1	947.00	1' x 1.75'
1	949.10	1' x 2.5'
1	950.00	1' x 2.8'

NOTES:

1. Refer to Structural Engineering Plans by Others for Thickness & Reinforcement of Structures and Walls.
2. Concrete that is visible to be clad in stone or tinted in an earthen tone and textured to appear as if constructed of stone or brick



Section A-A'



Section B-B'

Outlet Box
Scale: 1" = 5'

NOTE:

1. Refer to Structural Engineering Plans by Others for Thickness & Reinforcement of Structures and Walls.
2. Concrete that is visible to be clad in stone or tinted in an earthen tone and textured to appear as if constructed of stone or brick

Water Quality Pond Water Surface Elevations

Elevation (ft)	Depth (ft)	Area (sf)	Storage (cf)
947.25	0.00	1453	0
948.00	0.75	2834	1608
949.00	1.75	4227	5138
950.00	2.75	5048	9776
951.00	3.75	5882	15241
952.00	4.75	6777	21570
950.68	**WQV Elev. (Required)**		**13487.00**
950.70	**Weir Elev. (WQV Provided)**		**13601.13**

WQ Pond Weir

Q(100) =	46.60 cfs	
C(w) =	3.33	Depth of flow over weir = 0.79 ft.
H(w) =	1.30 ft. (provided)	Freeboard Provided 0.51 ft.
	Q(w) = C(w) x L x (H(w))^3/2	
	Solving for L Gives	
L =	9.44 lf.	
Use L =	**20.00 ft.**	

WQ Pond In-Flow Window

Q(25) =	34.40 cfs
Co) =	0.6
g =	32.2 ft/s^2
Orifice Height =	1.000 ft.
Orifice Width =	1.000 ft
H =	1.010 (Depth to Center of Window)
	Q = Co) * A * (2*g*H)^.5
	Solving for A gives:
A =	7.11 sf.
	Try an orifice 1' high x 1' long (1.00 sf)
# of Orifices =	8.00 orifices

USE 4 - 1' high by 1' wide orifice

Filtration Pond Valve Orifice for 24-Hour Drawdown

Water Quality Volume =	13,601 cf
Q=CA√2gH	
Q = Restrictor flow (maximum flow through orifice for minimum 24-hour draw dow n = WQV/86400 seconds in	0.157 cfs
C = Orifice Coefficient	0.6
A = Orifice Area (sf)	0.0144 sf
g = Gravitational Constant (ft/s)	32.2 ft/s
H = Average Head	5.12 ft/s
D = Orifice Diameter (in)	1.63 in

DRILL 1.25" ORIFICE IN CAP

Discharge Summary

Analysis Point	Atlas 14 - Storm Water Flows (cfs)			
	2-yr	*10-yr*	*25-yr*	*100-yr*
Ex DP	47.80	79.60	101.30	138.40
Pro DP	47.80	79.60	99.20	138.20

Detention Pond Inflow/Outflow Summary

	Atlas 14 - Storm Water Flows (cfs)			
	2-yr	*10-yr*	*25-yr*	*100-yr*
Inflow	16.60	27.20	34.40	46.60
Outflow	10.70	20.40	25.20	38.50

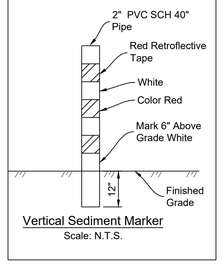
Onsite Detention Pond

Stage vs. Storage

Elevation	Area	Volume
ft	*ac*	*ac-ft*
947	0.000	0.000
947.25	0.004	0.001
948	0.045	0.019
949	0.073	0.077
950	0.089	0.158
951	0.107	0.257
952	0.127	0.374

Outflow Summary

Event	Elevation	Flow
yr	*ft*	*cfs*
2	949.10	10.70
10	950.00	20.40
25	950.40	25.20
100	950.90	38.50



Vertical Sediment Marker
Scale: N.T.S.

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
12007 Technology Blvd, Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

Revision	Date	By	App	Comment

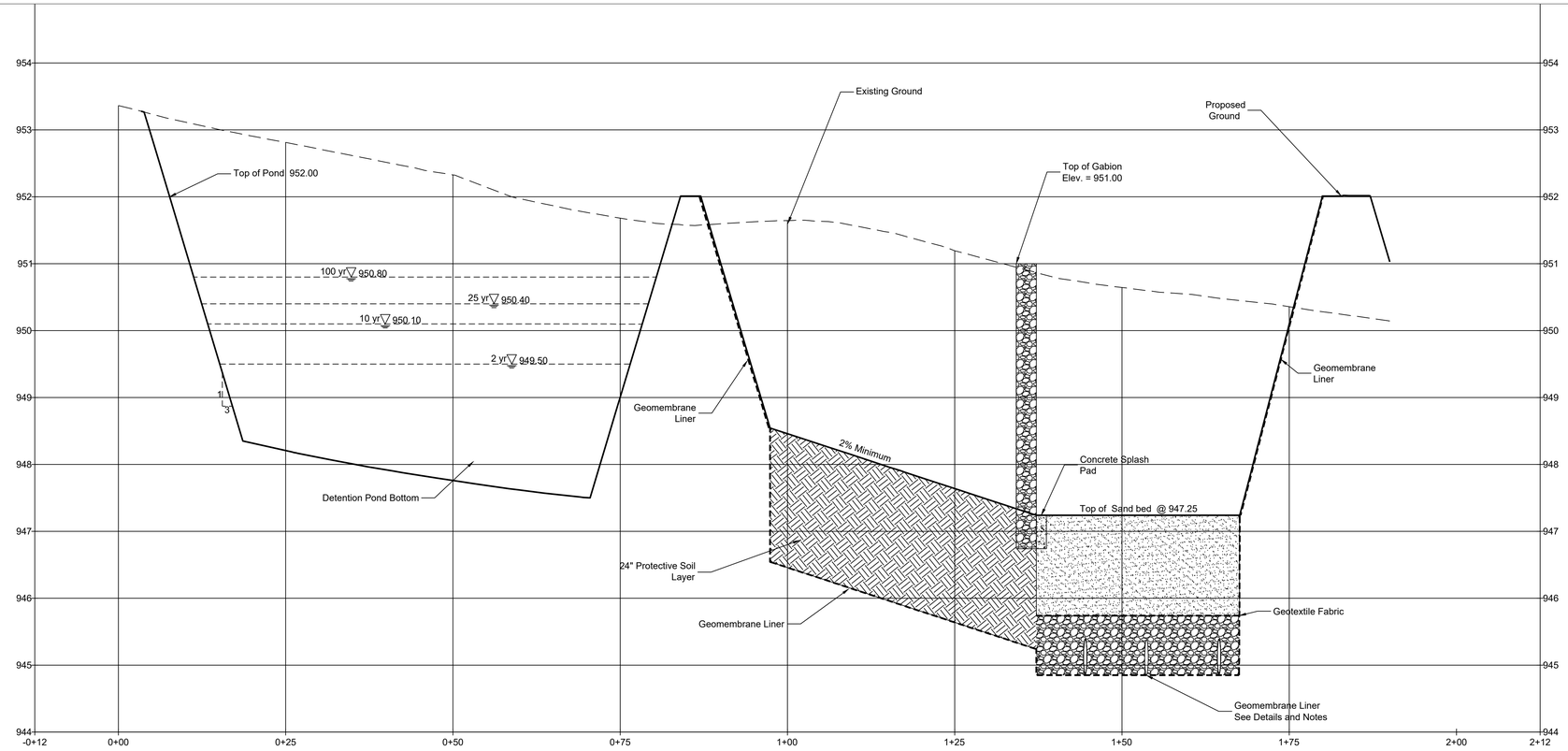
Detention and Water Quality Pond Plan

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

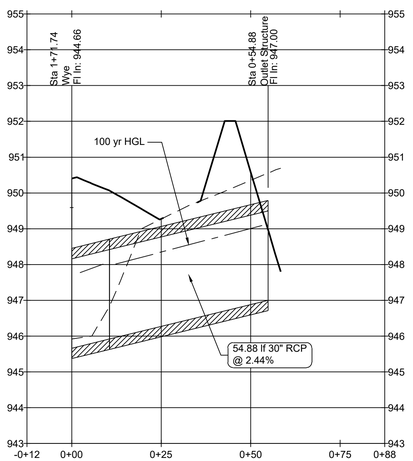
Design:	JW
CAD: BKV, Laf	Review: KW
Project No:	LPJ 12237

Sheet: **20** of **33**
20-SD-026



Pond Section A-A

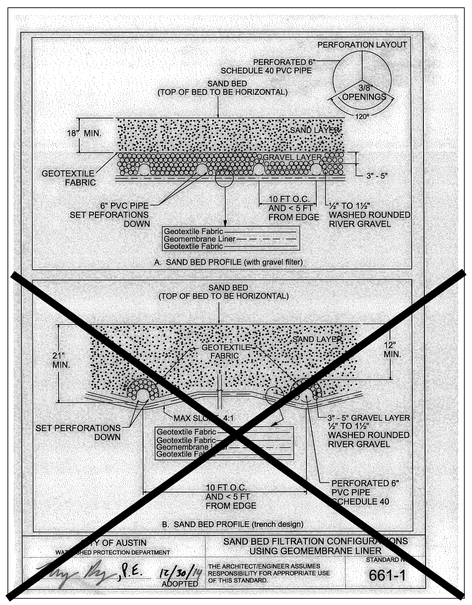
Scale 1" = 10'
Vertical 1" = 1'



Pond Outfall

Pond Outfall

Label	Flow (cfs)		Diameter (in)	Slope (%)	Velocity (fps)		Depth (ft)	
	25 yr	100 yr			25 yr	100 yr	25 yr	100 yr
Outfall	19.83	26.53	24.00	0.75	7.11	8.32	1.66	2.00



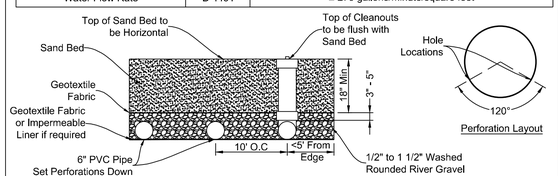
Sand Bed Specifications

First (top) Layer - Astm c-33, 0.02 - 0.04 inch, at least 18 inch depth.

Second Layer - Gravel, 1/2 - 1 1/2 inch washed river gravel, at least 3 inch to 5 inch depth surrounding Underdrain piping.

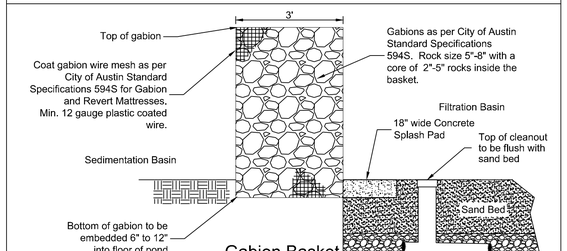
The two layers must be separated from each other using suitable geotextile fabric meeting the following specifications

Non Woven Geotextile Specifications		
Property	Test Method	ASTM Requirements
Fabric Weight	D 3776	≥ 3.0 Ounces/Sq Yard
Ultraviolet (UV) Radiation Stability	D 4335	70% strength retained min. After 500 hours in Xenon arc device
Mullen Burst Strength	D 3786	≥ 120 Pounds per square inch
Water Flow Rate	D 4491	≥ 275 gallons/minute/square feet



Note: Underdrain Piping. The underdrain piping consists of the main collector pipe(s) and perforated lateral branch pipes. The piping should be reinforced to withstand the weight of the overburden. Internal diameters of lateral branch pipes should be six (6) inches or greater and perforations should be three-eighths (3/8) inch. All piping is to be schedule 40 polyvinyl chloride (PVC) or greater strength. The maximum spacing for the laterals should be ten (10) feet between laterals and five (5) feet from a wall or side. Lesser spacings are acceptable. The maximum spacing between rows of perforations should not exceed six (6) inches.

Sand Bed



Gabion Basket

Revision	Date	By	App	Comment

Prepared For:

Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
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www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

Detention and Water Waulity Pond Sections & Details

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

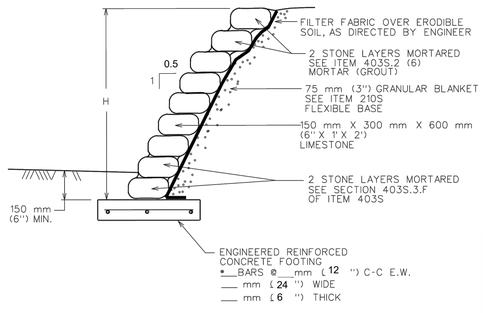
STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Design: JW	
CAD: BKV, Laf	Review: KW
Project No:	LPJ 12237

Sheet: 21 of 33

20-SD-026

ORIGINAL LAYOUT SIZE - 24X36



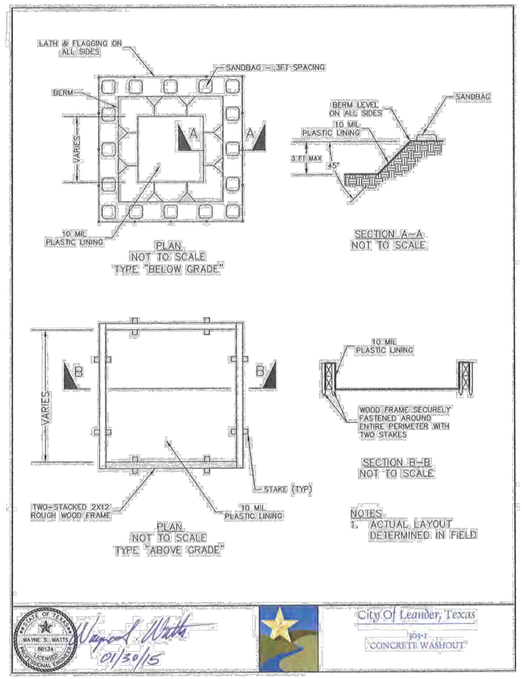
THIS STANDARD APPLIES ONLY UNDER THE FOLLOWING CONDITIONS:

A. H AND Z ARE SPECIFIED ON THE DRAWING.
B. GROUNDWATER IS NO HIGHER THAN THE BOTTOM OF THE FOOTING.
C. THE MATERIAL BELOW THE FOOTING IS FIRM AND STABLE.
D. THE MATERIAL BEHIND THE WALL HAS A LEVEL SURFACE.
E. THE MATERIAL IN FRONT OF THE WALL HAS A SLOPE NO STEEPER THAN 4 HORIZONTAL TO 1 VERTICAL.
F. THE FACE OF THE WALL IS NO STEEPER THAN 1 HORIZONTAL TO 2 VERTICAL.
G. SURCHARGE LOADS BEHIND THE WALL ARE NO CLOSER THAN DISTANCE H FROM THE TOP OF WALL.

