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: QuikTrip 4160						**2. Regulated Entity No.:**			
3. Customer Name: QT South LLC						**4. Customer No.:** 605786011			
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):**		1.89	
9. Application Fee:	$7,250		**10. Permanent BMP(s):**			1			
11. SCS (Linear Ft.):	0		**12. AST/UST (No. Tanks):**			5			
13. County:	Williamson		**14. Watershed:**			North Fork San Gabriel River			

Application Distribution

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

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

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

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

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

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

Rachel Roberts

Print Name of Customer/Authorized Agent

Rachel Roberts 04/21/2023

Signature of Customer/Authorized Agent Date

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

General Information Form

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Rachel Roberts

Date: 04/21/2023

Signature of Customer/Agent:

Project Information

1. Regulated Entity Name: QT 4160
2. County: Williamson
3. Stream Basin: Unnamed Creek to Unnamed Tributary 1 to Middle Fork San Gabriel River
4. Groundwater Conservation District (If applicable): N/A
5. Edwards Aquifer Zone:
   - [x] Recharge Zone
   - [ ] Transition Zone
6. Plan Type:
   - [x] WPAP
   - [ ] SCS
   - [ ] Modification
   - [ ] AST
   - [x] UST
   - [ ] Exception Request

7. Customer (Applicant):

Contact Person: Kyla Rudd
Entity: QT South, LLC
Mailing Address: 4705 South 129th East Avenue
City, State: Tulsa, Oklahoma Zip: 74134
Telephone: 918-615-7233 FAX: _____
Email Address: krudd@quiktrip.com

8. Agent/Representative (If any):

Contact Person: Rachel Roberts
Entity: Kimley-Horn
Mailing Address: 10101 Reunion Place, Suite 400
City, State: San Antonio, Texas Zip: 78216
Telephone: 210-762-5289 FAX: _____
Email Address: rachel.roberts@kimley-horn.com

9. Project Location:

☐ The project site is located inside the city limits of _____.
☑ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of Leander, Texas
☐ 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 approximate 1.89-acre site is located southeast of Highway 29 and Kauffman Loop, in Leander, Texas. The site is currently undeveloped.

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.

Drainage path follows San Gabriel River through 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: _____

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:

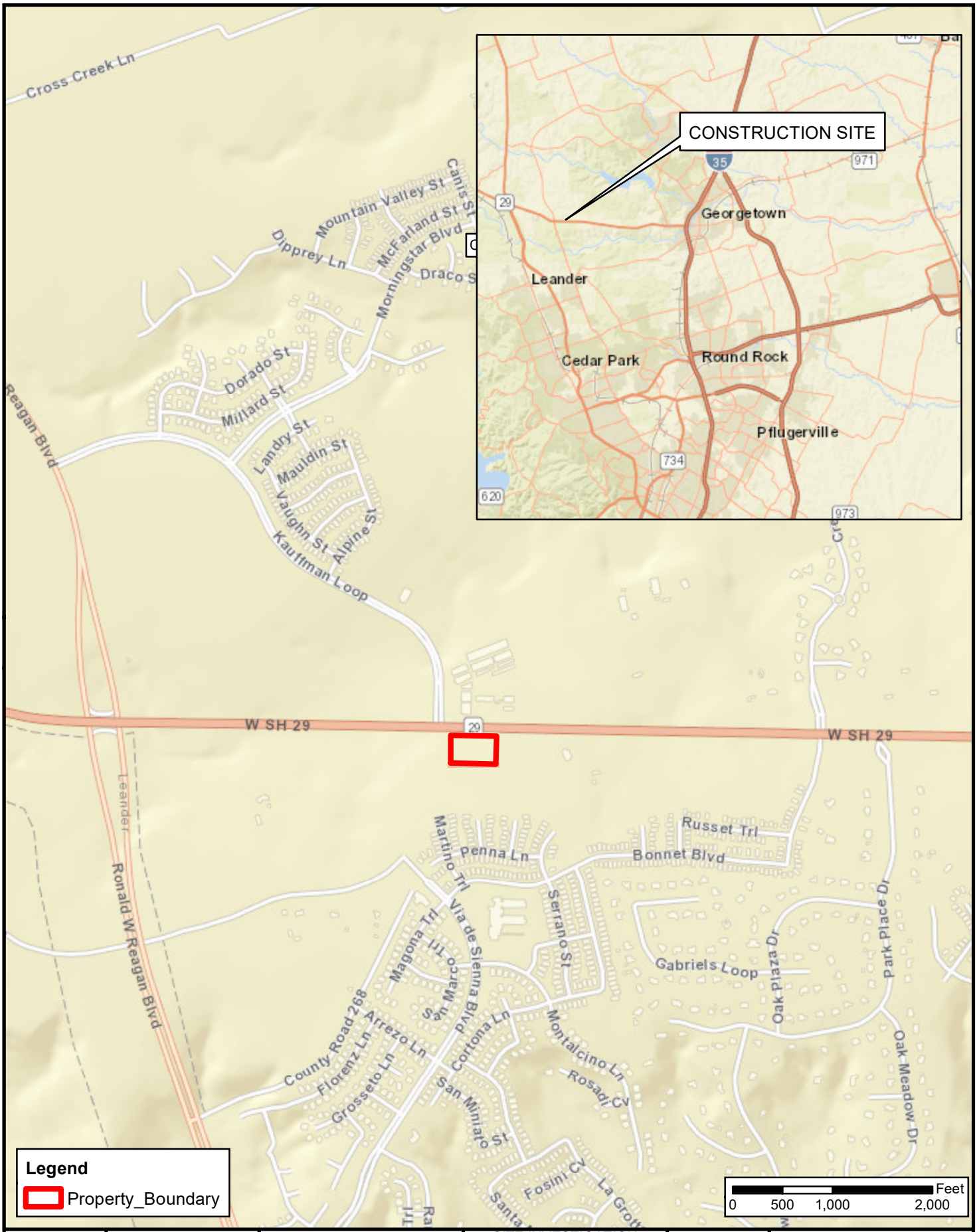
- [x] For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- [ ] For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- [x] For a UST Facility Plan or Modification 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. [x] 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:

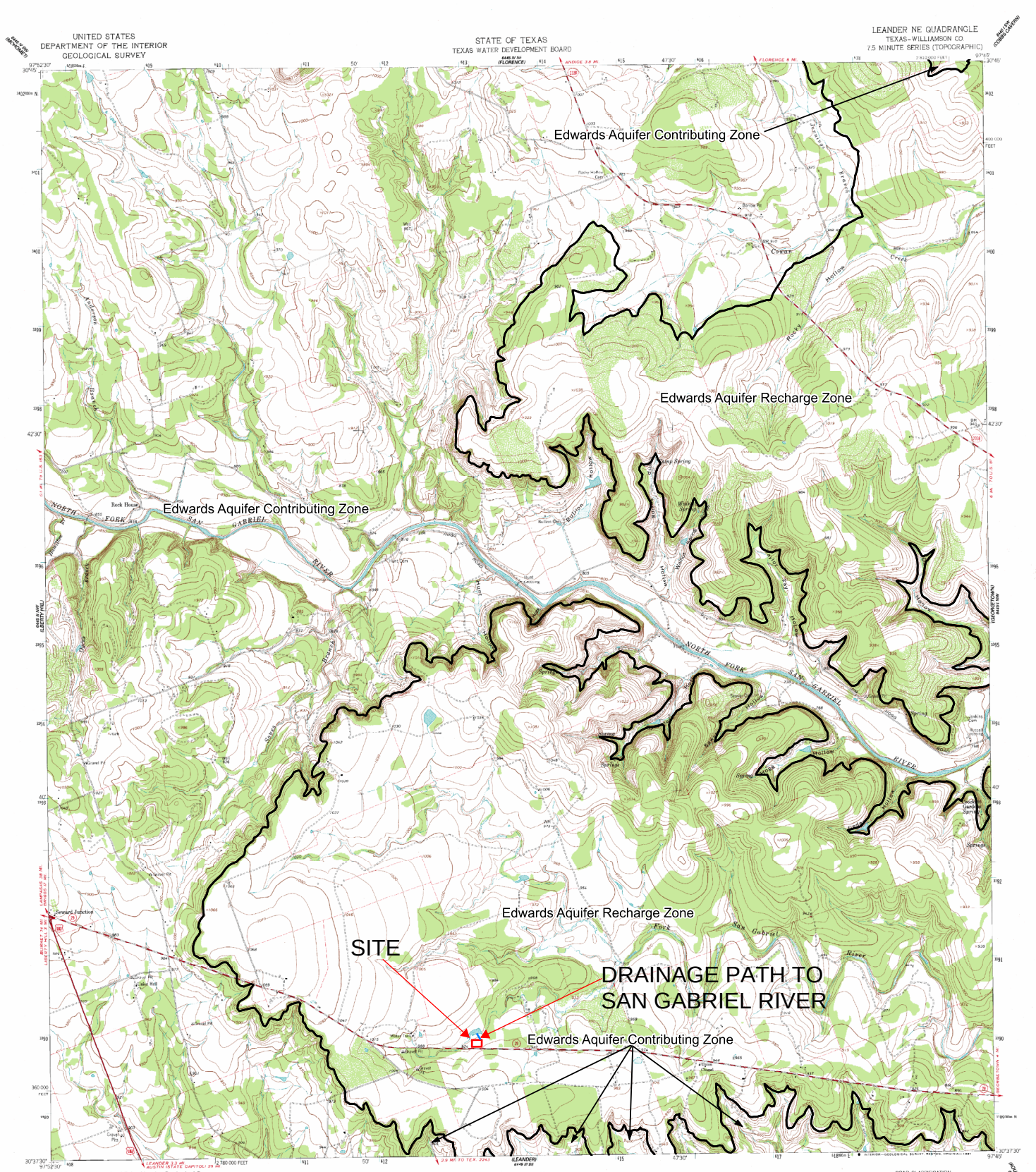
- [x] TCEQ cashier
- [x] Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- [ ] San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

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

21. [x] 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.



SHEET 1 OF 2 SHEETS	DATE: 01/20/2023 DESIGN: OG DRAWN: OG CHECKED: AN KHA NO.: 069304941	Vicinity Map	SITE INVESTIGATION REPORT QT 4160 7601 W SH 29 GEORGETOWN, TX, 78628	N	Kimley»Horn



Texas Commission on Environmental Quality
Edwards Aquifer Protection Program

TCEQ

Regulatory Zones

30 TAC Chapter 213- Edwards Aquifer
Effective May 1985

This map was produced by the Groundwater Planning and Assessment Team of the Texas Commission on Environmental Quality to detail the boundaries of the regulatory zones of the Edwards Aquifer Protection Program, as described in Texas Administrative Code Title 30, Part 1, §213.3. No other claims are made to the accuracy or completeness of the data or to its suitability for a particular use. For more information about the Edwards Aquifer Protection Program, please contact the TCEQ Regional Offices in San Antonio or Austin. Printed June 2006.

Project Description

The approximate 1.89-acre site is located southeast of Highway 29 and Kauffman Loop outside the city limits but inside the ETJ of Leander, Texas. The site is currently undeveloped. The proposed use is a retail gas station development with associated parking, access drive, and utility improvements. A detention pond is required since the site proposes an increase in impervious cover and increased developed flow rates compared to existing drainage conditions. A “jellyfish” water quality structure is proposed onsite to treat stormwater from the site. A proposed series of curb inlets and underground storm sewer system will divert stormwater captured from drainage areas on the site to an inlet in the R.O.W. The runoff volume for the site has been designed utilizing Atlas 14 rainfall depths. No portion of the site is located in the 100-year or 500-year floodplain according to the Federal Emergency Management Agency’s (FEMA) Flood Map, FIRM number 48491C0275E, revised September 26, 2008. The site lies within pressure plane 1200 of the City of Leander service area for water and wastewater service. The site’s water service connection is proposed from the existing 18” waterline located along Kauffman Loop. Wastewater service is proposed to connect to the existing force main line at the northwest corner of the site at the intersection of Highway 29 and Kauffman Loop. The site also lies within the service area of Pedernales Electric Cooperative (PEC). No overhead power lines are proposed to be relocated. The site if over the Edwards Aquifer Recharge Zone; a Geological Assessment was conducted and is in the following section of this report.

Geologic Assessment of QT 4160, 1.89-Acre Tract, Leander, Williamson County, Texas

MARCH 2023

PREPARED FOR

Kimley-Horn

PREPARED BY

SWCA Environmental Consultants

Texas Board of Professional Geoscientists, Firm Registration No. 50159

GEOLOGIC ASSESSMENT OF QT 4160, 1.89-ACRE TRACT, LEANDER, WILLIAMSON COUNTY, TEXAS

Prepared for

Kimley-Horn
10101 Reunion Place, Suite 400
San Antonio, Texas 78216

Prepared by

Philip Pearce, P.G.

Kenadi Sutton

SWCA Environmental Consultants
Texas Board of Professional Geoscientists, Firm Registration No. 50159
4949 N. Loop 1604 W, Suite 235
San Antonio, Texas 78249
www.swca.com

SWCA Project No. 79521

March 2023

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CONTENTS

Appendices

Figures

Tables

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) was contracted to conduct a geologic assessment of a 1.89-acre commercial tract of land at the southeast corner of SH-29 and Kauffman Loop in Leander, Williamson County, Texas, the Project Site. The Project Site is a parcel developed as pastureland, zoned for commercial use. The Project Site is wholly within the limits of the Edwards Aquifer Recharge Zone (EARZ).

This narrative geologic assessment accompanies the Texas Commission on Environmental Quality (TCEQ) geologic assessment form TCEQ-0585 completed for the Project in Leander, Williamson County, Texas (**Figure 1**).

2 METHODOLOGY

Prior to conducting fieldwork, SWCA Environmental Consultants (SWCA) scientists studied documents pertaining to known caves within the vicinity of the Project Site in an attempt to gather information related to documented caves (unpublished data related to SWCA et al. 2008 and other area projects). SWCA also examined aerial photography, mapped fault lines, and Project Site geology prior to fieldwork commencement.

SWCA scientists conducted a field survey on March 2, 2023. The pedestrian survey was completed by walking parallel transects spaced approximately 50 feet apart as directed by the TCEQ in the *Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones* (Rev. 10-01-04). Closer spacing was used where vegetation inhibited clear observation. The SWCA scientist carefully examined all potential karst features for subsurface extent; including depressions, holes, and animal burrows. SWCA used several techniques for this effort, including probing with a digging implement to determine the thickness and consistency of fill material and feeling for air flow, which may indicate the presence of a sub-surface void space. Other techniques included recording notable feature characteristics, such as vegetation types or a semi-circular burrow mound produced by small mammal activity.

3 RESULTS

3.1 Project Overview

The Project Site lies within the Recharge Zone of the Northern Segment of the Edwards Aquifer (TCEQ 2021). The Project Site lies approximately 1.75 miles north of The South Fork of the San Gabriel River. The Project Site elevation is approximately 980-990 feet above mean sea level.

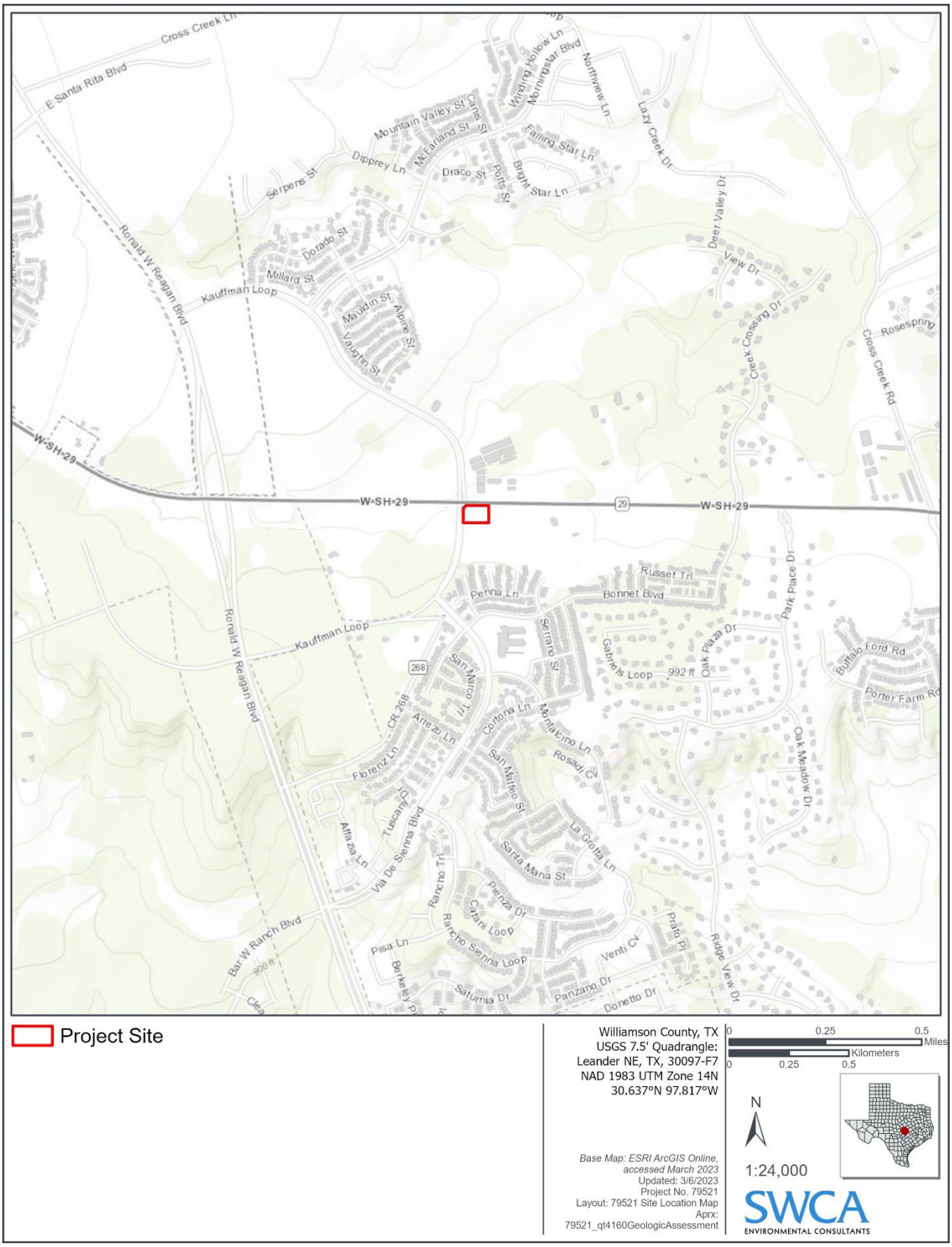

Figure 1. Project Site location map.

3.2 Geology

The Project Site lies within the Edwards Limestone. The geology of the Project Site has been mapped most recently at a useful scale by Collins (2005) and SWCA finds this interpretation of the geology to be generally accurate. A stratigraphic column is included in **Appendix A**, **Attachment B**.

The Project Site occurs along the Balcones Fault Zone (BFZ) within the Edwards Aquifer Recharge Zone (EARZ). Structural down-warping occurred with the Gulf of Mexico's ancestral formation during the middle Tertiary. The earth's crust was stretched in response and the BFZ formed along a zone of weakness, which currently marks the boundary between the Edwards Plateau and the Gulf Coastal Plain in central Texas. This zone is characterized by a series of northeast-trending, predominantly normal, nearly vertical, en echelon faults. No faults are mapped crossing the Project Site (Collins 2005).

Recharge into the Edwards Aquifer primarily occurs in areas where the Edwards Limestone and Georgetown Formation are exposed at the surface. Most recharge is from direct infiltration via precipitation and streamflow loss. Recharge occurs predominantly along secondary porosity features such as faults, fractures, and karst features (caves, solution cavities, sinkholes, etc.). Karst features commonly form along joints, fractures, and bedding plane surfaces in the Edwards Limestone and Georgetown Formation.

3.3 Soils

The Natural Resources Conservation Service (2023) identifies the following two soil unit within the Project Site (**Table 1**):

Table 1. Project Site Soils Detail

Soil Name	Hydric	Hydrologic Soil Group*	Drainage Class	Thickness (inches)
Crawford clay, 1 to 3 percent slopes (CfB)	No	D	Well drained	20-40
Fairlie clay, 0 to 1 percent slopes (FaA)			Moderately well drained	

Data Source: Natural Resources Conservation Service 2023.

* Group D – Soils had very slow infiltration rates when thoroughly wetted and exhibit the highest potential for runoff.

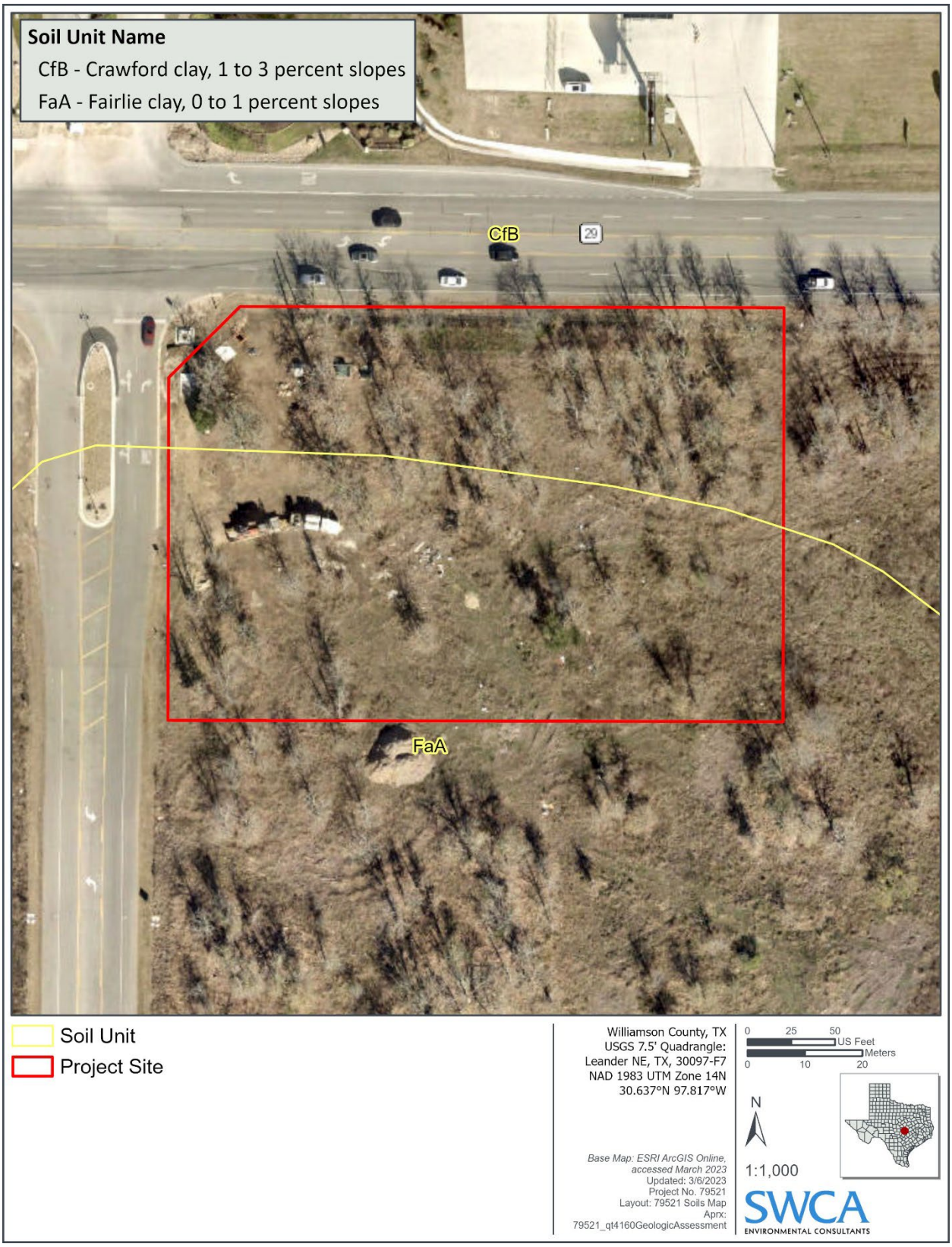

Figure 2. Project Site soils map.

3.4 Site Hydrogeologic Assessment

SWCA identified no manmade or geologic features (including faults) within the Project Site. Due to the lack of naturally occurring geologic or karst features, the overall potential for fluid migration to the Edwards Aquifer within the Project Site appears low compared to background infiltration rates. Based on water levels measured in a nearby water well, the depth to water is approximately 150 feet below the ground surface in the vicinity of the Project Site (**Table 2**) (Texas Water Development Board 2023).

Table 2. Water Levels at Nearby Water Wells

Water Well	Depth to Water (feet)	Groundwater Elevation	Year Measured	Distance from Project (feet)
58-18-802	150	820	1970	5900/6170 SE

Source: Texas Water Development Board 2023

No springs or streams were identified within the limits of the Project Site.

4 REFERENCES

Collins, E.W., 2005, Geologic Map of the West Half of the Taylor, Texas, 30 X 60 Minute Quadrangle: Central Texas Urban Corridor, Encompassing Round Rock, Georgetown, Salado, Briggs, Liberty Hill, and Leander, University of Texas at Austin, Bureau of Economic Geology, Miscellaneous Map 43, 1:100,000.

Natural Resource Conservation Service (NRCS). 2023. Soil Survey Staff, Natural Resources Conservation Service, U.S. Department of Agriculture. Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/. Accessed February 2023.

SWCA Environmental Consultants (SWCA), Smith, Robertson, Elliott, Glen, Klein, & Bell, LLP, Prime Strategies, Inc., Texas Perspectives, Inc. 2008. Williamson County Regional Habitat Conservation Plan. Prepared for Williamson County Conservation Foundation and The Honorable Lisa Birkman.

Texas Commission on Environmental Quality (TCEQ). 2023. Edwards Aquifer Viewer v3.8. Available at: http://tceq.maps.arcgis.com/apps/webappviewer/index.html?id=2e5afa3ba8144c30a49d3dc1ab49edcd. Accessed February 2023.

Texas Commission on Environmental Quality. (TCEQ). Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones. TCEQ-0585-Instructions (Rev. 10-01-04).

Texas Water Development Board (TWDB). 2023. Water Data Interactive, interactive GIS database. Available at: http://www2.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer. Accessed February 2023.

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APPENDIX A

Texas Commission on Environmental Quality (TCEQ) Forms

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: Philip Pearce, P.G. Telephone: 210.877.2847

Fax: 210.877.2848

Date: 3/21/2023

Representing: SWCA Environmental Consultants (TBPG Firm Registration #50159) (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

Regulated Entity Name: QT 4160

Project Information

1. Date(s) Geologic Assessment was performed: 3/2/2023
2. Type of Project:
   - ☒ WPAP
   - ☐ SCS
   - ☐ AST
   - ☒ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone

☐ Contributing Zone within the Transition Zone

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

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)

Soil Name	Group*	Thickness(feet)
Crawford clay, 1 to 3 percent slopes (CfB)	D	1.6-3.6
Fairlie clay, 0 to 1 percent slopes (FaA)	D	1.6-3.6

** 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" = 83.3'

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

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

Administrative Information

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

ATTACHMENT A

Geologic Assessment Table

GEOLOGIC ASSESSMENT TABLE			PROJECT NAME: QT 4160 1.89 ACRE TRACT																	
LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
No geologic or manmade features observed on site.																				

* DATUM: NAD83

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 3/21/2023

Sheet 1 of 1

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

ATTACHMENT B

Stratigraphic Column

Stratigraphic Column

Upper Cretaceous	Upper Confining Units	Navarro and Taylor Groups, undivided; 600 feet thick
		Austin Group; 325–420 feet thick
		Eagle Ford Group; 25–65 feet thick
		Buda Limestone; 40–50 feet thick
		Del Rio Clay; 40–70 feet thick
Lower Cretaceous	Edwards Aquifer	Georgetown Formation; 30–80 feet thick
		Edwards Limestone; Up to 200 feet thick
		Comanche Peak Formation; 80 feet thick
	Lower Confining Units	Walnut Formation; Up to 120 feet thick
		Upper member of Glen Rose Limestone; 500 feet thick

Note: The shaded areas represent the lithology that outcrops in the Project Site.

ATTACHMENT C

Narrative Description of Site Geology

PLEASE REFER TO SECTION 3.2 OF THIS REPORT FOR GEOLOGIC NARRATIVE DESCRIPTION

ATTACHMENT D

Site Geologic Map

Ked - Edwards Limestone

Project Site

STATE OF TEXAS
3-21-23
Phillip C. Pearce
Geology
691
LICENSED PROFESSIONAL GEOSCIENTIST

Williamson County, TX
USGS 7.5' Quadrangle:
Leander NE, TX, 30097-F7
NAD 1983 UTM Zone 14N
30.637°N 97.817°W

Base Map: ESRI ArcGIS Online, accessed March 2023
Updated: 3/6/2023
Project No. 79521
Layout: 79521 Geologic Map 17 x 22
Aprx: 79521_qt4160GeologicAssessment

0 30 60 Feet
0 10 20 Meters

N

1" = 30'

SWCA
ENVIRONMENTAL CONSULTANTS

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: Rachel Roberts

Date: 04/21/2023

Signature of Customer/Agent:

Regulated Entity Name: Kimley-Horn

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	15,000	Unleaded E10	Fiberglass Reinforced Plastic

UST Number	*Size(Gallons)*	*Substance to be Stored*	*Double-wall Tank Material*
2	15,000	Unleaded E10	Fiberglass Reinforced Plastic
3	15,000	Unleaded E0	Fiberglass Reinforced Plastic
4	15,000	Premium	Fiberglass Reinforced Plastic
5	15,000	Diesel	Fiberglass Reinforced Plastic

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	Fiberglass
Product Delivery Piping	Fiberglass

Equipment	*Corrosion Protection (Method)*
Vapor Recovery Piping	Fiberglass
Submersible Pumps	Powder Coated, E-coated, and stainless steel
Flex Connector (dispenser end)	Stainless steel
Flex Connector (pump end)	Stainless steel
Riser	Fiberglass

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 4 to 6 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" per ft (1/8" per foot minimum).

Site Plan Requirements

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

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

    Site Plan Scale: 1" = 30'.

14. 100-year floodplain boundaries:

    ☐ The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): DFIRM PANEL 48491C0275E, Dated 9/26/2008

    ☐ 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 _____(#) 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 _____. 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 3/22/2023, 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. ☑ Any modification of this UST application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

QT #4160 Leander, TX

The proposed new underground storage tank system will consist of five new 15,000 gallon double-walled fiberglass-reinforced plastic (FRP) tanks for the storage of gasoline fuels. Each tank will be equipped with a 4 horsepower, 4-inch diameter submersible pump. Overfill prevention for each tank will be provided by an automatic shut-off valve which will be installed in the tank below the full tube and must be se to shut off flow into the tank when the volume of liquid in the tank reaches no more than 95% of the tank capacity. Spill protection for each tank will be provided by a spill containment manhole which will be fitted on the fill tube of each tank.

Product and vent piping will be U.L. listed fiberglass-reinforced plastic piping. Product lines for unleaded, E0, and premium will be of double-wall construction and will consist of a 2-inch diameter primary pipe with a 3-inch diameter secondary containment. Product lines for diesel will be of double-wall construction and will consist of a 2-inch diameter primary pipe with a 4-inch diameter secondary containment. Vent lines will be 2-inch diameter single-wall pipe for E0 and Diesel products. Vent lines for Unleaded and Premium will be manifolded into a 3-inch diameter single-wall pipe. Sump vent lines will be 4-inch diameter single-wall pipe with an air fan supplying outside air to maintain tank sumps dry. A safety shear valve will be installed on each product line at the dispenser island surface level to assure automatic shut-off of product flow during emergencies. In addition, stainless steel braid flexible connector will be installed at both ends of each product line to connect to the dispenser until and the submersible pump.

The submersible pump housing and pump-end flexible connectors will be installed within a liquid-tight fiberglass-reinforced plastic sump which will provide isolation from the corrosive elements of the backfill material while also providing secondary containment for any leaks from these components. The dispenser-end flexible connector will be similarly isolated by enclosure within a flexible isolation sleeve. The vapor recovery riser, the fill tube riser, and the riser for the automatic tank gauging system will be 4-inch diameter primary fiberglass-reinforced plastic.

The proposed tanks and piping will be monitored for leaks by means of inventory, leak detection, and a line pressure pressured monitor. Each tank will be brined filled with a discrimination sensor which will be installed in the in the interstitial space between the walls of the double-wall tanks. Each of the product piping system will be monitored by pressurized line leak detector which will be installed adjacent to the submersible pump in the tank sump. Two 6-inch diameter and one 12-inch slotted PVC observations well will be installed in the corners of the tank pit excavation. Each tank will also be equipped with an automatic tank gauging probe which will automatically inventory the product volume in the tank. Each product piping line will be equipped with an electronic positive flow shut off that is designed to stop product flow in the even a leak in the product line is detected. The probes and sensors from all tanks, piping, and observation wells will be connected to a programmable control unit to be

located in the store building. This central monitoring unit is designed to provide visual and audible alarms when fuel products, fuel vapors, or any liquid is detected.

ZCL | XERXES®
making a lasting difference®

Fiberglass Underground Storage Tanks

ZCL | XERXES

RELIABLE, CORROSION-RESISTANT TANKS

OVER **200,000** FIBERGLASS STORAGE TANKS MANUFACTURED AND SHIPPED IN NORTH AMERICA

A history of **innovation** in the **fuel industry**

When ZCL Composites Inc. and Xerxes Corporation joined in 2007, it brought together North America's two leading fiberglass tank brands: ZCL (founded in 1987) and Xerxes (founded in 1979). Today, ZCL | Xerxes is one of the world's leading innovators in composite tank engineering. Nearly 40 years of manufacturing experience and more than 200,000 tanks manufactured and shipped stand as proof of the reliability and quality of our products.

This solid track record provides our customers with peace of mind, which is why petroleum equipment distributors, fuel marketers and commercial accounts rely on our double-wall tanks for safe underground storage of fuel products. We have provided customers with durable and sustainable products that protect the environment for decades. Our proven track record along with our financial strength assures customers that we will be around to support our industry-leading products and warranties. Currently, 29 of the 30 top c-store marketers[1] choose E15-, E85- and ULSD-compatible, corrosion-resistant fiberglass storage tanks from industry leaders like ZCL | Xerxes.

1 CSP's Convenience Top 101, http://www.cspdailynews.com/industry-news-analysis/top-convenience-stores/archive/2015

Our history of **storage solutions** includes:

- developing the first UL-listed double-wall fiberglass tank
- incorporating our factory-installed hydrostatic monitoring system (TRUCHEK®)
- incorporating our unique 3D glass fabric (Parabeam®) into our tank design

WHY CHOOSE A FIBERGLASS TANK?

Best Product Investment

Fiberglass tanks have rapidly grown in popularity since they were first introduced more than 50 years ago as the corrosion-resistant alternative to underground steel tanks that were rusting, leaking and creating serious environmental damage. Major oil companies and large fuel marketers were the first to realize the benefits of fiberglass over steel for underground tanks. Today, a large majority of North American fuel marketers choose fiberglass, and the preference for fiberglass reaches all segments of the market, including industrial, commercial and government accounts who specify, install and own underground storage tanks. The growing understanding of fiberglass' benefits goes well beyond external corrosion protection with the recognition that fiberglass is corrosion-resistant, both inside and out.

FIBERGLASS OUTPERFORMS STEEL

CORROSION RESISTANCE

It's now common knowledge that fiberglass tanks are protected from external rusting due to corrosive soil environments. Today, the widespread use of ethanol-blended gasoline (E10, E15, E85), biodiesel fuels and ultra-low sulfur diesel (ULSD) has shifted the concern about corrosion to include internal protection. Most significantly, new ethanol-blended fuels raise questions about the compatibility of storage tank materials with stored fuel. When today's buyers compare fiberglass and steel tanks they see the clear advantage of our fiberglass tanks, which are not vulnerable to aggressive internal corrosion caused by storage of today's biofuels. The fact that fiberglass tanks are corrosion-resistant both inside and out give them a distinct advantage over steel tanks.

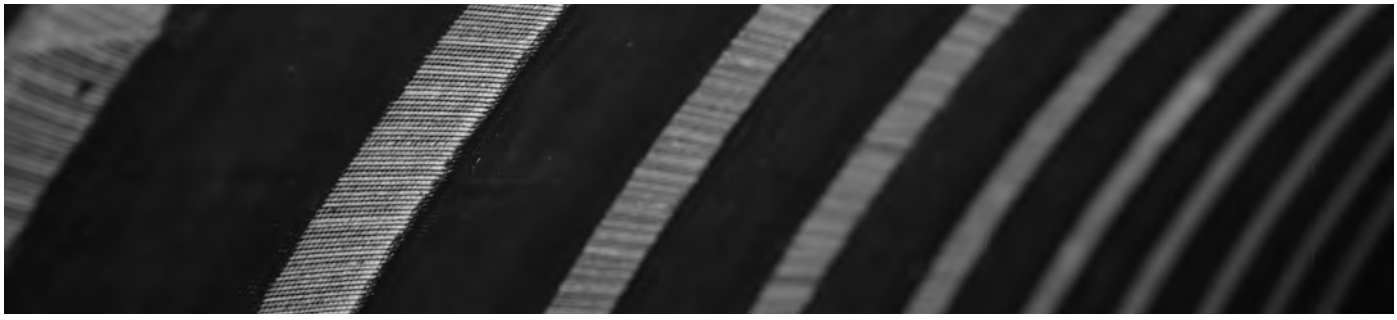
FUEL COMPATIBILITY

Customers today want to be confident that they are choosing a tank material that is compatible with the new fuels as well as traditional fuels. Our UL-listed (1316) and ULC-listed (S615) double-wall fiberglass tanks are UL-compatible with 0-100 percent ethanol storage. They are also warranted for the full range of ethanol-blended gasoline. The correlating UL listing (58) for steel fuel tanks does not require testing for ethanol compatibility. This third-party compatibility verification for fiberglass tanks – that steel tanks do not have – makes fiberglass the clear and superior choice for fuel tanks.

OUR FIBERGLASS TANKS PROVIDE **UNMATCHED BENEFITS**

The ZCL | Xerxes Advantage

ZCL | Xerxes double-wall underground storage tanks offer customers several significant design and performance differences that make them a superior choice to both steel tanks and other fiberglass tanks.



RIB DESIGN FOR STRUCTURAL INTEGRITY

As engineers, system designers and customers compare products, the rib geometry of our tanks is an important consideration in their analysis. Our uniform, high-profile ribs are fabricated directly into the tank cylinder. In some other tanks, ribs are incorporated as a separate step in the manufacturing process. Integrally constructed ribs increase the overall strength of the tank and create a structurally superior product.

30-YEAR WARRANTY

ZCL | Xerxes offers a 30-year limited warranty with no restrictions regarding water-bottom monitoring and removal. In contrast, many steel tank manufacturers now have a 10-year rather than 30-year warranty, and make ongoing maintenance and water-bottom removal a condition of warranty coverage.

PARABEAM®

Our proprietary 3D glass fabric, Parabeam®, also enhances the overall structural integrity of our tank by creating a bond between the tank walls, while providing a free-flowing interstitial space for monitoring capabilities. This technology also eliminates the potential for false alarms (created by fluctuating reservoir levels) that can occur in other hydrostatically monitored tanks.

MAINTENANCE-FREE

The presence of water in the bottom of fuel tanks is a common condition. Maintenance to remove it can be frequent and expensive. The requirement to do so, which is found in most steel-tank warranties, can leave a steel-tank owner vulnerable to a denied warranty claim should the tank corrode internally.

TRUCHEK® CONTINUOUS LEAK DETECTION

Our patented TRUCHEK® hydrostatic tank monitoring system for double-wall tanks is an easy, reliable method for true continuous leak detection and tank-tightness testing. Hydrostatic monitoring – now the industry standard for continuous monitoring – gives tank owners greater peace of mind than with a simple liquid sensor, which can fail to detect an outer-wall breach. (See p. 10 for more information.)

ZCL | XERXES
STORAGE TANK SOLUTIONS

Today, double-wall tanks are the industry standard in fuel applications. To meet the needs of our customers we also offer several other fiberglass tank options for a variety of applications and requirements. Our tank options include: double-wall tanks, multicompartment tanks, triple-wall tanks, diesel exhaust fluid tanks and oil-water separators. We also have a tank upgrade system when tank replacement is not viable.

DOUBLE-WALL TANKS

Tank owners and system designers of underground fuel systems need tanks that provide secure storage of fuel over time. ZCL | Xerxes fiberglass double-wall tanks are an excellent solution because they are corrosion-resistant, both inside and out. Our tanks have a proven record of compatibility with traditional petroleum fuel as well as with new biofuels, which are increasing in use. Our double-wall fiberglass tanks are not vulnerable to the corrosion problems inherent in storing ethanol-blended fuels (E10, E15, E85), biodiesel fuels and ultra-low sulfur diesel (ULSD). Nor are they vulnerable to rust caused by corrosive soil environments. Options such as protective coatings and cathodic protection don't guard entirely against external corrosion and rust. This makes ZCL | Xerxes fiberglass double-wall tanks a superior choice for a wider range of fuel applications.

FEATURES

- UL-listed (1316) & ULC-listed (S615) for alcohol fuels
- Secondary containment around full tank circumference
- Dry & hydrostatic monitoring options
- Capacities up to 50,000 gal. (USA)
- Capacities up to 155,000 L (Canada)

MULTICOMPARTMENT TANKS

These tanks are a popular choice among retail gasoline marketers and fleet fueling owners. The ability to store two or three grades or types of fuel in a single tank is particularly appealing when the amount of onsite space makes multiple tanks impossible or difficult. Customers may also find installation and insurance cost savings with a multicompartment tank.

The ZCL | Xerxes double-wall multicompartment tank comes standard with a double-wall bulkhead, while some other tank manufacturers require an upgrade to a double-wall bulkhead. Tanks are available in a wide range of capacities and in diameters of 6 to 10 feet.

FEATURES

- UL-Listed (1316) & ULC-listed (S615) for alcohol fuels
- Secondary containment around full tank circumference
- Dry & hydrostatic monitoring options
- Two- & three-compartment models
- Capacities up to 40,000 gal. (USA)
- Capacities up to 155,000 L (Canada)

TRIPLE-WALL TANKS

Some customers and regulatory agencies now require protection beyond secondary containment. Site conditions that could lead to a requirement for tertiary containment are the following: the presence of sensitive groundwater aquifers, lakes or streams. Our UL-listed triple-wall tank, with an additional Parabeam® interstice, is the innovative and cost-effective answer for this level of containment.

FEATURES

- UL-listed (1316) for alcohol fuels
- Tertiary containment around full tank circumference
- Dry & hydrostatic monitoring options
- Capacities up to 50,000 gal. (USA)
- Capacities up to 155,000 L (Canada)

DIESEL EXHAUST FLUID TANKS

ZCL | Xerxes has become a leading provider of diesel exhaust fluid (DEF) tanks in truck stops and vehicle fleet fuel facilities in the relatively short time DEF has been in demand in North America. Many fueling facilities now need to add bulk storage of DEF to meet the growing number of vehicles with diesel engines that require diesel exhaust fluid. A fiberglass underground storage tank has a number of benefits over the alternatives.

Since DEF cannot be exposed to carbon steel, a tank constructed of fiberglass is the clear choice. Using our fiberglass underground tank avoids the need for protective coatings or linings to protect the integrity of the product.

Underground storage of DEF has clear advantages over aboveground storage, in part because of the product's specific temperature requirements. An underground DEF tank also allows for storage of larger capacities than an aboveground tank and avoids an unsightly, space-consuming aboveground installation.

FEATURES

- Single-wall & double-wall models
- UL label available for future product storage flexibility
- Extensive third-party compatibility testing
- Capacities up to 50,000 gal. (USA)
- Capacities up to 155,000 L (Canada)

OIL-WATER SEPARATORS

With a fiberglass underground tank at the heart of the design, a ZCL | Xerxes oil-water separator incorporates unique refinements within the vessel to create a separator that removes free-floating oils and settleable solids from oil-water mixtures.

A properly sized coalescer is designed to produce effluent quality acceptable to most regulatory requirements for water runoff. Our oil-water separator is an excellent choice for managing water runoff from parking lots or equipment washdown stations.

This product is also available as a UL-listed (2215) and ULC-listed (S656) model.

FEATURES

- UL-listed (2215) & ULC-listed (S656) models available
- Single-wall & double-wall models
- Flexible design options
- Coalescer & gravity-flow models available
- Capacities up to 30,000 gal. (USA)
- Capacities up to 113,000 L (Canada)

ZCL | XERXES
STORAGE TANK SOLUTIONS

TANK UPGRADE SYSTEM

In a growing number of situations, secondary containment needs to be added to single-wall tanks, and site challenges make removal of existing tanks either cost-prohibitive or difficult. In instances where tanks are covered or surrounded by buildings, roads or rail lines, adding secondary containment to a single-wall fiberglass or steel tank can be accomplished with our Phoenix System®.

This upgrade system consists of two corrosion-resistant laminates with the proprietary Parabeam® glass fabric between the laminates creating an interstitial space. The interstice can be either dry or hydrostatically monitored. The Phoenix System®, applied onsite by trained installers, is compatible with biofuels, including ethanol-blended fuels and biodiesels.

FEATURES

- ULC/ORD-listed (C58)
- Corrosion-resistant fiberglass system
- Viable alternative in difficult tank replacement situations
- Suitable for both fiberglass & steel tanks

ZCL | XERXES
FUEL TANK ACCESSORIES

Your Complete Solution

Today's retail and commercial fueling facilities are sophisticated systems that are installed in a highly regulated environment. While the storage tank is the critical component in an underground fuel system, other important accessories are necessary to provide spill containment, tank anchoring, secondary pipe-drain collection, leak detection and other important functions. ZCL | Xerxes engineers have designed innovative, complementary products that provide system designers and installers with cost-effective, easy-to-install accessories. Very few tank manufacturers provide the wide range of accessories that we can supply. This is yet another example of how our innovative spirit benefits customers.

Installation & Technical Support

ZCL | Xerxes provides a comprehensive Installation Manual and Operating Guidelines (IMOG) document that outlines the proper – yet easy – steps necessary for a successful installation.

LEARN MORE ONLINE

Search our online database (zcl.com) for hundreds of resources for our fuel tanks and accessories, including:

- a pdf version of the Installation Manual
- a video of our Installation Manual
- technical drawings (available in CAD, DWG & BIM)
- guide specifications
- typical installation drawings

CONTAINMENT SUMPS AND COLLARS

Sumps and collars are common accessories found on virtually all double-wall tanks installed today. ZCL | Xerxes offers factory-installed containment collars that provide secondary containment around tank fittings and manways.

Designed to be a custom-match to the collar, our containment sump comes in a variety of models and sizes, all engineered to accommodate different customer preferences and needs. Our sumps and collars are also available in double-wall models, which are growing in popularity given changes to tank regulations.

FEATURES

- Flat-sided & round models for various piping layouts
- Watertight or friction-fit cover & open top options
- Diameters of 42 & 48 inches
- Heights of 36-72 inches
- Field-adjustable heights
- Custom options

ANCHORING SYSTEM

Site-specific installation conditions generally dictate whether a tank-anchoring system is necessary. Some customers choose to anchor all their tanks.

ZCL | Xerxes offers a complete tank-anchoring system, including reinforced precast concrete deadmen (designed to American Concrete Institute standards), fiberglass anchoring straps and galvanized turnbuckles.

Each component is engineered to specific tank sizes and for ease of installation. In most cases, concrete deadmen can be delivered on the same trailer as the tank, which minimizes the shipping cost and assures that deadmen are ready when the tank is set.

FEATURES

- Deadmen sizes for tank diameters 6-12 feet
- Corrosion-resistant anchor straps
- Optional man-out-of-hole straps available
- Galvanized turnbuckles

TRUCHEK® CONTINUOUS MONITORING

TRUCHEK® is the ideal solution to the growing regulatory interest in leak-detection methods that provide true continuous leak detection. Unlike dry interstitial monitoring methods, TRUCHEK® is able to monitor both walls of a tank 24/7 in all installation conditions.

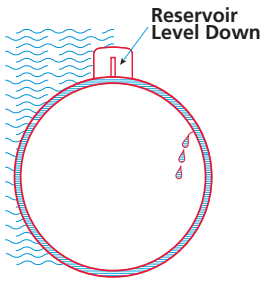
When you order our double-wall tank with the TRUCHEK® option, the interstice is filled at the factory with a calcium-chloride fluid that also partially fills a reservoir, creating an interstitial hydrostatic pressure. An electronic probe placed in the tank's reservoir alarms when the fluid level falls below or rises above the acceptable level.

FEATURES

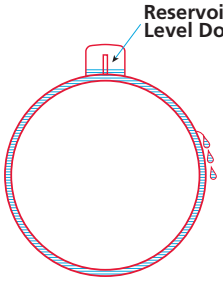
- 24/7 continuous tank monitoring regardless of installation conditions
- UL-verified as meeting the EPA criteria for tank-tightness testing
- Designed for dry-hole & wet-hole installations

How TRUCHEK® Works

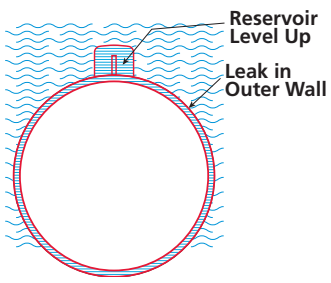
Primary-Tank Leak in Wet Hole or Dry Hole



Secondary-Tank Leak in Dry Hole



Secondary-Tank Leak in Wet Hole



TANK-TIGHTNESS TESTING

Besides providing true continuous monitoring of both tank walls – regardless of site conditions – TRUCHEK® also provides a simple and precise method to perform tank-tightness tests. A 10-hour tightness-test procedure meets the strict NFPA329 criteria. A 4-hour test (while product is dispensing) exceeds EPA's criteria for a tank-tightness test.

ZCL | Xerxes

Underground Double-Wall Tank Data

	Nominal Capacity (gallons)	Tank Length (feet/inches)	Nominal Shipping Weights (lbs) (dry interstitial)	Nominal Shipping Weights (lbs) (wet interstitial)	Number of Anchor Straps Required	Nominal Capacity (liters)	Tank Length (mm)	Nominal Shipping Weights(Kg) (dry interstitial)	Nominal Shipping Weights (Kg) (wet interstitial)	Number of Anchor Straps Required
4′	600	7′-3 1/2″	900	1,100	2	2,500	2,303	400	500	2
	1,000	11′-7 1/2″	1,100	1,300	2	3,900	3,395	500	600	2
	2,000	22′ -3 5/8″	2,800	3,400	2	5,000	4,380	600	700	2
6′	2,500	13′-5 3/4″	2,200	2,800	2	10,000	4,520	900	1,100	2
	3,000	16′-4 1/4″	2,600	3,300	2	15,000	6,604	1,300	1,600	4
	4,000	20′-8″	3,600	4,400	2	20,000	8,465	1,700	2,000	4
	5,000	26′-5″	4,300	5,200	4	25,000	10,420	2,200	2,500	4
	6,000	30′-8 3/4″	5,000	6,100	4					
8′	4,000	15′- 1/2″	2,700	3,600	2	15,000	3,994	900	1,100	2
	5,000	17′-8 1/2″	3,200	4,200	2	20,000	5,137	1,200	1,500	2
	6,000	20′-6 1/2″	3,700	4,900	2	25,000	6,090	1,400	1,700	2
	8,000	26′- 1/2″	4,800	6,200	4	30,000	7,264	1,700	2,100	4
	10,000	31′-6 1/2″	5,900	7,500	4	35,000	8,185	2,000	2,300	4
	12,000	37′- 1/2″	7,000	8,800	4	40,000	9,392	2,300	2,700	4
	15,000	46′- 9″	9,100	11,200	6	45,000	10,363	2,500	3,000	4
						50,000	11,328	2,700	3,200	4
						60,000	13,500	3,400	3,900	6
						65,000	14,522	3,700	4,300	6
10′	10,000	21′-5 1/4″	4,900	6,400	4	50,000	7,449	2,900	3,300	4
	12,000	24′- 1/4″	5,600	7,200	4	55,000	8,280	3,200	3,600	4
	15,000	29′-5 3/4″	7,000	8,900	4	60,000	8,827	3,300	3,800	5
	20,000	37′-8 3/4″	9,000	11,300	6	65,000	9,576	3,600	4,200	5
	25,000	47′-6 3/4″	11,800	14,600	8	70,000	10,395	3,900	4,500	6
	30,000	55′-9 3/4″	14,000	17,200	10	75,000	10,903	4,100	4,700	6
	35,000	64′- 3/4″	16,500	20,100	12	80,000	11,582	4,400	4,900	6
	40,000	73′-8 1/4″	19,000	23,100	14	85,000	12,268	4,700	5,300	7
						90,000	13,068	5,000	5,600	7
						100,000	14,345	5,400	6,100	8
						110,000	15,723	5,900	6,700	9
12′	20,000	29′ -4″	14,000	16,700	6					
	25,000	35′ -7″	16,600	19,700	8					
	30,000	43′ -1″	19,900	23,500	10					
	35,000	49′ -4″	22,500	26,500	12					
	40,000	54′ -4″	24,600	28,900	12					
	45,000	60′ -7″	27,400	32,100	16					
	48,000	65′ -7″	29,500	34,500	18					
	50,000	68′ -1″	30,500	35,700	18					

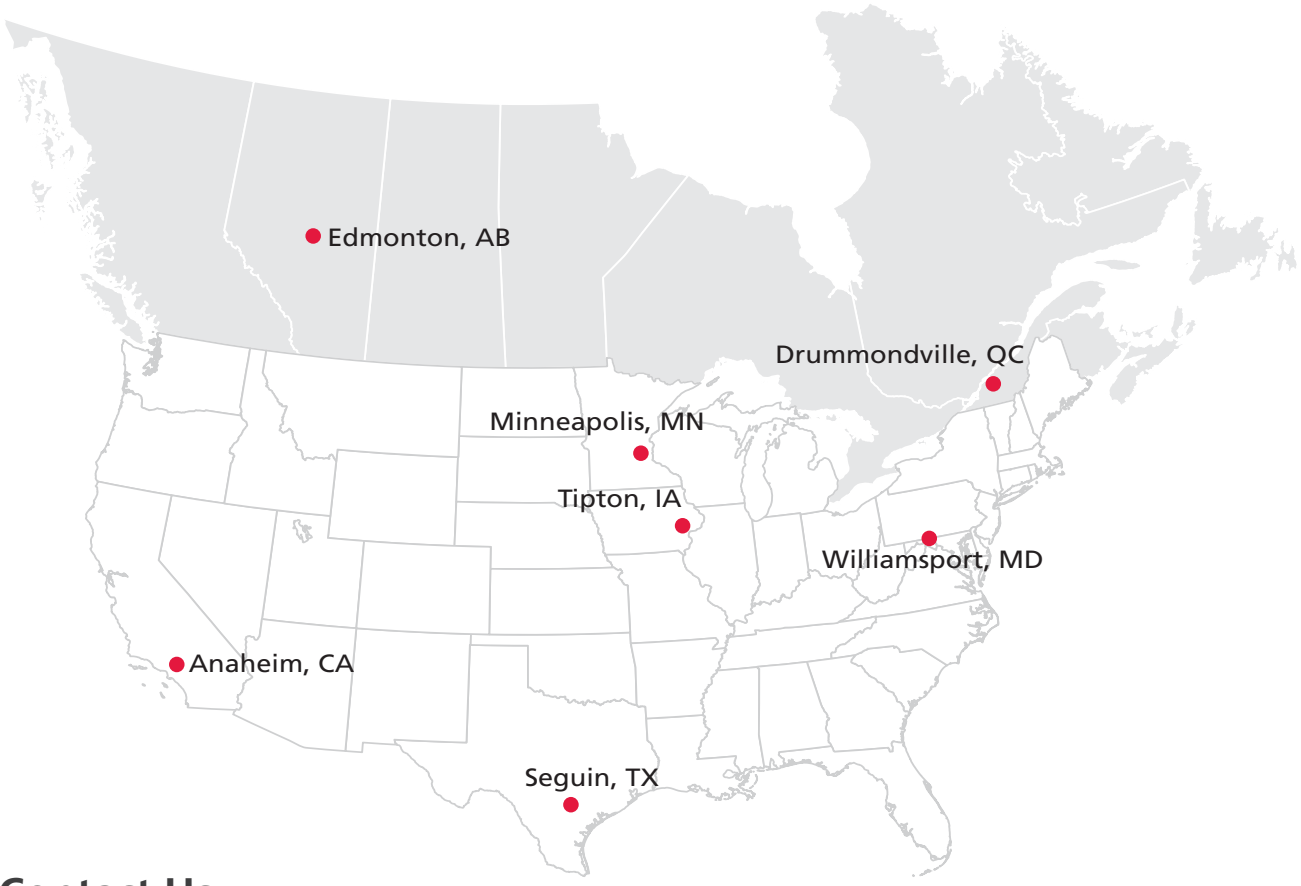
Notes:

1. Tank data for multicompartment tank models is available at www.zcl.com.
2. Actual height of the tank may be greater than the actual diameter due to fittings and accessories. Load height during shipping may vary due to tank placement on the shipping trailer.
3. If an overfill-protection device is installed in the tank, the actual capacity will be reduced.

Multiple Facilities

Customers Can Rely on Timely Manufacturing and Delivery of Tanks and Accessories.

With six manufacturing facilities – four in the United States and two in Canada – no matter where customers need fiberglass tanks and accessories shipped, a ZCL | Xerxes manufacturing facility is not far away. No other tank producer offers this kind of manufacturing capability in North America. All our facilities are either UL-listed or ULC-listed.



Contact Us

We're ready to design a double-wall tank, multi-compartment tank, triple-wall tank, diesel exhaust fluid tank or oil-water separator for your next project.

On the Web:
www.zcl.com

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USA: 952.887.1890
Email: eng.support@zcl.com

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Edmonton, AB T6X 1M5

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7901 Xerxes Avenue S
Minneapolis, MN 55431

Manufacturing Facilities:

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Edmonton, AB
Drummondville, QC

USA
Anaheim, CA
Seguin, TX
Tipton, IA
Williamsport, MD

UST12/17PP

ZCL | XERXES®
making a lasting difference®

Dualoy™ 3000/L Fiberglass Pipe

(Product Data)

FUEL HANDLING

Applications

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

Materials and Construction

Filament-wound fiberglass reinforced epoxy pipe with integral epoxy liner and exterior coating. When classified in accordance with ASTM D2310 and ASTM D2996, the pipe meets the following cell limits: RTRP 11CXF1-5420. The operating pressure of the pipe is up to 200 psig (13.8 bar) with continuous operating temperature to 150°F (66°C).

Dualoy 3000/L is Listed with Underwriters Laboratories Standard 971-2004 for nonmetallic underground piping for motor vehicle (MV), high blend (HB), concentrated (CT) and aviation and marine (A&M) fuels (File MH9162). Dualoy 3000/L pipe and fittings are also Listed with Underwriters Laboratories of Canada (File CMH 715). In Great Britain the Dualoy 3000/L system has been tested and accepted by the London Fire and Civil Defence Authority. Dualoy 3000/L has been issued a Certificate of Compliance to the Institute of Petroleum (IP) Specification by ERA Technology, Ltd.

Performance

Individual system components may not have the same ratings as the pipe. Refer to the detailed product information for the specific components to determine the pressure rating for the system as a whole.

Fittings

Compression-molded and filament-wound fiberglass reinforced epoxy.

For dimensions of fittings, consult publication Dualoy 3000/L Fittings Dimensions.

Pressure ratings of fittings without UL listing are available on request

Joining System

- **Bell & Spigot** - The primary joining method for fitting joints.

Nominal Dimensional Data

Pipe Size		Inside Diameter		Outside Diameter[1]		Wall Thickness				Capacity		Weight		Max. Deflection per 20 ft Joint	Min. Length Req. for 10° Change		Stiffness Factor[2]	
						Total		Structual										
in	mm	in	mm	in	mm	in	mm	in	mm	gal/ft	l/m	lb/ft	kg/m	deg	ft	m	lb•in³/in²	N•m
2	50	2.21	56	2.37	60	0.080	2.03	0.060	1.5	0.20	2.50	0.47	0.70	15	13	4	45	5.1
3	80	3.32	84	3.50	89	0.085	2.16	0.065	1.6	0.45	5.60	0.72	1.07	9	22	7	75	8.5
4	100	4.33	110	4.50	114	0.087	2.21	0.070	1.8	0.77	2.92	1.00	1.49	7.5	27	8	60	6.8
6	150	6.39	162	6.63	168	0.120	3.10	0.100	2.5	1.67	6.35	2.10	3.13	5	40	12	275	31.1

[1] Typical outside diameters of 2 through 6-inch pipe are within API, ASTM and ANSI fiberglass and steel pipe dimensions.

[2] At 5% deflection.

View of Joint Illustrations (Joint illustration only depicts type of connetion available, not type of pipe featured in data sheet)

Bell & Spigot

Typical Pipe Performance

Nominal Pipe Size		Pressure Rating[1]		Ultimate Internal Pressure [1]		Ultimate Collapse Pressure[2]	
in	mm	psig	MPa	psig	MPa	psig	MPa
2	50	200	2.07	3200	22.1	153	1.05
3	80	200	1.38	2400	16.5	90	0.62
4	100	175	1.21	2000	13.8	39	0.27
6	150	175	1.21	2000	13.8	38	0.26

[1] At 80°F (27°C).

[2] At 80°F (27°C). For continuous service do not exceed 75% of these values.

Typical Mechanical Properties

Pipe Property[1]			Method
Tensile Strength			
Longitudinal	35,000 psi	241.3 MPa	ASTM D2105
Circumferential	70,000 psi	482.7 MPa	ASTM D1599
Poisson's Ratio ν_{ha}[2] - ν_{ha}[3]	0.16 - 0.26		FGSTM
Tensile Modulus			
Longitudinal	25,000 psi	172.4 Mpa	ASTM D2105
Circumferential	38,000 psi	262.0 MPa	FGSTM
Compressive Strength			
Longitudinal	24,500 psi	168.9 MPa	FGSTM
Compressive Modulus			
Longitudinal	26,000 psi	179.3 MPa	FGSTM
Cyclic	8,000 psi	55.2 MPa	ASTM D2992 Procedure A

Typical Physical Properties

Pipe Property	Value	Value	Method
Thermal Conductivity	1.7 BTU-in/hr•ft²•°F	7.6 W/m-°C	ASTM C177
Thermal Expansion	8.5 x 10^{-6} in/in °F	15.3 x 10^{-6} cm/cm °C	ASTM D696
Friction Factor	Hazen-Williams 150.0		-
Absolute Roughness	0.00021 in	0.00053 mm	
Specific Gravity	1.8		ASTM D792
Barcol Hardness	65.0 (Impressor 934-1)		ASTM D2583

[1] Based on structural wall thickness.

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

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

Pipe Length

Size		Standard		Random	
in	mm	ft	m	ft	m
2-6	50-150	20	6.1	17-21	5.2 - 6.4

Minimum Bending Radius

Size		Minimum Bending Radius[1]	
in	mm	ft	m
2	50	75	23
3	80	100	38
4	100	150	46
6	150	200	61

[1] At rated pressure. Sharper bends may create excessive stress concentrations. **Do not** bend pipe until adhesive has cured.

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

FH3500ENG August 2016

Dualoy® 3000/L Secondary Containment Pipe and Fittings

Uses and Applications

- Service station product, vent and vapor recovery piping
- Bulk plant terminals and fueling terminals
- Central fuel oil systems
- Marinas and marine terminals (onshore only)
- All piping systems requiring UL or ULC Listing for MV, HB, CT and A&M fuels
- Containment piping for all of the above

Description

Dualoy 3000/L secondary containment systems require pipe one size larger than the primary and specially designed fittings. The system provides complete enclosure of UL- and ULC-Listed Dualoy primary piping used in product lines and vapor recovery lines from the sump at the product storage tank to the shear valve connector at the dispenser, and vent lines from the tank. Dualoy containment systems have been sized for close make-up and ease of installation.

Features of Dualoy 3000/L containment systems include:

- Filament-wound, fiberglass-reinforced pipe with integral liner;
- Compact fittings dimensions to minimize trench excavation;
- Smooth exterior pipe surface that eliminates the need for special end preparation tools;
- Ready accessibility to and complete inspectability of primary fittings prior to closure of the containment;
- Complete testability during installation and at any time thereafter;
- Rapid joint makeup with pre-inserted nuts and ambient cure adhesive.

Listings

Dualoy 3000/L is Listed in the United States with Underwriters Laboratories Standard 971-2004 for nonmetallic underground piping for motor vehicle (MV), high blend (HB), concentrated (CT) and aviation and marine (A&M) fuels for both primary and contained piping systems (File MH9162). Dualoy 3000/L pipe and fittings are also Listed with Underwriters' Laboratories of Canada (File CMH715). In Great Britain the Dualoy/3000L system has been tested and accepted by the London Fire and Civil Defense Authority. Dualoy 3000/L has been issued a Certificate of Compliance to the Institute of Petroleum (IP) Specification by ERA Technology, Ltd.

Performance

Operating pressures to 100 psig
Continuous operating temperatures to 150°F (66°C)
Individual system components may not have the same ratings as the pipe. Refer to the detailed product information for the specific components to determine the pressure rating for the system as a whole.

Secondary employs full-performance pipe — Many contained fuel handling systems employ materials in the secondary that fall far short of the primary piping in regard to chemical resistance and mechanical strength. By contrast, Dualoy 3000/L systems are manufactured with the same high-performance fiberglass-reinforced pipe in the secondary as in the primary. Thus, Dualoy 3000/L containment systems easily withstand both high external loads from backfill and traffic as well as internal pressures as high as 100 psig.

Compact containment fittings — Dualoy 3000/L containment fittings are compact clamshell-type closure pieces. Crossovers can be made with the same centerline-to-centerline dimension as single-wall system.

Piping System Characteristics

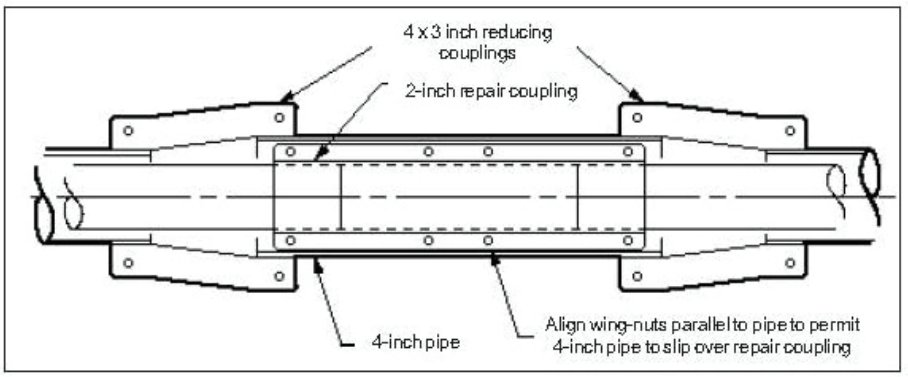
Precision pipe exterior eliminates scarfing — Dualoy pipe is manufactured in a proprietary continuous winding process that provides an extremely precise, consistent outside diameter. Light sanding of the pipe end to remove the surface gloss and obtain a suitable bonding surface is the only end prep required, although the scarfing feature of tapering tools can be used.

Easy containment fitting assembly — Dualoy 3000/L containment fitting clamshells are supplied in matched pairs. One half of each pair is fitted with pre-inserted propeller nuts, allowing the fitting to be assembled from one side, using the bolts provided.

Complete retestability — Dualoy 3000/L containment employs rigid-wall pipe and fittings that maintain their slope during the entire service life of the station. When installed with isolating penetration fittings (see page 3), Dualoy 3000/L containment piping can be repeatedly retested whenever desired.

Convenient repair capability — Contained piping systems are occasionally damaged after installation. Damage is generally caused by paving or excavation operations. Dualoy3000/L contained piping systems are designed so that only the damaged section need be replaced instead of the entire line. The 2-inch Dualoy repair coupling is sized so that it can be contained within 4-inch Dualoy 3000/L containment pipe.

Two-inch primary pipe contained within 3-inch containment pipe can be repaired with a UL-listed 2-inch repair coupling. The containment is restored by replacement of a section of the existing containment pipe with a 4-inch containment nipple. The 4-inch replacement nipple is then joined to the existing containment pipe with Dualoy reducing couplings.

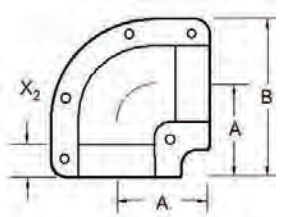


Containment Pipe and Fittings Dimensions

Pipe

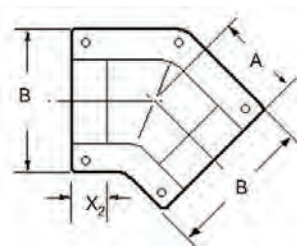
Nominal Pipe Size		A	B	C	X_2	No. of Bolt Holes	Wt.
in	mm	in	in	in	in		lb
3	80	3.50	3.32	—	—	—	0.72
4	100	4.50	4.33	—	—	—	1.00
6	150	6.63	6.39	—	—	—	2.10

90° Elbows



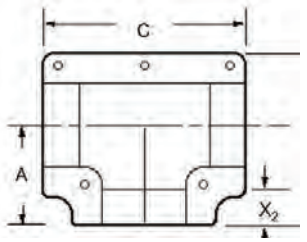
3	80	4.28	7.28	—	1.50	5	1.1
4	100	4.77	8.25	—	1.50	5	1.3
6	150	5.62	10.53	—	2.00	8	1.5

45° Elbows



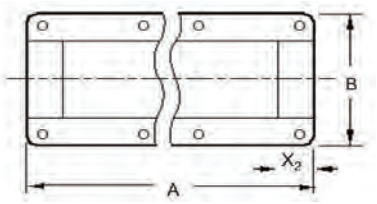
3	80	3.50	6.00	—	1.50	5	0.8
4	100	3.75	7.00	—	1.50	5	1.2
6	150	6.32	9.75	—	2.00	8	1.5

Tees



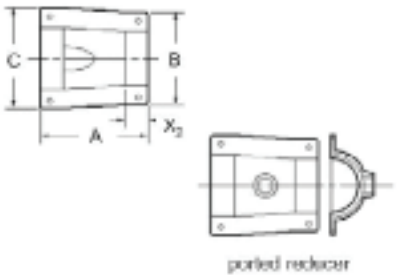
Nominal Pipe Size		A	B	C	X_2	No. of Bolt Holes	Wt.
in	mm	in	in	in	in		lb
3	80	4.28	7.24	8.56	1.50	5	1.2
4	100	4.78	8.25	9.58	1.50	5	1.6
6	150	5.72	10.67	11.65	2.00	6	1.7

Couplings



2	50	14.00	4.00	—	1.50	8	1.3
3	80	14.00	6.00	—	1.50	8	1.7
4	100	14.00	7.00	—	1.50	8	2.0
6	150	5.37	9.75	—	4.00	10	2.0

Reducers, Plain and with ¾ inch NPT Outlet

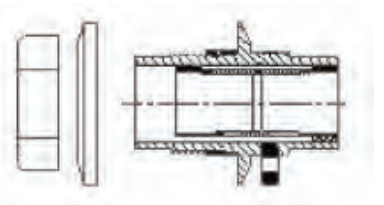


3 x 1½	80 x 40	6.25	4.48	6.10	1.50	4	0.6
3 x 1½	80 x 40	6.25	4.47	6.10	1.50	4	1.1(1)
3 x 2	80 x 50	6.25	4.90	6.10	1.00	4	0.7
3 x 2	80 x 50	6.25	4.90	6.10	1.00	4	1.1(1)
4 x 3	100 x 80	7.00	6.00	7.00	1.50	4	0.9
4 x 3	100 x 80	7.00	6.00	7.00	1.50	4	2.0(1)
6 x 4	150 x 100	7.17	7.62	9.74	2.00	6	1.0

(1) Ported reducer

Sump Penetration Fittings

Sump penetrations are designed for use at turbine sumps and dispenser pans. Plain sump penetration fittings permit the annular space between the primary and secondary lines to communicate with the interior of the sump or pan. Penetration fittings with factory-installed centralizers, sleeve couplings and monitoring ports may be used to isolate the pipe annular space from the sump or pan. When the annular space is so isolated, the secondary containment line can be retested at any time and as often as desired.



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NOV Fiber Glass Systems

FH3510 March 2013

GASOLINE SYSTEM, TANK & DISPENSER PIPING GENERAL NOTES

GENERAL NOTE:

A. IT IS REQUIRED THAT ONLY "CERTIFIED INSTALLERS" BE USED FOR INSTALLATION OF THE PIPING SYSTEM TO INSURE THAT PROPER PIPE FABRICATION, COUPLING AND INSTALLATION PREFORMED. "CERTIFIED INSTALLERS" ARE EQUIPPED WITH FACTORY MANUFACTURED COUPLING EQUIPMENT AND INSTALLATION TOOLS AND HAVE RECEIVED FACTORY TRAINING BY AMERON REPRESENTATIVE ON THE PROPER INSTALLATION AND TESTING PROCEDURES.

THIS ENVIRONMENTALLY SAFE, FRP UNDERGROUND PIPING SYSTEM PROVIDES PIPING RUNS BETWEEN USTS AND THE PRODUCT DISPENSERS.

B. ALL PRODUCT PIPING IS TO BE PRIMARY FUEL OF SPECIFIED DIAMETER IN SECONDARY PIPING OF SPECIFIED DIAMETER. PIPING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

C. WHERE FLEX CONNECTORS ARE COMPLETELY CONTAINED (NOT IN CONTACT WITH GROUND WATER, NATIVE SOIL OR BACKFILL MATERIAL), STAINLESS STEEL CONNECTORS ARE ACCEPTABLE. WHERE FLEX CONNECTORS ARE NOT COMPLETELY CONTAINED ISOLATION BOOTS OR PRIME AND WARP SHALL BE USED TO SEPARATE CONNECTOR FROM COMING INTO CONTACT WITH GROUND WATER, NATIVE SOIL OR BACKFILL MATERIAL. ALL FLEX CONNECTORS SHALL BE INSTALLED AS STRAIGHT AS POSSIBLE.

D. THE GENERAL CONTRACTOR ACCEPTS FULL RESPONSIBILITY FOR PROPER HANDLING AND INSTALLATION OF PIPING SYSTEM. THE GENERAL CONTRACTOR SHALL INSURE THAT GOOD WORKMANSHIP AND CONSTRUCTION PROCEDURES ARE FOLLOWED THROUGHOUT THE INSTALLATION, REGARDLESS OF INCLUSION OR OMISSION OF ANY APPLICABLE SUGGESTION IN THESE INSTRUCTIONS OR ON THE DRAWINGS.

E. UNKNOWN SITUATIONS OR CONDITIONS NOT COVERED IN THESE INSTRUCTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR. MANUFACTURERS SPECIALISTS ARE AVAILABLE FOR CONSULTATION. THE PRESENCE OF THE OWNER'S OR MANUFACTURERS REPRESENTATIVE AT AN INSTALLATION SITE DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR A PROPER INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SAFEGUARDING OF THE INSTALLATION AND MATERIALS AND EQUIPMENT STORED ON THE SITE TO PREVENT THEFT, VANDALISM OR DAMAGE.

RESPONSIBILITY NOTE:

FUEL CONTRACTOR RESPONSIBLE FOR DISPENSER AND SYSTEM START-UP AND CALIBRATION.

CONCRETE NOTE:

ALL CONCRETE SHALL BE 8" THICK, 4000PSI @ 28 DAY READY MIX WITH MAXIMUM 4" SLUMP. FINISH SHALL BE WOOD FLOAT WITH MEDIUM BROOM FINISH.

A MEDIUM BROOM FINISH IS REQUIRED ON THE CONCRETE PAVING LOCATED BETWEEN THE GASOLINE ISLANDS AND THE SIDEWALK IN FRONT OF THE QUIKTRIP BUILDING. CONTRACTOR TO PROVIDE TEST AREA FOR QUIKTRIP REPRESENTATIVE APPROVAL.

SETTLEMENT NOTE:

CAUTION TANK SETTLEMENT, TANK DISTORTION, OR MOVEMENT IN CONCRETE COVER SLAB CANNOT BE TOLERATED AND IF SPECIFIED MATERIALS ARE USED AND SPECIFIED PROCEDURES ARE FOLLOWED, NO INSTALLATION FAILURE SHOULD OCCUR. THEREFORE, IF ANY MOVEMENT, SETTLEMENT OR DISTORTION OCCURS, IT WILL BE PRESUMED THE CONTRACTOR HAS NOT FOLLOWED THE SPECIFIED INSTRUCTIONS AND PROCEDURES AND THE CONTRACTOR SHALL IMMEDIATELY UNDERTAKE, AT HIS SOLE EXPENSE, ANY NECESSARY CORRECTIVE MEASURES, AS MAY BE APPROVED BY THE QUIKTRIP FIELD REPRESENTATIVE, UP TO AND INCLUDING COMPLETE REMOVAL AND RESETTING OF ALL UNDERGROUND TANKAGE AT THE SITE. IF IT IS DETERMINED THAT MOVEMENT, SETTLEMENT OR DISTORTION HAS BEEN CAUSED BY FACTORS BEYOND THE CONTRACTOR'S CONTROL, THE COST OF REMEDIAL MEASURES WILL BE BORNE BY OTHERS. THROUGH ACCEPTANCE OF THE GAS CONTRACT, THE GAS INSTALLATION CONTRACTOR DOES HEREBY AGREE TO GUARANTEE THE UNDERGROUND TANKAGE INSTALLATION AGAINST FAILURE AS OUTLINED HEREIN ABOVE, FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE.

TANK BACKFILL REQUIREMENTS

POLICY 2.22.0 - TANK (FIBERGLASS UST) BACKFILL MATERIAL REQUIREMENTS AND COMPLIANCE TO STANDARDS

POLICY

IN ORDER TO ASSURE COMPLIANCE TO UST MANUFACTURER'S REQUIREMENTS FOR UST BACKFILL MATERIALS, PROCEDURES WILL BE FOLLOWED TO MONITOR APPROVAL BY MANUFACTURER, VERIFICATION THAT APPROVED MATERIAL HAS BEEN DELIVERED TO THE SITE, AND DOCUMENTATION ON THE CONSISTENCY OF MATERIAL PLACED IN THE UST EXCAVATION.

PROCEDURE
SPECIFICATIONS FOR ACCEPTABLE MATERIALS TO BE USED AS STRUCTURAL SUPPORT FOR FIBERGLASS USTS:
*
ROUNDED GRAVEL
WHEN USING ROUNDED GRAVEL, THE MATERIAL IS TO BE A MIX OF ROUNDED PARTICLES, SIZES BETWEEN 1/8" AND 3/4". THE ROUNDED GRAVEL MUST CONFORM TO THE SPECIFICATIONS OF ASTM C-33, PARAGRAPH 9.1, SIZES 6, 67, OR 7. NO MORE THAN 10% (BY WEIGHT) OF THE BACKFILL MAY PASS THROUGH A #8 SIEVE. THE MATERIAL IS TO BE WASHED, FREE-FLOWING, AND FREE OF ICE, SNOW AND DEBRIS.

CRUSHED STONE
WHEN USING CRUSHED STONE, THE MATERIAL IS TO BE A MIX OF ANGULAR PARTICLES, SIZES BETWEEN 1/8" AND 1/2". THE CRUSHED STONE MUST CONFORM TO THE SPECIFICATIONS OF ASTM C-33, PARAGRAPH 9.1, SIZES 7 OR 8. NO MORE THAN 10% (BY WEIGHT) OF THE BACKFILL MAY PASS THROUGH A #8 SIEVE. THE MATERIAL IS TO BE WASHED, FREE-FLOWING, AND FREE OF ICE, SNOW AND DEBRIS.

APPROVAL PROCESS

ROUNDED GRAVEL
A SAMPLE CONSISTING OF THREE (3) SEPARATE RANDOM INTERIOR STOCKPILE SAMPLES SHALL BE TAKEN AT THE QUARRY BY THE MATERIALS TESTING COMPANY. CLEAN ONE GALLON SIZED BUCKETS (APPROXIMATE) CAN BE USED FOR SAMPLING.

THE MATERIALS TESTING COMPANY SHALL COMPLETE A SIEVE ANALYSIS ON THIS MATERIAL AS IT HAS BEEN COMBINED. IF THIS MATERIAL MEETS THE ASTM C-33 SPECIFICATIONS, THE ANALYSIS SHALL BE SUBMITTED TO THE TANK MANUFACTURER FOR APPROVAL. THE TANK MANUFACTURER WILL ISSUE AN APPROVAL ON THAT SAMPLE AS REFERENCED TO A SPECIFIC QUARRY. THIS PROCESS SHOULD TAKE ABOUT TWO DAYS.

WITH ROUNDED GRAVEL ONLY, IT WILL NOT BE NECESSARY TO OBTAIN A NEW SAMPLE ON EACH INSTALLATION AS LONG AS THE QUARRY REMAINS THE SAME. AN APPROVAL FROM THE TANK MANUFACTURER WILL ONLY BE NEEDED ONCE TO DOCUMENT THE APPROVAL OF THE ROCK. IT WILL NOT BE NECESSARY TO ASK FOR APPROVAL ON ADDITIONAL INSTALLATIONS, UNLESS THE QUARRY LOCATION CHANGES.

IT WILL BE THE TANK INSTALLATION CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT ANY MATERIAL THAT HAS BEEN APPROVED BY THE TANK MANUFACTURER ALWAYS COMES FROM THE SAME QUARRY, AND REMAINS CONSISTENT.

POLICY 2.22.0 - CONTINUED

CRUSHED STONE
A SAMPLE CONSISTING OF THREE (3) SEPARATE RANDOM INTERIOR STOCKPILE SAMPLES SHALL BE TAKEN AT THE QUARRY BY THE MATERIALS TESTING COMPANY. CLEAN ONE GALLON (APPROXIMATE) SIZED BUCKETS CAN BE USED FOR SAMPLING.

THE MATERIALS TESTING COMPANY SHALL COMPLETE A SIEVE ANALYSIS ON THIS MATERIAL AS IT HAS BEEN COMBINED. IF THIS MATERIAL MEETS THE ASTM C-33 SPECIFICATIONS WITH NO VARIATION, IT WILL NOT BE NECESSARY TO SUBMIT A SIEVE ANALYSIS FOR APPROVAL BY THE TANK MANUFACTURER. IT IS NOT UNCOMMON TO RECEIVE AN ANALYSIS THAT INDICATES MATERIAL SIZES OUTSIDE OF THE ASTM-33 STANDARD. THESE VARIABLE REPORTS WILL NEED TO BE SUBMITTED TO THE TANK MANUFACTURER FOR APPROVAL. THIS PROCESS SHOULD TAKE ABOUT TWO DAYS.

A NEW SAMPLE AND SIEVE ANALYSIS WILL BE REQUIRED FOR EVERY LOCATION AS WELL AS AN APPROVAL FROM THE TANK MANUFACTURER.

- QUIKTRIP WILL REQUIRE AN ON-SITE INSPECTION AND DOCUMENTATION BY THE TESTING COMPANY AS TO THE CONSISTENCY OF THE MATERIAL DELIVERED TO THE SITE AND ITS SIMILARITY TO THE MATERIAL APPROVED BY THE TANK MANUFACTURER. QUIKTRIP WILL ALSO REQUIRE TESTING COMPANY DOCUMENTATION TO VERIFY THAT THE MATERIAL PLACED IN THE TANK EXCAVATION REMAINS CONSISTENT THROUGHOUT THE BACKFILL PROCESS. DOCUMENTATION SHALL BE PROVIDED TO QUIKTRIP.
- MATERIAL DISCOVERED ON SITE THAT DOES NOT MEET THE ASTM C-33 SPECIFICATION, FOR ANY REASON, WILL BE REMOVED AND REPLACED AT THE UST INSTALLER'S EXPENSE.
- ANY LIMESTONE MATERIAL USED SHALL ONLY BE PROVIDED FROM A D.O.T. APPROVED QUARRY. DOCUMENTATION OF APPROVAL SHALL BE PROVIDED TO QUIKTRIP.