NOTES:

1. DESIGN AND CONSTRUCTION OF ROCK WALL SHALL CONFORM TO THE REQUIREMENTS OF CITY CODE 16-7-2, PLACEMENT OF FENCES IN STREET CORNER AREAS, AND THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL FOR MINIMIM SIGHT DISTANCE.
2. CONCRETE SHALL CONFORM TO ITEM 403S, "CONCRETE FOR STRUCTURES".

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		DRY STACK ROCK WALL FOR SLOPE PROTECTION	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 623S-1



Note: This Detail is applicable only for walls less than 4' High

R-4990
HEAVY DUTY TRENCH

Materials: All frames and grates/lids are furnished standard in gray iron, meeting ASTM-A48 Class 35-B for heavy-duty use. For extra heavy-duty use or superior durability requirements, see our ductile iron Airport and Port Grating Series on page 286.

Neenah recommends project designers avoid the use of light duty trench installations because it is likely that applications will be subjected to heavy delivery vehicle traffic at some time. Furthermore, the use of a site could be changed to heavy duty use patterns at some unanticipated future date.

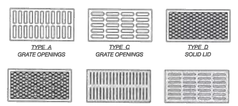
Dimensions in inches

Un-Bolted Catalog No.	A	B	C	Type A	Type C	Type D	Type E	Type P	Type Q
R-4990-AX	8	1 1/2	6	x	x	x	x	x	
R-4990-BX	10	1 1/2	8	x	x	x	x	x	
R-4990-CX	12	1 1/2	10	x	x	x	x	x	x
R-4990-DX	14	1 1/2	12	x	x	x	x	x	x
R-4990-EX	17	1 1/2	15	x	x	x	x	x	
R-4990-FX	20	1 1/2	18	x	x	x	x	x	
R-4990-GX	23	1 1/2	21	x	x*	x			
R-4990-HX	26	1 1/2	24	x	x*	x	x		x
R-4990-JX	30	2	27	x	x	x			
R-4990-KX	33	2	30	x	x	x*	x		
R-4990-LX	36	2	33	x	x	x*			
R-4990-MX	39	2	36	x	x*	x			
R-4990-NX	45	2	42	x	x*	x			
R-4990-OX	51	2	48	x		x*			

x - Indicates availability.
* Deep Ribs (consult shop drawing for dimensions).
Deep Ribs = "B" dimension times 2 or greater.

Illustrating Type C trench. Trench sections are furnished in 24" standard lengths.

Note: In Type A and P grates the slots are perpendicular to the trench run. In Type C and Q grates the slots are parallel with the trench run.



Note: 45°, 90° and "T" available in limited sizes and types.

Read Carefully Before Ordering
The various standard trench drains are available with a number of alternatives. It is important to examine all of the variables carefully and specify your requirements fully. Your order will be entered correctly and promptly if it includes the following information:

- Complete catalog number
- Frame end pieces, when required
- Type of Lid or Grate: A, C, D, E, P or Q
- Length of trench sections
- Angles and intersections *
- Load requirements

*Trenches with angles, intersections, size changes or other special requirements require detail drawings prior to ordering. Contact your sales representative or product engineering for assistance.
800-558-5075

TYPE X
MAXIMUM 3/16" GAP
HEAVY DUTY UNBOLTED

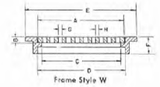
General schematic shown may not apply to all designs. Bar and rib depths, plate thicknesses and seating widths vary on different sizes and styles. If your project has design restrictions, contact your sales representative or product engineering.

R-6672 — R-6673 Square and Rectangular Series Frames and Grates

NEENAH FOUNDRY COMPANY

Heavy Duty — for Slab Construction

Suitable for drains in sidewalks, garages, laundries, service stations, bottling plants, industrial buildings, etc.



Catalog No.	Dimensions in inches A	B	C	D	E	F	G	H	Wt. Lbs.	Frame Type
Square — Heavy Duty										
R-6672-1	11⅞ x 11⅞	1⅛	10⅝ x 10⅝	—	16 x 16	3½	1⅛ x 1⅞	⅝	60	Y
R-6672-A	12¼ x 12¼	1	11⅛ x 11⅛	—	15 x 15	6	1⅛ x 10	1	95	Y ◎
R-6672-B	13¾ x 13¾	1⅛	12 x 12	14 x 14	18 x 18	4	1 x 9⅛	1	120	W
R-6672-C	18 x 18	1½	16 x 16	—	24 x 24	4½	1 x 4⅝	1	155	Y
R-6672-D	21⅜ x 21⅜	1½	20 x 20	22 x 22	28 x 28	4	1¼ x 3⅞	1	220	W
R-6672-E	23⅜ x 23⅜	1½	22 x 22	24 x 24	28 x 28	4	2¼ x 7⅛	¾	315	W
R-6672-F	25⅜ x 25⅜	1½	24 x 24	26 x 26	30 x 30	4	2¼ x 7⅛	¾	280	W
R-6672-G	27 x 27	2	25 x 25	—	33½ x 33½	4	1½ x 5	1	355	Y
R-6672-H	27½ x 27½	1½	26 x 26	28 x 28	32 x 32	4	1 x 5	1	325	W
R-6672-J	30x30	1¼	28 x 28	—	34 x 34	4	1½ x 6	1¼	440	Y
R-6672-K	31⅜ x 31⅜	1½	30 x 30	—	37 x 37	4	1 x 6⅝	1	475	Y
R-6672-M*	37 x 37	1½	36 x 36	37½ x 37½	42 x 42	4	1¼ x 10½	1½	700	W
R-6672-Q*△	56½ x 56½	1½	54 x 54	—	64 x 64	4½	1⅛ x 12¼	1¼	1820	Y ◎
Rectangular — Heavy Duty										
R-6673-A	14 x 20	1½	12 x 18	14⅛ x 20⅛	18 x 24	4	¾ x 5½	1	165	W
R-6673-B	13½ x 25½	1½	12 x 24	13⅜ x 25¼	18 x 30	4	1 x 4½	1	185	W
R-6673-C	19⅛ x 25½	1½	18 x 24	19⅛ x 25⅛	24 x 30	4	1 x 6⅛	1	260	W
R-6673-D	19⅜ x 31⅛	1½	18 x 30	20 x 32	24 x 36	4	2 x 5	1	250	W
R-6673-E	19⅜ x 37⅛	1½	18 x 36	20 x 38	30 x 42	4	2 x 5	1	295	W
R-6673-J	25⅜ x 31½	1½	24 x 30	25⅜ x 31⅜	30 x 36	4	1⅛ x 5	1	360	W
R-6673-K	25⅜ x 37⅛	1½	24 x 36	26 x 38	30 x 42	4	1⅛ x 8	1	425	W
R-6673-L*	25⅜ x 49⅛	1½	24 x 48	26 x 50	30 x 54	4	1¼ x 8 1/16	1	580	W
R-6673-N*	31⅜ x 37⅛	1½	30 x 36	32 x 38	36 x 42	4	1⅛ x 4⅛	1	515	W
R-6673-O*	31½ x 49⅛	1½	30 x 48	31⅜ x 49⅛	36 x 54	4	1½ x 4⅜	1	680	W
R-6673-Q*△	28 x 50	1¾	26 x 48	38½ x 50¼	44⅛ x 56⅛	4	1¾ x 6	1	735	W

*Grate in two pieces. ◎ Not recommended for bicycle traffic. For safety standards see pages 88 to 93. △Frame in sections. Bolted in corners.

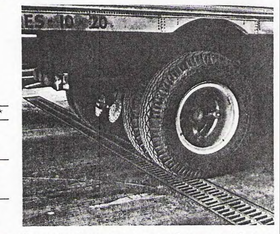
R-4990 Heavy Duty Trench Frames with Grated or Solid Covers

MATERIALS: All frames and grates are furnished standard in Gray Iron, Class 35, for heavy duty use. For extra heavy duty use, see page 170 for Airport Trenches.

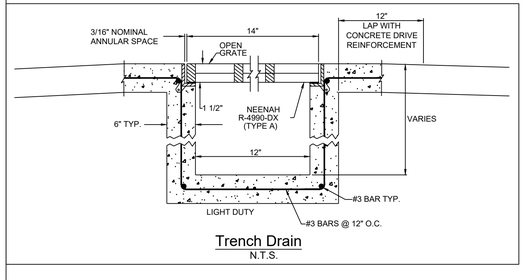
Standard Cover Dimensions

Catalog No.	Dimensions in inches A	B	C	Weight per lineal foot (without frame) Type A	Type C	Type D	Type E	Type P	Frame**
R-4990-AX	8	1½	6	19	22	19	22	25	12
R-4990-BX	10	1½	8	24	27	29	27	31	12
R-4990-CX	12	1½	10	28	31	40	36	37	12
R-4990-DX	14	1½	12	33	35	52	47	45	12
R-4990-EX	17	1½	15	39	52	55	49	—	12
R-4990-FX	20	1½	18	54	67	70	70	—	12
R-4990-GX	23	1½	21	60	77	85	—	—	12
R-4990-HX	26	1½	24	71	100	85	—	—	12
R-4990-JX	30	2	27*	100	120	100	—	—	17
R-4990-KX	33	2	30*	110	140	150	—	—	17
R-4990-LX	36	2	33*	120	130	185	—	—	17
R-4990-MX	39	2	36*	130	200	180	—	—	17
R-4990-NX	45	2	42*	150	245	210	—	—	17
R-4990-OX	51	2	48*	190	—	215	—	—	17

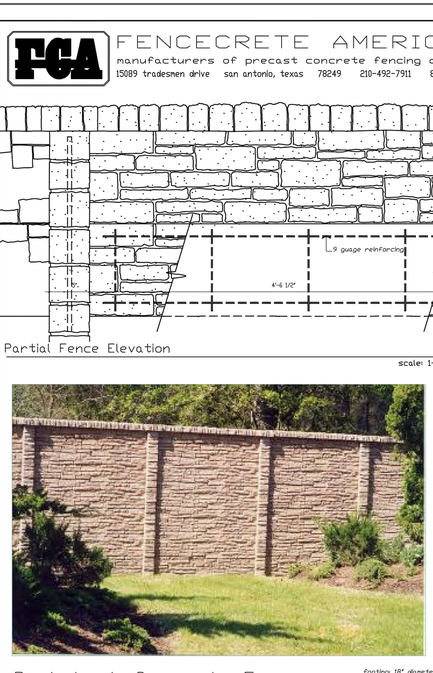
*½" Annular spacing **Weight per foot — includes both sides.



Illustrating heavy duty trench frames and Type A grates to drain loading ramp. Designs in this series are being used successfully in subway construction, intersecting elevated highways and underpasses, airport hangar doors, ramps and other special purposes.

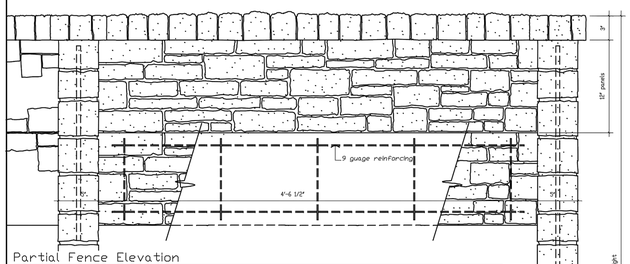


Trench Drain
N.T.S.

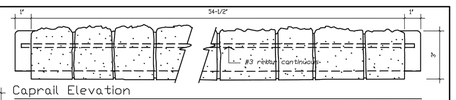


Rock Look Concrete Fence

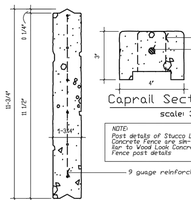
FENCECRETE AMERICA, LTD.
manufacturers of precast concrete fencing and masonry wall systems
15089 tradesmen drive san antonio, texas 78249 210-492-7911 800-229-7811 www.fencecrete.com



Partial Fence Elevation
scale: 1-1/2" = 1'-0"

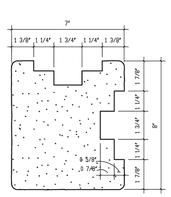


Caprail Elevation
scale: 3" = 1'-0"

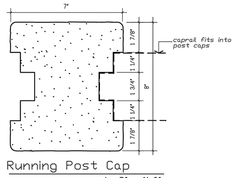


Caprail Section
scale: 3" = 1'-0"

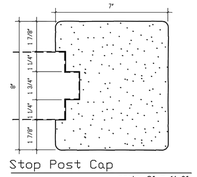
Typical Panel Section
scale: 3" = 1'-0"



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 0 to a maximum of 10'-0" - with 8'-0" above grade.
2. All concrete shall be 5000 p.s.i.
3. All reinforcement shall be A.S.T.M. 615 grade 60. Special reinforcement is available upon special order.
4. Footing - 2 feet deep footing standard per column, 12" - 18" diameter. Depth and diameter can vary per local soil conditions.
5. Texture: All exposed sides have rock-like texture.
6. Gates: Shall have additional steel supports adjacent to concrete columns.
7. All steel reinforcement is prewired 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.

Footing: 18" diameter, 24" deep 3000 p.s.i. concrete, varies according to local soil conditions

Revision	Date	By	App	Comment

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

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AUSTIN BRYAN CONROE HOUSTON

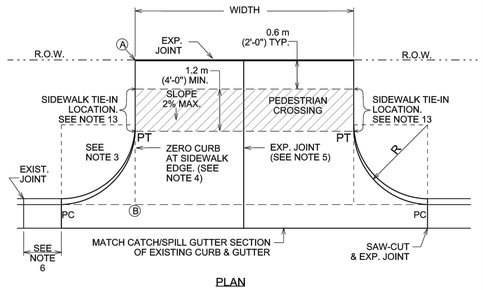
Construction Details

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL
ENGINEER
7/16/21

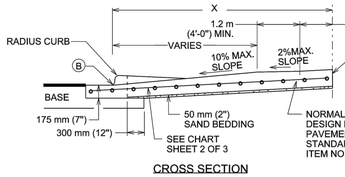
Design: JW	
CAD: BKV, Laf	Review: KW
Project No: LPJ 12237	

Sheet: 22 of 33
20-SD-026



PLAN

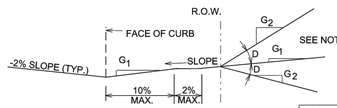
NOTE: ALL DRIVEWAYS SHALL BE SLOPED TOWARDS THE STREET FROM THE R.O.W. LINE. ELEVATION OF POINT Ⓐ ABOVE POINT Ⓑ IS, TYPICALLY A MINIMUM OF 150 mm (6") PLUS 20 mm/m (¼" RISE/FOOT) OVER DISTANCE "X" IN METERS (FEET).