BEDDING AND BACKFILL
1. MATERIAL SHALL CONFORM TO THE SPECIFICATIONS OF ASTM C-33 GRADING REQUIREMENTS FOR COARSE AGGREGATES.
   a. MATERIAL MUST BE FROM A TESTED AND APPROVED STATE DEPARTMENT OF TRANSPORTATION SUPPLIER OR SOURCE.
   b. CONTRACTOR SHALL PROVIDE THE FOLLOWING TESTING RESULTS WHICH HAVE BEEN PERFORMED WITHIN THE PRIOR 12 MONTHS OR MORE FREQUENT AS REQUIRED BY THE STATE DEPARTMENT OF TRANSPORTATION OF JURISDICTION, FORM THE SUPPLIER OR SOURCE PRIOR TO FUEL TANK INSTALLATION:
      i. SIEVE ANALYSIS
      ii. DELETERIOUS SUBSTANCES
      iii. SOUNDNESS
2. MATERIALS SHALL MEET GRADUATION REQUIREMENTS LISTED IN CURRENT MANUFACTURE'S INSTALLATION MANUAL.
3. ADHERENCE TO ALL INSTALLATION METHODS AND PRE-CAUTIONS AS INDICATED BY THE MANUFACTURER IS REQUIRED.
4. SUBMIT 5 SAMPLE TO QuikTrip's TESTING AGENCY FOR SIEVE ANALYSIS PRIOR TO FUEL TANK INSTALLATION.

TANK AND DISPENSER NOTE:

A. THE SPECIFIC SITE PLAN AND SPECIFICATIONS WILL GOVERN THE EXACT LOCATION, NUMBER, SIZE, AND TYPE OF EQUIPMENT TO BE INSTALLED AND INSTALLATION TO BE FOLLOWED.

B. PLANS AND SPECIFICATIONS REPRESENT MINIMUM REQUIREMENTS. CONTRACTOR SHALL MAKE THE INSTALLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, FEDERAL, STATE, AND LOCAL ORDINANCES WHEN SUCH ORDINANCES EXCEED THESE MINIMUMS.

C. CONTRACTOR SHALL SECURE, ARRANGE FOR AND PAY FOR ALL NECESSARY PERMITS, INSPECTIONS AND TESTS AND INCLUDE THE COST IN THEIR BID (UNLESS SPECIFIED DIFFERENTLY IN SCOPE OF WORK).

D. THE SCOPE OF WORK OR SPECIFICATIONS WILL LIST MATERIAL AND EQUIPMENT TO BE FURNISHED BY QUIKTRIP. CONTRACTOR SHALL STORE, SAFEGUARD AND FURNISH ALL OTHER MATERIALS REQUIRED TO COMPLETE INSTALLATION.

E. MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION AND OPERATIONAL TESTING OF DISPENSERS SHALL BE FOLLOWED TO AVOID POSSIBILITY OF DAMAGE TO EQUIPMENT.

F. ALL INSTALLATIONS SHALL INCLUDE THE INSTALLATION OF STAGE I VAPOR RECOVERY.

G. CONTRACTOR SHALL PLACE ALL UNDERGROUND PIPING WHERE AND AS SHOWN WITH A MINIMUM NUMBER OF BENDS AND CONTINUOUSLY PITCHED TO PROVIDE MAXIMUM SLOPE FROM RISER TO THE LOW POINT AT THE CONNECTION. MINIMUM SLOPE OF 1/8" PER FOOT. INSTALL ALL PRODUCT AND VENT LINES IN A COMMON TRENCH.

H. ALL PRODUCT AND VENT LINES (UNDERGROUND) SHALL BE FIBERGLASS UNLESS OTHERWISE NOTED. ALL PRODUCT LINES SHALL BE 3" / 2" FIBERGLASS. THE MANUFACTURE TO BE DETERMINED BY QUIKTRIP REPRESENTATIVE.

I. CONTRACTOR SHALL IDENTIFY UNDERGROUND PIPING, AND VENT PIPING ONCE IT HAS BEEN BACKFILLED AND COVERED UP SO FINISH GRADING AND CONCRETE CONTRACTOR KNOW WHERE UNDERGROUND PIPING IS LOCATED.

PIPE TRENCH LINER NOTE:

PIPING TRENCH LINERS SHALL BE 6oz NON-WOVEN GEOTECH FABRIC - OVERLAP TOP COURSE. CONTACT LOCAL QUIKTRIP REPRESENTATIVE FOR LOCAL REQUIREMENTS.

CERAMIC TILE NOTE:

CERAMIC TILE SHALL BE "CONTINENTAL SLATE CS53 ASIAN BLACK 6X6 WITH LATICRETE PERMACOLOR BLACK 22 GROUT". TILE MUST BE CENTERED ON THE ISLAND IN BOTH DIRECTIONS.

FINISH NOTE:

(ALL PRODUCTS ARE SHERWIN-WILLIAMS)

A. EXPOSED STEEL: 1 COAT KEM KROMIK METAL PRIMER
   ISLAND FORMS: DEVTHANE 379UVA ALIPHATIC URETHANE GLOSS ENAMEL
   VENT PIPE: GLOSS BLACK
   VENT PIPE: AMARILLO WHITE (PHOENIX ONLY)

B. EXPOSED STEEL: 1 COAT KEM KROMIK METAL PRIMER
   GUARD POSTS (ALL DIVISIONS EXCEPT PHOENIX): 2 COATS INDUSTRIAL ENAMEL.

   COLOR: SAFETY YELLOW
   GUARD POST (PHOENIX ONLY): ROLL BRUSH, A100 LATEX FLAT
   COLOR: B54-W101, Y-60 / 32, R2-20 / 32, B1-40 / 32

C. EXPOSED METAL COMPONENTS IN SUMPS: 2 COATS OF OIL RESISTANT, SPRAY CAN ENAMEL, BLUE IN COLOR

CANOPY NOTE:

CANOPY IS A PREFAB STEEL STRUCTURE. CONTACT QUIKTRIP REPRESENTATIVE FOR NAME OF MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR STRUCTURAL DESIGN AND INSTALLATION INFORMATION. SEE ARCHITECTURAL SITE PLAN FOR LOCATION OF CANOPY AND GAS ISLANDS. THE GASOLINE CANOPY STRUCTURE IS FINISHED AND INSTALLED BY QUIKTRIP.

INSURANCE NOTE:

SEE LOCAL REPRESENTATIVE FOR REQUIREMENTS.

INSTALLATION NOTE:

CANOPY, TANKS AND BUILDING TO BE INSTALLED AT THE SAME TIME. THESE PLANS MUST BE USED IN COORDINATION WITH SEPARATE SITE, BUILDING AND CANOPY PLANS.

CONTRACTOR NOTE:

A. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT WORK SCOPE PRIOR TO THE INITIATION OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR APPLICABLE CODES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AS DEFINED BY THE DRAWINGS AND IN FULL CONFORMANCE WITH LOCAL REGULATIONS AND CODES.

B. THE CONTRACTOR ACCEPTS FULL RESPONSIBILITY FOR PROPER HANDLING AND INSTALLATION OF THE GASOLINE USTS AND SHALL INSURE THAT GOOD WORKMANSHIP PRACTICES AND CONSTRUCTION PROCEDURES ARE FOLLOWED REGARDLESS OF THE INCLUSION OR OMISSION OF ANY INSTRUCTION.

C. UNKNOWN SITUATIONS OR CONDITIONS NOT COVERED IN THESE AND THE MANUFACTURER'S INSTRUCTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR. MANUFACTURER'S SPECIALISTS ARE AVAILABLE FOR CONSULTATION. THE PRESENCE OF THE MANUFACTURER OR OBSERVER AT AN INSTALLATION SITE DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR THE PROPER INSTALLATION OF THE TANKS.

D. QUESTIONS REGARDING INSTALLATION PROCEDURES OR TANK REPAIRS SHOULD BE DIRECTED TO THE QUIKTRIP FIELD REPRESENTATIVE.

E. GASOLINE UNDERGROUND TANKS MUST BE INSTALLED ACCORDING TO THESE INSTRUCTIONS, THE MANUFACTURER'S INSTRUCTIONS AND NFPA 30 AND 30A UL971. LOCAL CODES MAY APPLY AND MUST BE ADHERED TO. FAILURE TO FOLLOW THESE INSTALLATION INSTRUCTIONS WILL VOID THE WARRANTY AND WILL RESULT IN TANK FAILURE. PROPER INSTALLATION OF GASOLINE USTS HELP PREVENT TANK DAMAGE AND SHOULD INSURE LONG-TERM CORROSION-PROOF SERVICE. IT IS IMPERATIVE TO READ, UNDERSTAND AND FOLLOW THESE INSTRUCTIONS.

F. THESE SPECIFICATIONS ARE SUPPLEMENTED BY THE RESPECTIVE TANK MANUFACTURER'S SPECIFICATIONS. THE INSTALLATION PROCEDURE SHALL COMPLY WITH BOTH SETS OF INSTRUCTIONS AND SPECIFICATIONS. IF, IN THE CONTRACTOR'S JUDGEMENT, THERE APPEARS TO BE A CONFLICT IN THESE SPECIFICATIONS AND THE TANK MANUFACTURER'S INSTRUCTIONS, CONTACT THE LOCAL QUIKTRIP REPRESENTATIVE FOR CLARIFICATION AND GUIDANCE.

G. CONTRACTOR SHALL SECURE, ARRANGE FOR AND PAY FOR ALL NECESSARY PERMITS, INSPECTIONS AND TESTS AND INCLUDE THE COST IN HIS BID (UNLESS SPECIFIED DIFFERENTLY IN SCOPE OF WORK).

H. CONTRACTOR SHALL INSPECT AND CONFIRM ALL PIPING TO BE CLEAR OF ALL BEDDING MATERIAL, TRASH, ANY TYPE OF LIQUID OR DEBRIS PRIOR TO AND AFTER INSTALLATION.

I. TANK AND PRODUCT LINE TESTING AND REPORTING REQUIRED. COORDINATE REQUIREMENTS WITH QUIKTRIP REPRESENTATIVE.

J. XERXES TRUCHECK TANK TIGHTNESS TESTING PROCEDURES SHALL BE FOLLOWED FOR ALL TANK BEING INSTALLED. TRUCHECK DATA LOG SHALL BE COMPLETED BY THE CONTRACTOR AND SUBMITTED TO THE QUIKTRIP REPRESENTATIVE AFTER TESTING IS COMPLETE. CONTRACTOR SHALL ALSO RETAIN A COPY AS PART OF THE TANK RECORDS THAT MAY BE REQUIRED BY FEDERAL, STATE AND/OR LOCAL REGULATIONS OR CODES.

K. SUMP VENTILATION SYSTEM SHALL BE INSTALLED AND TESTED BY CONTRACTOR TO PROVIDE CONTINUOUS AIR MOVEMENT BETWEEN SUMPS. REFER TO SHEET XF410 AND DIRECTION FROM THE QUIKTRIP REPRESENTATIVE.

L. CONTRACTOR SHALL PROVIDE TANK EXCAVATION HOLE PROTECTION AT ALL TIMES UNTIL PAVING IS IN PLACE PER OSHA STANDARD 1910. COVERS AND/OR GUARDRAILS SHALL BE PROVIDED TO PROTECT PERSONNEL FROM THE HAZARDS OF OPEN PITS, TANKS, VATS, DITCHES, ETC.

M. ALL TANK, TRANSITION, AND DISPENSER SUMPS SHALL BE COVERED DURING CONSTRUCTION TO PREVENT DEBRIS AND WATER FROM ACCUMULATING. ANY ACCUMULATION SHALL BE REMOVED AND SUMPS KEEP CLEAN.

N. CONTRACTOR TO CONTACT QUIKTRIP REPRESENTATIVE AND QUIKTRIP ENVIRONMENTAL FOR TANK TESTING REQUIREMENTS.

O. ALL UNDERGROUND STORAGE TANKS SHALL BE BALLASTED WITH CLEAN WATER AT TIME OF TANK INSTALLATION PER MANUFACTURER INSTALLATION INSTRUCTIONS. THE PRACTICE OF BALLASTING WITH PRODUCT IS STRICTLY PROHIBITED AND NOT ALLOWED BY QUIKTRIP.

P. CONTRACTOR SHALL PERFORM ALL REQUIRED TANK TIGHTNESS TESTING WITH WATER ONLY, THE USE OF PRODUCT FOR THESE TEST IS STRICTLY PROHIBITED AND NOT ALLOWED BY QUIKTRIP.

B1

FIRE CODE NOTES:

A. FUEL TANKS TO BE VERIFIED FOR UL LISTING AND SHIPPING PRESSURE BY THE FIRE CODE OFFICIAL PRIOR TO PLACEMENT INTO THE GROUND

B. UNDERGROUND PIPING TO BE HYDROSTATIC TESTED AND VERIFIED BY THE FIRE CODE OFFICIAL.

C. FINAL INSPECTION OF ALL FUEL DISPENSERS TO BE CONDUCTED BY THE FIRE CODE OFFICIAL PRIOR TO DELIVERY OF PRODUCT.

FUEL SHEET INDEX

DAVID M. KEMPER
101813
LICENSED PROFESSIONAL ENGINEER
09/30/2022

CORESTATES, INC.
CERTIFICATE OF AUTHORIZATION
#F3349
EXPIRES 07-31-2023

SIGNATURE DATE:

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QuikTrip No. 4160
7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B1	09/19/22	CITY COMMENTS

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
GASOLINE SYSTEM TANK AND DISPENSER PIPING GENERAL NOTES

SHEET NUMBER:
XF101

A1
N.T.S.
GASOLINE SYSTEM, TANK & DISPENSER PIPING GENERAL NOTES

TEXAS NEW STORE UST INSTALL CHECKLIST

30-DAY NOTIFICATION (TCEQ-0445 FORM) FOR SENT TO THE TCEQ CENTRAL OFFICE IN AUSTIN, ALSO SEND RECEIPT OF SUBMISSION TO QTENVIRO@QUIKTRIP.COM - FUEL INSTALLER RESPONSIBLE

PROPER 24-72 HOUR NOTIFICATIONS TO BE MADE TO THE LOCAL TCEQ OFFICE FOR SETTING THE TANKS, COMPLETING THE PIPING INSTALLATION, AND THE FINAL INSPECTION. - FUEL INSTALLER RESPONSIBLE

TANK REGISTRATION APPLICATION - TCEQ-0724 FORM- FUEL INSTALLER RESPONSIBLE

REQUIRED DOCUMENTATION FOR NEW UST SYSTEMS:

1. 3RD PARTY VAPOR RECOVERY TESTING - INCLUDES A PRESSURE DECAY TEST, TIE-TANK TEST, AND PRESSURE/VACUUM (P/V) VENT VALVE TEST.(TX)- FUEL INSTALLER TO COORDINATE WITH QT ENV FOR APPROVED TESTING VENDOR (QTENVIRO@QUIKTRIP.COM)
2. 50 PSI PRIMARY AND FUTURE LINE AND 5 PSI SECONDARY LINE PRESSURE TEST COMPLETED PRIOR TO SYSTEM GOING IN SERVICE. TESTER TO DOCUMENT THAT PRESSURE WAS HOLDING ON SECONDARY LINES AT PROJECT COMPLETION. THE TEST RESULTS FOR CAN BE DOCUMENTED ON THE PRODUCT PIPING MANUFACTURER CHECKLIST FOR EACH TYPE OF PIPE OR CONTRACTOR FORM. (QT) FUEL INSTALLER RESPONSIBLE
3. 3RD PARTY TANK TIGHTNESS TESTING (MUST TEST WITH WATER PRIOR TO FUEL DELIVERY)(QT,TX) - FUEL INSTALLER TO COORDINATE WITH QT ENV FOR APPROVED TESTING VENDOR (QTENVIRO@QUIKTRIP.COM)
4. 3RD PARTY LINE TIGHTNESS TESTING (QT,TX) - FUEL INSTALLER TO COORDINATE WITH QT ENV FOR APPROVED TESTING VENDOR (QTENVIRO@QUIKTRIP.COM)
5. 3RD PARTY MANUAL/FORCED LINE LEAK DETECTOR OPERABILITY TEST FOLLOWING MANUFACTURERS GUIDELINES TO SIMULATE 3.0 GPH LEAK (QT,TX) - FUEL INSTALLER TO COORDINATE WITH QT ENV FOR APPROVED TESTING VENDOR (QTENVIRO@QUIKTRIP.COM)
6. TRUCHEK OR HYDROSTATIC STAND PIPE TANK TEST FOR EACH TANK (QT) FUEL INSTALLER RESPONSIBLE
7. 3RD PARTY DISPENSER CALIBRATION RESULTS (QT) - FUEL INSTALLER TO COORDINATE WITH QT ENV FOR APPROVED TESTING VENDOR (QTENVIRO@QUIKTRIP.COM)
8. 3RD PARTY SENSOR FUNCTIONALITY TESTING (TX)
   - NEED SENSOR STATUS PRINTOUT WITH ALL SENSORS IN NORMAL STATUS
   - NEED LEAK DETECTION CONSOLE PRINTOUT DOCUMENTING THE FUNCTIONALITY OF EACH INTERSTITIAL SENSOR. THE SENSOR FUNCTIONALITY TEST IS CONDUCTED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN GUIDELINES AND SHOULD CONSIST OF PRINTOUTS DOCUMENTING THE STATUS OF EACH SENSOR BEFORE, DURING, AND AFTER THE FUNCTIONALITY TEST. SENSOR STATUS PRINTOUTS BEFORE AND AFTER THE TEST SHOULD INDICATE A STATE OF NON-ALARM, SUCH AS A "NORMAL" OR "OK". (TX) - FUEL INSTALLER TO COORDINATE WITH QT ENV FOR APPROVED TESTING VENDOR (QTENVIRO@QUIKTRIP.COM)
9. 3RD PARTY REMOTE FILL PRESSURE (IF APPLICABLE) (QT REQUIRED TEST FORM) (QT) - FUEL INSTALLER TO COORDINATE WITH QT ENV FOR APPROVED TESTING VENDOR (QTENVIRO@QUIKTRIP.COM)
10. OVERFILL OPERABILITY TESTING/VERIFICATION (TX) - FUEL INSTALLER TO COORDINATE WITH QT ENV FOR APPROVED TESTING VENDOR (QTENVIRO@QUIKTRIP.COM)
11. 3RD PARTY SUMP HYDROSTATIC TEST RESULTS (TX) - FUEL INSTALLER TO COORDINATE WITH QT ENV FOR APPROVED TESTING VENDOR (QTENVIRO@QUIKTRIP.COM)
12. 3RD PARTY SPILL BUCKET HYDROSTATIC OR VACUUM TEST RESULTS (TX) - FUEL INSTALLER TO COORDINATE WITH QT ENV FOR APPROVED TESTING VENDOR (QTENVIRO@QUIKTRIP.COM)
13. TANK CHART FOR EACH TANK (QT) FUEL INSTALLER RESPONSIBLE
14. TANK WEIGHT AT DELIVERY (IF POSSIBLE). PLEASE WRITE ON UST MANUFACTURER CHECKLIST OR USE CONTRACTOR FORM. (QT) FUEL INSTALLER RESPONSIBLE
15. UST MANUFACTURER CHECKLIST (TX) 16. PRODUCT PIPING MANUFACTURER CHECKLIST FOR EACH TYPE OF PIPE (QT) FUEL INSTALLER RESPONSIBLE
16. PRODUCT PIPING MANUFACTURER CHECKLIST FOR EACH TYPE OF PIPE (QT) FUEL INSTALLER RESPONSIBLE

DAVID M. LEIPER
101813
LICENSED PROFESSIONAL ENGINEER
05/31/2023

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SIGNATURE DATE:

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TEXAS NEW STORE UST INSTALL CHECKLIST

SHEET NUMBER:

XF101.1

A1
N.T.S.

TEXAS NEW STORE UST INSTALL CHECK LIST

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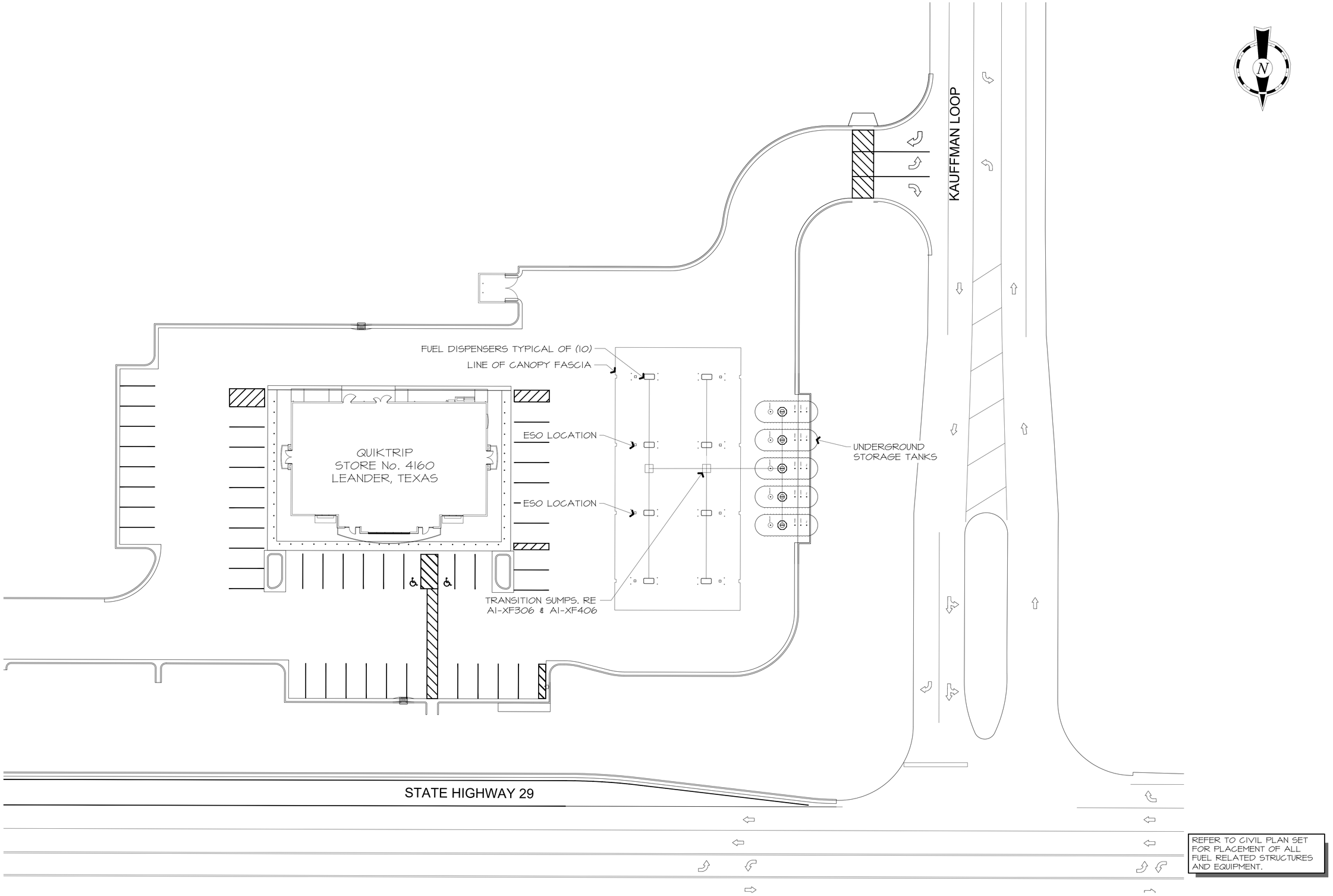

REFER TO CIVIL PLAN SET FOR PLACEMENT OF ALL FUEL RELATED STRUCTURES AND EQUIPMENT.

A1 SITE PLAN (REFERENCE ONLY - NOT FOR CONSTRUCTION) B2

N.T.S.

STATE OF TEXAS
DAVID M. LEIPER
101813
LICENSED
PROFESSIONAL ENGINEER
03/31/2023

CORESTATES, INC.
CERTIFICATE OF AUTHORIZATION
#F9349
EXPIRES 07-31-2023

SIGNATURE DATE:

CORE STATES GROUP
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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

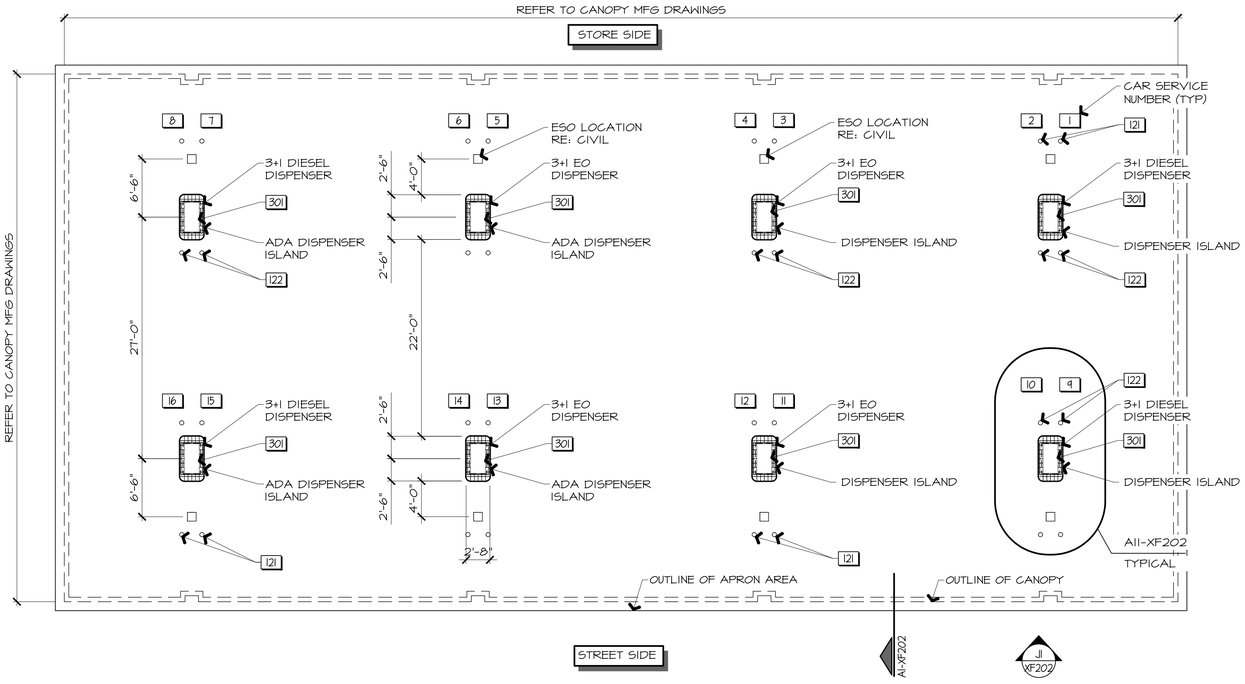
PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE
B4	03/27/23	COORDINATION

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
SITE PLAN

SHEET NUMBER:
XF102



NOTE:

1. DISPENSER SUMPS TO BE SET IN PLACE AND USED AS A FORM TO POUR CONCRETE AROUND.
2. ALL EQUIPMENT INSTALLATIONS MUST COMPLY WITH MANUFACTURER'S SPECIFICATIONS.
3. ALL EQUIPMENT AND CONSTRUCTION ARE NEW AND FACILITY IS TO BE SELF-SERVICE.
4. FOUNDATION AND SUBGRADE PREPARATION DETAILS IN ACCORDANCE WITH SOIL REPORT AND CIVIL DRAWINGS.
5. SEE CIVIL PLANS FOR ORIENTATION ON SITE, AND FOR TRAFFIC FLOW.
6. REFER TO CANOPY MANUFACTURERS DRAWINGS FOR SPECIFIC CANOPY FOOTING OPTIONS.
7. DISPENSER LAYOUT FOR EQUIPMENT LOCATION AND CONFIGURATION. SEE CIVIL DRAWINGS FOR CONCRETE SPECIFICATIONS, REINFORCING, CANOPY DETAILS, SLOPES & GRADES, SIGNAGE AND ADDITIONAL SITE REQUIREMENTS.

STATE OF TEXAS
DAVID M. KEPLER
101813
LICENSED
PROFESSIONAL ENGINEER
03/31/2023

CORESTATES, INC.
CERTIFICATE OF AUTHORIZATION
#F9349
EXPIRES 07-31-2023

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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:

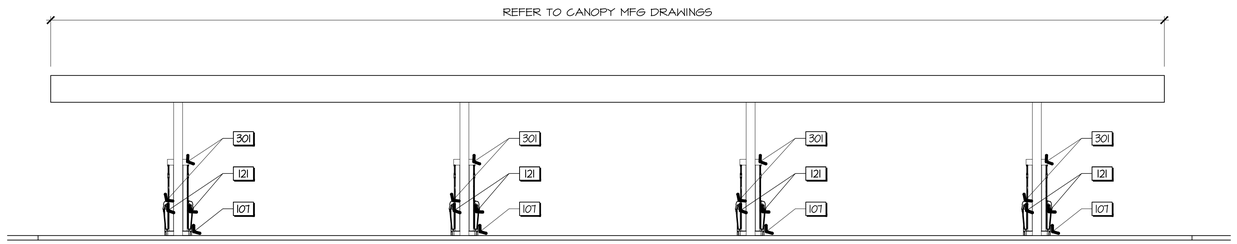
DISPENSER PLAN

SHEET NUMBER:

XF201

A1
1/8"=1'-0"

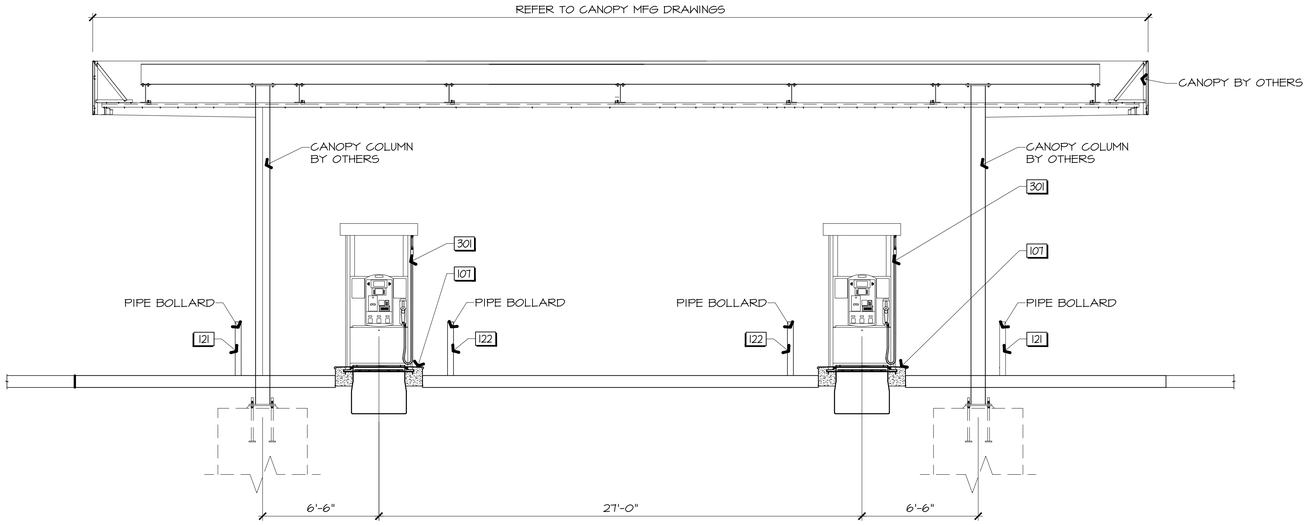
DISPENSER PLAN



NOTE:
REFER TO QUIKTRIP INSTALL PACKAGE IV210-IV212 FOR INSTALL INFORMATION ON THE WASHER BUCKET, AUTO DIESEL SIGNAGE MARKETING PLACARD, GAS COLUMN NUMERAL SIGNAGE, AND SECURITY CAMERAS.

J1 CANOPY FRONT ELEVATION

1/8"=1'-0" A1-XF201

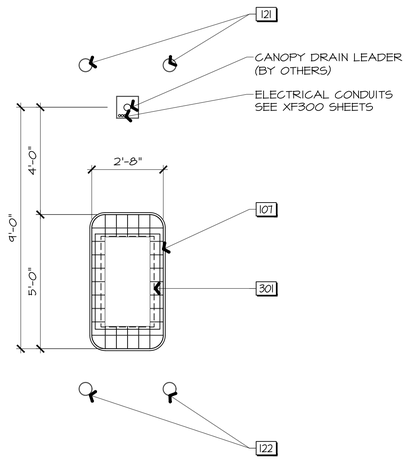


A1 CANOPY SECTION DETAILED CROSS SECTION

1/4"=1'-0" A1-XF201

NOTE:
EPOXY COAT BOLLARD AND CANOPY COLUMN 6" ABOVE AND BELOW GRADE RE: ARCHITECTURES

NOTE:
PIPE BOLLARD RE: STRUCTURAL DRAWINGS FOR SIZE & FOOTING DESIGN RE: CIVIL DRAWINGS FOR LOCATION



A11 DISPENSER PLAN

3/16"=1'-0" A1-XF201

CORESTATES, INC.
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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:

DISPENSER PLAN, SECTIONS & DETAILS

SHEET NUMBER:

XF202

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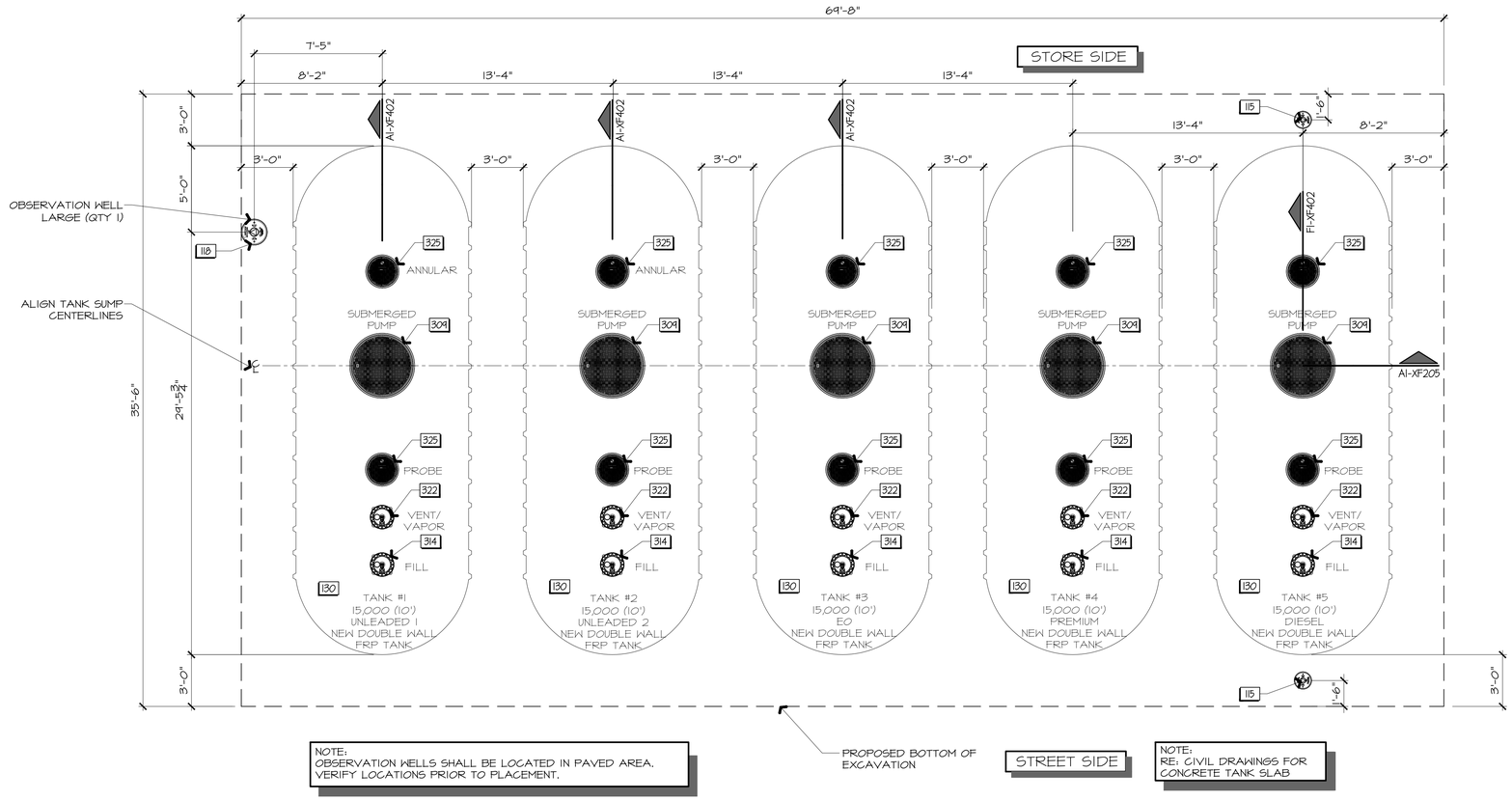
PAINT COLOR SPECIFICATIONS

PETROLEUM RESISTANT PAINT, INDUSTRIAL ENAMEL, (PROTECTIVE & MARINE COATINGS)

1. FUEL MANHOLE COVERS, VAPOR RECOVERY MANWAYS, PRODUCT FILL COVERS, STICK PORT COVERS.

A. PREMIUM UNLEADED - SAFETY RED B65R550.
B. UNLEADED PLUS - BLUE B65L550
C. UNLEADED - WHITE B65W550
D. UNLEADED W/ NO ETHANOL - WHITE B65W550 WITH BLACK "X"
E. UNLEADED E15 - HALF BLUE B65L550 AND HALF WHITE B65W550
F. VAPOR RECOVER CONNECTION - SAFETY ORANGE SW4023
G. PRODUCT X TANK WHEN FILLED WITH WATER - GRAY SW4031
H. OBSERVATION WELLS - WHITE B65W550 WITH DIAMOND BLOCK
I. DIESEL ALL GRADE ULTRA LOW SULFUR - BRIGHT YELLOW B65Y552
J. DIESEL EXHAUST FLUID - LASER BLUE SW4079
K. STICK PORT - MATCH PRODUCT FILL

FIBRELITE COVER NOTE:
1. ENSURE THAT THE SEAL AND SEALING FACES OF THE COVER ARE CLEAN
2. APPLY SILICONE TO THE COVER SEAL
3. LEAVE SILICONE CAN IN SUMP FOR FUTURE USE



NOTE:
OBSERVATION WELLS SHALL BE LOCATED IN PAVED AREA. VERIFY LOCATIONS PRIOR TO PLACEMENT.

NOTE:
RE: CIVIL DRAWINGS FOR CONCRETE TANK SLAB

TANK TOP EQUIPMENT PAINT REQUIREMENTS PAINT SHALL BE PETROLEUM RESISTANT	
MANHOLE COVER	COLOR
UNLEADED	WHITE
UNLEADED W/NO ETHANOL	WHITE W/BLACK "X"
UNLEADED PLUS	BLUE
PREMIUM	RED
DIESEL	YELLOW
VAPOR RECOVERY	ORANGE
PRODUCT X	BLACK
PROBE	GRAY
ANNULAR / INTERSTITIAL	GRAY
OBSERVATION WELL	WHITE W/BLACK DIAMOND
STICK PORT	MATCH PRODUCT FILL

TANK NUMBERING	
TANK #1	15K UNLEADED 1
TANK #2	15K UNLEADED 2
TANK #3	15K EO
TANK #4	15K PREMIUM
TANK #5	15K DIESEL

A1 TANK APRON PLAN B2
1/4" = 1'-0"

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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

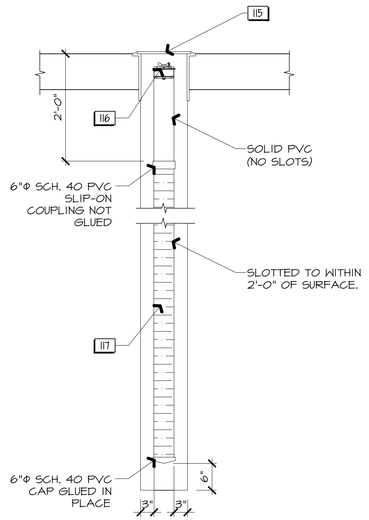
ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
UST PLAN & SECTIONS

SHEET NUMBER:
XF203

NOTES:

1. OBSERVATION WELL SHALL CONSIST OF 6 INCH DIA. SCHEDULE 40 PVC THREADED WELL MATERIAL.
2. WELL SHALL BE CONSTRUCTED WITH SCREEN TO WITHIN 2'-0" OF SURFACE W/ FACTORY MANUFACTURED SLOT WIDTH OF .020.
3. THE REMAINDER OF THE WELL SHALL BE CONSTRUCTED OR 6" THREADED SCHED. 40 SOLID PVC RISER MATERIAL.
4. WELL SHALL EXTEND FROM 4" BELOW FINISH GRADE TO THE 12" PAST THE BOTTOM OF THE UST BASIN.
5. THE BOTTOM OF THE WELL SHALL BE PLUGGED USING 6" Φ. SCHEDULE 40 PVC END PLUG OR CAP.
6. THE WELL SHALL BE CAPPED USING AN INTERNAL TYPE EXPANDING WELL CAP.
7. THE WELL SHALL BE FINISHED USING AT MINIMUM AN 12" Φ. FLUSH MOUNT MANWAY COVER.
8. THE WELL SHALL BE COMPLETELY SURROUNDED BY GRAVEL BACK FILL MATERIAL. AT NO TIME SHALL THE WELL BE PLACED INTO OR FILLED BY SOIL MATERIAL.
9. OBSERVATION WELLS SHALL BE PLACED IN PAVED AREA. VERIFY LOCATION PRIOR TO PLACEMENT.



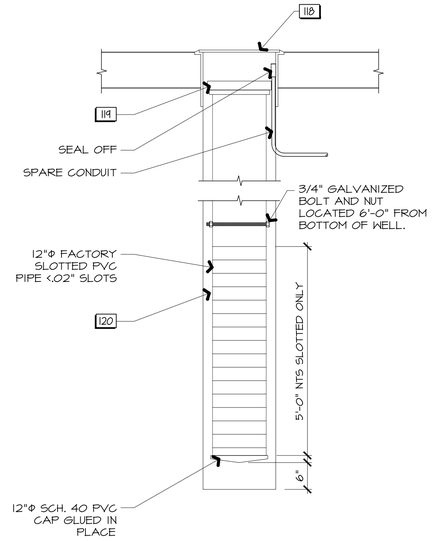
A1 — 6" OBSERVATION WELL DETAIL

3/4" = 1'-0"

A9/J9-XF203 A1/J1-XF402 A1-XF412

NOTES:

1. OBSERVATION WELL SHALL CONSIST OF 12" Φ. SCHEDULE 40 PVC THREADED WELL MATERIAL.
2. WELL SHALL BE CONSTRUCTED WITH ONE 5'X 12" SCREEN AT BOTTOM WITH A FACTORY MANUFACTURED SLOT WIDTH OF .020.
3. THE REMAINDER OF THE WELL SHALL BE CONSTRUCTED OF 12" THREADED SCHEDULE 40 SOLID PVC RISER MATERIAL.
4. WELL SHALL EXTEND FROM 4" BELOW FINISH GRADE TO THE 12" PAST THE BOTTOM OF THE UST BASIN.
5. THE BOTTOM OF THE WELL SHALL BE PLUGGED USING 12" Φ SCHEDULE 40 PVC END PLUG OR CAP.
6. THE WELL SHALL BE CAPPED USING AN INTERNAL TYPE EXPANDING WELL CAP.
7. THE WELL SHALL BE FINISHED USING AT MINIMUM AN 18" Φ FLUSH MOUNT MANWAY COVER.
8. THE WELL SHALL BE COMPLETELY SURROUNDED BY GRAVEL BACK FILL MATERIAL. AT NO TIME SHALL THE WELL BE PLACED INTO OR FILLED BY SOIL MATERIAL.
9. OBSERVATION WELLS SHALL BE PLACED IN PAVED AREA. VERIFY LOCATION PRIOR TO PLACEMENT.



A9 — 12" OBSERVATION WELL DETAIL

3/4" = 1'-0"

J9-XF203 J1-XF402 A1-XF412

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PROTOTYPE	P-110
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VERSION	G3SE
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REV	DATE	DESCRIPTION

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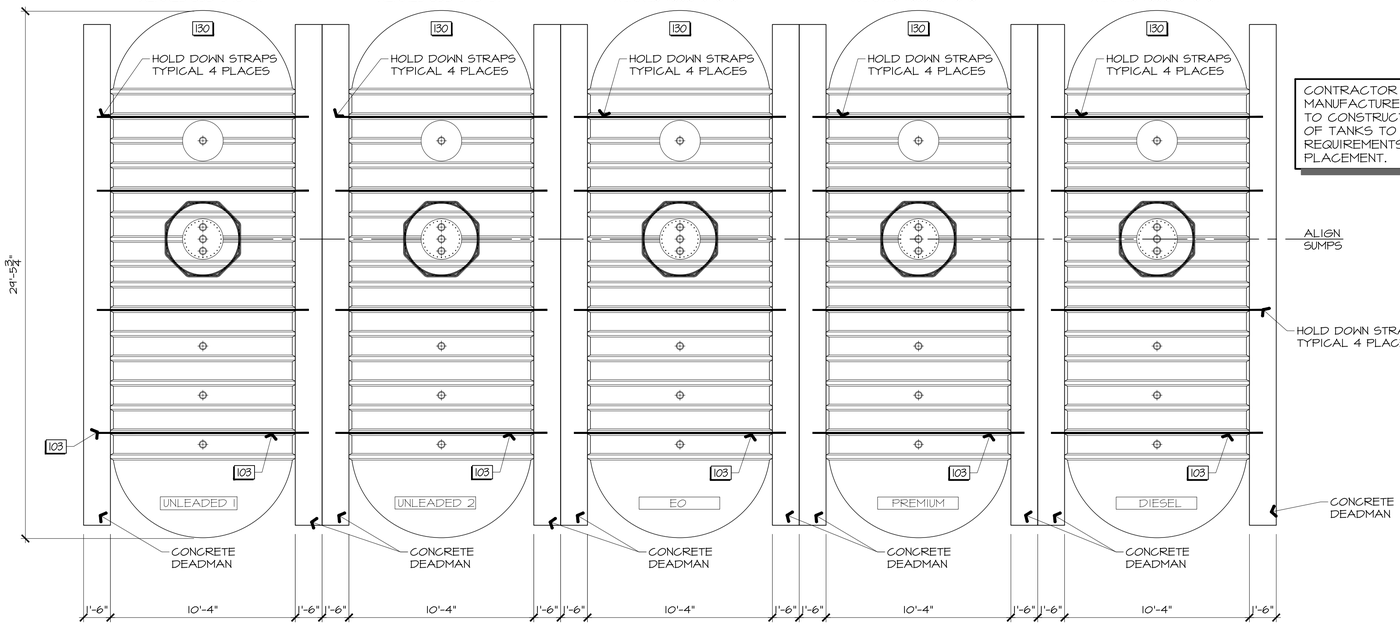
SHEET TITLE:

OBSERVATION WELL DETAILS

SHEET NUMBER:

XF204



CONTRACTOR SHALL SECURE MANUFACTURERS TANK DRAWINGS PRIOR TO CONSTRUCTIONS FOR VERIFICATION OF TANKS TO BE USED, DEADMAN REQUIREMENTS, AND STRAP AND ANCHOR PLACEMENT.

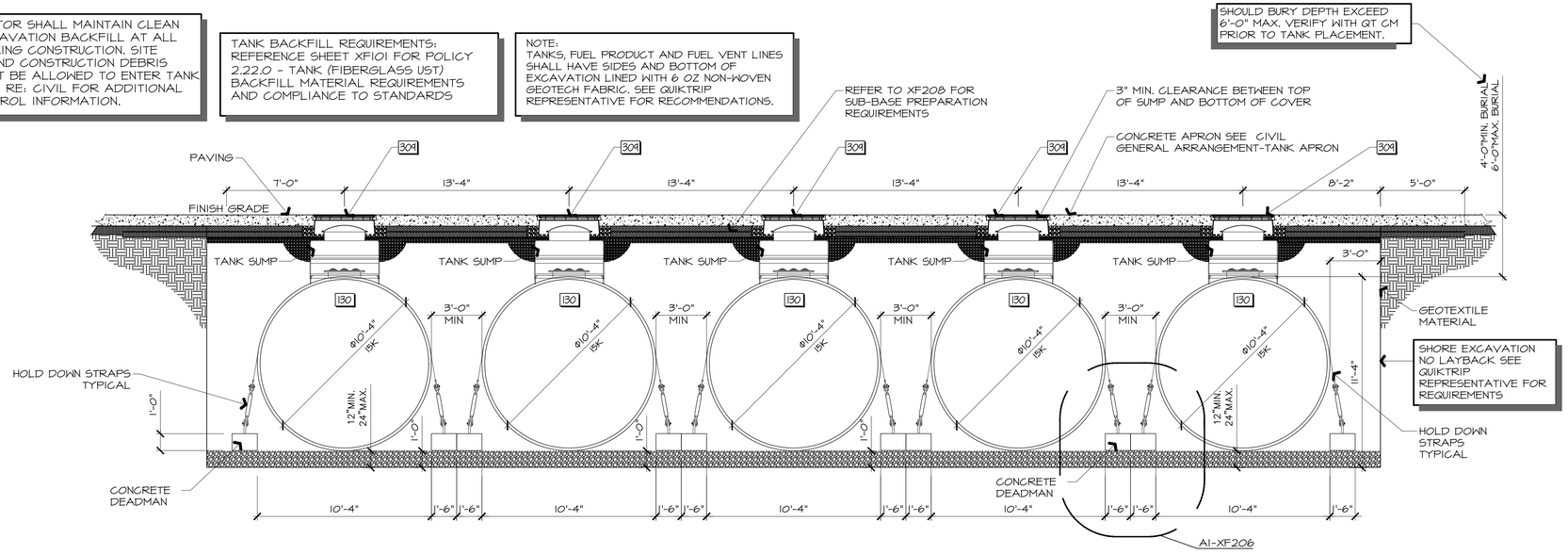
H1 TANK AND DEADMAN PLAN B2

1/4" = 1'-0" A1-XF203

CONTRACTOR SHALL MAINTAIN CLEAN TANK EXCAVATION BACKFILL AT ALL TIMES DURING CONSTRUCTION. SITE RUNOFF AND CONSTRUCTION DEBRIS SHALL NOT BE ALLOWED TO ENTER TANK BACKFILL. RE: CIVIL FOR ADDITIONAL SITE CONTROL INFORMATION.

TANK BACKFILL REQUIREMENTS: REFERENCE SHEET XF101 FOR POLICY 2.22.0 - TANK (FIBERGLASS UST) BACKFILL MATERIAL REQUIREMENTS AND COMPLIANCE TO STANDARDS

NOTE:
TANKS, FUEL PRODUCT AND FUEL VENT LINES SHALL HAVE SIDES AND BOTTOM OF EXCAVATION LINED WITH 6 OZ NON-WOVEN GEOTECH FABRIC. SEE QUIKTRIP REPRESENTATIVE FOR RECOMMENDATIONS.



CONTRACTOR SHALL PROVIDE TANK EXCAVATION HOLE PROTECTION AT ALL TIMES UNTIL PAVING IS IN PLACE PER OSHA STANDARD 1910. COVERS AND/OR GUARDRAILS SHALL BE PROVIDED TO PROTECT PERSONNEL FROM THE HAZARDS OF OPEN PITS, TANKS, VATS, DITCHES, ETC.

1. DEPTH MAY VARY, CONSULT PLANS FOR ACTUAL DEPTH OF TANK SHELF.
2. SEE PAVING PLAN AND ASSOCIATED DETAILS FOR PAVEMENT AND BASE DEPTH.
3. LINE EXCAVATION W/6 OZ NON-WOVEN GEOTECH FABRIC - OVERLAP TOP COURSE.
4. EXTEND GEOTECH FABRIC 5'-0" BEYOND EDGE OF TANK PIT AND COVER W/AGGREGATE BASE.
5. PLATE COMPACT FILL MATERIAL WHEN AT SUB GRADE.

NOTES:

A. THE CONTRACTOR SHALL PROVIDE APPROPRIATE EXCAVATION SUPPORT (i.e. ENGINEERED SHEETING AND SHORING) TO FURNISH SAFE CONDITIONS.

B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL UNDERGROUND FRP STORAGE TANKS BE INSTALLED ACCORDING TO LOCAL, STATE AND FEDERAL REGULATIONS AND MANUFACTURER'S SPECIFICATIONS.

GEOTECHNICAL CONSTRUCTION NOTE

SEE GEOTECHNICAL SOIL REPORT FOR SUBGRADE PREPARATION RECOMMENDATIONS FOR FOOTINGS, TRENCHES, APRONS, TANKS AND SURFACE TREATMENTS.

A1 TANK ANCHORING PLAN B2

1/4" = 1'-0"

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GEORGETOWN, TEXAS

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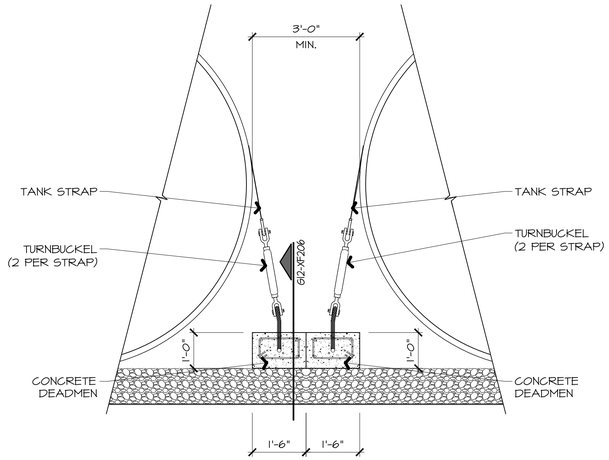
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
UST DEADMAN & BURIAL DETAILS

SHEET NUMBER:
XF205



NOTE:

ALL EXPOSED METAL ON ANCHORING SYSTEM AND TURNBUCKLES MUST BE GALVANIZED TO PROTECT AGAINST CORROSION.

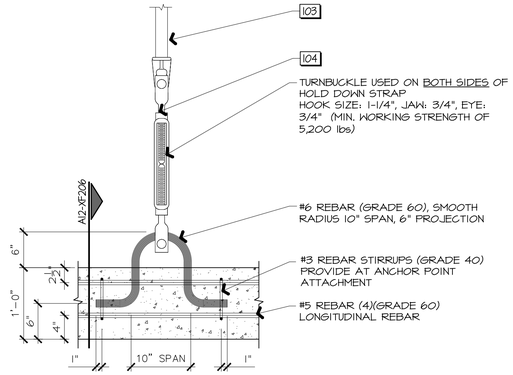
NOTES:

1. MECHANICAL TANK ANCHORING IS REQUIRED FOR ALL TANK INSTALLATIONS. ANCHORS/DEADMEN TO BE DESIGNED BY TANK MANUFACTURER AND ARE TO BE INSTALLED PER TANK MANUFACTURER'S SPECIFICATIONS.
2. DEADMAN TO BE PROVIDED BY GENERAL CONTRACTOR OR PROVIDED BY QUIKTRIP AT GENERAL CONTRACTORS REQUEST. GENERAL CONTRACTOR TO COORDINATE WITH QUIKTRIP REPRESENTIVE.
3. USE ONLY TANK MANUFACTURER'S SPECIFIED ANCHOR STRAPS. NUMBER AND LOCATION IN ACCORDANCE WITH TANK MANUFACTURER'S INSTALLATION INSTRUCTIONS.
4. ALL HOLD-DOWN STRAPS MUST BE UNIFORMLY TIGHTENED. STRAPS MUST BE TIGHTENED UNTIL SNUG, BUT CAUSE NO DEFLECTION OF THE TANK.
5. WIRE ROPE ANCHORS OVER THE TANKS ARE NOT ACCEPTABLE AS A MEANS OF ANCHORING TANKS, UNLESS WRITTEN CONFIRMATION IS RECEIVED FROM TANK MANUFACTURER AND OWNER AS AN ALTERATIVE METHOD.

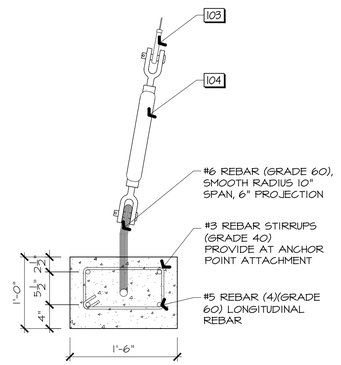
ALL EXPOSED METAL ON ANCHORING SYSTEM AND TURNBUCKLES MUST BE GALVANIZED TO PROTECT AGAINST CORROSION.

ULTIMATE STRENGTH

WORKING STRENGTH
SAFETY FACTOR OF 5.0 REQUIRED



G12 | TANK ANCHORING HARDWARE
1" = 1'-0" | A1-XF206



A1 | TYPICAL TANK ANCHORING HARDWARE
1/2" = 1'-0" | A7-XF205

A12 | TANK ANCHORING HARDWARE EDGE OF TANK
1" = 1'-0" | G12-XF206

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REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE: 8/22/2022

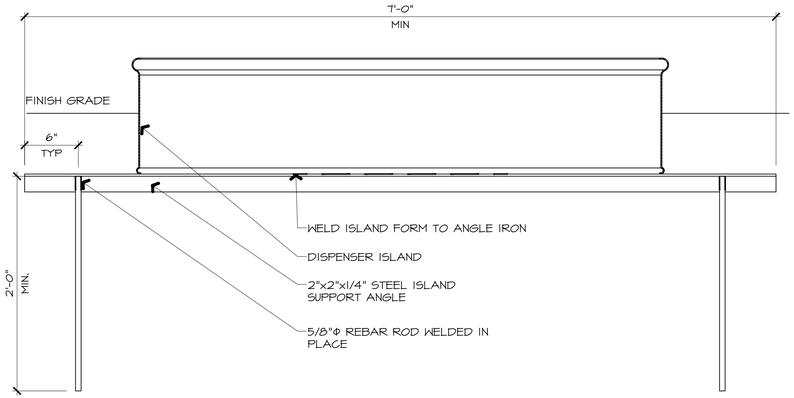
SHEET TITLE:

UST DEADMAN & BURIAL DETAILS

SHEET NUMBER:

XF206

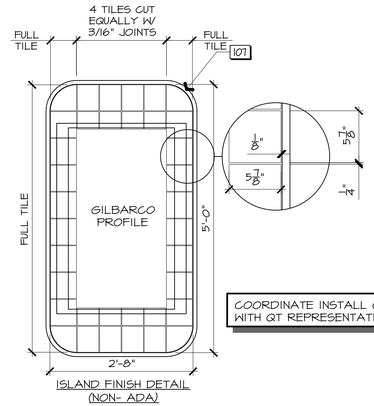
NOTE:
- DRIVE 5/8" REBAR ROD 2'-0" MINIMUM BELOW ISLAND TO SUPPORT 2"X2" ANGLE AND WELD IN PLACE.
- PLACE 2" ANGLE SUPPORT UNDER ISLAND FORM TO SET PROPER LEVEL AND DEPTH AS REQUIRED.
- THE USE OF WOOD ISLAND SUPPORTS ARE NOT ACCEPTABLE.



H1 ISLAND SUPPORT FRAME
1 1/2"=1'-0"

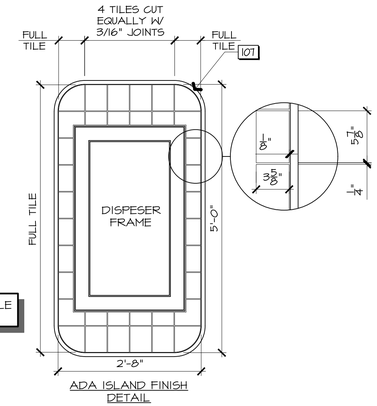
NOTES:
1. 6x6 CERAMIC TILE TO BE CENTERED IN BOTH DIRECTIONS.
2. TILE NEEDS TO EXTEND A MINIMUM OF ½" UNDER BASE OF DISPENSERS.

GAS ISLAND TILE & GROUT: RE: XF101 FOR SPECIFICATIONS



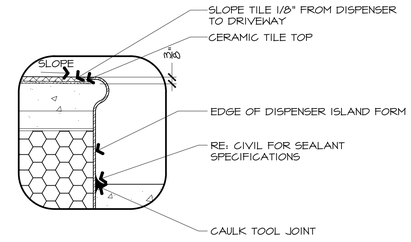
ISLAND FINISH DETAIL (NON- ADA)

COORDINATE INSTALL OF TILE WITH QT REPRESENTATIVE



ADA ISLAND FINISH DETAIL

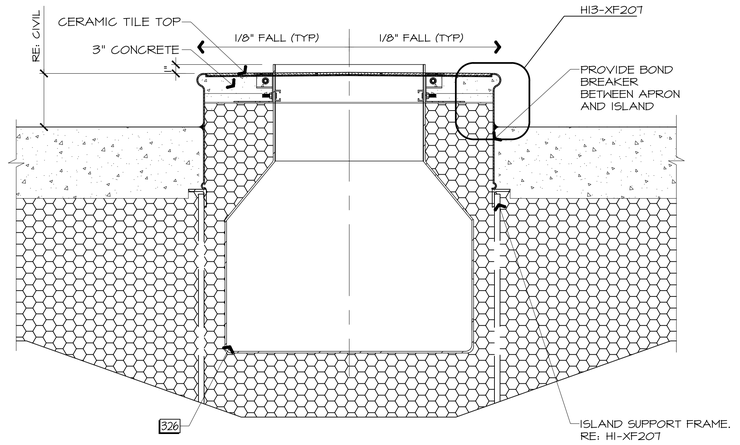
H7 ISLAND FINSH DETAIL
3/4"=1'-0"



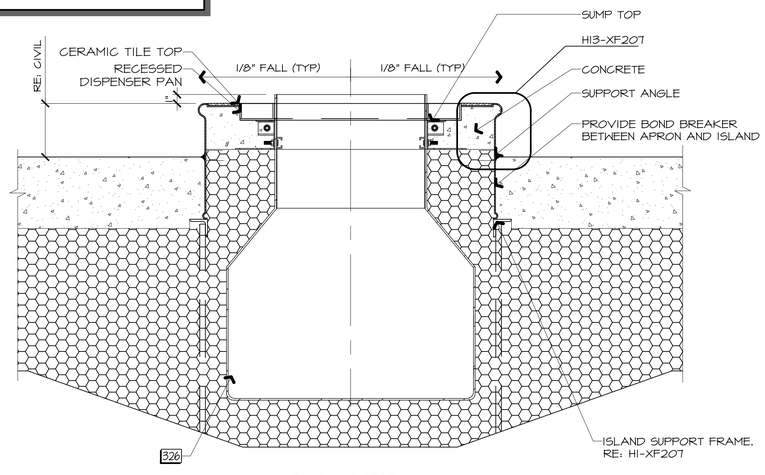
H13 ISLAND SECTION DETAIL
3"=1'-0" A1-XF207

GEOTECHNICAL CONSTRUCTION NOTE:
SEE GEOTECHNICAL SOIL REPORT FOR SUBGRADE PREPARATION RECOMMENDATIONS FOR FOOTINGS, TRENCHES, APRONS, TANKS AND SURFACE TREATMENTS.

REFERENCE CIVIL FOR 6" MIN ISLAND HEIGHT.



ISLAND SECTION (NON-ADA)



ADA ISLAND SECTION

A1 ISLAND SECTION
1 1/2"=1'-0"

PIPE:
FIBERGLASS PIPE TO BE AMERON PRODUCTS (BRANDS MAY NOT BE MIXED, INSTALL PER MANUFACTURER'S RECOMMENDATIONS). STEEL PIPE TO BE SCH. 40. ALL PIPING AND GLUE TO BE ALCOHOL COMPATIBLE, WHERE REQUIRED.

ALL PIPE AND PIPING SHALL BE AS NOTED ON DRAWINGS. SPACE PIPING IN TRENCHES AS PER MANUFACTURER'S SPECIFICATION.

All PIPING SHALL BE INSPECTED/CONFIRMED TO BE CLEAR OF ALL BEDDING MATERIAL, TRASH, ANY TYPE OF LIQUID OR DEBRIS PRIOR TO AND AFTER INSTALLATION.

PIPE JOINT SEAL:
U.L. CLASSIFIED PIPE THREAD SEALANT FOR USE ON ALL STEEL PIPE FITTINGS AND THREADED METAL CONNECTIONS. NON-HARDENING, NON-TOXIC. COMPATIBLE WITH ALL SPECIFIED PIPING. RESISTANT TO GASOLINE, ETHANOL BLENDED GASOLINE UP TO E85, DIESEL FUEL, & PETROLEUM SOLVENTS. TEMPERATURE RANGE SHALL BE -100°F TO 600°F. PRESSURE RANGE: UP TO 10,000 PSI WHEN SEALING LIQUIDS AND UP TO 3,000 PSI WITH GASES.

TANK VENTS:
ALL TANK VENTS SHALL BE 2" MIN.

SLOPE:
ALL PRODUCT PIPING MUST BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND PER SPECIFIC STATE REQUIREMENTS.
VENT LINE MUST SLOPE ⅛" PER FOOT TOWARDS TANK.
ALL PRODUCT PIPING MUST SLOPE ⅛" PER FOOT TOWARD TANK, DISPENSER SUMP OR A COLLECTION SUMP.
OKLAHOMA ONLY - PRODUCT LINES TO BE SLOPED TO THE TANK FARM FROM THE NEAREST DISPENSER TO THE TANKS.

PIPE TESTING:
ALL PRIMARY AND SECONDARY, & VENT FRP PIPING SHALL BE PRESSURIZED AND TESTED PER MANUFACTURER'S REQUIREMENTS. PRESSURE SHALL BE MAINTAINED AFTER THE TESTING IS COMPLETE FOR THE DURATION OF THE PROJECT TO INSURE SYSTEM REMAINS TIGHT.

BACKFILL:
BACKFILL OVER PRODUCT AND VENT LINES IN TRENCH SHALL BE CLEAN COMPACTED PEA GRAVEL, CRUSHED GRAVEL OR APPROVED CLEAN SAND. PIPING SHALL BE LAID AND CONTINUOUSLY SUPPORTED ON 6" OF COMPACTED APPROVED MATERIAL. NO PIPING SHALL BE SUPPORTED BY BLOCKS, PLANKS OR OTHER DEBRIS.

CONCRETE:
CONCRETE USED SHALL MEET QUIKTRIP STANDARD SPECS. SEE CIVIL DRAWINGS FOR DETAILS.

SUMP UNITS:
TURBINE ENCLOSURE/TANK SUMPS ARE TO BE SEALED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

GENERAL INSTALLATION :
1. PEA GRAVEL OR CRUSHED GRAVEL BACKFILL. ALL OTHER MATERIAL MUST BE APPROVED BY TANK MANUFACTURER AND OWNER'S FIELD REPRESENTATIVE.
2. RIGID STYROFOAM BOARD FIELD CUT TO SUPPORT MANWAY DURING INSTALLATION.
3. PRODUCT LINE & VENT LINE FIBERGLASS PIPE AND FITTINGS TO BE AMERON. FITTINGS MANUFACTURERS MAY NOT BE MIXED.
4. REINFORCING BARS TO BE A MAXIMUM OF 3" FROM TOP OF CONCRETE.
5. SEAL AND PLUG UNUSED OPENINGS.
6. OBSERVATION WELL DEPTH SHALL BE TO THE BOTTOM OF TANK EXCAVATION UNLESS OTHERWISE NOTED. WELLS SHALL BE PLACED IN PAVED AREA.
7. PROVIDE 6" CLEARANCE BETWEEN MANWAY LID AND TOP OF RISER FOR TANK GAUGE.
8. PROVIDE 6" CLEARANCE BETWEEN TOP OF MONITORING/OBSERVATION WELL CAP PLUG AND GRADE.
9. ALL PENETRATIONS MUST BE PERPENDICULAR TO CONTAINMENT SUMPS.
10. CUT AND POSITION FILL TUBE WITH ANGLE AWAY FROM SUBMERSIBLE PUMP.
11. INTERIOR OF FIBERGLASS CONTAINMENT SUMP TO BE CLEAR OF PEA GRAVEL, TRASH, ANY TYPE OF LIQUID AND OTHER DEBRIS.
12. REAM ALL RISERS FOR FULL PIPE BORE.
13. 4" RISER FOR UNLEADED GASOLINE & ETHANOL BLENDS STORAGE TANKS SHALL BE SCHEDULE 40 GALVANIZED. 4" RISERS FOR STORAGE TANKS CONTAINING DIESEL SHALL BE SCHEDULE 40 BLACK IRON. ALL RISERS TO BE PRIMED AND WRAPPED
14. ANNULAR SPACE RISER: AMERON 4" LCX FRP PIPING.
15. CONCRETE DEADMAN, TURNBUCKLES, AND OTHER ANCHORING HARDWARE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH TANK MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS AS SHOWN. (IF REQUIRED) SEE QUIKTRIP REPRESENTATIVE FOR DIRECTION.
16. INSTALLER MUST SAND DOWN GEL COAT BEFORE GLUING FIBERGLASS ENTRY FITTING TO SUMPS FOR PROPER ADHESION.
17. CENTRALIZERS SHALL BE PLACED 6" FROM EACH END AND 4'-0" ON CENTER IN ALL PIPING RUNS.

A12 INSTALLATION NOTES

STATE OF TEXAS
DAVID M. KEPLER
101813
LICENSED
PROFESSIONAL ENGINEER
05/31/2023

CORESTATES, INC.
CERTIFICATE OF AUTHORIZATION
#F3349
EXPIRES 07-31-2023

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QuikTrip No. 4160
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GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
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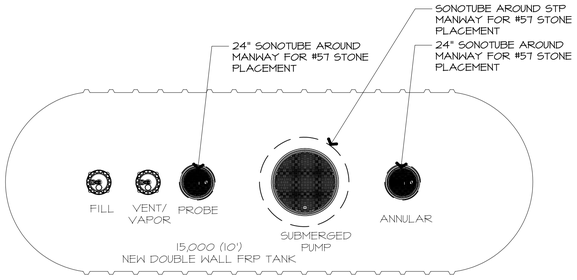
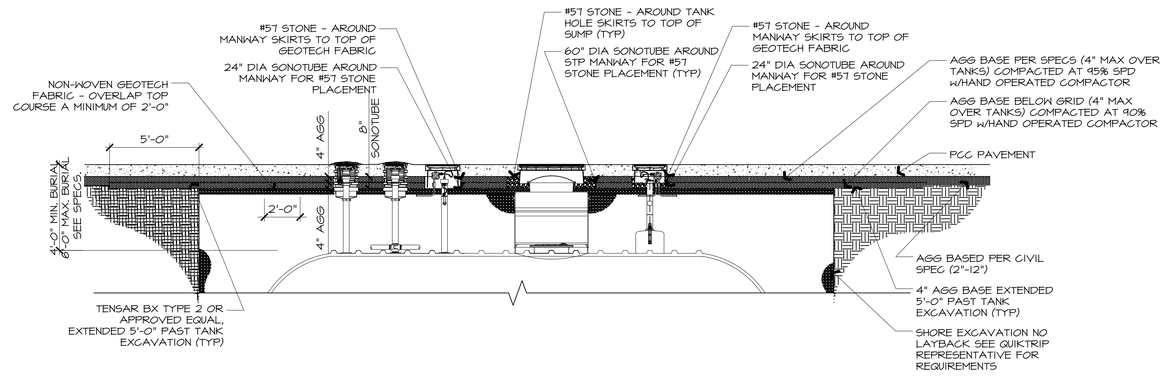
ISLAND DETAILS AND INSTALLATION NOTES

SHEET NUMBER:
XF207

J1 NOT USED





A1 STANDARD TANK BACKFILL SECTION B2

DAVID M. KEPPER 107813 LICENSED PROFESSIONAL ENGINEER 03/31/2023

CORESTATES, INC.
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PROTOTYPE	P-110
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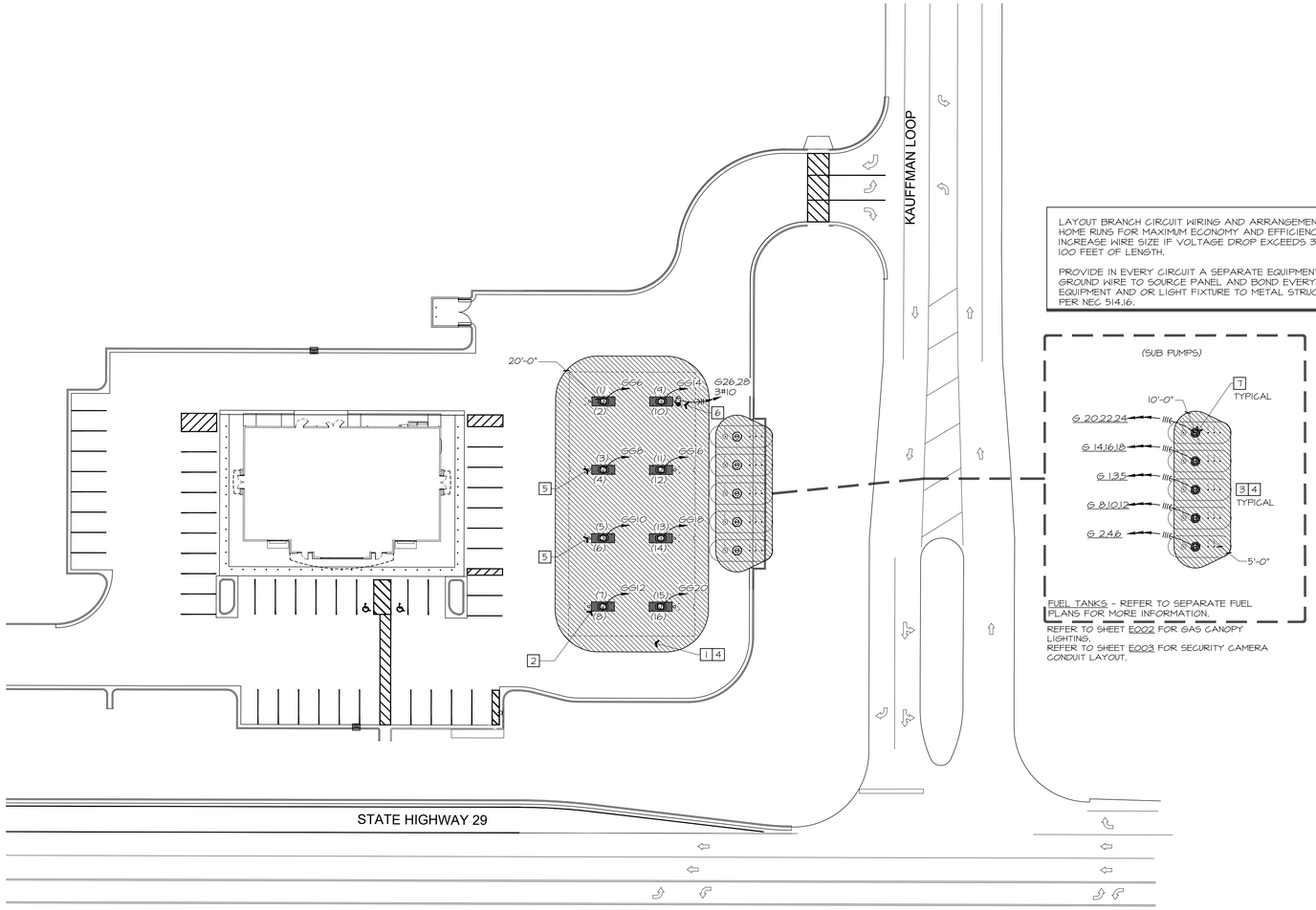
SHEET TITLE:
UST AREA SUB-BASE PREP PLAN AND SECTIONS

SHEET NUMBER:
XF208



LAYOUT BRANCH CIRCUIT WIRING AND ARRANGEMENT OF HOME RUNS FOR MAXIMUM ECONOMY AND EFFICIENCY. INCREASE WIRE SIZE IF VOLTAGE DROP EXCEEDS 3% OR 100 FEET OF LENGTH.

PROVIDE IN EVERY CIRCUIT A SEPARATE EQUIPMENT GROUND WIRE TO SOURCE PANEL AND BOND EVERY EQUIPMENT AND OR LIGHT FIXTURE TO METAL STRUCTURE PER NEC 514.16.

FUEL TANKS - REFER TO SEPARATE FUEL PLANS FOR MORE INFORMATION.

REFER TO SHEET E002 FOR GAS CANOPY LIGHTING.
REFER TO SHEET E003 FOR SECURITY CAMERA CONDUIT LAYOUT.

REFER TO CIVIL PLAN SET FOR PLACEMENT OF ALL FUEL RELATED STRUCTURES AND EQUIPMENT.

1 CLASS I, DIVISION 2 AREA WITHIN 18" OF ANY EDGE OF THE DISPENSER TO GRADE AND FROM GRADE TO 18" ABOVE GRADE WITHIN 20' OF ANY EDGE OF THE DISPENSER.

2 CLASS I, DIVISION I AREA WITHIN THE DISPENSER ENCLOSURE AND WITHIN THE PIT BELOW THE DISPENSER. (TYP)

3 CLASS I, DIVISION 2 AREA WITHIN 10'-0" OF PUMPS OR FILL OPENINGS FROM GRADE TO 18" ABOVE GRADE.

4 SEAL EACH CONDUIT ENTERING THE CLASS I (DIVISION I OR 2) LOCATION AT THE POINT WHERE IT EXITS THE GROUND. (BOTH ENDS)

5 EMERGENCY FUEL SHUTOFF WITHIN 100' OF DISPENSERS. REFER TO DETAIL A4-XF311. PROVIDE PERMANENT WHITE ALUMINUM LABEL WITH 1" HIGH RED LETTERING ON WHITE BACKGROUND ON COLUMN ABOVE SWITCH THAT SAYS, "EMERGENCY PUMP SHUT-OFF SWITCH". (LOCATION SHOWN IS OPTIONAL - COORDINATE WITH QT REP.)

6 SUMP VENTILATION FAN FURNISHED BY OTHERS. VERIFY EXACT LOCATION WITH FUEL SYSTEM DRAWINGS. PROVIDE NEMA-3R MOTOR STARTER/DISCONNECT SWITCH FOR 3/4 HP, 208V/1PH FAN ON CANOPY ROOF. MAKE ELECTRICAL CONNECTIONS AS REQUIRED. CIRCUIT TO SHUT DOWN WITH E-STOP SYSTEM, SENSOR IN ALARM, AND PLLD IN ALARM.

7 PROVIDE (1) SEPARATE #12 GROUND WIRE FROM BUILDING GROUND BUS TO EACH PLLD IN A NON-INTRINSICALLY SAFE CONDUIT. PROVIDE (1) GROUNDING KIT #330020-285 FOR EACH PLLD. REFER TO GI-XF313 AND VEEDER-ROOT MANUAL NO. 577014-012 FOR ADDITIONAL INFORMATION.

A1 ELECTRCIAL SITE PLAN B2 B4
1/32" = 1'-0"

A13 PLAN NOTES
NTS

STATE OF TEXAS
BRIAN M. PETERSON
103124
LICENSED
PROFESSIONAL ENGINEER
09/15/2023

CORESTATES, INC.
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PROTOTYPE	P-110
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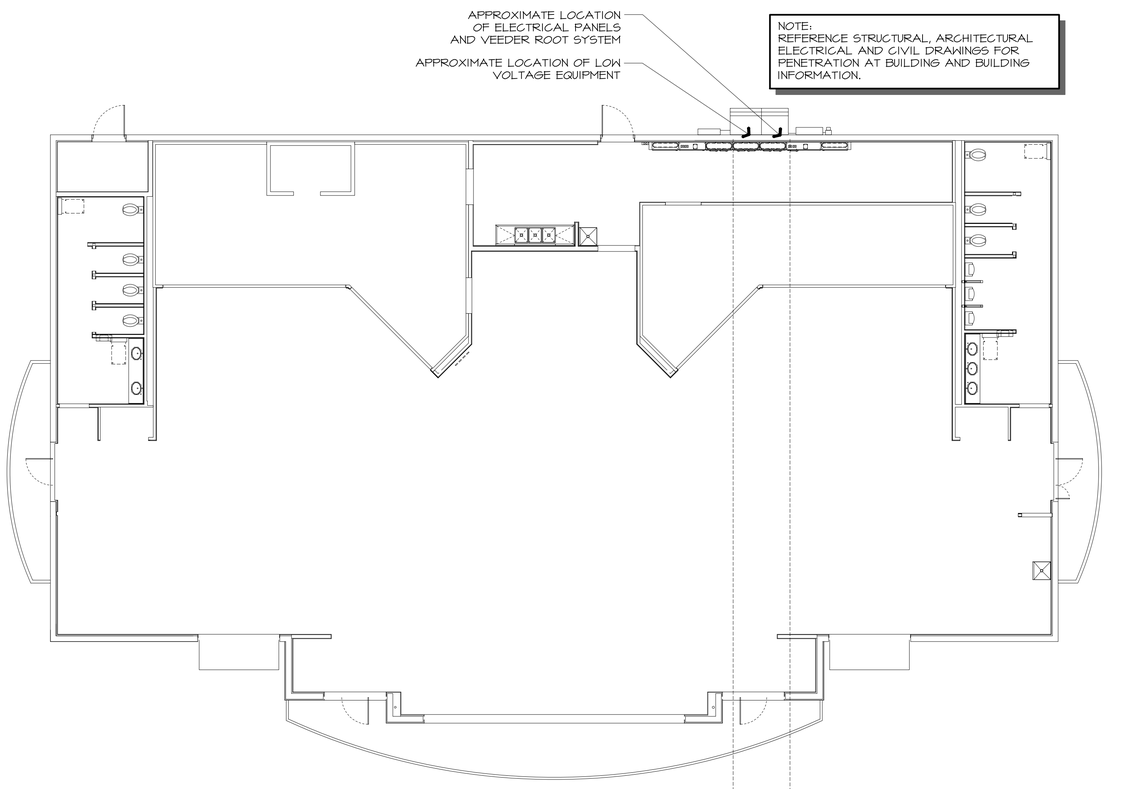
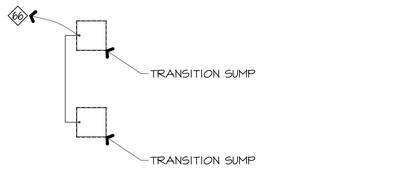
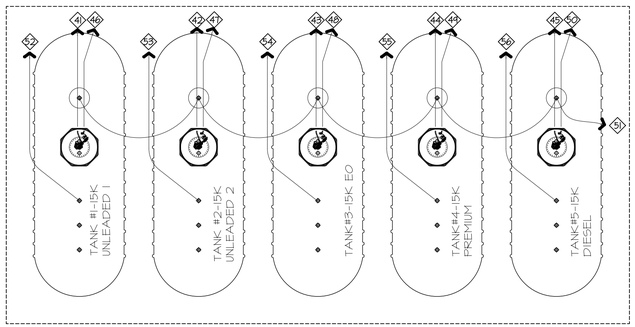
ELECTRCIAL SITE PLAN

SHEET NUMBER:
XF300







TANK NUMBERING	
TANK #1	15K UNLEADED 1
TANK #2	15K UNLEADED 2
TANK #3	15K EO
TANK #4	15K PREMIUM
TANK #5	15K DIESEL

RETAIL/GASOLINE CONDUIT SCHEDULE

NUMBER	DESCRIPTION (TRADE SIZE)	WIRE COUNT PER CONDUIT	TERMINATES TO
1 TO 12 (8 TOTAL)	DISPENSER POWER (3/4") (HOME RUN)	(2)#12, (1)#12G - DISPENSER POWER @ ALL LOCATIONS --- (5)#12 STP CONTROLLER WIRES TOTAL @ ALL LOCATIONS (2) FUTURE @3+0 / (1) FUTURE @3+1	MAIN ELEC. TROUGH MAIN ELEC. TROUGH
13 TO 24 (8 TOTAL)	DISPENSER DATA (3/4") (HOME RUN)	WINDY CITY WIRE: TWO TWISTED PAIR (VIOLET/BROWN) #036020-1012QT (ORANGE/YELLOW) #036013-1012QT	L.V. ELEC. TROUGH
25 TO 36 (8 TOTAL)	DISPENSER SUMP SENSORS (3/4") (HOME RUN)	(1) #18 WINDY CITY 18 AWG SHIELDED CABLE	I/S WIRING TROUGH
37 - 40 (2 TOTAL)	DISPENSER INTERCOM (1" HR - 1" LOOP) (3 DISPENSERS MAX)	(UP TO 6) BELDEN 6502FE (1 PER DISPENSER)	L.V. ELEC. TROUGH
41 TO 45 (5 TOTAL)	STP CTRL/POWER- (3/4") (HOME RUN) UNLEADED #1 UNLEADED #2 EO PREMIUM DIESEL	(3) #10 STP POWER, (1) #10 GROUND	DEDICATED CONDUIT BACK TO STP CONTROLLERS
46 TO 50 (5 TOTAL)	PLLD / (1) SUMP SENSOR (3/4") (1) CONDUIT PER TANK (HOME RUN)	(2) WINDY CITY 18 AWG SHIELDED CABLE	I/S WIRING TROUGH
51	HYDROSTATIC RESERVOIR SENSOR (3/4")	(4) 18 WINDY CITY 18 AWG SHIELDED CABLE	I/S WIRING TROUGH
52 TO 56 (5 TOTAL)	UST ATG PROBE (3/4")	(1) WINDY CITY 18 AWG SHIELDED CABLE	I/S WIRING TROUGH
57	CANOPY LIGHTING CONDUITS (1")	CANOPY LIGHTING = RE: ARCH MEP	MAIN ELEC. TROUGH
58 - 59 (2 TOTAL)	FUTURE POWER CONDUITS (1") (ROUTE TO JBOX @TOP OF CANOPY)	PULL STRING TO DECK	MAIN ELEC. TROUGH
60 - 61 (2 TOTAL)	FUTURE LOW VOLTAGE CONDUITS (1") (ROUTE TO PULL BOX)	PULL STRING TO PULL BOX	I/S WIRING TROUGH
62 - 63 (2 TOTAL)	FUTURE DATA CONDUITS (1") (ROUTE TO PULL BOX)	PULL STRING TO PULL BOX	L.V. ELEC. TROUGH
64	CANOPY GROUND WIRE (1-1/4") (ROUTE TO JBOX @TOP OF CANOPY)	FIELD DETERMINED	MAIN ELEC. "T" PANEL
65	SUMP VENT CIRCULATION FAN	FAN = (3) #12 POWER, (1) #12 GROUND	MAIN ELEC. TROUGH
66	TRANSITION SUMP SENSOR (3/4")	(1) #18 WINDY CITY 18 AWG SHIELDED CABLE	I/S WIRING TROUGH
67	OBSERVATION WELL SPARE (3/4")	PULL STRING	I/S WIRING TROUGH
68	EMERGENCY SHUTOFF (3/4")	FIELD DETERMINED (RE ARCH.)	MAIN ELEC. TROUGH
69	CANOPY LIGHTING CONDUITS (1")(HOME RUN)	CANOPY LIGHTING = RE: ARCH MEP	MAIN ELEC. TROUGH
70 - 71 (2 TOTAL)	SECURITY CAMERA HOMERUN (1")	FIELD DETERMINED	FIELD DETERMINED

NOTE:
ALL FUTURE USE CONDUITS SHALL EXTEND 12 INCHES ABOVE CANOPY DECK AND BE SEALED WITH WEATHER PROOF JUNCTION BOX.