CROSS SECTION

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN	*02/24/10* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 1 OF 2

USE	THICKNESS	REINFORCEMENT
DRIVEWAYS FOR PASSENGER VEHICLE PARKING LOTS	150 mm (6") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF 13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS
ALL OTHERS	175 mm (7") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF 13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS



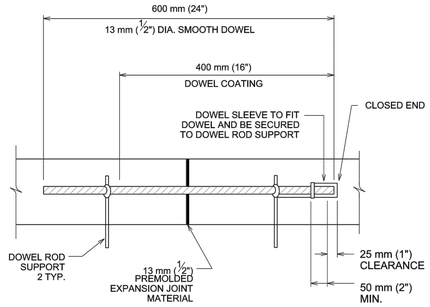
ALLOWABLE GRADES

DRIVEWAY VOLUME (ADT)	D=GRADE CHANGE STD.	MAX
>1500	0%	3%
500-1500	3%	6%
< 500	6%	15%

NOTES:

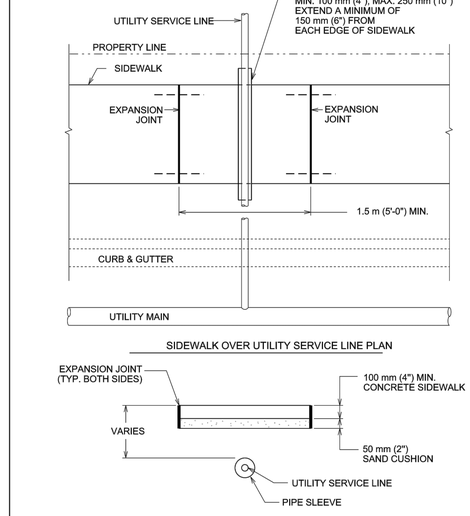
1. ALL TYPE II DRIVEWAYS SHALL HAVE RADIUS ENDS.
2. DRIVEWAY WIDTHS AND RADII DIMENSIONS, ONE/TWO WAY TRAVEL REQUIREMENTS, AND GEOMETRIC LAY-OUT ARE HIGHLY VARIABLE, SUBJECT TO SITE SPECIFIC CONDITIONS AND REQUIREMENTS. SEE TRANSPORTATION CRITERIA MANUAL, SECTION 5 "DRIVEWAYS".
3. THE DRIVEWAY EDGE SHALL BE SMOOTHLY TRANSITITIONED INTO THE SIDEWALK TIE-IN LOCATION BEGINNING AT THE RADIUS PC LINE.
4. "ZERO" CURB AT PT OR SIDEWALK EDGE, WHICHEVER IS ENCOUNTERED FIRST.
5. PLACE AN EXPANSION JOINT DOWN THE CENTER OF DRIVEWAY ALL DRIVEWAYS.
6. IF DIMENSION IS LESS THAN 1.5 METERS (5 FEET), REMOVE CURB AND GUTTER TO EXISTING JOINT AND POUR MONOLITHICALLY WITH DRIVEWAY.
7. IF THE BASE IS OVER-EXCAVATED WHERE THE CURB AND GUTTER WERE REMOVED, BACKFILL WITH CONCRETE MONOLITHICALLY WITH THE DRIVEWAY.
8. TYPE II DRIVEWAYS ARE TO BE LOCATED NO CLOSER TO THE CORNER OF INTERSECTING RIGHT OF WAY THAN 60% OF PARCEL FRONTAGE OR AT 30 METERS (100 FEET), WHICHEVER IS LESS.
9. DRIVEWAY SHALL NOT BE CONSTRUCTED WITHIN THE CURB RETURN OF A STREET INTERSECTION.
10. WHILE THE PROPERTY OWNER REMAINS RESPONSIBLE FOR GRADE BREAKS WITHIN PRIVATE PROPERTY, THE FIRE DEPARTMENT SHALL BE CONSULTED WHERE THE DRIVEWAY IS ESSENTIAL TO EMERGENCY VEHICLE ACCESS AND "G2 IS GREATER THAN 15%.
11. USE 12 MM (1/2") ASPHALT BOARD OR OTHER APPROVED MATERIAL FOR CURB AND GUTTER EXPANSION JOINTS. SIDEWALK, AT THE R.O.W. LINE AND AT MIDWIDTH. SEE NOTE 5.
12. SEE TRANSPORTATION CRITERIA MANUAL, SECTION 5 FOR OTHER DRIVEWAY REQUIREMENTS.
13. THE SIDEWALK, REGARDLESS OF ITS LOCATION WITH RESPECT TO THE CURB OR PROPERTY LINE, SHALL BE CONNECTED TO THE DRIVEWAY AT THESE LOCATIONS.
14. WATER METER BOXES AND WASTEWATER CLEAN OUTS ARE PROHIBITED FROM BEING LOCATED IN DRIVEWAY AREAS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN	*02/24/10* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 2 OF 2



DOWEL DETAIL

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 2 OF 3



SIDEWALK OVER UTILITY SERVICE LINE PLAN

SECTION OF SIDEWALK OVER UTILITY SERVICE LINES

NOTES:
1. THIS STANDARD APPLIES TO THE INSTALLATION OF NEW UTILITIES OR UTILITIES BEING REPLACED BY A NEW LINE.
2. NO JOINTS IN UTILITY SERVICE PIPE TO BE LOCATED INSIDE PVC PIPE SLEEVE.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 3 OF 3

FIRE APPARATUS ACCESS ROADS:

1. ALL FIRE APPARATUS ACCESS ROADS AND TEMPORARY TURNAROUNDS SHALL COMPLY WITH THE CURRENT INTERNATIONAL FIRE CODE, AS ADOPTED BY THE CITY OF LEANDER, AND CITY OF LEANDER CODE OF ORDINANCES.
2. ALL FACILITIES, BUILDINGS OR PORTIONS OF BUILDINGS SHALL BE ACCESSIBLE TO FIRE DEPARTMENT APPARATUS BY WAY OF AN APPROVED FIRE APPARATUS ACCESS ROAD CONSTRUCTED WITH AN ASPHALT OR CONCRETE DRIVING SURFACE CAPABLE OF SUPPORTING THE IMPOSED LOAD OF A FIRE APPARATUS WEIGHING AT LEAST 75,000 POUNDS.
3. FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED TEN-PERCENT (10%) IN GRADE WITHOUT THE APPROVAL OF THE FIRE MARSHAL.
4. DEAD-END FIRE APPARATUS ACCESS ROADS IN EXCESS OF ONE HUNDRED AND FIFTY FEET (150') IN LENGTH SHALL BE PROVIDED WITH WIDTH AND TURNAROUND PROVISIONS IN ACCORDANCE WITH THE TABLE BELOW.

LENGTH (FEET)	WIDTH (FEET)	TURNAROUNDS REQUIRED
0-150	20	NONE REQUIRED
151-500	20	120-FOOT HAMMERHEAD, 60-FOOT "Y" OR 96-FOOT DIAMETER CUL-DE-SAC
501-750	26	120-FOOT HAMMERHEAD, 60-FOOT "Y" OR 96-FOOT DIAMETER CUL-DE-SAC
OVER 750	SPECIAL APPROVAL REQUIRED	

5. GATES SECURING FIRE APPARATUS ACCESS ROADS SHALL BE NOT LESS THAN TWENTY FEET (20') IN WIDTH WHERE A SINGLE GATE IS PROVIDED. WHERE A FIRE APPARATUS ROAD CONSISTS OF A DIVIDED ROADWAY, THE GATE WIDTH SHALL BE NOT LESS THAN TWELVE FEET (12').
6. ALL GATE LOCKS SHALL COMPLY WITH CITY OF LEANDER CODE OF ORDINANCES SECTION 506.1.1.
7. GATES SECURING FIRE APPARATUS ACCESS ROADS SHALL BE OF THE SWINGING OR SLIDING TYPE.
8. FIRE APPARATUS ACCESS ROADS SHALL BE TWENTY-SIX FEET (26') IN WIDTH FOR TWENTY-FEET (20') IN BOTH DIRECTIONS FROM FIRE HYDRANTS, AT MINIMUM, TO PROVIDE MINIMUM CLEARANCE FOR EMERGENCY OPERATIONS.

*THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. DRAWING NOT TO SCALE.

STATE OF TEXAS MICHAEL LAFFERTY 118706 LICENSED FIRE SERVICE INSPECTOR

2016-06-15

FIRE MARSHAL

City Of Leander, Texas
DETAIL #501-3
FIRE APPARATUS ACCESS ROADS & TURNAROUNDS

NOTES:

1. CONTRACTOR SHALL VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR REPAIR OF ALL DAMAGE THAT RESULTS FROM HIS WORK, INCLUDING ANY DAMAGE TO ROADWAY STRUCTURAL ELEMENTS SUCH AS CURB, FLEXIBLE BASE, GEOGRID, ETC.
2. "DEEPROOT" ROOT BARRIERS, OR APPROVED EQUAL, A MINIMUM OF TWENTY-FOUR INCHES (24") IN HEIGHT AND EIGHT FEET IN LENGTH (8') SHALL BE PROVIDED PARALLEL TO CURBLINE ON BOTH SIDES OF STREET TREES. ROOT BARRIERS SHALL BE PLACED WITH TOP OF ROOT BARRIER TWO INCHES (2") BELOW FINISHED GRADE AND RIBS FACING TOWARDS THE TREE.
3. TREES SHALL BE PLACED A MINIMUM OF TEN FEET (10') FROM ALL EXISTING AND PROPOSED WASTEWATER LINES, WATER SERVICES, STORM SEWER LINES, AND CURB INLETS.
4. A WATER RETENTION BASIN THREE INCHES (3") IN HEIGHT AND FOUR FEET (4') IN DIAMETER FORMED WITH TOPSOIL SHALL BE PROVIDED AROUND ALL TREES. INTERIOR OF BASIN SHALL BE FILLED WITH THREE INCH (3") LAYER OF SHREDDED BARK MULCH HELD THREE INCHES (3") BACK FROM THE TRUNK.
5. ALL TREES SHALL BE STAKED WITH 7' LENGTH STEEL "T" POSTS, PAINTED DARK GREEN. LOCATE POSTS 6" +/- FROM ROOTBALL. DO NOT DISTURB ROOTBALL. POSTS SHALL BE DRIVEN 2' INTO GROUND WITH 5' EXPOSED ABOVE GROUND. POSTS SHALL BE CONSISTENT HEIGHT AND ALIGNED PARALLEL TO ADJACENT CURBS. USE 12-GAUGE STRANDED CABLE WITH HOSE TO PROTECT TRUNK. ENSURE THERE IS NO SLACK IN WIRES.
6. IF SOLID ROCK IS ENCOUNTERED AT DEPTHS LESS THAN TWENTY-SIX INCHES (26") FROM FINISHED GRADE, INSTALL ROOT BARRIER TO TOP OF ROCK LAYER AND TRIM EXCESS LENGTH.

*THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. DRAWING NOT TO SCALE.

STATE OF TEXAS WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER

03/07/18

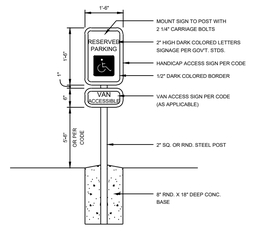
City Of Leander, Texas
DETAIL #204-4
STREET TREE INSTALLATION

SECTION

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 1 OF 3

Fig. 17
Examples of Edge Protection and Handrail Extensions

Note: Handrail details are for private handrails only. Not allowed in Public Improvements



HANDICAP PARKING SIGN DETAILS

Revision	Date	By	App	Comment

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
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512-912-6374

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Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

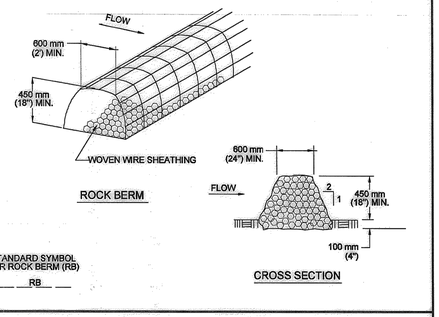
Construction Details 2

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS KENNY WATKINS 64738 REGISTERED PROFESSIONAL ENGINEER 7/16/21

Design: JW
CAD: BKV, Laf | Review: KW
Project No: LPJ 12237
Sheet: 23 of 33
20-SD-026

ORIGINAL LAYOUT SIZE - 24X36



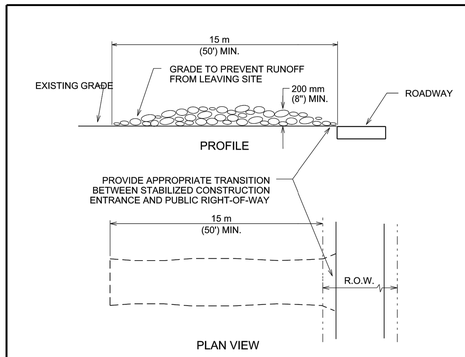
STANDARD SYMBOL FOR ROCK BERM (RB)

RB

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.

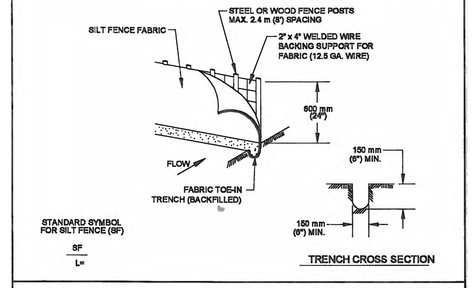
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	ROCK BERM	
Wayne S. Watts P.E. 8/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S-1



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, VEHICLE 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	
RECORD COPY SIGNED BY J. PATRICK MURPHY 5/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1



STANDARD SYMBOL FOR SILT FENCE (SF)

SF

L=

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.

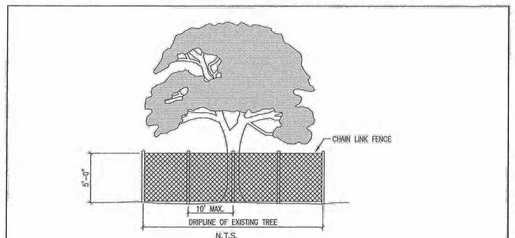
4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE , WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.

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.

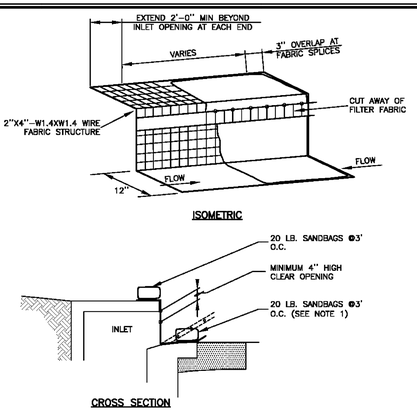
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	SILT FENCE	
9/1/2011 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1



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 (DRIPLINE), 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 CONSTRUCTION CLOSER TO THE TRUNK THAN ONE HALF (½) THE RADIAL DISTANCE, DEPENDING ON THE SIZE, SPACING, OR SPECIES OF THE TREE, THE TYPE OF DISTURBANCE PROPOSED, AND UNIQUENESS 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 FLATWORK, 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.

STATE OF TEXAS WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER
Wayne S. Watts 08/21/15

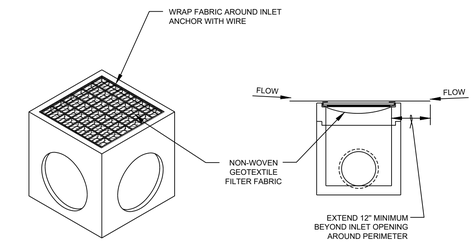
City Of Leander, Texas
203-2.
TREE PROTECTION



NOTES:

1. WHERE MINIMUM CLEARANCES CAUSE TRAFFIC TO DRIVE IN THE GUTTER, THE CONTRACTOR MAY SUBSTITUTE A 1" X 4" BOARD SECURED WITH CONCRETE NAILS 3' O.C. NAILED INTO THE GUTTER IN LIEU OF SANDBAGS TO HOLD THE FILTER DIKE IN PLACE. UPON REMOVAL, CLEAN ANY DIRT/DEBRIS FROM NAILING LOCATIONS, APPLY CHEMICAL SANDING AGENT AND APPLY NON-SHRINK GROUT FLUSH WITH SURFACE OF GUTTER.
2. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION.
3. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
4. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM-WATER BEGINS TO OVERTOP THE CURB.
5. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO:
APPROVED 03-25-11 DATE	CURB INLET PROTECTION DETAIL	EC-14
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		ROUND ROCK, TEXAS



FILTER FABRIC SPECIFICATION TABLE

PROPERTY	TEST METHOD	ASTM REQUIREMENTS
FABRIC WEIGHT	D 3776	☆3.0 OUNCES/SQUARE YARD
UV RADIATION STABILITY	D 4355	70% STRENGTH RETAINED MIN., AFTER 500 HOURS IN XENON ARC DEVICE
MULLEN BURST STRENGTH	D 3786	☆120 POUND PER SQUARE INCH
WATER FLOW RATE	D 4491	☆275 GALLONS/MINUTE/SQUARE FEET

Contact GeoSolutions at 512-445-0790 for filter fabric

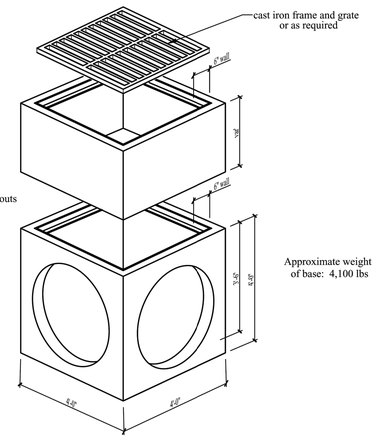
NOTES

1. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2". DO NOT ALLOW SILT TO ENTER STORM SYSTEM WHEN REMOVING INLET.
2. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY CLEAN THE INLET PROTECTION IF EXCESSIVE PONDING OCCURS.
3. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

AREA INLET PROTECTION DETAIL

3' x 3' x var Grade Inlet



Bottom Section

36" dia thinwall knockouts all four sides

Approximate weight of base: 4,100 lbs

Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC.
6905 SOUTH OLD BASTROP HWY
SAN MARCOS, TEXAS 78666
PH. (830) 606-6200

FOR 3' x 3' x var Grade Inlet			
JOB			
DRAWN RW	DATE 12/1/2015	Rev. No.	SHEET 1 OF 1
FILE catalog/grate inlets/3x3 Grate Inlet			

NOTES:

1. INSTALL 4" DIAMETER STAINLESS STEEL "NO DUMPING – DRAINS TO CREEK" MARKER, FACTORY PAINTED BLUE AS SHOWN, 2" ABOVE VERTICAL FACE OF INLET AT MIDPOINT OF ALL INLETS.
2. MARKER SHALL BE AFFIXED TO SURFACE WITH ADHESIVE PER MANUFACTURER'S RECOMMENDATIONS.
3. MARKER SHALL BE MANUFACTURED BY ALMATEK INDUSTRIES OR APPROVED EQUAL:
   ALMATEK INDUSTRIES, INC.
   2 JOY DRIVE
   HACKETTSTOWN, NJ 07840
   (800) 248-2080
   WWW.ALMATEK.COM

STATE OF TEXAS WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER
Wayne S. Watts 08/20/18

City Of Leander, Texas
DETAIL #303-3
STORM DRAIN MARKERS

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

Revision	Date	By	App	Comment

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
12007 Technology Blvd. Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

Construction Details 3

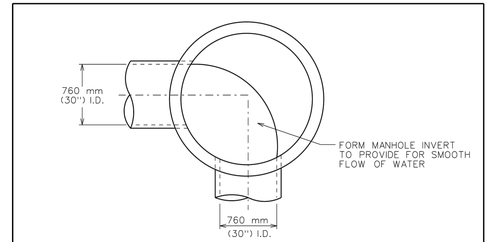
Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS KENNY WATKINS 64738 REGISTERED PROFESSIONAL ENGINEER
9/21/21

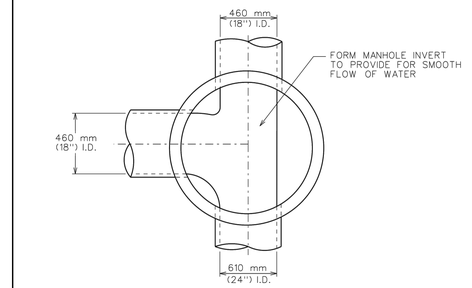
Design: JW	
CAD: BKV, Laf	Review: KW
Project No: LPJ 12237	

Sheet: 24 of 33

20-SD-026

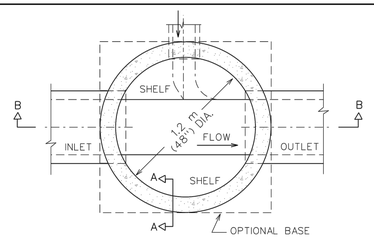


TYPICAL MANHOLE AT ANGLE IN STORM DRAIN

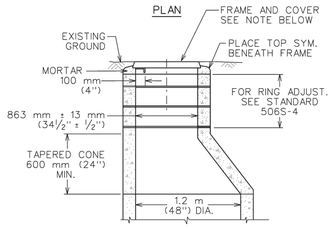


TYPICAL JUNCTION MANHOLE

CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		MANHOLE INVERT PLAN	
RECORD COPY SIGNED BY GEORGE E. OSWALD	*2/14/02* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-1



PLAN



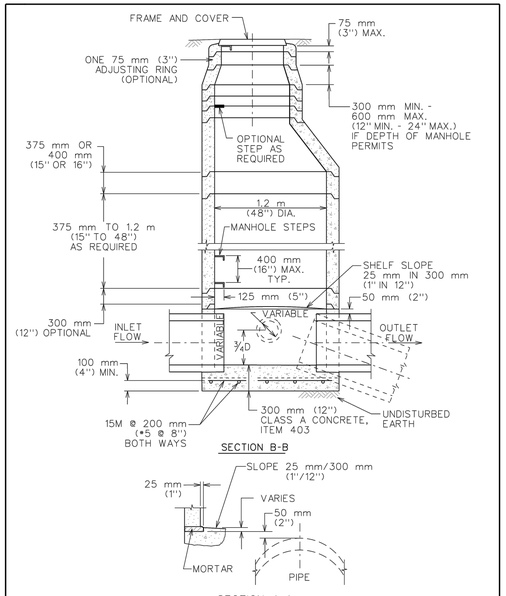
ALTERNATE SECTION
MAY BE SUBMITTED FOR APPROVAL

NOTE:
USE 800 mm (32") FRAME AND COVER.

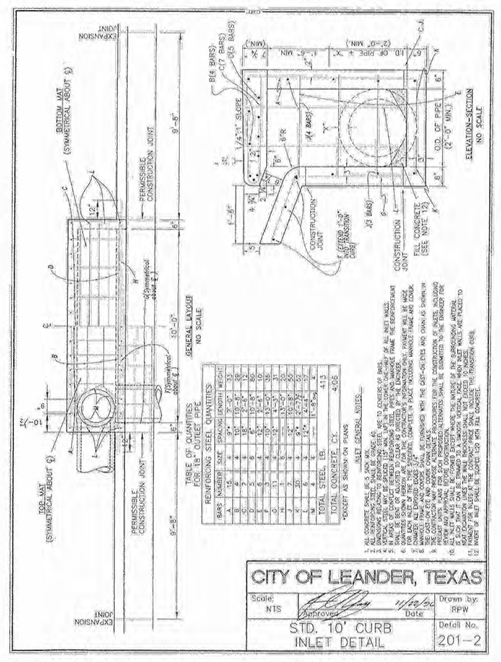
MINIMUM MANHOLE DIA.	MINIMUM PIPE SIZE
1.2 m (4')	450 TO 600 mm (18 TO 24")
1.5 m (5')	750 mm TO 1.1 m (30 TO 42")
1.8 m (6')	1.2 TO 1.4 m (48 TO 54")
2.1 m (7')	1.5 TO 1.7 m (60 TO 66")

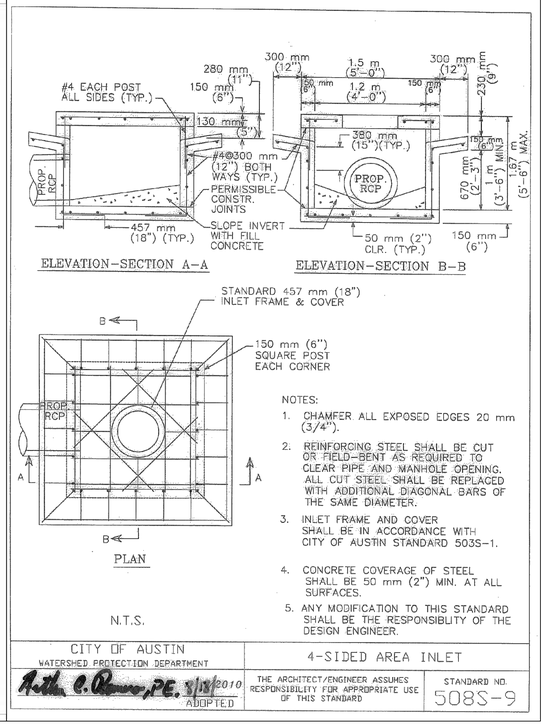
SIZE TO BE USED IS DEPENDENT ON DRAIN ANGLES.

CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		PRE-CAST CONCRETE STORM DRAIN MANHOLE	
RECORD COPY SIGNED BY GEORGE E. OSWALD	*2/14/02* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-3 1 OF 2



CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		PRE-CAST CONCRETE STORM DRAIN MANHOLE	
RECORD COPY SIGNED BY GEORGE E. OSWALD	*2/14/02* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-3 2 OF 2





ELEVATION–SECTION A–A

ELEVATION–SECTION B–B

PLAN

N.T.S.

NOTES:

1. CHAMFER ALL EXPOSED EDGES 20 mm (3/4").
2. REINFORCING STEEL SHALL BE CUT OR FIELD-BENT AS REQUIRED TO CLEAR PIPE AND MANHOLE OPENING. ALL CUT STEEL SHALL BE REPLACED WITH ADDITIONAL DIAGONAL BARS OF THE SAME DIAMETER.
3. INLET FRAME AND COVER SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD 503S-1.
4. CONCRETE COVERAGE OF STEEL SHALL BE 50 mm (2") MIN. AT ALL SURFACES.
5. ANY MODIFICATION TO THIS STANDARD SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		4-SIDED AREA INLET	
Kenneth C. Ramsey, P.E. 5/12/2010 ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	STANDARD NO. 508S-9

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
12007 Technology Blvd. Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

Revision	Date	By	App	Comment

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

Construction Details 4

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
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Design: JW
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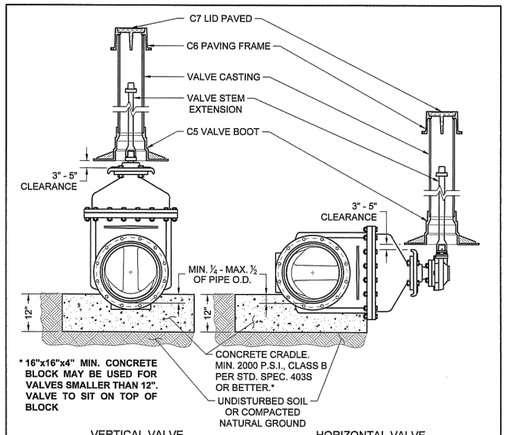
Project No: LPJ 12237

Sheet: **25** of **33**
20-SD-026



*** 16"x16"x4" MIN. CONCRETE BLOCK MAY BE USED FOR VALVES SMALLER THAN 12". VALVE TO SIT ON TOP OF BLOCK**

VERTICAL VALVE

HORIZONTAL VALVE

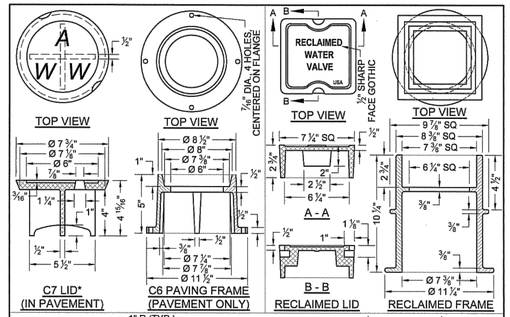
ONLY TO BE USED WHEN CALLED OUT ON THE DRAWINGS.

NOTES:

1. WELD SOCKET 2½" x 2" DEEP TO 1" SCH. 40 CARBON STEEL ROUND STEM EXTENSION, FITTED ON OPERATING NUT. [SCH. 80 FOR LENGTHS OVER 10']
2. VALVE CASTING SHALL BE 6" DI PIPE WITH BELL OR COLLAR CENTERED OVER VALVE BOOT.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
4. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 12" AND 18" FROM FINISHED GRADE.