NOTE:
WINDY CITY WIRE CONTACT INFORMATION:
KIMBERLY DePAOLA
1.800.374.1191
KDEPAOLA@SMARTWIRE.COM

A1 CONDUIT LAYOUT - UST (TANK) AREA B2
1/8" = 1'-0"

A10 ELECTRICAL CONDUIT SCHEDULE

CORESTATES, INC.
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#F3349
EXPIRES 07-31-2023
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GEORGETOWN, TEXAS

PROTOTYPE	P-110
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UST AREA CONDUIT LAYOUT

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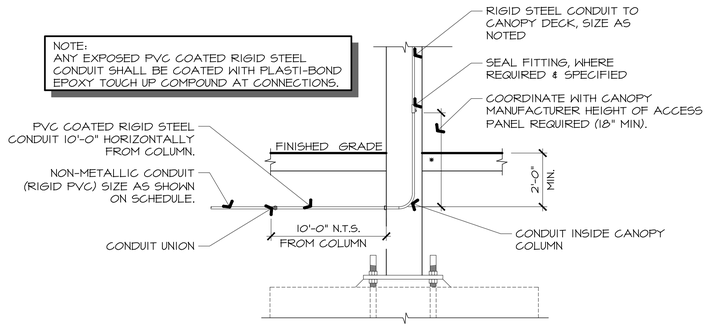


CONDUITS CONDITIONS

1. STP/TURBINE POWER

STP POWER CONDUITS: PVC COATED RIGID STEEL CONDUIT SHALL BE USED FOR THE FIRST PIECE OF EXPOSED CONDUIT WITHIN THE BUILDING, TRANSITIONING TO SCH. 40 PVC TO WITHIN 10' OF THE STP SUMPS, WHERE THE CONDUIT SHALL TRANSITION TO PVC COATED RIGID STEEL FOR THE PENETRATIONS.

2. TANK FARM AREA

FOR TANK FARM EQUIPMENT. PVC COATED RIGID STEEL CONDUIT SHALL BE USED FOR THE FIRST PIECE OF EXPOSED CONDUIT WITHIN THE BUILDING, TRANSITIONING TO SCH. 40 PVC TO WITHIN 10' OF THE TANK FARM EQUIPMENT WHERE THE CONDUIT SHALL TRANSITION TO PVC COATED RIGID STEEL FOR THE PENETRATIONS OR CONNECTION TO JBOX.

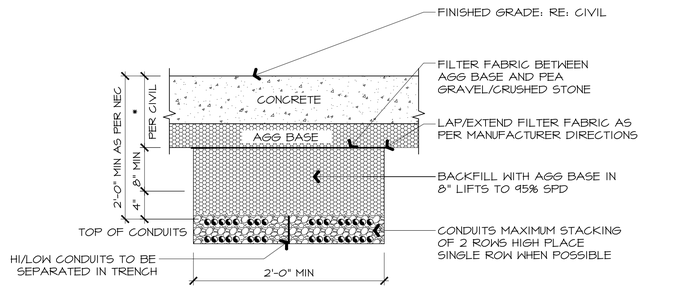
3. DISPENSER AREA

FOR DISPENSERS, PVC COATED RIGID STEEL CONDUIT SHALL BE USED FOR THE FIRST PIECE OF EXPOSED CONDUIT WITHIN THE BUILDING, TRANSITIONING TO SCH. 40 PVC TO WITHIN 10' OF THE DISPENSER AND/OR TRANSITION SUMPS, WHERE THE CONDUIT SHALL TRANSITION TO PVC COATED RIGID STEEL FOR THE PENETRATIONS.

4. CANOPY AREA:

FOR CANOPY, PVC COATED RIGID STEEL CONDUIT SHALL BE USED FOR THE FIRST PIECE OF EXPOSED CONDUIT WITHIN THE BUILDING, TRANSITIONING TO SCH. 40 PVC TO WITHIN 10' OF THE CANOPY WHERE THE CONDUIT SHALL TRANSITION TO PVC COATED RIGID STEEL FOR ALL CONNECTIONS TO THE CANOPY.

H1 — CONDUIT STUB-UP DETAIL
N.T.S.



WHEN PLACING ELECTRICAL CONDUITS FROM THE TANK PIT TO THE BUILDING, THIS SPECIFICATION SHALL BE FOLLOWED TO INSURE RUNOFF IS NOT INTRODUCED INTO THE TANK PIT, OR OUT OF THE TANK PIT AND TOWARD THE BUILDING.

CONTRACTOR NOTE: CONTRACTOR TO SEPARATE HIGH AND LOW VOLTAGE CONDUITS WITHIN THE CONDUIT TRENCH.

CONTRACTOR NOTE: ELECTRICAL CONDUIT TRENCH FILTER FABRIC NOT NEEDED IF AGG BASE IS USED FOR THE ENTIRE BACKFILL.

A1 — ELECTRICAL CONDUIT TRENCH SECTION FROM TANK PIT TO BUILDING
N.T.S.

GENERAL INFORMATION

1. SITE PREPARATION :

A. CONTRACTOR IS TO ENSURE ALL EXISTING UTILITIES ARE LOCATED AND MARKED PRIOR TO ANY DEMOLITION, CONSTRUCTION OR EXCAVATION ON THE SITE.

2. EQUIPMENT :

A. ALL EQUIPMENT INSTALLATIONS MUST COMPLY WITH MANUFACTURER'S SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF N.E.C. LATEST EDITION AND NFPA 30A. ALL COMPONENTS FOR ELECTRICAL INSTALLATIONS MUST BE UL RATED, BEAR THE UL SEAL, AND COMPLY WITH N.E.C. ARTICLE 110-3, 514-3 AND 514-4. ALL WORKING CLEARANCES IN FRONT OF PANELS AND EQUIPMENT SHALL BE MAINTAINED.

B. THE WIRE SIZES SHALL BE INCREASED IF NECESSARY AS REQUIRED BY NEC. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING REVISED CONDUIT SIZE.

3. CONDUIT :

A. FOR EACH ELECTRICAL RACEWAY SYSTEM INDICATED, PROVIDE A COMPLETE ASSEMBLY OF CONDUIT WITH FITTINGS, INCLUDING , BUT NOT NECESSARILY LIMITED TO, CONNECTORS, NIPPLES, COUPLINGS, EXPANSION FITTINGS, BUSHINGS LOCKOUTS, OTHER COMPONENTS AND ACCESSORIES AS NEEDED TO FORM A COMPLETE SYSTEM OF THE TYPE INDICATED, AND AS REQUIRED BY THE NEC.

B. ALL CONDUIT WITHIN CLASS I AREA SHALL BE PVC COATED HEAVY WALL STEEL EXCEPT AS NOTED OTHERWISE ON THE DRAWINGS. PVC CONDUIT IS ACCEPTABLE FOR USE OUTSIDE CLASS I DIV I AREA. CONTRACTOR MAY SWITCH TO PVC CONDUIT OUTSIDE OF CLASS I AREA PROVIDED ALL INSTALLATIONS COMPLY WITH THE NATIONAL ELECTRICAL CODE AND NFPA 30A. ALL TRANSITION FITTINGS ARE TO BE UL APPROVED FOR DIRECT BURIAL. ALL CONDUIT SHALL BE FREE OF FOREIGN MATTER FROM OBSTRUCTING THE CONDUIT. ALL WIRING AND FITTINGS SHALL BE CLASS I, GROUP D, AS REQUIRED BY CODE. ALL REQUIRED SEAL- OFF FITTINGS SHALL BE PROPERLY SEALED. SEAL SHALL BE POURED AFTER TESTING PROCEDURES ARE COMPLETE.

C. CONDUIT RUNS EXCEEDING 25 FEET IN LENGTH SHALL BE EQUIPPED WITH SUITABLE WIRE INSERT TO ENABLE THE PULLING OF A FISH TAPE FOR ADDITIONAL WIRING.

D. WHERE APPLICABLE ALL CONDUIT SHALL BE RIGIDLY SUPPORTED FROM STRUCTURAL MEMBERS WITH MALLEABLE IRON CONDUIT CLAMPS, NOT TO EXCEED 8 FEET ON CENTER. ALL THREAD IS NOT ACCEPTABLE FOR MOUNTING, USE U-BOLTS INSTEAD.

E. PROVIDE CONDUIT AND FITTINGS AS INDICATED.
1. PVC COATED RIGID STEEL CONDUIT.
2. RIGID STEEL CONDUIT FITTINGS : ANSI C80.4.
3. FLEXIBLE METAL CONDUIT :
A. LIQUID-TIGHT FLEXIBLE METAL CONDUIT : LIQUID-TIGHT FLEXIBLE METAL CONDUIT COMPRISED OF SINGLE STRIP, CONTINUOUS, FLEXIBLE, INTERLOCKED, DOUBLE-WRAPPED STEEL, GALVANIZED INSIDE AND OUTSIDE; FORMING SMOOTH INTERNAL WIRING CHANNEL;WITH LIQUID-TIGHT JACKET OF FLEXIBLE PVC.
B. LIQUID-TIGHT FLEXIBLE METAL CONDUIT FITTINGS: LIQUID-TIGHT, ZINC COATED
STEEL. PROVIDE FITTINGS BY CROUSE-HINDS, APPLETON OR EQUAL. FITTINGS SHALL HAVE RUBBER OR NEOPRENE GASKETS WHERE INSTALLED IN DAMP AREAS.
FITTINGS INSTALLED IN HAZARDOUS AREA SHALL COMPLY WITH NEC AND UL 885.

F. ALL PENETRATIONS THROUGH RATED WALL AND ROOF ASSEMBLIES MUST CONFORM TO UL STANDARD PENETRATION DETAIL, (SYSTEM #F-C-5010), NEC, AND ALL APPLICABLE LOCAL CODES.

G. ALL PENETRATIONS THROUGH RATED SLAB ASSEMBLIES MUST CONFORM TO UL STANDARD PENETRATION DETAIL,
(SYSTEM #C-AJ-1064), NEC, AND ALL APPLICABLE LOCAL CODES.

H. MAGNETIC SAFETY TAPE SHALL BE INSTALLED ABOVE ALL UNDERGROUND PRODUCT PIPING AND ELECTRICAL CONDUIT.

I. ALL CONDUIT LAYOUTS SHOWN ARE FOR REFERENCE ONLY. ACTUAL FIELD INSTALLATION MAY VARY DUE TO MECHANICAL PIPING INTERFERENCE.

4. CABLE AND WIRE CONNECTORS :

A. WIRE AND CABLE: PROVIDE FACTORY-FABRICATED WIRE AND CABLE OF THE SAME SIZE RATING, MATERIAL AND TYPE AS INDICATED FOR EACH USE, AS SPECIFIED OR UNLESS NOTED OTHERWISE.

B. CONDUCTORS: PROVIDE SOFT OR ANNEALED COPPER WIRES MEETING, BEFORE STRANDING, THE REQUIREMENTS OF ASTM B-3, STANDARD SPECIFICATIONS FOR SOFT OR ANNEALED COPPER WIRE FOR ELECTRICAL PURPOSES, LATEST EDITION.
1. CONDUCTORS FOR POWER AND CONTROL WIRING SHALL BE STRANDED COPPER.
NO ALUMINUM OR COPPER CLAD ALUMINUM WIRING IS PERMITTED.
2. THE MINIMUM SIZE FOR POWER WIRING IS #12 AWG UNLESS STATED OTHERWISE ON THE DRAWINGS.

C. INSTALLATION SHALL MEET OR EXCEED THE REQUIREMENTS OF UL 83, STANDARD FOR THERMOPLASTIC INSULATION WIRES.
1. INSULATION FOR CONDUCTORS SIZED NO. 18 AWG THROUGH NO. 16 AWG SHALL BE UL TYPE TFFN GASOLINE AND OIL RESISTANT AND BE SO MARKED.
2. INSULATION FOR CONDUCTORS SIZED NO. 14 AWG THROUGH NO. 8 AWG SHALL BE UL TYPE THHN/THWN GASOLINE AND OIL RESISTANT AND BE SO MARKED.
3. ALL WIRING INSIDE LIGHTING FIXTURES SHALL BE TEMPERATURE RATED PER THE NEC.

D. CONNECTORS FOR BUILDING WIRE AND CABLE: PROVIDE FACTORY-FABRICATED, METAL CONNECTORS OF THE SIZE, RATING, MATERIAL TYPE, AND CLASS REQUIRED FOR EACH USE.
1. TERMINAL LUGS ARE TO BE USED WHENEVER POSSIBLE. CONNECTORS FOR CONDUCTORS UP TO A MAXIMUM OF NO. 6 AWG WIRE WITH TWO NO. 8 AWG WIRES MAY USE TWIST-ON PRESSURE CONNECTORS OF REQUIRED SIZE. LUG/BOLTED CONNECTIONS ARE REQUIRED FOR ALL CONDUCTORS LARGER THAN #6 AWG.
2. ALL MOTOR LEADS, #10 AWG OR LARGER, SHALL BE CONNECTED USING PRESSURE FITTED LUGS AND BOLTED.
3. SPLICES ARE NOT PERMITTED IN FEEDERS, MOTOR LEADS, OR COMMUNICATION/DATA WIRING.
4. THE USE OF TERMINAL STRIPS FOR WIRING CONNECTIONS IS ENCOURAGED EXCEPT WHEN IN CONFLICT WITH #3 ABOVE.

5. WIRING NOTES :

DISPENSER POWER SUPPLY WIRING :

A. CONDUCTOR: #14 AWG (MINIMUM), USE WIRES RATED AT LEAST 90°C (194°F)

B. VOLTAGE RATING: MAXIMUM OPERATING VOLTAGE OF 600V

C. ENVIRONMENTAL: GAS AND OIL RESISTANT, UL LISTED WIRE; SUITABLE FOR WET OR DRY LOCATIONS

A7 — GENERAL INFORMATION
N.T.S.

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CERTIFICATE OF AUTHORIZATION #F9349
EXPIRES 07-31-2023
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CONDUIT GENERAL INFORMATION & DETAILS

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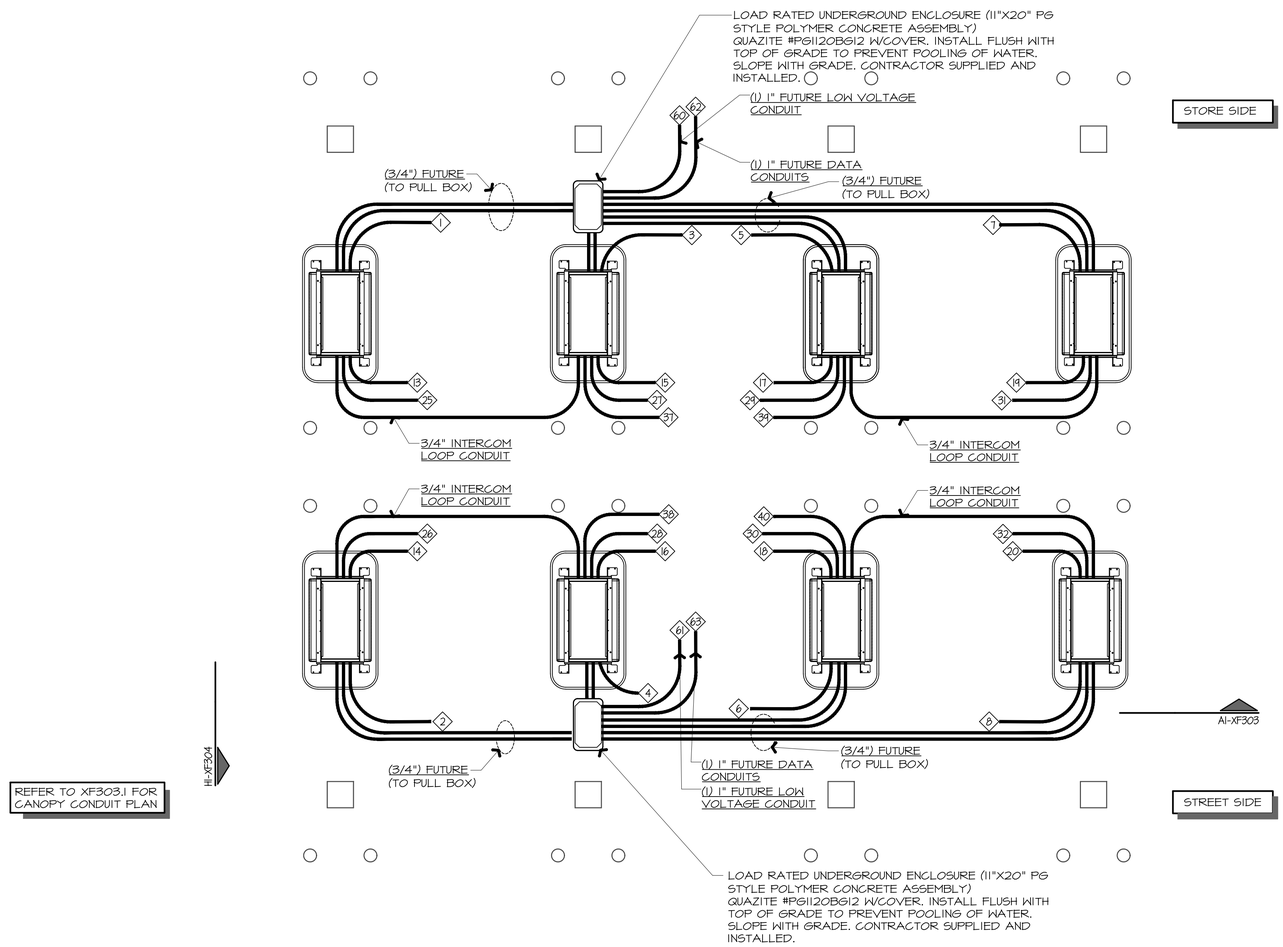
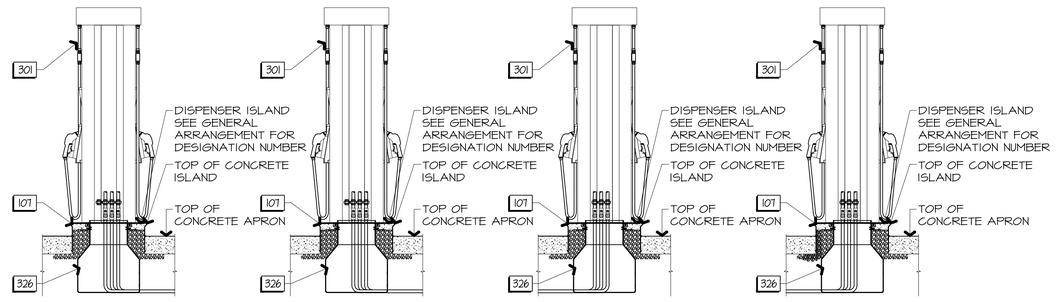


F1 DISPENSER SUMP CONDUIT - PLAN

3/8"=1'-0" | A1-XF303



A1 DISPENSER CONDUIT SECTION

3/8"=1'-0" | F1-XF303

CORESTATES, INC.
CERTIFICATE OF AUTHORIZATION
#F3349
EXPIRES 07-31-2023
SIGNATURE DATE:

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Phone (470) 990-4400
Fax (866) 393-9803

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

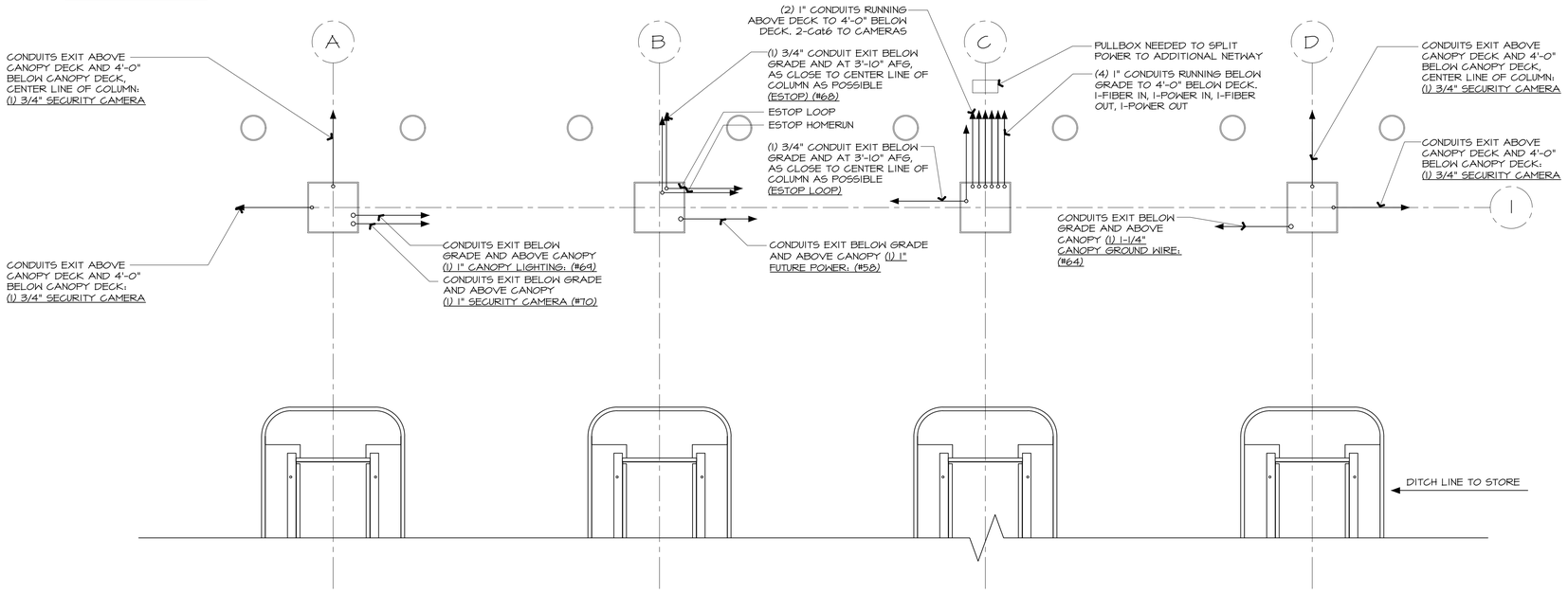
PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

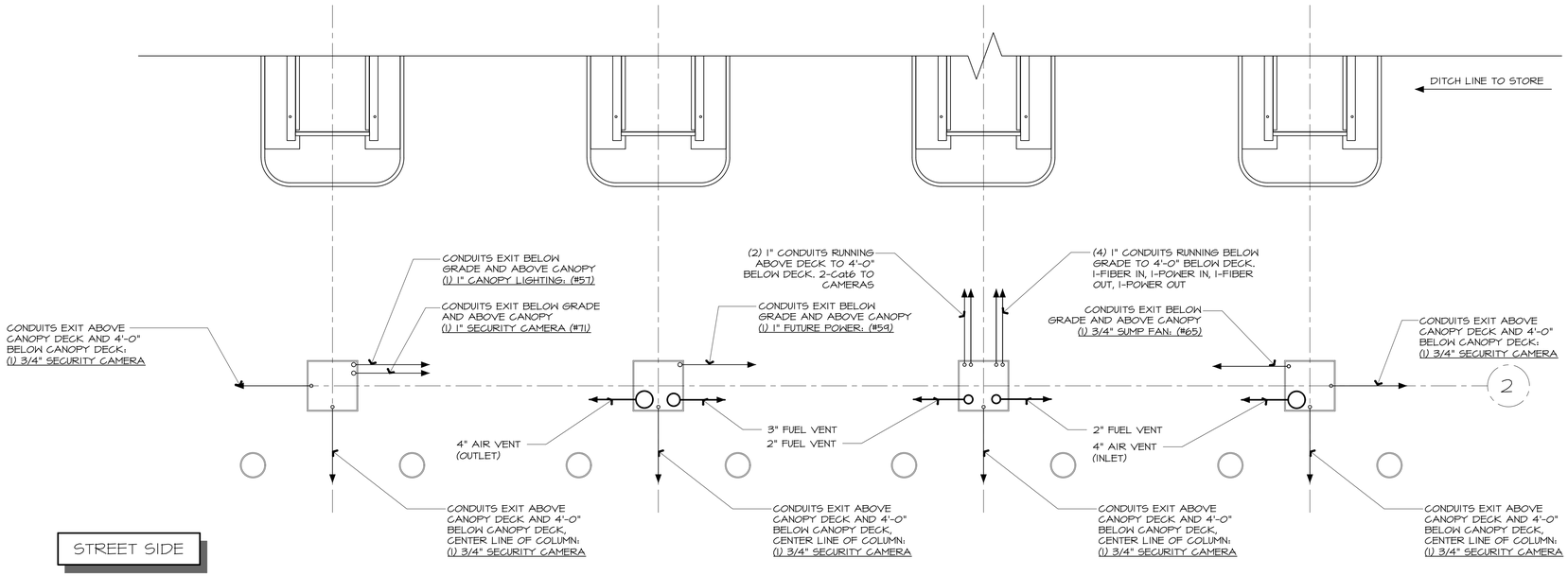
REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
DISPENSER CONDUIT LAYOUT & SECTION

SHEET NUMBER:
XF303





A1 DISPENSER CONDUIT SECTION

NTS F1-XF303

JOHN D. FERGUSON
103854
03/31/2023

CORESTATES, INC.
CERTIFICATE OF AUTHORIZATION
#F9349
EXPIRES 07-31-2023

SIGNATURE DATE:

CORE STATES GROUP

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Rogers, AR 72756
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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION

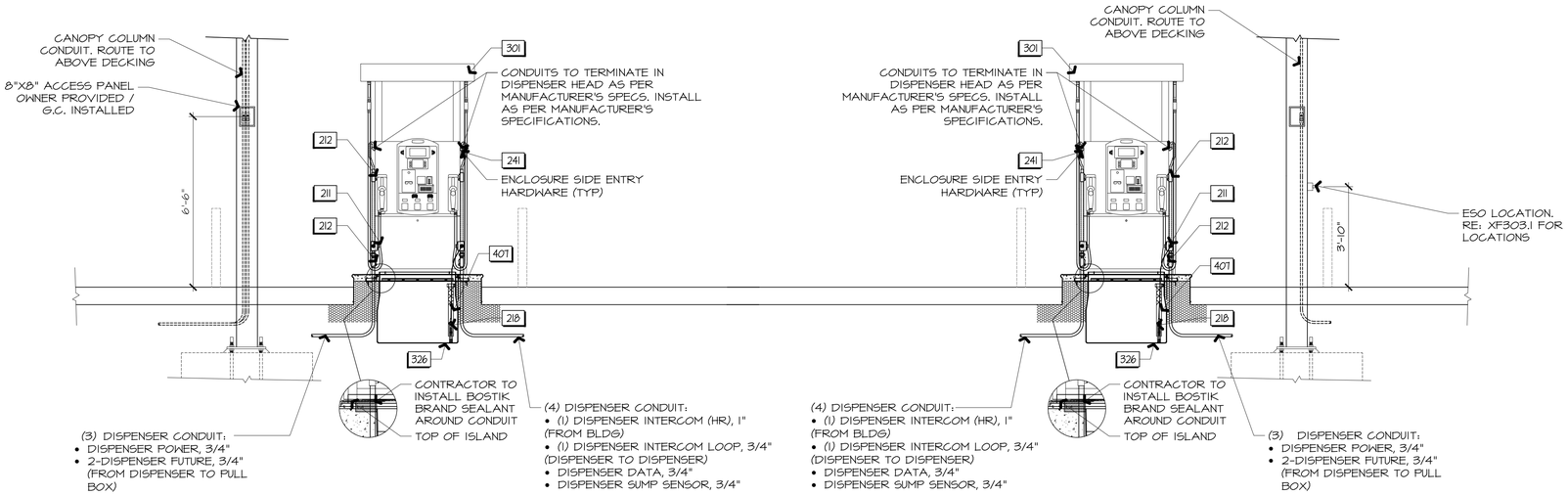
ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:

CANOPY CONDUIT LAYOUT

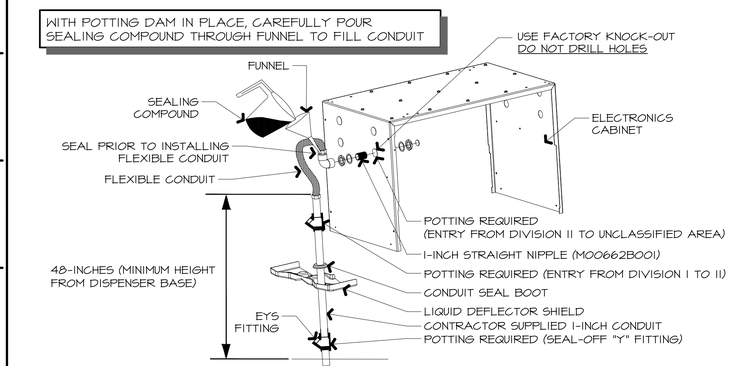
SHEET NUMBER:

XF303.1

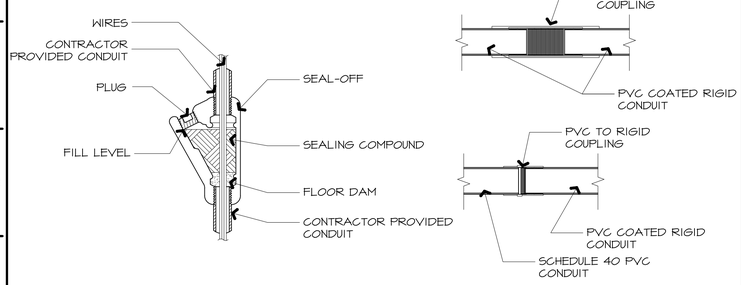


H1 DISPENSER CONDUIT ELEVATION

3/8"=1'-0" F1-XF303



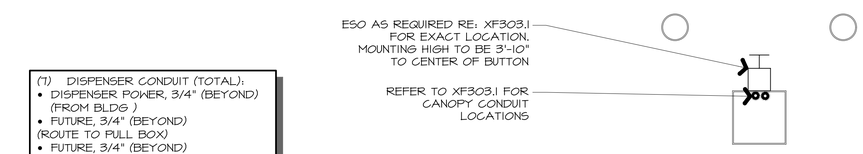
NOTE: THIS DEFLECTOR SHIELD IS ONLY USED FOR UNITS ORIGINALLY EQUIPPED WITH ONE. IT IS NOT NECESSARY FOR SIDE ELECTRONICS CABINET CONDUIT ENTRY INSTALLATIONS ON UNITS ORIGINALLY EQUIPPED WITHOUT THE SHIELD.

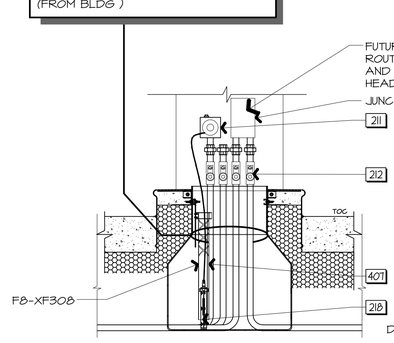


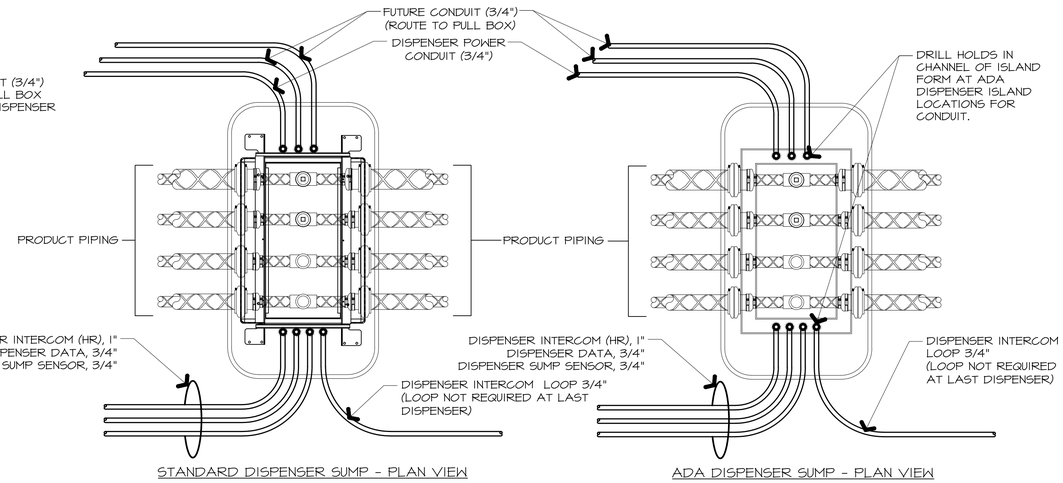
A1 REQUIRED CONDUIT SEAL DETAILS

N.T.S.

(1) DISPENSER CONDUIT (TOTAL):
- DISPENSER POWER, 3/4" (BEYOND) (FROM BLDG)
- FUTURE, 3/4" (BEYOND) (ROUTE TO PULL BOX)
- FUTURE, 3/4" (BEYOND) (ROUTE TO PULL BOX)
- (1) DISPENSER INTERCOM, 3/4" (FROM BLDG OR DISPENSER)
- (1) DISPENSER INTERCOM LOOP, 3/4" (DISPENSER TO DISPENSER)
- DISPENSER DATA, 3/4" (FROM BLDG)
- DISPENSER SUMP SENSOR, 3/4" (FROM BLDG)







STANDARD DISPENSER SUMP - PLAN VIEW

ADA DISPENSER SUMP - PLAN VIEW

A6 DISPENSER CONDUIT DETAIL B2

N.T.S.

CORESTATES, INC.
CERTIFICATE OF AUTHORIZATION #F3349
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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

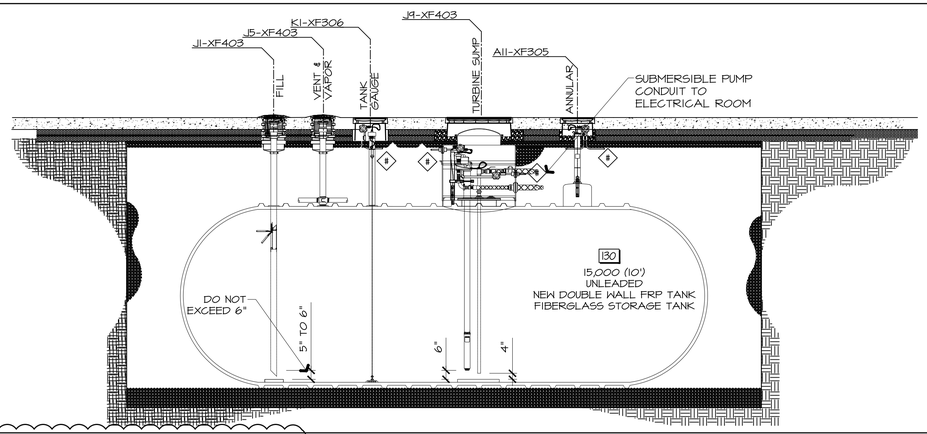
ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
DISPENSER CONDUIT LAYOUT & DETAILS

SHEET NUMBER:
XF304

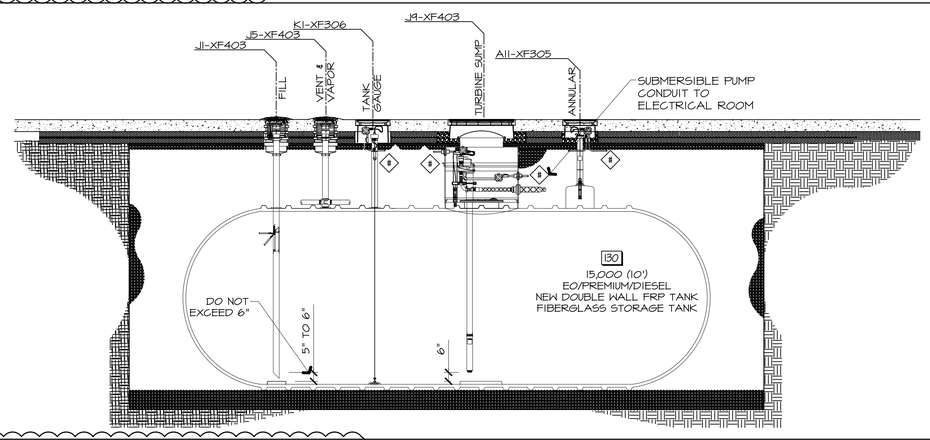
K1 NOT USED

1/4" = 1'-0"



E1 15K UNLEADED TANK ELECTRICAL SECTION B2

1/4" = 1'-0"



A1 15K E0/PREMIUM/DIESEL TANK ELECTRICAL SECTION B2

1/4" = 1'-0"

NOTE:
1. REQUIRED FOR DOUBLE WALL FIBERGLASS TANK INSTALLATIONS ONLY.
2. SETTING BRINE LEVEL IN RISER PIPE WILL CAUSE FALSE ALARMS!!!!
3. SET BRINE LEVEL IN ACCORDANCE WITH XERXES INSTALLATION INSTRUCTIONS AS FOLLOWS:

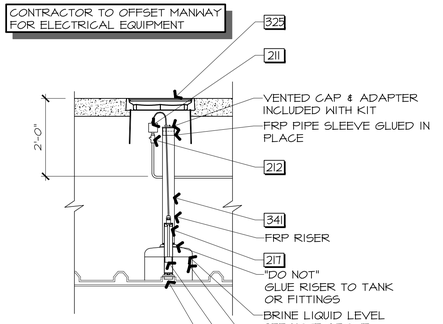
PROBE INSTALLATION
- IF THE TANK CONTAINS PRODUCT, STICK THE TANK AND SET THE MONITORING-FLUID LEVEL BASED ON THE PRODUCT LEVEL.
- THE PROBE MUST REMAIN IN CONTACT WITH THE TANK TOP AT ALL TIMES. DO NOT RAISE THE PROBE OFF THE TANK TO MEET THE MONITORING-FLUID LEVEL. ADD OR REMOVE MONITORING FLUID TO CHANGE THE LEVEL ON THE PROBE.
- THE TYPICAL PROBE HAS ONE FLOAT. WHILE THE PROBE IS UPRIGHT, LOCATE THE MIDPOINT.
- IF THE TANK IS BETWEEN EMPTY AND 1/4 FULL, SET THE MONITORING-FLUID LEVEL AT ABOUT 1 - 1 ½ INCHES BELOW THE MIDPOINT OF THE PROBE.
- IF THE PRODUCT LEVEL IS BETWEEN ¼ AND ½ FULL, SET THE MONITORING-FLUID LEVEL TO THE MIDPOINT OF THE PROBE.
- IF THE PRODUCT LEVEL IS BETWEEN ½ FULL AND FULL, SET THE MONITORING-FLUID LEVEL TO ABOUT 1 - 1 ½ INCHES ABOVE THE MIDPOINT OF THE PROBE.

4. IF THERE IS NO BRINE VISIBLE IN THE RESERVOIR WHEN THE TANK ARRIVES, IMMEDIATELY CONTACT XERXES

TANK SIZE	LIQUID LEVEL MEASUREMENT (L) WHEN TANK IS EMPTY	LIQUID LEVEL MEASUREMENT (L) WHEN TANK IS FULL
8' (12M)	3 1/2"	5"
10' (20M)	4"	6 1/2"

FOR COMPARTMENT TANKS, USE TOTAL VOLUME OF ALL COMPARTMENTS TO DETERMINE TANK SIZE.

CONTRACTOR TO OFFSET MANWAY FOR ELECTRICAL EQUIPMENT



A11 HYDROSTATIC RESERVOIR SENSOR

1/2"=1'-0"

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QuikTrip No. 4160

7601 W SH 29
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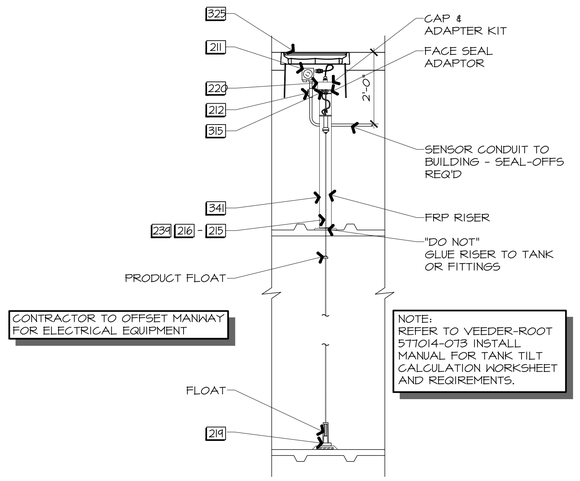
B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

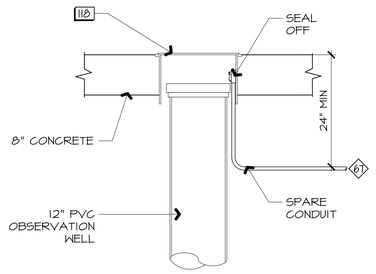
SHEET TITLE:
UST CONDUIT LAYOUT & DETAILS

SHEET NUMBER:
XF305



K1 AUTOMATIC TANK GAUGE

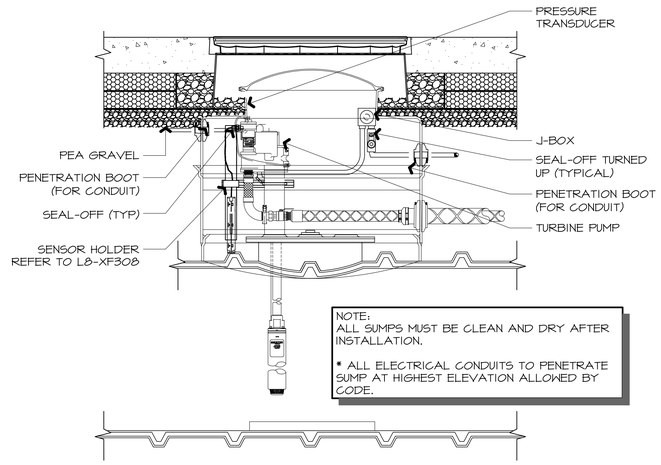
1/2"=1'-0" | A9/J9-XF203 | A1/E1-XF305 | A1/J1-XF402 | A1-XF412



K6 OBSERVATION WELL

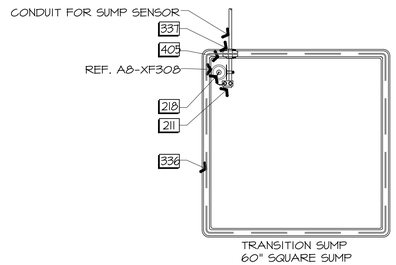
N.T.S. | E1/J1-XF305

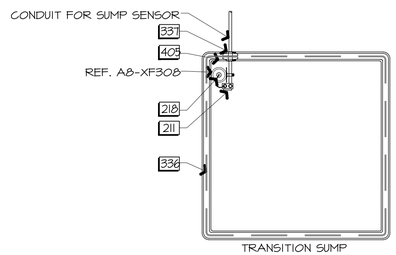
K9 NOT USED



K12 TANK SUMP ELECTRICAL ELEVATION B2

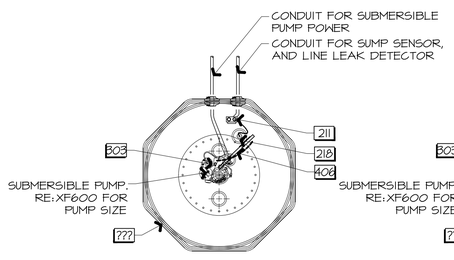
3/4" = 1'-0" | A1/E1-XF305



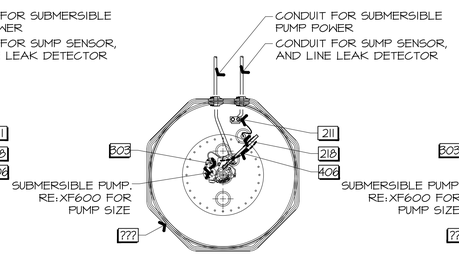


ALL CONDUIT ENTRY POINTS TO BE AS CLOSE TO CORNER OF SUMP AS POSSIBLE.

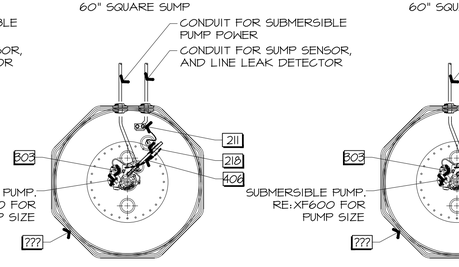
SENSOR WIRE FOR MULTI-PORT SHALL BE ROUTED TO J-BOX AT TANK MONITOR. EXPOXY PACK TERMINATIONS TO BE MADE IN TANK MONITOR J-BOX TO ALLOW FOR FUTURE REMOVAL/REPLACMENT OF SENSOR WITHOUT DISASSEMBLY OF MULTI-PORT.



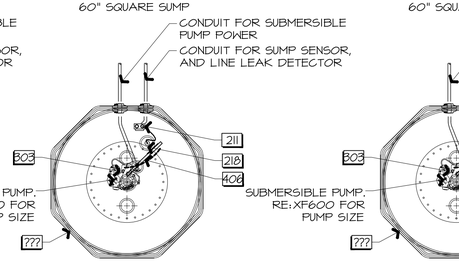
UNLEADED 1 TANK SUMP
48" ROUND SUMP



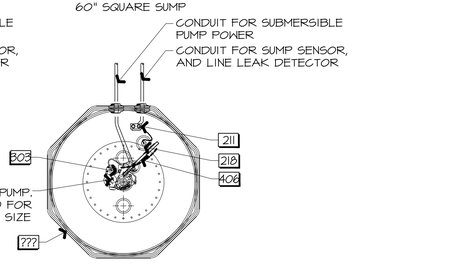
UNLEADED 2 TANK SUMP
48" ROUND SUMP



EO TANK SUMP 48"
ROUND SUMP



PREMIUM TANK SUMP 48"
ROUND SUMP



DIESEL TANK SUMP 48"
ROUND SUMP

A1 TANK & TRANSITION SUMP ELECTRICAL PLAN B2

1/2"=1'-0"

JOHN M. ALEXANDER
103124
LICENSED PROFESSIONAL ENGINEER
03/31/2023

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CERTIFICATE OF AUTHORIZATION
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REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
UST CONDUIT LAYOUT & DETAILS

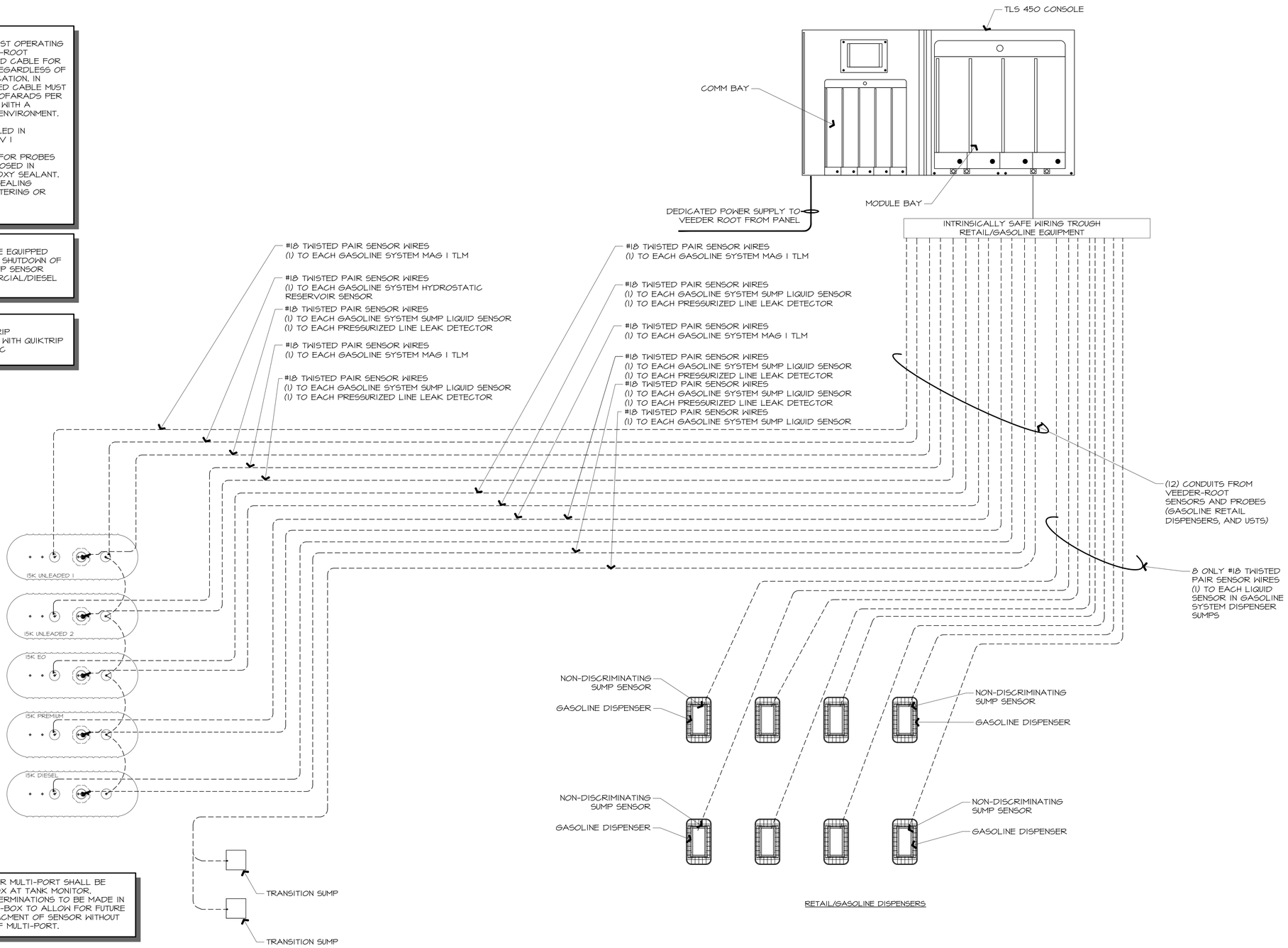
SHEET NUMBER:
XF306

WIRING NOTE:
- IN ORDER TO ENSURE THE BEST OPERATING SYSTEMS AVAILABLE, VEEDER-ROOT REQUIRES THE USE OF SHIELDED CABLE FOR ALL PROBES AND SENSORS, REGARDLESS OF CONDUIT MATERIAL OR APPLICATION. IN THESE INSTALLATIONS, SHIELDED CABLE MUST BE RATED LESS THAN 100 PICOFARADS PER FOOT AND BE MANUFACTURED WITH A MATERIAL SUITABLE FOR THE ENVIRONMENT.

- ALL WIRING MUST BE INSTALLED IN ACCORDANCE WITH CLASS1, DIV 1 SPECIFICATIONS.
- ANY SPLICED CONNECTIONS FOR PROBES OR SENSORS SHOULD BE ENCLOSED IN PLASTIC BAG FILLED WITH EPOXY SEALANT.
- CONTRACTOR TO PROVIDE SEALING FITTINGS ON ALL CONDUITS ENTERING OR LEAVING DISPENSER SUMPS.

NOTE:
VEEDER ROOT CONSOLE TO BE EQUIPPED WITH MODULES TO ALLOW FOR SHUTDOWN OF SUBMERSIBLE PUMPS UPON SUMP SENSOR ACTIVATION IN EITHER COMMERCIAL/DIESEL OR RETAIL/GASOLINE SYSTEM.

NOTE:
PROGRAM UNIT AS PER QUIKTRIP SPECIFICATIONS. COORDINATE WITH QUIKTRIP REPRESENTATIVE FOR SPECIFIC REQUIREMENTS.



RETAIL/GASOLINE DISPENSERS

SENSOR WIRE FOR MULTI-PORT SHALL BE ROUTED TO J-BOX AT TANK MONITOR. EXPOXY PACK TERMINATIONS TO BE MADE IN TANK MONITOR J-BOX TO ALLOW FOR FUTURE REMOVAL/REPLACMENT OF SENSOR WITHOUT DISASSEMBLY OF MULTI-PORT.

A1 N.T.S. VEEDER ROOT SCHEMATIC AND DETAILS B2

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B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
VEEDER ROOT SCHEMATIC & DETAILS

SHEET NUMBER:
XF307

SENSING OPTIONS

VEEDER ROOT CONSOLE TLS 450 c/w PRINTER			VR-860090-100	
QTY	MODULE MODEL #	SENSOR/PROBE MODEL #	MODEL NUMBER	QTY
2	UNIVERSAL SENSOR/PROBE MODULE VR-332812-001	NON-DISCRIMINATING INTERSTITIAL SENSOR FOR STEEL TANKS	794380-460	5
		NON-DISCRIMINATING DISPENSER PAN AND CONTAINMENT SUMP SENSORS	794380-208 (W/12' CABLE)	15
			794380-209 (W/30' CABLE)	-
		MAG PLUS MAGNETOSTRICTIVE TANK LEVEL MONITOR PROBE	846396-104 (10') USE ON 10'-0"Φ TANK	-
			846396-111 (11') USE ON 10'-6"Φ TANK	5
			846396-112 (12') USE ON 11'-6"Φ TANK	-
		NOT USED	NOT USED	-
1	UNIVERSAL INPUT/OUTPUT MODULE VR-332813-001	PLLD LINE LEAK SENSOR	859080-001 (F.E. PETRO PUMPS)	5

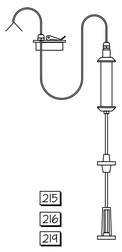
COMMUNICATIONS OPTIONS

RISK MGMT LEAK DETECTION PLLD	VR-32972-008	1
USB/ETHERNET DUAL MODULE	INCLUDED W/TLS 450 CONSOLE	-
RS-232 DUAL INTERFACE MODULE	INCLUDED W/TLS 450 CONSOLE	-
PRINTER INTERFACE	INCLUDED W/TLS 450 CONSOLE	-

HARDWARE/SOFTWARE

PROBE INSTALLATION KITS (GASOLINE)	849800-000	4
PROBE INSTALLATION KITS (DIESEL)	849800-001	1
4" COMPOSITE CAP AND RING KIT (MAG PROBES)	312020-282	-
SUMP SENSOR MOUNTING KIT	330020-012	-
4" METAL CAP AND RING KIT (MAG PROBES)	312020-952	5

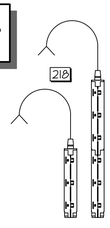
H1 SCHEDULES
N.T.S.



MAGNETOSTRICTIVE TANK LEVEL MONITOR PROBE

MAGNETOSTRICTIVE PROBES FOR TANK LEVEL MONITORING (WATER PRODUCT LEVELS) AND CONTINUOUS STATISTICAL LEAK DETECTION (MAG PLUS).

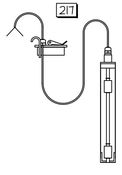
DESCRIPTION: NON-DISCRIMINATING SENSORS FOR SENSING WATER AND PETROLEUM IN SUMPS.



OPERATING PRINCIPLE: FLOAT DETERMINES PRESENCE OF LIQUID AND WILL TRIGGER AN ALARM TO THE TANK MONITOR.

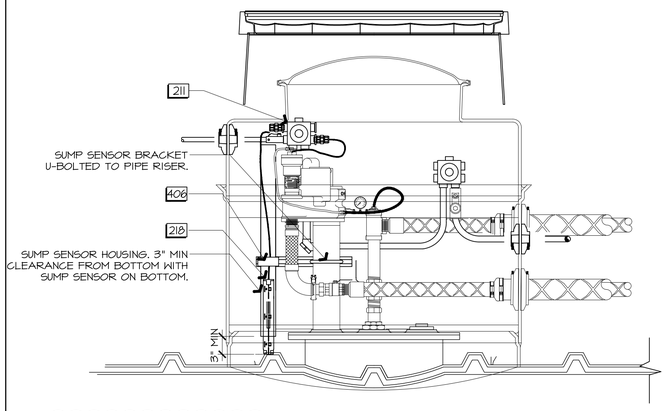
NON-DISCRIMINATING DISPENSER PAN AND CONTAINMENT SUMP SENSORS

DESCRIPTION: FOR MONITORING BRINE LEVELS IN DOUBLE WALL FRP BRINE MONITORED TANKS.

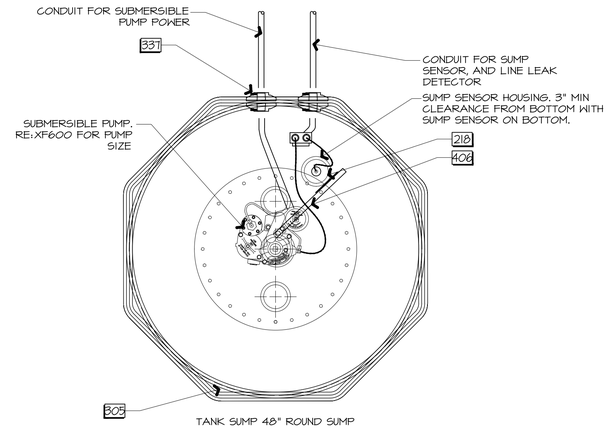


HYDROSTATIC RESERVOIR SENSORS (BRINE)

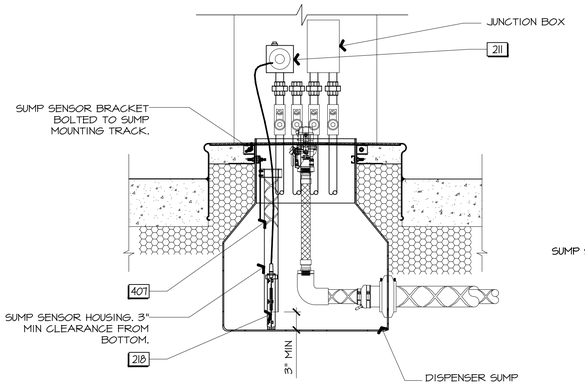
A1 VEEDER DETAILS
N.T.S.

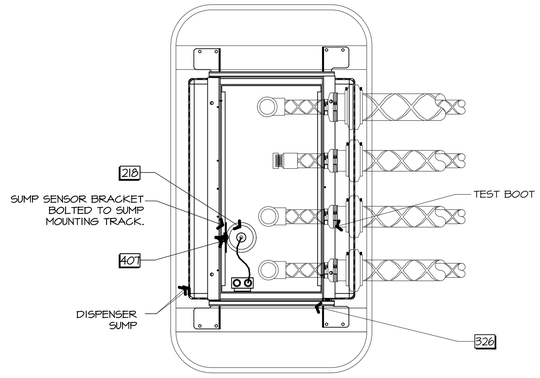


L8 STP SUMP SENSOR B2
1" = 1'-0"

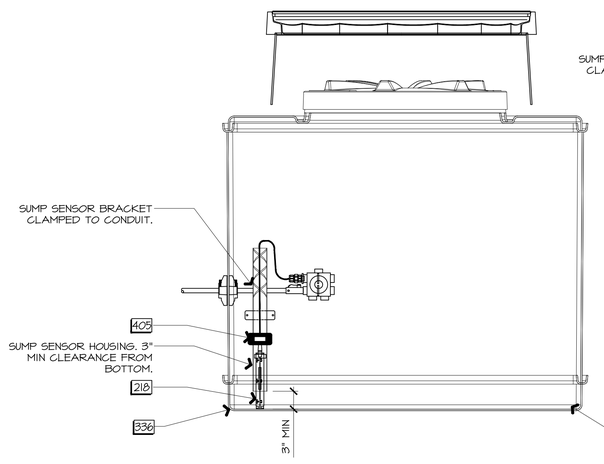


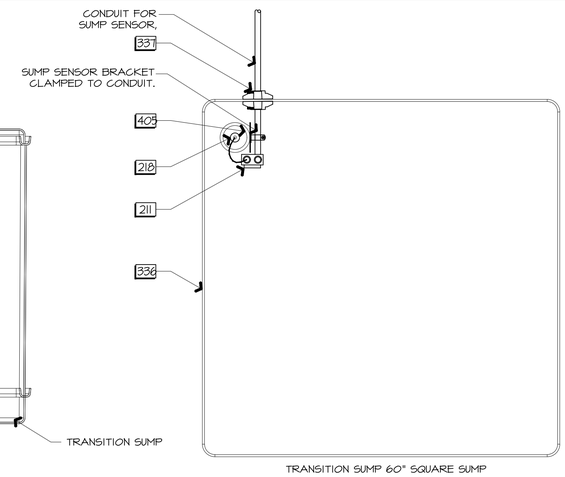
TANK SUMP 48" ROUND SUMP





F8 DISPENSER SUMP SENSOR B2
1" = 1'-0"





TRANSITION SUMP 60" SQUARE SUMP

A8 TRANSITION SUMP SENSOR
1" = 1'-0"

JOHN M. PERSSON
41034
LICENSED PROFESSIONAL ENGINEER
NATIONAL ENGINEER
09/30/2022
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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
VEEDER ROOT SCHEDULE & DETAILS

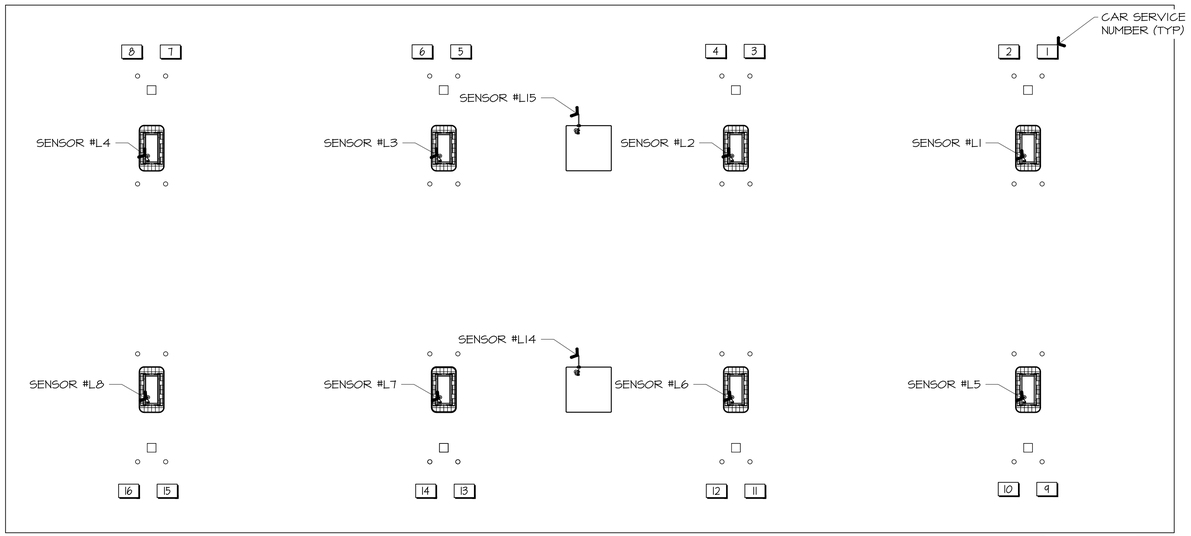
SHEET NUMBER:
XF308

I. SENSOR NOTE:

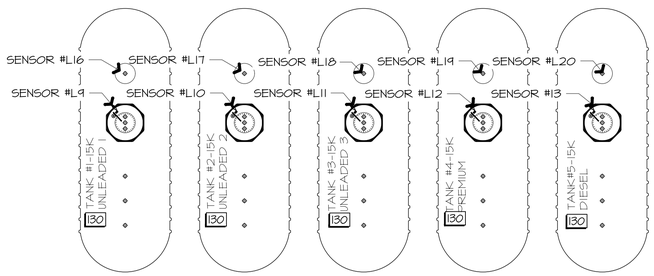
SENSORS AND VEEDER-ROOT TO BE WIRED AND PROGRAMMED TO MATCH NUMBERING ON DETAIL A1-XF309. VEEDER-ROOT NUMBERING IS DETERMINED FOR CONSISTENCY BETWEEN STORES.
IF IT IS UNCLEAR AS TO THE CORRECT PROGRAMMING DUE TO SOFTWARE REVISIONS OR ANY OTHER REASON, PROGRAMMER MUST NOTIFY APPROPRIATE QUIKTRIP PERSONNEL.

FOR WIRING REFER TO QT TLS-450+ PROGRAMING SCRIPT

STORE SIDE



STREET SIDE



LIQUID SENSOR CHART

	SENSOR NUMBER	LOCATION	NON-DISCRIMINATING SUMP SENSOR	HYDROSTATIC RESERVOIR SENSOR (BRINE)	
EQUIP. TAG			218	217	
DISPENSER SUMPS	L1	DISP 1-2	●		
	L2	DISP 3-4	●		
	L3	DISP 5-6	●		
	L4	DISP 7-8	●		
	L5	DISP 9-10	●		
	L6	DISP 11-12	●		
	L7	DISP 13-14	●		
	L8	DISP 15-16	●		
STP SUMP	L9	UST T1 UNL 1 STP SUMP	●		
	L10	UST T2 UNL 2 STP SUMP	●		
	L11	UST T3 EO STP SUMP	●		
	L12	UST T4 PREMUM STP SUMP	●		
	L13	UST T5 DIESEL STP SUMP	●		
TRANSITION SUMP	L14	TRANS SUMP #1	●		
	L15	TRANS SUMP #2	●		
TANK INTERSTITIAL (ANNULAR)	L16	INTERSTITIAL UNL T1		●	
	L17	INTERSTITIAL UNL T2		●	
	L18	INTERSTITIAL EO T3		●	
	L19	INTERSTITIAL PREMIUM T4		●	
	L20	INTERSTITIAL DIESEL T5		●	

A1 SENSOR LOCATION AND NUMBERING DETAIL B2
1/8" = 1'-0"

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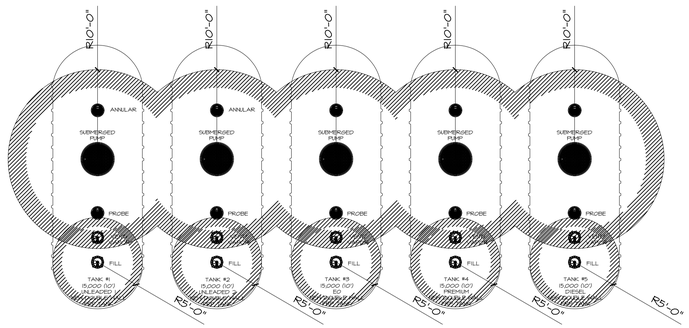
SHEET TITLE:
SENSOR NUMBERING PLAN

SHEET NUMBER:
XF309



K1 NEC CLASSIFIED AREA AT GROUND LEVEL (B2)

1/8"=1'-0"

N.E.C. HAZARDOUS AREA NOTES

(A) TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (UNDERGROUND TANK - FILL OPENING)

EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION: ANY PIT, BOX, OR SPACE BELOW GRADE LEVEL, ANY PART OF WHICH IS WITHIN THE DIVISION 1 OR 2 CLASSIFIED LOCATION.

EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION: UP TO 18 INCHES ABOVE GRADE LEVEL WITHIN A HORIZONTAL RADIUS OF 10 FEET FROM A LOOSE FILL CONNECTION AND WITHIN A HORIZONTAL RADIUS OF 5 FEET FROM A TIGHT FILL CONNECTION.

(B) TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (UNDERGROUND TANK - VENT DISCHARGING UPWARD)

EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION: WITHIN 5 FEET OF OPEN END OF VENT, EXTENDING IN ALL DIRECTIONS.

EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION: SPACE BETWEEN 5 FEET AND 10 FEET OF OPEN END OF VENT, EXTENDING IN ALL DIRECTIONS.

(C) TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (REMOTE PUMP - OUTDOOR)

EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION: ANY PIT, BOX, OR SPACE BELOW GRADE LEVEL IF ANY PART IS WITHIN A HORIZONTAL DISTANCE OF 10 FEET FROM ANY EDGE OF PUMP.

EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION: WITHIN 3 FEET OF ANY EDGE OF PUMP, EXTENDING IN ALL DIRECTION. ALSO UP TO 18 INCHES ABOVE GRADE LEVEL WITHIN 10 FEET HORIZONTALLY FROM ANY EDGE OF PUMP.

(D) TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE - PITS)

EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION: ANY PIT, BOX, OR SPACE BELOW GRADE LEVEL, ANY PART OF WHICH IS WITHIN THE DIVISION 1 OR 2 CLASSIFICATION LOCATION.

(E) TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE - DISPENSER)

EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION: SPACE CLASSIFICATION INSIDE THE DISPENSER ENCLOSURE IS COVERED IN ANSI/UL 87, "POWER OPERATED DISPENSING DEVICES FOR PETROLEUM PRODUCTS."

(F) TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE - DISPENSER)

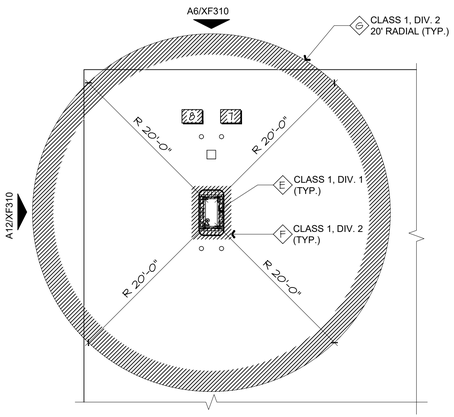
EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION: WITHIN 18 INCHES HORIZONTALLY IN ALL DIRECTIONS EXTENDING TO GRADE FROM (1) THE DISPENSER ENCLOSURE OR (2) THAT PORTION OF THE DISPENSER ENCLOSURE CONTAINING LIQUID HANDLING COMPONENTS. SPACE CLASSIFICATION INSIDE THE DISPENSER ENCLOSURE IS COVERED IN ANSI/UL 87, "POWER OPERATED DISPENSING DEVICES FOR PETROLEUM PRODUCTS."

(G) TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE - OUTDOOR)

EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION: UP TO 18 INCHES ABOVE GRADE LEVEL WITHIN 20 FEET HORIZONTALLY OF ANY EDGE OF ENCLOSURE.

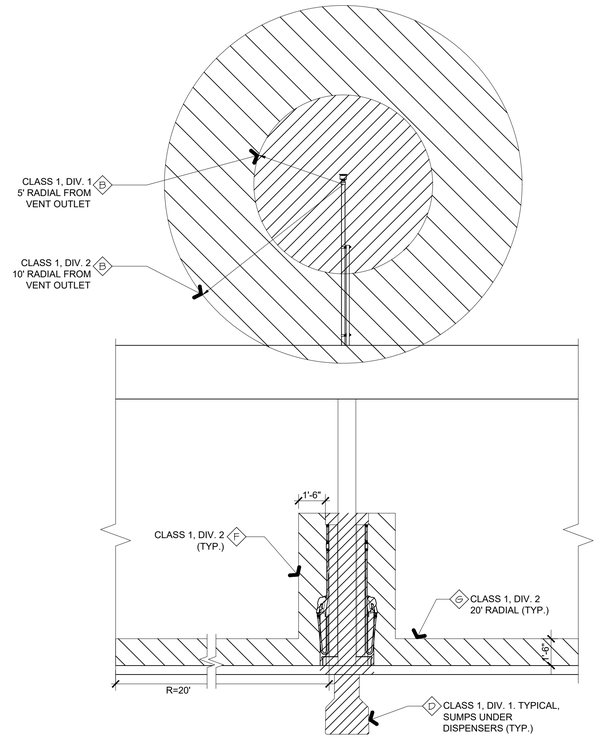
K10 NEC HAZARDOUS AREA NOTES

1/8"=1'-0"



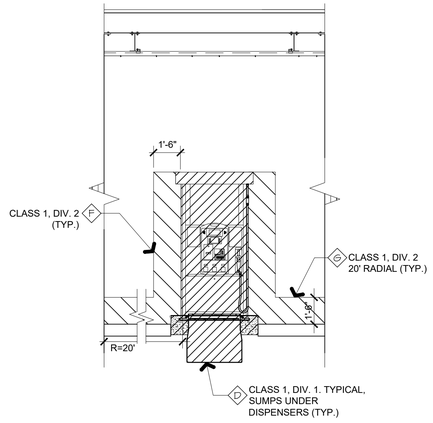
A1 NEC CLASSIFIED AREA AT DISPENSERS

1/8"=1'-0"



A6 NEC CLASSIFIED SIDE ELEVATION

1/4"=1'-0"



A12 NEC CLASSIFIED FRONT ELEVATION

1/4"=1'-0"

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REV	DATE	DESCRIPTION
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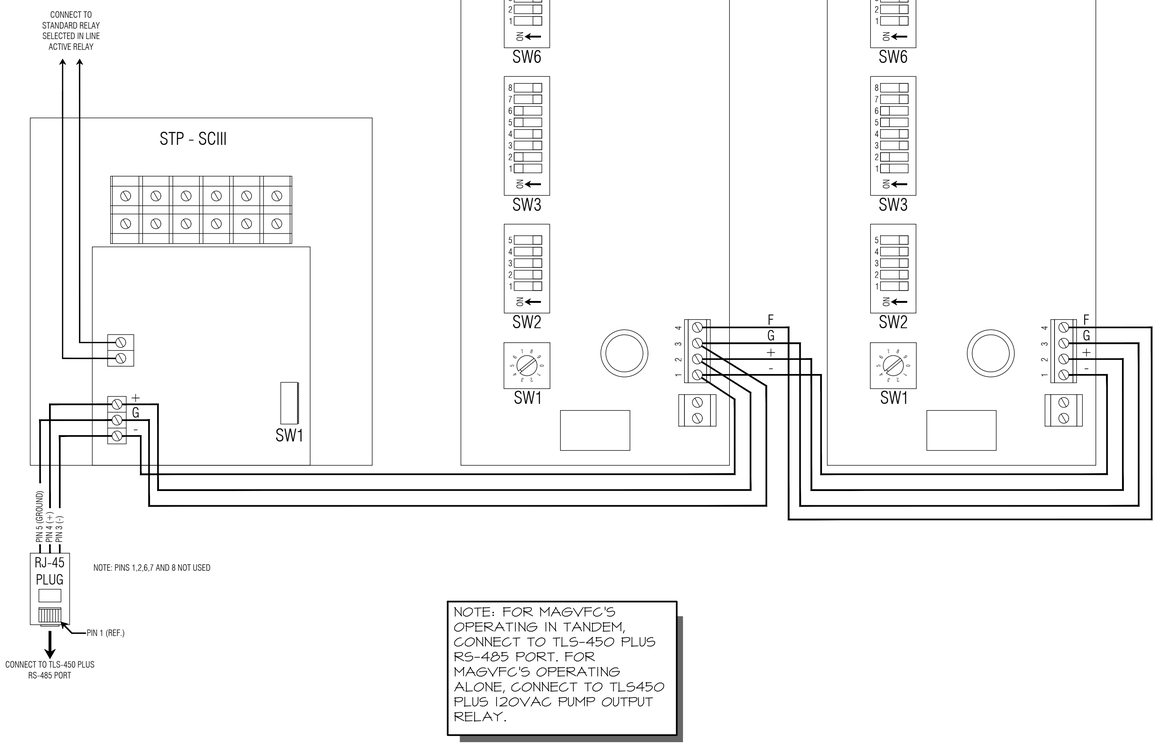
ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
NEC CLASSIFIED AREAS

SHEET NUMBER:
XF310

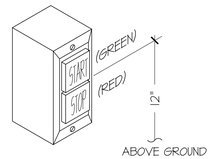


NOTE: FOR MAGVFC'S OPERATING IN TANDEM, CONNECT TO TLS-450 PLUS RS-485 PORT. FOR MAGVFC'S OPERATING ALONE, CONNECT TO TLS450 PLUS 120VAC PUMP OUTPUT RELAY.

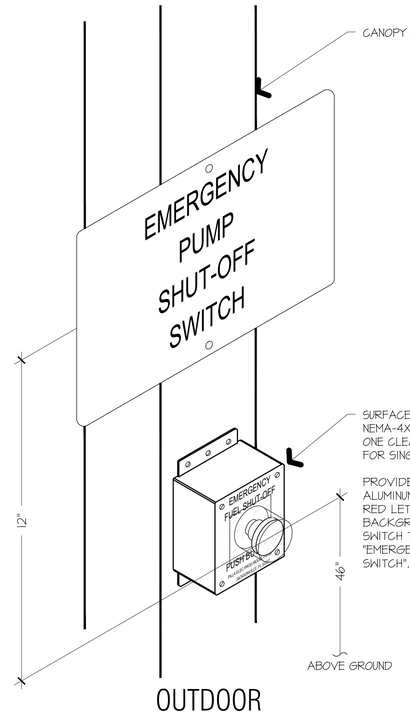
A1 MULTI CONTROLLER WIRING DIAGRAM

NTS

ELECTRICAL EQUIPMENT LIST AND CONNECTION SCHEDULE									
TAG ##	DESCRIPTION	MAKE & MODEL	VOLTAGE / PHASE / WIRE	LOAD AMPS	TYPE OF CONNECTION	WIRE AND CONDUIT	MOUNTING HEIGHT (AFF)	FURNISHED BY	ITEM REMARKS
302	EMERGENCY GASOLINE SHUT-OFF SWITCH	PILLA #FS120MOGRYGLMXD	24VAC/2W	-	HARDWIRED		*	GC	*SEE DETAIL A9/XF311



INDOOR

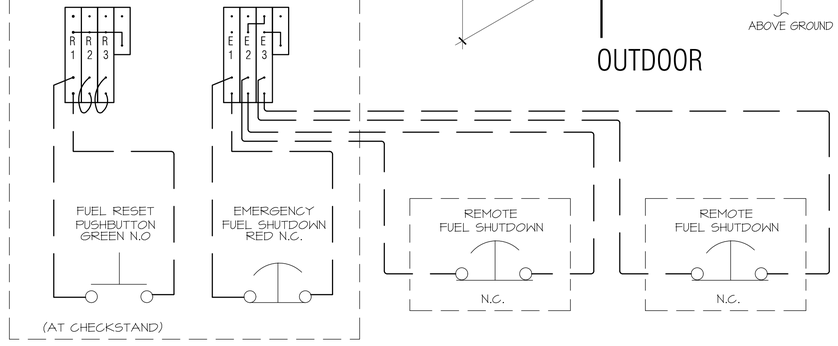


SURFACE MOUNTED NONMETALLIC NEMA-4X ENCLOSURE. PROVIDE ONE CLEAR HINGED LOCKOUT LID FOR SINGLE DEVICE.

PROVIDE PERMANENT WHITE ALUMINUM LABEL WITH 1" HIGH RED LETTERING ON WHITE BACKGROUND ON WALL ABOVE SWITCH THAT SAYS, "EMERGENCY PUMP SHUT-OFF SWITCH".

OUTDOOR

FUEL SHUTDOWN CIRCUITRY



SUMMARY OF INTEGRATED HV AND LV DISCONNECT SYSTEM.
FULL NEC 514 COMPLIANCE INTEGRATED HV AND LV DISCONNECTING MEANS

SYSTEM INCORPORATES A FUEL CONTROL PANEL THAT IS INTEGRATED INTO THE PREMANUFACTURED CABINET. FORMER E-STOP BOX AND CONTACTORS, ALONG WITH THE F.E. PETRO DHI RELAY FUNCTIONS ARE ALL INTEGRATED INTO THE CONTROL PANEL. SYSTEM AND COMPONENTS SHALL BE PRE-WIRED TO THE EXTENT POSSIBLE WITHIN THE CABINET, INCLUDING ALL LOW VOLTAGE COMMUNICATION CABLES TO THE PANEL SYSTEM OR LINE SIDE OF THE LOW VOLTAGE WIRING TERMINALS.

1. SYSTEM SHALL PRE WIRE FOR STP POWER, DISPENSER POWER AND COMMUNICATIONS ON A TERMINAL BLOCK FOR TERMINATION OF FIELD WIRING.
2. SYSTEM SHALL PRE-WIRE HOOK SIGNALS IN A COLOR CODED ROW OF TERMINALS ALL SIDE BY SIDE AT THE BOTTOM OF THE PANEL.
3. CONTROL PANEL DESIGN SHALL INCLUDE A "DIESEL" TERMINAL BLOCK FOR ANY DISPENSER WIRED AS A SPARE.
4. CONTROL PANEL DESIGN SHALL BE FULLY COMPLIANT WITH 514-11 AND 514-13. THE EMERGENCY SHUTOFF SHALL BE SET UP SUCH THAT ANY ONE KILL SWITCH WILL SHUT DOWN THE ENTIRE SYSTEM, INCLUDING OPENING ALL LINE VOLTAGE AND LOW VOLTAGE WIRES TO THE DISPENSERS AND FUEL PUMPS. A MANUAL RESET BUTTON LOCATED IN THE ELECTRICAL CABINET ACCESSIBLE TO AUTHORIZED PERSONNEL SHALL BE REQUIRED FOR RE-ENERGIZING THE SYSTEM.
5. IN ADDITION, A SINGLE DISCONNECTING SWITCH SHALL BE LOCATED ON THE CONTROL PANEL TO ALLOW SERVICING TO ANY SINGLE DISPENSER BY DISCONNECTING BOTH THE DISPENSER POWER AND COMMUNICATIONS/DATA TO THAT DISPENSER ONLY WHILE LEAVING THE REMAINDER OF THE LOCATION UP AND RUNNING.

ON-OFF SWITCH(ES) SHALL BE PROVIDED BY GENERAL CONTRACTOR AS SCHEDULED, WIRED AS INDICATED AND PER MFR INSTALLATION INSTRUCTIONS.

1. INDOOR EMERGENCY SHUT-OFF (ESO) SWITCH AND RESET AT CHECKSTAND.
2. EXTERIOR EMERGENCY SHUT-OFF(S) (ESO) OUTSIDE STORE.

RE: XF 300 FOR LOCATIONS.