RECLAIMED WATER: ALL RECLAIMED PVC PIPE SHALL BE MANUFACTURED PURPLE PIPE. HDPE PIPE SHALL BE MANUFACTURED WITH PURPLE STRIPES. ALL OTHER PIPE AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL PIPE AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 1 OF 4



NOTES:

1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID, FRAME, COLLAR AND BASE.
3. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
4. CASTING FINISH BY MANUFACTURER SHALL INCLUDE REMOVAL OF FINS AND FLASHING, AND PAINT WITH BLACK ASPHALT COATING.

WEIGHTS:

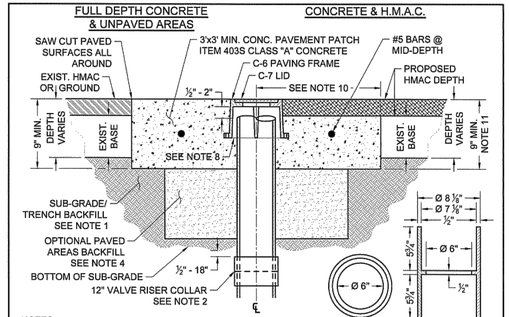
C7 LID: 13 LBS
RECLAIMED LID: 15 LBS
C6 FRAME: 23 LBS
RECLAIMED FRAME: 33 LBS
C5 BASE: 78 LBS

* LETTERING SHALL BE 1 ½"
2 PICK BAR SLOTS REQUIRED

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 2 OF 4

FULL DEPTH CONCRETE & UNPAVED AREAS

CONCRETE & H.M.A.C.



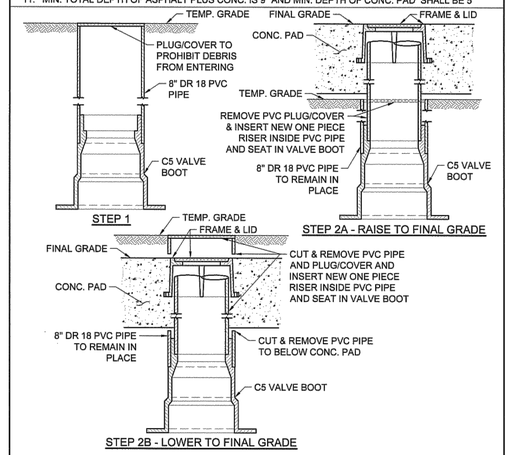
NOTES:

1. SUB-GRADE/TRENCH BACKFILL SHALL BE COMPACTED AS PER ITEM 201S, SUB-GRADE PREPARATION.
2. TO ADJUST VALVE CASTINGS TO FINAL GRADE, REMOVE RISER PIPE BELOW SUB-GRADE AND INSTALL APPROPRIATE LENGTH OF NEW RISER PIPE TO ACHIEVE FINAL GRADE. CONNECT THE TWO PIECES OF RISER PIPE WITH A 6" COLLAR MIN. 12" LENGTH APPROXIMATELY CENTERED ON THE JOINT WITH THE TOP OF SLEEVE LOCATED ½" - 18" BELOW SUB-GRADE. THE INSIDE "LIP" OF COLLAR TO BE PAINTED WITH FLUORESCENT WHITE PAINT OR COVERED WITH FLUORESCENT WHITE TAPE. ALTERNATE: FOR OPTIONAL SINGLE PIECE RISER INSTALLATION SEE SHEET 4 OF 4.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE NUT OF THE VALVE; NUT SHALL OPERATE WITH NO OBSTRUCTION.
4. WHERE CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20" DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL (SPEC. ITEM 402S) TO THE UNDERSIDE OF THE CONCRETE. PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
5. REINFORCING STEEL SHALL MEET SPEC. ITEM 406S.7.
6. NO MORE THAN 2 SECTIONS OF PIPE SHALL BE USED FROM VALVE TO FINAL GRADE.
7. BELL AND SPIGOT IS ACCEPTABLE FOR DEPTH OVER 18'.

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 3 OF 4

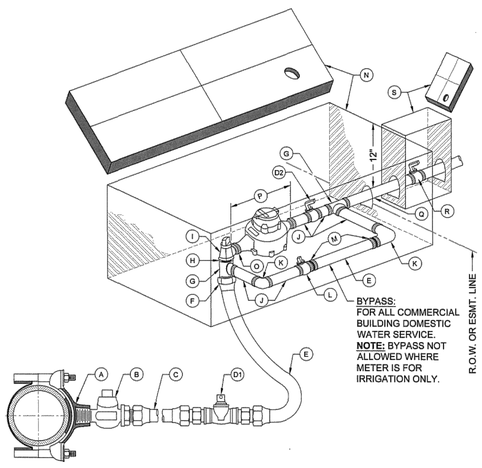
NOTES (CONT'):

8. PAVING FRAME SHALL BE FLUSH WITH THE CONC. PAD AND PLACED ½" - 2" ABOVE RISER PIPE (FRAME SHALL NOT REST ON RISER.)
9. IN UNPAVED AREAS, INSTALL ONE DELINEATOR STAKE IMMEDIATELY ADJACENT TO THE EDGE OF THE CONCRETE PAD. DELINEATOR SHALL BE BLUE FOR POTABLE WATER AND PURPLE FOR RECLAIMED WATER AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE IN COLOR, TYPE I REFLECTIVE TAPE MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES.
10. VALVE SHALL TYPICALLY BE CENTERED IN CONCRETE DIAMOND BUT MAY BE OFFSET WITH A MIN. OF 12" FROM CENTER OF VALVE LID TO EDGE OF CONCRETE IN ALL DIRECTIONS.
11. MIN. TOTAL DEPTH OF ASPHALT PLUS CONC. IS 9" AND MIN. DEPTH OF CONC. PAD SHALL BE 5"



OPTIONAL ONE PIECE VALVE CASTING INSTALLATION

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 4 OF 4



CITY OF AUSTIN AUSTIN WATER	1 ½" - 2" METER INSTALLATION SHOWING OPTIONAL BYPASS	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-04 1 OF 2

MATERIALS LIST:

A. 2" SERVICE CLAMP
B. 2" CORPORATION STOP MALE THREAD INLET BY COMPRESSION OUTLET
C. 2" COPPER WATER SERVICE TUBING EXTENDED BEYOND PAVEMENT
D1. 2" BALL VALVE, SPL WW-275
D2. 2" BALL VALVE, SPL WW-275
E. 2" COPPER SERVICE TUBING
F. 2" BRASS COUPLING - COMPRESSION TO MALE IPT
G. 2" BRASS TEE
H. 2" BRASS CLOSE-NIPPLE
I. 2" ANGLE METER STOP; SERVICE TUBING INLET x FLANGED OUTLET
J. 2" BRASS NIPPLE
K. 2" BRASS ELBOW
L. 2" LOCKABLE CURB STOP - FEMALE IPT INLET BY COMPRESSION OUTLET
M. 2" BRASS COUPLING - SERVICE TUBING TO MALE IPT
N. RECTANGULAR METER BOX AND COVER, SPL WW-145A
O. BRASS ADAPTER (2" x 1 ½") FOR 1 ½" METER ONLY
P. WATER METER, LENGTH 13", (PURCHASED FROM AUSTIN WATER)
Q. 2" COPPER SERVICE TUBING (PRIVATE PLUMBING PER CODE)
R. CUSTOMER CUT-OFF VALVE
S. CUSTOMER VALVE BOX AND LID

NOTES:

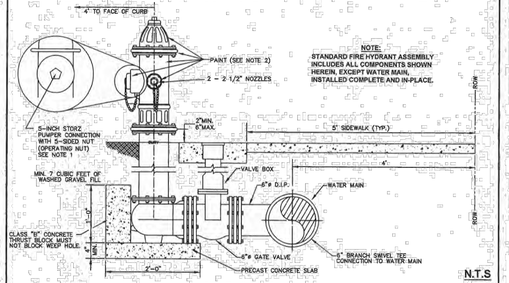
1. SERVICE CLAMP SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
2. BRANCH CONNECTIONS AND ALL ANGLE METER STOPS MUST BE INSTALLED PRIOR TO ANY METER INSTALLATION.
3. TOP OF BOXES SHOULD BE 1" ABOVE GROUND.
4. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY SECTION 510.3 (14) OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS; BACKFILL ABOVE GRANULAR BEDDING AS REQUIRED BY SECTION 510.3 (25).
5. BOX MUST BE BEHIND CURB NEXT TO PROPERTY LINE OR EASEMENT AND OUT OF VEHICULAR TRAFFIC AREA AND SIDEWALK.
6. BALL VALVE "D1" SHALL NOT BE LOCATED UNDER SIDEWALK, CURB, OR PAVEMENT, AND NOT BE LOCATED MORE THAN 24" HORIZONTALLY FROM METER BOX OR 36" BELOW FINAL GRADE.
7. COPPER SERVICE SHALL BE COPPER TUBING SIZE ANNEALED SEAMLESS TYPE "K" MEETING ASTM B88 WITH NO SWEAT OR SOLDERED JOINTS.

RECLAIMED WATER:

FOR RECLAIMED WATER SERVICES AND METERS, ALL RECLAIMED TUBING SHALL BE MANUFACTURED PURPLE TUBING. ALL OTHER TUBING AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL TUBING AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	1 ½" - 2" METER INSTALLATION SHOWING OPTIONAL BYPASS	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-04 2 OF 2

FIRE HYDRANTS LACKING INTEGRAL STORZ CONNECTOR SHALL BE REJECTED (NO STORZ ADAPTERS ALLOWED)



NOTES:

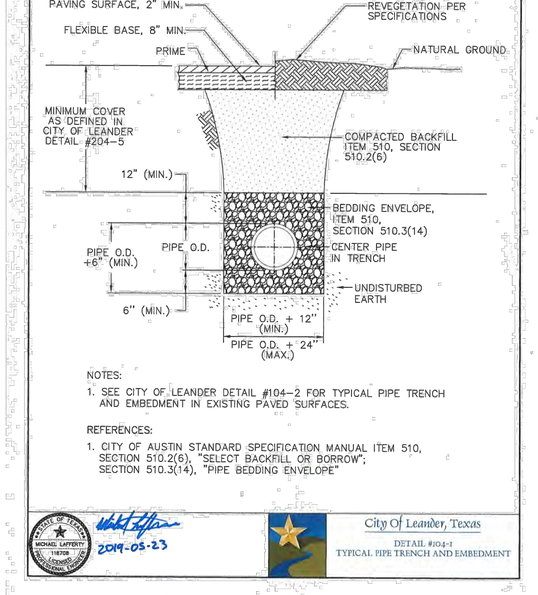
1. FIRE HYDRANT SHALL BE CLOW MEDALLION F2545, AMERICAN DARLING B-84-B-5, MUELLER SUPER CENTURION, EJ 5CD250 WATERMASTER, KENNEDY K81D GUARDIAN, AVK 2780, OR APPROVED EQUAL VIA SUBMITTAL PROCESS. THE PRIMARY FEATURES REQUIRED INCLUDE: FACTORY INSTALLED INTEGRAL 5-INCH STORZ PUMPER NOZZLE; 1.5-INCH PENT OPERATING NUT ON NOZZLE CAP; OPEN LEFT. FACTORY PAINTED.
2. HYDRANTS SHALL BE FACTORY PAINTED WITH FLYNT ALUMINUM SILVER PAINT OR SHERWIN WILLIAMS SILVER B59S11. HYDRANTS WILL NOT BE ACCEPTED IF PAINTED AFTER DELIVERY OR IF PAINT IS FLAT IN APPEARANCE.
3. ALL DUCTILE OR CAST IRON FITTINGS AND/OR PIPE SHALL BE POLYWRAPPED.
4. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE. ALL FITTINGS SHALL BE EQUIPPED WITH JOINT RESTRAINT "MEGALUG" OR APPROVED EQUAL. ALL ANCHOR FITTING TO BE CONCRETE THRUST BLOCKED.
5. BLUE, BI-DIRECTIONAL REFLECTIVE PAVEMENT MARKER, ULTIMATE WET NIGHT VISIBILITY SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION AT THE CORRESPONDING ROADWAY STATION OFFSET 6" (SIX INCHES) FROM CENTER OF STREET TO THE SIDE HYDRANT IS LOCATED. AT INTERSECTIONS, MARKERS SHALL BE PLACED ON BOTH ROADWAYS ADJACENT TO HYDRANT.

LOCATION:

6. SET F.H. ON LOT LINE (EXTENDED WHEN POSSIBLE)
7. F.H. LOCATED AT STREET INTERSECTIONS SHALL BE PLACED A MINIMUM OF TEN FEET (10') FROM RADIUS TANGENT POINT.
8. NO OBSTRUCTIONS SHALL BE PERMITTED WITHIN THREE FEET (3') IN ALL DIRECTIONS FROM F.H.
9. 5-INCH STORZ PUMPER NOZZLE SHALL FACE THE FIRE LANE OR TRAVEL WAY UNLESS OTHERWISE NOTED.