A9 EMERGENCY FUEL CUTOFF DIAGRAM

NTS

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PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

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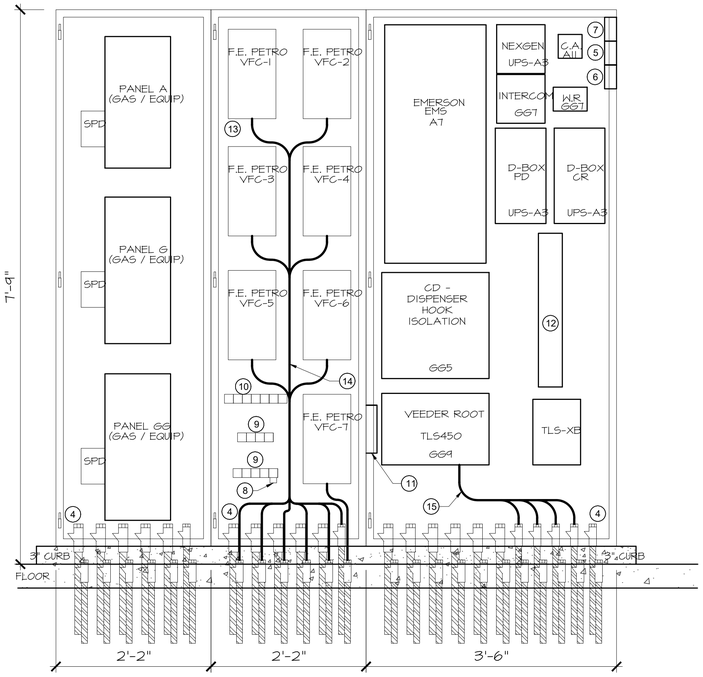
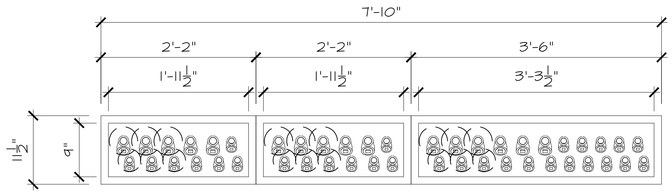
SHEET TITLE:

DETAILS

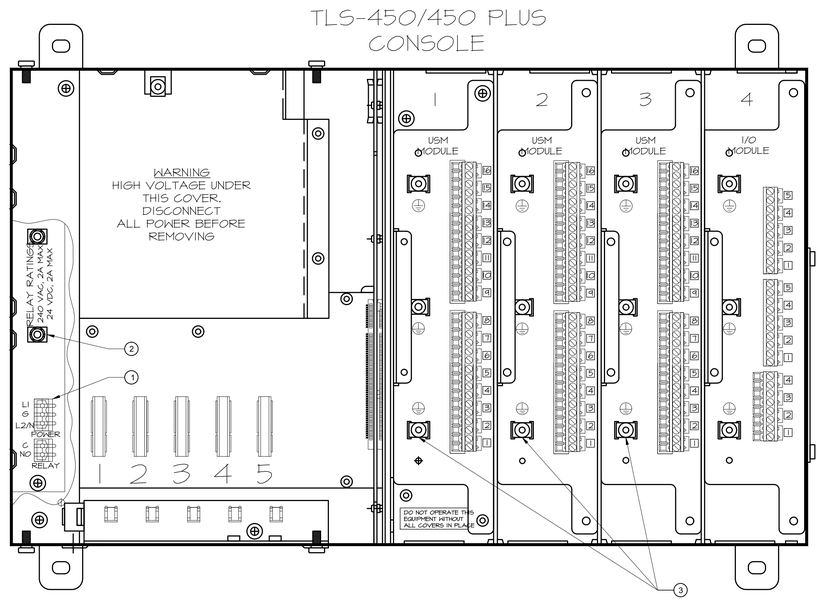
SHEET NUMBER:

XF311





SECTION A-A



	KEYNOTES
1	PULL THREE #14 AWG OR LARGER COLOR-CODED WIRES FOR AC LINE (HOT), AC NEUTRAL AND CHASSIS GROUND BETWEEN THE POWER PANEL AND THE CONSOLE.
2	PROVIDE A BARRIER GROUND FROM GROUNDING TERMINAL BAR IN POWER PANEL TO GROUNDING CLAP IN THE CONSOLE. FOR UL/cUL APPROVED SYSTEMS, USE A #12 AWG BARRIER GROUND WIRE.
3	FOR EACH BAY HOUSING A USM MODULE, PROVIDE A #12 AWG GROUND FROM THE GROUNDING CLAMP TO GROUNDING LUGS.
4	EXPLOSION PROOF SEAL-OFF, ONE PER CONDUIT. SEE SECTION A-A FOR APPROXIMATE CONDUIT LAYOUT. QUANTITY AND SIZE OF CONDUITS MAY VARY. USE FLOOR TEMPLATE FURNISHED BY ELECTRICAL PANEL MANUFACTURER TO LAYOUT FLOOR CONDUIT PENETRATIONS.
5	PREMOUNTED QUAD RECEPTACLE FOR SECURITY SYSTEM.
6	PREMOUNTED INTERCOM / WARREN ROGERS DUPLEX RECEPTACLE.
7	PREMOUNTED QUAD RECEPTACLE FOR UPS.
8	MOTOR STARTER FOR CANOPY EXHAUST FAN.
9	MPD ISOLATION MODULES. QUANTITY MAY VARY.
10	SUBMERSIBLE PUMP CONTACTORS.
11	TVSS FOR VEEDER-ROOT.
12	DISPENSING EQUIPMENT LOW VOLTAGE DISCONNECT (TWISTED PAIR & CAT-5).
13	REFER TO SHEET E503 & E610 FOR CIRCUIT NUMBERING
14	3/4" FLEXIBLE CONDUIT FROM MAGVFC'S TO SEAL-OFF'S.
15	3/4" FLEXIBLE CONDUIT FROM VEEDER ROOT TO SEAL-OFF'S.

VEEDER-ROOT PROGRAMMING (NON-TRAVEL CENTERS)

CARD #1		CARD #2		CARD #3	
#16	DIESEL STP SUMP	#16	PROBE PREMIUM	#16	(ADDITIONAL SENSOR) **
#15	PREMIMUM STP SUMP	#15	PROBE UNL #2	#15	(ADDITIONAL SENSOR) **
#14	UNL #2 STP SUMP	#14	PROBE UNL #1	#14	(ADDITIONAL SENSOR) **
#13	UNL #1 STP SUMP	#13	(ADDITIONAL SENSOR) **	#13	(ADDITIONAL SENSOR) **
#12	DISP PAN 23/64 **	#12	(ADDITIONAL SENSOR) **	#12	(ADDITIONAL SENSOR) **
#11	DISP PAN 21/32 **	#11	MULTI-PORT SUMP #1 **	#11	MULTI-PORT SUMP #2 **
#10	DISP PAN 19/32 **	#10	(ADDITIONAL SENSOR) **	#10	TRANS SUMP #4 **
#9	DISP PAN 17/32 **	#9	(ADDITIONAL SENSOR) **	#9	TRANS SUMP #3 **
#8	DISP PAN 15/16 **	#8	INTERSTITIAL DIESEL	#8	OFFSET FILL SUMP #2 (REMOTE) **
#7	DISP PAN 13/64 **	#7	INTERSTITIAL PREM/E0 (PROD X) **	#7	PLLD E0 (PROD X) **
#6	DISP PAN 11/32	#6	INTERSTITIAL UNL #2	#6	PLLD DIESEL
#5	DISP PAN 9/32	#5	INTERSTITIAL UNL #1	#5	PLLD PREMIUM
#4	DISP PAN 7/32	#4	TRANS SUMP #2	#4	PLLD UNL #2
#3	DISP PAN 5/32	#3	TRANS SUMP #1	#3	PLLD UNL #1
#2	DISP PAN 3/64	#2	OFFSET FILL SUMP #1 **	#2	PROBE E0 (PROD X) **
#1	DISP PAN 1/32	#1	E0 (PROD X) STP SUMP **	#1	PROBE DIESEL

** - IF EQUIPPED

NOTE: THE VEEDER-ROOT MONITORING SYSTEM TO BE FULLY FUNCTIONAL PRIOR TO INTRODUCING ANY FUEL PRODUCTS INTO THE TANKS.

NOTE: VEEDER-ROOT PROGRAMMING DISPLAYED FOR GENERAL EXAMPLE PURPOSES. CONTACT QT REPRESENTATIVE FOR LATEST PROGRAMMING SCRIPT.

A1 NTS INTERIOR ELECTRICAL PANEL DETAILS

A7 NTS VEEDER ROOT ELEVATION

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PROTOTYPE	P-110
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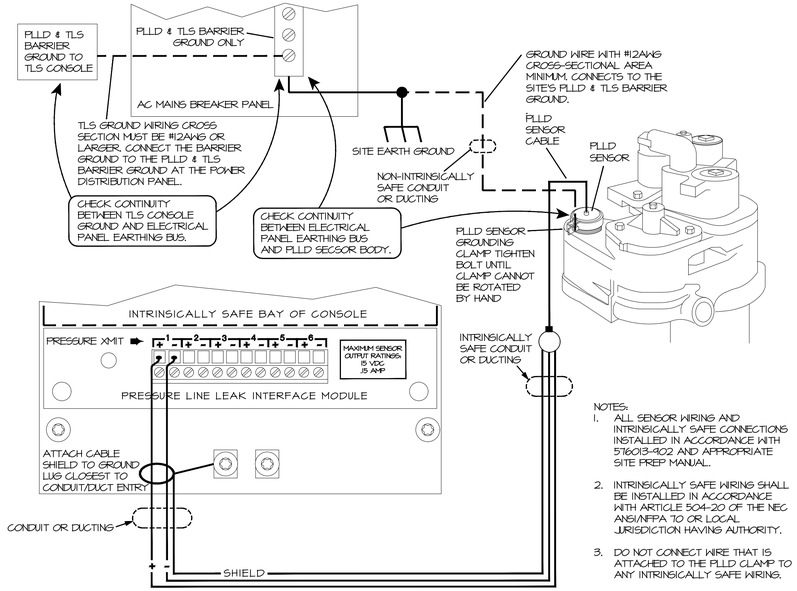
SHEET TITLE:

DETAILS

SHEET NUMBER:

XF312

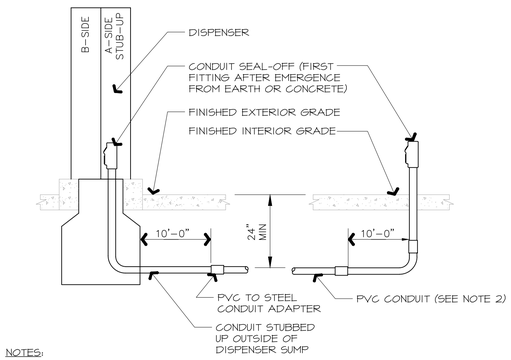


NOTES:

1. ALL SENSOR WIRING AND INTRINSICALLY SAFE CONNECTIONS INSTALLED IN ACCORDANCE WITH 576013-902 AND APPROPRIATE SITE PREP MANUAL.
2. INTRINSICALLY SAFE WIRING SHALL BE INSTALLED IN ACCORDANCE WITH ARTICLE 504-20 OF THE NEC ANSI/NFPA 70 OR LOCAL JURISDICTION HAVING AUTHORITY.
3. DO NOT CONNECT WIRE THAT IS ATTACHED TO THE PLLD CLAMP TO ANY INTRINSICALLY SAFE WIRING.

G1 — PLLD GROUND DETAIL
NTS

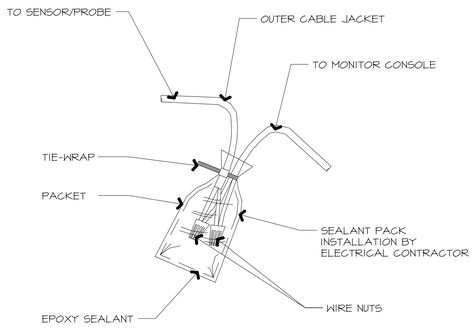
A1 — NOT USED
NTS



NOTES:

1. THREADED RIGID GALVANIZED STEEL CONDUIT SHALL BE USED FOR THE LAST 10 FEET OF UNDERGROUND RUN TO EMERGENCE PER NEC 514.
2. UNDERGROUND PVC CONDUIT SHALL BE USED ONLY AS ALLOWED BY NEC 514-8, EXCEPTION NO. 2 AND APPLICABLE LOCAL CODES. VERIFY SUITABILITY WITH ALL APPROPRIATE AGENCIES. PVC CONDUIT SHALL BE SCHEDULE 40 OR HEAVIER WITH ALL PORTIONS BURIED A MINIMUM 2 FEET BELOW GRADE.
3. THE DISPENSER CONDUITS ARE TO BE STUBBED UP OUTSIDE OF THE DISPENSER SUMP. NO CONDUITS WILL PENETRATE THE DISPENSER SUMPS.

A6 — CONDUIT STUB UP DETAILS
NTS



A12 — EPOXY FILLED SPLICE KIT
NTS

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DETAILS

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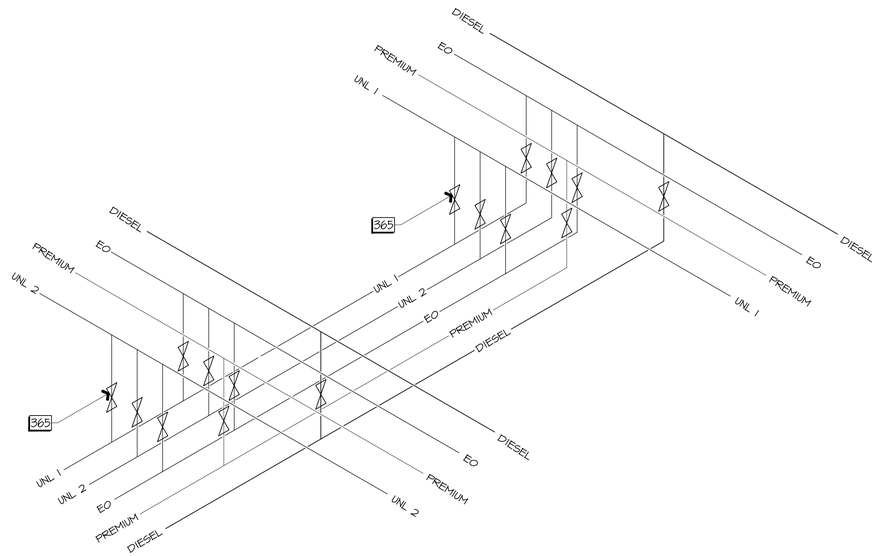


K1 — TRANSITION SUMP ISOMETRIC VIEW

NTS

I. GENERAL NOTE:

THE CONTRACTOR ACCEPTS FULL RESPONSIBILITY FOR PROPER HANDLING AND INSTALLATION OF THE GASOLINE UNDERGROUND STORAGE TANKS AND SHALL INSURE THAT GOOD WORKMANSHIP PRACTICES AND CONSTRUCTION PROCEDURES ARE FOLLOWED REGARDLESS OF THE INCLUSION OR OMISSION OF ANY INSTRUCTION.

UNKNOWN SITUATIONS OR CONDITIONS NOT COVERED IN THESE AND THE MANUFACTURER'S INSTRUCTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR. MANUFACTURER'S SPECIALISTS ARE AVAILABLE FOR CONSULTATION. THE PRESSENCE OF THE MANUFACTURER OR OBSERVER AT AN INSTALLATION SITE DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR THE PROPER INSTALLATION OF THE TANKS.

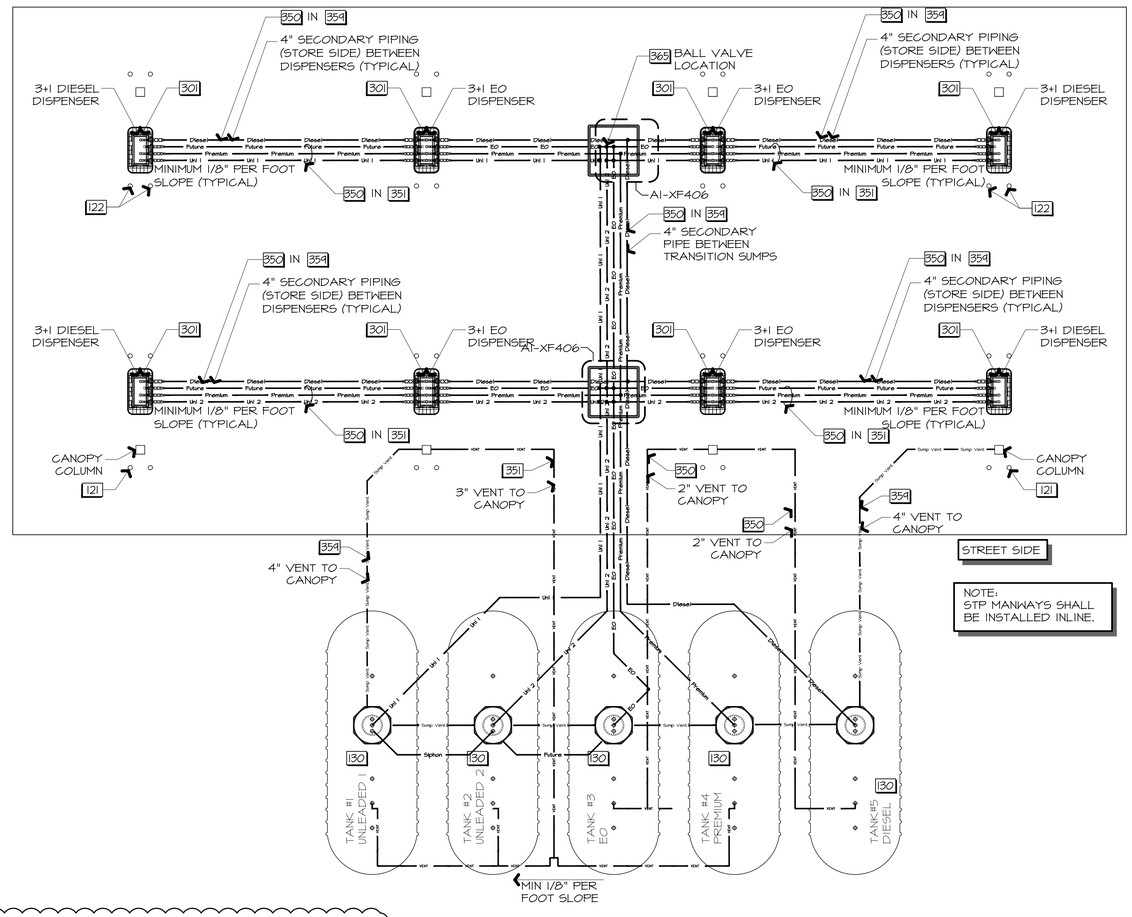
QUESTIONS REGARDING INSTALLATION PROCEDURES OR TANK REPAIRS SHOULD BE DIRECTED TO THE QUIKTRIP FIELD REPRESENTATIVE.

GASOLINE UNDERGROUND TANKS MUST BE INSTALLED ACCORDING TO THESE INSTRUCTIONS, THE MANUFACTURER'S INSTRUCTIONS AND NFPA 30 AND 30A. LOCAL CODES MAY APPLY AND MUST BE ADHERED TO. FAILURE TO FOLLOW THESE INSTALLATION INSTRUCTIONS WILL VOID THE WARRANTY AND WILL RESULT IN TANK FAILURE. PROPER INSTALLATION OF GASOLINE UNDERGROUND STORAGE TANKS HELPS PREVENT TANK DAMAGE AND SHOULD INSURE LONG-TERM CORROSION-PROOF SERVICE. IT IS IMPERATIVE TO READ, UNDERSTAND AND FOLLOW THESE INSTRUCTIONS.

THESE SPECIFICATIONS ARE SUPPLEMENTED BY THE RESPECTIVE TANK MANUFACTURER'S SPECIFICATIONS. THE INSTALLATION PROCEDURE SHALL COMPLY WITH BOTH SETS OF INSTRUCTIONS AND SPECIFICATIONS. IF, IN THE CONTRACTOR'S JUDGMENT, THERE APPEARS TO BE A CONFLICT IN THESE SPECIFICATIONS AND THE TANK MANUFACTURER'S INSTRUCTIONS, CONTACT THE LOCAL QUIKTRIP REPRESENTATIVE FOR CLARIFICATION AND GUIDANCE.

1. ALL PRODUCT LINES ARE SECONDARILY CONTAINED.
2. EVERY TANK CONTAINMENT SUMP AND DISPENSER CONTAINMENT SUMP SHALL CONTAIN A LIQUID SENSING PROBE.
3. PERPENDICULAR PENETRATIONS OF THE CONTAINMENT SUMPS ARE PREFERRED. 5° IS THE MAXIMUM ALLOWABLE PENETRATION ANGLE.
4. SPARE ELECTRICAL CONDUITS MUST BE SEALED.
5. SEE ELECTRICAL SHEETS FOR ELECTRICAL CONDUIT LAYOUT.
6. FILL, VENT/VAPOR AND AUTOMATIC TANK GAUGE RISER MUST BE SCHEDULE 40 PRIMED AND WRAPPED PIPE. EACH RISER MUST BE PRIMED AND WRAPPED IF BACK FILL IS TOUCHING THE RISER.
7. AMERON ADHESIVE EPOXY KIT SHALL BE USED ON ALL PIPE CONNECTION FITTINGS, STP SUMP ENTRY FITTINGS AND TRANSITION SUMP ENTRY FITTINGS.

STORE SIDE



NOTE:
STP MANWAYS SHALL BE INSTALLED INLINE.

HYDROSTATIC SUMP TESTING STANDARD
NEW STORE

HYDROSTATIC TESTING OF ALL DISPENSER, TANK TOP, AND TRANSITION SUMPS WILL BE MANDATORY. ALL PETROLEUM PRODUCT, AND DIESEL EXHAUST FLUID SUMPS IN ALL MARKETS ARE TO BE INCLUDED.

DURING THE CONSTRUCTION PROCESS, ALL SUMPS SHOULD BE PROTECTED FROM STORMWATER, AND DEBRIS. CORROSION OF METALLIC PARTS PRIOR TO PLACING THE SITE INTO SERVICE SHOULD BE KEPT TO A MINIMUM.

PRIOR TO TESTING SUMPS THE FOLLOWING WORK WILL NEED TO BE COMPLETED.

- ALL EQUIPMENT INSTALLATION HAS BEEN COMPLETED WITHIN SUMPS, ALL BOOTS IN PLACE
- JUMPER TUBES CONNECTED WITHIN SUMP
- SUMPS HAVE BEEN CLEANED OF DIRT, AND DEBRIS
- ALL ELECTRICAL WORK HAS BEEN COMPLETED, AND INSPECTED

ALL TESTING WILL BE PERFORMED, AND PASSED PRIOR TO THE INTRODUCTION OF PETROLEUM, OR OTHER PRODUCTS TO TANKS, OR LINES.

TEST PROCESS:

- TESTS TO BE PERFORMED USING CLEAN MUNICIPALLY TREATED WATER.
- TEMPORARY CAPS TYPICALLY USED IN PLUMBING SYSTEMS WILL NEED TO BE USED TO SEAL ALL OPEN 4 INCH VENTILATION LINES IN TANK SUMPS.
- MAINTAIN 5 PSI OF PRESSURE ON SECONDARY PIPING UNTIL A PASSING RESULT IS OBTAINED
- TEST ALL SUMPS TO AN ELEVATION OF APPROX. 2 INCHS ABOVE THE HIGHEST SEALED PENETRATION.
- FOR THE PURPOSE OF CONSISTENCY QUIKTRIP WILL REQUIRE THE USE OF A "CALDWELL SUMP TESTER" AVAILABLE THROUGH CALDWELL INSTRUMENTS. PHONE #(916)294-4567.
- A PASSING TEST WILL REQUIRE NO MOVEMENT IN THE TEST DEVICE INDICATOR FOR A TERM OF ONE HOUR. A PRE-TEST MAY BE ADVISED TO DETERMINE THE EXISTENCE OF HIGH VOLUME LEAKS
- QUIKTRIP WILL REQUIRE THE REMOVAL OF ALL WATER IN SUMPS IMMEDIATELY AFTER PASSING TEST RESULTS ARE DOCUMENTED. THE REMOVAL OF CLEAN SYSTEM WATER SHOULD NOT REQUIRE ANY TYPE OF DISPOSAL CONSIDERATIONS.
- THE PROCESS FOR TESTING SUMPS, AND DISPOSING OF WATER ON FACILITIES THAT HAVE BEEN PLACED INTO OPERATION SHALL BE COORDINATED WITH QUIKTRIP REPRESENTATIVE PRIOR TO TESTING FOR APPROVAL FROM QUIKTRIP ENVIRONMENTAL GROUP.
- ALL SUMPS MUST PASS THIS TEST PRIOR TO THE INTRODUCTION OF MOTOR FUEL PRODUCTS INTO THE TANKS, OR LINES
- THIS TESTING PROCESS IS INTENDED TO COMPLY WITH QUIKTRIP'S DESIRE TO VERIFY THAT ALL SUMPS ARE LIQUID TIGHT PRIOR TO OPERATING ANY SYSTEM. THIS TESTING PROCESS MAY NEED TO BE MODIFIED IN ORDER TO COMPLY WITH STATE BY STATE REQUIREMENTS.
- REPORTING WILL BE REQUIRED BY SITE, AND BY SUMP. DOCUMENTATION SHALL BE FORWARDED TO THE QUIKTRIP ENVIRONMENTAL GROUP ALONG WITH OTHER REQUIRED FUEL SYSTEM DOCUMENTATION.

TANK NUMBERING:	
TANK #1	15K UNLEADED #1
TANK #2	15K UNLEADED #2
TANK #3	15K EO
TANK #4	15K PREMIUM
TANK #5	15K DIESEL

A1 — PETROLEUM DISPENSING SYSTEM UNDERGROUND PIPING AND CONFIGURATION (B2) (B4)

1/8"=1'-0"

DAVID M. KEPLER
76181
LICENSED
PROFESSIONAL ENGINEER
09/30/2023

CORESTATES, INC.
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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE
B4	03/27/23	COORDINATION

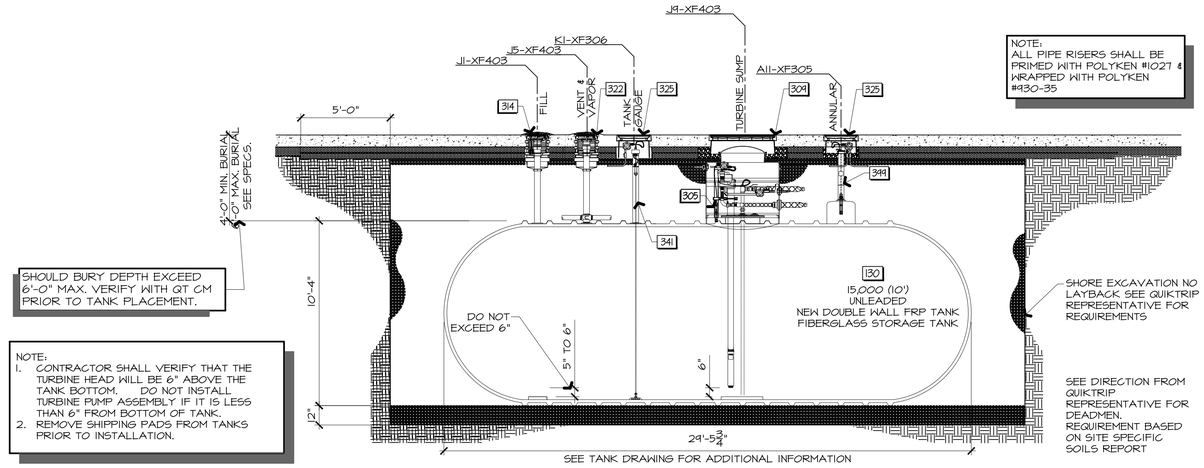
ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:

UNDERGROUND PIPING SYSTEM PLAN

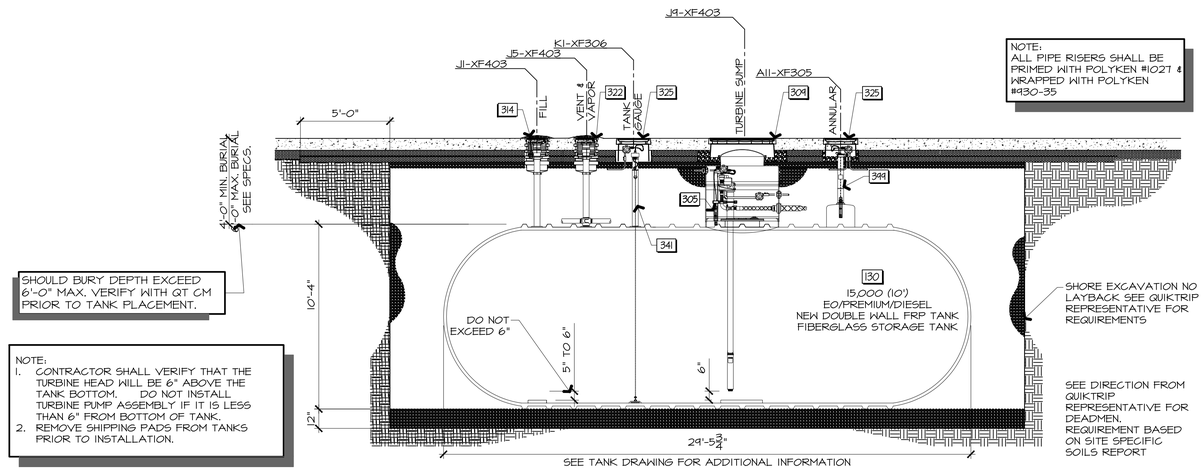
SHEET NUMBER:

XF401



J1 — 15K UNLEADED TANK MECHANICAL - SECTION (B2)

1/4"=1'-0"



A1 — 15K TANK MECHANICAL - SECTION (B2)

1/4"=1'-0"

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7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

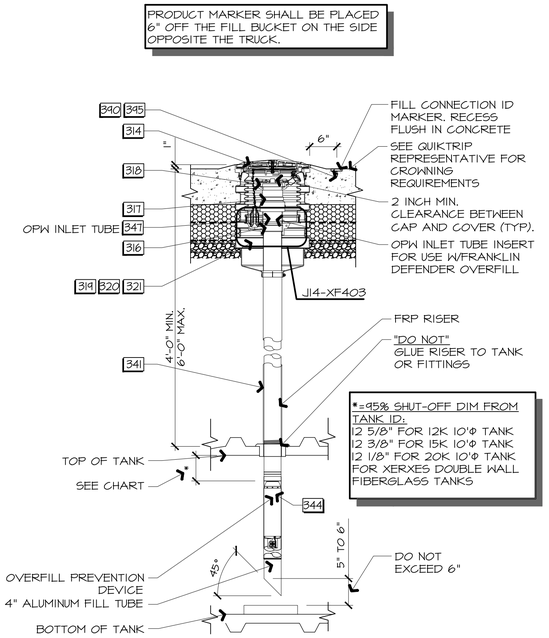
ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:

UST SECTIONS

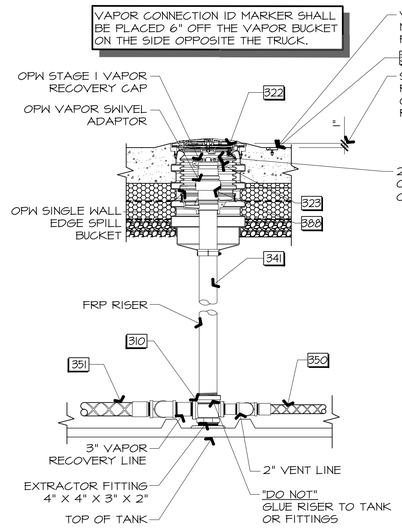
SHEET NUMBER:

XF402



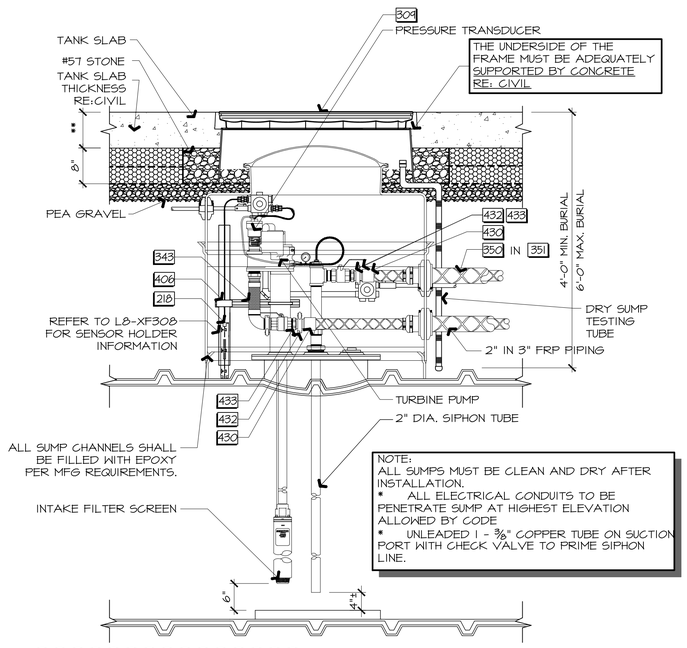
J1 | UST FILL DETAIL | B2

3/4" = 1'-0" | A1-XF402 | J1-XF402



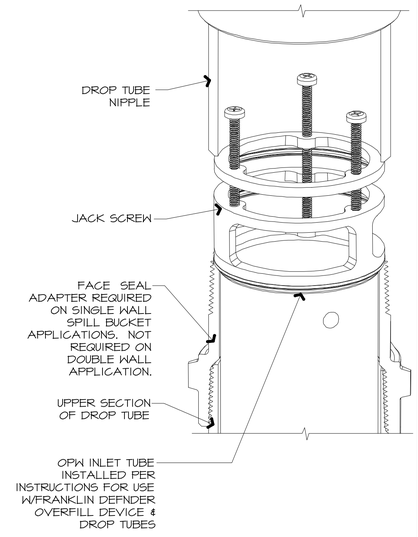
J5 | VAPOR RECOVERY DETAIL | B2

3/4" = 1'-0" | A1-XF402 | J1-XF402



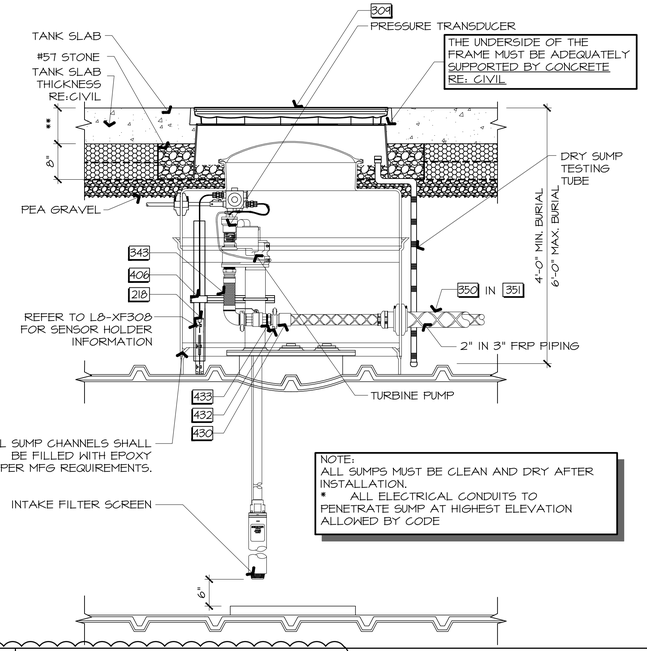
J9 | UNLEADED TURBINE SUMP | B2

3/4" = 1'-0" | J1-XF402



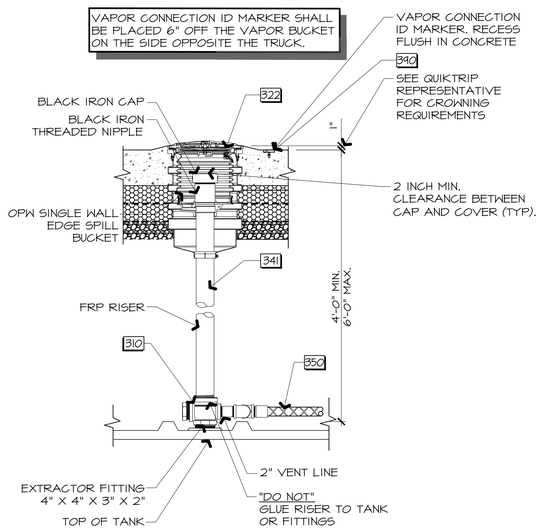
J14 | JACK SCREW DETAIL

N.T.S. | J1-XF403



A1 | E0/ PREMIUM / DIESEL / TURBINE SUMP | B2

3/4" = 1'-0" | A1-XF402 | J1-XF402



A7 | DIESEL VENT/VAPOR | B2

3/4" = 1'-0" | A1-XF402 | J1-XF402

A12 | NOT USED

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7601 W SH 29
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PROTOTYPE	P-110
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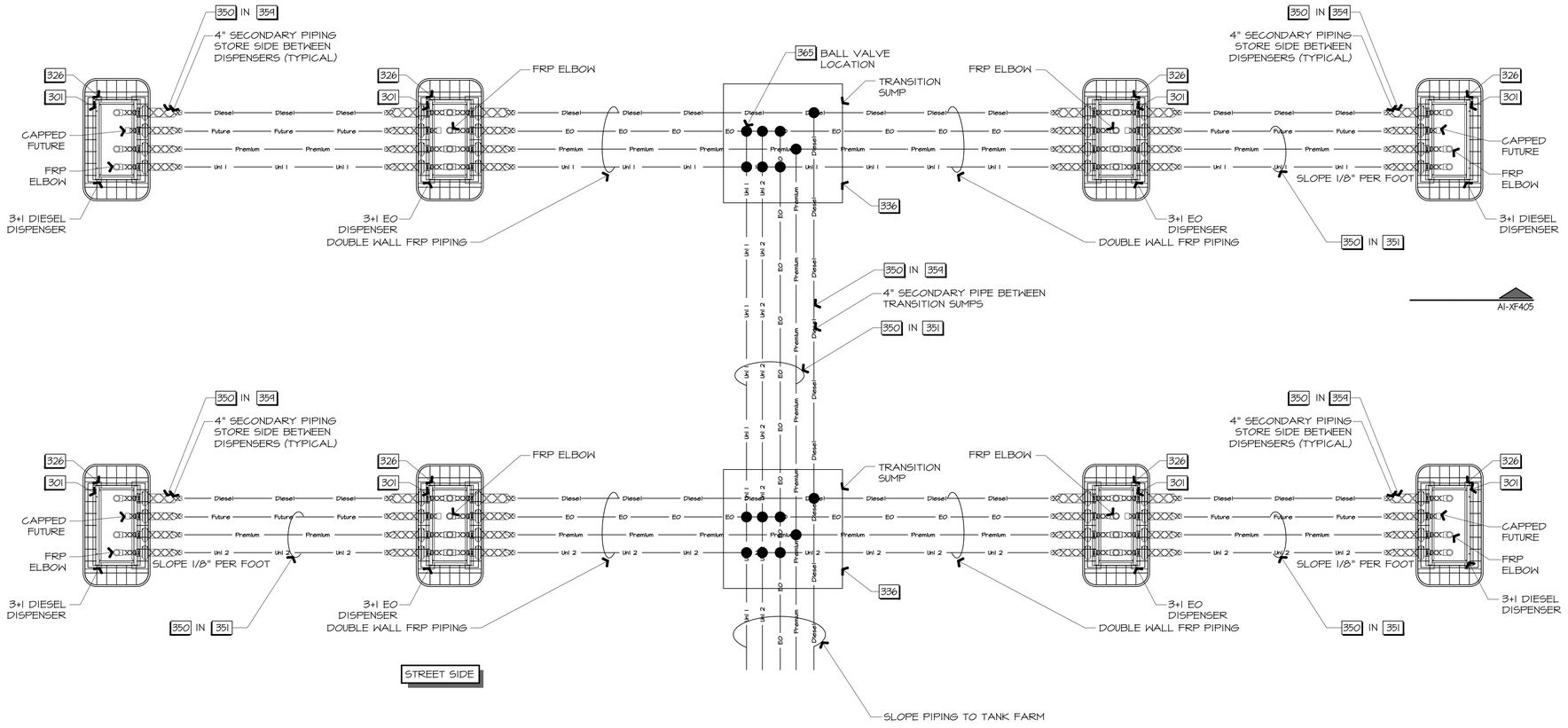
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
TANK TOP EQUIPMENT DETAILS

SHEET NUMBER:
XF403



STATE OF TEXAS
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B2	09/21/22	TANK UPDATE

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SHEET TITLE:

DISPENSER & ISLAND DETAILS

SHEET NUMBER:

XF404

A1 DISPENSER SUMP-PLAN VIEW B2
3/8"=1'-0"

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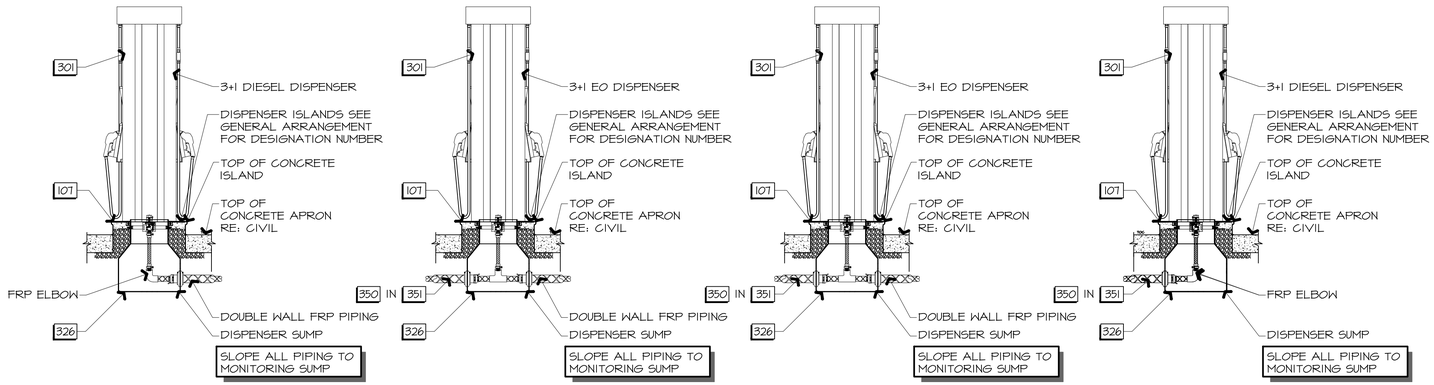

A1 DISPENSER SUMP-END VIEW B2

3/8" = 1'-0"

A1-XF404

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7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
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VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:

DISPENSER & ISLAND SECTION

SHEET NUMBER:

XF405

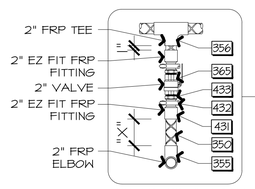
NOTES:
- ALL METAL PIPING COMPONENTS AND RISERS INSIDE THE TANK SUMPS SHALL BE BLACK IRON COAT/PRIME PER SPEC RE: XF101 UNLESS OTHERWISE NOTED.
- PRESET PUMP SETTING PER MANUFACTURERS INSTRUCTIONS

NOTES
- INSTALL CENTRALIZERS PER MANUFACTURES RECOMMENDATION AND 6" FROM END OF PIPING RUN.

NOTE:
LOCATION OF SUMP PENETRATION WILL VARY. THE INTENT OF THIS DRAWING IS TO ILLUSTRATE THE CORRECT PLACEMENT AND CONNECTION OF PIPING WITHIN THE SUMP.

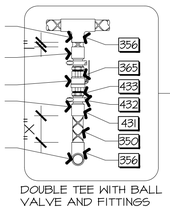
- ALL BALL VALVES TO BE SEALED WITH RECTORSEAL #5 PIPE THREAD SEALANT WITH TEFLON.
- ELECTRICAL CONDUITS NOT SHOWN FOR CLARITY
- All PIPING SHALL BE INSPECTED/CONFIRMED TO BE CLEAR OF ALL BEDDING MATERIAL, TRASH, ANY TYPE OF LIQUID OR DEBRIS PRIOR TO AND AFTER INSTALLATION.
- PREP SUMP FOR ALL FITTINGS WITH BRAVO SAND KIT #T-FF-SAND-FX (BY G.C.).
- COAT ALL FITTING AND PIPE PER MANUFACTURES INSTALLATION INSTRUCTION. INSURE ALL RAW FIBERGLASS AREAS HAVE BEEN NEATLY COATED WITH ADHESIVE.

INTELLIGENT PUMP CONTROL CONFIGURATIONS:
- DS 7 OR LESS WITH 3 UNLEADED TANKS
  - SEGMENT 1 - UNLEADED 1 = MASTER STP #1
  - SEGMENT 1 - UNLEADED 2= SATELLITE STP #1
  - SEGMENT 1 - UNLEADED 3= SATELLITE STP #2
- DS 7 OR LESS WITH 4 UNLEADED TANKS
  - SEGMENT 1 - UNLEADED 1 = MASTER STP #1
  - SEGMENT 1 - UNLEADED 2= SATELLITE STP #1
  - SEGMENT 1 - UNLEADED 3= SATELLITE STP #2
  - SEGMENT 1 - UNLEADED 4= SATELLITE STP #3
- DS 8 OR GREATER WITH 3 UNLEADED TANKS
  - SEGMENT 1 - UNLEADED 1 = MASTER STP #1
  - SEGMENT 1 - UNLEADED 2= SATELLITE STP #1
  - SEGMENT 2 - UNLEADED 2= SATELLITE STP #2
  - SEGMENT 2 - UNLEADED 3= MASTER STP #2
- DS 8 OR GREATER WITH 4 UNLEADED TANKS
  - SEGMENT 1 - UNLEADED 1 = MASTER STP #1
  - SEGMENT 1 - UNLEADED 2= SATELLITE STP #1
  - SEGMENT 2 - UNLEADED 2= SATELLITE STP #2
  - SEGMENT 2 - UNLEADED 3= MASTER STP #2
- VERTICAL WITH 3 UNLEADED TANKS (REMOTE OR OFFSET TANK LOCATION).
  - SEGMENT 1 - UNLEADED 1 = MASTER STP #1
  - SEGMENT 1 - UNLEADED 2= SATELLITE STP #1
  - SEGMENT 1 - UNLEADED 3= SATELLITE STP #2
- VERTICAL WITH 4 UNLEADED TANKS (REMOTE OR OFFSET TANK LOCATION).
  - SEGMENT 1 - UNLEADED 1 = MASTER STP #1
  - SEGMENT 1 - UNLEADED 2= SATELLITE STP #1
  - SEGMENT 1 - UNLEADED 3= SATELLITE STP #2
  - SEGMENT 1 - UNLEADED 4= SATELLITE STP #3

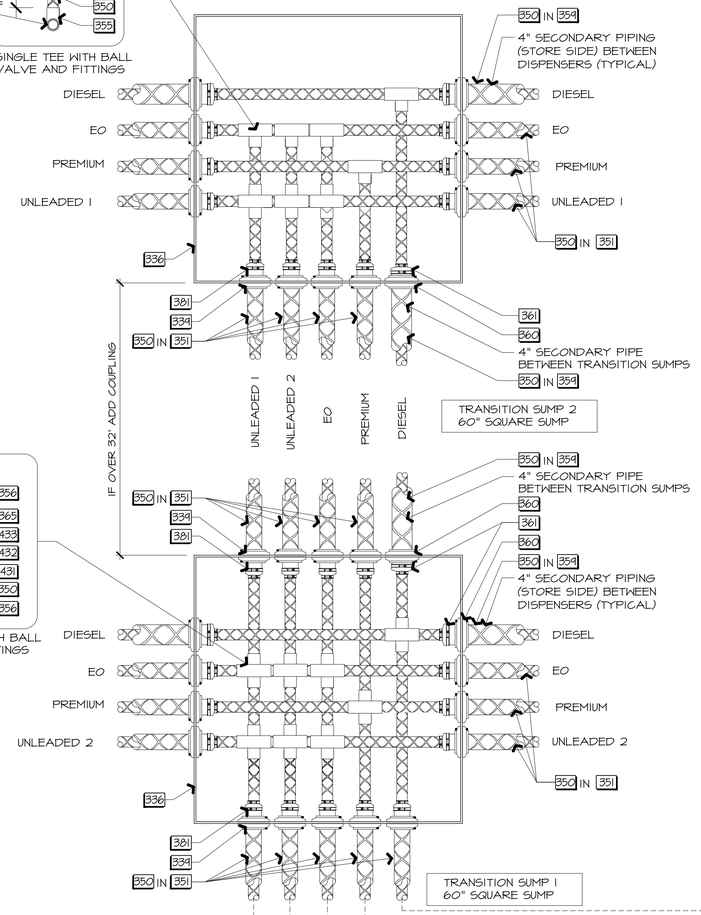


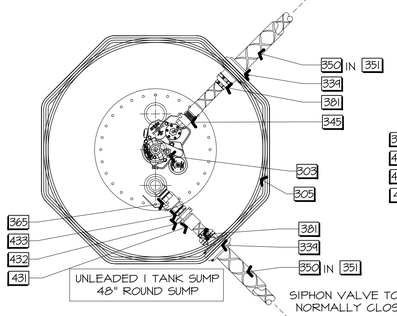
SINGLE TEE WITH BALL VALVE AND FITTINGS

GC TO COORDINATE TRANSITION SUMP BALL VALVE OPEN/CLOSE POSITIONS WITH QT CONSTRUCTION MANAGER. BALL VALVE HANDLES TO BE REMOVED IN TRANSITION SUMPS ONLY AND GIVEN TO QT CONSTRUCTION MANAGER AFTER OPEN/CLOSE POSITIONS ARE VERIFIED.

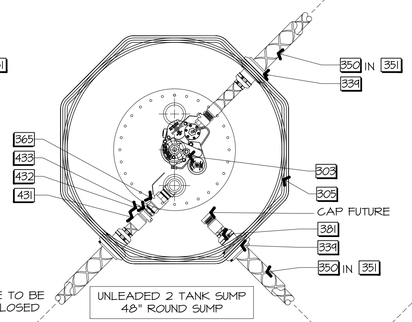


DOUBLE TEE WITH BALL VALVE AND FITTINGS

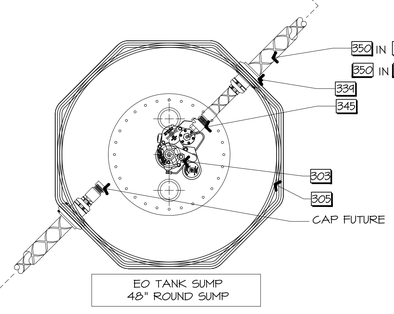




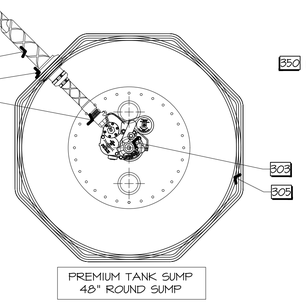
UNLEADED 1 TANK SUMP
48" ROUND SUMP



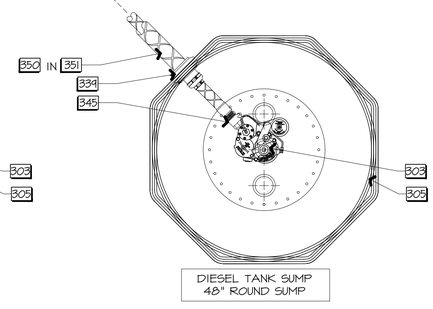
UNLEADED 2 TANK SUMP
48" ROUND SUMP



EO TANK SUMP
48" ROUND SUMP



PREMIUM TANK SUMP
48" ROUND SUMP



DIESEL TANK SUMP
48" ROUND SUMP

A1 TANK AND TRANSITION SUMP DETAILED PLAN B2
3/4" = 1'-0"

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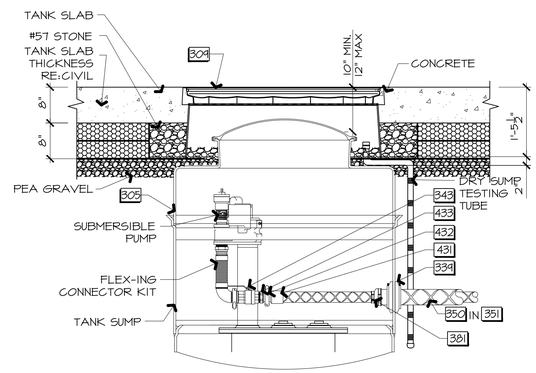
PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
UST, TRANSITION SUMP AND MISCELLANEOUS DETAILS

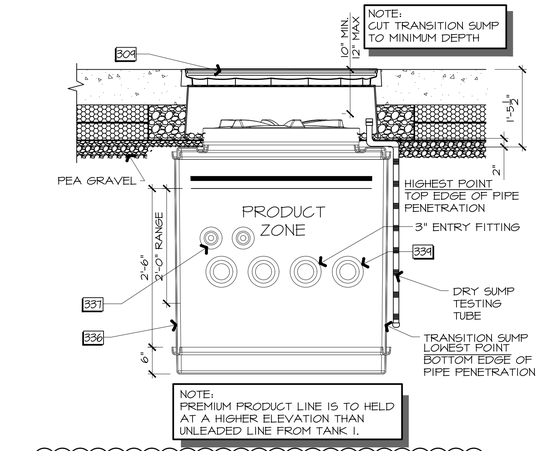
SHEET NUMBER:
XF406



B2

L13 TANK SUMP ELEVATION SHOWING ONLY PUMP DETAILS

3/4" = 1'-0"



F13 TRANSITION SUMP PENETRATION PLACEMENT

B2

3/4" = 1'-0"

A1 NOT USED

3/4" = 1'-0"

STATE OF TEXAS
DAVID M. LEIPER
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LICENSED
PROFESSIONAL ENGINEER
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REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

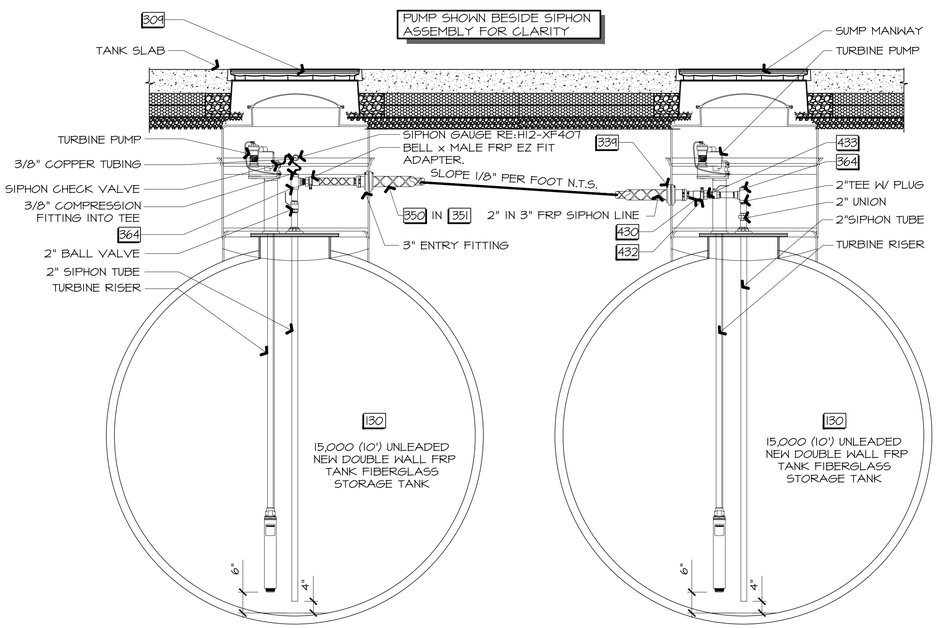
ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:

UST, TRANSITION SUMP AND MISCELLANEOUS DETAILS

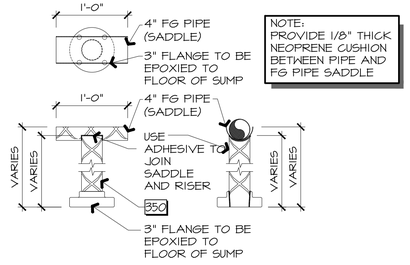
SHEET NUMBER:

XF406.1



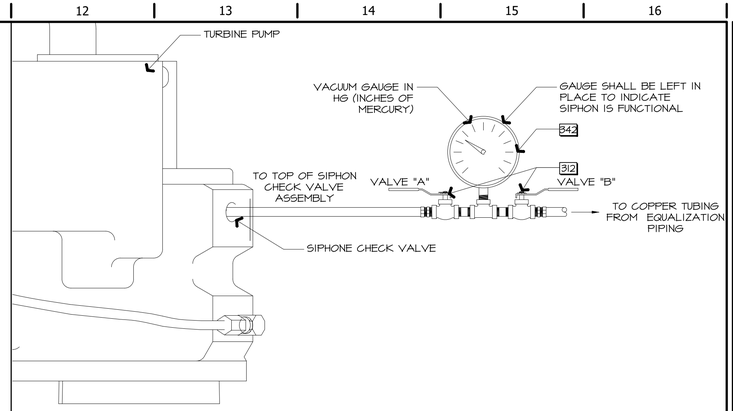
H1 | UNLEADED TANK SIPHON ONLY DETAILS | B2

1/2" = 1'-0"



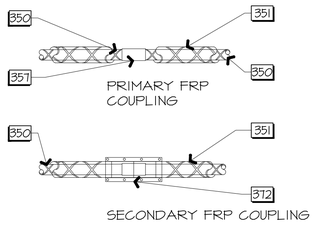
H8 | PIPE SUPPORT IN TRANSITION SUMP DETAIL | B2

1/2"=1'-0"



1. INSTALL TEST FIXTURE IN EQUALIZATION LINE AS SHOWN ABOVE.
2. RUN THE SUBMERSIBLES WITH DISPENSER NOZZLES CLOSED AND VALVE "A" CLOSED, VALVE "B" OPEN. THE NORMAL VACUM READINGS SHOULD BE 15-28". NOTE: HIGHER RVP FUELS AND/OR HIGHER FUEL TEMPERATURES CAN RESULT IN LOWER VACUUM READINGS . IF THE VACUUM IS SOMEWHAT LESS THAN 15" THERE IS THE POSSIBILITY OF BLOCKAGE IN THE SIPHON PASSAGES (PLUGGED SIPHON NOZZLE AND/OR VENTURI, PLUGGED SIPHON PORT, PLUGGED/PINCHED RETURN TUBE). TO REMEDY, CLEAN THE PASSAGES AND REPLACE IF NECESSARY. IF THE PASSAGES ARE CLEAN AND THE VACUUM READING IS ZERO OR VERY LOW, A LEAK MAY BE PRESENT IN THE FLOW PATH TO THE SIPHON JET OR IN THE DISCHARGE TUBE. PULL THE EXTRACTABLE PORTION AND REPAIR AS NECESSARY
3. RUN THE SUBMERSIBLE WITH DISPENSER NOZZLES CLOSED AND VALVE "A" CLOSED, VALVE "B" OPEN. WHEN THE VACUUM READING REACHES 15-28", SHUT THE PUMP OFF AND WAIT TWO MINUTES. IF THE READING DROPS TO ZERO, THE SIPHON CHECK VALVE IS NOT HOLDING. REMOVE AND CLEAN OR REPLACE. NOTE: SIPHON CHECK VALVES MAY HOLD AT HIGH VACUUMS, BUT LEAK UNDER LOW VACUUMS. TEST THE SIPHON CHECK VALVE AT A LOWER VACUUM BY BLEEDING THE VACUUM TO ABOUT 5" Hg AND REPEAT THE TEST
4. RUN THE SUBMERSIBLE WITH BOTH VALVES "A" AND "B" OPEN AND THE DISPENSER NOZZLES CLOSED FOR APPROXIMATELY 5-10 MINUTES. CLOSE VALVE "B" AND THEN SHUT OFF PUMP. IF VACUUM DROPS, THERE IS A LEAK IN THE EQUALIZATION LINE BETWEEN THE TANKS ABOVE THE LEVEL OF THE PRODUCT. REPAIR LEAKS AND REPEAT STEP 4
5. BOTH VALVES SHOULD BE IN THE "OPEN" POSITION DURING NORMAL OPERATIONS OF THE SYSTEM
6. WRITTEN VERIFICATION OF THE TESTING FOR EQUALIZATION SHALL BE SIGNED BY THE GENERAL CONTRACTOR AND TANK INSTALLER. VERIFICATION SHALL BE PROVIDED TO THE OWNER AS PART OF THE CLOSE OUT DOCUMENTS

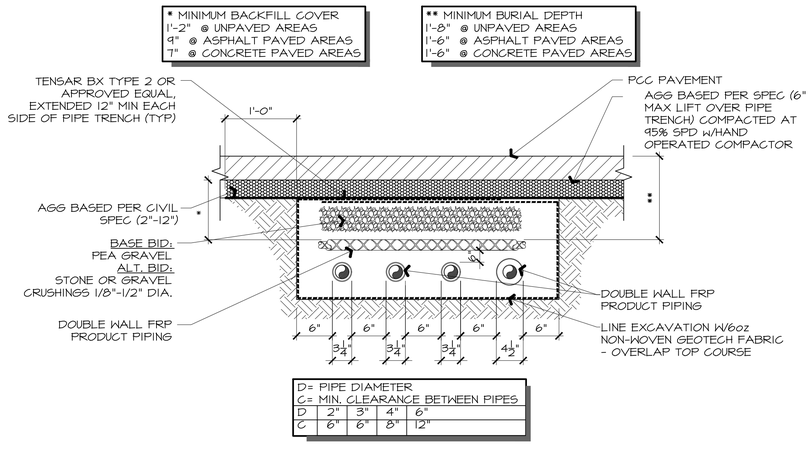
H12 | SIPHON GAUGE DETAIL



NOTE:
NEW FRP PIPING AND FITTING TO HAVE THE SAME MANUFACTURE.

A1 | DOUBLE WALL PIPE COUPLING DETAIL | B2

1/2" = 1'-0"

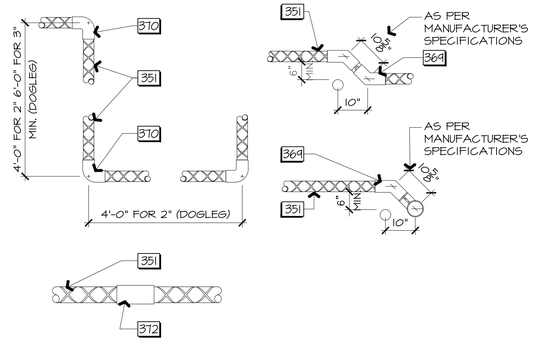


D= PIPE DIAMETER
C= MIN. CLEARANCE BETWEEN PIPES

D	2"	3"	4"	6"
C	6"	6"	8"	12"

A5 | UNDERGROUND PIPING TRENCH AND COVER DETAIL | B2

N.T.S.



A12 | FIBERGLASS PIPING FITTING AND CONNECTION TYPICAL DETAILS

N.T.S.

STATE OF TEXAS
DAVID M. KEMPER
101813
LICENSED
PROFESSIONAL ENGINEER
03/31/2023

CORESTATES, INC.
CERTIFICATE OF AUTHORIZATION
#F9349
EXPIRES 07-31-2023

SIGNATURE DATE:

CORE STATES GROUP
1700 Industrial Drive, Suite B
Round Rock, TX 78681
Phone: (512) 995-4400
Fax: (866) 393-8803

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

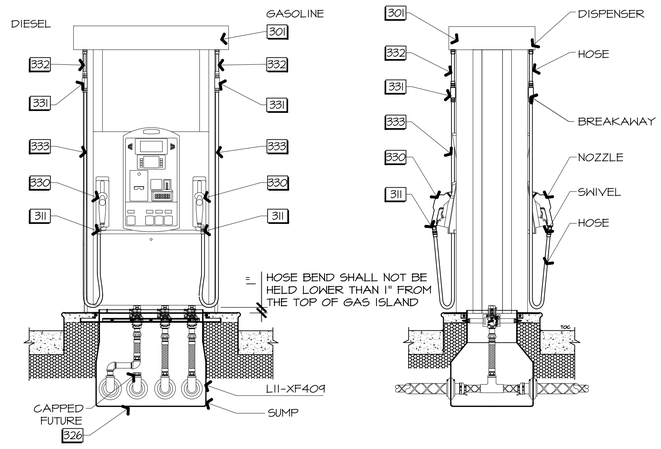
SHEET TITLE:
UST & PIPING DETAILS

SHEET NUMBER:
XF407

K1 NOT USED

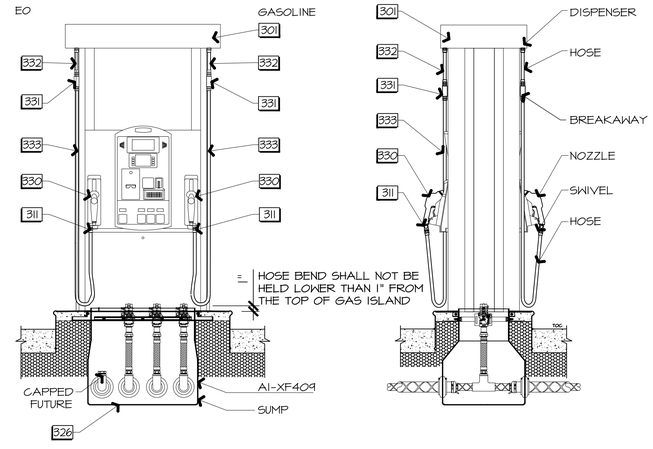
K7 3+1 DIESEL GASOLINE DISPENSER ELEVATION (B2)

1/2" = 1'-0"



K12 3+1 EO GASOLINE DISPENSER ELEVATION (B2)

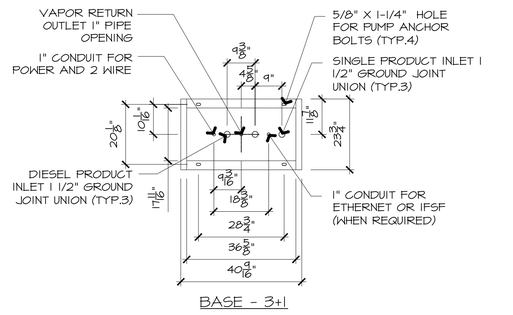
1/2" = 1'-0"



E1 NOT USED

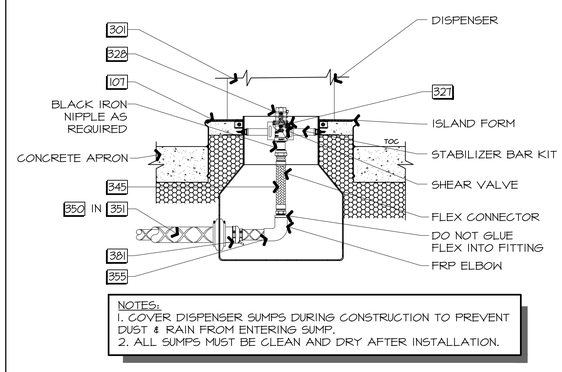
E4 DISPENSER FOOTPRINT 3+1

1/2" = 1'-0"



E8 PRODUCT CONNECTION END OF PIPING RUN (SECTION) (B2)

3/4" = 1'-0"

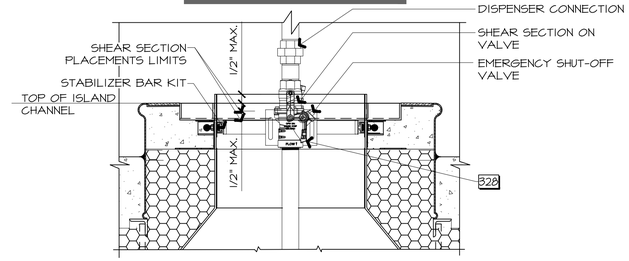


NOTES:
1. COVER DISPENSER SUMPS DURING CONSTRUCTION TO PREVENT DUST & RAIN FROM ENTERING SUMP.
2. ALL SUMPS MUST BE CLEAN AND DRY AFTER INSTALLATION.

E12 SHEAR VALVE DETAIL (FOR ADA ISLANDS)

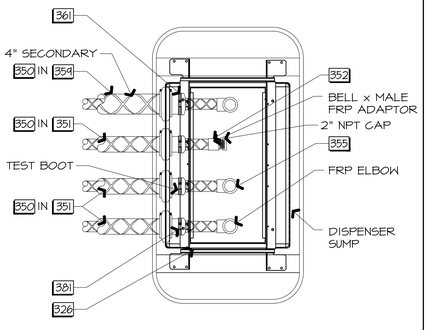
1 1/2" = 1'-0"

CONNECTION BETWEEN DISPENSER AND SHEAR VALVE BY G.C. UNLEADED GASOLINE & ETHANOL BLENDS SHALL BE GALVANIZED. DIESEL SHALL BE BLACK IRON.



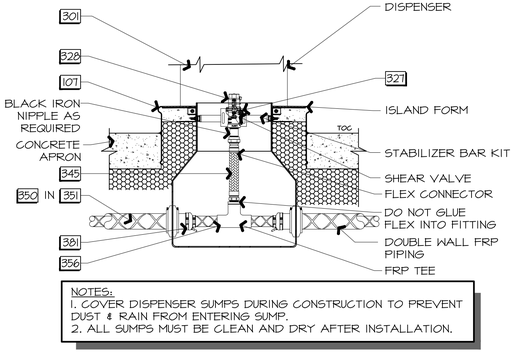
A1 END OF PIPING RUN (PLAN) (B2)

3/4" = 1'-0"



A4 PRODUCT CONNECTION AT ISLANDS THROUGH DETAIL (B2)

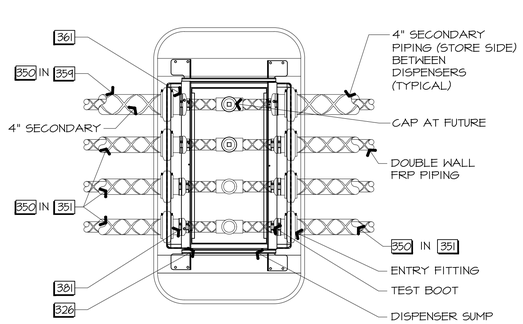
3/4" = 1'-0"



NOTES:
1. COVER DISPENSER SUMPS DURING CONSTRUCTION TO PREVENT DUST & RAIN FROM ENTERING SUMP.
2. ALL SUMPS MUST BE CLEAN AND DRY AFTER INSTALLATION.

A8 PRODUCT CONNECTION (B2)

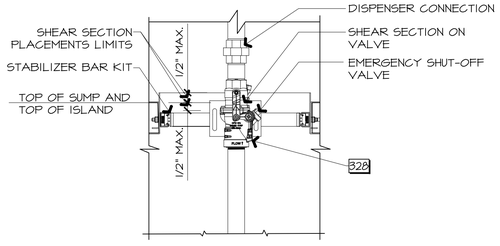
1 1/2" = 1'-0"



A12 SHEAR VALVE DETAIL (NON-ADA)

1 1/2" = 1'-0"

CONNECTION BETWEEN DISPENSER AND SHEAR VALVE BY G.C. UNLEADED GASOLINE & ETHANOL BLENDS SHALL BE GALVANIZED. DIESEL SHALL BE BLACK IRON.



STATE OF TEXAS
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107813
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09/30/2023

CORESTATES, INC.
CERTIFICATE OF AUTHORIZATION
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EXPIRES 07-31-2023

SIGNATURE DATE:

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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:

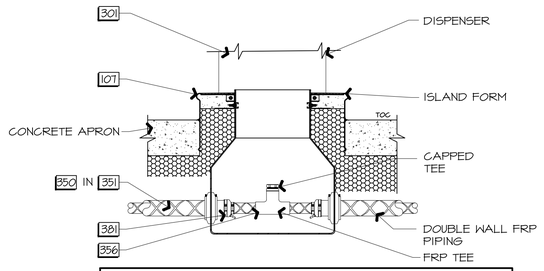
DISPENSER & PIPING DETAILS

SHEET NUMBER:

XF408

L1 FUTURE PRODUCT PIPING CONNECTION SHOWN ONLY (B2)

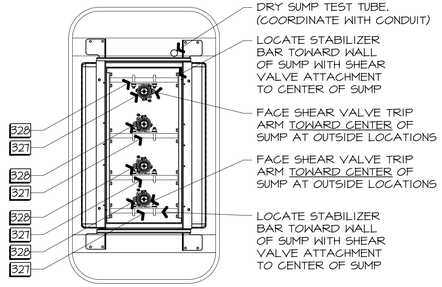
1 1/2" = 1'-0"



NOTES:
1. COVER DISPENSER SUMPS DURING CONSTRUCTION TO PREVENT DUST & RAIN FROM ENTERING SUMP.
2. ALL SUMPS MUST BE CLEAN AND DRY AFTER INSTALLATION.

L6 SHEAR VALVE INSTALLATION

1" = 1'-0"

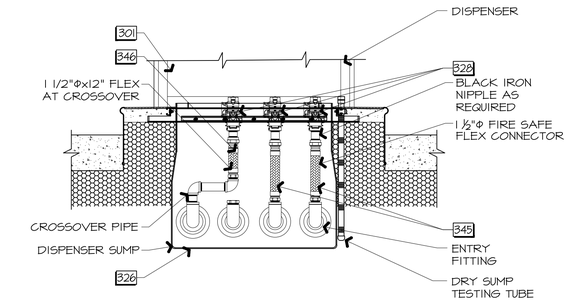


CONTRACTOR NOTE:
THE OUTSIDE SHEAR VALVES MUST HAVE TRIP ARM FACING TOWARD THE CENTER OF THE SUMP TO ALLOW CLEARANCE FOR UNOBSTRUCTED OPERATION.
PLACEMENT OF THE SHEAR VALVE WITH THE TRIP ARM TOWARD THE SUMP WALL IS NOT PERMITTED

CONTRACTOR NOTE:
AFTER INSTALLATION OF SHEAR VALVES INSURE THAT ALL TRIP ARMS HAVE CLEARANCE AND ARE FREE FROM OBSTRUCTIONS AND ANYTHING THAT WOULD IMPEDE PROPER OPERATION OF VALVE IN AN EMERGENCY SITUATION

L11 DIESEL CROSSOVER (B2)

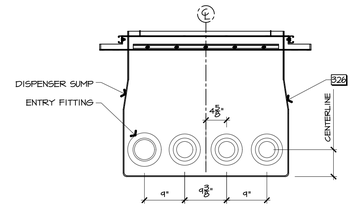
1 1/2" = 1'-0"



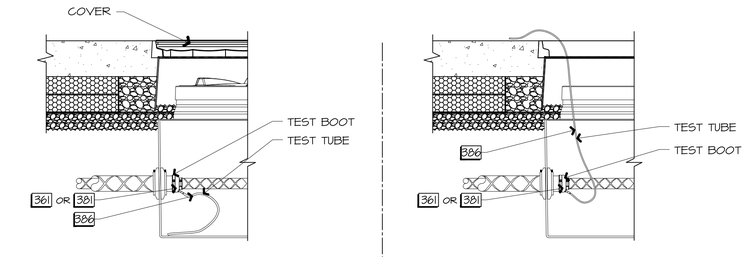
F1 NOT USED

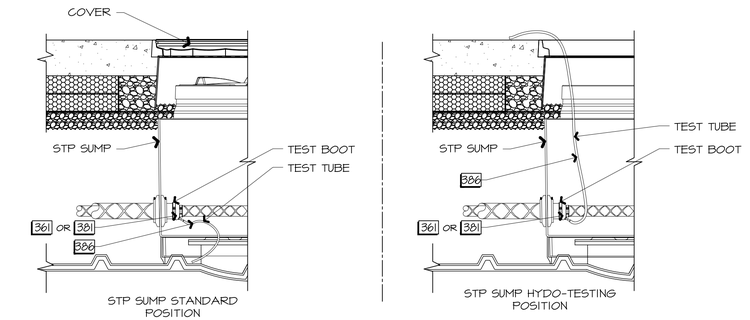
F6 SUMP DIMENSION DETAIL (B2)

1"=1'-0"



NOTES:
- PREP SUMP FOR ALL FITTINGS WITH BRAVO SAND KIT #T-FF-SAND-FX (BY G.C.).
- COAT ALL FITTING AND PIPE PER MANUFACTURES INSTALLATION INSTRUCTION, INSURE ALL RAW FIBERGLASS AREAS HAVE BEEN NEATLY COATED WITH ADHESIVE.

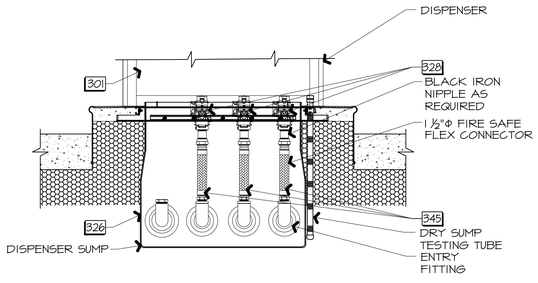




A1 3+1 DISPENSER SUMP SECTION (B2)

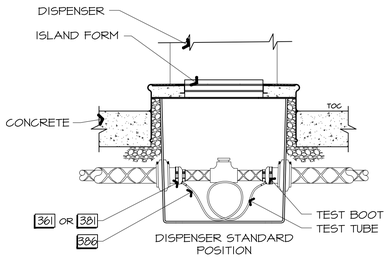
1" = 1'-0"

K8-XF408



A6 NOT USED

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



NOTES:
1. TEST TUBE SHALL BE LONG ENOUGH TO REACH TOP OF CONCRETE FOR HYDROSTATIC TESTING.
2. LEAVE TEST TUBES INTACT UNTIL PROJECT TURNOVER. DO NOT CUT TUBES.

A11 TEST TUBE DETAIL (B2)

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09/21/2022

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CERTIFICATE OF AUTHORIZATION
#F9349
EXPIRES 07-31-2023

SIGNATURE DATE:

CORE STATES GROUP
1700 Industrial Drive, Suite B
New Braunfels, TX 78130
Phone (470) 995-4400
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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

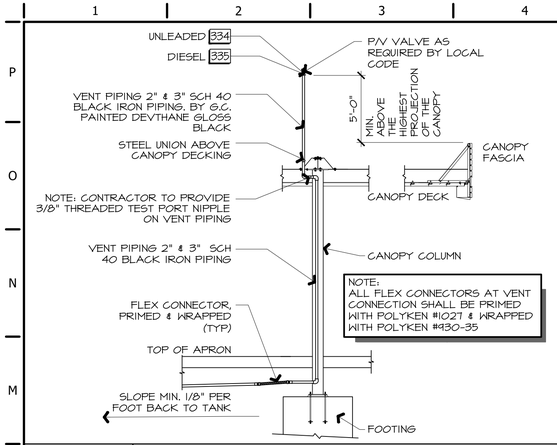
PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

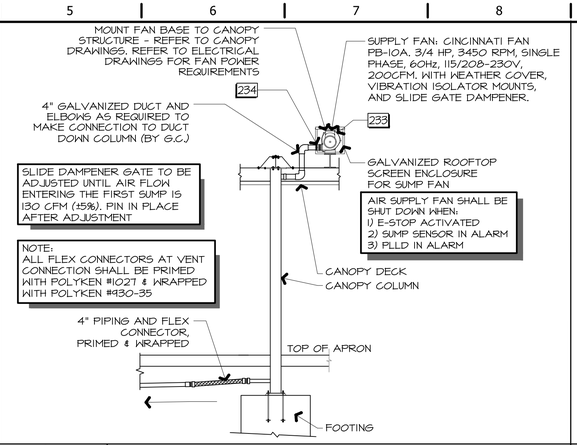
SHEET TITLE:
DISPENSER & PIPING DETAILS

SHEET NUMBER:
XF409



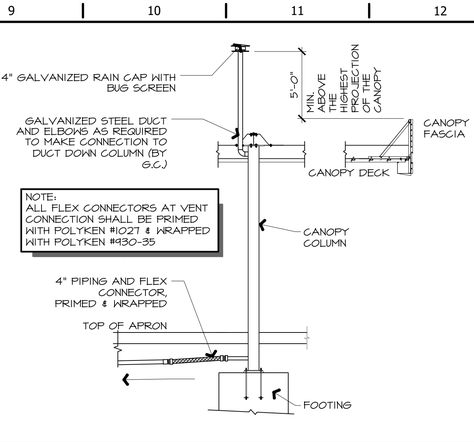
L1 VENT CONFIGURATION

3/16" = 1'-0"



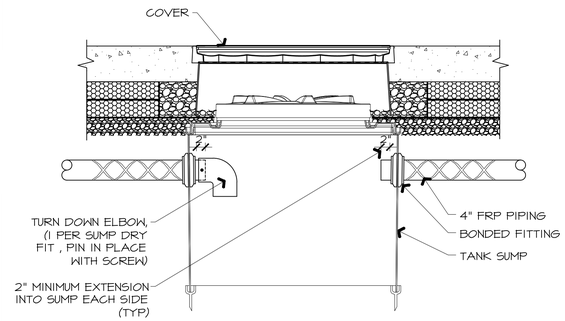
L5 SUMP VENTILATION INLET DETAIL

3/16" = 1'-0" | A1-XF410



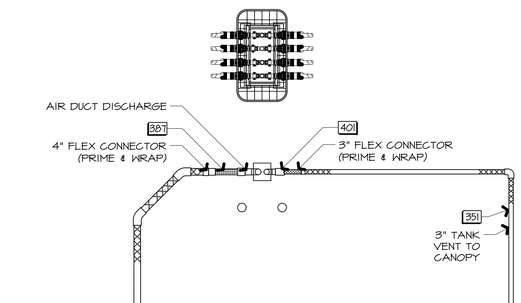
L9 SUMP VENTILATION DISCHARGE DETAIL

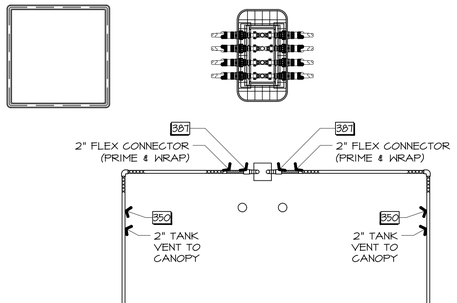
3/16" = 1'-0" | A1-XF410

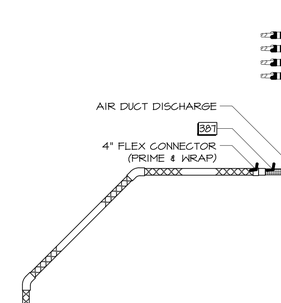


L13 SUMP SECTION

3/4" = 1'-0" | A1-XF410

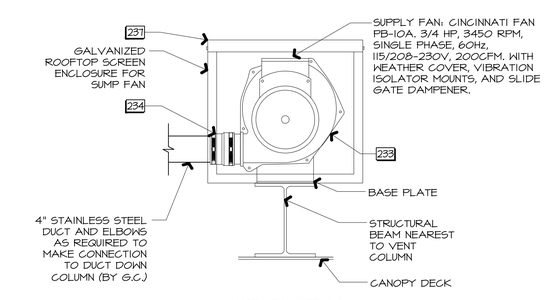




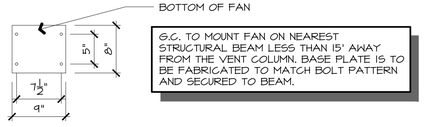


A1 VENT/DUCT PIPING ENLARGED DETAIL B2 B4

1/4" = 1'-0"



CANOPY FAN DETAILS

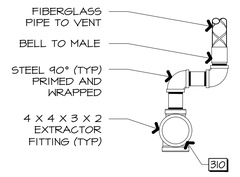


BOLT PATTERN DIMENSIONS

E13 CANOPY FAN DETAILS

1" = 1'-0" | A1-XF410

METAL PIPING COMPONENTS INSIDE THE TANK SUMPS SHALL BE BLACK IRON PRIMED/COATED PER SPEC RE: XF101 UNLESS OTHERWISE NOTED.



2" & 3" VENT LOCATIONS

A15 SWING JOINT DETAIL

1" = 1'-0" | A1-XF410

CORESTATES, INC.
CERTIFICATE OF AUTHORIZATION #9349
EXPIRES 07-31-2023
SIGNATURE DATE:

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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
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DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE
B4	03/27/23	COORDINATION

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
VAPOR, VENT DETAILS

SHEET NUMBER:
XF410

P:\QuikTrip\Leander, TX (4160)-QTR.XXXXX\Design Files\Fuel\4160-XF410.0.dwg, 3/31/2023 11:05:44 AM, AutoCAD PDF (General Documentation).pc3

LEGEND

EQUIPMENT LOCATION ON SITE

ABBREVIATION	INSTALLATION LOCATION IN SYSTEM
U.A.	UST AREA
D.A.	DISPENSER AREA
U.S.	UST SUMP
T.S.	TRANSITION SUMP
D.S.	DISPENSER SUMP
T.T.E.	TANK TOP EQUIPMENT
S.B.	STORE BUILDING

COUNTY / AREA SENSITIVE EQUIPMENT

ABBREVIATION	FACILITY LOCATION	STATE	VAPOR RECOVERY REQUIRED
(ATL)	ATLANTA AREA	GEORGIA	STAGE I
(DAL)	DALLAS AREA	TEXAS	STAGE I
(OMA)	OMAHA AREA	NEBRASKA	STAGE I
(IWA)	IOWA AREA	IOWA	STAGE I
(STL)	ST. LOUIS AREA	MISSOURI	STAGE I
(PHX)	PHOENIX AREA	ARIZONA	STAGE I
(KC)	KANSAS CITY AREA	KANSAS	STAGE I
(WIC)	WICHITA AREA	KANSAS	STAGE I
(TUL)	TULSA AREA	OKLAHOMA	STAGE I
(TUC)	TUCSON AREA	ARIZONA	STAGE I
(NC)	CHARLOTTE AREA	N. CAROLINA	STAGE I
(SC)	SOUTH CAROLINA AREA	S. CAROLINA	STAGE I

PARTS LISTED IN BILL OF MATERIAL WITHOUT ADDED ABBREVIATION IN THE EQUIPMENT DESCRIPTION ARE STANDARD

QUIKTRIP SUPPLIED / INSTALLED SUMMARY

AREA AND ITEM DESCRIPTION	SUPPLIED BY OWNER / VENDOR	RECEIVED BY OWNER / VENDOR	INSTALLED BY OWNER / VENDOR		SUPPLIED BY CONTRACTOR	RECEIVED BY CONTRACTOR	INSTALLED BY CONTRACTOR	FINAL CONNECTIONS & TESTING BY CONTRACTOR
T UNDERGROUND TANKS								
1 GASOLINE TANKS	●					●	●	●
2 TANK ANCHORING EQUIPMENT	●					●	●	●
3 TANK TOP EQUIPMENT	●					●	●	●
4 SUBMERSIBLE PUMPS	●					●	●	●
G GAS CANOPY								
1 GAS CANOPY (NO LIGHTS)	●	●	●					
2 CANOPY SIGNAGE	●	●	●					●
3 CANOPY ANCHOR BOLTS	●					●	●	●
4 DISPENSERS	●					●	●	●
5 DISPENSER NUMBERS, SIGNAGE & DECALS	●					●	●	●
6 PAPER TOWEL HOLDERS	●					●	●	●
7 FIRE EXTINGUISHERS & CABINETS					●	●	●	●
8 TRASH CANS	●					●	●	
9 BUG BUCKETS/SQUEEGEES	●					●	●	●
10 COMMUNICATION	●	●	●					
11 E-STOPS					●	●	●	●
12 FITTINGS AND PIPING	●					●	●	●
13 HOSES AND NOZZLES	●					●	●	●
14 CANOPY DRAINS AND DRAIN LINES					●	●	●	●
15 CANOPY LIGHTS	●					●	●	●
16 CAMERAS	●	●					●	
17 INTERCOM SYSTEM	●					●	●	●
18 WIRING (POWER,DATA,& INTERCOM)					●	●	●	●
19 VEEDER ROOT SYSTEM	●						●	●
20 VEEDER ROOT WIRING (BELDEN 8760)	●					●	●	●
21 FUEL EQUIPMENT, DATA BOXES, GSM, PAM, ETC.	●					●	●	●
22 FUEL PRE- MANUFACTURED PANELS, TRANSFORMERS , UPS UNITS, & ISOLATION BOXES	●					●	●	●
23 CERAMIC TILE (CONTINENTAL SLATE CS53 "ASIAN BLACK" 6X6, LATICRETE PERMACOLOR "BLACK" 22 GROUT)	●					●	●	

GENERAL EQUIPMENT

TAG	EQUIPMENT DESCRIPTION	PROVIDED	MFG MODEL #	LOCATION	QUANTITY
101	20,000 GALLON DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANKS.	OWNER	660-219-00	U.A.	-
102	12,000 GALLON DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANKS	OWNER	660-216-00	U.A.	-
103	TANK HOLD DOWN STRAPS	OWNER	10 FOOT STRAP	U.A.	20
			8 FOOT STRAP		0
104	TURNBUCKLE - GALVANIZED	OWNER	10 FOOT TURNBUCKLE	U.A.	40
			8 FOOT TURNBUCKLE		0
105	CONCRETE DEADMAN CAST IN PLACE. SEE QUIKTRIP REPRESENTATIVE FOR REQUIREMENTS	CONTRACTOR	-	U.A.	-
106	NUMBER CURRENTLY NOT USED	-	-	-	-
107	STEEL ISLAND FORMS 2'-8"X5'-0"	OWNER	#RS-2.8X513 GALV	D.A.	4
	STEEL ISLAND FORMS 2'-8"X5'-0" (ADA)		#RS-1G32051309QF		4
108	NUMBER CURRENTLY NOT USED	-	-	-	-
109	DEEP BURY TANK STICK 3 PC 20'	OWNER	BG-3S20	U.A.	1
110	NUMBER CURRENTLY NOT USED	-	-	-	-
111	FIRE EXTINGUISHER MIN. SIZE AS PER LOCAL INSPECTOR	OWNER	SUPPLIED LOCALLY	D.A.	2
112	SAMSON IND. FIRE EXTINGUISHER CABINET WHITE W/ HAMMER AND CHAIN. SURFACE MOUNT OR EQUAL	CONTRACTOR	#9263Z30	D.A.	2
113	WASHER BUCKET W/QT GRAPHICS,	OWNER	DC-SWBC-GH	D.A.	16
114	NUMBER CURRENTLY NOT USED	-	-	-	-
115	12" DIA MONITOR/OBSERVATION WELL MANWAY	OWNER	OPW 104A0W-1200	U.A.	2
116	6 INCH DIA MONITOR/OBSERVATION WELL CAP	OWNER	GRAINGER- 270261	U.A.	2
117	6 INCH FACTORY SLOTTED PVC PIPE, >02 SLOTS OR PER LOCAL REQUIREMENTS W/ CAPPED BOTTOM. ATLANTIC SCREEN OR EQUIV.	CONTRACTOR	-	U.A.	-
118	18" DIA MONITOR/OBSERVATION WELL MANWAY	OWNER	OPW 104A0W-1800	U.A.	1
119	12" DIA MONITOR/OBSERVATION WELL CAP	OWNER	TITAN CAP-12	U.A.	1
120	12" FACTORY SLOTTED PVC PIPE, >02 " SLOTS OR PER LOCAL REQUIREMENTS W/ CAPPED BOTTOM. ATLANTIC SCREEN OR EQUIV.	CONTRACTOR	-	U.A.	-
121	STEEL BOLLARD W/ CAP AND SLEEVE BY S&M- SCH40 (END PAINTED ORANGE)	OWNER	E823240	D.A.	16
122	STEEL BOLLARD W/ CAP AND SLEEVE BY S&M -SCH80 (END PAINTED GREEN)	OWNER	E826216	D.A.	16
123	BACKFILL SHIELD MATERIAL APPROVED BY SITE REPRESENTATIVE	CONTRACTOR	-	U.A.	-
124	20,000 GALLON DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANKS.	OWNER	660-225-00	U.A.	-
125	19,500 GALLON, COMPARTMENTAL DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANK, 10/9500 SPLIT, PREMIUM / PRODUCT X	OWNER	660-226-00	U.A.	-
126	12,000 GALLON DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANKS.	OWNER	660-223-00	U.A.	-
127	NUMBER CURRENTLY NOT USED	-	-	-	-
128	19,500 GALLON, COMPARTMENTAL DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANK, 10/9500 SPLIT, PREMIUM / PRODUCT X	OWNER	660-221-00	U.A.	-
129	12,000 GALLON DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANK (10' DIAMETER)	OWNER	660-224-00	U.A.	-
130	15,000 GALLON DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANK (10' DIAMETER) SW CONTAINMENT COLLAR AND 60" HIGH 8 SIDED SW SUMP WITH 36" DIA WATERTIGHT TOP COVER	OWNER	658-546-01	U.A.	5
131	12,000 GALLON DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANK (10' DIAMETER)	OWNER	660-217-00	U.A.	-
132	20,000 GALLON DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANK (10' DIAMETER)(SQUARE SUMP)	OWNER	660-802-00	U.A.	-
133	GAS DISPENSER FILTER (PETRO CLEAR)	OWNER	PF-40510P-AD	D.A.	-
134	AUTO DIESEL FILTER (PETRO CLEAR)	OWNER	PF-40530P-AD	D.A.	-

SUBMERSIBLE PUMP OPTIONS

VERTICAL 6-8 LAYOUTS	DOUBLE STACKED 9-12 LAYOUTS
4HP PUMP FOR UNLEADED 1 4HP PUMP FOR UNLEADED 2 4HP PUMP FOR PREMIUM (IF <500' OF PIPING) 4HP PUMP FOR DIESEL (IF <500' OF PIPING) 4HP PUMP FOR E0/FLEX FUEL (IF <500' OF PIPING)	4HP PUMP FOR UNLEADED 1 4HP PUMP FOR UNLEADED 2 4HP PUMP FOR PREMIUM (IF <500' OF PIPING) 4HP PUMP FOR DIESEL (IF <500' OF PIPING) 4HP PUMP FOR E0/FLEX FUEL (IF <500' OF PIPING)
VERTICAL 9-12 LAYOUT	**DOUBLE STACKED 14 LAYOUTS**
4HP PUMP FOR UNLEADED 1 4HP PUMP FOR UNLEADED 2 4HP PUMP FOR PREMIUM (IF <500' OF PIPING) 4HP PUMP FOR DIESEL (IF <500' OF PIPING) 4HP PUMP FOR E0/FLEX FUEL (IF <500' OF PIPING)	(2)4HP PUMP IN TANDEM FOR UNLEADED 1 (2)4HP PUMP IN TANDEM FOR UNLEADED 2 4HP PUMP FOR PREMIUM (IF <500' OF PIPING) 4HP PUMP FOR DIESEL (IF <500' OF PIPING) 4HP PUMP FOR E0/FLEX FUEL (IF <500' OF PIPING)
DOUBLE STACKED 6-8 LAYOUTS	
4HP PUMP FOR UNLEADED 1 4HP PUMP FOR UNLEADED 2 4HP PUMP FOR PREMIUM (IF <500' OF PIPING) 4HP PUMP FOR DIESEL (IF <500' OF PIPING) 4HP PUMP FOR E0/FLEX FUEL (IF <500' OF PIPING)	

ELECTRICAL EQUIPMENT

TAG	EQUIPMENT DESCRIPTION	PROVIDED	MFG MODEL #	LOCATION	QUANTITY
201	NUMBER CURRENTLY NOT USED	-	-	-	-
202	NUMBER CURRENTLY NOT USED	-	-	-	-
203	NUMBER CURRENTLY NOT USED	-	-	-	-
204	NUMBER CURRENTLY NOT USED	-	-	-	-
205	F.E. PETRO 2/4HP VFC PUMP CONTROL BOX	OWNER	MODEL FE-MAG-VFC	S.B.	5
206	NUMBER CURRENTLY NOT USED	-	-	-	-
207	ISLAND EMERGENCY SHUTDOWN SWITCH - PILLA ELECTRICAL PRODUCTS INC.- SURFACE MOUNT NEMA	CONTRACTOR	FS120MO GRYCLM	D.A.	-
208	E-STOP BUTTON (INSTALLED AT RETAIL CASHIER)	CONTRACTOR	20C794	S.B.	-
209	NUMBER CURRENTLY NOT USED	-	-	-	-
210	WEATHER-PROOF JUNCTION BOX (INTRINSICALLY SAFE WIRING COMPONENTS)	CONTRACTOR	-	D.A./D.S./U.S./T.S.	-
211	EXPLOSION PROOF JUNCTION BOX	CONTRACTOR	-	-	-
212	SEAL FITTING (SIZE TO SUIT)	CONTRACTOR	-	-	-
213	UNION (SIZE TO SUIT)	CONTRACTOR	-	-	-
214	VEEDER-ROOT: TLS 450 CONSOLE W/PRINTER INCLUDES:	OWNER	VEEDER-ROOT: VR-860090-301	S.B.	1
	USB/ETHERNET DUAL MODULE		VR-332913-001		
	RS-232 DUAL INTERFACE MODULE		VR-332868-001		
	UNIVERSAL SENSOR/PROBE MODULE		VR-332812-001		
	UNIVERSAL INPUT/OUTPUT MODULE		VR-332813-001		
	RISK MGMT LEAK DETECT - PLLD		VR-332972-008		
	INTELLIGENT PUMP CONTROL SOFTWARE		VR-332972-028		-
215	VEEDER-ROOT MAGNETOSTRICTIVE TANK PROBE (8')	OWNER	VR-846396-107	T.T.E.	-
216	VEEDER-ROOT MAGNETOSTRICTIVE TANK PROBE (10')	OWNER	VR-846396-109	T.T.E.	5
217	VEEDER-ROOT DUAL-POINT SINGLE FLOAT HYDROSTATIC SENSOR	OWNER	VR-794380-303	T.T.E.	5
218	VEEDER-ROOT SUMP SENSOR (W/12' CABLE)	OWNER	VR-794380-208	D.S./U.S./T.S.	15
	VEEDER-ROOT SUMP SENSOR (W/30' CABLE)		VR-794380-209		-
219	VEEDER-ROOT 4 INCH DIESEL FLOAT KIT W/10' CABLE	OWNER	VR-846400-011	T.T.E.	1
	VEEDER-ROOT PHASE SEP GAS FLOAT KIT W/10' CABLE		VR-886100-010		4
220	4" ATG CAP & ADAPTER	OWNER	305 XPA-1100AK EVR	T.T.E.	5
221	VEEDER-ROOT ELECTRONIC LINE LEAK DETECTOR	OWNER	VR-859080-001	U.S.	5
222	GILBARCO UNIVERSAL DISTRIBUTION BOX	OWNER	-	S.B.	1
223	3M INTERCOM 20 STATION COMM CONTROLLER MODEL	OWNER	ES-941-0064	S.B.	1
	3M 4 STATION I/O CARD		ES-941-0063		
	3M COMBO STATION SELECTOR		ES-941-0061		
	3M CEILING SPEAKER,		78-6911-1530-3		3
	CEILING T-BAR SUPPORT,		78-6911-1503-TB		3
	ANS AMPLIFIER (10 WATT),		BG-220		1
224	2" INTERSTITIAL SENSOR CAP & ADAPTOR	OWNER	VR-312020-928	T.T.E.	-
225	NUMBER CURRENTLY NOT USED	-	-	-	-
227	PIPE TRACING TAPE - HANSON CO	OWNER	16632	-	1000 FT
230	ALTERNATIVE FLUIDS MAG PLUS PROBE - 10' TANK	OWNER	VR-846397-409	-	-
231	VEEDER-ROOT E85 FLOAT KIT-10' CABLE	OWNER	VR-846400-014	-	-
232	WINDY CITY - 18 AWG 2-CONDUCTOR SHIELDED CABLE	OWNER	FEP-18-02-0AS	-	10
233	CINCINNATI FAN (CANOPY) 3/4 HP SINGLE PHASE, 60Hz, 115/208-230V 200CFM. 3450 RPM WITH WEATHER COVER, VIBRATION ISOLATOR MOUNT AND SLIDE GATE DAMPENER. INTAKE SCREEN	OWNER	PB-10A E820006 SIDE DRAFT	-	1
234	CINCINNATI FAN (GROUND) 3/4 HP SINGLE PHASE, 60Hz, 115/208-230V 200CFM. 3450 RPM WITH WEATHER COVER, VIBRATION ISOLATOR MOUNT AND SLIDE GATE DAMPENER. INTAKE SCREEN	OWNER	PB-10A E820005 DOWN DRAFT	-	-
235	FERNCO 4" BOOT FOR CANOPY FAN	OWNER	1051-44	-	1
236	GALVANIZED SCREEN FAN ENCLOSURE	OWNER	E822810	-	1
237	GROUND MOUNTED FAN CAGE	OWNER	E817542	-	-
238	MULITPORT SENSOR HOLDER	OWNER	AH-650450	-	-
239	VEEDER-ROOT MAGNETOSTRICTIVE TANK PROBE (11')	OWNER	VR-846396-111	T.T.E.	-
240	VEEDER-ROOT MAGNETOSTRICTIVE TANK PROBE (12')	OWNER	VR-846396-112	T.T.E.	-
241	KIT,ENC SIDE CONDUIT ENTRY HARDWARE	OWNER	M07838K001	D.S./D.A.	48

NOTE: ALL EQUIPMENT INSTALLED BY CONTRACTOR UNLESS SPECIFIED OTHERWISE BY MANUFACTURER OR FIELD CONSTRUCTION MANAGER.

NOTE: THIS MATERIALS EQUIPMENT SCHEDULE IS NOT A COMPLETE LIST OF MATERIALS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MISCELLANEOUS EQUIPMENT, FITTINGS, MATERIALS AND DEVICES NECESSARY TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. CONTRACTOR TO COORDINATE MATERIALS DELIVERY SCHEDULE AND VERIFY EQUIPMENT COUNTS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THAT ALL EQUIPMENT ARRIVES AT SITE IN UNDAMAGED CONDITION.
CONTRACTOR AND/OR SUBCONTRACTOR RESPONSIBLE TO CONFIRM ACTUAL QUANTITIES OF MATERIALS/EQUIPMENT NECESSARY FOR COMPLETE AND OPERABLE SYSTEM.

A1 BILL OF MATERIALS B2
NTS

STATE OF TEXAS
DAVID M. LEIFFER
101813
LICENSED PROFESSIONAL ENGINEER
03/31/2023
CORESTATES, INC.
CERTIFICATE OF AUTHORIZATION
#F9349
EXPIRES 07-31-2023
SIGNATURE DATE:
CORE STATES GROUP
1700 Industrial Drive, Suite B
Rogers, AR 72756
Phone (479) 986-4400
Fax (866) 593-8803

QuikTrip No. 4160
7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:
BILL OF MATERIALS

SHEET NUMBER:
XF600

MECHANICAL EQUIPMENT

TAG	EQUIPMENT DESCRIPTION	PROVIDED	MFG MODEL #	LOCATION	QUANTITY
301	GILBARCO ENCORE 700S DISPENSERS, 3+0 BLENDER, MODEL NNI GASOLINE DISPENSER (REFURBISHED BY QT)	OWNER	NNI E696976	D.A.	-
	GILBARCO ENCORE 700S DISPENSERS, 3+1 BLENDER, MODEL NLI GASOLINE DISPENSER - DIESEL		NLI E696984		4
	(OMA) & (IWA) 3 PRODUCT (1 HOSE) GILBARCO ENCORE 700S DISPENSERS, MODEL NGO GASOLINE DISPENSER		NGO E696968		-
	(OMA) & (IWA) 4 PRODUCT (2 HOSES) GILBARCO ENCORE 700S DISPENSERS, MODEL NGO GASOLINE DISPENSER		NGI E697004		-
	GILBARCO ENCORE 700S DISPENSERS, 3+1 BLENDER, MODEL NLI GASOLINE DISPENSER - E0		NLI E677791		4
	GILBARCO ENCORE 700S DISPENSERS, 3+1 BLENDER, MODEL NLI GASOLINE DISPENSER - (DALLAS, TARRENT, COLIN, DENTON COUNTIES-E15)		NLI E818033		-
302	FE PETRO SIPHON CHECK VALVE KIT	OWNER	400137937	U.S.	1
303	FE PETRO 4 HP, VARIABLE SPEED SUBMERGED PUMP - ONE SIPHON SIPHON CARTRIDGE PER PUMP, 24" BLACK IRON RISER. 22 PSI "TYPE R" CHECK VALVE. (UNLEADED, PREMIUM E0, E15, DIESEL)	OWNER	ISTMV54-VL2 W/EPOXY PAINTED	U.S.	5
304	FE PETRO 65 PSI CHECK VALVE	OWNER	FE-402459931	U.S.	0
305	PETROLEUM CONTAINMENT 46 IN SQUARE CONTAINMENT TANK SUMP	OWNER	TSM464652-NCO-QT	U.A.	5
306	BRAVO DOUBLE WALL 48" ROUND CONTAINMENT SUMP. W/ BRINE SENSOR	OWNER	INCLUDED W/ XERXES TANK	T.S.	-
307	NOT USED	-	-	-	-
308	46" SQ FIBERGLASS SUMP COLLAR FROM TANK MANUFACTURER	OWNER	-	U.S.	-
309	FIBERLITE 40" DIAMETER COMPOSITE COVER W/SKIRT	OWNER	FL100	U.S.	7
310	EXTRACTOR W/CAGE - OPW (4X4X3X2 CROSS)	OWNER	233-4432	T.T.E.	5
311	NON STAGE II SWIVEL - (ALL DIV EXCEPT PHX)	OWNER	241TPS-0241	D.A.	32
312	HOSEXPRESS 1/4" BRASS BALL VALVE	CONTRACTOR	BBV25	U.A.	-
313	NOT USED	-	-	-	-
314	OPW DOUBLE WALL EDGE SPILL CONTAINER W/DRAIN VALVE	OWNER	1SC-3112D	T.T.E.	5
315	OPW FACE SEAL ADAPTER	OWNER	FSA-400-S	T.T.E.	5
316	OPW JACK SCREW (DROP TUBE LOCK)	OWNER	61J5K-44CB	T.T.E.	5
317	OPW (4") SWIVEL ADAPTER EVR (GAS)	OWNER	615ALP-1020-EVR	T.T.E.	5
318	OPW ADAPTER 4" TOP SEAL CAP	OWNER	OPW 634LPC-0400	T.T.E.	5
319	FILL TAG ID MARKER-UNLEADED	OWNER	US-FPI-125U	T.T.E.	2
320	FILL TAG ID MARKER-PREMIUM	OWNER	US-FPI-125P	T.T.E.	1
321	FILL TAG ID MARKER- DIESEL	OWNER	US-FPI-125D	T.T.E.	1
322	OPW SINGLE WALL EDGE SPILL BUCKET W/ PLUG (STANDARD)	OWNER	1SC-3101P	T.T.E.	5
323	OPW STAGE I VAPOR RECOVER CAP	OWNER	1711T-7085-EVR	T.T.E.	4
324	VAPOR TAG ID MARKER-ORANGE,	OWNER	US-FPI-22	T.T.E.	5
325	FIBRELITE 18' FLAT SEALED COMPOSITE COVER, FRAME & SKIRT	OWNER	FL180	T.T.E.	10
326	BRAVO DOUBLE ENTRY CONDUITLESS DISPENSER SUMP FOR GILBARCO ENCORE W/FRAME (SW FRP)	OWNER	BI380-S33-QT	D.S.	4
			BI38A-S33-QT (ADA)		4
327	PETROLEUM CONTAINMENT SHEAR VALVE STABILIZER BARS (1 PER PRODUCT)	OWNER	BK-1000-ENC	D.S.	12
			BK-8000-QTADA (ADA)		12
328	OPW DOUBLE POPPET SHEAR VALVE PER PRODUCT	OWNER	1OP-0152	D.S.	24
329	LOW PROFILE VAPOR CAP	OWNER	1711LPC-300	T.T.E.	-

MECHANICAL EQUIPMENT

TAG	EQUIPMENT DESCRIPTION	PROVIDED	MFG MODEL #	LOCATION	QUANTITY
330	PRODUCT NOZZLE: NON STAGE II AREA (STANDARD) OPW GASOLINE NOZZLE REGULAR AUTOMATIC-CLOSING	OWNER	11BP-0400	D.A.	24
	PRODUCT NOZZLE: NON STAGE II AREA (DIESEL) OPW DIESEL NOZZLE REGULAR AUTOMATIC-CLOSING		11B-0400		8
	(OMA) & (IWA) HUSKY GASOLINE NOZZLE REGULAR AUTOMATIC-CLOSING		159559-04-04		-
	(OMA) & (IWA) HUSKY DIESEL NOZZLE REGULAR AUTOMATIC-CLOSING		159561-04-04		-
331	NON STAGE II AREA (STANDARD) HUSKY RECONNECTABLE BREAKAWAY VALVE	OWNER	GW-GTM75	D.A.	32
332	NON STAGE II AREA (STANDARD) GASOLINE GOODYEAR SHORT HOSE (WHIP) 12" LONG (HARDWALL)	OWNER	532327024208G9	D.A.	32
333	NON STAGE II AREA (STANDARD) GASOLINE GOODYEAR HOSE (HARDWALL)	OWNER	5323271240096 9	D.A.	32
334	2" PRESSURE VACUUM VENT (TYPICAL)	OWNER	OPW 623V-2203	U.A.	2
	(STL&PHX) 2" PRES/VAC VENT		OPW 523V-2203		-
	(ATL&TUC) 2" PRES/VAC VENT		OPW 723V		-
	P/V VENT 3" TO 2" ADAPTOR		OPW 523A-1003		1
335	"OPEN CAP" (2") VENT CAP FOR DIESEL & AIR VENTILATION	OWNER	MB-354-0200AV	U.A.	1
336	PCI 60" TRANSITION SUMP	OWNER	TSM606050-3B0-QT	T.S.	2
337	3/4" CONDUIT ENTRY (BRAVO)	OWNER	F-07R-F	-	12
338	JOMAR 4" SS FULL PORT BALL VALVE	OWNER	500-311		-
339	3" DIA SINGLE WALL FRP ENTRY FITTING (BRAVO)	OWNER	F-30-FF	D.A./U.A.	0
340	DIVERSIFIED 3X2 CENTRALIZER	OWNER	DIV-C-3X2	U.A./D.A.	370
341	4" FRP RISER (RED THREAD)	OWNER	98C02373	D.S./U.S.	20
342	GRANGER ASHCROFT 3 1/2" DIAL STAINLESS STEEL SOCKET, LIQUID FILLED VACUUM GAUGE, 30 TO 0" HG VAC IN HG	CONTRACTOR	40J5	U.A.	-
343	OMEGAFLEX AT STP	OWNER	UGF-FC20MSP90SFAB VSS-012	T.T.E.	5
344	OVERFILL PREVENTION VALVE DROP TUBES (10' TANK)	OWNER	FRANKLIN DEFENDER 708592922	T.T.E.	5
345	OMEGAFLEX 1.5" X 18" MALE X FEMALE	OWNER	UGF-MS-HF-FC0150-18	D.S./U.S./T.S.	0
346	OMEGAFLEX 1.5 X 12" MALE X FEMALE	OWNER	UGF-MS-HF-FC0150-12	D.S./U.S./T.S.	0
347	OPW INLET TUBE (FOR USE W/FRANKLIN DEFENDER OVERFILL DEVICE & DROP TUBE)	OWNER	71S0-INLET	T.T.E.	5 .
348	NUMBER CURRENTLY NOT USED	- -	- -	-	-
349	AMERON ADHESIVE KIT	CONTRACTOR	80210101	D.A./U.A.	-
350	AMERON DUALOY 2" FRP 3000L SINGLE WALL FRP, PRIMARY PRODUCT, VAPOR AND VENT LINES	OWNER	AM-P-2-XX	D.A./U.A.	1330 FT 43 UNITS
351	AMERON DUALOY 3" FRP 3000L SINGLE WALL FRP, SECONDARY CONTAINMENT AND MAIN VAPOR MANIFOLD LINES	OWNER	AM-P-3-XX	D.A./U.A.	1120 FT 36 UNITS
352	2" FRP BELL X MALE ADAPTOR	CONTRACTOR	012020-191-4	D.S./U.S./T.S.	4
353	2" FRP SPIGOT X MALE ADAPTOR	CONTRACTOR	-	D.S./U.S./T.S.	-
354	2" DIA SINGLE WALL FRP 45 ELBOW	CONTRACTOR	012020-310-4	D.S./U.S./T.S.	12
355	2" DIA SINGLE WALL FRP 90 ELBOW	CONTRACTOR	012020-360-4	D.S./U.S./T.S.	3
356	2" DIA SINGLE WALL FRP TEE	CONTRACTOR	012020-410-4	D.S./U.S./T.S.	0
357	2" DIA SINGLE WALL FRP COUPLING	CONTRACTOR	012020-101-8	D.S./U.S./T.S.	4
358	4" X 15' DROP TUBE (STICK PORT)	OWNER	EM A20-005	D.S./U.S./T.S.	-
359	4" AMERON SINGLE WALL PIPING	OWNER	DUALOY 3000/L	D.S./U.S./T.S.	340 FT 11 UNITS
360	4" DIA SINGLE WALL FRP ENTRY FITTING (BRAVO)	OWNER	F-40-FF	D.S.	29
361	4" TO 2" FRP TEST BOOT WAIR STEM	OWNER	DV-RA4.5X2.4A	D.S.	18
362	4"X2" CENTRALIZER	OWNER	DV-C4X2	D.S./U.S./T.S.	55
363	2" DIA. STEEL 90° ELBOW	CONTRACTOR	-	D.S./U.S./T.S.	-
364	2" DIA. STEEL TEE	CONTRACTOR	-	D.S./U.S./T.S.	-
365	JOMAR 2" SS FULL PORT BALL VALVE	OWNER	T100-968	U.S.	23
366	3"X2" FRP REDUCER	CONTRACTOR	-	D.A.	-
367	3" FRP BELL X MALE ADAPTOR	CONTRACTOR	012030-191-4	D.A.	4
368	3" FRP SPIGOT X MALE ADAPTOR	CONTRACTOR	-	D.A.	-
369	3" DIA SINGLE WALL FRP 45 ELBOW	CONTRACTOR	012030-310-4	D.A./U.A.	-
370	3" DIA SINGLE WALL FRP 90 ELBOW	CONTRACTOR	012030-360-4	D.A./U.A.	7
371	3" DIA SINGLE WALL FRP TEE	CONTRACTOR	012030-410-4	D.A./U.A.	2
372	3" DIA SINGLE WALL FRP COUPLING	CONTRACTOR	012030-101-8	D.A./U.A.	2
374	2" DIA SINGLE WALL FRP ENTRY FITTING (BRAVO)	OWNER	F-20-FF	D.A./U.A.	-
376	3" DIA. BLACK IRON COUPLING	CONTRACTOR	AS REQ'D	U.A.	-
377	3" DIA. BLACK IRON PIPE	CONTRACTOR	AS REQ'D	U.A.	-
378	4" DIA. BLACK IRON 90° ELBOW	CONTRACTOR	AS REQ'D	U.A.	-
379	3" DIA. BLACK IRON 90° ELBOW	CONTRACTOR	AS REQ'D	U.A.	-
380	4" DIA. BLACK IRON TEE	CONTRACTOR	AS REQ'D	U.A.	-
381	3" TO 2" FRP TEST BOOT WAIR STEM	OWNER	EP-RTR-3020	D.S./U.S./T.S.	70

MECHANICAL EQUIPMENT

TAG	EQUIPMENT DESCRIPTION	PROVIDED	MFG MODEL #	LOCATION	QUANTITY
382	4" FRP BELL X MALE ADAPTOR	CONTRACTOR	012040-191-4	D.A./U.A.	2
383	4" DIA SINGLE WALL FRP 45 ELBOW	CONTRACTOR	012040-310-4	D.A./U.A.	4
384	4" DIA SINGLE WALL FRP 90 ELBOW	CONTRACTOR	012040-360-4	D.A./U.A.	5
385	4" DIA SINGLE WALL FRP TEE	CONTRACTOR	012040-101-4	D.A./U.A.	0
386	4" DIA SINGLE WALL FRP COUPLING	CONTRACTOR	012030-101-8	D.S./U.S./T.S.	0
387	OMEGAFLEX-FLEX CONNECTOR	OWNER	UGF-MS-HM-FC0200-024	U.A.	2
388	OPW VAPOR SWIVEL ADAPTOR	OWNER	61V5A-1020-EVR	U.A.	5
389	TEST TUBE - TEE STYLE	OWNER	DV-XOVER-6FT	D.S./U.S./T.S.	63
390	PRODUCT MARKER (OPW)	OWNER	106DL-0045-DIESEL	U.A.	2
			106P-0150-PREMIUM		2
			106N-1100-UNLEAD 1		2
			106N-2200-UNLEAD 2		2
			106N-3300-UNLEAD 3		-
			106X-0200-E15		-
391	OPW 4" FILL CAP DIESEL	OWNER	634LPC-0400D	U.A.	1
392	PRODUCT MARKER - "E0" - "PREMIUM E0"	OWNER	EW-A0998-E0 EW-A0998-PE0	U.A.	2
393	MULTI-PORT SPILL CONTAINMENT AND TOP HAT	OWNER	MPBDKP-3 SG	U.A.	-
394	REMOTE FILL KIT	OWNER	OPW-61J5K-4RMT-QT	U.A.	-
395	FILL TAG ID MARKER - "E0" - " PREMIUM E0"	OWNER	US-56-S-CU US-56-S-CPU	T.T.E.	1
396	4" DIA. DOUBLEWALL LCX FRP PIPING ENTRY FITTING	OWNER	F-40-FF-LCX	U.A.	10
397	AMERON 4" TEST BOOT WITH AIR PORT	OWNER	44482736	U.A.	-
398	4" FIBERGLASS FITTINGS FOR OFFSET FILL	CONTRACTOR	AMERON	U.A.	-
399	4" AMERON DOUBLEWALL PIPING 20' STICK FOR OFFSET FILL	OWNER	DUALOY 3000/LCX	U.A.	-
400	EXTRACTOR W/CAGE - OPW (4X4X3X3 CROSS)	OWNER	233-4433	T.T.E.	-
401	OMEGAFLEX-FLEX CONNECTOR	OWNER	UGF-PM-PM-FC0300-024	U.A.	1
402	PETROLEUM CONTAINMENT 42" SQUARE CONTAINMENT TANK SUMP (FOR MULTI-PORT CONNECTION)	OWNER	TSM464652-NCO-QT	U.A.	-
404	OMEGAFLEX-FLEX CONNECTOR	OWNER	UGF-PM-PM-FC0400-018	U.A.	2
405	BRAVO TRANSITION SUMP SENSOR HOLDER	OWNER	SH-TRS	D.S./U.S./T.S.	2
406	BRAVO TANK SUMP SENSOR HOLDER	OWNER	SH-TS	D.S./U.S./T.S.	5
407	BRAVO UDC SUMP SENSOR HOLDER	OWNER	SH-UDC	D.S./U.S./T.S.	8
408	14 OZ SPRAY CAN- LITHIUM GREASE	OWNER	GA-WG16	T.T.E.	7
409	FIBERLITE LID LIFTER (LEAVE IN STORE)	OWNER	FL7A	T.T.E.	1
410	OVERFILL PREVENTION VALVE W/10' TOP DROP TUBE, 10' BOTTOM DROP TUBE E85 COMPATIBLE	OWNER	FRANKLIN DEFENDER 708592922	T.T.E.	-
411	JACK SCREW KIT - E85	OWNER	OPW-71J5K-44MA	U.A./T.T.E.	-
412	PROBE CAP AND ADAPTOR-E85	OWNER	305 XPA-1100AK EVR	U.A./T.T.E.	-
413	CONCRETE ID MARKER - E85	OWNER	EW-A0998-039	U.A./T.T.E.	-
414	OPW E85 COMPATIBLE PRESSURE SENSITIVE NOZZLE - YELLOW GUARD	OWNER	OPW-11BP-0942-E85-UL	D.S./U.S.	-
415	3/4" E85 COMPATIBLE HOSE SWIVEL	OWNER	241TPS-04421	D.S./U.S.	-
416	GOODYEAR, 3/4" X 9'-0", U.L. LABELED E85 HOSE	OWNER	GT-3404-E25	D.S.	-
417	GOODYEAR, 3/4" X 8", U.L. LABELED E85 WHIP HOSE	OWNER	GTWHP3408-E25	D.S.	-
418	3/4" E85 COMPATIBLE BREAKAWAY	OWNER	GW-GTM75-85	D.S./U.S.	-
419	2" X 12" MALE EZ FLEX W/ 90 & 2" BALL VALVE ALL STAINLESS STEEL	OWNER	FLX-2X12X290-BV-SS	T.S.	-
420	1.5" 10 PLUS SHEAR VLV-DBL POP E85 (UL APPROVED FOR E85)	OWNER	OPW-10P-0152E85	D.S.	-
421	1.5" X 18" MALE X FEMALE FLEX - STAINLESS STEEL	OWNER	UGF-MS-HF-FC0150-18-DEF	D.S.	-
422	FILL PIPE ID TAG - E85	OWNER	US-FPI-E15	D.S./U.S.	-
423	SWIVEL FILL ADAPTOR - E85	OWNER	OPW-61SALP-MA	D.S./U.S.	-
424	SWIVEL VAPOR ADAPTOR - E85	OWNER	OPW-61V5A-MA	D.S./U.S.	-
425	FILL CAP	OWNER	OPW-634LPC-EVR	D.S./U.S.	-
426	VAPOR CAP	OWNER	OPW-1711LCP-EVR	D.S./U.S.	-
427	2" OMEGAFLEX DOUBLETRAC DOUBLEWALL PIPING	OWNER	UFG-FSP-32	D.A./U.A.	-
428	2" OMEGAFLEX DOUBLETRAC NPT STRAIGHT S.S. FITTING (FRONT BOLT)	OWNER	UGF-SSFST-32-BB (FRONT)		-
429	OMEGAFLEX BULKHEAD FITTING	OWNER	UGF-20-OFLX	D.A./U.A.	-
430	EZ FIT X 2" FEMALE	OWNER	EZX20HFPL	T.S.	44
431	EZ FIT X 2" FEMALE GLUE PIPE FOR FRP	OWNER	EZX20FGPL	T.S.	0
432	EZ FIT CLAMP	OWNER	EZCLAMP	T.S.	106
433	EZ FIT X 2" MALE	OWNER	EZX20HMPL	T.S.	44
434	2" OMEGAFLEX DOUBLETRAC NPT STRAIGHT S.S. FITTING (STANDARD)	OWNER	UGF-SSFT-32 (STANDARD)	D.A./U.A.	-
435	APT 2" XP SECONDARY CONTAINED DOUBLE WALL PIPING	OWNER	XP-200-SC	T.S.	- -
436	APT 4" XP PIPE DUCTING DOUBLE WALL PIPING	OWNER	DUCT-400-250	T.S.	- -
437	XP DUCTED RIGID ENTRY FITTING	OWNER	RDEB-200-SC	T.S.	-
438	APT XP CLAMSNELL DECONDARY TEST BOOT FITTING WITH TEST PORT	OWNER	STB-200	T.S.	-
439	2" XP PIPE QUICK RELEASE FITTING FOR 2" EZ CLAMP	OWNER	QRS-XP-200-200	T.S.	- -
440	2" XP PIPE CLAMSHELL SWIVEL FITTING WITH 2" NPT	OWNER	MS-XP-200-200SS	T.S.	-
441	EZFIT 2" TEE	OWNER	EZ20XEZ20TEEFF	T.S.	27
442	EZFIT 2" 90°	OWNER	EZXEZ90	T.S.	5

CORESTATES, INC.
CERTIFICATE OF AUTHORIZATION
#F9349
EXPIRES 07-31-2023

SIGNATURE:

CORE STATES GROUP
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Rogers, AR 72756
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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE	P-110
DIVISION	AUSTIN
VERSION	G3SE
DATE	05-01-2022

REV	DATE	DESCRIPTION
B2	09/21/22	TANK UPDATE

ORIGINAL ISSUE DATE: 8/22/2022

SHEET TITLE:

BILL OF MATERIALS CONTINUED

SHEET NUMBER:

XF601

A1 BILL OF MATERIALS B2

Attachment I: Initial and Continuing Training

The automatic tank gauging and release detection system at this facility will be continuously monitored by an offsite certified monitoring firm, Warren Rogers. Qualified, trained technicians monitoring the system will generate and distribute work orders for alarms and/or fuel variances that trained QuikTrip Facility Support technicians will investigate. Monitoring, work order generation/distribution, and investigations are conducted 24 hours per day, 7 days per week, 365 days per year.

QuikTrip store employees typically do not respond to UST system alarms, and when they do it is under the guidance of one of the technicians from Warren Rogers or QuikTrip Facility Support. Store employees are usually the first responders to surface spills that may occur at the facility. QuikTrip store employees receive training on emergency response procedures, spill response procedures, and familiarization with UST monitoring system upon initial hire.

A copy of the VeederRoot alarm system troubleshooting guide that is kept at each site for reference has been included as part of this Plan.

QuikTrip UST System, Leak Prevention, and Emergency Response

Introduction: QuikTrip has a state-of-the-art UST system that includes several leak prevention systems and procedures. We also have in place a sophisticated network which notifies us real time should a leak occur within our piping system. We also track our fuel inventory daily to determine if we are possibly losing fuel from our system. The following information provides a brief overview of QuikTrip's UST standards for leak prevention, monitoring, detection, and emergency response.

(1) UST System Design: QuikTrip utilizes a unique UST system design that has been developed and refined over the past twenty years to maximize leak prevention and detection. The current design is a result of lessons learned from previous designs, input from in-house engineers and scientists, and input from third-party experts. Some components of the fuel system are below:

(A) Doublewall Steel Tanks with Brine filled Interstice and Sensors

(B) Doublewall XP Pipe (3" and 4")

(C) Fiberglass Sumps with Sensors (i.e. Tank, Dispenser)

(D) Transition Sumps: This unique design ensures all subsurface fuel piping connections are contained in a sump.

(E) Doublewall Spill Buckets with Sensors

(F) Variable Speed FE Petro Submersible Turbine Pumps: These pumps allow the gas system to operate at the lowest possible pressure thus minimizing the potential for leaks. The alternative is to utilize fixed speed pumps which operate at maximum pressure at all times when fuel is being dispensed.

(2) UST System Monitoring: QuikTrip monitors all stores using technology developed both externally and internally by systems experts. The monitoring includes real-time remote system monitoring, daily inventory management, periodic site inspections, and annual third-party operability testing.

(A) Veeder Root TLS-450: This unit monitors the fuel system for pressure drops which indicates a possible leak in the system. Sump and interstitial sensors are also connected to the TLS-450. All of these units are programmed automatically to shut down the fuel system if a leak is indicated. These units are monitored remotely by a 24/7 Help Desk.

(B) In-House Remote System Monitoring: QuikTrip has developed a computer program that monitors all TLS-450's. A message is sent to the 24/7 Help Desk, the Environmental Department, and QuikTrip's Maintenance Department in the

event of an alarm. The Help Desk enters a work order in the tracking system and a trained employee is dispatched to the site to investigate the alarm.

(C) Daily Inventory Variance Monitoring: QuikTrip has developed a program to monitor daily inventory records for each tank in the company. If certain criteria are triggered, an email alarm is sent to the Help Desk, Environmental Department, and the Maintenance Department. The Help Desk investigates the inventory variance. If the variance is unable to be reconciled, the Environmental Department will investigate the issue and ensure that a leak has not occurred.

(D) Semi-Annual Site Checks: A QuikTrip Environmental Technician performs a thorough site check of the UST system every six months. Any system issues are identified, tracked, and repaired.

(E) Annual Leak Detection System Testing: QuikTrip has a third-party contractor inspect and test the line leak detectors at each store on an annual basis.

(3) Regulatory Compliance: Federal and state regulations require at least one recognized method of release detection to be utilized when operating a fuel system. QuikTrip's redundant methods of release detection are presented below:

(A) Continuous in Tank Leak Detection System (CITLDS): QuikTrip utilizes a third-party certified consultant, Warren Rogers Associates (WRA), to monitor all fuel systems for leaks in "real time". With the completion of every fueling transaction, a simultaneous observation of elapsed sales and associated tank system product volumes and temperatures are recorded. WRA identifies operational problems as they occur.

(B) Automatic Tank Gauge (ATG)/Line Leak Detection: All stores have a Veeder Root TLS-450 Leak Detection System that is capable of detecting a leak as small as 0.1 GPH.

(C) Interstitial Monitoring: The fuel systems at QuikTrip stores are installed with sensors capable of detecting a leak in any portion of our system.

(4) Emergency Response: QuikTrip maintains a 24/7 emergency response system. Store Operations and store personnel are trained in the identification of and the response to spills and leaks. Store employees will notify the 24/7 Help Desk, as well as take appropriate measures on-site to prevent the migration of any spilled fuel. The Help Desk notifies the Environmental Department and/or the Environmental Consultant to respond to the site. The Environmental Consultant will clean-up the spill or contact the Emergency Response Contractor to assist in the clean-up. The Environmental Consultant will also conduct any necessary follow-up at the site.

Veeder-Root TLS-350/450 Alarm Troubleshooting Guidelines

PLLD Gross Test (3.0 GPH) Fail Alarm – Priority 0
PLLD Shutdown Alarm – Priority 0

Alarm occurs when a drop in Pump-Off line pressure or low Pump-Off line pressure is detected (Gross Test starts after dispensing stops).

Probable Causes:

1. Large line leak.
2. Tank is empty.
3. Power to submersible (STP) is off.
4. Partially clogged functional element (Red Jacket).*
5. STP contactor relay is not closing or sticking.*
6. Faulty check valve.*
7. Line length or type programmed incorrectly.
8. Packer-Discharge Seal is leaking (Red Jacket).
9. Dispenser leak (External - filter, connections; Internal – solenoid valve leaking into nozzle, blender valve leaking).*
10. Air in the line.
11. Low or no STP pressure (bad STP or starting capacitor).
12. Incorrect wiring of pump control or transducer.*
13. No STP request signal from dispenser.*

* The most common intermittent failures.

Troubleshooting Guidelines:

A. Perform a quick site check – inspect visible areas of piping, dispensers, and STP for visible signs of leak.
B. Retest the failed line to determine if the failure is repeatable or intermittent.
C. If line fails again, close the product sheer-valve to each affected dispenser and retest line. If the test passes, the leak is in probably in a dispenser(s).

PLLD Low Pressure Alarm – Priority 0

Indicates a Low Pressure condition (10 psi or less) was detected while dispensing.

Probable Causes:

1. Large line leak.
2. Tank is empty.
3. Low or no STP pressure (bad STP or starting capacitor).
4. STP contactor relay is not closing or sticking.
5. Power to submersible (STP) is off.

Troubleshooting Guidelines:

A. Perform a quick site check – inspect visible areas of piping, dispensers, and STP for signs of leakage.
B. Check tank for fuel.
C. Check for bad starting capacitor or bad STP.
D. Clean contactor relay contacts or replace.
E. Check STP breaker, wiring, etc.

PLLD Sensor Open Alarm – Priority 0

Alarm indicating that a pressure transducer is not connected properly.

Probable Causes:

1. Open condition in the field wiring.
2. Incorrect field wiring.
3. Reversed wiring on the pressure transducer.
4. Bad transducer.
5. Bad PLLD Interface Module.

Troubleshooting Guidelines:

A. Check wiring continuity.
B. Check wiring polarity.
C. Check wiring is connected to PLLD Interface Module (diagnostics displaying 0 pressure).

PLLD High Pressure Alarm – Priority 2

Alarm indicating excessive line pressure when STP is off.

Probable Causes:

1. Sticking/ Stuck contactor relay.
2. Clogged functional element (Red Jacket STP)
3. Faulty pressure transducer.
4. Incorrect or incorrectly adjusted check valve relief (FE Petro STP).
5. Faulty check valve.
6. Functional element relief valve has not been disable (Red Jacket STP).
7. Vent closing screw on functional element not fully retracted.
8. STP is being switched on by another device not detected by the console.
9. Cross-wired transducers.

Troubleshooting Guidelines:

A. Switch on STP for 10 seconds to pressurize the line. Turn STP off, wait 5 seconds, then measure the line side pressure. Normally, pressure should be less than 27 psi.
B. If greater than 27 psi, troubleshoot for causes 1, 2, 3, 4, 6, 7, and 9.
C. If less than 27 psi, problem is likely intermittent. Troubleshoot for causes 1, 5, 8, and 9.

PLLD Periodic Test (.20 GPH) Fail Alarm – Priority 2
PLLD Annual Test (.10 GPH) Fail Alarm – Priority 4

Pump-On pressures indicate a Periodic or Annual line leak test has failed.

Probable Causes:

1. The line is leaking.
2. A Check valve is leaking.
3. The Packer-Discharge seal needs replaced (Red Jacket).
4. Dispenser leak (external - filter, connections; internal – solenoid valve leaking into nozzle, blender valve leaking).
5. The console is not programmed for the correct line length or line type.

Troubleshooting Guidelines:

A. Switch STP on and inspect all visible areas of pipeline, dispenser piping, and STP for leakage.
B. Check dispenser solenoid valves for leakage by squeezing each nozzle with STP switched ON and dispenser switched OFF.

C. Check for blend valve leakage by looking for meter movement while STP is on but not dispensing.
D. Retest the line to confirm failure – if it passes without any repairs, problem is intermittent. Troubleshoot causes 2 and 4.
E. If retest fails, close dispenser emergency shuts-off valves (sheer valves) and retest again. If test fails, troubleshoot causes 1, 2, and 3.
F. If retest passes, problem is in one of the dispensers. Open shut-off valves one at a time or in groups and retest until dispenser is identified.

* Note: .20 GPH test takes a minimum of 30 minutes. .10 GPH test takes a minimum of 45 minutes.

PLLD Sensor Short Alarm – Priority 2

Alarm indicating that Pump-On and Pump-Off pressures are the same and are within a range of 5-15 psi.

Probable Causes:

1. STP did not switch on.
2. Low STP pump pressure.
3. Bad transducer.
4. Bad PLLD Interface Module.

Troubleshooting Guidelines:

A. Check STP breaker, wiring, etc.
B. Check/ replace transducer.

PLLD Continuous Handle On Alarm – Priority 2

Alarm indicating a continuous Pump-On (handle raised) signal for 16 hours.

Probable Causes:

1. Dispenser handle switch is faulty.
2. Excessive dispenser leakage (handle feedback) voltage.
3. Dispenser internal board faulty.

Troubleshooting Guidelines:

A. Check dispenser handle switch integrity.
B. Check handle switch wiring is intact.
C. Check dispenser line-in voltage. Greater than 30VAC is excessive. Isolation relay between dispenser and PLLD Controller Module is needed or defective.

PLLD Line Equipment Alarm – Priority 2

Alarm indicating a fault with the pressure measurement system.

Probable Causes:

1. Faulty Pressure Transducer.
2. Faulty PLLD Interface Module.
3. Incorrectly wired transducer.

Troubleshooting Guidelines:

A. For steps B and C, **Turn Off** the power to the STP.
B. Vent the product line to drop the line pressure to zero psi.
C. Reconnect the product line.
D. Restore power to the STP.
E. In the PLLD Diagnostic Menu, run the pressure measurement offset test.

    1.) Press the MODE to display Diagnostic Mode.
    2.) Press FUNCTION until “Pressure Line Leak Diag” is displayed.
    3.) Press STEP until “PLLD Number X” is displayed (X = line).
    4.) Press ENTER and the results of the last test displays.
    5.) Press STEP and ENTER to start the test. “Measuring” is displayed.
    6.) The Pressure Offset result is displayed when the test is finished “Done – Offset: +XX.X PSI”.

F. If the test result is greater than 5 psi, re-run the test again. If still greater than 5 psi, check the transducer wiring.
G. If transducer wiring is good and correct, then the transducer is likely bad.
H. Re-run the pressure measurement offset test following all repairs.
I. Run a Gross Line test to clear any active alarms.

Sensor Fuel Alarm – Priority 0

Alarm indicating fuel, fuel vapor, or liquid is present in area being monitored.

Troubleshooting Guidelines:

Fuel/ Liquid:

1. Perform site check for visible signs of fuel or liquid in area being monitored.
2. Determine source of fuel or liquid in area (isolated leak, water run off, etc.) and resolve.
3. Check sensor for correct location and proper function.

Vapor:

1. Check Vapor Sensor Setup in console programming for correct threshold value (established during System Setup).
2. Check Vapor Diagnostic for sensor status and PPM (parts per million) conversion.

    a.) < 200 = Short
    b.) 200 – threshold value = Normal
    c.) > 1.05 times the threshold value for +24 hours = Fuel
    d.) > 4 times the threshold value = Fuel

3. If fuel vapor is smelled at vault exhaust fans, the sensor is likely working correctly and fuel is present in the vault.
4. If no fuel vapor is smelled at exhaust fans, vapor sensor is likely saturated and needs replaced.

Sensor Out Alarm – Priority 2

Alarm indicating a sensor is defective, disconnected, or the sensor setup was performed incorrectly.

Troubleshooting Guidelines:

1. Check and validate correct sensor programming (configuration, location, type, and category).
2. Check sensor wiring circuit for disconnected or broken wires.
3. Connect sensor directly to console to verify function.
4. Verify sensor wiring polarity is correct.
5. Replace defective sensor.

Sensor Short Alarm – Priority 2

Alarm indicating a short circuit has occurred in the sensor or sensor wiring.

Troubleshooting Guidelines:

1. Verify sensor is good/ bad by connecting directly to the interface module.
2. Perform continuity test on sensor wiring.
3. Perform continuity test on sensor wiring to ground (conduit).

Sensor High Liquid Alarm – Priority 2

Indicates an increase in the brine solution level of a double-walled fuel tank.

Probable Causes:

1. A hole on the inside wall of the tank is allowing fuel into the interstitial space (fuel level is higher than brine level).
2. The sensor is malfunctioning.
3. Water is entering the interstitial space from an outside source.

Troubleshooting Guidelines:

1. Check the sensor for proper function and installation.
2. Manually check the level of brine solution.
3. Check the EPA Book history for volume variances (loss) in the tank.

Sensor Low Liquid Alarm – Priority 2

Indicates a decrease in the brine solution level of a double-walled fuel tank.

Probable Causes:

1. A hole on the exterior wall of the tank is allowing brine solution to leak out.
2. A hole on the inside wall of the tank is allowing brine to leak into the tank (tank level is less than brine level).
3. The sensor is malfunctioning.

Troubleshooting Guidelines:

1. Check the sensor for proper function and installation.

2. Manually check level of brine solution.
3. Check tank gauging for high water.
4. Check the EPA Book history for volume variances (gains) in the tank.
5. Add brine or water (when tank is full) and check level regularly.

PLLD / Sensor Setup Data Warning – Priority 4

Alarm indicates an error in programming.

Troubleshooting Guidelines:

1. Double check PLLD and/or Sensor programming is correct.
2. Default line length is 501 feet and must be changed to actual line length. Also ensure line type is also entered correctly.
3. Check for probe out on startup.

PLLD Periodic Test Needed Alarm – Priority 4

Alarm indicating the system has not completed or passed a Periodic (.20 GPH) test.

Probable Causes:

1. Periodic test failures.
2. Pump-On pressure readings are less than 22 psi.
3. The line is not venting when the pump is shut off (should be a 2 psi difference between Pump-On pressure and Pump-Off pressure.
4. The site is too busy for testing to complete.

Troubleshooting Guidelines:

1. Follow procedures for troubleshooting Annual and Periodic Test Fail alarms (page 3).
2. Check for stuck relays, incorrect or incorrectly adjusted check valves (FE Petro), or functional element not disabled (Red Jacket).
3. Site or line(s) may need to be shut down in order for test to complete – minimum 30 minutes per line for test to pass/fail.

Attachment J: Release Detection Maintenance

The automatic tank gauging and release detection system and cathodically-protected equipment at this facility will be routinely inspected and maintained by qualified, trained QuikTrip Facility Support technicians or certified contractors. Inspections, routine maintenance, and preventative maintenance will be performed according to the manufacturer's specifications and recommended schedules. Copies of these relevant maintenance programs and schedules are included as part of this Plan.

Semi-Annual Site Check Inspection

*Complete Environmental Site Checklist
*Be sure to complete all "checks" on the work order
*Complete any routine repairs as part of this Site Check
*Do Not open additional Work Orders for these repairs

Additional work orders may only be opened if you are not able to complete the repairs while on site.

Note: Ensure you replace any nozzles with expired dates on them!!!

ATG/Line Leak Detector Check:

- Check ATG for fuel and water levels and verify ATG and stick readings are not off by more than 2".
- Check ATG for correctly programmed tank limits (High Water Warning and Alarm)

Tank Pit Observation Well:

- Check surface lid, well cap condition.
- Indicate the depth to groundwater (in inches or dry)

- Check all observation wells onsite.
- Apply fuel finding paste to the bottom 3" of the fuel sampler to check for presence of fuel. Is fuel present in the well? If so, notify EPM or ECM and FS Supervisor immediately.
- If fuel is present, use a sampler to collect a sample from the well to measure fuel thickness.

Piping Trench Observation Well (DFW ONLY):

- Check surface lid, well cap condition.
- Check all observation wells onsite.
- Apply fuel finding paste to the bottom 3" of the fuel sampler to check for presence of fuel. Is fuel present in the well? If so, notify EPM or ECM and FS Supervisor immediately.
- If fuel is present, use a duel sampler to collect a sample from the well to measure fuel thickness.

ATG Probe Port:

- Cap/grommet water tight?

Spill Buckets (fill and vapor):

- Are there any issues with the spill bucket (holes, cracks, dents, liquid, lid seals, etc.)?
- Are Spill Bucket lids water tight?
- Did you clean the spill bucket?

Condensate Trap:

- Is there liquid in the condensate trap?

Submersible Pump Containment Area (Sump):

- Are there any issues to report with the sumps?
- Are Blueline boots present?
- What is the condition of the Blueline boot?
- Is water present? If so what is the thickness in inches?
- Is fuel present in well? If so, notify EPM immediately.
- Clean Silt ring.

Dispensers:

- Are there any leaks/issues to report?
- Are there any issues to report with the sumps?
- Are Blueline boots present?
- What is the condition of the Blueline boot?
- Is fuel present? If so, notify EPM immediately.
- Are there any nozzles with expired date codes?

Copper Piping Splice Sump:

- Are there any leaks/issues to report?

Fuel Piping:

- Are there any leaks/issues to report?
- What is the type of fuel piping from the submersible to 1st dispenser?
- What is the type of fuel piping under the dispensers?

Sensors:

- Are the submersible pump containment (sump) sensors present, programmed correctly & installed at proper depth?
- Are the dispenser sumps present, programmed correctly & installed at proper depth?
- Are the diesel filter sump sensors present, programmed correctly & installed at proper depth?
- Are the transition sump sensors present, programmed correctly & installed at proper depth?

TC Only - Travel Center Diesel Filter Pods (Sumps):

- Are there any issues to report with the sumps?

- Is water present? If so what is the thickness in inches?
- Is fuel present? If so, notify EPM immediately.

Vault (AZ only):

- Is water present in the vaults?
- Is fuel present in the vaults? If so, contact EPM immediately.
- Product vapor present in vaults?

Remote Fills:

- Are there any issues with the remote fill tank entry and sump (water/fuel present, condition of lid)?
- Are there any issues with the remote fill spill bucket (holes, cracks, dents, liquid, etc.)?

Stick Port and Bucket (former fill):

- Are there any issues with the bucket/lid condition?
- Is any fuel present? If so, contact EPM immediately
- Is water present? If so what is the thickness in inches?

Transition Sump:

- Are there any issues to report with the sumps?
- Are Blueline boots present?
- What is the condition of the Blueline boot?
- Is water present? If so what is the thickness in inches?
- Is fuel present? If so, notify EPM immediately.

AZ Only - Drywell System (Envibro or DW Guardian):

- Check if the inlet grate and the chambers are clear of trash/debris/sediment

DFW Only - 60 Day Spill Bucket Inspection Log

- Complete the 60-day Spill Bucket Inspection Log and return to the Vapor Binder in the store.

Elevated Fuel Services, LLC

ANNUAL SUMP SENSOR TEST FORM

FACILITY NAME: **QuikTrip** #4160
FACILITY ADDRESS:
TCEQ FACILITY ID #:

A. Results of Annual Leak Monitoring Test - Complete the following checklist using: Y = Yes, N = No, N/A = Not Applicable.

1. Leak monitor (ATG) manufacturer's name and model number Veeder – Root TLS – **____350 _____** 450 **(Check one)** Comments:	
2. ATG console assignments are correctly programmed and labeled for all sensors. ***Print and attach set up report.*** *Comments:*	
3 **ALL** Tank secondary containment sensor is positioned per manufacturer's requirements *Comments:*	
4. Brine level of the tank interstitial space is within the manufacturer's operating range. Comments:	
5. **Q1 Unleaded** Submersible Pump Sump Sensors are positioned per manufacturer's requirements. *Comments:*	
6. Q2 Unleaded Submersible Pump Sump Sensors are positioned per manufacturer's requirements**.** Comments:	
7. Q3 Premium Submersible Pump Sump Sensors are positioned per manufacture's requirements. Comments:	
8. Q4 Diesel Submersible Pump Sump Sensors are positioned per manufacture's requirements. Comments:	
9. _____	
10. **Dispenser Sump** Sensors are positioned per manufacture's requirements. *Comments:*	
11. **Transition Sump Sensors** are positioned per manufacture's requirements. *Comments*:	
12. All secondary containment Sumps are liquid tight and free of debris, water and regulated substance *Comments:*	
12. All Sensors were visually inspected, manually tested, confirmed operational and reset. ***Attach printouts that document system shut down or alarmed when tested*** *Comments:*	
13. The ATG console **Audible and Visual Alarms** are confirmed operational and cleared and reset after testing. *Comments:*	

14. Alarms active and present upon arrival. See attached **printout.** Comments:	None
15. Additional Comments:	

B. Verification: I hereby verify that the equipment identified in this document was tested for proper operation in performance of the original design function in accordance with the manufacturer's requirements. Attached to this form is information (if available, system set-up reports, alarm history, sensor status) necessary to verify that this information is correct.

TEST COMPANY NAME	TEST COMPANY ADDRESS	CITY/STATE/ZIP	PHONE

TECHNICIAN NAME	TECHNICIAN PHONE	TECHNICIAN SIGNATURE	DATE OF TEST

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Rachel Roberts

Date: 04/21/2023

Signature of Customer/Agent:

Regulated Entity Name: Kimley-Horn

Regulated Entity Information

1. The type of project is:

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

2. Total site acreage (size of property): 1.89

3. Estimated projected population: N/A

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

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	5,312	÷ 43,560 =	0.12
Parking	8,847	÷ 43,560 =	0.20
Other paved surfaces	41,598	÷ 43,560 =	0.95
Total Impervious Cover	55,757	÷ 43,560 =	1.28

Total Impervious Cover 1.28 **÷ Total Acreage** 1.89 **X 100 =** 67.72 **% Impervious Cover**

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

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

For Road Projects Only

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

7. Type of project:

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

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

☐ Concrete
☐ Asphaltic concrete pavement
☐ Other: _____

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

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

10. Length of pavement area: _____ feet.

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

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

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

15. Wastewater will be disposed of by:

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

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

☑ Sewage Collection System (Sewer Lines):

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

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

☑ The sewage collection system will convey the wastewater to the Liberty Hill (name) Treatment Plant. The treatment facility is:

☑ Existing.
☐ Proposed.

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

Site Plan Requirements

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

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

Site Plan Scale: 1" = 30 '.

18. 100-year floodplain boundaries:

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☑ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): DFIRM PANEL 48491C0275E, Dated 9/26/2008

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

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

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

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

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

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

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

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

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

    ☑ N/A
27. ☑ Locations where stormwater discharges to surface water or sensitive features are to occur.

    ☐ There will be no discharges to surface water or sensitive features.
28. ☑ Legal boundaries of the site are shown.

Administrative Information

29. ☑ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
30. ☑ Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

Attachment A – Factors Affecting Surface Water Quality

Factors that could affect the quality of the water discharges for ultimate land use are:

- Oil, grease, and fuel from vehicle drippings;
- Dirt from vehicles;
- Trash and litter;
- Hydrocarbons from asphalt paving operations.

Attachment B- Volume and Character of Stormwater

Stormwater runoff will decrease due to the development of this site. The site will produce a decrease of 3.35 cfs for the 25-year development. The weighted C-value for the site would be 0.88 after development. C-value was obtained from the City of Roundrock Rain and Roundrock Determination of Storm.

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: Rachel Roberts

Date: 04/21/2023

Signature of Customer/Agent:

Regulated Entity Name: Kimley-Horn

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: 5 Underground Storage Tanks

   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: North Fork San Gabriel River

Temporary Best Management Practices (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.

7. ☑ **Attachment D – Temporary Best Management Practices and Measures**. TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

- [x] 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.
- [x] 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.
- [x] A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
- [x] 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.
   - [x] There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. [x] **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. [x] **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

    - [ ] For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.
    - [ ] For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.
    - [ ] For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.
    - [ ] There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

☑ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.

11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations**. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

☑ N/A

12. ☑ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.

13. ☑ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ☑ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. ☑ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ☑ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. ☑ **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices**. A schedule of the interim and permanent soil stabilization practices for the site is attached.

18. ☑ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

19. ☑ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

20. ☑ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. ☑ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. ☑ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

ATTACHMENT A – Spill Report Actions

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of the materials and substances described above to storm water runoff.

Education

(1) Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.

(2) Educate employees and subcontractors on potential danger to humans and the environment from spills and leaks.

(3) Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).

(4) Establish a continuing education program to indoctrinate new employees.

(5) Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

(1) To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.

(2) Store hazardous materials and wastes in covered containers and protect from vandalism.

(3) Place a stockpile of spill cleanup materials where it will be readily accessible.

(4) Train employees in spill prevention and cleanup.

(5) Designate responsible individuals to oversee and enforce control measures.

(6) Spills should be covered and protected from stormwater run-on during rainfall to the extent that it doesn't compromise cleanup activities.

(7) Do not bury or wash spills with water.

(8) Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.

(9) Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.

(10) Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.

(11) Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.

(12) Keep waste storage areas clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, cover, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

(1) Clean up leaks and spills immediately.

(2) Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.

(3) Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

(1) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.

(2) Use absorbent materials on small spills rather than hosing down or burying the spill.

(3) Absorbent materials should be promptly removed and disposed of properly.

(4) Follow the practice below for a minor spill:

(5) Contain the spread of the spill.

(6) Recover spilled materials.

(7) Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills – can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities. Spills should be cleaned up immediately:

(1) Contain spread of the spill.

(2) Notify the project foreman immediately.

(3) If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.

(4) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.

(5) If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

(1) Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.

(2) For spills of federal reportable quantities, in conformance with the requirements on 40 CFR parts 110, 119, and 302, the contractor should notify the National Response Center at (800) 424-8802.

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

(4) The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.

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

(6) The Reportable Quantities table can be found in the following link https://www.tceq.texas.gov/response/spills/spill_rq.html

Vehicle and Equipment Maintenance

(1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon of stormwater and runoff of spills.

(2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately

(3) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite

(4) Always use secondary containment, such as drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.

(5) Place drip pans or absorbent materials under paving equipment when not in use.

(6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.

(7) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.

(8) Oil filters dispose of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about oil filters.

(9) Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think the acid had drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

(1) If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.

(2) Discourage "topping off" of fuel tanks.

(3) Always use secondary containment, such as a drain pan, when fueling to catch spills/leaks.

ATTACHMENT B – Potential Sources of Contamination

Sources of contamination during construction that could potentially affect surface and groundwater quality are as follows:

Potential Source	Preventative Measure
Asphalt Products used on this project	After placement of Asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The Contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain event.
Oil, grease, fuel and Hydraulic fluid drippings	Vehicle maintenance when possible will be performed within the construction staging area.
Miscellaneous trash and litter	Trash containers will be placed throughout the site to encourage proper trash disposal.
Construction Debris	Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addresses on a case-by-case basis

ATTACHMENT C – Sequence of Major Events

The installation of erosion and sedimentation controls shall occur prior to any excavation of materials or major disturbances on the site.

The sequence of major construction activities will be as follows. Approximate acreage to be disturbed is listed in parentheses next to each activity.

1. Install all temporary erosion controls. (1.89 acres)
2. Clear and grub strip topsoil. (1.89 acres)
3. Grading (1.89 acres)
4. Rough Cut Drive Aisles and building pads (1.89 acres)
5. Install wet/dry utilities (1.89 acres)
6. Install paving improvements (1.89 acres)
7. Complete restoration of site vegetation. (No additional area will be disturbed by this activity)
8. Remove and dispose of temporary erosion controls when restoration has been accepted.

Maximum total construction time is not expected to exceed 12 months.

ATTACHMENT D – Temporary Best Management Practices and Measures

Also refer to the TCEQ Site Plan for details of TBMP's.

Silt fencing will be installed prior to the commencement of construction to prohibit runoff of sediment. The silt fence shall be placed perpendicular to direction of flow, where feasible, to maximize efficiency. If there are any, potentially sensitive features, a silt fence will surround the site as specified by TCEQ Guidance Manual Chapter 5.

Bagged gravel inlet filters will be used and maintained in a condition to prevent runoff of sediment from flowing into drains during construction.

Stabilized construction entrance will be installed prior to the commencement of construction and will be used and maintained in a condition that will prevent tracking or flowing of sediment onto public roadway.

a.) Silt fence will not be placed on the upstream side of the site because stormwater drainage to the site from upgradient will be captured in an inlet and bypassed to the existing channel in Kauffman Loop. The inlet will have filter protection during construction activity.

b.) Silt fencing and bagged gravel inlet filters will be used on-site to filter out pollutants and restrict sediment from leaving the site. Silt fencing will be placed in existing and proposed channels and downstream of flow on site. Bagged gravel inlet filters will be placed around proposed inlets to capture any suspended solids.

c.) Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. Silt Fencing, bagged gravel inlet filters and construction entrance measures prevent sediment and pollution by filtering and routing water. These filtered pollutants are then removed and prevented from entering surface streams, sensitive features, or the aquifer.

d.) BMP measures utilized in this plan are intended to allow stormwater to continue downstream after passing through the BMP's. Silt fencing and bagged gravel inlet filters will be placed to intercept and detain water with sediment or pollution from entering or leaving the site to any unprotected areas. The BMP's will filter out sediment and pollution while allowing filtered water to flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

ATTACHMENT F – Structural Practices

The structural practices that will be used to divert and store flows, and limit runoff discharge or pollutants will be the use of silt fences, inlet protection, and construction entrance stabilization.

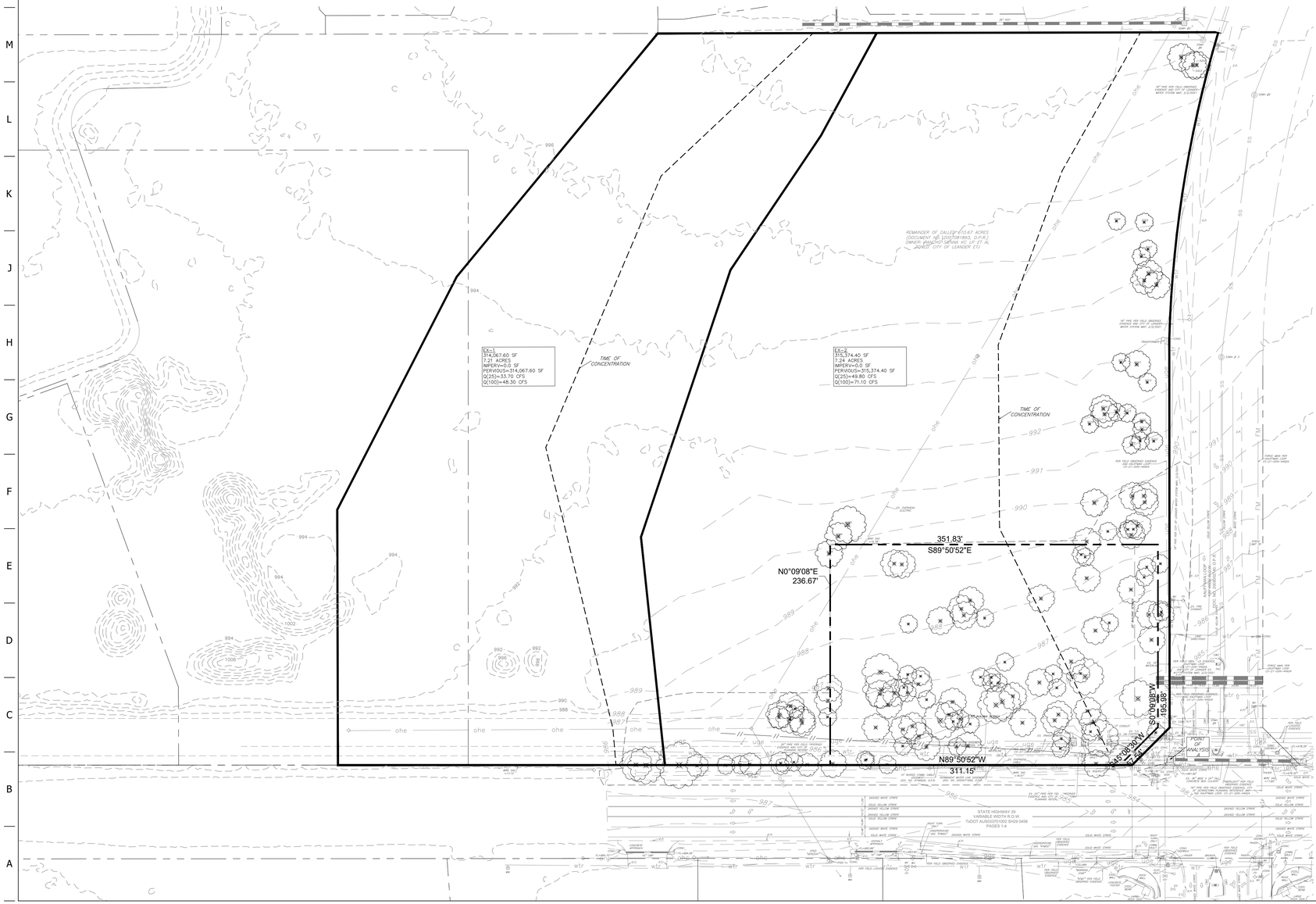
TIME OF CONCENTRATION CALCULATIONS

SHEET FLOW		SHALLOW CONCENTRATED FLOW		SHALLOW CONCENTRATED FLOW		CHANNEL FLOW	
EX-1							
n=	0.150	paved?	no	paved?		v(fps)=	
S (ft/ ft)=	0.010	S (ft/ft)=	0.003	S (ft/ft)=		L (ft)=	
L (ft)=	100	L (ft)=	790	L (ft)=			
T_{t1}=	11.478	T_{t2}=	16.219	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	27.70 minutes						

SHEET FLOW		SHALLOW CONCENTRATED FLOW		SHALLOW CONCENTRATED FLOW		CHANNEL FLOW	
EX-2							
n=	0.150	paved?	no	paved?		v(fps)=	
S (ft/ ft)=	0.010	S (ft/ft)=	0.021	S (ft/ft)=		L (ft)=	
L (ft)=	100	L (ft)=	758	L (ft)=			
T_{t1}=	11.478	T_{t2}=	5.389	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	16.87 minutes						

EXISTING DRAINAGE AREA CALCULATIONS

DRAINAGE AREA	AREA (ac.)	IMPERVIOUS COVER (%)	CN-VALUE (IMPERVIOUS)	PERVIOUS COVER (%)	CN-VALUE (PERVIOUS)	CN (COMPOSITE)	TC (MIN)	Q_2 (CFS)	Q_5 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{50} (CFS)	Q_{100} (CFS)
EX-1	7.21	0%	98	100%	80	80.0	27.70	13.00	19.30	25.50	33.70	40.70	48.30
EX-2	7.24	0%	98	100%	80	80.0	11.48	19.40	28.70	37.70	49.80	60.10	71.10
HEC-HMS VERSION 4.1 AND CITY OF LEANDER ATLAS 14 VALUES WERE USED FOR THIS CALCUATION							POA - A	20.50	31.50	42.50	57.60	70.70	85.00



RACHEL M. ROBERTS
137894
REGISTERED
PROFESSIONAL
ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn
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TBPE # FIRM NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

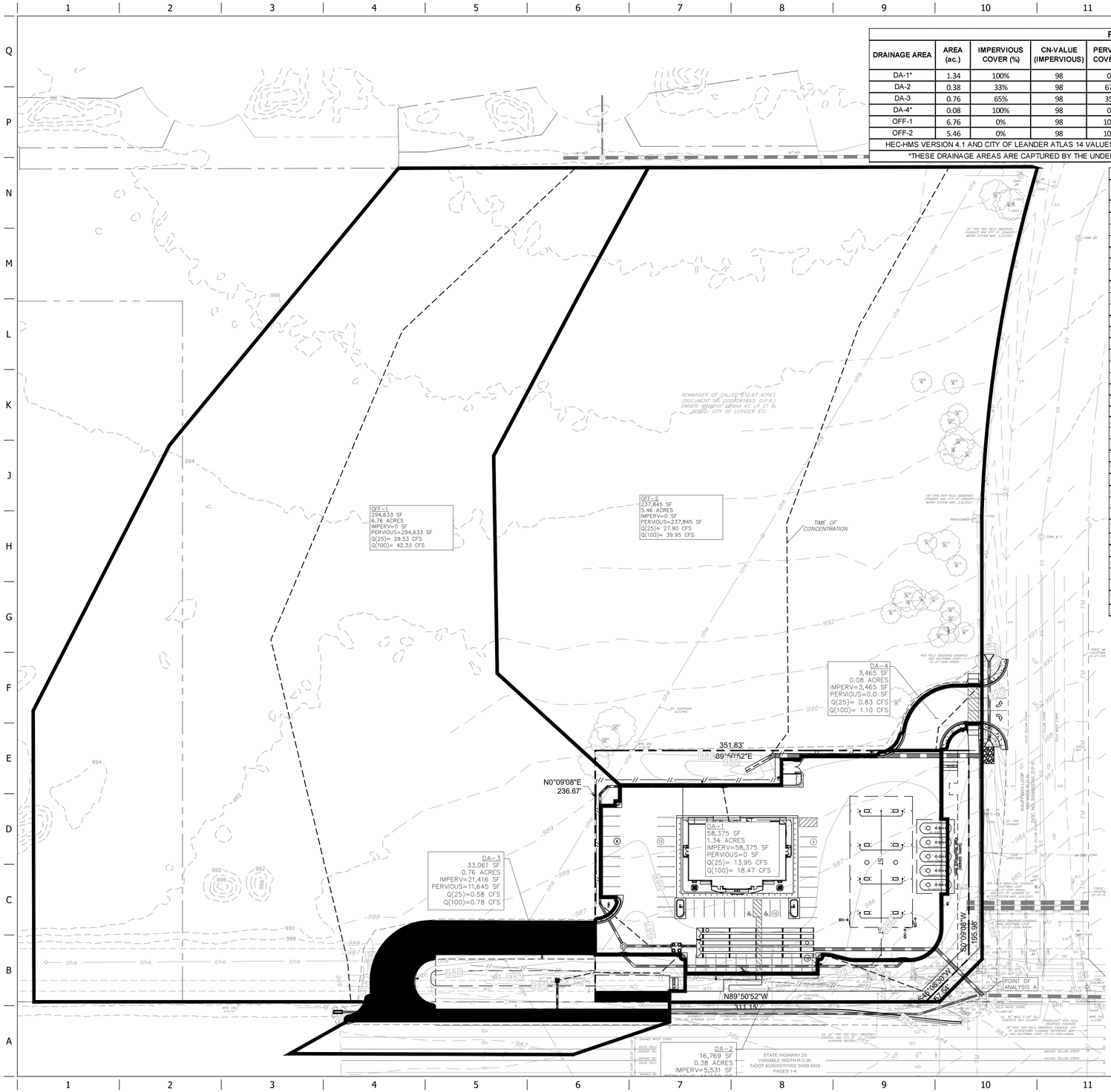
SHEET TITLE:

PRE-DEVELOPED DRAINAGE MAP

SHEET NUMBER:

C121

FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-DAM EX.dwg TAB NAME:PRE-DEVELOPED DRAINAGE MAP USER:Oscar.garcia SAVED:1/27/2023 1:04 PM PLOTTED:4/21/2023 10:28 AM



PROPOSED DRAINAGE AREA CALCULATIONS

DRAINAGE AREA	AREA (ac.)	IMPERVIOUS COVER (%)	CN-VALUE (IMPERVIOUS)	PERVIOUS COVER (%)	CN-VALUE (PERVIOUS)	CN (COMPOSITE)	TC (MIN)	Q_2 (CFS)	Q_5 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{50} (CFS)	Q_{100} (CFS)
DA-1*	1.34	100%	98	0%	80	98.0	5.00	7.56	9.56	11.40	13.95	16.12	18.47
DA-2	0.38	33%	98	67%	80	85.9	9.10	1.35	1.86	2.35	3.01	3.58	4.18
DA-3	0.76	65%	98	35%	80	91.7	12.34	0.29	0.38	0.46	0.58	0.68	0.78
DA-4*	0.08	100%	98	0%	80	98.0	5.00	0.45	0.57	0.68	0.83	0.96	1.10
OFF-1	6.76	0%	98	100%	80	80.0	31.62	11.41	16.91	22.31	29.53	35.71	42.33
OFF-2	5.46	0%	98	100%	80	80.0	23.06	10.83	16.06	21.11	27.90	33.73	39.95
HEC-HMS VERSION 4.1 AND CITY OF LEANDER ATLAS 14 VALUES WERE USED FOR THIS CALCUATION							POA - A	17.86	28.05	38.52	52.59	64.63	77.51
*THESE DRAINAGE AREAS ARE CAPTURED BY THE UNDERGROUND DETENTION SYSTEM													

TIME OF CONCENTRATION CALCULATIONS

SHEET FLOW		SHALLOW CONCENTRATED FLOW		SHALLOW CONCENTRATED FLOW		CHANNEL FLOW	
DA-1*							
n=	0.015	paved?		paved?		v(fps)=	5.00
S (ft/ ft)=	0.010	S (ft/ft)=		S (ft/ft)=		L (ft)=	370
L (ft)=	39	L (ft)=		L (ft)=			
T_{t1}=	0.856	T_{t2}=	0.000	T_{t3}=	0.000	T_{t4}=	1.233
Total TC =	5.00 minutes						
DA-2							
n=	0.240	paved?	yes	paved?		v(fps)=	
S (ft/ ft)=	0.045	S (ft/ft)=	0.01	S (ft/ft)=		L (ft)=	
L (ft)=	97	L (ft)=	20	L (ft)=			
T_{t1}=	8.939	T_{t2}=	0.164	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	9.10 minutes						
DA-3							
n=	0.240	paved?	no	paved?		v(fps)=	5.00
S (ft/ ft)=	0.033	S (ft/ft)=	0	S (ft/ft)=		L (ft)=	30
L (ft)=	123	L (ft)=	0	L (ft)=			
T_{t1}=	12.237	T_{t2}=	0.000	T_{t3}=	0.000	T_{t4}=	0.100
Total TC =	12.34 minutes						
DA-4*							
n=	0.015	paved?		paved?		v(fps)=	
S (ft/ ft)=	0.032	S (ft/ft)=		S (ft/ft)=		L (ft)=	
L (ft)=	77	L (ft)=		L (ft)=			
T_{t1}=	0.921	T_{t2}=	0.000	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	5.00 minutes						
OFF-1							
n=	0.240	paved?	no	paved?		v(fps)=	
S (ft/ ft)=	0.010	S (ft/ft)=	0.003	S (ft/ft)=		L (ft)=	
L (ft)=	100	L (ft)=	790	L (ft)=			
T_{t1}=	16.717	T_{t2}=	14.899	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	31.62 minutes						
OFF-2							
n=	0.240	paved?	no	paved?		v(fps)=	
S (ft/ ft)=	0.010	S (ft/ft)=	0.021	S (ft/ft)=		L (ft)=	
L (ft)=	100	L (ft)=	890	L (ft)=			
T_{t1}=	16.717	T_{t2}=	6.344	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	23.06 minutes						

Point of Analysis	Storm Event	Existing Runoff (cfs)	Developed Runoff (cfs)	Is Developed ≤ Existing?
A	2	20.50	17.86	YES
	10	42.50	38.52	YES
	25	57.60	52.59	YES
	100	85.00	77.51	YES

50 25 0 50 100

RACHEL M. ROBERTS
137894
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

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TBPE F-928/BS NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION
		ORIGINAL ISSUE DATE:

SHEET TITLE:
POST-DEVELOPED DRAINAGE MAP

SHEET NUMBER:
C122

FILE LOCATION=K:\SNA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-DMM PR.dwg TAB NAME:POST-DEVELOPED DRAINAGE MAP USER:Rachel.Roberts SAVED:4/20/2023 6:29 PM PLOTTED:4/21/2023 10:29 AM

ATTACHMENT I – Inspection and Maintenance for BMP's

PROJECT NAME: QuikTrip 4160
ADDRESS: 7601 W SH 29
CITY, STATE: Leander ETJ, Williamson County, TX

TEMPORARY BMP'S

SILT FENCE

- Inspections: Inspect all fencing weekly, and after any rainfall.
- Sediment Removal: Remove sediment when buildup reaches 6 inches.
- Replace any torn fabric or install a second line of fencing parallel to the torn section.
- Replace or repair any section crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.

When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

BAGGED GRAVEL INLET FILTER

- Inspections: Should be made weekly, and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.
- Sediment Removal: Remove sediment when buildup reaches 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.
- Check placement of device to prevent gaps between device and curb.
- Inspect filter fabric and patch or replace if torn or missing.
- Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized

STABILIZED CONSTRUCTION ENTRANCE

- The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public roadways. 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 sediment that is spilled, dropped, washed or tracked onto public roadway must be removed immediately by contractor.