STATE OF TEXAS WAYNE S. WATTS 86134 REGISTERED PROFESSIONAL ENGINEER
Wayne S. Watts 02/05/19

City Of Leander, Texas
DETAIL #101-4
STANDARD FIRE HYDRANT ASSEMBLY



NOTES:

1. SEE CITY OF LEANDER DETAIL #104-2 FOR TYPICAL PIPE TRENCH AND EMBEDMENT IN EXISTING PAVED SURFACES.

REFERENCES:

1. CITY OF AUSTIN STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

STATE OF TEXAS MICHAEL LAFFERTY 118708 REGISTERED PROFESSIONAL ENGINEER
2019-05-23

City Of Leander, Texas
DETAIL #104-1
TYPICAL PIPE TRENCH AND EMBEDMENT

Revision	Date	By	App	Comment

Prepared For:
Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
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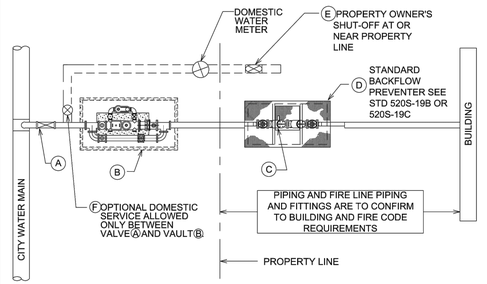
Water Details

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS KENNY WATKINS 64738 REGISTERED PROFESSIONAL ENGINEER
7/16/21

Design: JW
CAD: BKV, Laf | Review: KW
Project No: LPJ 12237

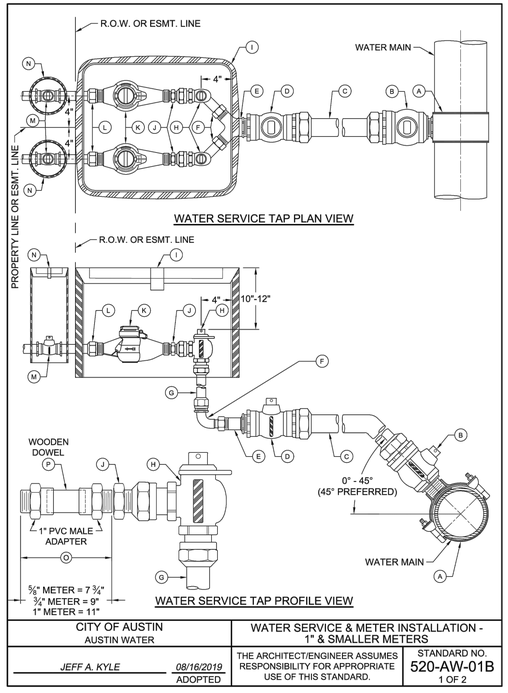
Sheet: 26 of 33
20-SD-026



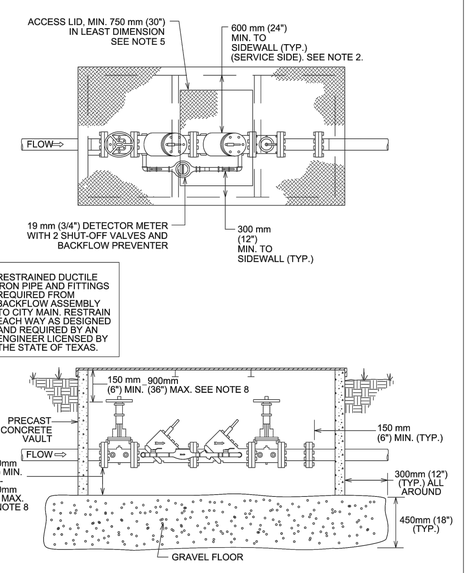
MATERIALS:
- A TAPPING, RESTRAINED OR FLANGED VALVE (GATE, IRON BODY WITH MJ OUTLET). SEE SPL WW-243, WW-27, WW-27A, AND/OR WW-27B.
- B FIRELINE OR MASTER METER, SEE STD. DETAIL 520S-17.
- C CUSTOMER'S BACKFLOW PREVENTION ASSEMBLY AS REQUIRED BY CROSS CONNECTION ORDINANCES. SEE SPL WW-293 OR APPROVEL EQUAL.
- D VAULT AND ACCESS DOOR SHALL BE PER SPL WW-298 OR SPL WW-614, RESPECTIVELY, OR APPROVED EQUAL. SEE STD. DETAIL 520S-19B OR 19C. VAULT SHALL NOT BE LOCATED IN A TRAFFIC AREA.
- E CUSTOMER'S SHUT-OFF VALVE ON DOMESTIC WATER LINE.
- F DOMESTIC WATER SERVICE LINE VALVE.

NOTES:
1. FIRE LINE SHALL BE A MINIMUM OF 150 mm (6") & GREATER THAN OR EQUAL TO METER SIZE IN THE STREET RIGHT-OF-WAY. PLANS SHALL BE PREPARED BY A LICENSED ENGINEER.
2. ALL BURIED PIPE SHALL BE WRAPPED COMPLETELY WITH A MINIMUM OF 0.2 mm (8 MIL) POLYETHYLENE FILM.
3. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR. MATERIALS AS REQUIRED BY SECTION 510.3 (14) OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS: BACKFILL ABOVE GRANULAR BEDDING AS REQUIRED BY SECTION 510.3 (25).
4. FOR STD. DETAILS 520S-19A, 19B, AND 19C, MASTER METER MEANS METER FOR FIRE AND DOMESTIC SERVICE.
5. THE TOP OF THE METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT. ADDITIONAL DRAINAGE CONSIDERATION SUCH AS CONNECTION OF VAULT TO STORM SEWER, LATERAL DRAIN LINES FROM GRAVEL BED OR OTHER MEANS SHALL BE REQUIRED IF CONDITIONS CAUSE WATER TO COLLECT IN VAULT.

CITY OF AUSTIN AUSTIN WATER UTILITY	STANDARD FIRE LINE INSTALLATION WITH OR WITHOUT MASTER METER	
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-19A



CITY OF AUSTIN AUSTIN WATER	WATER SERVICE & METER INSTALLATION - 1" & SMALLER METERS	
JEFF A. KYLE 08/16/2019 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-01B 1 OF 2



CITY OF AUSTIN WATER AND WASTEWATER UTILITY	STANDARD FIRE LINE INSTALLATION WITHOUT MASTER METER	
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-19C 1 OF 2

NOTES:
1. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL HAVE LAB AND FIELD APPROVAL FROM THE UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH.
2. ALL TEST PORTS SHALL BE DIRECTED UPWARD AND PLUGGED. TEST PORTS ARE LOCATED ON SERVICE SIDE. PLUGS SHALL BE NON-FERROUS.
3. BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED IN THE UPRIGHT HORIZONTAL POSITION, UNLESS OTHERWISE APPROVED. BACKFLOW PREVENTION ASSEMBLIES SHALL NOT BE ROTATED ON THEIR AXIS.
4. CLEARANCE SHALL BE AS INDICATED,AND IN THE STANDARD CROSS CONNECTION ORDINANCES AND UCM.
5. ACCESS OPENING MUST BE LARGE ENOUGH TO REMOVE LARGEST PORTION OF BACKFLOW PREVENTER, BUT NOT LESS THAN 750 mm (30") IN LEAST DIMENSION.
6. TEST AND MAINTENANCE REPORT SHALL BE RECEIVED BY AUSTIN WATER UTILITY'S SPECIAL SERVICE DIVISION WITHIN 5 DAYS AFTER BEING INSTALLED.
7. VAULT SHALL NOT BE INSTALLED IN TRAFFIC AREA.
8. VAULT DEPTH MAY NOT EXCEED 1.8m (72"), BOTTOM OF LID TO TOP OF FLOOR.
9. HAND WHEELS SHALL BE HORIZONTALLY LOCATED WITHIN 300mm (12") OF ACCESS OPENING.
10. FOR ACCESS DOORS SEE SPL WW-614 OR APPROVED EQUAL (H20 LOADING REQUIRED).
11. FOR VAULT SEE SPL WW-298 OR APPROVED EQUAL (H20 LOADING REQUIRED).
12. VAULT PIPE WALL VOIDS SHALL BE SEALED WITH NON-SHRINK GROUT OR SEALANT PER SPL WW-146A OR APPROVED EQUAL.
13. THE TOP OF THE METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT. ADDITIONAL DRAINAGE CONSIDERATION SUCH AS CONNECTION OF VAULT TO STORM SEWER, LATERAL DRAIN LINES FROM GRAVEL BED OR OTHER MEANS SHALL BE REQUIRED IF CONDITIONS CAUSE WATER TO COLLECT IN VAULT.

CITY OF AUSTIN WATER AND WASTEWATER UTILITY	STANDARD FIRE LINE INSTALLATION WITHOUT MASTER METER	
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-19C 2 OF 2

Revision	Date	By	App	Comment

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KENNY WATKINS 64738 REGISTERED PROFESSIONAL ENGINEER STATE OF TEXAS
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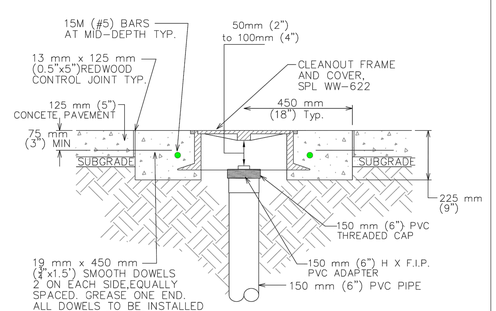
20-SD-026

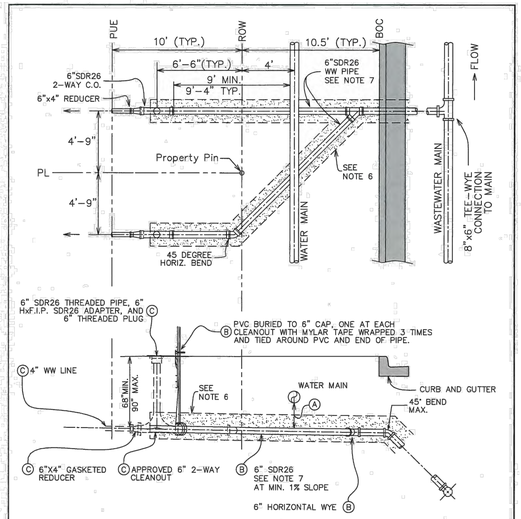


PLAN VIEW

NOTES:

1. SERVICES SHALL BE DESIGNED TO AVOID CLEANOUT LOCATION WITHIN DRIVEWAYS.
2. THIS STANDARD DETAIL IS ONLY FOR EXISTING CLEANOUTS THAT ARE LOCATED WITHIN EXISTING DRIVEWAYS.
3. SUBGRADE SHALL BE COMPACTED AS PER STD. SPEC. 201S, SUBGRADE PREPARATION.
4. REINFORCING STEEL SHALL MEET ITEM 406S, REINFORCING STEEL.
5. PC CONCRETE SHALL MEET ITEM 403S CLASS "A".
6. TRAFFIC BEARING FRAME AND COVER ONLY, HEAVY DUTY.
7. PLACE CASTING IN CONCRETE, FINISH CONCRETE SMOOTH.
8. LOCATE CASTING SO WATER WILL NOT ACCUMULATE AT CASTING.
9. PVC PIPE SHALL BE A MINIMUM WALL THICKNESS AS REQUIRED BY SDR-35. CLEANOUTS INSTALLED ON SDR-26 SERVICES SHALL BE A MINIMUM WALL THICKNESS AS REQUIRED BY SDR-26.

CITY OF AUSTIN AUSTIN WATER UTILITY		WASTEWATER CLEANOUT ADJUSTMENT TO GRADE IN DRIVEWAYS	
RECORD COPY SIGNED BY KATHI L FLOWERS	06/01/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-4



NOTES:

Ⓐ WATER MAIN SHALL CROSS ABOVE 6" WASTEWATER SERVICE, TWO-FOOT (2') MINIMUM VERTICAL SEPARATION.

Ⓑ TO BE INSTALLED AND INSPECTED DURING SUBDIVISION CONSTRUCTION. UTILITY CONTRACTOR INSTALLS SERVICE STUB WITH PLUG OR CAP.

Ⓒ 2-WAY CLEANOUTS, 6" HxF.I.P. ADAPTER, REDUCER, AND 4" SERVICE LINE INSTALLED BY BLDG. PLUMBER. PERMITS DEPARTMENT SHALL INSPECT CUSTOMER'S WASTEWATER LINE AND ALL APPURTENANCES INSTALLED BY BUILDING PLUMBER.

STATE OF TEXAS · WAYNE S. WATTS · 86134 · LICENSED PROFESSIONAL ENGINEER · 9/26/18

City Of Leander, Texas
DETAIL #101-2
1 OF 2
WASTEWATER SERVICE CONNECTIONS

NOTES

1. DURING SUBDIVISION CONSTRUCTION, UTILITY CONTRACTOR INSTALLS WASTEWATER CONNECTION TO MAIN, 6" HORIZONTAL WYE FOR DOUBLE SERVICES, 6" SERVICE BRANCH, AND PLUG(S) FOR 6" SERVICE BRANCH STUB. CONTRACTOR TIES MYLAR TAPE TO END OF 6" STUB, WRAPS 3 TIMES AROUND LENGTH OF PVC BURIED TO THE DEPTH OF THE 6" STUB AND TIES TO TOP OF PVC EXTENDING A MINIMUM OF 2 FEET ABOVE GROUND.

   ALL WASTEWATER PIPING SHALL HAVE ELASTOMERIC GASKET TYPE JOINTS AND SHALL SLOPE DOWNWARD TO MAIN 1% (1/8" PER FOOT) MINIMUM TO 45° MAXIMUM. DEPTH OF SERVICE STUB AT PROPERTY LINE WILL BE SHOWN ON PLANS BY ENGINEER. IF GREATER THAN 8', OTHERWISE THE INSTALLED DEPTH WILL TYPICALLY BE 6' TO 8'. IF WASTEWATER SERVICE LINE TO MAIN REQUIRES DEFLECTION EXCEEDING 45°, REFER TO DETAIL 520-6. ALL INSTALLATIONS SHALL BE MADE IN ACCORDANCE WITH INFORMATION SHOWN ON APPLICABLE STANDARD DRAWINGS AND WILL BE INSPECTED BY CITY OF LEANDER CONSTRUCTION INSPECTION PERSONNEL.

2. CUSTOMER REMOVES PLUG FROM 6" SERVICE LINE STUB, INSTALLS 6" 2-WAY CLEANOUT, 6" BY 4" REDUCER, RISER FOR CLEANOUT, 6" HxF.I.P. ADAPTER, 6" THREADED PLUG, AND 4" SERVICE LINE TO STRUCTURE. IF WASTEWATER WILL NOT SATISFACTORILY FLOW BY GRAVITY FROM STRUCTURE TO SEWER SERVICE STUB & WASTEWATER MAIN, PUMP EQUIPMENT MUST BE PROVIDED BY THE CUSTOMER AS PART OF CUSTOMER'S WASTEWATER SYSTEM.

3. CUSTOMER IS RESPONSIBLE FOR PUBLIC PIPING SYSTEM UNTIL WASTEWATER IS CONNECTED. ANY MISSING OR DAMAGED PARTS SHALL BE REINSTALLED BY CUSTOMER WHO SHALL GUARANTEE, FOR A PERIOD OF TWO (2) YEARS FROM DATE OF ACCEPTANCE, THAT CONNECTIONS TO CITY SYSTEMS ARE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIAL. CUSTOMER ALSO HAS THE RESPONSIBILITY TO ASSURE THAT ALL 2-WAY-CLEANOUTS REMAIN CLEAR OF SIDEWALKS AND OTHER OBSTRUCTIONS.

4. CITY OF LEANDER ACTIVITY IS LIMITED TO INSPECTION OF CONNECTIONS TO THE CITY'S WASTEWATER SYSTEM. FOR MAINTENANCE PURPOSES, THE CITY'S RESPONSIBILITY ENDS AT THE CUSTOMER'S WASTEWATER CONNECTION TO THE 2-WAY-CLEANOUT.