The stabilized construction entrance will be removed once the driveway to the proposed site is complete. Disposal of accumulated silt shall be accomplished following Texas Commission on Environmental Quality guidelines and specifications.

Maintenance records shall be kept on the installation, maintenance, or removal of items necessary for the proper operation of the facilities.
All inspections shall be documented.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.
This Maintenance Plan is based on TCEQ Maintenance Guidelines.

EDWARDS AQUIFER CONTRIBUTING ZONE
STORMWATER QUALITY MAINTENANCE PLAN

INSTALLATION		MAINTENANCE		REMOVAL	
DATE	**CONTROL TYPE**	**DATE**	**CONTROL TYPE**	**DATE**	**CONTROL TYPE**

Note: Reference Contributing Zone Application Attachment N Maintenance Plan and Schedule for BMP's

ATTACHMENT J – Schedule of Interim and Permanent Soil Stabilization Practices

Stabilization measures shall be initiated as soon as possible in portions of the site where construction activities have ceased, temporarily or permanently, but in no case more than 14 days after the construction activity in that portion of the site concluded. Where the initiation of stabilization measures by the 14th day after construction activity temporary or permanently cease is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

SOIL STABILIZATION PRACTICES:

_____HYDROMULCHING
_____TEMPORARY SEEDING
__X__PERMANENT PLANTING, SODDING, OR SEEDING
_____MULCHING
_____SOIL RETENTION BLANKET
_____BUFFER ZONES
_____PRESERVATION OF NATURAL RESOURCES

OTHER: Disturbed areas, in which construction activity has ceased temporarily or permanently, shall be stabilized within 14 days unless activities are scheduled to resume and done within 21 days.

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: Rachel Roberts

Date: 04/21/2023

Signature of Customer/Agent

Regulated Entity Name: Kimley-Horn

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**.

- [x] 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. [x] **Attachment C - BMPs for On-site Stormwater**.
   - [x] 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.
   - [x] N/A
9. [x] 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.
   - [x] 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. [x] **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:
    - [x] Design calculations (TSS removal calculations)
    - [x] TCEQ construction notes
    - [x] All geologic features
    - [x] All proposed structural BMP(s) plans and specifications
    - [ ] N/A

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

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

    ☐ N/A

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

    ☑ N/A

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

    ☑ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

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

    ☐ N/A

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

    ☐ N/A

Attachment B – BMPs for Upgradient Stormwater

Flows generated upgradient are captured in an inlet and conveyed through a storm pipe to the existing earthen channel in Kauffman Loop. Permanent soil stabilization will be incorporated to reduce the volume runoff, improve water quality, prevent erosion, and remove sediment from runoff. The runoff volume for the site has been designed utilizing Atlas 14 rainfall depths. No portion of the site is located in the 100-year or 500-year floodplain according to the Federal Emergency Management Agency's (FEMA) Flood Map, FIRM number 48491C0275E, revised September 26, 2008.

Attachment C – BMPs for On-site Stormwater

A detention pond is required since the site proposes an increase in impervious cover and increased developed flow rates compared to existing drainage conditions. A “jellyfish” water quality structure is proposed onsite to treat stormwater from the site. A proposed series of curb inlets and underground storm sewer system will divert stormwater captured from drainage areas on the site to an existing underground storm system in the R.O.W. The runoff volume for the site has been designed utilizing Atlas 14 rainfall depths. No portion of the site is located in the 100-year or 500-year floodplain according to the Federal Emergency Management Agency’s (FEMA) Flood Map, FIRM number 48491C0275E, revised September 26, 2008.

Contech Engineered Solutions Calculations for Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: **QuikTrip No. 4160 - Leander TX**
Date Prepared: **2/16/2023**

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: $L_M = 27.2(A_N \times P)$

$L_{M\ TOTAL\ PROJECT}$ = 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 * =	**1.89**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan* =	**1.83**	acres
Total post-development impervious cover fraction * =	**0.97**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**1593**	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 =	**1.32**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**1.32**	acres
Post-development impervious fraction within drainage basin/outfall area =	**1.00**	
$L_{M\ THIS\ BASIN}$ =	**1149**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	**JF**	abbreviation
Removal efficiency =	**86**	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:
LR = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

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 =	**1.32**	acres
A_I =	**1.32**	acres
A_P =	**0.00**	acres
L_R =	**1257**	lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\ THIS\ BASIN}$ =	**1149**	lbs.
F =	**0.91**	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Offsite area draining to BMP =	**0.08**	acres
Offsite impervious cover draining to BMP =	**0.08**	acres

Calculations from RG-348 Pages Section 3.2.22

Rainfall Intensity =	**1.15**	inches per hour
Effective Area =	**1.26**	acres
Cartridge Length =	**54**	inches
Peak Treatment Flow Required =	**1.46**	cubic feet per second

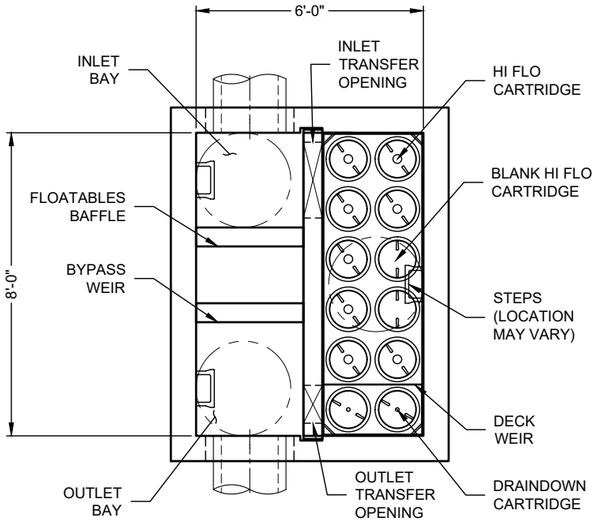
7. Jellyfish

Designed as Required in RG-348 Section 3.2.22

Flow Through Jellyfish Size

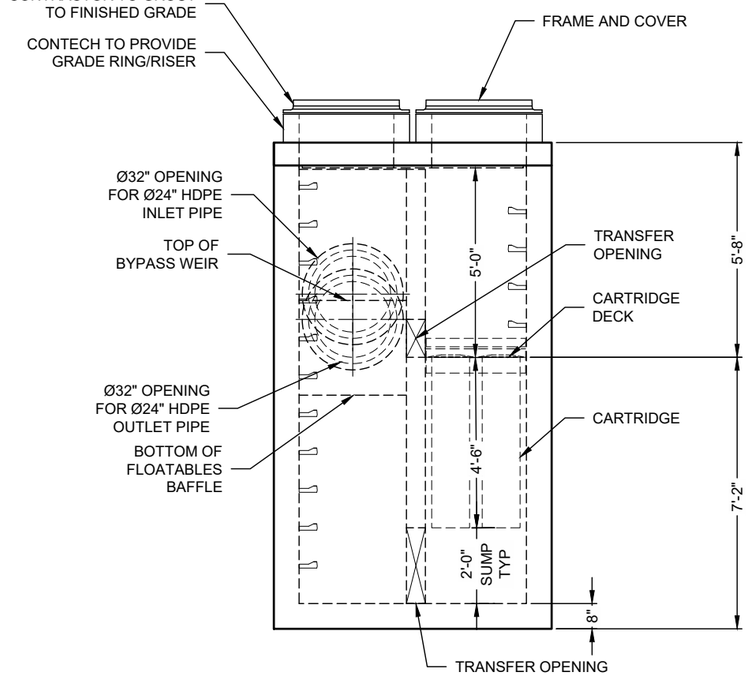
Jellyfish Size for Flow-Based Configuration =	**JFPD0806-8-2**	
Jellyfish Treatment Flow Rate =	**1.60**	cfs

04/21/2023



PLAN VIEW

(TOP SLAB NOT SHOWN FOR CLARITY)



ELEVATION VIEW

RIM
ELEV. = 987.59'

TOP OF STRUCTURE
ELEV. = 985.82'

WEIR ELEV. =981.65'

INLET INV. ELEV. = 980.65'

OUTLET INV. ELEV. = 980.15'

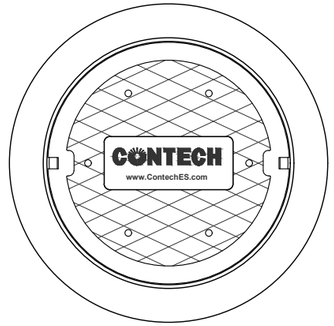
STRUCTURE INV.
ELEV. = 973.65'

BOTTOM OF STRUCTURE
ELEV. = 972.98'

JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VAULT AND/OR SHALLOW ORIENTATIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD

CARTRIDGE LENGTH	54"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"
FLOW RATE HI-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089
MAX. TREATMENT (CFS)	1.96
DECK TO INSIDE TOP (MIN) (B)	5.00



FRAME AND COVER

(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	WQU
WATER QUALITY FLOW RATE (cfs)	1.60
PEAK FLOW RATE (cfs)	14.56
RETURN PERIOD OF PEAK FLOW (yrs)	25
# OF CARTRIDGES REQUIRED (HF / DD)	7 / 2
CARTRIDGE LENGTH	54"

PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	980.65'	HDPE	24"	*	*
INLET #2	*	*	*	*	*
OUTLET	980.15'	HDPE	24"	*	*

SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.

RIM ELEVATION	987.59'

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES:

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 10', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
D. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

Jellyfish Filter

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

8' x 6' JELLYFISH - 715972- 010
QUIKTRIP 4160 GEORGETOWN
LEANDER, TX
SITE DESIGNATION: WQU

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Additional information is provided for cells with a red triangle in the upper right corn
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will

1. The Required Load Reduction for the total project: Calculations from RG-348

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resul
A_N = Net increase in impervious a
P = Average annual precipitation

Site Data: Determine Required Load Removal Based on the Entire Project

County =	Williamson	
Total project area included in plan * =	14.54	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	1.94	acres
Total post-development impervious cover fraction * =	0.13	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	1689	lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 2

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = 2

Total drainage basin/outfall area =	0.29	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.29	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M\ THIS\ BASIN}$ =	255	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 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 3

where:

A_C = Total On-Site drainage area
A_I = Impervious area proposed in
A_P = Pervious area remaining in tl
L_R = TSS Load removed from this

A_C =	**0.29**	acres
A_I =	**0.29**	acres
A_P =	**0.00**	acres
L_R =	**276**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

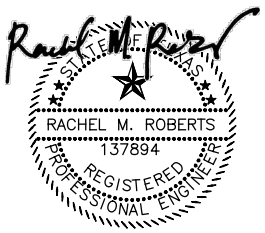
Desired $L_{M\ THIS\ BASIN}$ =	**276**	lbs.
F =	**1.00**	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Rainfall Depth =	**4.00**	inches
Post Development Runoff Coefficient =	**0.82**	
On-site Water Quality Volume =	**3473**	cubic feet

Calculations from RG-348

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



04/21/2023

Storage for Sediment = **695**

Total Capture Volume (required water quality volume(s) x 1.20) = 4167 cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP
The values for BMP Types not selected in cell C45 will show NA.

16. Vegetated Filter Strips Designed as Required in RG

There are no calculations required for determining the load or size of vegetative filter strips.
The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction o
the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with m
across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as lo

If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described o

SEE SHEETS C100, C110, & C120 FOR VEGETATED FILTER STRIP LOCATIONS, DIMENSIONS AND GRADING. SEE SHEET C122 FOR PAVEMENT AREA TREATED BY VFS.

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 12100 Park 35 Circle, Building A Austin, Texas 78753-1808 Phone (512) 339-2929 Fax (512) 339-3795	San Antonio Regional Office 14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 490-3096 Fax (210) 545-4329

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

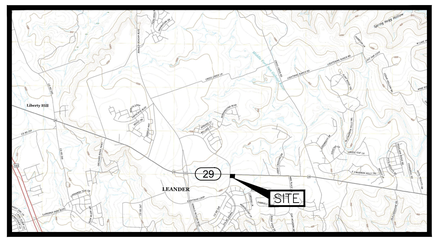
SITE DEVELOPMENT PLANS FOR

QUIKTRIP STORE #4160

7601 W SH 29

GEORGETOWN, TX 78628

LEANDER ETJ, WILLIAMSON COUNTY, TEXAS



GENERAL NOTES:

1. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE.
2. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL NECESSARY PERMITS HAVE BEEN OBTAINED FROM THE GOVERNING AGENCIES AND COORDINATING ALL GOVERNING AGENCY INSPECTIONS REQUIRED THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR RAZING AND REMOVAL OF THE EXISTING STRUCTURES, RELATED UTILITIES, PAVING, AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED. REFERENCE SITE WORK SPECIFICATIONS.
4. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
5. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR DAMAGE TO ADJACENT PROPERTIES AND NEW CONSTRUCTION IN PLACE DURING THE CONSTRUCTION PHASES OF THIS PROJECT. ANY DISTURBED IMPROVEMENTS SHALL BE REPLACED IN KIND AT THE CONTRACTORS EXPENSE.
6. ANY QUANTITIES PROVIDED ON THESE PLANS ARE FOR GENERAL REFERENCE PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE QUANTITIES REQUIRED FOR CONSTRUCTION.
7. THE EXISTING FEATURES SHOWN ON THESE PLANS ARE THOSE NOTED IN THE FIELD AND THOSE TAKEN FROM RECORD DRAWINGS. THERE IS NO GUARANTEE THAT ALL FEATURES (ABOVE OR BELOW GROUND) ARE SHOWN ON THE PLANS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING FEATURES PRIOR TO BIDDING THE PROJECT.
8. THE CONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION BY CONTACTING THE LOCAL UTILITY COMPANIES AND/OR UTILIZING THE LOCAL ONE-CALL SYSTEM. ANY DAMAGE DONE TO EXISTING UTILITIES (THAT ARE TO REMAIN IN PLACE) DURING CONSTRUCTION OPERATIONS WILL BE THE CONTRACTOR'S RESPONSIBILITY AND REPAIRED AT THE CONTRACTOR'S EXPENSE.
9. ALL SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE OWNERS CONTRACT DOCUMENTS AND SPECIFICATIONS. ALL WORK SHALL MEET OR EXCEED THE RELEVANT UTILITY COMPANIES AND REGULATORY AGENCIES, CONTRACT DOCUMENTS AND SPECIFICATIONS. ALL WORK WITHIN PUBLIC AND STATE RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE GOVERNING AGENCIES STANDARDS AND SPECIFICATIONS.
10. TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), CURRENT EDITION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER TRAFFIC CONTROL IS IN PLACE FOR EACH PHASE OF CONSTRUCTION. THE CONTRACTOR IS ALSO RESPONSIBLE FOR PROPERLY MAINTAINING TRAFFIC CONTROL DEVICES THROUGHOUT THE DURATION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TRAFFIC CONTROL PLANS TO THE CITY AND DEPARTMENT OF TRANSPORTATION AS REQUIRED.
11. THE STORMWATER TREATMENT SYSTEM (CONTECH JELLYFISH) IS TO BE PRIVATELY MAINTAINED.
12. THE WILLIAMSON COUNTY CERTIFICATE OF COMPLIANCE PERMIT NUMBER IS _____.
13. THE CONTRACTOR SHALL OBTAIN A "NOTICE OF PROPOSED INSTALLATION OF UTILITY LINE" PERMIT FROM WILLIAMSON COUNTY FOR ANY WORK PERFORMED IN THE EXISTING COUNTY RIGHT-OF-WAY (DRIVEWAY APRON, WATER MAIN TIE-IN, ETC.) THIS PERMIT APPLICATION WILL REQUIRE A LIABILITY AGREEMENT, A CONSTRUCTION COST ESTIMATE FOR WORK WITHIN THE RIGHT-OF-WAY INCLUDING PAVEMENT REPAIR (IF NEEDED), A PERFORMANCE BOND, CONSTRUCTION PLANS AND, IF NECESSARY, A TRAFFIC CONTROL PLAN. AN INSPECTION FEE, AND A PRE-CONSTRUCTION MEETING MAY ALSO BE REQUIRED, DEPENDING ON THE SCOPE OF WORK. THE PERMIT WILL BE REVIEWED AND APPROVED BY THE COUNTY ENGINEER, AND MUST BE APPROVED BY THE WILLIAMSON COUNTY COMMISSIONERS COURT IF ANY ROAD CLOSURE IS INVOLVED.
14. DRAINAGE FOR THIS DEVELOPMENT HAS BEEN DESIGNED SUCH THAT THERE WILL BE NO ADVERSE IMPACTS ON THE CAPACITY, FUNCTION OR INTEGRITY OF TEXAS DEPARTMENT OF TRANSPORTATION RIGHT OF WAY DRAINAGE FACILITIES.

WETLANDS NOTICE:

ANY DEVELOPMENT, EXCAVATION, CONSTRUCTION, OR FILLING IN A U.S. CORPS OF ENGINEERS DESIGNATED WETLAND IS SUBJECT TO LOCAL, STATE AND FEDERAL APPROVALS. THE CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS AND/OR RESTRICTIONS AND ANY VIOLATION WILL BE SUBJECT TO FEDERAL PENALTY. THE CONTRACTOR SHALL HOLD THE OWNER/ DEVELOPER, THE ENGINEER AND THE LOCAL GOVERNING AGENCIES HARMLESS AGAINST SUCH VIOLATION.

WARRANTY/DISCLAIMER:

THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER THE ENGINEER NOR ITS PERSONNEL CAN OR DO WARRANT THESE DESIGNS OR PLANS AS CONSTRUCTED EXCEPT IN THE SPECIFIC CASES WHERE THE ENGINEER INSPECTS AND CONTROLS THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.

NOTICE TO BIDDERS:

ALL QUESTIONS REGARDING THE PREPARATION OF THE GENERAL CONTRACTOR'S BID SHALL BE DIRECTED TO THE OWNER'S CONSTRUCTION REPRESENTATIVE. SUBCONTRACTORS MUST DIRECT THEIR QUESTIONS THROUGH THE GENERAL CONTRACTOR. THE CONSULTING ARCHITECT AND/OR THE CONSULTING ENGINEER SHALL NOT BE CONTACTED DIRECTLY WITHOUT PRIOR AUTHORIZATION FROM THE OWNER/DEVELOPER.

FLOOD CERTIFICATION:

THIS PROPERTY DOES NOT LOCATE WITHIN ANY PRESENTLY ESTABLISHED 100-YEAR FLOOD PLAIN, AS SHOWN BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP FOR THE WILLIAMSON COUNTY OF LEANDER, TEXAS, COMMUNITY PANEL NUMBER 48491C0275E EFFECTIVE DATE SEPTEMBER 26, 2008.

BENCHMARKS:

BM-100 SCRIBED "X" ON TOP OF CONCRETE, BEARS N 62°23'07" W 3.26' FROM THE WESTERN MOST NORTHWEST CORNER OF THE SUBJECT TRACT.
ELEVATION=983.80'

BM-101 COTTON SPINDLE SET IN POWER POLE, BEARS N 70°40'03" E, 299.23' FROM THE NORTHEAST CORNER OF THE SUBJECT TRACT.
ELEVATION=986.48'
NOT GRAPHICALLY SHOWN HERON

EMERGENCY SERVICES DISTRICT _____ DATE _____

REVIEWED FOR COMPLIANCE WITH COUNTY REQUIREMENTS

WILLIAMSON COUNTY _____ DATE _____

WILLIAMSON COUNTY DRIVEWAY PERMIT NO. _____ DATE _____

TxDOT DRIVEWAY PERMIT NO. _____ DATE _____

MUNICIPAL CONTACT LIST:

WATER UTILITY
CITY OF LEANDER
105 N BRUSHY ST
LEANDER, TEXAS, 78641
TEL:(512) 259-1142

WILLIAMSON COUNTY ESD NO.4
LIBERTY HILL FIRE DEPARTMENT
301 LOOP 332
LIBERTY HILL, TEXAS, 78642
TEL:(512) 515-5165

ELECTRIC COMPANY
PEDERNALES ELECTRIC
COOPERATIVE INC
1949 W WHITESTONE BLVD
CEDAR PARK, TEXAS, 78613
TEL:(512) 331-8883

TRANSPORTATION DEPARTMENT
WILLIAMSON COUNTY
3151 S.E. INNER LOOP, SUITE B
GEORGETOWN, TEXAS, 78626
TEL:(512) 943-3330

GAS COMPANY
ATMOS ENERGY
3110 N IH 35
ROUND ROCK, TEXAS, 78681
TEL:(512) 310-3850
CONTACT: MARTIN PEREZ

TELEPHONE COMPANY
AT&T
1395 US HWY 183, SUITE 110
LEANDER, TEXAS, 78641
TEL:(281) 549-2135

WASTE WATER PROVIDER:
CITY OF LIBERTY HILL
100 FORREST ST
PO BOX 1920
LIBERTY HILL, TEXAS 78642
TEL:(512) 548-5519

PROJECT CONTACT LIST:

SURVEYOR OF RECORD
MATKIN HOOVER
KYLE PRESSLER
3303 SHELL ROAD, SUITE 3
GEORGETOWN, TEXAS, 78628
TEL:(512) 868-2244

ENGINEER OF RECORD
KIMLEY-HORN
DEVIN KING, P.E.
5301 SOUTHWEST PARKWAY, SUITE 100, BUILDING 3
AUSTIN, TEXAS, 78735
TEL:(512) 787-8638

QT REAL ESTATE PROJECT MANAGER
QUIKTRIP CORPORATION
ROBERT COSTELLO
2007 SAM BASS ROAD, SUITE 100
ROUND ROCK, TEXAS, 78681
TEL:(512) 814-4326

QT CIVIL PROJECT MANAGER
QUIKTRIP CORPORATION
WADE RICHARDSON
4705 SOUTH 129TH EAST AVE
TULSA, OK 74134
TEL: (918) 615-7942

ODS QUANTITIES:	
LOT SIZE	__.___SF
DEVELOPED SITE (LOD)	__.___SF
QT SPEC CONCRETE	__.___SF
ALTERNATE:	
QT SPEC ASPHALT/CONCRETE	__.___SF/__.___ SF
UG DETENTION	__.___CF
SOD OR DECOMPOSED GRANITE AREA	__.___SF
ALL OTHER NON-QT SPEC PAVING	__.___SF
MASONRY CANOPY	YES/NO
WATER QUALITY UNIT	YES/NO
-UNIT TYPE:	e.g. CRYSTAL STREAM

THE QUANTITIES ABOVE ARE INTENDED FOR INTERNAL TRACKING PURPOSES ONLY.
THEY ARE NOT REPRESENTATIVE OF THE QUANTITIES FOR BIDDING PURPOSES.
THE CONTRACTOR IS RESPONSIBLE FOR CALCULATING THEIR OWN QUANTITIES.

SHEET INDEX

RACHEL M. ROBERTS
137894
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
10101 REUNION PLACE, SUITE 400,
SAN ANTONIO, TEXAS 78216
PHONE: 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM
TBPE #F-928 TBPLS #10193 928

QuikTrip No. 4160
7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

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FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C–NOTE.dwg TAB NAME:CITY OF LEANDER GENERAL NOTES USER:Oscar.garcia SAVED:4/10/2023 5:49 PM PLOTTED:4/21/2023 10:27 AM

GENERAL NOTES
REVISED JUNE 22, 2022
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
UTILITY LOCATE REQUESTS locates@leandertx.gov

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 LOCATIONS 48 HOURS PRIOR TO CONSTRUCTION.
a. LOCATE REQUESTS MUST INCLUDE A COPY OF YOUR 811 TICKET. THE CITY OF LEANDER IS ALLOWED UP TO 48 HOURS TO COMPLY WITH YOUR REQUEST, EXCLUDING WEEKENDS AND DESIGNATED CITY HOLIDAYS.
b. REFRESH ALL LOCATES BEFORE 14 DAYS – LOCATE REFRESH REQUESTS MUST INCLUDE A COPY OF YOUR 811 TICKET. SUBMIT ALL REQUESTS TO LOCATES@LEANDERTX.GOV. 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 PIPELINE DAMAGE IMMEDIATELY – IF YOU WITNESS OR EXPERIENCE PIPELINE EXCAVATION DAMAGE, PLEASE CONTACT THE CITY OF LEANDER BY PHONE AT 512-259-2640.

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 9:00 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 9:00 PM AND 7:00 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 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.
18. 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.
19. PROJECT SPECIFICATIONS TAKE PRECEDENCE OVER PLANS AND SPECIAL CONDITIONS GOVERN OVER TECHNICAL SPECIFICATIONS.
20. HOT MIX ASPHALTIC CONCRETE PAVEMENT SHALL BE MINIMUM THICKNESS OF 2 INCHES WITH NO RECYCLED ASPHALT SHINGLES CONTENT.
21. 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.
22. CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
23. 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.
24. 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.
25. 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.
26. THE CITY OF LEANDER SHALL NOT BE PETITIONED FOR ACCEPTANCE UNTIL ALL NECESSARY EASEMENT DOCUMENTS HAVE BEEN SIGNED AND RECORDED.
27. 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
28. TREES IN EXISTING ROW SHOULD BE PROTECTED OR NOTED IN THE PLANS TO BE REMOVED.

CONSTRUCTION SEQUENCE NOTES
1. INSTALL STABILIZED CONSTRUCTION ENTRANCE, EROSION CONTROLS AND TREE PROTECTION FENCING FOR EACH PHASE PRIOR TO CLEARING AND GRUBBING AND PER APPROVED EROSION AND SEDIMENTATION CONTROL/TREE PROTECTION PLAN.
2. THE CONTRACTOR SHALL ARRANGE AND COORDINATE ACCEPTABLE MEETING TIMES FOR AN ON-SITE PRE-CONSTRUCTION MEETING WITH THE OWNER, PROJECT ENGINEER, RELEVANT CONTRACTORS, RELEVANT UTILITY REPRESENTATIVES, AND THE CITY ENGINEER. AT THIS MEETING, THE CITY SHALL VERIFY THAT ALL EROSION AND SEDIMENT CONTROLS AND TREE PROTECTION ARE IN PLACE, THAT CONSTRUCTION DRAWINGS AND THE SWPPP ARE LOCATED ON SITE, AND THAT THE SWPPP PERMITS HAVE BEEN ISSUED. THE CITY MAY THEN ISSUE THE SUBDIVISION IMPROVEMENT PERMIT.
3. BEGIN SITE CLEARING.
4. CLEAR AND GRUB AND STRIP TOPSOIL. STOCKPILE TOPSOIL FOR LATER USE.
5. ROUGH SUBGRADE SITE IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.
6. CONSTRUCT WET AND DRY UTILITIES.
7. FINAL SUBGRADE PREPARATION.
8. INSTALL BASE MATERIALS.
9. INSTALL CONCRETE (FOUNDATIONS, CURBS, FLATWORK).
10. CONSTRUCT BUILDINGS.
11. INSTALL PAVEMENTS.
12. TOPSOIL, IRRIGATION, AND LANDSCAPING.
13. PROJECT ENGINEER INSPECTS JOB AND SUBMITS THE ENGINEER’S CONCURRENCE LETTER.
14. CITY VISITS SITE AND ISSUES CERTIFICATE OF ACCEPTANCE ONLY IF ALL CONSTRUCTION IS IN SUBSTANTIAL CONFORMANCE TO THE PLANS.
15. SITE CLEANUP AND REMOVAL OF TEMPORARY BMP'S.
16. 16. FOLLOWING THE COMPLETION OF THE PROJECT THE CONTRACTOR SHALL REMOVE ANY SEDIMENT BUILDUP IN THE WET POND FROM CONSTRUCTION ACTIVITIES.

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 WILLIAMSON COUNTY ESD NO. 4 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. DURING PERIODS OF EXTENDED DRY WEATHER, TRENCH BACKFILL MUST BE COMPACTED BY FLOODING THE TRENCHES AS DIRECTED BY THE CITY ENGINEER.
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

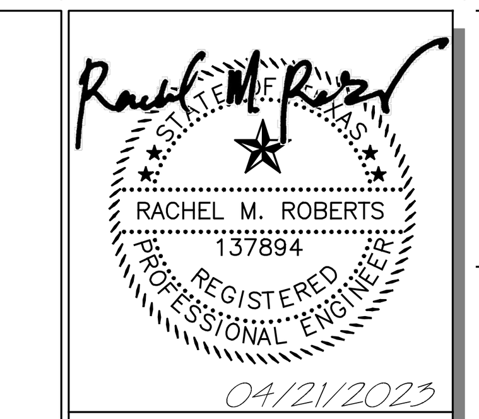
36. THE CONTRACTOR IS HEREBY NOTIFIED THAT CONNECTING TO, SHUTTING DOWN, OR TERMINATING EXISTING UTILITY LINES MAY HAVE TO OCCUR AT OFF-PEAK HOURS. SUCH HOURS ARE USUALLY OUTSIDE NORMAL WORKING HOURS AND POSSIBLY BETWEEN 12 AM AND 6 AM.
37. ALL WASTEWATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE 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 ACCESSIBLITY 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 _________. PAVEMENT RECOMMENDATIONS ARE AS FOLLOWS:

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
1. [PROVIDE LOCATION DESCRIPTION]



PROJECT NO.:069304941

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DIVISION:
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REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
CITY OF LEANDER GENERAL NOTES

SHEET NUMBER:
C002

KH GENERAL NOTES

OVERALL:
1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THESE PLANS, CITY (OR TOWN) STANDARD DETAILS AND SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT AND ALL ISSUED ADDENDA, AND COMMONLY ACCEPTED CONSTRUCTION STANDARDS. THE CITY SPECIFICATIONS SHALL GOVERN WHERE OTHER SPECIFICATIONS DO NOT EXIST. IN CASE OF CONFLICTING SPECIFICATIONS OR DETAILS, THE MORE RESTRICTIVE SPECIFICATION AND DETAIL SHALL BE FOLLOWED.
2. THE CONTRACTOR SHALL COMPLY WITH CITY (OR TOWN) "GENERAL NOTES" FOR CONSTRUCTION, IF EXISTING AND REQUIRED BY THE CITY. FOR INSTANCES WHERE THEY CONFLICT WITH THESE KH GENERAL NOTES, THEN THE MORE RESTRICTIVE SHALL APPLY.
3. THE CONTRACTOR SHALL FURNISH ALL MATERIAL AND LABOR TO CONSTRUCT THE FACILITY AS SHOWN AND DESCRIBED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE APPROPRIATE AUTHORITIES' SPECIFICATIONS AND REQUIREMENTS.
4. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO DETERMINE EXISTING CONDITIONS.
5. THE EXISTING CONDITIONS SHOWN ON THESE PLANS WERE PROVIDED BY THE TOPOGRAPHIC SURVEY PREPARED BY THE PROJECT SURVEYOR, AND ARE BASED ON THE BENCHMARKS SHOWN. THE CONTRACTOR SHALL REFERENCE THE SAME BENCHMARKS.
6. THE CONTRACTOR SHALL REVIEW AND VERIFY THE EXISTING TOPOGRAPHIC SURVEY SHOWN ON THE PLANS REPRESENTS EXISTING FIELD CONDITIONS PRIOR TO CONSTRUCTION, AND SHALL REPORT ANY DISCREPANCIES FOUND TO THE OWNER AND ENGINEER IMMEDIATELY.
7. IF THE CONTRACTOR DOES NOT ACCEPT THE EXISTING TOPOGRAPHIC SURVEY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY AT THEIR OWN EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED PROFESSIONAL LAND SURVEYOR TO THE OWNER AND ENGINEER FOR REVIEW.
8. CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION SURVEYING AND STAKING.
9. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL CONTROL, INCLUDING BENCHMARKS PRIOR TO COMMENCING CONSTRUCTION OR STAKING OF IMPROVEMENTS. PROPERTY LINES AND CORNERS SHALL BE HELD AS THE HORIZONTAL CONTROL.
10. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS, ELEVATIONS, AND FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE ARCHITECT, ENGINEER, AND IF APPLICABLE THE CITY AND OWNER. NO CONSIDERATION WILL BE GIVEN TO CHANGE ORDERS FOR WHICH THE CITY, ENGINEER, AND OWNER WERE NOT CONTACTED PRIOR TO CONSTRUCTION OF THE AFFECTED ITEM.
11. CONTRACTOR SHALL THOROUGHLY CHECK COORDINATION OF CIVIL, LANDSCAPE, MEP, ARCHITECTURAL, AND OTHER PLANS PRIOR TO COMMENCING CONSTRUCTION. OWNER/ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY PRIOR TO COMMENCING WITH CONSTRUCTION.
12. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE BURIED OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA BEFORE COMMENCING WORK TO HAVE THEM LOCATE THEIR EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION.
13. CONTRACTOR SHALL CALL TEXAS 811 AN ADEQUATE AMOUNT OF TIME PRIOR TO COMMENCING CONSTRUCTION OR ANY EXCAVATION.
14. CONTRACTOR SHALL USE EXTREME CAUTION AS THE SITE CONTAINS VARIOUS KNOWN AND UNKNOWN PUBLIC AND PRIVATE UTILITIES.
15. THE LOCATIONS, ELEVATIONS, DEPTH, AND DIMENSIONS OF EXISTING UTILITIES SHOWN ON THE PLANS WERE OBTAINED FROM AVAILABLE UTILITY COMPANY MAPS AND PLANS, AND ARE CONSIDERED APPROXIMATE AND INCOMPLETE. IT SHALL BE THE CONTRACTORS' RESPONSIBILITY TO VERIFY THE PRESENCE, LOCATION, ELEVATION, DEPTH, AND DIMENSION OF EXISTING UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION SO THAT ADJUSTMENTS CAN BE MADE TO PROVIDE ADEQUATE CLEARANCES. THE ENGINEER SHALL BE NOTIFIED WHEN A PROPOSED IMPROVEMENT CONFLICTS WITH AN EXISTING UTILITY.
16. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ANY ADJUSTMENTS AND RELOCATIONS OF EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO, ADJUSTING EXISTING MANHOLES TO MATCH PROPOSED GRADE, RELOCATING EXISTING POLES AND GUY WIRES THAT ARE LOCATED IN PROPOSED DRIVEWAYS, ADJUSTING THE HORIZONTAL OR VERTICAL ALIGNMENT OF EXISTING UNDERGROUND UTILITIES TO ACCOMMODATE PROPOSED GRADE OR CROSSING WITH A PROPOSED UTILITY, AND ANY OTHERS THAT MAY BE ENCOUNTERED THAT ARE UNKNOWN AT THIS TIME AND NOT SHOWN ON THESE PLANS.
17. CONTRACTOR SHALL ARRANGE FOR OR PROVIDE, AT ITS EXPENSE, ALL GAS, TELECOMMUNICATIONS, CABLE, OVERHEAD AND UNDERGROUND POWER LINE, AND UTILITY POLE ADJUSTMENTS NEEDED.
18. CONTRACTOR IS RESPONSIBLE FOR COORDINATING INSTALLATION OF FRANCHISE UTILITIES THAT ARE NECESSARY FOR ON-SITE AND OFF-SITE CONSTRUCTION, AND SERVICE TO THE PROPOSED DEVELOPMENT.
19. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGES DUE TO THE CONTRACTORS' FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UTILITIES. THE OWNER OR ENGINEER WILL ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES. IF IT IS NECESSARY TO SHORE, BRACE, SWING OR RELOCATE A UTILITY, THE UTILITY COMPANY OR DEPARTMENT AFFECTED SHALL BE CONTACTED BY THE CONTRACTOR AND THEIR PERMISSION OBTAINED REGARDING THE METHOD TO USE FOR SUCH WORK.
20. BRACING OF UTILITY POLES MAY BE REQUIRED BY THE UTILITY COMPANIES WHEN TRENCHING OR EXCAVATING IN CLOSE PROXIMITY TO THE POLES. THE COST OF BRACING POLES WILL BE BORNE BY THE CONTRACTOR, WITH NO SEPARATE PAY ITEM FOR THIS WORK. THE COST IS INCIDENTAL TO THE PAY ITEM.
21. CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND POWER LINES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, FEDERAL AND UTILITY OWNER REGULATIONS PERTAINING TO WORK SETBACKS FROM POWER LINES.
22. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL REQUIRED CONSTRUCTION PERMITS, APPROVALS, AND BONDS PRIOR TO CONSTRUCTION.
23. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES A COPY OF THE CONTRACT DOCUMENTS INCLUDING PLANS, GEOTECHNICAL REPORT AND ADDENDA, PROJECT AND CITY SPECIFICATIONS, AND SPECIAL CONDITIONS, COPIES OF ANY REQUIRED CONSTRUCTION PERMITS, EROSION CONTROL PLANS, SWPPP AND INSPECTION REPORTS.
24. ALL SHOP DRAWINGS AND OTHER DOCUMENTS THAT REQUIRE ENGINEER REVIEW SHALL BE SUBMITTED BY THE CONTRACTOR SUFFICIENTLY IN ADVANCE OF CONSTRUCTION OF THAT ITEM, SO THAT NO LESS THAN 10 BUSINESS DAYS FOR REVIEW AND RESPONSE IS AVAILABLE.
25. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES, JURISDICTIONAL AGENCIES, AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO USE OF THE FACILITY AND THE FINAL CONNECTION OF SERVICES.
26. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS.
27. CONTRACTOR'S BID PRICE SHALL INCLUDE ALL INSPECTION FEES.
28. ALL SYMBOLS SHOWN ON THESE PLANS (E.G. FIRE HYDRANT, METERS, VALVES, INLETS, ETC....) ARE FOR PRESENTATION PURPOSES ONLY AND ARE NOT TO SCALE. CONTRACTOR SHALL COORDINATE FINAL SIZES AND LOCATIONS WITH APPROPRIATE CITY INSPECTOR.
29. THE SCOPE OF WORK FOR THE CIVIL IMPROVEMENTS SHOWN ON THESE PLANS TERMINATES 5-FEET FROM THE BUILDING. REFERENCE THE BUILDING PLANS (E.G. ARCHITECTURAL, STRUCTURAL, MEP) FOR AREAS WITHIN 5-FEET OF THE BUILDING AND WITHIN THE BUILDING FOOTPRINT.
30. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR ALL FINAL BUILDING DIMENSIONS.
31. THE PROPOSED BUILDING FOOTPRINT(S) SHOWN IN THESE PLANS WAS PROVIDED TO KIMLEY-HORN AND ASSOCIATES, INC. (KH) BY THE PROJECT ARCHITECT AT THE TIME THESE PLANS WERE PREPARED. IT MAY NOT BE THE FINAL CORRECT VERSION BECAUSE THE BUILDING DESIGN WAS ONGOING. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFIRMING THE FINAL CORRECT VERSION OF THE BUILDING FOOTPRINT WITH THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO LAYOUT. DIMENSIONS AND/OR COORDINATES SHOWN ON THESE PLANS WERE BASED ON THE ABOVE STATED ARCHITECTURAL FOOTPRINT, AND ARE THEREFORE A PRELIMINARY LOCATION OF THE BUILDING. THE CONTRACTOR IS SOLELY RESPONSIBLE TO VERIFY WHAT PART OF THE BUILDING THE ARCHITECT'S FOOTPRINT REPRESENTS (E.G. SLAB, OUTSIDE WALL, MASONRY LEDGE, ETC.....) AND TO CONFIRM ITS FINAL POSITION ON THE SITE BASED ON THE FINAL ARCHITECTURAL FOOTPRINT, CIVIL DIMENSION CONTROL PLAN, SURVEY BOUNDARY AND/OR PLAT. ANY DIFFERENCES FOUND SHALL BE REPORTED TO KH IMMEDIATELY.
32. ALL CONSTRUCTION SHALL COMPLY WITH THE PROJECT'S FINAL GEOTECHNICAL REPORT (OR LATEST EDITION), INCLUDING SUBSEQUENT ADDENDA.
33. CONTRACTOR IS RESPONSIBLE FOR ALL MATERIALS TESTING AND CERTIFICATION, UNLESS SPECIFIED OTHERWISE BY OWNER. ALL MATERIALS TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR AND COMPLY WITH CITY STANDARD SPECIFICATIONS AND GEOTECHNICAL REPORT. TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING MATERIALS. OWNER SHALL APPROVE THE AGENCY NOMINATED BY THE CONTRACTOR FOR MATERIALS TESTING.
34. ALL COPIES OF MATERIALS TEST RESULTS SHALL BE SENT TO THE OWNER, ENGINEER AND ARCHITECT DIRECTLY FROM THE TESTING AGENCY.
35. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SHOW, BY THE STANDARD TESTING PROCEDURES OF THE MATERIALS, THAT THE WORK CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS.
36. DUE TO THE POTENTIAL FOR DIFFERENTIAL SOIL MOVEMENT ADJACENT TO THE BUILDING, THE CONTRACTOR SHALL ADHERE TO GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PROPOSED BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC TO FLATWORK ADJACENT TO THE BUILDING, IF NONE IS CURRENTLY EXISTING.
37. ALL CONTRACTORS MUST CONFINE THEIR ACTIVITIES TO THE WORK AREA. NO ENCROACHMENTS OUTSIDE OF THE WORK AREA WILL BE ALLOWED. ANY DAMAGE RESULTING THEREFROM SHALL BE CONTRACTOR'S SOLE RESPONSIBILITY TO REPAIR.
38. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, UTILITIES, MANHOLES, POLES, GUY WIRES, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, COMMUNICATION BOXES/PEDESTALS, AND OTHER FACILITIES TO REMAIN AND SHALL REPAIR ANY DAMAGES AT NO COST TO THE OWNER.
39. THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY PHYSICAL DAMAGE TO PRIVATE PROPERTY OR PUBLIC IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO: FENCES, WALLS, SIGNS, PAVEMENT, CURBS, UTILITIES, SIDEWALKS, GRASS, TREES, LANDSCAPING, AND IRRIGATION SYSTEMS, ETC.... TO ORIGINAL CONDITION OR BETTER AT NO COST TO THE OWNER.
40. ALL AREAS IN EXISTING RIGHT-OF-WAY DISTURBED BY SITE CONSTRUCTION SHALL BE REPAIRED TO ORIGINAL CONDITION OR BETTER, INCLUDING AS NECESSARY GRADING, LANDSCAPING, CULVERTS, AND PAVEMENT.
41. THE CONTRACTOR SHALL SALVAGE ALL EXISTING POWER POLES, SIGNS, WATER VALVES, FIRE HYDRANTS, METERS, ETC... THAT ARE TO BE RELOCATED DURING CONSTRUCTION.
42. CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION, INCLUDING MAINTAINING EXISTING DITCHES OR CULVERTS FREE OF OBSTRUCTIONS AT ALL TIMES.
43. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND SUBMITTING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENCHES. NO OPEN TRENCHES SHALL BE ALLOWED OVERNIGHT WITHOUT PRIOR WRITTEN APPROVAL OF THE CITY.
44. THE CONTRACTOR SHALL KEEP TRENCHES FREE FROM WATER.
45. SITE SAFETY IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
46. THESE PLANS DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE ENGINEER'S SEAL HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF ALL REQUIRED SAFETY PROCEDURES AND PROGRAMS.
47. SIGNS RELATED TO SITE OPERATION OR SAFETY ARE NOT INCLUDED IN THESE PLANS.
48. CONTRACTOR OFFICE AND STAGING AREA SHALL BE AGREED ON BY THE OWNER AND CONTRACTOR PRIOR TO BEGINNING OF CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITTING REQUIREMENTS FOR THE CONSTRUCTION OFFICE, TRAILER, STORAGE, AND STAGING OPERATIONS AND LOCATIONS.
49. LIGHT POLES, SIGNS, AND OTHER OBSTRUCTIONS SHALL NOT BE PLACED IN ACCESSIBLE ROUTES.
50. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
51. TOP RIM ELEVATIONS OF ALL EXISTING AND PROPOSED MANHOLES SHALL BE COORDINATED WITH TOP OF PAVEMENT OR FINISHED GRADE AND SHALL BE ADJUSTED TO BE FLUSH WITH THE ACTUAL FINISHED GRADE AT THE TIME OF PAVING.
52. CONTRACTOR SHALL ADJUST ALL EXISTING AND PROPOSED VALVES, FIRE HYDRANTS, AND OTHER UTILITY APPURTENANCES TO MATCH ACTUAL FINISHED GRADES AT THE TIME OF PAVING.
53. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION SEQUENCING AND PHASING, AND SHALL CONTACT THE APPROPRIATE CITY OFFICIALS, INCLUDING BUILDING OFFICIAL, ENGINEERING INSPECTOR, AND FIRE MARSHALL TO LEARN OF ANY REQUIREMENTS.
54. CONTRACTOR IS RESPONSIBLE FOR PREPARATION, SUBMITTAL, AND APPROVAL BY THE CITY OF A TRAFFIC CONTROL PLAN PRIOR TO THE START OF CONSTRUCTION, AND THEN THE IMPLEMENTATION OF THE PLAN.
55. CONTRACTOR SHALL KEEP A NEAT AND ACCURATE RECORD OF CONSTRUCTION, INCLUDING ANY DEVIATIONS OR VARIANCES FROM THE PLANS.
56. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AS-BUILT PLANS TO THE ENGINEER AND CITY IDENTIFYING ALL DEVIATIONS AND VARIATIONS FROM THESE PLANS MADE DURING CONSTRUCTION.

EROSION CONTROL:
1. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL EROSION CONTROL AND WATER QUALITY REQUIREMENTS, LAWS, AND ORDINANCES THAT APPLY TO THE CONSTRUCTION SITE LAND DISTURBANCE.
2. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE "TCEQ GENERAL PERMIT TO DISCHARGE UNDER THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM TXR 150000".
3. EROSION CONTROL DEVICES SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBANCE.
4. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT.
5. CONTRACTOR IS SOLELY RESPONSIBLE FOR INSTALLATION, IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL EROSION CONTROL DEVICES, BEST MANAGEMENT PRACTICES (BMPS), AND FOR UPDATING THE EROSION CONTROL PLAN DURING CONSTRUCTION AS FIELD CONDITIONS CHANGE.
6. CONTRACTOR SHALL DOCUMENT THE DATES OF INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL FOR EACH BMP EMPLOYED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IF APPLICABLE.
7. AS STORM SEWER INLETS ARE INSTALLED ON-SITE, TEMPORARY EROSION CONTROL DEVICES SHALL BE INSTALLED AT EACH INLET PER APPROVED DETAILS.
8. THE EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL THE AREA IT PROTECTS HAS BEEN PERMANENTLY STABILIZED.
9. CONTRACTOR SHALL PROVIDE ADEQUATE EROSION CONTROL DEVICES NEEDED DUE TO PROJECT PHASING.
10. CONTRACTOR SHALL OBSERVE THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES AND MAKE FIELD ADJUSTMENTS AND MODIFICATIONS AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE SITE. IF THE EROSION CONTROL DEVICES DO NOT EFFECTIVELY CONTROL EROSION AND PREVENT SEDIMENTATION FROM WASHING OFF THE SITE, THEN THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
11. OFF-SITE SOIL BORROW, SPOIL, AND STORAGE AREAS (IF APPLICABLE) ARE CONSIDERED AS PART OF THE PROJECT SITE AND MUST ALSO COMPLY WITH THE EROSION CONTROL REQUIREMENTS FOR THIS PROJECT. THIS INCLUDES THE INSTALLATION OF BMP'S TO CONTROL EROSION AND SEDIMENTATION AND THE ESTABLISHMENT OF PERMANENT GROUND COVER ON DISTURBED AREAS PRIOR TO FINAL APPROVAL OF THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR MODIFYING THE SWPPP AND EROSION CONTROL PLAN TO INCLUDE BMPS FOR ANY OFF-SITE THAT ARE NOT ANTICIPATED OR SHOWN ON THE EROSION CONTROL PLAN.
12. ALL STAGING, STOCKPILES, SPOIL, AND STORAGE SHALL BE LOCATED SUCH THAT THEY WILL NOT ADVERSELY AFFECT STORM WATER QUALITY. PROTECTIVE MEASURES SHALL BE PROVIDED IF NEEDED TO ACCOMPLISH THIS REQUIREMENT, SUCH AS COVERING OR ENCIRCLING THE AREA WITH AN APPROPRIATE BARRIER.
13. CONTRACTORS SHALL INSPECT ALL EROSION CONTROL DEVICES, BMPS, DISTURBED AREAS, AND VEHICLE ENTRY AND EXIT AREAS WEEKLY AND WITHIN 24 HOURS OF ALL RAINFALL EVENTS OF 0.5 INCHES OR GREATER, AND KEEP A RECORD OF THIS INSPECTION IN THE SWPPP BOOKLET IF APPLICABLE, TO VERIFY THAT THE DEVICES AND EROSION CONTROL PLAN ARE FUNCTIONING PROPERLY.
14. CONTRACTOR SHALL CONSTRUCT A STABILIZED CONSTRUCTION ENTRANCE AT ALL PRIMARY POINTS OF ACCESS IN ACCORDANCE WITH CITY SPECIFICATIONS. CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION TRAFFIC USES THE STABILIZED ENTRANCE AT ALL TIMES FOR ALL INGRESS/EGRESS.
15. SITE ENTRY AND EXITS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING AND FLOWING OF SEDIMENT AND DIRT ONTO OFF-SITE ROADWAYS. ALL SEDIMENT AND DIRT FROM THE SITE THAT IS DEPOSITED ONTO AN OFF-SITE ROADWAY SHALL BE REMOVED IMMEDIATELY.
16. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL SILT AND DEBRIS FROM THE AFFECTED OFF-SITE ROADWAYS THAT ARE A RESULT OF THE CONSTRUCTION, AS REQUESTED BY OWNER AND CITY. AT A MINIMUM, THIS SHOULD OCCUR ONCE PER DAY FOR THE OFF-SITE ROADWAYS.
17. WHEN WASHING OF VEHICLES IS REQUIRED TO REMOVE SEDIMENT PRIOR TO EXITING THE SITE, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP BMP.
18. CONTRACTOR SHALL INSTALL A TEMPORARY SEDIMENT BASIN FOR ANY ON-SITE DRAINAGE AREAS THAT ARE GREATER THAN 10 ACRES, PER TCEQ AND CITY STANDARDS. IF NO ENGINEERING DESIGN HAS BEEN PROVIDED FOR A SEDIMENTATION BASIN ON THESE PLANS, THEN THE CONTRACTOR SHALL ARRANGE FOR AN APPROPRIATE DESIGN TO BE PROVIDED.
19. ALL FINES IMPOSED FOR SEDIMENT OR DIRT DISCHARGED FROM THE SITE SHALL BE PAID BY THE RESPONSIBLE CONTRACTOR.
20. WHEN SEDIMENT OR DIRT HAS CLOGGED THE CONSTRUCTION ENTRANCE VOID SPACES BETWEEN STONES OR DIRT IS BEING TRACKED ONTO A ROADWAY, THE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASH-DOWN OPERATION SHALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF SITE WITHOUT FIRST FLOWING THROUGH ANOTHER BMP TO CONTROL SEDIMENTATION. PERIODIC RE-GRADING OR NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFECTIVENESS OF THE CONSTRUCTION ENTRANCE.
21. TEMPORARY SEEDING OR OTHER APPROVED STABILIZATION SHALL BE INITIATED WITHIN 14 DAYS OF THE LAST DISTURBANCE OF ANY AREA, UNLESS ADDITIONAL CONSTRUCTION IN THE AREA IS EXPECTED WITHIN 21 DAYS OF THE LAST DISTURBANCE.
22. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING CONSTRUCTION, ALWAYS CLEANING UP DIRT, LOOSE MATERIAL, AND TRASH AS CONSTRUCTION PROGRESSES.
23. UPON COMPLETION OF FINE GRADING, ALL SURFACES OF DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED. STABILIZATION IS ACHIEVED WHEN THE AREA IS EITHER COVERED BY PERMANENT IMPERVIOUS STRUCTURES, SUCH AS BUILDINGS, SIDEWALK, PAVEMENT, OR A UNIFORM PERENNIAL VEGETATIVE COVER.
24. AT THE CONCLUSION OF THE PROJECT, ALL INLETS, DRAIN PIPE, CHANNELS, DRAINAGEWAYS AND BORROW DITCHES AFFECTED BY THE CONSTRUCTION SHALL BE DREDGED, AND THE SEDIMENT GENERATED BY THE PROJECT SHALL BE REMOVED AND DISPOSED IN ACCORDANCE WITH APPLICABLE REGULATIONS.

STORM WATER DISCHARGE AUTHORIZATION:
1. CONTRACTOR SHALL COMPLY WITH ALL TCEQ AND EPA STORM WATER POLLUTION PREVENTION REQUIREMENTS.
2. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE TCEQ GENERAL PERMIT TO DISCHARGE UNDER THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM TXR 150000.
3. THE CONTRACTOR SHALL ENSURE THAT ALL PRIMARY OPERATORS SUBMIT A NOI TO TCEQ AT LEAST SEVEN DAYS PRIOR TO COMMENCING CONSTRUCTION (IF APPLICABLE), OR IF UTILIZING ELECTRONIC SUBMITTAL, PRIOR TO COMMENCING CONSTRUCTION. ALL PRIMARY OPERATORS SHALL PROVIDE A COPY OF THE SIGNED NOI TO THE OPERATOR OF ANY MS4 (TYPICALLY THE CITY) RECEIVING DISCHARGE FROM THE SITE.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IF APPLICABLE, INCLUDING POSTING SITE NOTICE, INSPECTIONS, DOCUMENTATION, AND SUBMISSION OF ANY INFORMATION REQUIRED BY THE TCEQ AND EPA (E.G. NOI).
5. ALL CONTRACTORS AND SUBCONTRACTORS PROVIDING SERVICES RELATED TO THE SWPPP SHALL SIGN THE REQUIRED CONTRACTOR CERTIFICATION STATEMENT ACKNOWLEDGING THEIR RESPONSIBILITIES AS SPECIFIED IN THE SWPPP.
6. A COPY OF THE SWPPP, INCLUDING NOI, SITE NOTICE, CONTRACTOR CERTIFICATIONS, AND ANY REVISIONS, SHALL BE SUBMITTED TO THE CITY BY THE CONTRACTOR AND SHALL BE RETAINED ON-SITE DURING CONSTRUCTION.
7. A NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO TCEQ BY ANY PRIMARY OPERATOR WITHIN 30 DAYS AFTER ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND A UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED ON ALL UNPAVED AREAS AND AREAS NOT COVERED BY STRUCTURES, A TRANSFER OF OPERATIONAL CONTROL HAS OCCURRED, OR THE OPERATOR HAS OBTAINED ALTERNATIVE AUTHORIZATION UNDER A DIFFERENT PERMIT. A COPY OF THE NOT SHALL BE PROVIDED TO THE OPERATOR OF ANY MS4 RECEIVING DISCHARGE FROM THE SITE.

DEMOLITION:
1. KH IS NOT RESPONSIBLE FOR THE MEANS AND METHODS EMPLOYED BY THE CONTRACTOR TO IMPLEMENT THIS DEMOLITION PLAN. THIS PRELIMINARY DEMOLITION PLAN SIMPLY INDICATES THE KNOWN OBJECTS ON THE SUBJECT TRACT THAT ARE TO BE DEMOLISHED AND REMOVED FROM THE SITE.
2. KH DOES NOT WARRANT OR REPRESENT THAT THE PLAN, WHICH WAS PREPARED BASED ON SURVEY AND UTILITY INFORMATION PROVIDED BY OTHERS, SHOWS ALL IMPROVEMENTS AND UTILITIES, THAT THE IMPROVEMENTS AND UTILITIES ARE SHOWN ACCURATELY, OR THAT THE UTILITIES SHOWN CAN BE REMOVED. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ITS OWN SITE RECONNAISSANCE TO SCOPE ITS WORK AND TO CONFIRM WITH THE OWNERS OF IMPROVEMENTS AND UTILITIES THE ABILITY AND PROCESS FOR THE REMOVAL OF THEIR FACILITIES.
3. THIS PLAN IS INTENDED TO GIVE A GENERAL GUIDE TO THE CONTRACTOR, NOTHING MORE. THE GOAL OF THE DEMOLITION IS TO LEAVE THE SITE IN A STATE SUITABLE FOR THE CONSTRUCTION OF THE PROPOSED DEVELOPMENT. REMOVAL OR PRESERVATION OF IMPROVEMENTS, UTILITIES, ETC. TO ACCOMPLISH THIS GOAL ARE THE RESPONSIBILITY OF THE CONTRACTOR.
4. CONTRACTOR IS STRONGLY CAUTIONED TO REVIEW THE FOLLOWING REPORTS DESCRIBING SITE CONDITIONS PRIOR TO BIDDING AND IMPLEMENTING THE DEMOLITION PLAN:
   a. ENVIRONMENTAL SITE ASSESSMENT PROVIDED BY THE OWNER,
   b. ASBESTOS BUILDING INSPECTION REPORT(S) PROVIDED BY THE OWNER,
   c. GEOTECHNICAL REPORT PROVIDED BY THE OWNER.
   d. OTHER REPORTS THAT ARE APPLICABLE AND AVAILABLE.
5. CONTRACTOR SHALL CONTACT THE OWNER TO VERIFY WHETHER ADDITIONAL REPORTS OR AMENDMENTS TO THE ABOVE CITED REPORTS HAVE BEEN PREPARED AND TO OBTAIN/REVIEW/AND COMPLY WITH THE RECOMMENDATION OF SUCH STUDIES PRIOR TO STARTING ANY WORK ON THE SITE.
6. CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS REGARDING THE DEMOLITION OF OBJECTS ON THE SITE AND THE DISPOSAL OF THE DEMOLISHED MATERIALS OFF-SITE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO REVIEW THE SITE, DETERMINE THE APPLICABLE REGULATIONS, RECEIVE THE REQUIRED PERMITS AND AUTHORIZATIONS, AND COMPLY.
7. KH DOES NOT REPRESENT THAT THE REPORTS AND SURVEYS REFERENCED ABOVE ARE ACCURATE, COMPLETE, OR COMPREHENSIVE SHOWING ALL ITEMS THAT WILL NEED TO BE DEMOLISHED AND REMOVED.
8. SURFACE PAVEMENT INDICATED MAY OVERLAY OTHER HIDDEN STRUCTURES, SUCH AS ADDITIONAL LAYERS OF PAVEMENT, FOUNDATIONS OR WALLS, THAT ARE ALSO TO BE REMOVED.

GRADING:
1. THE CONTRACTOR AND GRADING SUBCONTRACTOR SHALL VERIFY THE SUITABILITY OF EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE START OF CONSTRUCTION. THE CIVIL ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
2. CONTRACTOR SHALL OBTAIN ANY REQUIRED GRADING PERMITS FROM THE CITY.
3. UNLESS OTHERWISE NOTED, PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN IN PAVED AREA REFLECT TOP OF PAVEMENT SURFACE. IN LOCATIONS ALONG A CURB LINE, ADD 6-INCHES (OR THE HEIGHT OF THE CURB) TO THE PAVING GRADE FOR TOP OF CURB ELEVATION.
4. PROPOSED SPOT ELEVATIONS AND CONTOURS OUTSIDE THE PAVEMENT ARE TO TOP OF FINISHED GRADE.
5. PROPOSED CONTOURS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND DESIGNATED GRADIENT ARE TO BE USED IN CASE OF DISCREPANCY.
6. ALL FINISHED GRADES SHALL TRANSITION UNIFORMLY BETWEEN THE FINISHED ELEVATIONS SHOWN.
7. CONTOURS AND SPOT GRADES SHOWN ARE ELEVATIONS OF TOP OF THE FINISHED SURFACE. WHEN PERFORMING THE GRADING OPERATIONS, THE CONTRACTOR SHALL PROVIDE AN APPROPRIATE ELEVATION HOLD-DOWN ALLOWANCE FOR THE THICKNESS OF PAVEMENT, SIDEWALK, TOPSOIL, MULCH, STONE, LANDSCAPING, RIP-RAP AND ALL OTHER SURFACE MATERIALS THAT WILL CONTRIBUTE TO THE TOP OF FINISHED GRADE. FOR EXAMPLE, THE LIMITS OF EARTHWORK IN PAVED AREAS IS THE BOTTOM OF THE PAVEMENT SECTION.
8. NO REPRESENTATIONS OF EARTHWORK QUANTITIES OR SITE BALANCE ARE MADE BY THESE PLANS. THE CONTRACTOR SHALL PROVIDE THEIR OWN EARTHWORK CALCULATION TO DETERMINE THEIR CONTRACT QUANTITIES AND COST. ANY SIGNIFICANT VARIANCE FROM A BALANCED SITE SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CIVIL ENGINEER.
9. ALL GRADING AND EARTHWORK SHALL COMPLY WITH THE PROJECT'S FINAL GEOTECHNICAL REPORT (OR LATEST EDITION), INCLUDING SUBSEQUENT ADDENDA.
10. ALL EXCAVATION IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED. UNUSABLE EXCAVATED MATERIAL AND ALL WASTE RESULTING FROM SITE CLEARING AND GRUBBING SHALL BE REMOVED FROM THE SITE AND APPROPRIATELY DISPOSED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE.
11. EROSION CONTROL DEVICES SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF GRADING. REFERENCE EROSION CONTROL PLAN, DETAILS, GENERAL NOTES, AND SWPPP FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
12. BEFORE ANY EARTHWORK IS PERFORMED, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF THE PROJECT'S PROPERTY LINE AND SITE IMPROVEMENTS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK.
13. CONTRACTOR TO DISPOSE OF ALL EXCESS EXCAVATION MATERIALS IN A MANNER THAT ADHERES TO LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS. THE CONTRACTOR SHALL KEEP A RECORD OF WHERE EXCESS EXCAVATION WAS DISPOSED, ALONG WITH THE RECEIVING LANDOWNER'S APPROVAL TO DO SO.
14. CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF TOPSOIL AT THE COMPLETION OF FINE GRADING. CONTRACTOR SHALL REFER TO LANDSCAPE ARCHITECTURE PLANS FOR SPECIFICATIONS AND REQUIREMENTS FOR TOPSOIL.
15. CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION, INCLUDING MAINTAINING EXISTING DITCHES OR CULVERTS FREE OF OBSTRUCTIONS AT ALL TIMES.
16. NO EARTHWORK FILL SHALL BE PLACED IN ANY EXISTING DRAINAGE WAY, SWALE, CHANNEL, DITCH, CREEK, OR FLOODPLAIN FOR ANY REASON OR ANY LENGTH OF TIME, UNLESS THESE PLANS SPECIFICALLY INDICATE THIS IS REQUIRED.
17. TEMPORARY CULVERTS MAY BE REQUIRED IN SOME LOCATIONS TO CONVEY RUN-OFF.
18. REFER TO DIMENSION CONTROL PLAN, AND PLAT FOR HORIZONTAL DIMENSIONS.
19. THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND CONDITION FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
20. CONTRACTOR IS RESPONSIBLE FOR ALL SOILS TESTING AND CERTIFICATION, UNLESS SPECIFIED OTHERWISE BY OWNER. ALL SOILS TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR AND SHALL COMPLY WITH CITY STANDARD SPECIFICATIONS AND THE GEOTECHNICAL REPORT. SOILS TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING SOILS. THE OWNER SHALL APPROVE THE AGENCY NOMINATED BY THE CONTRACTOR FOR SOILS TESTING.
21. ALL COPIES OF SOILS TEST RESULTS SHALL BE SENT TO THE OWNER, ENGINEER AND ARCHITECT DIRECTLY FROM THE TESTING AGENCY.
22. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SHOW, BY THE STANDARD TESTING PROCEDURES OF THE SOILS, THAT THE WORK CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS.
23. THE SCOPE OF WORK FOR CIVIL IMPROVEMENT SHOWN ON THESE PLANS TERMINATES 5-FEET FROM THE BUILDING. CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND STRUCTURAL PLANS AND SPECIFICATIONS FILL, CONDITIONING, AND PREPARATION IN THE BUILDING PAD.
24. DUE TO THE POTENTIAL FOR DIFFERENTIAL SOIL MOVEMENT ADJACENT TO THE BUILDING, THE CONTRACTOR SHALL ADHERE TO GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PROPOSED BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC TO FLATWORK ADJACENT TO THE BUILDING, IF NONE IS CURRENTLY EXISTING.
25. CONTRACTOR SHALL ENSURE THAT SUFFICIENT POSITIVE SLOPE AWAY FROM THE BUILDING PAD IS ACHIEVED FOR ENTIRE PERIMETER OF THE PROPOSED BUILDING(S) DURING GRADING OPERATIONS AND IN THE FINAL CONDITION. IF THE CONTRACTOR OBSERVES THAT THIS WILL NOT BE ACHIEVED, THE CONTRACTOR SHALL CONTACT THE ENGINEER TO REVIEW THE LOCATION.
26. THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. CONTRACTOR SHALL CONTROL DUST BY SPRINKLING WATER, OR BY OTHER MEANS APPROVED BY THE CITY, AT NO ADDITIONAL COST TO THE OWNER.
27. CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS NEEDED FOR GRADING OPERATIONS AND TO ACCOMMODATE PROPOSED GRADE, INCLUDING THE UNKNOWN UTILITIES NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL REFER TO THE GENERAL NOTES "OVERALL" SECTION THESE PLANS FOR ADDITIONAL INFORMATION.
28. EXISTING TREE LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE. CONTRACTOR SHALL REPORT ANY DISCREPANCIES FOUND IN THE FIELD THAT AFFECT THE GRADING PLAN TO THE CIVIL ENGINEER.
29. CONTRACTOR SHALL FIELD VERIFY ALL PROTECTED TREE LOCATIONS, INDIVIDUAL PROTECTED TREE CRITICAL ROOT ZONES, AND PROPOSED SITE GRADING, AND NOTIFY THE CIVIL ENGINEER AND LANDSCAPE ARCHITECT OF ANY CONFLICTS WITH THE TREE PRESERVATION PLAN BY THE LANDSCAPE ARCHITECT PRIOR TO COMMENCING THE WORK.
30. TREE PROTECTION MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY STANDARD TREE PROTECTION DETAILS AND THE APPROVED TREE PRESERVATION PLANS BY THE LANDSCAPE ARCHITECT.
31. CONTRACTOR SHALL REFER TO THE LANDSCAPING AND TREE PRESERVATIONS PLANS FOR ALL INFORMATION AND DETAILS REGARDING EXISTING TREES TO BE REMOVED AND PRESERVED.
32. NO TREE SHALL BE REMOVED UNLESS A TREE REMOVAL PERMIT HAS BEEN ISSUED BY THE CITY, OR CITY HAS OTHERWISE CONFIRMED IN WRITING THAT ONE IS NOT NEEDED FOR THE TREE(S).
33. NO TREE SHALL BE REMOVED OR DAMAGED WITHOUT PRIOR AUTHORIZATION OF THE OWNER OR OWNER'S REPRESENTATIVE. EXISTING TREES SHALL BE PRESERVED WHENEVER POSSIBLE AND GRADING IMPACT TO THEM HELD TO A MINIMUM.
34. AFTER PLACEMENT OF SUBGRADE AND PRIOR TO PLACEMENT OF PAVEMENT, CONTRACTOR SHALL TEST AND OBSERVE PAVEMENT AREAS FOR EVIDENCE OF PONDING AND INADEQUATE SLOPE FOR DRAINAGE. ALL AREAS SHALL ADEQUATELY DRAIN TOWARDS THE INTENDED STRUCTURE TO CONVEY STORMWATER RUNOFF. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER AND ENGINEER IF ANY AREAS OF POOR DRAINAGE ARE DISCOVERED.
35. CONTRACTOR FIELD ADJUSTMENT OF PROPOSED SPOT GRADES IS ALLOWED, IF THE APPROVAL OF THE CIVIL ENGINEER IS OBTAINED.

RETAINING WALLS:
1. RETAINING WALLS SHOWN ARE FOR SITE GRADING PURPOSES ONLY, AND INCLUDE ONLY LOCATION AND SURFACE SPOT ELEVATIONS AT THE TOP AND BOTTOM OF THE WALL.
2. RETAINING WALL TYPE OR SYSTEM SHALL BE SELECTED BY THE OWNER.
3. RETAINING WALL DESIGN SHALL BE PROVIDED BY OTHERS AND SHALL FIT IN THE WALL ZONE OR LOCATION SHOWN ON THESE PLANS. STRUCTURAL DESIGN AND PERMITTING OF RETAINING WALLS, RAILINGS, AND OTHER WALL SAFETY DEVICES SHALL BE PERFORMED BY A LICENSED ENGINEER AND ARE NOT PART OF THIS PLAN SET.
4. RETAINING WALL DESIGN SHALL MEET THE INTENT OF THE GRADING PLAN AND SHALL ACCOUNT FOR ANY INFLUENCE ON ADJACENT BUILDING FOUNDATIONS, UTILITIES, PROPERTY LINES AND OTHER CONSTRUCTABILITY NOTES.
5. RETAINING WALL ENGINEER SHALL CONSULT THESE PLANS AND THE GEOTECHNICAL REPORT FOR POTENTIAL CONFLICTS.

PAVING:
1. ALL PAVING MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS, THE CITY STANDARD DETAILS AND SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT AND ALL ISSUED ADDENDA, AND COMMONLY ACCEPTED CONSTRUCTION STANDARDS. THE CITY SPECIFICATIONS SHALL GOVERN WHERE OTHER SPECIFICATIONS DO NOT EXIST. IN CASE OF CONFLICTING SPECIFICATIONS OR DETAILS, THE MORE RESTRICTIVE SPECIFICATION/DETAIL SHALL BE FOLLOWED.
2. ALL PRIVATE ON-SITE PAVING AND PAVING SUBGRADE SHALL COMPLY WITH THE PROJECT'S FINAL GEOTECHNICAL REPORT (OR LATEST EDITION), INCLUDING ALL ADDENDA.
3. ALL FIRELANE PAVING AND PAVING SUBGRADE SHALL COMPLY WITH DETAILS. IF THESE ARE DIFFERENT THAN THOSE IN THE GEOTECHNICAL REPORT, THEN THE MORE RESTRICTIVE SHALL BE FOLLOWED.
4. ALL PUBLIC PAVING AND PAVING SUBGRADE SHALL COMPLY WITH CONSTRUCTION DETAILS AND SPECIFICATIONS.
5. PER ESD NO. 4 STANDARDS, FIRE LANE SHALL BE CONSTRUCTED OF CONCRETE OR ASPHALT ONLY ABLE TO WITHSTAND AN IMPOSED LOAD OF 75,000 POUNDS.
6. CONTRACTOR IS RESPONSIBLE FOR ALL PAVING AND PAVING SUBGRADE TESTING AND CERTIFICATION, UNLESS SPECIFIED OTHERWISE BY OWNER. ALL PAVING AND PAVING SUBGRADE TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR. TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING PAVING AND SUBGRADE. OWNER SHALL APPROVE THE AGENCY NOMINATED BY THE CONTRACTOR FOR PAVING AND PAVING SUBGRADE TESTING.
7. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SHOW, BY THE STANDARD TESTING PROCEDURES OF THE PAVING AND PAVING SUBGRADE, THAT THE WORK CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS.
8. DUE TO THE POTENTIAL FOR DIFFERENTIAL SOIL MOVEMENT ADJACENT TO THE BUILDING, THE CONTRACTOR SHALL ADHERE TO GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PROPOSED BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC TO FLATWORK ADJACENT TO THE BUILDING, IF NONE IS CURRENTLY EXISTING.
9. CURB RAMPS ALONG PUBLIC STREETS AND IN THE PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED BASED ON THE CITY STANDARD CONSTRUCTION DETAIL AND SPECIFICATIONS.
10. PRIVATE CURB RAMPS ON THE SITE (I.E. OUTSIDE PUBLIC STREET RIGHT-OF-WAY) SHALL CONFORM TO ADA AND TAS STANDARDS AND SHALL HAVE A DETECTABLE WARNING SURFACE THAT IS FULL WIDTH AND FULL DEPTH OF THE CURB RAMP, NOT INCLUDING FLARES.
11. ALL ACCESSIBLE RAMPS, CURB RAMPS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA AND TAS STANDARDS, LATEST EDITION.
12. ANY COMPONENTS OF THE PROJECT SUBJECT TO RESIDENTIAL USE SHALL ALSO CONFORM TO THE FAIR HOUSING ACT, AND COMPLY WITH THE FAIR HOUSING ACT DESIGN MANUAL BY THE US DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
13. CONTRACTOR SHALL CONSTRUCT PROPOSED PAVEMENT TO MATCH EXISTING PAVEMENT WITH A SMOOTH, FLUSH, CONNECTION.
14. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS FOR FIRE LANES, PARKING STALLS, HANDICAPPED PARKING SYMBOLS, AND MISCELLANEOUS STRIPING WITHIN PARKING LOT AND AROUND BUILDING AS SHOWN ON THE PLANS. ALL PAINT AND PAVEMENT MARKINGS SHALL ADHERE TO CITY AND OWNER STANDARDS.
15. REFER TO GEOTECHNICAL REPORT FOR PAVING JOINT LAYOUT PLAN REQUIREMENTS FOR PRIVATE PAVEMENT.
16. REFER TO CITY STANDARD DETAILS AND SPECIFICATIONS FOR JOINT LAYOUT PLAN REQUIREMENTS FOR PUBLIC PAVEMENT.
17. ALL REINFORCING STEEL SHALL CONFORM TO THE GEOTECHNICAL REPORT, CITY STANDARDS, AND ASTM A-615, GRADE 60, AND SHALL BE SUPPORTED BY BAR CHAIRS. CONTRACTOR SHALL USE THE MORE STRINGENT OF THE CITY AND GEOTECHNICAL STANDARDS.
18. ALL JOINTS SHALL EXTEND THROUGH THE CURB.
19. THE MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS SHALL BE 2 FEET.
20. CONTRACTOR SHALL SUBMIT A JOINTING PLAN TO THE ENGINEER AND OWNER PRIOR TO BEGINNING ANY OF THE PAVING WORK.
21. ALL SAWCUTS SHALL BE FULL DEPTH FOR PAVEMENT REMOVAL AND CONNECTION TO EXISTING PAVEMENT.
22. FIRE LANES SHALL BE MARKED AND LABELED AS A FIRELANE PER ESD NO. 4 STANDARDS.
23. UNLESS THE PLANS SPECIFICALLY DICTATE TO THE CONTRARY, ON-SITE AND OTHER DIRECTIONAL SIGNS SHALL BE ORIENTED SO THEY ARE READILY VISIBLE TO THE ONCOMING TRAFFIC FOR WHICH THEY ARE INTENDED.
24. CONTRACTOR IS RESPONSIBLE FOR INSTALLING NECESSARY CONDUIT FOR LIGHTING, IRRIGATION, ETC. PRIOR TO PLACEMENT OF PAVEMENT. ALL CONSTRUCTION DOCUMENTS (CIVIL, MEP, LANDSCAPE, IRRIGATION, AND ARCHITECT) SHALL BE CONSULTED.
25. BEFORE PLACING PAVEMENT, CONTRACTOR SHALL VERIFY THAT SUITABLE ACCESSIBLE PEDESTRIAN ROUTES (PER ADA, TAS, AND FHA) EXIST TO AND FROM EVERY DOOR AND ALONG SIDEWALKS, ACCESSIBLE PARKING SPACES, ACCESS AISLES, AND ACCESSIBLE ROUTES. IN NO CASE SHALL AN ACCESSIBLE RAMP SLOPE EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWALK CROSS SLOPE EXCEED 2.0 PERCENT. IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPE EXCEED 5.0 PERCENT. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL NOT EXCEED 2.0 PERCENT SLOPE IN ANY DIRECTION.
26. CONTRACTOR SHALL TAKE FIELD SLOPE MEASUREMENTS ON FINISHED SUBGRADE AND FORM BOARDS PRIOR TO PLACING PAVEMENT TO VERIFY THAT ADA/TAS SLOPE REQUIREMENTS ARE PROVIDED. CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO PAVING IF ANY EXCESSIVE SLOPES ARE ENCOUNTERED. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR ADA AND TAS SLOPE COMPLIANCE ISSUES.

STORM DRAINAGE:
1. ALL STORM SEWER MATERIALS AND CONSTRUCTION SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
2. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE STORM SEWER.
3. THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, CONDITION, HORIZONTAL, AND VERTICAL LOCATIONS OF ALL EXISTING STORM SEWER FACILITIES THAT ARE TO BE CONNECTED TO, PRIOR TO START OF CONSTRUCTION OF ANY STORM SEWER, AND SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED.
4. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF CURB INLETS AND GRATE INLETS AND ALL UTILITIES CROSSING THE STORM SEWER.
5. FLOW LINE, TOP-OF-CURB, RIM, THROAT, AND GRATE ELEVATIONS OF PROPOSED INLETS SHALL BE VERIFIED WITH THE GRADING PLAN AND FIELD CONDITIONS PRIOR TO THEIR INSTALLATION.
6. ALL PUBLIC STORM SEWER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO CITY PUBLIC WORKS STANDARD DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS.
7. ALL PRIVATE STORM SEWER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO THE APPLICABLE PLUMBING CODE. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS.
8. ALL PVC TO RCP CONNECTIONS AND ALL STORM PIPE CONNECTIONS ENTERING STRUCTURES OR OTHER STORM PIPES SHALL HAVE A CONCRETE COLLAR AND BE GROUTED TO ASSURE THE CONNECTION IS WATERTIGHT.
9. ALL PUBLIC STORM SEWER LINES SHALL BE MINIMUM CLASS III RCP. PRIVATE STORM SEWER LINES 18-INCHES AND GREATER SHALL BE CLASS III RCP OR OTHER APPROVED MATERIAL.
10. WHERE COVER EXCEEDS 20-FEET OR IS LESS THAN 2-FEET, CLASS IV RCP SHALL BE USED.
11. IF CONTRACTOR PROPOSES TO USE HDPE OR PVC IN LIEU OF RCP FOR PRIVATE STORM SEWER, CONTRACTOR SHALL SUBMIT TECHNICAL DATA TO THE OWNER, ENGINEER AND CITY ENGINEER/INSPECTOR FOR APPROVAL PRIOR TO ORDERING THE MATERIAL. ANY PROPOSED HDPE AND PVC SHALL BE WATERTIGHT.
12. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION SURVEYING FOR ALL STORM SEWER LINES.
13. EMBEDMENT FOR ALL STORM SEWER LINES, PUBLIC OR PRIVATE, SHALL BE PER CITY STANDARD DETAILS.
14. ALL WYE CONNECTIONS AND PIPE BENDS ARE TO BE PREFABRICATED AND INSTALLED PER MANUFACTURERS SPECIFICATIONS.
15. USE 4 FOOT JOINTS WITH BEVELED ENDS IF RADIUS OF STORM SEWER IS LESS THAN 100 FEET.
16. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND SUBMITTING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENCHES. NO OPEN TRENCHES SHALL BE ALLOWED OVERNIGHT WITHOUT PRIOR WRITTEN APPROVAL OF THE CITY.
17. THE CONTRACTOR SHALL KEEP TRENCHES FREE FROM WATER.

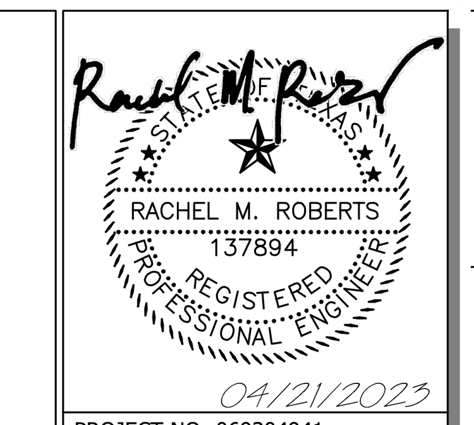
WATER AND WASTEWATER:
1. ALL WATER AND WASTEWATER MATERIALS AND CONSTRUCTION SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
2. CONTRACTOR SHALL FIELD VERIFY THE SIZE, CONDITION, HORIZONTAL, AND VERTICAL LOCATIONS OF ALL EXISTING WATER AND WASTEWATER FACILITIES THAT ARE TO BE CONNECTED TO, PRIOR TO START OF CONSTRUCTION OF ANY WATER OR WASTEWATER CONSTRUCTION, AND SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED.
3. CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITY SERVICES ENTERING THE BUILDING.
4. THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATION OF ALL UTILITY CROSSINGS PRIOR TO THE INSTALLATION OF ANY PIPE.
5. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE WATER AND WASTEWATER IMPROVEMENTS.
6. ALL PUBLIC WATER AND WASTEWATER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO CITY PUBLIC WORKS STANDARD DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS.
7. ALL PRIVATE WATER AND WASTEWATER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO THE APPLICABLE PLUMBING CODE. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS.
8. FIRE SPRINKLER LINES SHALL BE DESIGNED AND INSTALLED BY A LICENSED FIRE SPRINKLER CONTRACTOR, AND COMPLY TO THE APPLICABLE CODES AND INSPECTIONS REQUIRED. THESE PLANS WERE PREPARED WITHOUT THE BENEFIT OF THE FIRE SPRINKLER DESIGN. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES.
9. EMBEDMENT FOR ALL WATER AND WASTEWATER LINES, PUBLIC OR PRIVATE, SHALL BE PER CITY STANDARD DETAILS.
10. CONTRACTOR SHALL TAKE REQUIRED SANITARY PRECAUTIONS, FOLLOWING ANY CITY, TCEQ, AND AWWA STANDARDS, TO KEEP WATER PIPE AND FITTINGS CLEAN AND CAPPED AT TIMES WHEN INSTALLATION IS NOT IN PROGRESS.
11. CONTRACTOR SHALL PROVIDE CONSTRUCTION SURVEYING FOR ALL WATER AND WASTEWATER LINES.
12. ALL WATER AND WASTEWATER SERVICES SHALL TERMINATE 5-FEET OUTSIDE THE BUILDING, UNLESS NOTED OTHERWISE.
13. CONTRACTOR SHALL COMPLY WITH CITY REQUIREMENTS FOR WATER AND WASTEWATER SERVICE DISRUPTIONS AND THE AMOUNT OF PRIOR NOTICE THAT IS REQUIRED, AND SHALL COORDINATE DIRECTLY WITH THE APPROPRIATE CITY DEPARTMENT.
14. CONTRACTOR SHALL SEQUENCE WATER AND WASTEWATER CONSTRUCTION TO AVOID INTERRUPTION OF SERVICE TO SURROUNDING PROPERTIES.
15. CONTRACTOR SHALL MAINTAIN WATER SERVICE AND WASTEWATER SERVICE TO ALL CUSTOMERS THROUGHOUT CONSTRUCTION (IF NECESSARY, BY USE OF TEMPORARY METHODS APPROVED BY THE CITY AND OWNER). THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
16. THE CONTRACTOR IS RESPONSIBLE TO PROTECT ALL WATER AND WASTEWATER LINES CROSSING THE PROJECT. THE CONTRACTOR SHALL REPAIR ALL DAMAGED LINES IMMEDIATELY. ALL REPAIRS OF EXISTING WATER MAINS, WATER SERVICES, SEWER MAINS, AND SANITARY SEWER SERVICES ARE SUBSIDIARY TO THE WORK, AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
17. VALVE ADJUSTMENTS SHALL BE CONSTRUCTED SUCH THAT THE COVERS ARE AT FINISHED SURFACE GRADE OF THE PROPOSED PAVEMENT.
18. THE ENDS OF ALL EXISTING WATER MAINS THAT ARE CUT, BUT NOT REMOVED, SHALL BE PLUGGED AND ABANDONED IN PLACE. THIS WORK SHALL BE CONSIDERED AS A SUBSIDIARY COST TO THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
19. ALL FIRE HYDRANTS, VALVES, TEES, BENDS, WYES, REDUCERS, FITTINGS, AND ENDS SHALL BE MECHANICALLY RESTRAINED AND/OR THRUST BLOCKED TO ESD NO. 4 STANDARDS.
20. CONTRACTOR SHALL INSTALL A FULL SEGMENT OF WATER OR WASTEWATER PIPE CENTERED AT ALL UTILITY CROSSINGS SO THAT THE JOINTS ARE GREATER THAN 9-FEET FROM THE CROSSING.
21. ALL CROSSINGS AND LOCATIONS WHERE WASTEWATER IS LESS THAN 9-FEET FROM WATER, WASTEWATER CONSTRUCTION AND MATERIALS SHALL COMPLY WITH TCEQ CHAPTER 217.53.
22. ALL CROSSING AND LOCATIONS WHERE WATER IS LESS THAN 9-FEET FROM WASTEWATER, WATER CONSTRUCTION AND MATERIALS SHALL COMPLY WITH TCEQ CHAPTER 290.44.
23. ALL WATER AND WASTEWATER SHALL BE TESTED IN ACCORDANCE WITH THE CITY, AWWA, AND TCEQ STANDARDS AND SPECIFICATIONS. AT A MINIMUM, THIS SHALL CONSIST OF THE FOLLOWING:
   a. ALL WATERLINES SHALL BE HYDROSTATICALLY TESTED AND CHLORINATED BEFORE BEING PLACED INTO SERVICE. CONTRACTOR SHALL COORDINATE WITH THE CITY FOR THEIR REQUIRED PROCEDURES AND SHALL ALSO COMPLY WITH TCEQ REGULATIONS.
   b. WASTEWATER LINES AND MANHOLES SHALL BE PRESSURE TESTED. CONTRACTOR SHALL COORDINATE WITH THE CITY FOR THEIR REQUIRED PROCEDURES AND SHALL ALSO COMPLY WITH TCEQ REGULATIONS. AFTER COMPLETION OF THESE TESTS, A TELEVISION INSPECTION SHALL BE PERFORMED AND PROVIDED TO THE CITY AND OWNER ON A DVD.
24. CONTRACTOR SHALL INSTALL DETECTABLE WIRING OR MARKING TAPE A MINIMUM OF 12" ABOVE WATER AND WASTEWATER LINES. MARKER DECALS SHALL BE LABELED "CAUTION - WATER LINE", OR "CAUTION - SEWER LINE". DETECTABLE WIRING AND MARKING TAPE SHALL COMPLY WITH CITY STANDARDS, AND SHALL BE INCLUDED IN THE COST OF THE WATER AND WASTEWATER PIPE.
25. DUCTILE IRON PIPE SHALL BE PROTECTED FROM CORROSION BY A LOW-DENSITY POLYETHYLENE LINER WRAP THAT IS AT LEAST A SINGLE LAYER OF 8-MIL. ALL DUCTILE IRON JOINTS SHALL BE BONDED.
26. WATERLINES SHALL BE INSTALLED AT NO LESS THAN THE MINIMUM COVER REQUIRED BY THE CITY.
27. CONTRACTOR SHALL PROVIDE CLEAN-OUTS FOR PRIVATE SANITARY SEWER LINES AT ALL CHANGES IN DIRECTION AND 100-FOOT INTERVALS, OR AS REQUIRED BY THE APPLICABLE PLUMBING CODE. CLEAN-OUTS REQUIRED IN PAVEMENT OR SIDEWALKS SHALL HAVE CAST IRON COVERS FLUSH WITH FINISHED GRADE.
28. CONTRACTOR SHALL PROVIDE BACKWATER VALVES FOR PLUMBING FIXTURES AS REQUIRED BY THE APPLICABLE PLUMBING CODE (E.G. FLOOR ELEVATION OF FIXTURE UNIT IS BELOW THE ELEVATION OF THE MANHOLE COVER OF THE NEXT UPSTREAM MANHOLE IN THE PUBLIC SEWER). CONTRACTOR SHALL REVIEW BOTH MEP AND CIVIL PLANS TO CONFIRM WHERE THESE ARE REQUIRED.
29. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND SUBMITTING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENCHES. NO OPEN TRENCHES SHALL BE ALLOWED OVERNIGHT WITHOUT PRIOR WRITTEN APPROVAL OF THE CITY.
30. THE CONTRACTOR SHALL KEEP TRENCHES FREE FROM WATER.

WILLIAMSON COUNTY GENERAL NOTES:

SEE SECTIONS B4 THROUGH B9 OF THE WILLIAMSON COUNTY SUBDIVISION REGULATIONS.

ABBREVIATIONS AND DEFINITIONS:

A	AREA
ADA	AMERICANS WITH DISABILITIES ACT
AWWA	AMERICAN WATER WORKS ASSOCIATION
B-B	BACK TO BACK
BC	BEGIN CURVE
BC	BACK OF CURB
BCR	BEGIN CURB RETURN
BMP	BEST MANAGEMENT PRACTICE
BOC	BACK OF CURB
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
BW	BOTTOM OF WALL
CFS	CUBIC FEET PER SECOND
CITY	CITY, TOWN, OR OTHER APPLICABLE LOCAL GOVERNMENT JURISDICTION
C/L	CENTERLINE
CL	CENTERLINE
CONC	CONCRETE
CY	CUBIC YARD
DEMO	DEMOLITION
DG	DECOMPOSED GRANITE
DTL	DETAIL
EA	EACH
EC	END CURVE
ECR	END CURB RETURN
EG	EXISTING GROUND
EL	ELEVATION
ELEC	ELECTRICAL / ELECTRICITY
ELEV	ELEVATION
EPA	UNITES STATES ENVIRONMENTAL PROTECTION AGENCY
ESMT	EASEMENT
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EX.	EXISTING
F-F	FACE TO FACE
FG	FINISHED GROUND
FH	FIRE HYDRANT
FL	FLOW LINE
FOC	FACE OF CURB
FT	FEET
HGL	HYDRAULIC GRADE LINE
KH	KIMLEY-HORN AND ASSOCIATES, INC.
KHA	KIMLEY-HORN AND ASSOCIATES, INC.
LAT	LATERAL
LF	LINEAR FEET
LT	LEFT
MAX	MAXIMUM
ME	MATCH EXISTING ELEVATION
MH	MANHOLE
MIN	MINUTE / MINIMUM
NO	NUMBER
NOI	NOTICE OF INTENT, REF. TCEQ GENERAL PERMIT
NOT	NOTICE OF TERMINATION, REF. TCEQ GENERAL PERMIT
NTS	NOT TO SCALE
OC	ON CENTER
OFF	OFFSET
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE / POINT OF COMPOUND CURVATURE
PGL	PROPOSED GRADE LINE
PI	POINT OF INFLECTION
PROP	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INFLECTION
PVMT	PAVEMENT
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT OF WAY
RT	RIGHT
SF	SQUARE FEET
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
SY	SQUARE YARD
TAS	ARCHITECTURAL BARRIERS TEXAS ACCESSIBILITY STANDARDS
TC	TOP OF CURB
TCEQ	TEXAS COMMISSION OF ENVIRONMENTAL QUALITY
TEMP	TEMPORARY
TXDOT	TEXAS DEPARTMENT OF TRANSPORTATION
TXMUTCD	TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
TW	TOP OF WALL



PROJECT NO.:069304941

Kimley»Horn

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WWW.KIMLEY-HORN.COM
TBPE FIRM NO. 928

QuikTrip No. 4160
7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE: P-112 (11/18/22)
DIVISION:
VERSION: 001
DESIGNED BY: OHW
DRAWN BY: OHW
REVIEWED BY: RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
KHA GENERAL NOTES

SHEET NUMBER:
C003

FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C–NOTE.dwg TAB NAME:GENERAL NOTES USER:Oscar.garcia SAVED:4/10/2023 5:49 PM PLOTTED:4/21/2023 10:27 AM

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 12100 Park 35 Circle, Building A Austin, Texas 78753-1808 Phone (512) 339-2929 Fax (512) 339-3795	San Antonio Regional Office 14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 490-3096 Fax (210) 545-4329

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

RACHEL M. ROBERTS
137594
REGISTERED
PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn
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TBPE F-928/BS F-928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE: P-112 (11/18/22)
DIVISION:
VERSION: 001
DESIGNED BY: OHW
DRAWN BY: OHW
REVIEWED BY: RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
TCEQ GENERAL NOTES

SHEET NUMBER:
C004

QUIKTRIP #4160

SHORT FORM FINAL PLAT

A 1.89 ACRE TRACT OF LAND, LOCATED IN THE GREENLIEF FISK SURVEY, ABSTRACT 5, WILLIAMSON COUNTY, TEXAS AND BEING A PORTION OF A CALLED 1.961 ACRE TRACT OF LAND AS DESCRIBED AND CONVEYED OF RECORD IN DOCUMENT NO. 2023010495 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS.

PROJECT INFORMATION

PROPERTY OWNERS:
QT SOUTH LLC
2007 SAM BASS RD., SUITE 100
ROUND ROCK, TX 78681

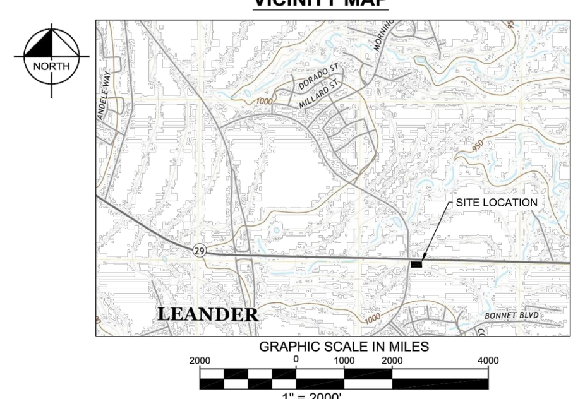
DEVELOPER:
ROBERT COSTELLO
QT SOUTH, LLC
2007 SAM BASS ROAD, SUITE 100
ROUND ROCK, TX 78681

ENGINEER / DEVELOPER'S AGENT:
RACHEL M. ROBERTS, P.E.
KIMLEY HORN AND ASSOCIATES, INC.
10101 REUNION PL., STE 400
SAN ANTONIO, TX 78216
(210)541-9166

SURVEYOR:
KYLE L. PRESSLER, R.P.L.S.
MATKIN HOOVER ENGINEERING & SURVEYING
8 SPENCER RD., STE 300
BOERNE, TX 78006
(830) 249-0600

THESE PLANS WERE FILED ON 07/26/2022.

VICINITY MAP



SHEET INDEX

SHEET	DESCRIPTION
1	COVER SHEET
2	SHORT FORM FINAL PLAT
3	SIGNATURES & PLAT NOTES

LOT SUMMARY

TOTAL NUMBER OF LOTS: 1
TOTAL LOT ACREAGE: 1.89
PROPOSED USE: RETAIL

STREET FRONTAGE

WEST STATE HIGHWAY 29	351 LF
KAUFFMAN LOOP	237 LF

Kimley»Horn
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Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
1" = 2000'	OHW	RMR	3/8/2023	069304941	1 OF 3

DWG NAME: K:\SNA_CIVIL\069304941 - QT 4160 KAUFFMAN LOOP & HWY29\CAD\PLAT\PLAT.DWG PLOTTED BY WATTS, OLIVIA 3/8/2023 10:13 AM LAST SAVED 3/8/2023 10:03 AM

QUIKTRIP #4160

SHORT FORM FINAL PLAT

A 1.89 ACRE TRACT OF LAND, LOCATED IN THE GREENLIEF FISK SURVEY, ABSTRACT 5, WILLIAMSON COUNTY, TEXAS AND BEING A PORTION OF A CALLED 1.961 ACRE TRACT OF LAND AS DESCRIBED AND CONVEYED OF RECORD IN DOCUMENT NO. 2023010495 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS.

LEGEND

SIR	1/2" IRON ROD W/ "MATKIN HOOVER ENG. & SURVEY" CAP SET
IRFC	1/2" IRON ROD FOUND W/ "RPLS 4046" CAP
OPRTC	OFFICIAL PUBLIC RECORDS OF TRAVIS COUNTY, TEXAS
O.P.R.	OFFICIAL PUBLIC RECORDS
B.M.	BENCHMARK
	PROPOSED SIDEWALK
	CITY OF LEANDER ETJ LIMITS
	RIGHT-OF-WAY DEDICATION

BENCHMARK

B.M. # 1
"X" CUT ON TOP OF CONCRETE, BEARS N 62° 23' 07" W, 3.26' FROM THE WESTERN MOST NORTHWEST CORNER OF SUBJECT TRACT.
ELEVATION: 983.80'

B.M. # 2
COTTON SPINDLE SET IN POWER POLE, BEARS N 70° 40' 03" E, 299.23' FROM THE NORTHEAST CORNER OF SUBJECT TRACT.
ELEVATION: 986.48'

BEARINGS ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, CENTRAL ZONE. ALL DISTANCES SHOWN HEREON ARE SURFACE VALUES, CGF = 1.0001411147 AT CP 1 (N: 10204376.52', E: 3087603.65', Z: 983.90').
VERTICAL RELIEF WAS MADE FROM AN ON THE GROUND SURVEY, CONTOURS SHOWN HEREON ARE AT 1' INTERVALS. BASIS OF ELEVATION IS THE TRIMBLE VRS NETWORK, NAD83(2011), EPOCH 2010.00, GEOID12B.

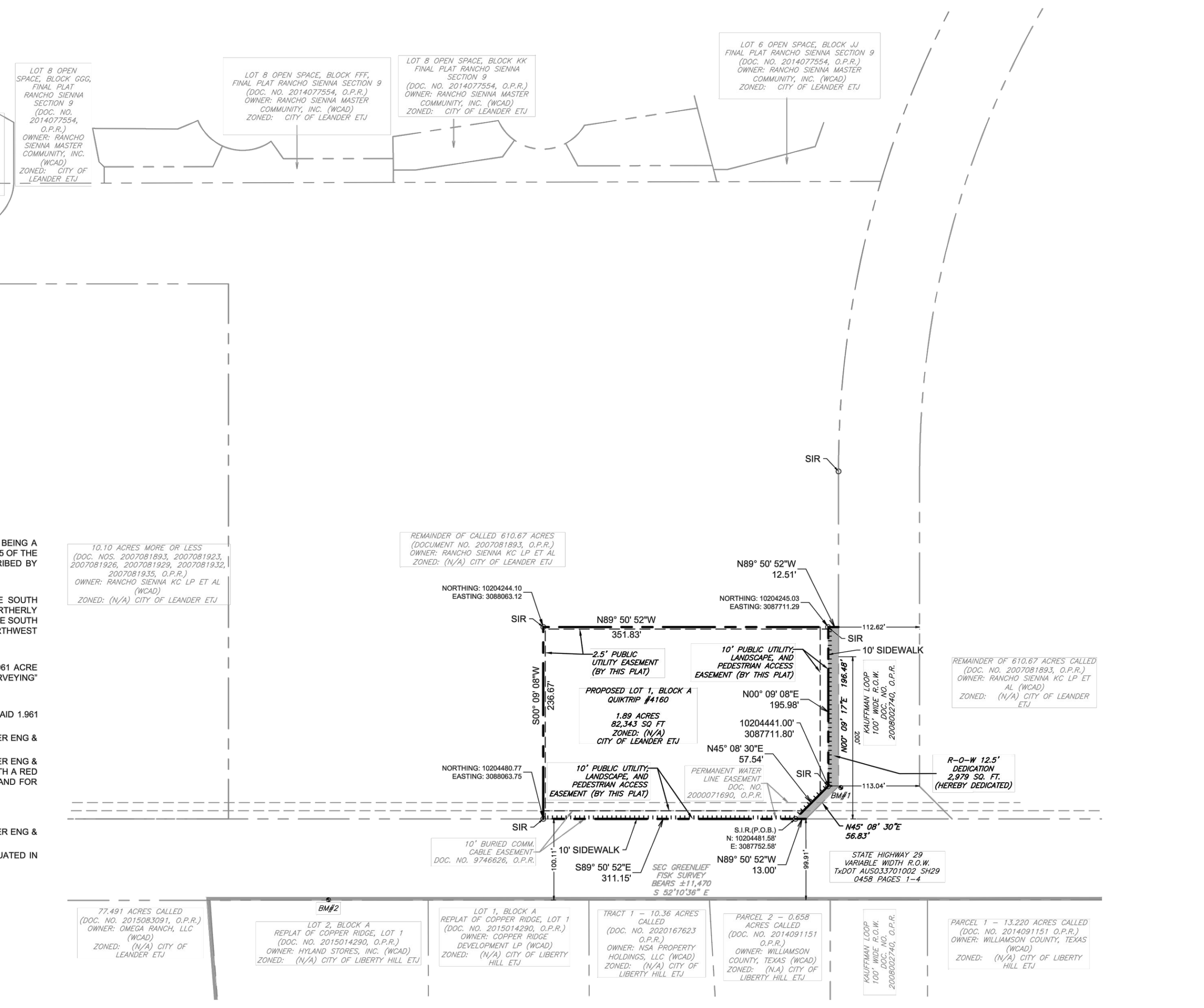
SURVEY TIES ADJACENT INTERSECTING

STREETS/DRIVEWAYS (AS-SCALED FROM DRIVEWAY INFORMATION DERIVED FROM GOOGLE EARTH)

±1105.6 FEET S 18°42' 03" W
FROM SOUTHWEST CORNER THIS TRACT TO CENTER OF VIA DE SIENNA BLVD

±721.3 FEET S 89°50'52" E
FROM NORTHEAST CORNER THIS TRACT TO CENTER OF 7451 HWY 29 W, LIBERTY HILL TX (BAYLOR SCOTT & WHITE HEALTH)

±503.8 FEET N 04°44'19" W
FROM POB (NORTHERLY NORTHWEST CORNER) THIS TRACT TO CENTER OF 7600 W HWY 29, GEORGETOWN TX
(HWY 29 STORAGE)



FIELD NOTES FOR A 1.89 ACRE TRACT OF LAND

A 1.89 ACRE TRACT OF LAND, LOCATED IN THE GREENLIEF FISK SURVEY, ABSTRACT 5, WILLIAMSON COUNTY, TEXAS AND BEING A PORTION OF A CALLED 1.961 ACRE TRACT OF LAND AS DESCRIBED AND CONVEYED OF RECORD IN DOCUMENT NO. 2023010495 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS. SAID 1.89 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A SET ½" IRON ROD WITH A RED PLASTIC CAP STAMPED "MATKIN HOOVER ENG & SURVEYING" IN THE SOUTH RIGHT-OF-WAY LINE OF STATE HIGHWAY 29, THE NORTH LINE OF SAID 1.961 ACRE TRACT AND FOR THE MOST NORTHERLY NORTHWEST CORNER OF THE TRACT DESCRIBED HEREIN, FROM WHICH A FOUND ½" IRON ROD AT THE INTERSECTION OF THE SOUTH RIGHT-OF-WAY LINE OF STATE HIGHWAY 29 AND THE EAST RIGHT-OF-WAY LINE OF KAUFMAN LOOP, AND FOR THE NORTHWEST CORNER OF SAID 1.961 ACRE TRACT BEARS, N 89° 50' 52" W, A DISTANCE OF 13.00 FEET;

THENCE: S 89° 50' 52" E, WITH SAID SOUTH RIGHT-OF-WAY LINE OF STATE HIGHWAY 29 AND THE NORTH LINE OF SAID 1.961 ACRE TRACT, A DISTANCE OF 311.15 FEET TO A SET ½" IRON ROD WITH A RED PLASTIC CAP STAMPED "MATKIN HOOVER ENG & SURVEYING" FOR THE NORTHEAST CORNER OF SAID 1.961 ACRE TRACT AND THE TRACT DESCRIBED HEREIN;

THENCE: DEPARTING SAID SOUTH RIGHT-OF-WAY LINE OF STATE HIGHWAY 29 AND WITH THE EAST AND SOUTH LINE OF SAID 1.961 ACRE TRACT, THE FOLLOWING TWO (2) COURSES:

1. S 00° 09' 08" W, A DISTANCE OF 236.67 FEET TO A SET ½" IRON ROD WITH A RED PLASTIC CAP STAMPED "MATKIN HOOVER ENG & SURVEYING" FOR THE SOUTHEAST CORNER, AND
2. N 89° 50' 52" W, A DISTANCE OF 351.83 FEET TO A SET ½" IRON ROD WITH A RED PLASTIC CAP STAMPED "MATKIN HOOVER ENG & SURVEYING" FOR THE SOUTHWEST CORNER OF THE TRACT DESCRIBED HEREIN, FROM WHICH A SET ½" IRON ROD WITH A RED PLASTIC CAP STAMPED "MATKIN HOOVER ENG & SURVEYING" IN THE EAST RIGHT-OF-WAY LINE OF KAUFMAN LOOP AND FOR THE SOUTHWEST CORNER OF SAID 1.961 ACRE TRACT BEARS, N 89° 50' 52" W, A DISTANCE OF 12.51 FEET;

THENCE: INTO SAID 1.961 ACRE TRACT, THE FOLLOWING TWO (2) COURSES:

1. N 00° 09' 08" E, A DISTANCE OF 195.98 FEET TO A SET ½" IRON ROD WITH A RED PLASTIC CAP STAMPED "MATKIN HOOVER ENG & SURVEYING" FOR CORNER, AND
2. N 45° 08' 30" E, A DISTANCE OF 57.54 FEET TO THE POINT OF BEGINNING AND CONTAINING 1.89 ACRES OF LAND SITUATED IN WILLIAMSON COUNTY, TEXAS.

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www.kimley-horn.com

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
1" = 100'	OHW	RMR	3/8/2023	069304941	2 OF 3

QUIKTRIP #4160

SHORT FORM FINAL PLAT

A 1.89 ACRE TRACT OF LAND, LOCATED IN THE GREENLIEF FISK SURVEY, ABSTRACT 5, WILLIAMSON COUNTY, TEXAS AND BEING A PORTION OF A CALLED 1.961 ACRE TRACT OF LAND AS DESCRIBED AND CONVEYED OF RECORD IN DOCUMENT NO. 2023010495 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS.

GENERAL PLAT NOTES:

1. THIS SUBDIVISION IS WHOLLY CONTAINED WITH THE EXTRA TERRITORIAL JURISDICTION OF THE CITY OF LEANDER, TEXAS.
2. NO LOT IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO THE CITY OF LEANDER WATER DISTRIBUTION AND CITY OF LEANDER WASTEWATER COLLECTION FACILITIES.
3. NO BUILDINGS, FENCES, LANDSCAPING OR OTHER STRUCTURES ARE PERMITTED WITHIN DRAINAGE EASEMENTS SHOWN EXCEPT AS APPROVED BY THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT.
4. PROPERTY OWNER SHALL PROVIDE FOR ACCESS TO DRAINAGE EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY THE CITY OF LEANDER.
5. ALL EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY OWNER OR HIS OR HER ASSIGNS.
6. IN ADDITION TO THE EASEMENT SHOWN HEREON, A TEN (10') FOOT WIDE PUBLIC UTILITY EASEMENT IS DEDICATED ALONG AND ADJACENT TO ALL RIGHT-OF-WAY AND A TWO AND A HALF (2.5') FOOT WIDE PUBLIC UTILITY EASEMENT IS DEDICATED ALONG ALL SIDE LOT LINES.
7. NO PORTION OF THIS TRACT IS WITHIN A FLOOD HAZARD AREA AS SHOWN ON THE FLOOD INSURANCE RATE MAP PANEL #48491C0275E FOR WILLIAMSON CO., EFFECTIVE 09/26/2008.
8. ALL UTILITY LINES MUST BE LOCATED UNDERGROUND.
9. APPROVAL OF THIS FINAL PLAT DOES NOT CONSTITUTE THE APPROVAL OF VARIANCES OR WAIVERS TO ORDINANCE REQUIREMENTS.
10. SIDEWALKS SHALL BE INSTALLED ALONG KAUFFMAN LOOP AND SH29.

NON-RESIDENTIAL & MULTI-FAMILY PLAT NOTES:

11. ALL DRIVE LANES, FIRE LANES, AND DRIVEWAYS WITHIN THIS SUBDIVISION SHALL PROVIDE FOR RECIPROCAL ACCESS FOR INGRESS AND EGRESS TO ALL OTHER LOTS WITHIN THE SUBDIVISION.

TIA PLAT NOTES:

12. SITE DEVELOPMENT CONSTRUCTION WILL INCLUDE THE FOLLOWING MITIGATION IDENTIFIED IN THE TRAFFIC IMPACT ANALYSIS DATED DECEMBER 2022:
    - 12.1. SH 29 AND KAUFFMAN LOOP - RE-STRIPE EXISTING PAVEMENT TO PROVIDE AN EXCLUSIVE LEFT TURN LANE AND A RIGHT TURN LANE SHARED WITH THRU MOVEMENT FOR A NORTHBOUND APPROACH. PROVIDE A PROTECTED AND PERMISSIVE PHASE FOR NORTHBOUND AND SOUTHBOUND LEFT TURN MOVEMENTS
    - 12.2. SH 29 AND KAUFFMAN LOOP - REPLACE SOUTHBOUND SIGNAL HEAD WITH APPROPRIATE FOUR-SECTION HEAD TO ACCOMMODATE PROTECTED/PERMISSIVE LEFT TURN MOVEMENTS
    - 12.3. SH 29 AND DRIVEWAY #1 - CONSTRUCT A RIGHT TURN LANE SERVING THE DRIVEWAY INTO DEVELOPMENT

OWNER'S SIGNATURE BLOCK

STATE OF TEXAS §

COUNTY OF WILLIAMSON §

THAT, QT SOUTH LLC, AS THE OWNER OF THAT CERTAIN 1.961 ACRE TRACT OF LAND RECORDED IN DOCUMENT NO. 2023010495, OF THE OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS DOES HEREBY CERTIFY THAT THERE ARE NO LIEN HOLDER AND DEDICATED TO THE PUBLIC FOREVER USE OF ALL ADDITIONAL ROW, STREETS, ALLEYS EASEMENTS, PARKS AND ALL OTHER LANDS INTENDED FOR PUBLIC DEDICATION, OR WHEN THE SUBDIVIDER HAS MADE PROVISION FOR PERPETUAL MAINTENANCE THEREOF, TO THE INHABITANTS OF THE SUBDIVISION AS SHOWN HEREON TO BE KNOWN AS QUIKTRIP #4160 SUBDIVISION.

BY: QT SOUTH LLC

BY: MICHAEL Z. WARD, REAL ESTATE MANAGER

____
MICHAEL Z. WARD, REAL ESTATE MANAGER

STATE OF TEXAS §

COUNTY OF WILLIAMSON §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE ON THIS THE ______ DAY OF ________________, 2023, PERSONALLY APPEARED, MICHAEL Z. WARD , AS REAL ESTATE MANAGER OF QT SOUTH LLC, ON BEHALF OF SAID QT SOUTH LLC, A DULY AUTHORIZED AGENT WITH AUTHORITY TO SIGN SAID DOCUMENT, PERSONALLY KNOWN TO ME (AND PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT (S)HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE ON THIS THE ____ DAY OF ________ 2023.

NOTARY PUBLIC-STATE OF ____________________________

PRINTED NAME: ____________________________
MY COMMISSION EXPIRES ON: ____________________________

SURVEYOR'S CERTIFICATION

STATE OF TEXAS §

COUNTY OF WILLIAMSON §

THAT I, KYLE L. PRESSLER, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF LAND SURVEYING AND HEREBY STATE THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE ON-THE-GROUND SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION IN ACCORDANCE WITH ALL CITY OF LEANDER ORDINANCE AND CODES , AND THAT ALL EXISTING EASEMENTS OF RECORD AS FOUND ON THE TITLE POLICY PROVIDED BY FIRST AMERICAN TITLE GUARANTY COMPANY, GF NO. 22-0647-C, ISSUED 15TH DAY OF MARCH, 2022 HAVE BEEN SHOWN OR NOTED HEREON.

KYLE L PRESSLER, R.P.L.S. — DATE
REGISTERED PROFESSIONAL SURVEYOR
NO. 6528 STATE OF TEXAS

ENGINEER'S CERTIFICATION

STATE OF TEXAS §

COUNTY OF WILLIAMSON §

THAT I, RACHEL M. ROBERTS, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF ENGINEERING, AND DO HEREBY STATE THAT THIS PLAT CONFORMS WITH THE APPLICABLE ORDINANCES OF THE CITY OF LEANDER, TEXAS.

RACHEL M. ROBERTS, P.E. — DATE
REGISTERED PROFESSIONAL ENGINEER
NO. 137894 STATE OF TEXAS

PLANNING AND ZONING COMMISSION

APPROVED THIS THE _____ DAY OF ___________________, 2023, A.D. AT A PUBLIC MEETING OF THE PLANNING AND ZONING COMMISSION OF THE CITY OF LEANDER, TEXAS AND AUTHORIZED TO BE FILED FOR THE RECORD BY THE COUNTY CLERK OF WILLIAMSON COUNTY.

JOHN COSGROVE, CHAIRMAN
PLANNING AND ZONING COMMISSION
CITY OF LEANDER, TEXAS

ATTEST: ____________________________
ELLEN COUFAL, SECRETARY
PLANNING AND ZONING COMMISSION
CITY OF LEANDER, TEXAS

WILLIAMSON COUNTY RECORDING STATEMENT

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

I, NANCY RISTER, CLERK OF THE COUNTY COURT OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT IN WRITING, WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE ON THE DAY OF __________, 2023, AD, AT ________ O'CLOCK, ____M, AND DULY RECORDED THIS THE DAY OF ______________, 2023, AD, AT _______ O'CLOCK, ____M, IN THE PLAT RECORDS OF SAID COUNTY IN INSTRUMENT NO. _________________________.

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.

NANCY RISTER, CLERK COUNTY COURT OF WILLIAMSON COUNTY, TEXAS

BY:____________________________DEPUTY

Kimley»Horn
10101 REUNION PL
SUITE 400, SAN ANTONIO, TX 78216 FIRM #928
TEL. NO. (210) 541-9166
www.kimley-horn.com

	Drawn by	Checked by	Date	Project No.	Sheet No.
	OHW	RMR	3/8/2023	069304941	3 OF 3

RACHEL M. ROBERTS
137894
REGISTERED PROFESSIONAL ENGINEER
STATE OF TEXAS
04/21/2023

PROJECT NO.:069304941

Kimley»Horn

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SAN ANTONIO, TX 78216
PHONE : 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM
TBPE FIRM NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE: P-112 (11/18/22)
DIVISION:
VERSION: 001
DESIGNED BY: OHW
DRAWN BY: OHW
REVIEWED BY: RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
FINAL PLAT

SHEET NUMBER:
C005

FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C–NOTE.dwg TAB NAME:Final Plat USER:Oscar.garcia SAVED:4/10/2023 5:49 PM PLOTTED:4/21/2023 10:27 AM

TREE TABLE				
POINT NUMBER	SPECIES	TRUNK DIA. (IN.)	SPREAD (FT.)	MULTI-TRUNK DIA. (IN.)
2156	POST OAK	20.5	35	15X11
2157	POST OAK	34	40	13X14+13X10X10
2158	POST OAK	26.5	50	16X13X10
2159	MESQUITE	11	25	N/A
2160	POST OAK	12	20	N/A
2161	POST OAK	12	20	N/A
2162	HOLLY SPP.	15	25	N/A
2163	POST OAK	16.5	25	11X11
2164	POST OAK	9	15	N/A
2165	POST OAK	13	20	N/A
2166	POST OAK	16	25	N/A
2167	POST OAK	17	30	N/A
2168	POST OAK	11	20	N/A
2169	PECAN	8	15	N/A
2170	POST OAK	12	20	N/A
2171	POST OAK	12	25	N/A
2172	POST OAK	10	20	N/A
2173	POST OAK	9	15	N/A
2174	POST OAK	12	25	N/A
2175	POST OAK	19	30	N/A
5022	POST OAK	15	30	N/A
5023	POST OAK	14	30	N/A
5024	HOLLY SPP.	12	30	N/A
5025	CITRUS SPP.	8	20	N/A
5026	POST OAK	11	20	N/A
5027	CRAPE MYRTLE	8	20	N/A
5028	POST OAK	8	20	N/A
5029	LIVE OAK	9	30	N/A
5030	HOLLY SPP.	13	20	N/A
5031	LIVE OAK	10	30	N/A
5032	LIVE OAK	11	20	9X4
5033	POST OAK	18	30	14X10
5034	POST OAK	8	20	N/A
5035	POST OAK	10	20	N/A
5036	POST OAK	10	20	N/A
5037	POST OAK	12	30	N/A
5038	POST OAK	10	30	N/A
5039	POST OAK	9	20	N/A
5040	HOLLY SPP.	9	20	N/A
5041	POST OAK	8	20	N/A
5042	POST OAK	12	20	N/A
5043	POST OAK	8	20	N/A
5044	POST OAK	12	30	N/A
5045	POST OAK	13	30	N/A
5046	POST OAK	11	30	N/A
5047	POST OAK	11	30	N/A
5048	POST OAK	11	30	N/A
5049	POST OAK	11	30	N/A
5050	POST OAK	11	30	N/A
5051	POST OAK	11	30	N/A
5052	POST OAK	9	20	N/A
5053	POST OAK	11	30	N/A
5054	POST OAK	11	30	N/A
5055	POST OAK	11	30	N/A
5056	POST OAK	11	30	N/A
5057	POST OAK	13	30	N/A
5058	POST OAK	10	20	N/A
5059	POST OAK	8	20	N/A
5060	POST OAK	8	30	N/A
5061	HOLLY SPP.	13	30	N/A
5062	POST OAK	9	20	N/A
5063	POST OAK	9	20	N/A
5064	HOLLY SPP.	14	30	N/A
5065	HOLLY SPP.	11	30	8X6
5066	POST OAK	10	30	N/A
5067	POST OAK	17	40	12X10
5068	POST OAK	11	40	8X8
5069	POST OAK	8	20	N/A
5070	POST OAK	10	20	N/A
5071	POST OAK	8	20	N/A
5072	POST OAK	10	20	N/A
5073	POST OAK	8	20	N/A
5074	HOLLY SPP.	11	30	N/A
5075	POST OAK	8	20	N/A
5076	LIVE OAK	12	30	N/A
5077	HOLLY SPP.	11	30	N/A
5078	POST OAK	11	30	N/A
5079	POST OAK	14	30	N/A
5080	HOLLY SPP.	8	20	N/A
5081	POST OAK	6	30	N/A

TREE TABLE				
POINT NUMBER	SPECIES	TRUNK DIA. (IN.)	SPREAD (FT.)	MULTI-TRUNK DIA. (IN.)
5082	POST OAK	12	30	N/A
5083	POST OAK	13	40	N/A
5084	POST OAK	12	30	N/A
5085	CEDAR ELM	15	30	11"4"4"
5086	HOLLY SPP.	10.5	30	8X7
5087	POST OAK	13	20	6X6X4
5088	POST OAK	11	30	8X6
5089	HOLLY SPP.	8	20	N/A
5090	POST OAK	11	30	N/A
5091	POST OAK	12.5	20	9X7
5092	HOLLY SPP.	13	30	N/A
5093	POST OAK	13	40	N/A
5094	POST OAK	10	30	N/A
5095	HOLLY SPP.	13	30	N/A
5096	POST OAK	9	20	N/A
5097	POST OAK	11	30	N/A
5098	POST OAK	11	30	N/A
5099	POST OAK	8	20	N/A
5100	POST OAK	8	30	N/A
5101	POST OAK	8	30	N/A
5102	POST OAK	10	20	N/A
5103	POST OAK	11	30	N/A
5104	POST OAK	10	20	N/A
5105	POST OAK	9	30	N/A
5106	POST OAK	13	30	N/A
5107	POST OAK	9	30	N/A
5108	POST OAK	11.5	40	8X7
5109	HOLLY SPP.	14.5	40	9X8X7
5110	POST OAK	16.5	30	9X8
5111	POST OAK	8	20	N/A
5112	HOLLY SPP.	15	30	N/A
5113	POST OAK	12	30	N/A
5114	POST OAK	9	30	N/A
5115	HOLLY SPP.	12	30	N/A
5116	POST OAK	9	20	N/A
5117	POST OAK	12	30	N/A
5118	HOLLY SPP.	10	30	N/A

EXISTING LEGEND

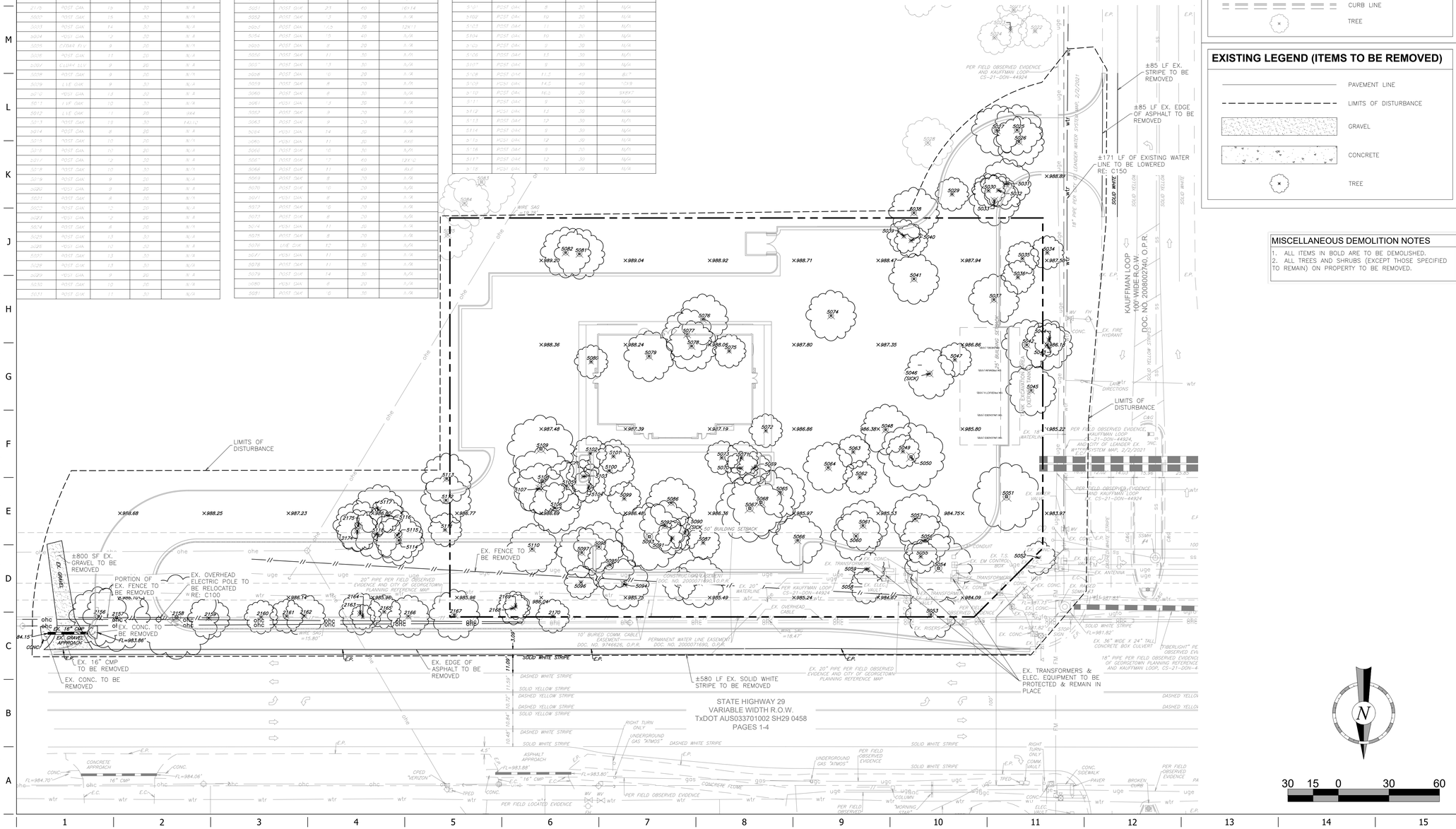
- OHE — OVERHEAD ELECTRIC
- GAS — GAS LINE
- WTR — WATER LINE
- SS — SEWER LINE
- UTILITY POLE W/TRANSFORMER
- UTILITY MANHOLE
- FIRE HYDRANT
- UTILITY METER
- UTILITY VALVE
- SINGLE POST SIGN
- TRAFFIC ARROWS
- TRAFFIC CONTROL BOX
- CURB LINE
- TREE

EXISTING LEGEND (ITEMS TO BE REMOVED)

- PAVEMENT LINE
- LIMITS OF DISTURBANCE
- GRAVEL
- CONCRETE
- TREE

MISCELLANEOUS DEMOLITION NOTES

1. ALL ITEMS IN BOLD ARE TO BE DEMOLISHED.
2. ALL TREES AND SHRUBS (EXCEPT THOSE SPECIFIED TO REMAIN) ON PROPERTY TO BE REMOVED.



RACHEL M. ROBERTS
137894
REGISTERED
PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn
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TBPE #FIRM NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:

DEMOLITION PLAN

SHEET NUMBER:

C030

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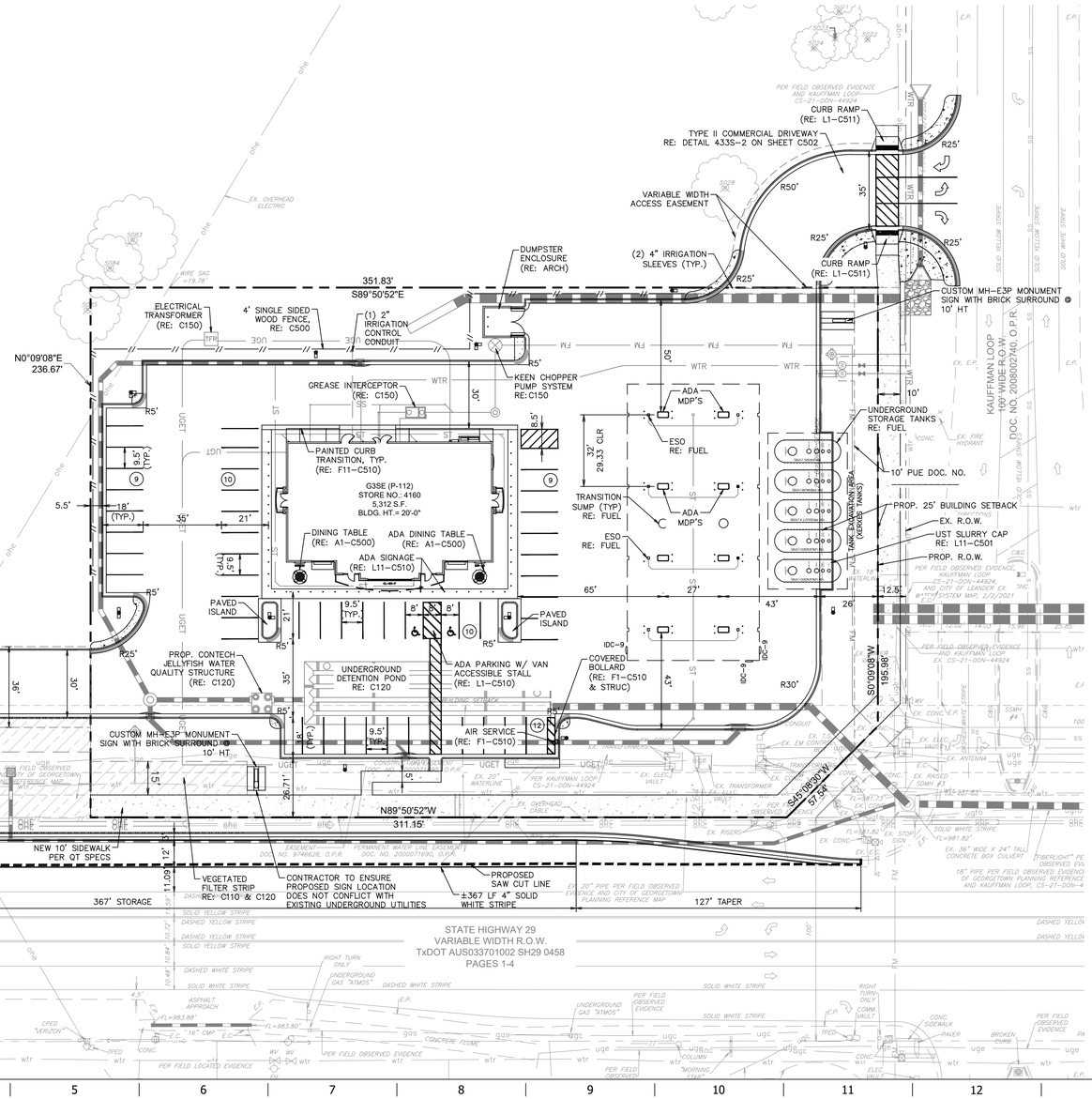

SITE LEGEND

- BOUNDARY LINE
- CONCRETE CURB AND GUTTER
- MOUNTABLE CURB W/RADIUS PROTECTOR
- PARKING SPACE INDICATOR
- AREA LIGHT
- MULTIPLE PRODUCT DISPENSER WITH CANOPY COLUMNS AND BOLLARDS
- TRANSFORMER
- FUEL SYSTEM ACCESS MANWAY

MISCELLANEOUS SITE PLAN NOTES

1. MAXIMUM OF 70% IMPERVIOUS COVER PER LOT, OTHERWISE STORMWATER MANAGEMENT CONTROLS SHALL BE DESIGNED, CONSTRUCTED AND MAINTAINED BY OWNER. IF IMPERVIOUS COVER IS PROPOSED TO EXCEED MAXIMUM PERCENTAGE ALLOWED, CONTACT WILLIAMSON COUNTY FLOODPLAIN ADMINISTRATION TO REVIEW THE STORMWATER MANAGEMENT CONTROLS PROPOSED ON LOT.

SITE DATA TABLE		
Site Area	1.89	AC
	82,328.40	SF
Parking Provided	50	
ADA Parking Required	2	
ADA Parking Provided	2	
Impervious Cover	69%	
	56,806.60	SF

SITE LIGHTING FIXTURE TABLE		
TYPE	HEIGHT	QUANTITY
	22'	8
	22'	4
	22'	1
	22'	0
BREAK AWAY BASES REQUIRED		0
LOW VOLTAGE POLES		0

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7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION
		ORIGINAL ISSUE DATE:

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

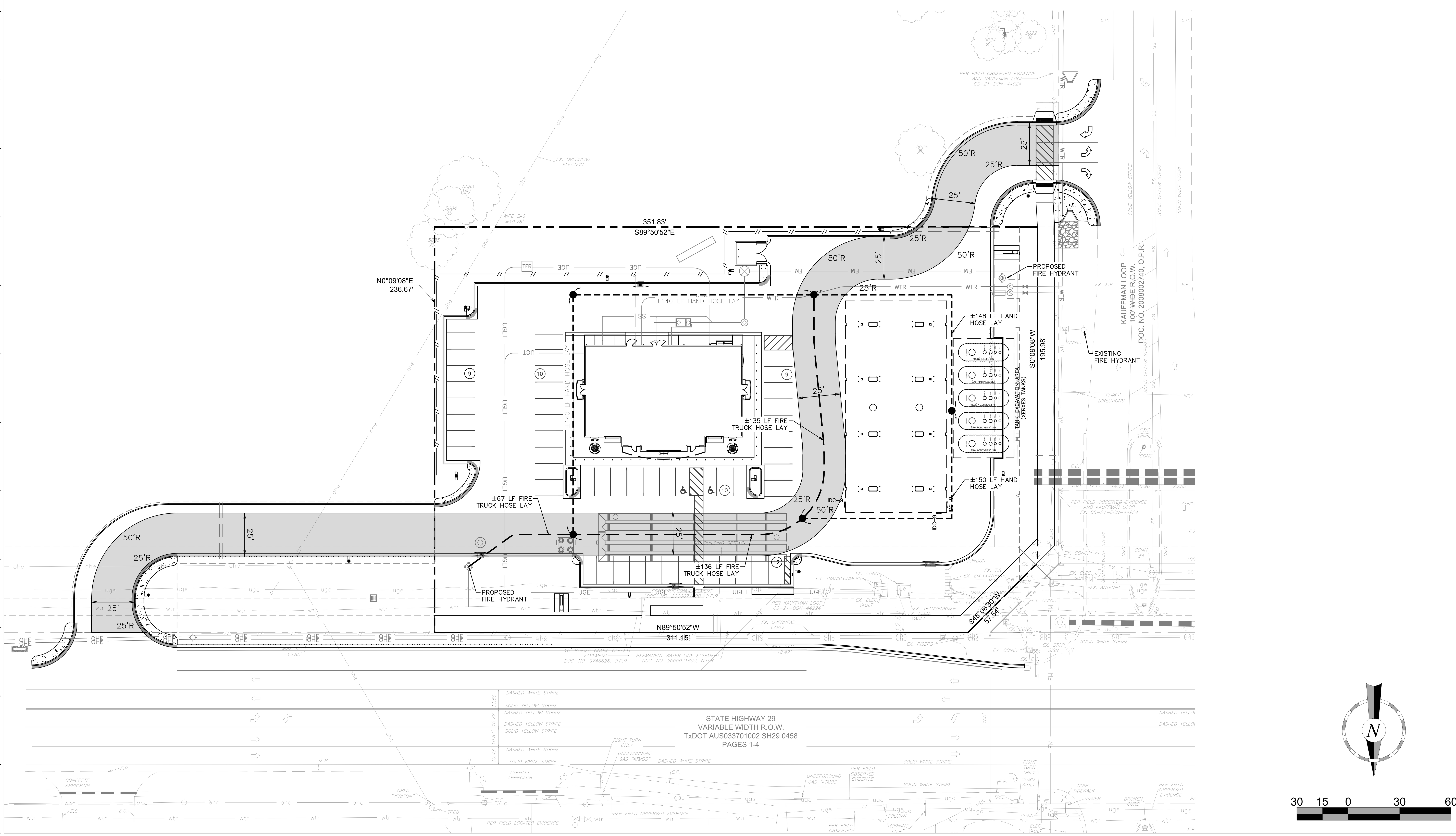
C100

FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C–DIMC.dwg TAB NAME:Site USER:Oscar-garcia SAVED:4/21/2023 10:15 AM PLOTTED-4/21/2023 10:27 AM

SITE LEGEND

- BOUNDARY LINE
- CONCRETE CURB AND GUTTER
- FIRE LANE
- FIRE TRUCK HOSE LAY
- HAND HOSE LAY
- PROPOSED FIRE HYDRANT

NOTE:
FIRE LANE SHOWN FOR REFERENCE ONLY.
NO STRIPING PROPOSED.
CONTRACTOR TO INSTALL FIRE LANE SIGNAGE PER WILLIAMSON COUNTY SPECIFICATIONS AND DETAILS



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RACHEL M. ROBERTS
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REGISTERED PROFESSIONAL ENGINEER
STATE OF TEXAS
04/21/2023

PROJECT NO.:069304941

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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

QT

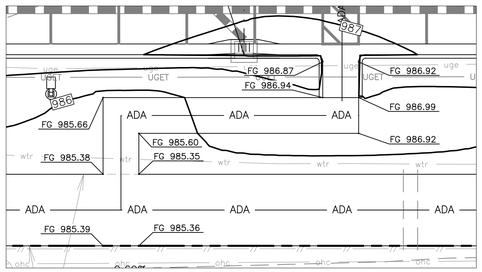
PROTOTYPE: P-112 (11/18/22)
DIVISION:
VERSION: 001
DESIGNED BY: OHW
DRAWN BY: OHW
REVIEWED BY: RMR

REV	DATE	DESCRIPTION

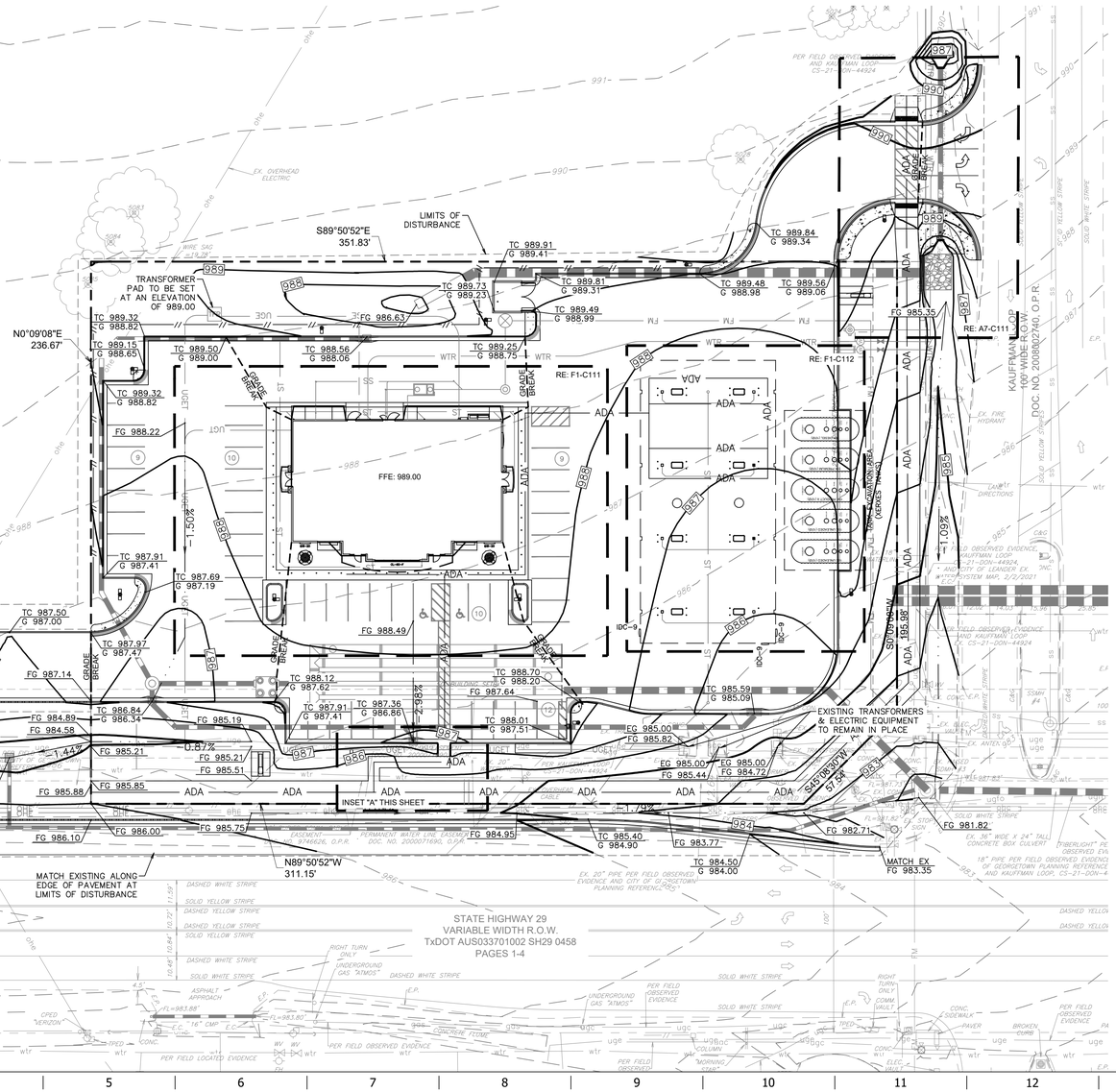
ORIGINAL ISSUE DATE:

SHEET TITLE:
FIRE PROTECTION PLAN

SHEET NUMBER:
C101



INSET "A"



GRADING LEGEND

ST	STORM PIPE (≤ 10" NEW)
ST	STORM PIPE (≥ 12" NEW)
ST	STORM PIPE (≥ 12" EXISTING)
FD	FRENCH DRAIN
CD	BACK OF CURB DRAIN
ADA	ADA PATH OF TRAVEL
XXXX	MAJOR CONTOUR (NEW)
XXXX	MINOR CONTOUR (NEW)
XXX	MAJOR CONTOUR (EXISTING)
XXX	MINOR CONTOUR (EXISTING)
	LIMITS OF DISTURBANCE
TC XXXX.XX / G XXXX.XX	TOP OF CURB ELEVATION (NEW) / GUTTER ELEVATION (NEW)
FG XXXX.XX	FINISHED GRADE ELEVATION (NEW)
FG XXXX.XX	SPOT ELEVATION (EXISTING)
	STORM GRATE (NEW)

MISCELLANEOUS GRADING NOTES

1. GAS CANOPY INSTALLER SHALL INSTALL THE CANOPY COLUMN DRAIN PIPE AND OVERFLOW FITTING. THE STORM WATER INSTALLER SHALL CONNECT THEIR PIPING TO THE GAS INSTALLER'S OVERFLOW FITTING.
2. WHEN PLAN GRADES DEPICT RUNOFF TO BE DIRECTED AWAY FROM THE CURB, USE DRAIN AWAY CURB ALTERNATE. (RE: "CURB DETAIL-BARRIER" PD009A00X DETAIL)

30 15 0 30 60

RACHEL M. ROBERTS
137894
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

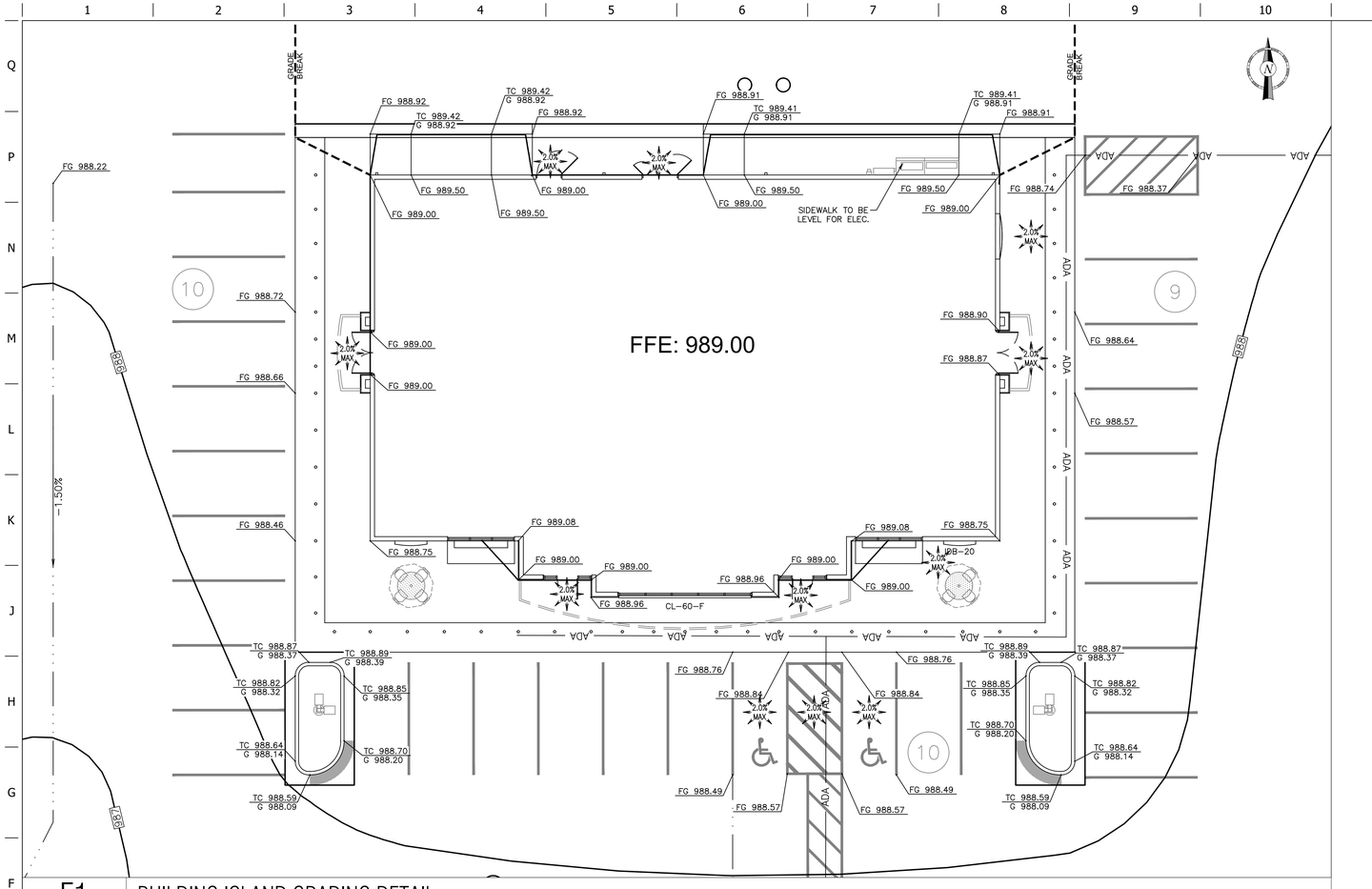
SHEET TITLE:

GRADING PLAN

SHEET NUMBER:

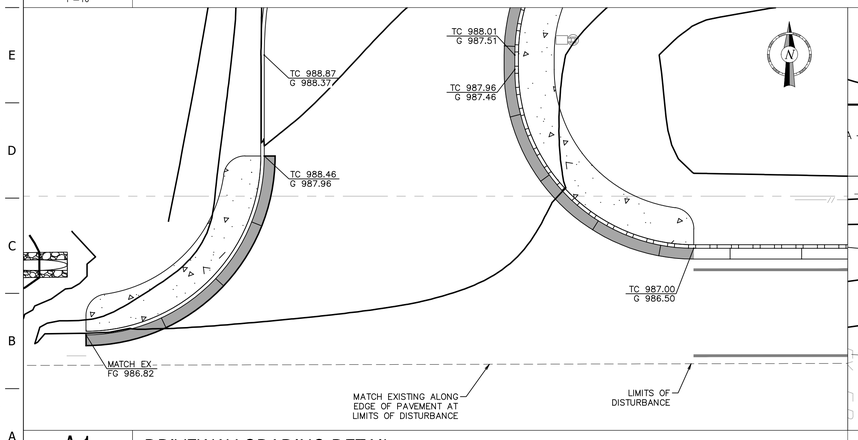
C110

FILE LOCATION:K:\SNA_Civil\069304941 - Q1 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-GRAD.dwg TAB NAME:Grading USER:Olivia.Watts SAVED:4/13/2023 3:44 PM PLOTTED:4/21/2023 10:27 AM



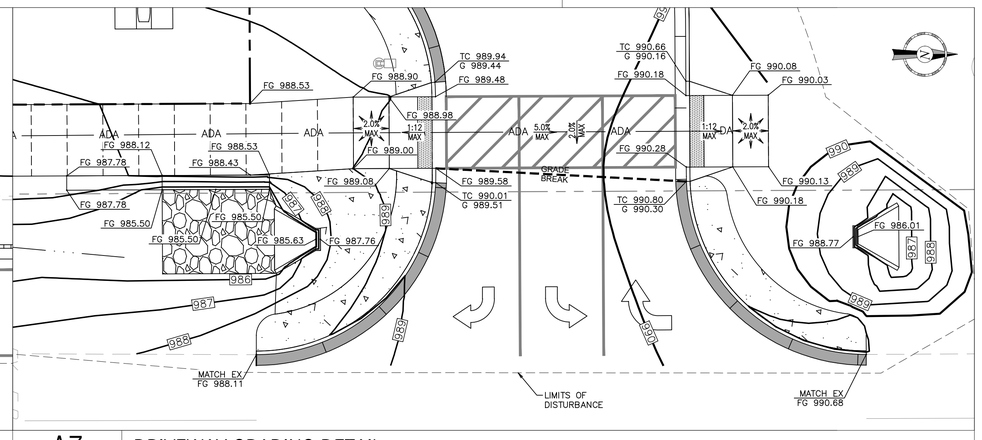
F1 BUILDING ISLAND GRADING DETAIL

1"=10'



A1 DRIVEWAY GRADING DETAIL

1"=10'



A7 DRIVEWAY GRADING DETAIL

1"=10'

10 5 0 10 20

GRADING LEGEND

ST	STORM PIPE (≤ 10" NEW)
	STORM PIPE (≥ 12" NEW)
	STORM PIPE (≥ 12" EXISTING)
FD	FRENCH DRAIN
CD	BACK OF CURB DRAIN
ADA	ADA PATH OF TRAVEL
XXXX	MAJOR CONTOUR (NEW)
XXXX	MINOR CONTOUR (NEW)
	MAJOR CONTOUR (EXISTING)
	MINOR CONTOUR (EXISTING)
	LIMITS OF DISTURBANCE
TC XXXX.XX G XXXX.XX	TOP OF CURB ELEVATION (NEW) GUTTER ELEVATION (NEW)
FG XXXX.XX	FINISHED GRADE ELEVATION (NEW)
FG XXXX.XX	SPOT ELEVATION (EXISTING)
	STORM GRATE (NEW)

MISCELLANEOUS GRADING NOTES

1. GAS CANOPY INSTALLER SHALL INSTALL THE CANOPY COLUMN DRAIN PIPE AND OVERFLOW FITTING. THE STORM WATER INSTALLER SHALL CONNECT THEIR PIPING TO THE GAS INSTALLER'S OVERFLOW FITTING.
2. WHEN PLAN GRADES DEPICT RUNOFF TO BE DIRECTED AWAY FROM THE CURB, USE DRAIN AWAY CURB ALTERNATE. (RE: "CURB DETAIL-BARRIER" PD009A00X DETAIL)

BENCHMARKS

BM-100 SCRIBED "X" ON TOP OF CONCRETE, BEARS N 62°23'07" W 3.26' FROM THE WESTERN MOST NORTHWEST CORNER OF THE SUBJECT TRACT.

ELEVATION=983.80'

BM-101 COTTON SPINDLE SET IN POWER POLE, BEARS N 70°40'03" E, 299.23' FROM THE NORTHEAST CORNER OF THE SUBJECT TRACT.

ELEVATION=986.48'
NOT GRAPHICALLY SHOWN HERON

RACHEL M. ROBERTS
137894
REGISTERED
PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

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TBPE #10865 NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

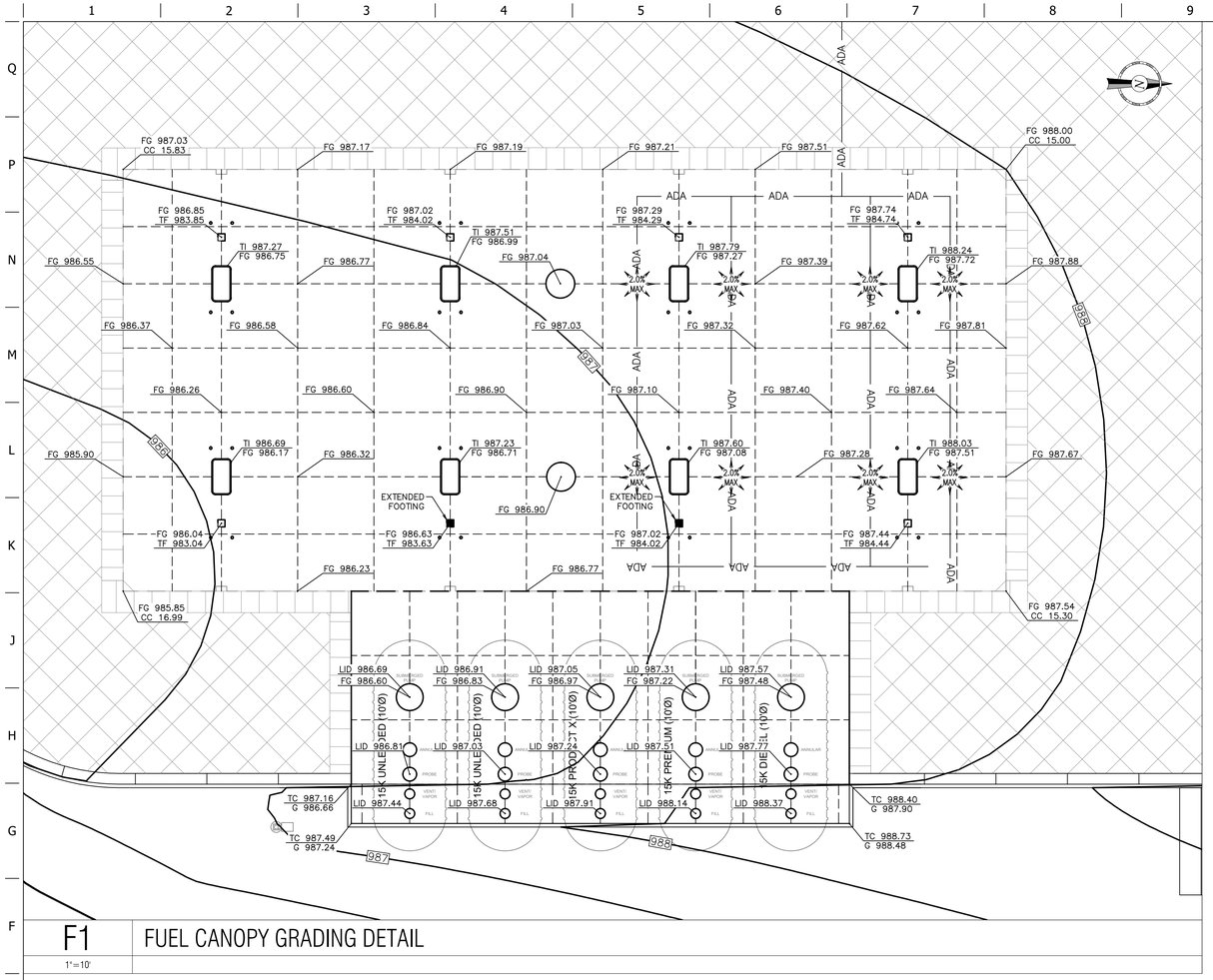
SHEET TITLE:

BUILDING & DETAILED GRADING PLANS

SHEET NUMBER:

C111

FILE LOCATION=K:\SNA_Civil\069304941 - QT 4160 Kaufman Loop & HWY29\Cad\QT\Plan Sheets\C-DETAILED GRAD.dwg TAB NAME:Building & Detailed Grading USER:OliviaWatts SAVED:3/10/2023 3:55 PM PLOTTED:4/21/2023 10:28 AM



F1 FUEL CANOPY GRADING DETAIL

1"=10'

GRADING LEGEND

- ST — STORM PIPE (≤ 10" NEW)
- STORM PIPE (≥ 12" NEW)
- STORM PIPE (≥ 12" EXISTING)
- FD — FRENCH DRAIN
- CD — BACK OF CURB DRAIN
- ADA — ADA PATH OF TRAVEL
- XXXX — MAJOR CONTOUR (NEW)
- XXXX — MINOR CONTOUR (NEW)
- MAJOR CONTOUR (EXISTING)
- MINOR CONTOUR (EXISTING)
- LIMITS OF DISTURBANCE
- TC XXXX.XX — TOP OF CURB ELEVATION (NEW)
- G XXXX.XX — GUTTER ELEVATION (NEW)
- FG XXXX.XX — FINISHED GRADE ELEVATION (NEW)
- FG XXXX.XX — SPOT ELEVATION (EXISTING)
- STORM GRATE (NEW)

MISCELLANEOUS GRADING NOTES

1. GAS CANOPY INSTALLER SHALL INSTALL THE CANOPY COLUMN DRAIN PIPE AND OVERFLOW FITTING. THE STORM WATER INSTALLER SHALL CONNECT THEIR PIPING TO THE GAS INSTALLER'S OVERFLOW FITTING.
2. WHEN PLAN GRADES DEPICT RUNOFF TO BE DIRECTED AWAY FROM THE CURB, USE DRAIN AWAY CURB ALTERNATE. (RE: "CURB DETAIL–BARRIER" PD009A00X DETAIL)

BENCHMARKS

BM–100 SCRIBED "X" ON TOP OF CONCRETE, BEARS N 62°23'07" W 3.26' FROM THE WESTERN MOST NORTHWEST CORNER OF THE SUBJECT TRACT.

ELEVATION=983.80'

BM–101 COTTON SPINDLE SET IN POWER POLE, BEARS N 70°40'03" E, 299.23' FROM THE NORTHEAST CORNER OF THE SUBJECT TRACT.

ELEVATION=986.48'
NOT GRAPHICALLY SHOWN HERON

10 5 0 10 20

RACHEL M. ROBERTS
137894
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn
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TBPE #10698 NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

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SHEET TITLE:
CANOPY & DETAILED GRADING PLANS

SHEET NUMBER:
C112

FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C–DETAILED GRAD.dwg TAB NAME:Canopy Detailed Grading USER:Olivia.Watts SAVED:3/10/2023 3:55 PM PLOTTED:4/21/2023 10:28 AM

ADA GENERAL NOTES

1. ANY REQUEST BY A GOVERNING AUTHORITY OR INSPECTOR TO ALTER THE ADA COMPLIANCE DETAILS OR REQUIREMENTS DEPICTED IN THE QUIKTRIP PLANS AND SPECIFICATIONS MUST BE DIRECTED TO THE QUIKTRIP CONSTRUCTION MANAGER FOR AUTHORIZATION. ANY CHANGES MADE BY A PRIMARY OR SUB-CONTRACTOR WITHOUT AUTHORIZATION FROM THE QUIKTRIP CONSTRUCTION MANAGER AND LATER FOUND TO BE NON-COMPLIANT WITH THE DETAILS AS SHOWN IN THE QUIKTRIP PLANS AND SPECIFICATIONS WILL BE REMOVED AND REPLACED AND MADE FULLY COMPLIANT REGARDLESS OF MAGNITUDE AT THE PRIMARY AND/OR SUB-CONTRACTOR'S EXPENSE. THE PRIMARY SHALL FOLLOW THE RFI PROCESS IN ESTABLISHING THE APPROVAL OR DENIAL OF CHANGES TO ADA RELATED DETAILS OR MOUNTING DIMENSIONS.
2. RE: GRADING PLAN SHEETS ####, #### & #### FOR FINAL GRADES.
3. ALL NEW SIDEWALKS (INCLUDING SIDEWALKS TO BE REMOVED & REPLACED) SHALL NOT EXCEED 2% CROSS SLOPE & 5% RUNNING SLOPE. FOR SIDEWALKS CONTAINED WITHIN THE PUBLIC R/W AND WHEN ADJACENT STREET GRADES EXCEED 5%, THEN SIDEWALK RUNNING SLOPES MAY MATCH STREET GRADES.
4. 1/8" MAXIMUM DEPTH TO TOP OF SEALANT AND 1/8" MAXIMUM PROTRUSION TO TOP OF SEALANT ALONG ADA ACCESS ROUTES. (RE: PAVING DETAIL PD042(X)(XXX))
5. PRIVATE PROPERTY RAMPS SHALL HAVE THE FACE OF THE CURB TRANSITIONS PAINTED YELLOW (RE: DETAIL AD015(X)(XXX))

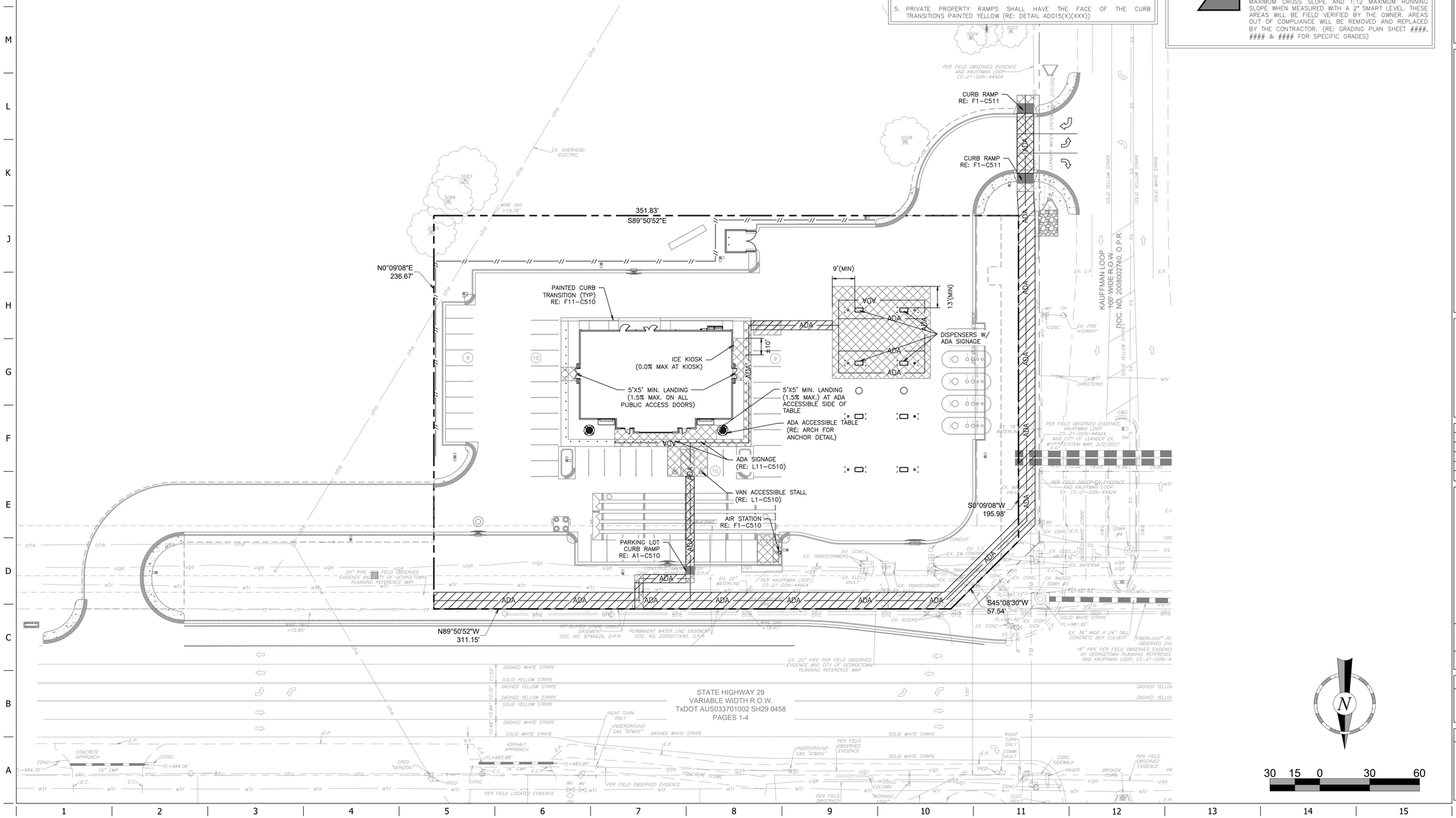
ADA GRADING LEGEND

ADA — ADA PATH OF TRAVEL (RE: HATCHING FOR RUNNING & CROSS SLOPE REQUIREMENT)

HATCH INDICATES AREAS OF FEDERALLY MANDATED 2% MAXIMUM SLOPE IN ALL DIRECTIONS WHEN MEASURED WITH A 2' SMART LEVEL. THESE AREAS WILL BE FIELD VERIFIED BY THE OWNER. AREAS OUT OF COMPLIANCE WILL BE REMOVED AND REPLACED BY THE CONTRACTOR. (RE: GRADING PLAN SHEETS ####, #### & #### FOR SPECIFIC GRADES)

HATCH INDICATES AREAS OF FEDERALLY MANDATED 2% MAXIMUM CROSS SLOPE AND 5% MAXIMUM RUNNING SLOPE WHEN MEASURED WITH A 2' SMART LEVEL. WHEN ADJACENT STREET GRADES EXCEED 5% AND SIDEWALKS ARE CONTAINED WITHIN THE PUBLIC R/W, THEN SIDEWALK RUNNING SLOPE CAN MATCH STREET GRADES. THESE AREAS WILL BE FIELD VERIFIED BY THE OWNER. AREAS OUT OF COMPLIANCE WILL BE REMOVED AND REPLACED BY THE CONTRACTOR. (RE: GRADING PLAN SHEET ####, #### & #### FOR SPECIFIC GRADES)

HATCH INDICATES AREAS OF FEDERALLY MANDATED 2% MAXIMUM CROSS SLOPE AND 1:12 MAXIMUM RUNNING SLOPE WHEN MEASURED WITH A 2' SMART LEVEL. THESE AREAS WILL BE FIELD VERIFIED BY THE OWNER. AREAS OUT OF COMPLIANCE WILL BE REMOVED AND REPLACED BY THE CONTRACTOR. (RE: GRADING PLAN SHEET ####, #### & #### FOR SPECIFIC GRADES)



RACHEL M. ROBERTS
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04/21/2023

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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE: P-112 (11/18/22)
DIVISION:
VERSION: 001
DESIGNED BY: OHW
DRAWN BY: OHW
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ADA COMPLIANCE REFERENCE PLAN

SHEET NUMBER:
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FILE LOCATION=K:\SNA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-ADA.dwg TAB NAME:ADA USER:Olivia.Watts SAVED:3/10/2023 3:43 PM PLOTTED:4/21/2023 10:28 AM

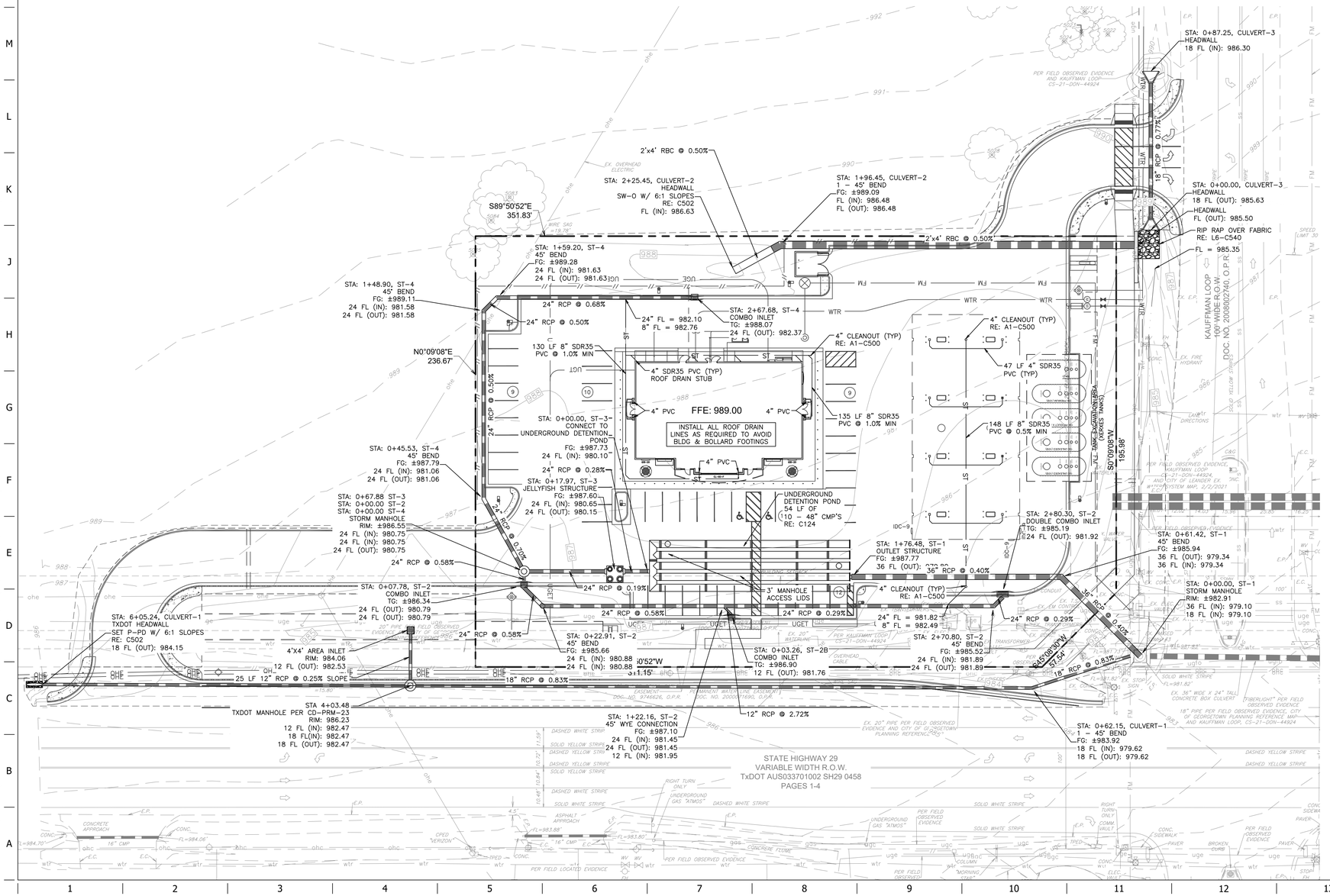
STORM SEWER GENERAL NOTES

STORM SEWER INSTALLATION CONSIDERATIONS

PRIOR TO THE CONSTRUCTION OF, OR CONNECTION TO ANY STORM DRAIN OR ANY OTHER ELEVATION SENSITIVE UTILITY, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTIONS AND ALL UTILITY CROSSINGS. THE CONTRACTOR SHALL INFORM THE ENGINEER AND THE OWNER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. THE ENGINEER AND OWNER WILL BE HELD HARMLESS IN THE EVENT THE ENGINEER AND OWNER ARE NOT NOTIFIED OF A DESIGN CONFLICT.