5. PIPING AND TUBING IN STREET RIGHT-OF-WAY AND IN EASEMENT AREA SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY CITY OF AUSTIN STANDARD SPECIFICATION SECTION 510.3 (14) UNLESS OTHERWISE NOTED ON THIS DETAIL; MATERIALS SHALL BE AS SPECIFIED IN 510.2 (2)(A) AND (3)(B); BACKFILL ABOVE THE GRANULAR BEDDING SHALL BE AS REQUIRED BY SECTION 510.3 (25). SERVICE LINES IN THESE AREAS SHALL HAVE A MINIMUM COVER BELOW FINAL STREET GRADE OF 42". ANY EXCEPTION MUST BE SPECIFICALLY APPROVED BY THE ENGINEER.

6. ALL SANITARY SEWER PIPE WITHIN 9' OF WATER MAINS SHALL BE BEDDED IN CEMENT STABILIZED SAND PER TCEQ CHAPTER 217 & 290 REQUIREMENTS. BEDDING SHALL EXTEND A MINIMUM OF 12" ABOVE PIPE, 4" BELOW PIPE, AND 12" BEYOND JOINTS AT EACH END.

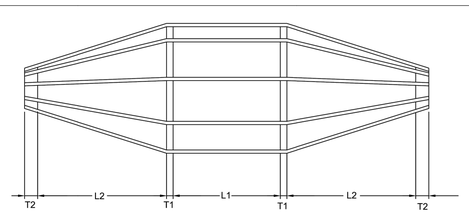
7. PIPE MATERIAL FOR WASTEWATER SERVICES SHALL BE 6" SDR-26 PVC D2241 160 PSI RATED.

8. NO METER BOX OR CLEAN OUT SHALL BE SET IN SIDEWALK OR DRIVEWAY AREA WITHOUT WRITTEN APPROVAL FROM THE CITY ENGINEERING DEPT.

9. NO JOINTS SHALL BE PERMITTED BETWEEN THE 6"x6" HORIZONTAL WYE AND THE 6" 2-WAY CLEANOUT EXCEPT FOR THE 6" 45-DEGREE BEND REQUIRED FOR DOUBLE SERVICES.

STATE OF TEXAS · WAYNE S. WATTS · 86134 · LICENSED PROFESSIONAL ENGINEER · 9/26/18

City Of Leander, Texas
DETAIL #101-2
2 OF 2
WASTEWATER SERVICE CONNECTIONS



NOTE: WELD ALL RODS TO FRAME

NOTE: MANDREL DIMENSIONS SHOWN ARE FOR ASTM 3034 SDR-26 PVC SEWER PIPE

PIPE SIZE	L1 (MIN.)	L2	T1	T2	ROD DIA.	R1	R2	DIA.
6"	4.34"	6"	.375"	1.0"	.375"	2.75"	0.75"	5.50"
8"	5.82"	6"	.375"	1.0"	.375"	3.68"	1.25"	7.37"
10"	7.27"	8"	.375"	1.0"	.375"	4.60"	1.50"	9.21"
12"	8.65"	8"	.375"	1.0"	.375"	5.48"	1.75"	10.96"

SPECIFICATIONS

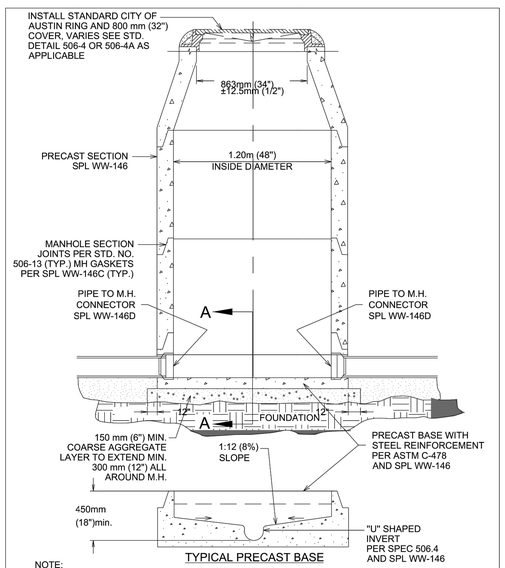
1. MANDREL SIZING. MANDREL SHALL HAVE AN OUTSIDE DIAMETER EQUAL TO 95%%% OF THE INSIDE DIAMETER OF THE PIPE. THE INSIDE OF THE PIPE SHALL BE MEASURED AS THE AVERAGE OUTSIDE DIAMETER MINUS TWO MINIMUM WALL THICKNESS FOR O.D. CONTROLLED PIPE AND THE AVERAGE INSIDE DIAMETER FOR I.D. CONTROLLED PIPE.

2. MANDREL DESIGN. MANDREL SHALL BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200 psi WITHOUT BEING DEFORMED. THE MANDREL SHALL HAVE 9 OR MORE RUNNERS (LEGS) AS LONG AS THE TOTAL NUMBER OF LEGS IS AN ODD NUMBER. THE BARREL SECTION OF THE MANDREL SHALL HAVE A LENGTH OF AT LEAST 75%%% OF THE INSIDE DIAMETER OF THE PIPE. A PIVOT RING SHALL BE PROVIDED AND USED FOR EACH SIZE MANDREL IN USE.

3. METHOD OPTIONS. ADJUSTABLE OR FLEXIBLE MANDRELS ARE PROHIBITED. A TELEVISION INSPECTION IS NOT A SUBSTITUTE FOR THE DEFLECTION TEST. A DEFLECTOMETER MAY BE APPROVED FOR USE ON A CASE-BY-CASE BASIS. MANDRELS WITH REMOVABLE LEGS OR RUNNERS MAY BE ACCEPTED ON A CASE-BY-CASE BASIS.

TYPICAL MANDREL DETAILS

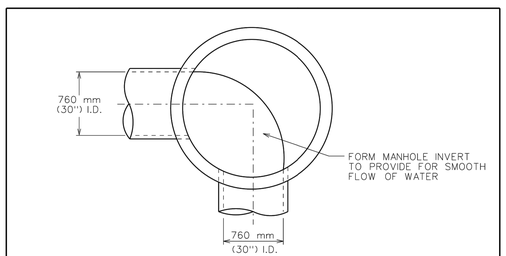
N.T.S.



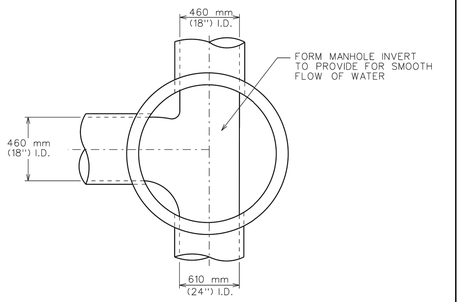
TYPICAL PRECAST BASE

NOTE:
1. THE MANHOLE BASE SHALL BE BEDDED ON 150 mm (6") COARSE AGGREGATE. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE.
2. MH FOUNDATION SHALL MEET OR EXCEED STD. SPEC. 506.5B.

CITY OF AUSTIN AUSTIN WATER UTILITY		WASTEWATER MANHOLE ON PRECAST BASE	
RECORD COPY SIGNED BY KATHI L FLOWERS	08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	STANDARD NO. 506S-10

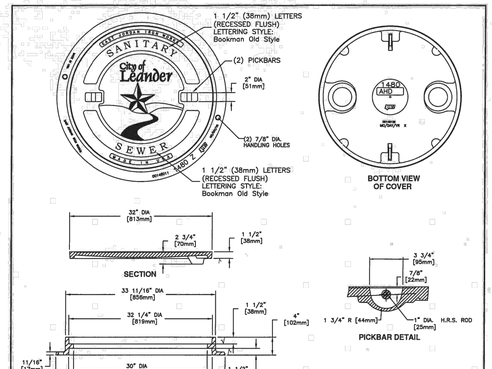


TYPICAL MANHOLE AT ANGLE IN STORM DRAIN



TYPICAL JUNCTION MANHOLE

CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		MANHOLE INVERT PLAN	
RECORD COPY SIGNED BY GEORGE E. OSWALD	2/14/02 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-1



MANHOLE ASSEMBLY	EST. WT. COVER: 200 LBS 91kg FRAME: 155 LBS 70kg UNIT: 355 LBS 161kg
EAST JORDAN IRON WORKS PRODUCT NO. 00148107 OR NEENAH FOUNDRY DF-1274 LEANDER SANITARY	OPEN AREA N/A MAT'L SPEC. COVER – GRAY IRON ASTM A48 CL35B FRAME – GRAY IRON ASTM A48 CL35B

LOAD RATING
HEAVY DUTY (H20)

STATE OF TEXAS · WAYNE S. WATTS · 86134 · LICENSED PROFESSIONAL ENGINEER · 02/22/16

City Of Leander, Texas
DETAIL #107-1
SANITARY SEWER MANHOLE COVER

Prepared For:
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AUSTIN BRYAN CONROE HOUSTON

Wastewater Details

Site Development Plan
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17680 Ronald W. Reagan Blvd
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STATE OF TEXAS · KENNY WATKINS · 64738 · REGISTERED PROFESSIONAL ENGINEER · 9/21/21

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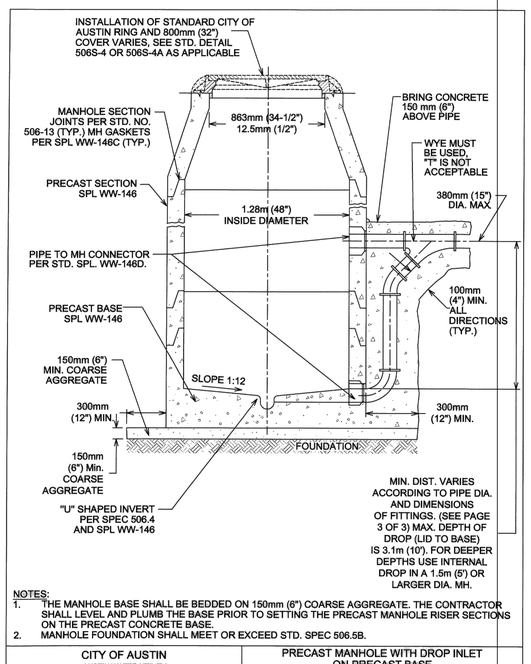
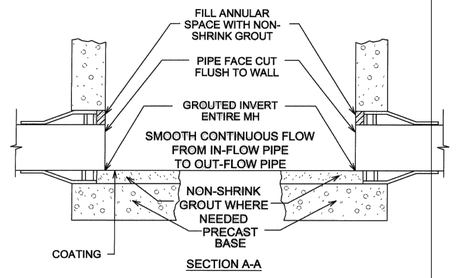


NOTES:
1. THE MANHOLE BASE SHALL BE BEDDED ON 150mm (6") COARSE AGGREGATE. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE.
2. MANHOLE FOUNDATION SHALL MEET OR EXCEED STD. SPEC 506.5B.

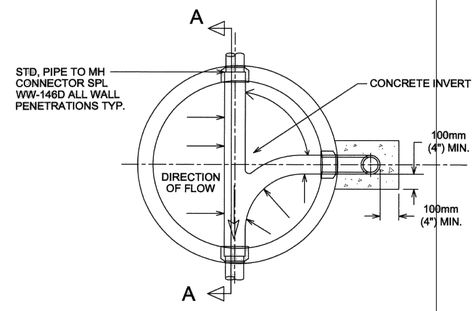
CITY OF AUSTIN AUSTIN WATER UTILITY	PRECAST MANHOLE WITH DROP INLET ON PRECAST BASE	
Kathi A Silbowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-8 1 OF 3

INVERT DETAIL



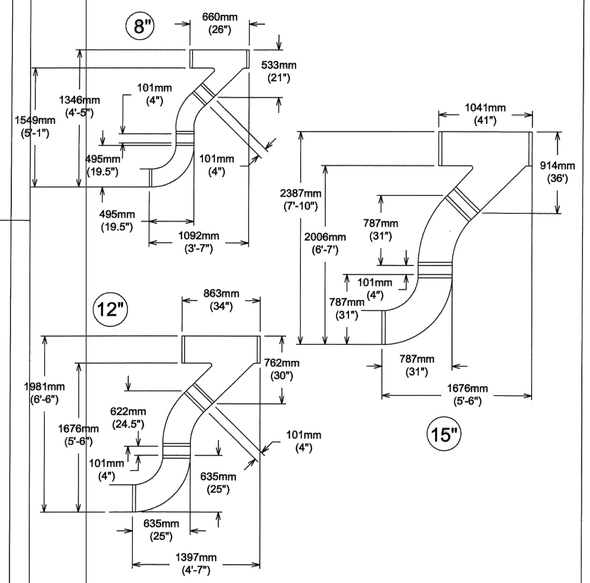
SECTION A-A

INVERT PLAN VIEW



CITY OF AUSTIN AUSTIN WATER UTILITY	PRECAST MANHOLE WITH DROP INLET ON PRECAST BASE	
Kathi A Silbowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-8 2 OF 3

STANDARD DROP CONNECTIONS
MINIMUM DIMENSIONS
(FOR INFORMATION ONLY)



CITY OF AUSTIN AUSTIN WATER UTILITY	PRECAST MANHOLE WITH DROP INLET ON PRECAST BASE	
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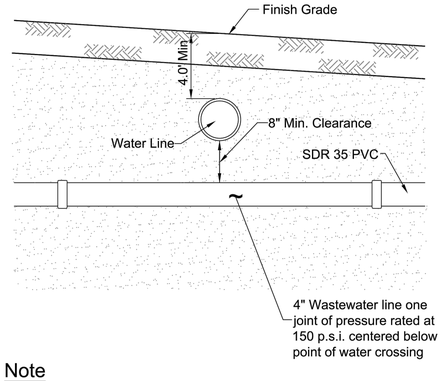

Note
If 4' cover over waterline cannot be achieved, then waterline must be routed under the conflicting utility while maintaining a 6" clearance.

Utility Crossing Detail
N.T.S.

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Wastewater Details 2

Site Development Plan
Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
Williamson County

STATE OF TEXAS
KENNY WATKINS
64738
REGISTERED
PROFESSIONAL ENGINEER
7/16/21

Design: JW
CAD: BKV, Laf | Review: KW
Project No: LPJ 12237
Sheet: 29 of 33
20-SD-026

ORIGINAL LAYOUT SIZE - 24X36

GENERAL:

1. Dimensions refer to rough surfaces. The contractor must verify all dimensions prior to start of construction. The engineer shall be notified of any discrepancies or inconsistencies.

2. All drawings are considered part of the contract documents. The contractor shall be responsible for review and coordination of all drawings and specifications prior to the start of construction. Any discrepancies that occur shall be brought to the attention of the engineer prior to the start of construction so that clarification can be issued. Any work in conflict with the contract documents or any code requirements shall be corrected by the contractor at his own expense and at no expense to the owner or structural engineer.

3. All work shall conform to the minimum standards of the building code as well as any other regulating authority over any portion of the work including those additional codes and standards listed in the structural notes and specifications.

4. The engineer shall not control and shall not be responsible for construction means, methods, techniques, sequences or procedures; for safety precautions and programs in connection with the work; for acts or omissions of the contractor, subcontractor or for any persons performing the work; or for the failure of any of them to carry out the work in accordance with contract documents.

5. Site observations by field representatives of the engineer are solely for the purpose of determining if the work of the contractor is proceeding in accordance with the structural contract drawings. This limited site observation should not be construed as exhaustive or continuous to check the quality or quantity of the work, but rather an effort to guard the owner against defects or deficiencies in the work of the contractor.

6. All structures require periodic maintenance to extend life span and to insure structural integrity from exposure to the environment. A planned program of maintenance shall be established by the building owner. This program shall include items such as painting of structural steel, protective coating for concrete, sealants, caulked joints, expansion joints, control joints, spall and cracks in concrete.

DESIGN DATA

GENERAL BUILDING CODE
The contract documents are based on the requirements of THE 2015 INTERNATIONAL BUILDING CODE

Ground snow load:	5psf
Wind speed (3 second gust)	115mph
Risk Category:	II
Exposure category:	C
Seismic Design Category:	A

Live Loads:
Surcharge Load: 100psf

STRUCTURAL OBSERVATION:

1. The structural engineer of record, or his designate, shall provide structural observation of the structural system for general conformance to the approved plans and specifications at significant construction stages and at completion of the structural system as noted elsewhere in the contract documents.

REINFORCED CONCRETE:

STANDARD SPECIFICATIONS AND CODES:

Structural Concrete Building Code Requirements for Reinforced Concrete, ACI 318-11.

MATERIALS:

1. Concrete shall meet the following requirements:
28 day strength: 3000 psi
aggregate type: C33
max. aggregate size: 1½"

2. Reinforcing steel shall meet the following requirements:

#3 to #18: ASTM A615 grade 60

CONCRETE TESTING

Furnish mix design for all classes of concrete. Retain a qualified testing laboratory to make concrete cylinders and perform compressive tests. A minimum of three cylinders shall be taken per 50 cubic yards of concrete with one test at 7 days and two at 28 days.

REINFORCING STEEL COVERAGE:

For layer nearest surface unless specified otherwise on drawings.

1. Concrete surfaces cast against and permanently in contact with earth:
#3 to #18 bars: 3"

2. Concrete surfaces exposed to earth or weather:
#3 to #5 bars: 1.5"
#6 to #18 bars: 2"

3. Concrete surfaces not exposed to weather or in contact with earth:
#3 to #11 bars in slabs & walls: 1"
#3 to #18 bars in beams & columns 1.5"

DETAILS:

1. Contractor shall submit proposed locations for construction joints not shown on drawings for review by the Architect and Structural Engineer.

2. Continuous reinforcing bars shall have a minimum lap of 30 diameters or 24 inches, whichever is greater.

CONCRETE CRACK CONTROL:

1. Install crack control joints @ 15'-0" o.c.e.w. If crack control is not a consideration as determined by both the builder and the owner, then the joints may be eliminated.

2. Create crack control joints by tooling or sawcutting to a depth of one third the slab thickness. Tool the base of all drops-in-slab to function as control joints.

RETAINING WALL:

This retaining wall design is based on a geotechnical report provided by SEC Solutions and Marcos V. Dequelmga, P.E. dated August 31, 2016.

SELECT FILL:

1. Scarify and re-compact all areas to receive fill. Surfaces steeper than 1 vertical to 4 horizontal which are to receive fill must be benched

2. Select underslab fill material shall be composed of hard durable particles of gravel or crushed stone and shall meet the following criteria:
Gradation:

sieve size	% finer by weight
1-3/4"	100
1-1/2"	85-100
3/4"	45-75
No. 4	25-70
No. 40	10-40

Material passing the no.40 sieve:

%minus no. 40	max. PI	min. PI
25-40	15	3
10-25	20	4

Maximum liquid limit of the minus no. 40 material shall be 45.

No organic matter is permitted.

3. Compaction shall be to 95 percent of maximum laboratory density determined in accordance with ASTM D 698. Material shall be within three percent of optimum moisture at time of compaction.

4. Placements should be in lifts not exceeding six inches after compaction.

REQUIRED TESTING AND APPROVALS
- Fill material composition, placement and compaction shall be tested and approved by the Geotechnical Engineer
- A 100 pound sample of proposed fill material shall be submitted to the Geotechnical Engineer a minimum 7 days in advance of filling and compaction operations to determine Moisture-Density Relationship.
- Testing Frequency: Not less than one field density test per 2,000 square feet and minimum 3 tests per lift.

FILL PLACEMENT:

Use select fill (not on site fill) in areas under building footprints. All compaction to minimum of 95% of the maximum dry density obtained from standard proctor (ASTM D 698).

TUCKER engineering

Structural Notes

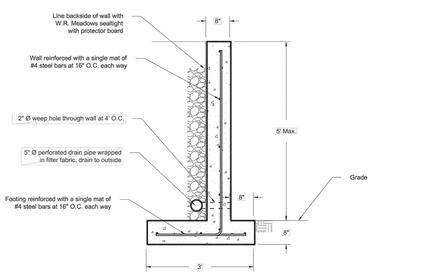
17860 Ronald Reagan Blvd, Leander, Texas

STATE OF TEXAS
MATTHEW SOLUM
129777
LICENSED
PROFESSIONAL ENGINEER

Tucker Engineering, Inc., Business Registration F-8811 - - 1311 Chisholm Trail, Suite 303, Round Rock, Texas 78681 - - (512) 255-7477 - - TuckerEngineering.net

Scale: Not to Scale
Issued: 4/26/2021
Drafter: JG

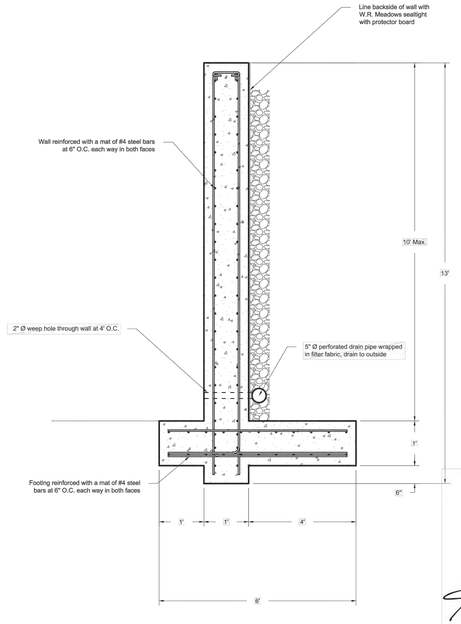
S0.0



1 0' - 5' Retaining Wall Detail

Scale: not to scale

Notes:



2 5' - 10' Retaining Wall Detail

Scale: not to scale

Notes:

TUCKER engineering

Retaining Wall Details

17860 Ronald Reagan Blvd, Leander, Texas

STATE OF TEXAS
MATTHEW SOLUM
129777
LICENSED
PROFESSIONAL ENGINEER

Tucker Engineering, Inc., Business Registration F-8811 - - 1311 Chisholm Trail, Suite 303, Round Rock, Texas 78681 - - (512) 255-7477 - - TuckerEngineering.net

Scale: 1/2" = 1'-0"
Issued: 4/26/2021
Drafter: JG

S1.0

Revision	Date	By	App	Comment

Prepared For:

Leander Platinum Jubilee Investments Group, LLC
c/o Aly Hussaini
3604 Balcones Dr
Austin, TX 78731
512-912-6374

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
12007 Technology Blvd. Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com

AUSTIN BRYAN CONROE HOUSTON

Structural Details

Leander Platinum
17680 Ronald W. Reagan Blvd
Leander, Texas 78641
WilliamsonCounty

Design:	JW
CAD: CS, AE	Review: KW
Project No:	LPJ 12237
Sheet:	33 of 31
	20-SD-XXX

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 15, 2021

Mr. Aly Hussaini
Leander Platinum Jubilee Investments Group, LLC
3604 Balcones Dr.
Austin, Texas 78731

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Leander Platinum; Located at 17680 Ronald W Reagan Blvd., Leander, Texas

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

Edwards Aquifer Protection Program ID Nos. 11002598 (WPAP) & 11002599 (SCS); Regulated Entity No. RN109247379

Dear Mr. Hussaini:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP and SCS applications for the above-referenced project submitted to the Austin Regional Office by Bleyl Engineering. on behalf of Leander Platinum Jubilee Investments Group, LLC on July 23, 2021. Final review of the WPAP and SCS was completed after additional material was received on September 24, 2021 and October 14, 2021. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213 and Chapter 217. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

WPAP PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 4.37 acres. It will include a convenience store with gas dispensers and canopy, a retail building, an office building, a right turn lane on Ronald W Reagan Blvd. (right of way), hike and bike trail, parking, utilities, and associated appurtenances. The total impervious cover will be 2.63 acres (60.18%).

SCS PROJECT DESCRIPTION

The proposed SCS will consist of a total of 154.5 linear feet of 8-inch diameter SDR-26 PVC ASTM D3034 pipe. The SCS will provide disposal service for the commercial development.

The system will be connected to the existing City of Leander wastewater line for conveyance to the Brushy Creek Wastewater Treatment Plant for treatment and disposal. The project is located within the City of Leander and will conform to all applicable codes, ordinances, and requirements of the City of Leander.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a sand filter system, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be utilized to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 2170 pounds of TSS generated from the 2.63 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, the property is surficially characterized by the Comanche Peak Formation. The site is located partially on the Edwards Aquifer Recharge Zone and partially on the Edwards Aquifer Contributing Zone. No sensitive geologic features were identified in the GA. The TCEQ Austin Regional Office site assessment conducted on September 16, 2021, revealed the site to be generally as described by the GA.

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP, SCS plan, and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP and SCS applications following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction, and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.

12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
13. There is one water well present on the project site. All water wells including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.
18. No part of the system shall be used as a holding tank for a pump-and-haul operation.

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

19. Certification by a Texas Licensed Professional Engineer of the testing of sewage collection systems required by 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office within 30 days of test completion and prior to the new sewage collection system being put into service. The certification should include the project name as it appeared on the approved application, the program ID number, and two copies of a site plan sheet(s) indicating the wastewater lines that were tested and are being certified as complying with the appropriate regulations.
20. Every five years after the initial certification, the sewage collection system shall be retested. Any lines that fail the test must be repaired and retested. Certification that the system continues to meet the requirements of 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office. The certification should include the project name as it appeared on the approved application, the program ID number and two copies of a site plan sheet(s) indicating the wastewater lines that were tested and are being certified as complying with the appropriate regulations. Should any test result fail to meet passing test criteria, and then subsequently pass testing, the result(s) and an explanation of what repair,

adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

21. If ownership of this organized sewage collection system is legally transferred (e.g., developer to city or Municipal Utility District), the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

22. Certification by a Texas Licensed Professional Engineer of the testing of sewage collection systems required by 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office within 30 days of test completion and prior to the new sewage collection system being put into service. The certification should include the project name as it appeared on the approved application, the program ID number, and two copies of a site plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. 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. Should any test result fail to meet passing test criteria and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

    Every five years after the initial certification, the sewage collection system shall be retested. Any lines that fail the test must be repaired and retested. Certification that the system continues to meet the requirements of 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office. The certification should include the project name as it appeared on the approved application, the program ID number and two copies of a site plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. Should any test result fail to meet passing test criteria, and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

23. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

24. An Edwards Aquifer protection plan approval or extension will expire, and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

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

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Ryan Soutter of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

Lillian Butler

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

LIB/rts

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

CC: Kenny Watkins, P.E., Bleyl Engineering

Agent Authorization

TCEQ-0599

RANGER
ENVIRONMENTAL SERVICES, LLC

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

I Mr. Akbar Gulamali,
Print Name

Manager,
Title - Owner/President/Other

of Leander Platinum Jubilee Investments Group, LLC,
Corporation/Partnership/Entity Name

have authorized Mr. Chad M. Copeland, P.G., PWS
Print Name of Agent/Engineer

of Ranger Environmental Services, LLC
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

10.10.25
Date

THE STATE OF Texas §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Akbar Ghamdi 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 10 day of October 2025

Nermal A Makhnejia
My Commission Expires
5/6/2029
Notary ID 135514351

NOTARY PUBLIC

Nermal Makhnejia
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 5-6-2029

Application Fee Form

TCEQ-0574

RANGER
ENVIRONMENTAL SERVICES, LLC

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Leander Platinum
Regulated Entity Location: 17680 W. Ronald Reagan Blvd., Leander, Texas 78641
Name of Customer: Leander Platinum Jubilee Investments Group, LLC
Contact Person: Aly Hussaini Phone: 512-912-6374
Customer Reference Number (if issued):CN 605170497
Regulated Entity Reference Number (if issued):RN 109247379

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	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	1 Tanks	$ 650.00
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: 

Date: 10/202025

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

Core Data Form

TCEQ-10400

RANGER
ENVIRONMENTAL SERVICES, LLC

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 **UST EAPP**

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 605170497		**RN 109247379**

SECTION II: Customer Information

4. General Customer Information	**5. Effective Date for Customer Information Updates** (mm/dd/yyyy)	10/2/2025

☐ 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:*
Leander Platinum Jubilee Investments Group, LLC	

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
0802179226	32056722468	47-3496793	

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

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

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

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

15. Mailing Address:	3604 Balcones Drive						
	City	Austin	**State**	TX	**ZIP**	78731	**ZIP + 4**

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

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 912-6374		( ) -

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.)*

Leander Platinum

23. Street Address of the Regulated Entity: *(No PO Boxes)*	17680 Ronald Reagan Blvd							
	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:	

26. Nearest City	**State**	**Nearest ZIP Code**

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:	30.597506		**28. Longitude (W) In Decimal:**	97.813085	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	35	51.021	97	48	44.106

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)
5541		447110	

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

Convenience Store with retail fueling

34. Mailing Address:	**3604 Balcones Drive**							
	City	**Austin**	**State**	**TX**	**ZIP**	**78731**	**ZIP + 4**	
35. E-Mail Address:	**amhussaini@aol.com**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 912-6374		( ) -

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
		11002598, 11002599		
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☒ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
	TXR1553VN			
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Chad M. Copeland, P.G., PWS	**41. Title:**	Senior Project Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 335-1785	3	( ) -	chad@rangerenv.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:	Leander Platinum Jubilee Investments Group, LLC	**Job Title:**	Manager
Name *(In Print):*	Mr. Akbar Gulamali	**Phone:**	(512) 577- **3603**
Signature:		**Date:**	10 · 10 · 25