STORM SEWER LEGEND

- ST — STORM PIPE (< 10" NEW)
- CD — BACK OF CURB DRAIN
- STORM PIPE (> 12" NEW)
- STORM PIPE (> 12" EXISTING)
- XXXX — MAJOR CONTOUR (NEW)
- XXXX — MINOR CONTOUR (NEW)
- XXX — MAJOR CONTOUR (EXISTING)
- XXX — MINOR CONTOUR (EXISTING)
- STORM GRATE (NEW)



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SHEET TITLE:

STORM SEWER PLAN

SHEET NUMBER:

C120

FILE LOCATION:K:\SNA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-STORM.dwg TAB NAME:Storm USER:Rachel.Roberts SAVED:4/13/2023 10:37 AM PLOTTED:4/21/2023 4:46 PM

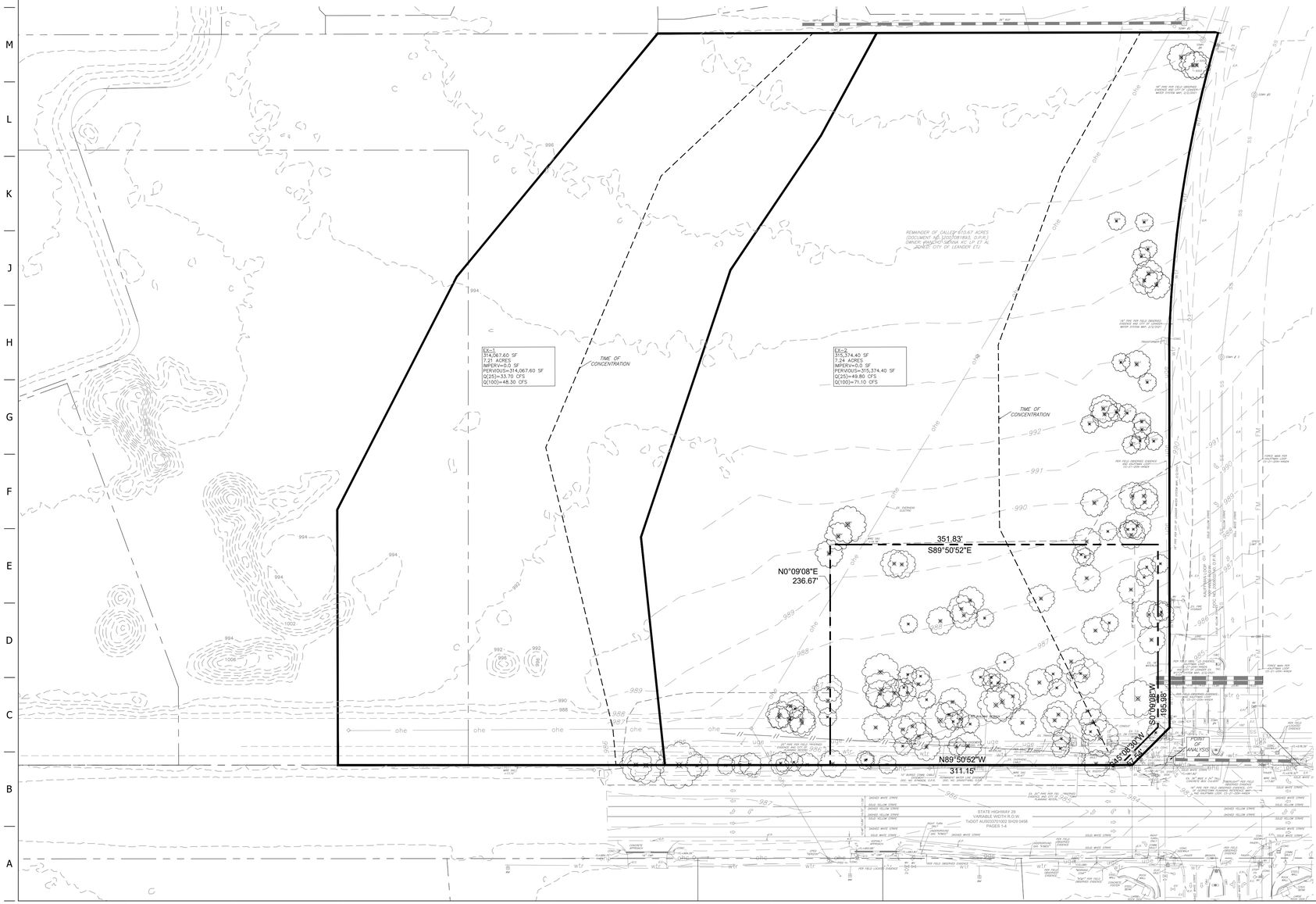
TIME OF CONCENTRATION CALCULATIONS

SHEET FLOW		SHALLOW CONCENTRATED FLOW		SHALLOW CONCENTRATED FLOW		CHANNEL FLOW	
EX-1							
n=	0.150	paved?	no	paved?		v(fps)=	
S (ft/ ft)=	0.010	S (ft/ft)=	0.003	S (ft/ft)=		L (ft)=	
L (ft)=	100	L (ft)=	790	L (ft)=			
T_{t1}=	11.478	T_{t2}=	16.219	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	27.70 minutes						

SHEET FLOW		SHALLOW CONCENTRATED FLOW		SHALLOW CONCENTRATED FLOW		CHANNEL FLOW	
EX-2							
n=	0.150	paved?	no	paved?		v(fps)=	
S (ft/ ft)=	0.010	S (ft/ft)=	0.021	S (ft/ft)=		L (ft)=	
L (ft)=	100	L (ft)=	758	L (ft)=			
T_{t1}=	11.478	T_{t2}=	5.389	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	16.87 minutes						

EXISTING DRAINAGE AREA CALCULATIONS

DRAINAGE AREA	AREA (ac.)	IMPERVIOUS COVER (%)	CN-VALUE (IMPERVIOUS)	PERVIOUS COVER (%)	CN-VALUE (PERVIOUS)	CN (COMPOSITE)	TC (MIN)	Q_2 (CFS)	Q_5 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{50} (CFS)	Q_{100} (CFS)
EX-1	7.21	0%	98	100%	80	80.0	27.70	13.00	19.30	25.50	33.70	40.70	48.30
EX-2	7.24	0%	98	100%	80	80.0	11.48	19.40	28.70	37.70	49.80	60.10	71.10
HEC-HMS VERSION 4.1 AND CITY OF LEANDER ATLAS 14 VALUES WERE USED FOR THIS CALCUATION							POA - A	20.50	31.50	42.50	57.60	70.70	85.00



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04/21/2023

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7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

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ORIGINAL ISSUE DATE:

SHEET TITLE:

PRE-DEVELOPED DRAINAGE MAP

SHEET NUMBER:

C121

FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-DAM EX.dwg TAB NAME:PRE-DEVELOPED DRAINAGE MAP USER:Oscar.garcia SAVED:1/27/2023 1:04 PM PLOTTED:4/21/2023 10:28 AM

PROPOSED DRAINAGE AREA CALCULATIONS

DRAINAGE AREA	AREA (ac.)	IMPERVIOUS COVER (%)	CN-VALUE (IMPERVIOUS)	PERVIOUS COVER (%)	CN-VALUE (PERVIOUS)	CN (COMPOSITE)	TC (MIN)	Q_2 (CFS)	Q_5 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{50} (CFS)	Q_{100} (CFS)
DA-1*	1.34	100%	98	0%	80	98.0	5.00	7.56	9.56	11.40	13.95	16.12	18.47
DA-2	0.38	33%	98	67%	80	85.9	9.10	1.35	1.86	2.35	3.01	3.58	4.18
DA-3	0.76	65%	98	35%	80	91.7	12.34	0.29	0.38	0.46	0.58	0.68	0.78
DA-4*	0.08	100%	98	0%	80	98.0	5.00	0.45	0.57	0.68	0.83	0.96	1.10
OFF-1	6.76	0%	98	100%	80	80.0	31.62	11.41	16.91	22.31	29.53	35.71	42.33
OFF-2	5.46	0%	98	100%	80	80.0	23.06	10.83	16.06	21.11	27.90	33.73	39.95
HEC-HMS VERSION 4.1 AND CITY OF LEANDER ATLAS 14 VALUES WERE USED FOR THIS CALCUATION							POA - A	17.86	28.05	38.52	52.59	64.63	77.51
*THESE DRAINAGE AREAS ARE CAPTURED BY THE UNDERGROUND DETENTION SYSTEM													

TIME OF CONCENTRATION CALCULATIONS

SHEET FLOW		SHALLOW CONCENTRATED FLOW		SHALLOW CONCENTRATED FLOW		CHANNEL FLOW	
DA-1*							
n=	0.015	paved?		paved?		v(fps)=	5.00
S (ft/ ft)=	0.010	S (ft/ft)=		S (ft/ft)=		L (ft)=	370
L (ft)=	39	L (ft)=		L (ft)=			
T_{t1}=	0.856	T_{t2}=	0.000	T_{t3}=	0.000	T_{t4}=	1.233
Total TC =	5.00 minutes						
DA-2							
n=	0.240	paved?	yes	paved?		v(fps)=	
S (ft/ ft)=	0.045	S (ft/ft)=	0.01	S (ft/ft)=		L (ft)=	
L (ft)=	97	L (ft)=	20	L (ft)=			
T_{t1}=	8.939	T_{t2}=	0.164	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	9.10 minutes						
DA-3							
n=	0.240	paved?	no	paved?		v(fps)=	5.00
S (ft/ ft)=	0.033	S (ft/ft)=	0	S (ft/ft)=		L (ft)=	30
L (ft)=	123	L (ft)=	0	L (ft)=			
T_{t1}=	12.237	T_{t2}=	0.000	T_{t3}=	0.000	T_{t4}=	0.100
Total TC =	12.34 minutes						
DA-4*							
n=	0.015	paved?		paved?		v(fps)=	
S (ft/ ft)=	0.032	S (ft/ft)=		S (ft/ft)=		L (ft)=	
L (ft)=	77	L (ft)=		L (ft)=			
T_{t1}=	0.921	T_{t2}=	0.000	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	5.00 minutes						
OFF-1							
n=	0.240	paved?	no	paved?		v(fps)=	
S (ft/ ft)=	0.010	S (ft/ft)=	0.003	S (ft/ft)=		L (ft)=	
L (ft)=	100	L (ft)=	790	L (ft)=			
T_{t1}=	16.717	T_{t2}=	14.899	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	31.62 minutes						
OFF-2							
n=	0.240	paved?	no	paved?		v(fps)=	
S (ft/ ft)=	0.010	S (ft/ft)=	0.021	S (ft/ft)=		L (ft)=	
L (ft)=	100	L (ft)=	890	L (ft)=			
T_{t1}=	16.717	T_{t2}=	6.344	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	23.06 minutes						

Point of Analysis	Storm Event	Existing Runoff (cfs)	Developed Runoff (cfs)	Is Developed ≤ Existing?
A	2	20.50	17.86	YES
	10	42.50	38.52	YES
	25	57.60	52.59	YES
	100	85.00	77.51	YES

OFF-1
294,633 SF
6.76 ACRES
IMPERV=0 SF
PERVIOUS=294,633 SF
Q(25)= 29.53 CFS
Q(100)= 42.33 CFS

OFF-2
237,845 SF
5.46 ACRES
IMPERV=0 SF
PERVIOUS=237,845 SF
Q(25)= 27.90 CFS
Q(100)= 39.95 CFS

DA-1
58,375 SF
1.34 ACRES
IMPERV=58,375 SF
PERVIOUS=0 SF
Q(25)= 13.95 CFS
Q(100)= 18.47 CFS

DA-2
16,769 SF
0.38 ACRES
IMPERV=5,531 SF
PERVIOUS=11,238 SF
Q(25)=3.01 CFS
Q(100)=4.18 CFS

DA-3
33,061 SF
0.76 ACRES
IMPERV=21,416 SF
PERVIOUS=11,645 SF
Q(25)=0.58 CFS
Q(100)=0.78 CFS

DA-4
3,465 SF
0.08 ACRES
IMPERV=3,465 SF
PERVIOUS=0.0 SF
Q(25)= 0.83 CFS
Q(100)= 1.10 CFS

0.29 ACRES OF PAVEMENT TREATED BY VFS

TIME OF CONCENTRATION

REMAINDER OF CALLED 110.67 ACRES (DOCUMENT NO. 2020081893, O.P.R.) OWNER: GIANNO SENNA KC, LP ET AL ZONED: CITY OF LEANDER ETJ

N0°09'08"E 236.67'

351.83'
89°50'52"E

S0°09'08"W 195.98'

S48°06'30"W 67.65'

N89°50'52"W 311.15'

POINT OF ANALYSIS A

STATE HIGHWAY 29
VARIABLE WIDTH R.O.W.
TxDOT AUS03370002 SH029ABSB
PAGES 1-4

50 25 0 50 100

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POST-DEVELOPED DRAINAGE MAP

SHEET NUMBER:
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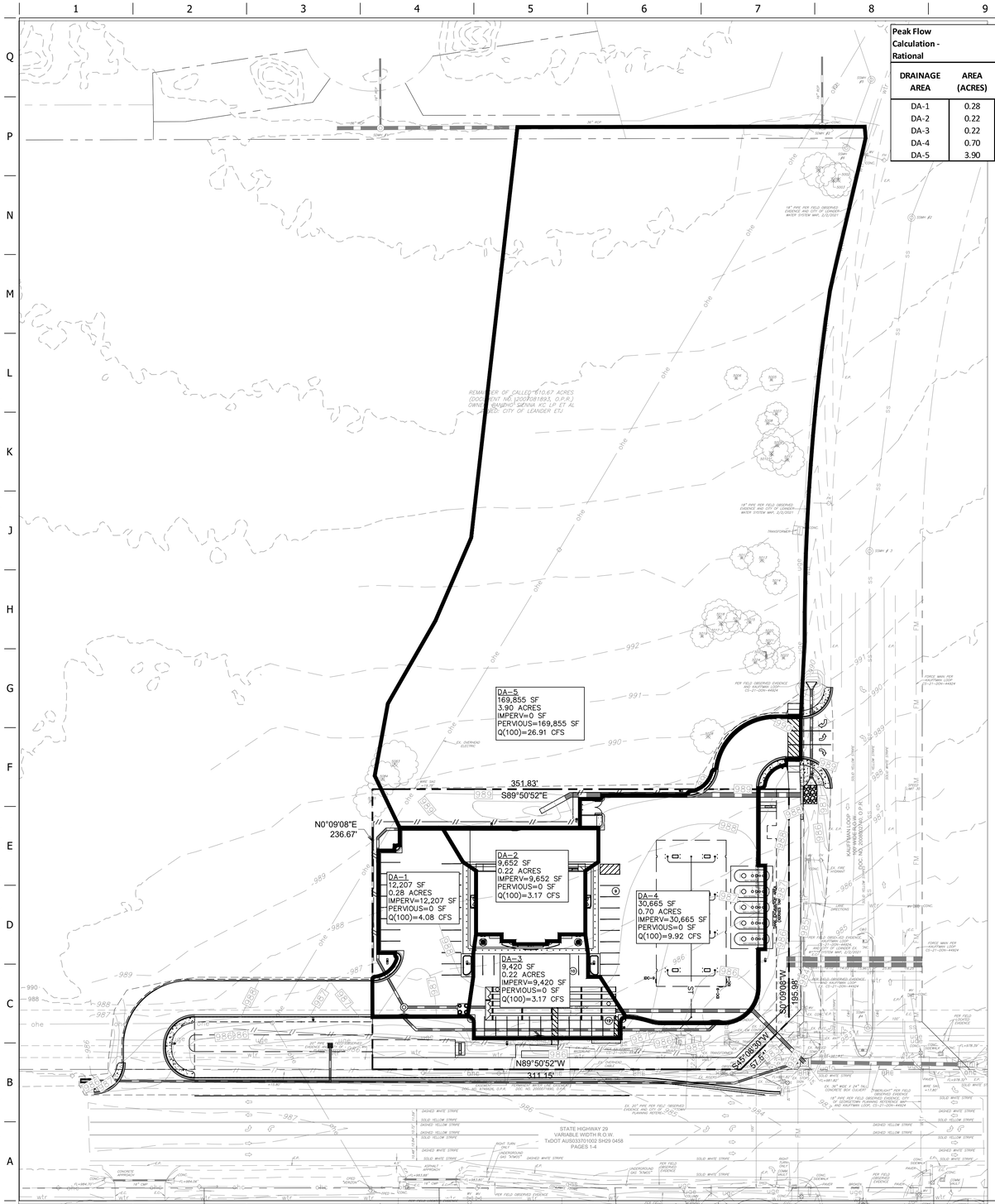

Peak Flow Calculation - Rational					RUNOFF COEFFICIENT (C)					RAINFALL INTENSITY (I)							
DRAINAGE AREA	AREA (ACRES)	Pervious Cover (ACRES)	Impervious Cover (ACRES)	Impervious Cover %	C 2-YEAR	C 10-YEAR	C 25-YEAR	C 100-YEAR	Tc (min)	I 2-YEAR	I 10-YEAR	I 25-YEAR	I 100-YEAR	Q 2-YEAR	Q 10-YEAR	Q 25-YEAR	Q 100-YEAR
DA-1	0.28	0.00	0.28	100%	0.75	0.83	0.88	0.97	5	6.13	9.19	11.30	15.00	1.43	2.14	2.79	4.08
DA-2	0.22	0.00	0.22	98%	0.74	0.82	0.87	0.96	5	6.13	9.19	11.30	15.00	1.11	1.66	2.16	3.17
DA-3	0.22	0.00	0.22	98%	0.74	0.82	0.87	0.96	5	6.13	9.19	11.30	15.00	1.11	1.66	2.17	3.17
DA-4	0.70	0.00	0.70	100%	0.75	0.83	0.88	0.97	5	6.13	9.19	11.30	15.00	3.56	5.34	6.96	10.19
DA-5	3.90	3.90	0.00	0%	0.29	0.35	0.39	0.46	5	6.13	9.19	11.30	15.00	8.37	12.54	17.19	26.91

Formulas:

Q=CiA
Q=Peak Factor Runoff
C=Weighted Runoff Coefficient
i=Rainfall Intensity
A=Drainage Area

Hydrologic Runoff Coefficients (Table 2-3 Austin Rational Method Runoff)

	2yr	10yr	25yr	100yr
Impervious C (Concrete)	0.75	0.83	0.88	0.97
Pervious C (Good, Average)	0.29	0.35	0.39	0.46

Curb Inlet Table

Equations: Weir (Unsubmerged) $Q = 3.0h^{1.5}L$ — Clogging Factor = 10% (Grate inlets in Sump)

Inlet # or Area #	Q100 (cfs)	Required Q to Pass (w/ 10 % clogging factor)	INLET (FT)	Available Weir Length (ft.)	Required Min. 'h' (ft.)	Provided 'h' (ft.)	Provided Capacity (cfs)
DA-1	4.08 cfs	4.53 cfs	5' CURB	5'	0.45'	0.50'	4.77 cfs
DA-2	3.17 cfs	3.52 cfs	5' CURB	5'	0.38'	0.50'	4.77 cfs
DA-3	3.17 cfs	3.52 cfs	5' CURB	5'	0.38'	0.50'	4.77 cfs
DA-4	10.19 cfs	11.32 cfs	10' CURB	12'	0.46'	0.53'	12.50 cfs

50 25 0 50 100

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04/21/2023

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INLET DRAINAGE AREA MAP

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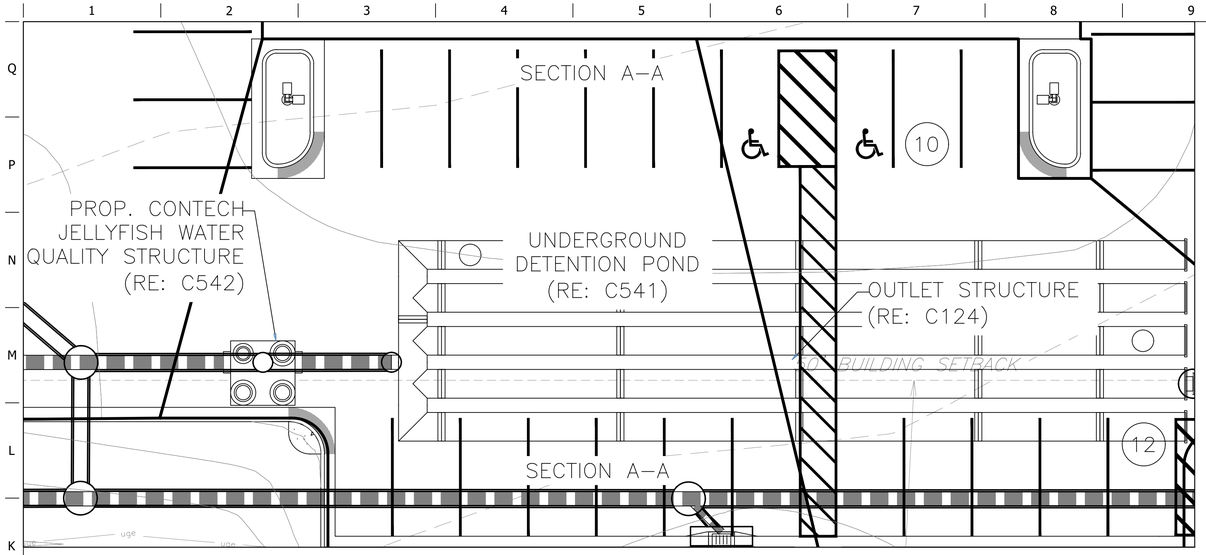
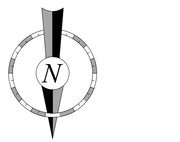




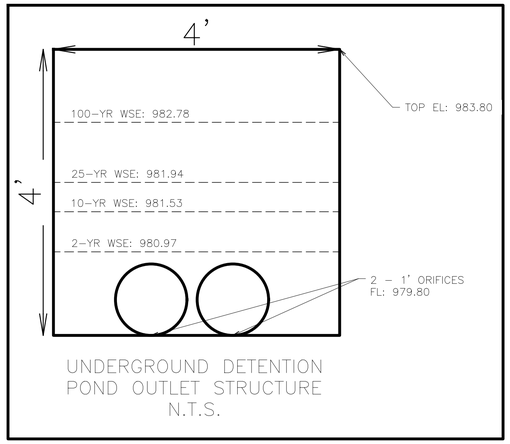
10 5 0 10 20

Table 1 - Atlas 14 DDF Data for Leander (Replaces Table 2-3 in the Austin DCM)

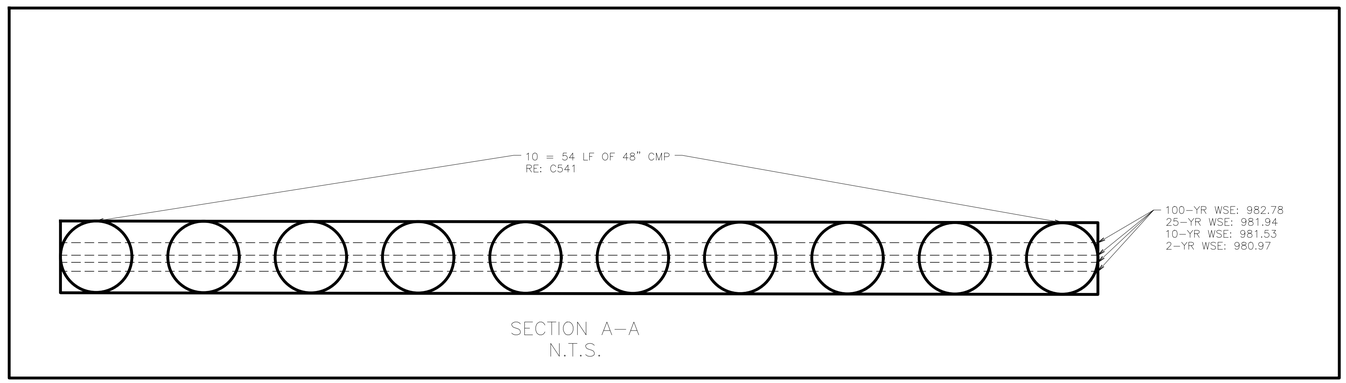
Depth-Duration-Frequency Table									
Duration	Depth of Precipitation (inches)								
	Average recurrence interval (years)								
	1	2	5	10	25	50	100	200	500
5-min	0.422	0.511	0.646	0.766	0.943	1.09	1.25	1.41	1.64
10-min	0.672	0.814	1.03	1.23	1.51	1.75	2	2.26	2.6
15-min	0.848	1.02	1.29	1.53	1.88	2.17	2.48	2.8	3.25
30-min	1.2	1.44	1.81	2.14	2.62	3.01	3.44	3.89	4.54
60-min	1.55	1.88	2.37	2.82	3.47	4.01	4.59	5.24	6.17
2-hr	1.84	2.3	2.96	3.58	4.51	5.3	6.19	7.19	8.68
3-hr	2	2.54	3.31	4.05	5.18	6.15	7.27	8.55	10.5
6-hr	2.29	2.97	3.93	4.85	6.28	7.52	8.97	10.6	13.2
12-hr	2.65	3.43	4.53	5.6	7.23	8.65	10.3	12.2	15.2
24-hr	3.05	3.92	5.17	6.36	8.16	9.72	11.5	13.6	16.9

Table 2 - Atlas 14 IDF Data for Leander (Replaces Table 2-4 in the Austin DCM)

Intensity-Duration-Frequency Table									
Intensity of Precipitation (Inches Per Hour)									
Duration	Average Recurrence Interval (years)								
	1	2	5	10	25	50	100	200	500
5-min	5.06	6.13	7.75	9.19	11.3	13.1	15	17	19.7
10-min	4.03	4.88	6.19	7.35	9.05	10.5	12	13.5	15.6
15-min	3.39	4.1	5.16	6.12	7.51	8.68	9.92	11.2	13
30-min	2.4	2.88	3.62	4.28	5.24	6.03	6.88	7.79	9.07
60-min	1.55	1.88	2.37	2.82	3.47	4.01	4.59	5.24	6.17
2-hr	0.921	1.15	1.48	1.79	2.25	2.65	3.09	3.6	4.34
3-hr	0.665	0.846	1.1	1.35	1.72	2.05	2.42	2.85	3.48
6-hr	0.383	0.496	0.655	0.81	1.05	1.26	1.5	1.78	2.2
12-hr	0.22	0.285	0.376	0.464	0.6	0.718	0.855	1.02	1.26
24-hr	0.127	0.164	0.215	0.265	0.34	0.405	0.48	0.568	0.703



UNDERGROUND DETENTION POND OUTLET STRUCTURE
N.T.S.



SECTION A–A
N.T.S.

PROVIDED DETENTION POND VOLUME		
STAGE STORAGE TABLE PROVIDED BY CONTECH		
ELEVATION (FT)	CUMULATIVE VOLUME (CUBIC FT)	CUMULATIVE VOLUME AC-FT)
979.8	0	0
980.3	506	0.01
980.8	1371	0.03
981.3	2402	0.06
981.8	3506	0.08
982.3	4610	0.11
982.8	5641	0.13
983.3	6506	0.15
983.8	7012	0.16

POND AND OUTLET CONTROL CALCULATIONS			
RETURN PERIOD (YR)	OUTFLOW (CFS)	VOLUME (AC-FT)	MAX WSEL (FT)
2	6.17	0.04	980.97
10	8.37	0.07	981.53
25	9.68	0.09	981.94
100	11.92	0.13	982.78

DRAINAGE GENERAL NOTES

1. HEC-HMS VERSION 4.1 HAS BEEN UTILIZED FOR DETENTION POND SIZING.

RACHEL M. ROBERTS
137894
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
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TBPE F-928/BS NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
DETENTION POND MAP

SHEET NUMBER:
C124

FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-POND.dwg TAB NAME:DETENTION POND PLAN USER:Olivia.Watts SAVED:3/22/2023 12:56 PM PLOTTED:4/21/2023 10:29 AM

HYDROLOGIC CALCULATIONS:

TIME OF CONCENTRATION CALCULATIONS							
SHEET FLOW		SHALLOW CONCENTRATED FLOW		SHALLOW CONCENTRATED FLOW		CHANNEL FLOW	
n=	0.300	paved?	no	paved?		v(fps)=	
S (ft/ ft)=	0.050	S (ft/ft)=	0.008	S (ft/ft)=		L (ft)=	
L (ft)=	300	L (ft)=	115	L (ft)=			
T_{t1}=	20.000	T_{t2}=	1.328	T_{t3}=	0.000	T_{t4}=	0.000
Total TC =	21.33 minutes						

Driveway 1		
Drainage Area	3.04	ac
TC Calculation	21.33	min
Impervious Cover	0.49	ac
Pervious Cover	2.55	ac
Runoff Coefficient (10 yr)	0.43	
Intensity (CORR Brushy Creek Table 3)	9.00	
10 yr Flow (Q=CiA)	11.69	cfs

HYDRAULIC CALCULATIONS:

TxDOT Driveway Culvert

Invert Elev Dn (ft)	= 983.32
Pipe Length (ft)	= 100.00
Slope (%)	= 0.83
Invert Elev Up (ft)	= 984.15
Rise (in)	= 18.0
Shape	= Circular
Span (in)	= 18.0
No. Barrels	= 1
n-Value	= 0.013
Culvert Type	= Circular Concrete
Culvert Entrance	= Groove end projecting (C)
Coeff. K,M,c,Y,k	= 0.0045, 2, 0.0317, 0.69, 0.2

Embankment

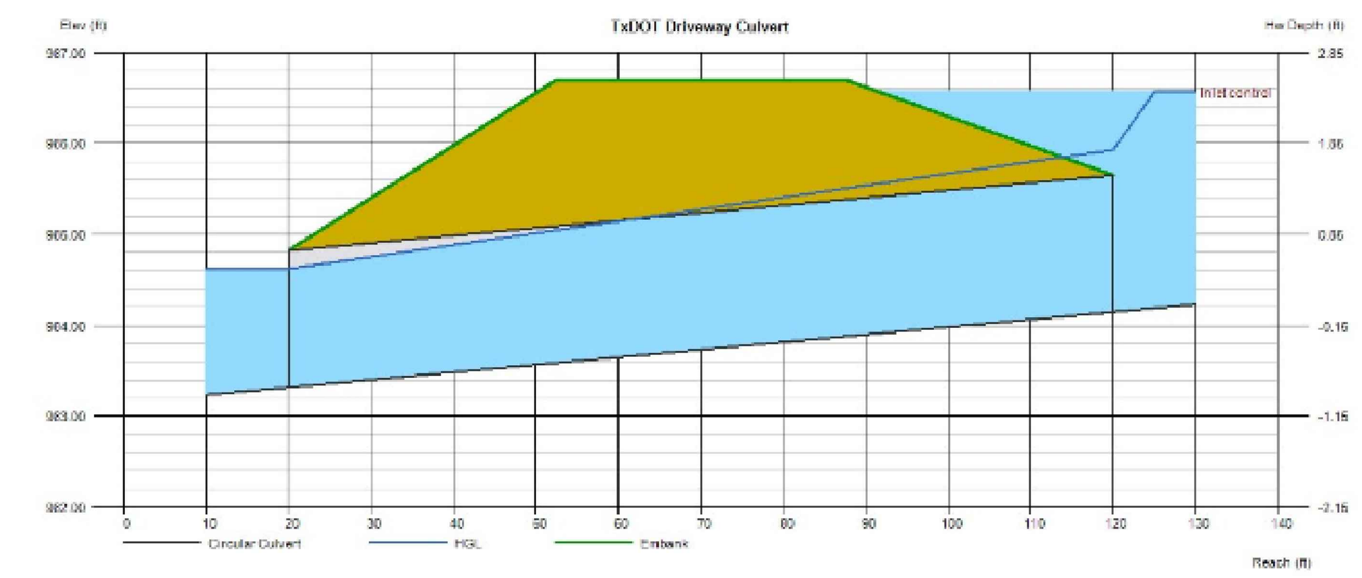
Top Elevation (ft)	= 986.70
Top Width (ft)	= 35.00
Crest Width (ft)	= 50.00

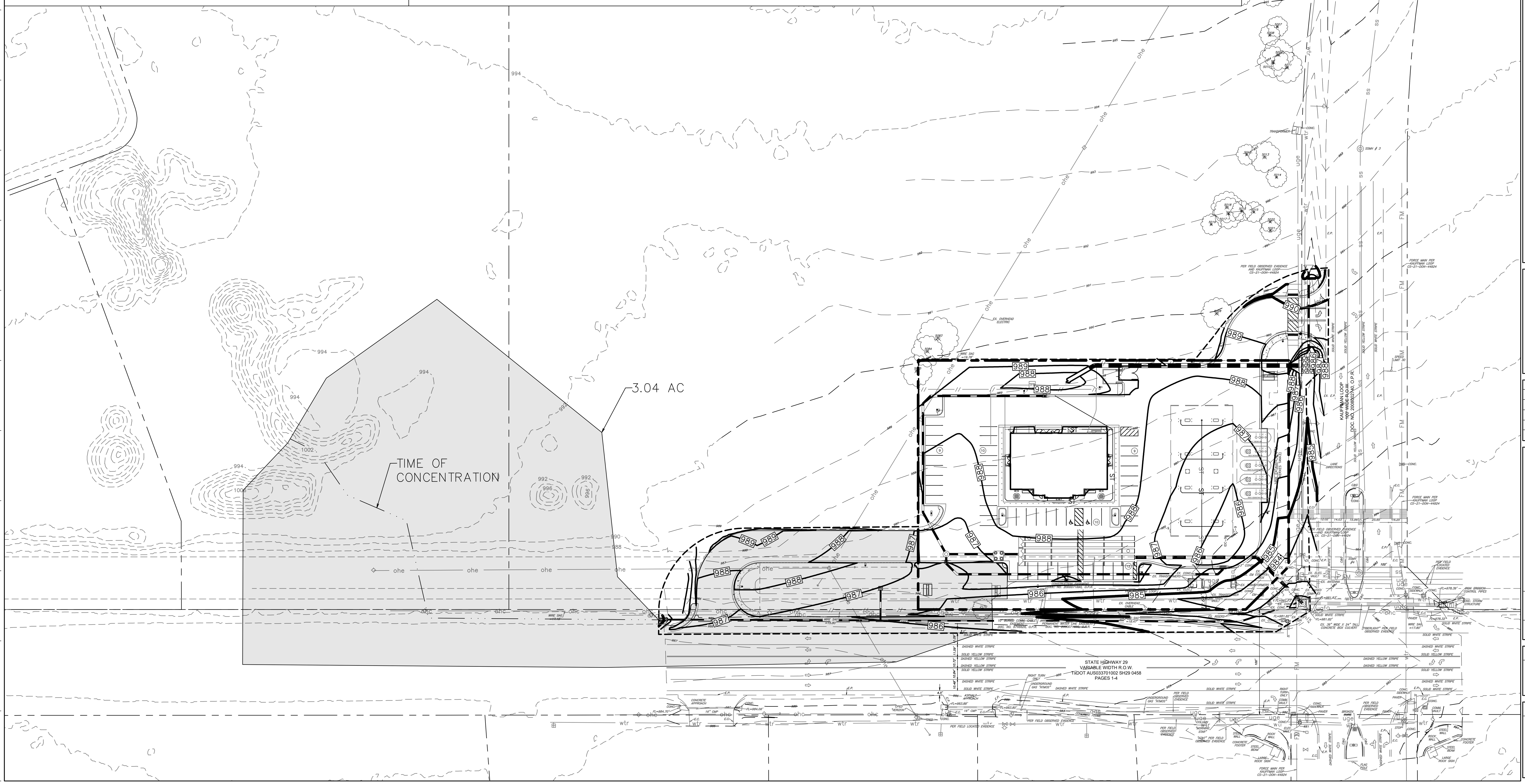
Calculations

Qmin (cfs)	= 11.69
Qmax (cfs)	= 11.69
Tailwater Elev (ft)	= 0.00

Highlighted

Qtotal (cfs)	= 11.69
Qpipe (cfs)	= 11.69
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 7.18
Veloc Up (ft/s)	= 6.62
HGL Dn (ft)	= 984.62
HGL Up (ft)	= 985.93
Hw Elev (ft)	= 986.57
Hw/D (ft)	= 1.61
Flow Regime	= Inlet Control





RACHEL M. ROBERTS
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STATE OF TEXAS
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn

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TBPE FIRM NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE: P-110 (05/01/22)
DIVISION:
VERSION: 001
DESIGNED BY: OHW
DRAWN BY: OHW
REVIEWED BY: RMR

REV	DATE	DESCRIPTION

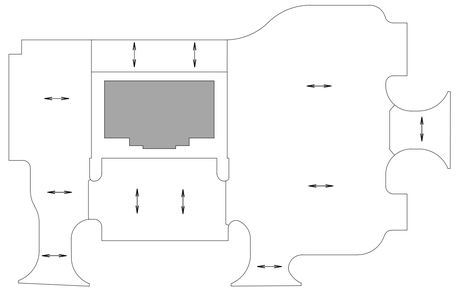
ORIGINAL ISSUE DATE:

SHEET TITLE:
TXDOT DRIVEWAY CULVERT DRAINAGE AREA MAP

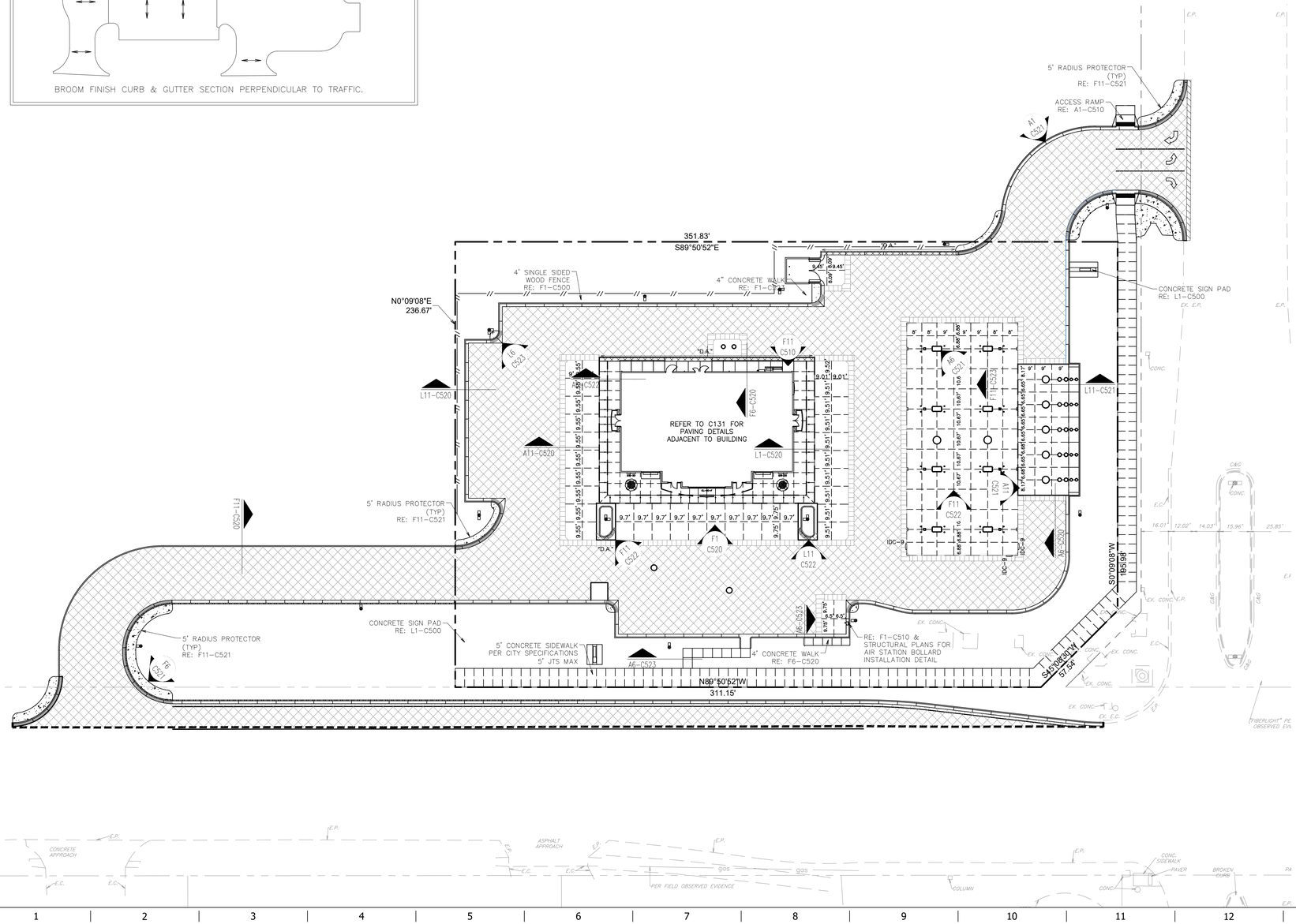
SHEET NUMBER:
C125

PAVEMENT BROOM FINISH DIRECTION EXHIBIT

SCALE: NONE



BROOM FINISH CURB & GUTTER SECTION PERPENDICULAR TO TRAFFIC.



PAVING LEGEND

- ISOLATION – DOWEL
- ISOLATION – NO DOWEL
- CONSTRUCTION – TIED
- CONTRACTION – DOWEL
- CONTRACTION – NO DOWEL
- THICKENED EDGE
- "DRAIN-AWAY CURB" OR "D.A." — DRAIN AWAY CURB
- CONCRETE PAVING
- ASPHALT PAVING
- R — REINFORCED PANEL
- RADIUS PROTECTOR
- MOUNTABLE CURB
- X#–X### — SECTION DETAIL
- X# / X### — BLOWUP DETAIL

PAVING GENERAL NOTES

1. DURING CONSTRUCTION, CONTRACTION JOINTS SHALL BE REPLACED BY CONSTRUCTION JOINTS AS DETERMINED AND AGREED UPON BY THE GC AND QT CONSTRUCTION MANAGER BASED ON THE PROJECT SCHEDULE FOR CONCRETE PAVING PLACEMENT. CONSTRUCTION JOINTS SHALL BE CONSTRUCTED PER DETAIL XX-XXX.
2. AT THE GC'S PREFERENCE, CURB MAY BE CONSTRUCTED AS SEPARATELY FORMED OR MONOLITHICALLY POURED WITH THE SITE PAVING SECTIONS. THE CONSTRUCTION OF THE CURB SHALL BE CONSISTENT THROUGHOUT THE SITE, WITH THE EXCEPTION OF MONOLITHIC CURB NEAR THE TANK PIT WHEN NOTED ON THE PLANS, AND THE STORE FRONT ISLANDS WHICH MUST HAVE ISOLATION JOINTS. FOR SEPARATELY FORMED CURB, A 3 SIDED FORM IS REQUIRED. FOR MONOLITHIC CURB, A 2 SIDED FORM IS REQUIRED.
3. FOR JOINT LOCATIONS WITHIN ADA LOCATIONS, RE: ADA COMPLIANCE REFERENCE SHEET C113.
4. FOR CONSTRUCTION TOLERANCES OF SEALANT PLACEMENT IN JOINTS, RE: C521-L1.

RACHEL M. ROBERTS
137594
REGISTERED
PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

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TBPE F-928 TBPELS #10194 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	001
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:

ASPHALT PAVING PLAN

SHEET NUMBER:

C130A

30 15 0 30 60

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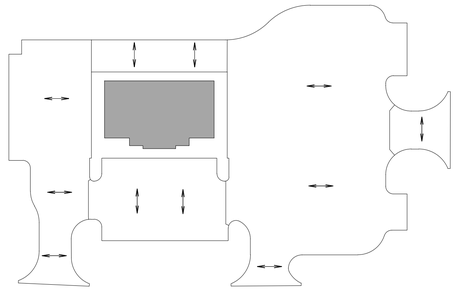
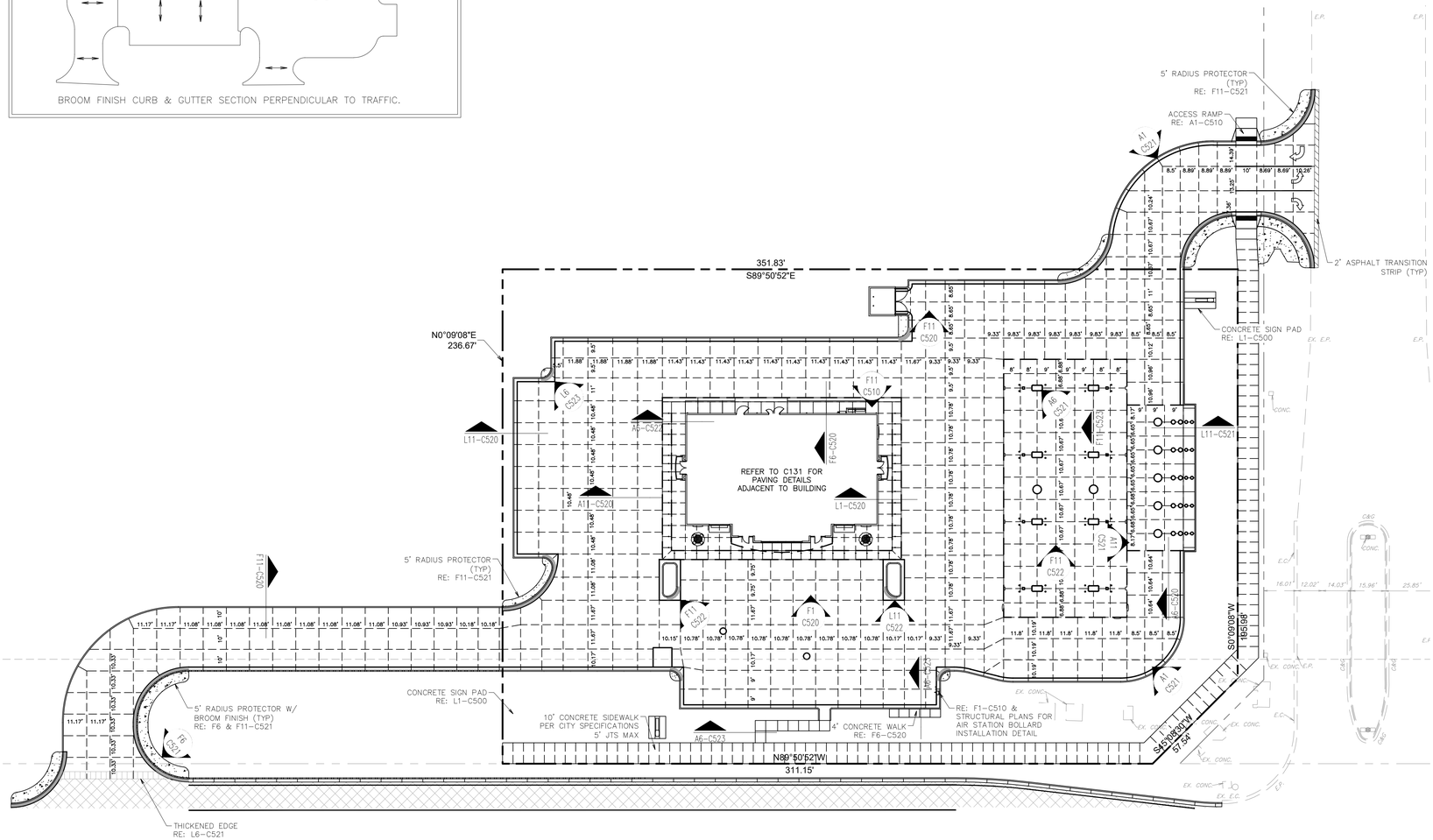
PAVEMENT BROOM FINISH DIRECTION EXHIBIT

SCALE: NONE



BROOM FINISH CURB & GUTTER SECTION PERPENDICULAR TO TRAFFIC.



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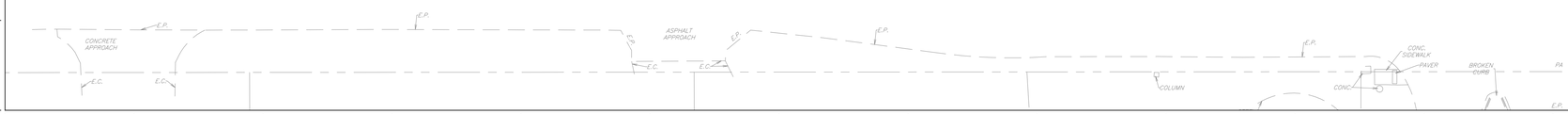

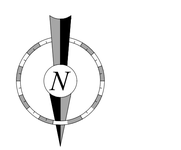

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RACHEL M. ROBERTS
137594
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

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TBPE F-928 TBPLS #100189-00

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION
		ORIGINAL ISSUE DATE:

SHEET TITLE:

CONCRETE PAVING PLAN

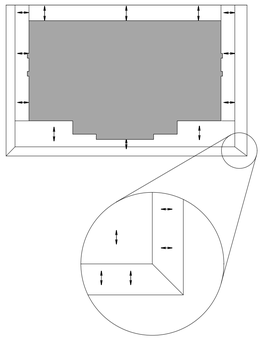
SHEET NUMBER:

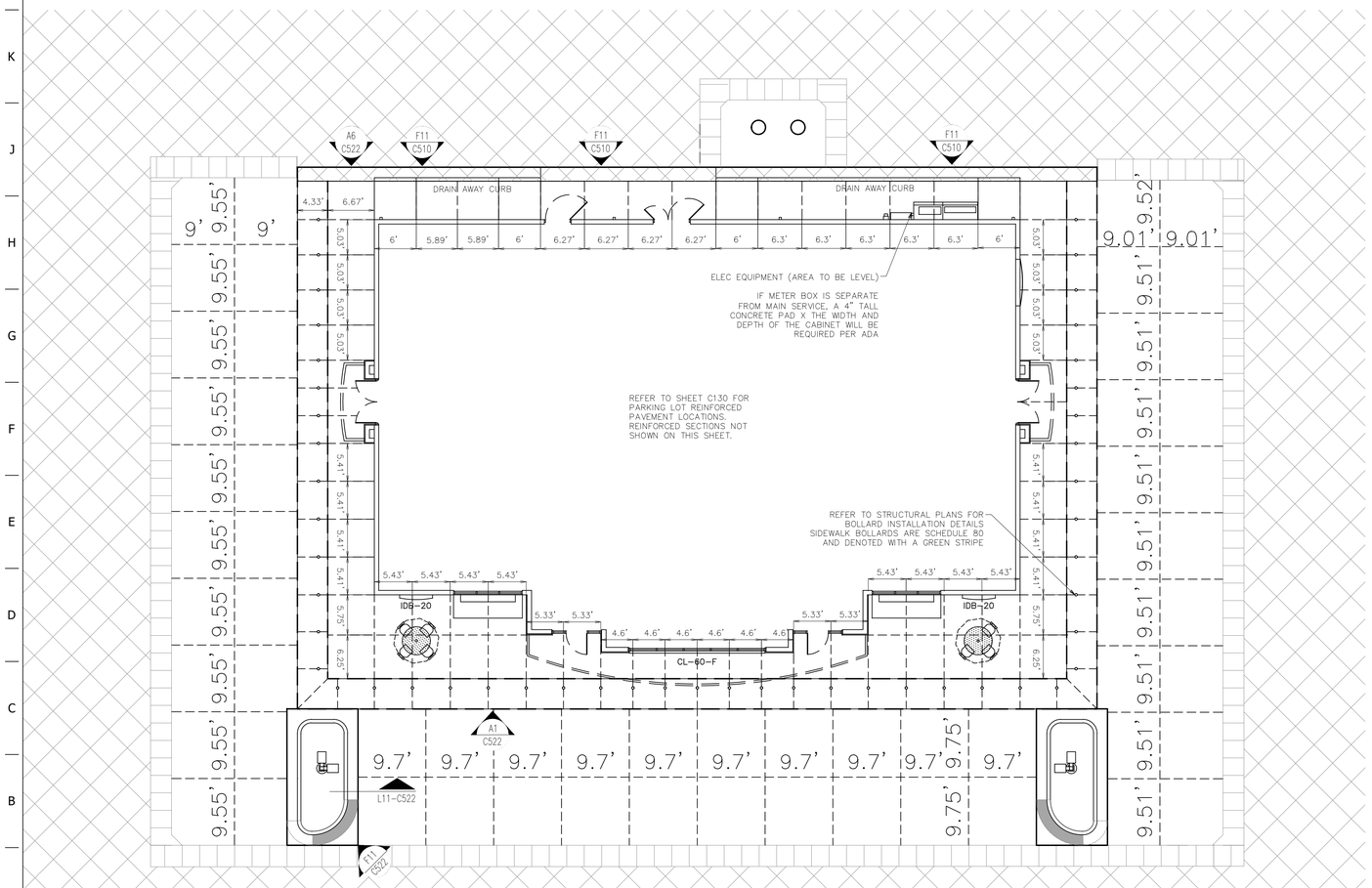
C130B

FILE LOCATION:K:\SNA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-PAVC.dwg TAB NAME:CONCRETE PAVING PLAN USER:Olivia.Watts SAVED:3/22/2023 1:15 PM PLOTTED:4/21/2023 10:30 AM

BUILDING SIDEWALK BROOM FINISH DIRECTION EXHIBIT

SCALE: NONE





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- CONTRACTION – DOWEL
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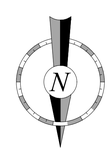

10 5 0 10 20

RACHEL M. ROBERTS
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PROFESSIONAL ENGINEER
04/21/2023

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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:

BUILDING PAVING PLAN

SHEET NUMBER:

C131

FILE LOCATION:K:\SNA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-PAVI.dwg TAB NAME:BUILDING PAVING PLAN USER:Olivia.Watts SAVED:3/22/2023 1:14 PM PLOTTED:4/21/2023 10:30 AM

ACREAGE SUMMARY	
IMPERVIOUS AREA	±0.00 ACRES
LANDSCAPE AREA	±3.09 ACRES
TOTAL DISTURBED	±3.09 ACRES

OWNERSHIP / CONTRACTOR SUMMARY

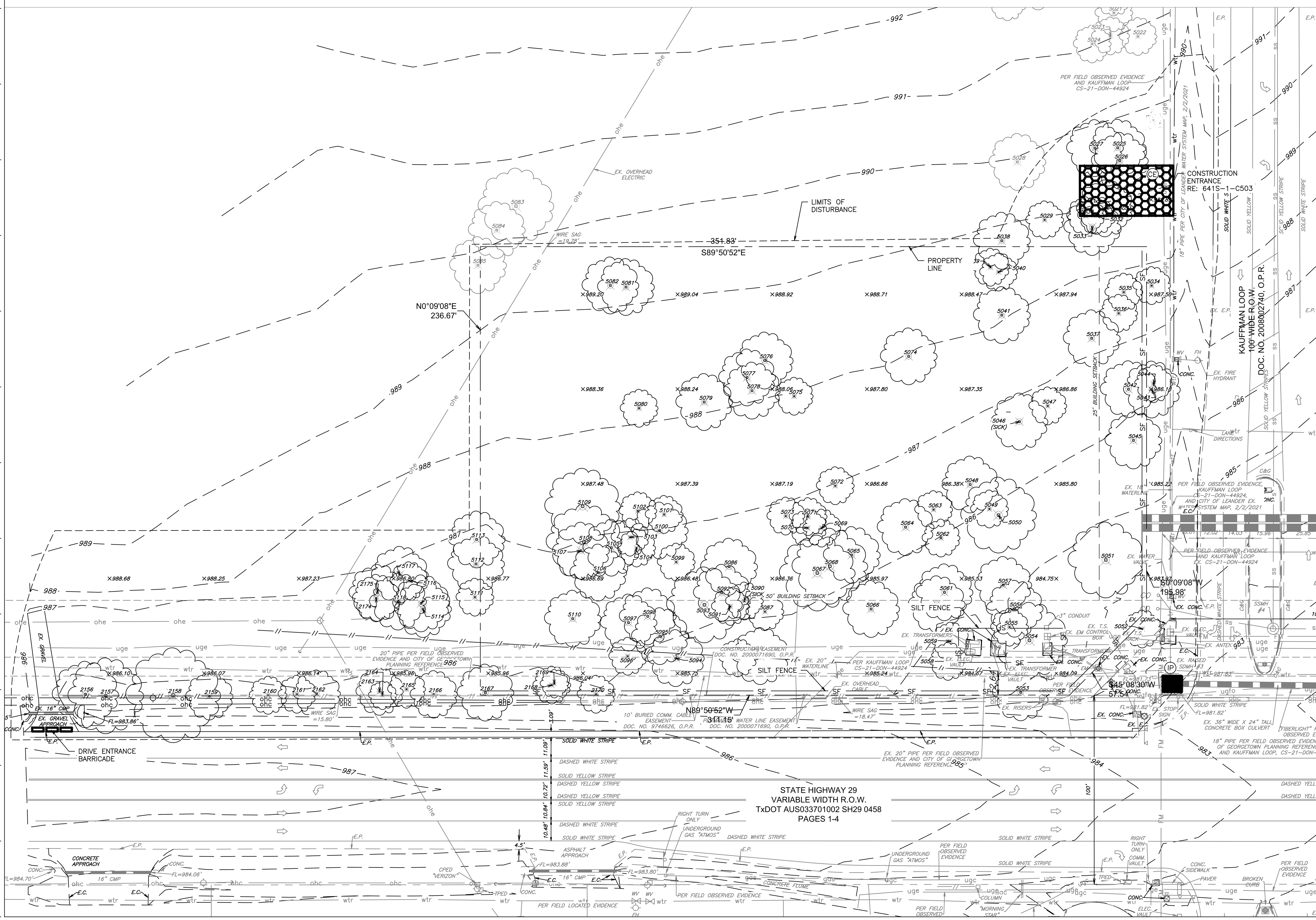
OWNER/DEVELOPER:
QUIKTRIP CORPORATION
742 NW LOOP 410, STE 102
SAN ANTONIO, TEXAS, 78216
TEL: (469) 766-8331

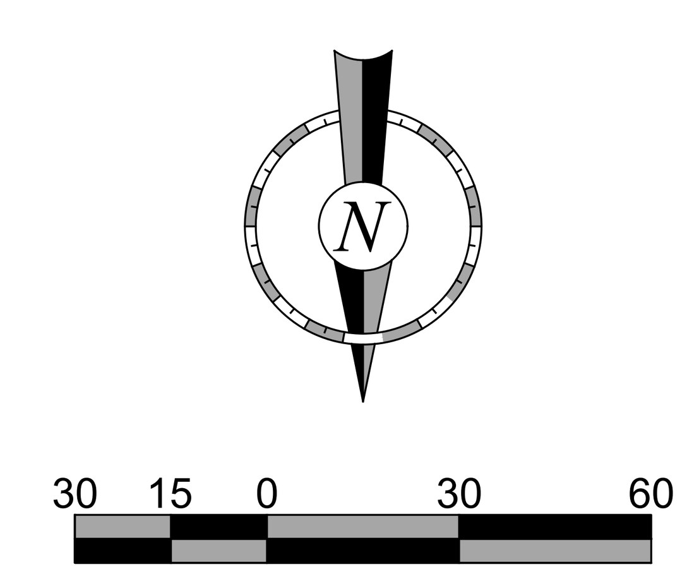
SITE OPERATOR/GENERAL CONTRACTOR:
TBD

SUPERINTENDENT:
TBD

EROSION CONTROL PHASE 1 LEGEND

- XXX — MAJOR CONTOUR (EXISTING)
- XXX — MINOR CONTOUR (EXISTING)
- SF — SILT FENCE
- LIMITS OF DISTURBANCE
- DRIVE ENTRANCE BARRICADE
- INLET PROTECTION
- TEMPORARY STABILIZED CONSTRUCTION ENTRANCE





RACHEL M. ROBERTS
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STATE OF TEXAS
04/21/2023

PROJECT NO.:069304941

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7601 W SH 29
GEORGETOWN, TEXAS

QT

PROTOTYPE: P-112 (11/18/22)
DIVISION:
VERSION: 001
DESIGNED BY: OHW
DRAWN BY: OHW
REVIEWED BY: RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
EROSION CONTROL PLAN - PHASE 1

SHEET NUMBER:
C140

FILE LOCATION:K:\SNA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-EROS PH1.dwg TAB NAME:Erosion-Phase 1 USER:Olivia.Watts SAVED:3/10/2023 4:49 PM PLOTTED:4/21/2023 10:30 AM

FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-EROS PH2.dwg TAB NAME:Erosion-Phase 2 USER:Olivia.Watts SAVED:3/22/2023 3:25 PM PLOTTED:4/21/2023 10:31 AM

ACREAGE SUMMARY	
IMPERVIOUS AREA	±1.97 ACRES
LANDSCAPE AREA	±1.12 ACRES
TOTAL DISTURBED	±3.09 ACRES

OWNERSHIP / CONTRACTOR SUMMARY

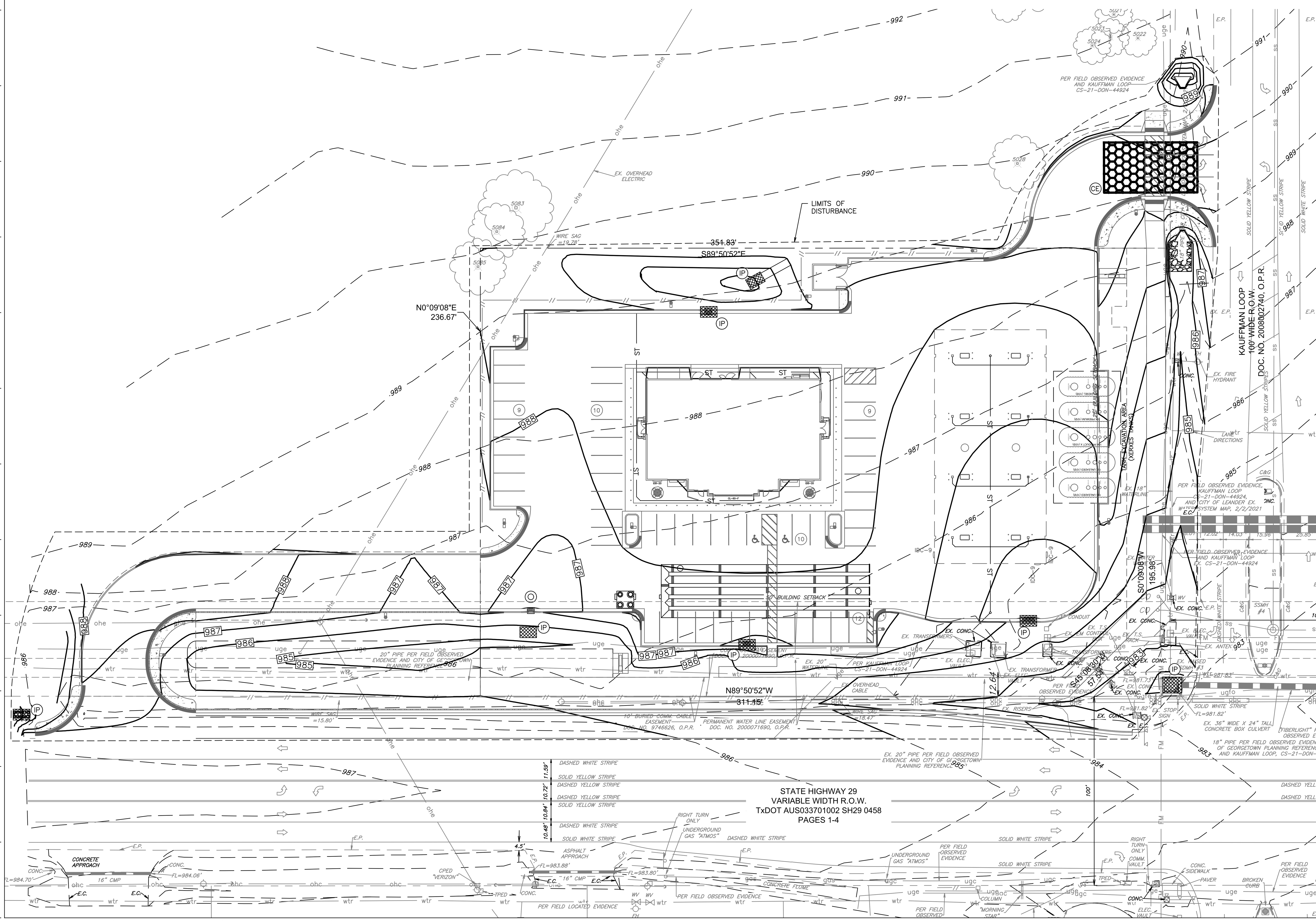
OWNER/DEVELOPER:
QUIKTRIP CORPORATION
742 NW LOOP 410, STE 102
SAN ANTONIO, TEXAS, 78216
TEL: (469) 766-8331

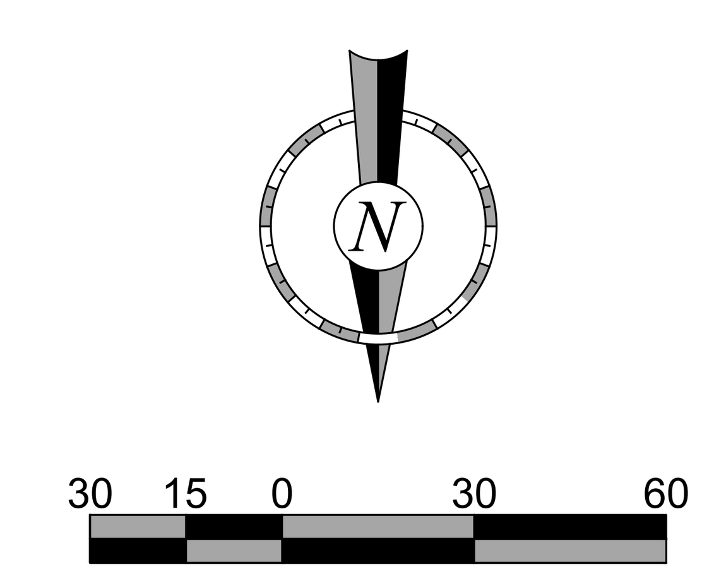
SITE OPERATOR/GENERAL CONTRACTOR:
TBD

SUPERINTENDENT:
TBD

EROSION CONTROL PHASE 1 LEGEND

Symbol	Description
— — XXX — —	MAJOR CONTOUR (EXISTING)
— — XXX — —	MINOR CONTOUR (EXISTING)
——[XXX]——	MAJOR CONTOUR (PROPOSED)
——[XXX]——	MINOR CONTOUR (PROPOSED)
—— SF ——	SILT FENCE
— — — — —	LIMITS OF DISTURBANCE
▭ ▭ ▭	DRIVE ENTRANCE BARRICADE
(crosshatch)	INLET PROTECTION
(hexagon pattern)	TEMPORARY STABILIZED CONSTRUCTION ENTRANCE





RACHEL M. ROBERTS
137894
STATE OF TEXAS
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn
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10101 REUNION PLACE, SUITE 400,
SAN ANTONIO, TX 78216
PHONE: 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM
TBPE FIRM NO. 928

QuikTrip No. 4160
7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE: P-112 (11/18/22)
DIVISION:
VERSION: 001
DESIGNED BY: OHW
DRAWN BY: OHW
REVIEWED BY: RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
EROSION CONTROL PLAN - PHASE 2

SHEET NUMBER:
C141

UTILITY GENERAL NOTES

UTILITY INSTALLATION CONSIDERATIONS

PRIOR TO THE CONSTRUCTION OF, OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, OR ANY OTHER ELEVATION SENSITIVE UTILITY, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTIONS AND ALL UTILITY CROSSINGS. THE CONTRACTOR SHALL INFORM THE ENGINEER AND THE OWNER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. THE ENGINEER AND OWNER WILL BE HELD HARMLESS IN THE EVENT THE ENGINEER AND OWNER ARE NOT NOTIFIED OF A DESIGN CONFLICT.

AS POSSIBLE, ALL PROPOSED UTILITIES SHALL BE ROUTED THROUGH PERVIOUS AREAS – SPECIFICALLY AVOIDING ON–SITE PAVED AREAS DESIGNATED FOR PARKING, ACCESS, AND VEHICULAR TRAFFIC FLOW.

REFER TO THIS SHEET FOR LOCATION, AND SHEETS #### THRU #### FOR TRENCHING, BACKFILL, AND PLACEMENT DETAILS.

UTILITY LEGEND (NEW)

WTR	WATER LINE
SS	SANITARY SEWER LINE
UGET	UNDERGROUND ELECTRIC LINE
UGT	UNDERGROUND TELEPHONE LINE
ST	STORM PIPE (≤ 10")
	STORM PIPE (≥ 12")
XXX	MAJOR CONTOUR
XXX	MINOR CONTOUR
	CONCRETE CURB AND GUTTER
	LIGHT POLE – 6' MIN. CLEAR FROM F/C (TRAVEL CENTER PARKING – 15' MIN. CLEAR)

CONTRACTOR TO INSTALL CAST–IN–PLACE TRANSFORMER PAD IN ACCORDANCE WITH UTILITY CO. SPECS

INSTALL 144 LF OF CONDUITS FOR ELECTRIC SERVICE. (CONDUIT COUNT PER UTILITY CO. REQUIREMENTS (RE: ELECTRICAL)

STA: 3+47.38, WW–A
KEEN GRINDER PUMP
RE: C552
RIM: ±989.44
4 FL (OUT): 984.11
6 FL (IN): 983.52

S89°50'52"E
351.83'

STA: 1+87.83, WW–A
WW FM 90° BEND
RIM: ±988.71
4 FL (OUT): 979.49
4 FL (IN): 979.49

1.5" DOMETIC SERVICE METER & VALVE

1 – FIRE HYDRANT ASSEMBLY
35 LF OF 6" DI

N0°09'08"E
236.67'

4" PVC @ 2.89%

236 LF 2" (PEX) WATER SERVICE
MAX PEAK = 155 GPM±

6" PVC @ 1.90%

STA: 0+81.68, WW–B
SEE MEP PLANS FOR CONTINUATION
FG: ±989.50
6 FL (OUT): 985.25

INSTALL 400 LF OF 2–4" CONDUITS FOR TELEPHONE SERVICE TO EX. TRANSFORMER. (COORDINATE LOCATION W/ UTILITY CO.)

STA: 4+29.49, WW–A
2 – 45° BEND
FG: ±988.71
6 FL (OUT): 985.32
6 FL (IN): 985.32

6" PVC @ 1.32%

STA: 4+43.16, WW–A
SEE MEP PLANS FOR CONTINUATION
6 FL (OUT): 985.50

STA: 4+28.97, WW–A
SEE MEP PLANS FOR CONTINUATION
6 FL (IN): 984.50

INSTALL 413 LF OF CONDUITS FOR ELECTRIC SERVICE FROM EX. TRANSFORMER TO PROPOSED TRANSFORMER. (CONDUIT COUNT PER UTILITY CO. REQUIREMENTS (RE: ELECTRICAL)

FFE: 989.00

STA: 3+77.38, WW–A
SANITARY MANHOLE
RIM: ±988.86
6 FL (OUT): 984.09
6 FL (IN): 984.19

STA: 4+13.23, WW–A
GREASE INTERCEPTOR
FG: ±988.76
6 FL (OUT): 984.90
6 FL (IN): 985.10

6" PVC @ 1.32%

1.5" IRRIGATION BACKFLOW PREVENTER
RE: IRRIGATION FOR CONTINUATION

ESO
RE: ELEC

1 – FIRE HYDRANT ASSEMBLY
30 LF OF 6" DI

1 – 6"X21" TAPPING SADDLE

RELOCATED POWER POLE

CONNECT TO EX. TRANSFORMER
RE: ELEC

N89°50'52"W
311.15'

S45°08'08"W
57.54'

4" PVC @ 2.89%

S0°09'08"W
195.98'

1.5" IRRIGATION SERVICE METER & VALVE

STA: 0+26.99, WW–A
WW FM 60° BEND
RIM: ±984.47
4 FL (OUT): 974.84
4 FL (IN): 974.84

STA: 0+00.00, WW–A
CONNECT TO EX. 10" FORCEMAIN:
1 – 10"X4" SERVICE SADDLE
1 – 4" ISOLATION VALVE
1 – 4" CHECK VALVE
RE: C550
RIM: ±983.22
4 FL (IN): 974.06

MORNING STAR RANCH WASTEWATER OFF–SITE FORCE MAIN PROJECT NO. 160–10706–000

STA. 2+71 WATER MAIN END EX. 18" WATER MAIN LOWERING

STA 2+63.11 WATER MAIN PROP. 45° VERTICAL BEND

STA 2+45.92 WATER MAIN PROP. 45° VERTICAL BEND

±171 LF EX. 18" WATER MAIN TO BE LOWERED TO PROVIDE CLEARANCE PER CITY OF LEANDER REQUIREMENTS
RE: C151

STA 1+41.67 WATER MAIN PROP. 45° VERTICAL BEND

STA 1+33.77 WATER MAIN PROP. 45° VERTICAL BEND

STA 1+25.96 WATER MAIN
1 – 6"x18" TAPPING SADDLE

STA 1+20.80 WATER MAIN
1.5" DOMESTIC CONNECTION

STA 1+17.23 WATER MAIN
1.5" IRRIGATION CONNECTION

STA 1+00 WATER MAIN
BEGIN EX. 18" WATER MAIN LOWERING

NOTE:
CONTRACTOR IS RESPONSIBLE FOR INSTALLING PROPOSED UTILITY SERVICES TO AVOID PROPOSED STORM SEWER AND PROVIDE THE PROPER CLEARANCES REQUIRED BY UTILITY COMPANIES (RE: C120)

STATE HIGHWAY 29
VARIABLE WIDTH R.O.W.
TxDOT AUS033701002 SH29 0458
PAGES 1-4

30 15 0 30 60

RACHEL M. ROBERTS
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REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

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TBPE F-928/BS-928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

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SHEET TITLE:

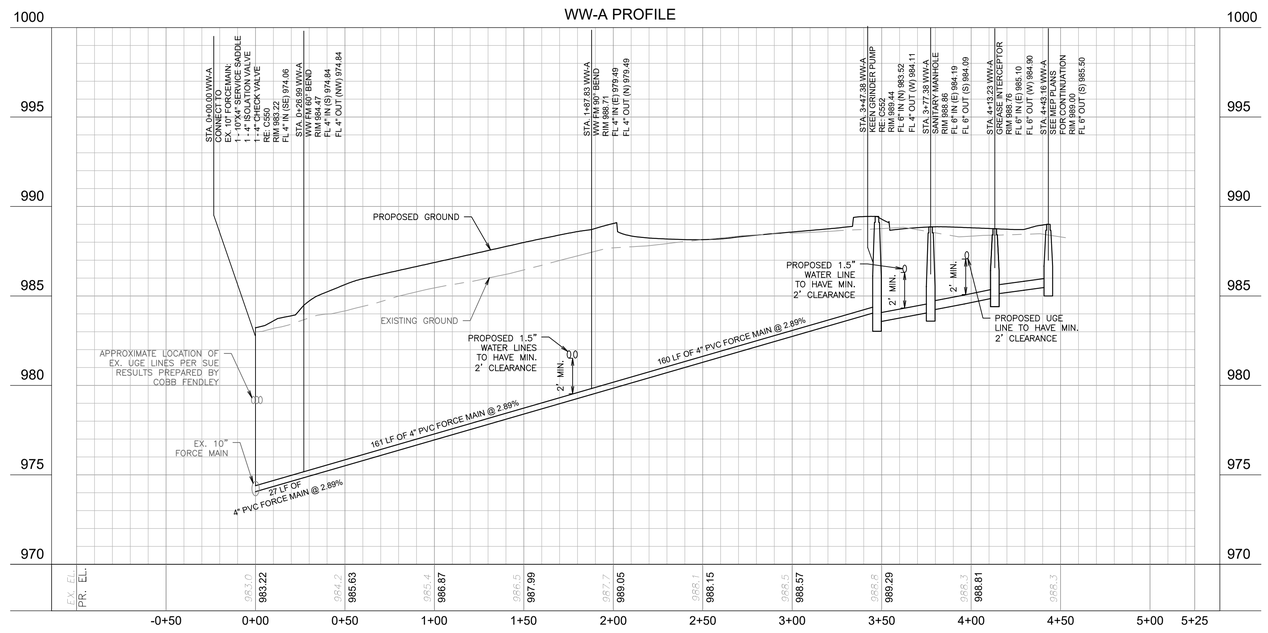
UTILITY PLAN

SHEET NUMBER:

C150

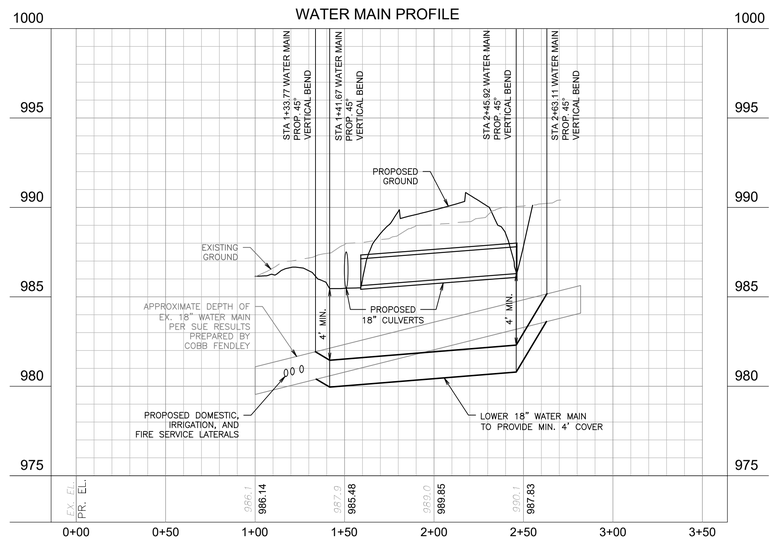
FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C–UTIL.dwg TAB NAME:Utility USER:Olivia.Watts SAVED:3/27/2023 10:51 AM PLOTTED:4/21/2023 10:31 AM

WW-A PROFILE



HORIZONTAL SCALE 1" = 40'
VERTICAL SCALE 1" = 4'

WATER MAIN PROFILE



HORIZONTAL SCALE 1" = 40'
VERTICAL SCALE 1" = 4'

UTILITY LEGEND (NEW)

- WTR — WATER LINE
- SS — SANITARY SEWER LINE
- UGET — UNDERGROUND ELECTRIC LINE
- UGT — UNDERGROUND TELEPHONE LINE
- ST — STORM PIPE (≤ 10")
- ST — STORM PIPE (≥ 12")
- XXX — MAJOR CONTOUR
- XXX — MINOR CONTOUR
- CONCRETE CURB AND GUTTER
- LIGHT POLE – 6' MIN. CLEAR FROM F/C (TRAVEL CENTER PARKING – 15' MIN. CLEAR)

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04/21/2023

PROJECT NO.:069304941

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TBPE # FIRM NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:

UTILITY PROFILE

SHEET NUMBER:

C151

FILE LOCATION:K:\SNA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-UTIL PROFILE.dwg TAB NAME:UTILITY PROFILE USER:Olivia.Watts SAVED:3/27/2023 5:55 PM PLOTTED:4/21/2023 10:31 AM

POTHOLE GENERAL NOTES

1. IN AREAS TO BE EXCAVATED, EXCAVATE TO A DEPTH NECESSARY TO IDENTIFY ALL UTILIES SHOWN AND/OR LOCATED BY THE UTILITY OWNER OR THE STATE ONE-CALL SYSTEM
2. ALL UTILITIES ARE TO BE IDENTIFIED BY UTILITY TYPE, SIZE, MATERIAL, AND DEPTH ON A FIELD STAKE, PLACED AT THE EXACT LOCATE, FOR THE SURVEYOR TO FIELD LOCATE AFTER POTHOLING OPERATIONS. POTHOLE CONTRACTOR TO ALSO KEEP RECORDS OF LOCATES FOR CROSS CHECK WITH SURVEYOR OBTAINED FIELD DATA.
3. SURVEYOR TO PROVIDE POTHOLE RESULTS TO THE CIVIL ENGINEER IN AN AUTOCAD FILE WHICH CLEARLY LABELS ALL ITEMS REQUIRED IN ITEM 2 ABOVE.
4. UTILITIES SHOWN HAVE BEEN FIELD VERIFIED, HOWEVER, CAUTION SHOULD BE USED WHEN EXCAVATING IN CASE OTHER UTILITIES ARE PRESENT.

351.83'
S89°50'52"E

N0°09'08"E
236.67'

N89°50'52"W
311.15'

S50°09'08"W
105.96'

S45°09'08"W
57.04'

TEST HOLE #1A (WTR)
ELEV = 986.20'
DEPTH = 3.81'
T.O.P. = 982.39'

TEST HOLE #1B (ELEC)
ELEV = 986.37'
DEPTH = 3.47'
T.O.P. = 982.90'

TEST HOLE #2A (WTR)
ELEV = 985.80'
DEPTH = 3.40'
T.O.P. = 982.40'

TEST HOLE #2B (ELEC)
ELEV = 986.53'
DEPTH = 3.27'
T.O.P. = 983.26'

TEST HOLE #3A (WTR)
ELEV = 982.64'
DEPTH = 3.51'
T.O.P. = 979.13'

TEST HOLE #3B (ELEC)
ELEV = 984.36'
DEPTH = 4.98'
T.O.P. = 982.38'

TEST HOLE #3C (FOC)
ELEV = 983.38'
DEPTH = 2.98'
T.O.P. = 980.40'

TEST HOLE #3D (SWR)
ELEV = 983.34'
DEPTH = 6.92'
T.O.P. = 976.42'

TEST HOLE #3E (N/A)
ELEV = 983.12'
DEPTH = 1.84'
T.O.P. = 981.28'

TEST HOLE #4A (WTR)
ELEV = 985.31'
DEPTH = 5.40'
T.O.P. = 979.91'

TEST HOLE #4B (ELEC)
ELEV = 985.62'
DEPTH = 5.53'
T.O.P. = 980.09'

TEST HOLE #4C (N/A)
ELEV = 985.28'
DEPTH = 4.03'
T.O.P. = 981.25'

TEST HOLE #5A (WTR)
ELEV = 989.46'
DEPTH = 5.76'
T.O.P. = 983.70'

TEST HOLE #5B (ELEC)
ELEV = 989.73'
DEPTH = 3.71'
T.O.P. = 986.02'

STATE HIGHWAY 29
VARIABLE WIDTH R.O.W.
TxDOT AUS033701002 SH29 0458
PAGES 1-4

KAUFFMAN LOOP
100' WIDE R.O.W.
DOC. NO. 2009802740, O.P.R.

30 15 0 30 60

RACHEL M. ROBERTS
137894
REGISTERED
PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

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TBPE #: FIRM NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

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		ORIGINAL ISSUE DATE:

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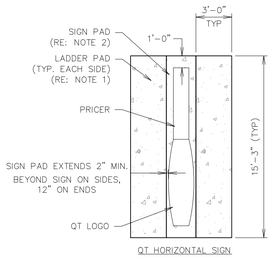
UTILITY VERIFICATION PLAN

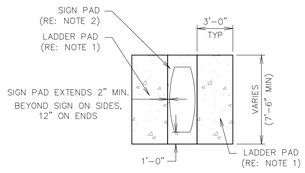
SHEET NUMBER:
C152

FILE LOCATION:K:\SNA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\C-UTIL VERIFICATION.dwg TAB NAME:Utility Verification USER:Olivia.Watts SAVED:3/9/2023 6:22 PM PLOTTED:4/21/2023 10:31 AM

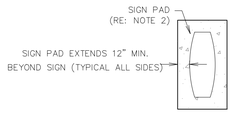
1. 4" THICK X 4000 P.S.I. CONCRETE LADDER PAD W/6"X6" 10 GA. W.W.F. PLACED LEVEL, MID-DEPTH (TYPICAL)
2. 4" THICK X 4000 P.S.I. CONCRETE SIGN PAD W/6"X6" 10 GA. W.W.F. PLACED LEVEL, MID-DEPTH (TYPICAL)
3. CAULK CONSTRUCTION JOINT BETWEEN SIGN AND LADDER PADS.
4. FOR QT SIGN PAD PLACEMENT, RE: SITE PLAN FOR SITE SPECIFIC SIGNAGE.



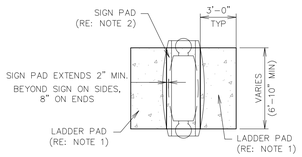
QT HORIZONTAL SIGN



QT VERTICAL SIGN



QT VERTICAL SIGN W/ ELECTRIC PRICER
(LADDER PADS OMITTED)



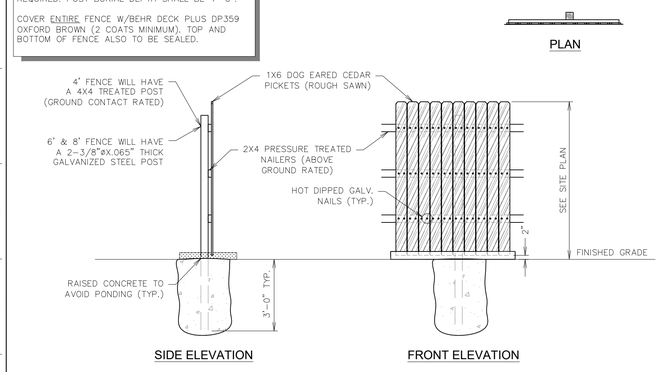
QT POLE SIGN

L1	GEN III SIGN PAD DETAIL
NTS	SN: SD015A005

L11	NOT USED
NTS	SN:

FOR 8' OR TALLER FENCE, A 4TH "NAILER" WILL BE REQUIRED. POST BURIAL DEPTH SHALL BE 4'-0".

COVER ENTIRE FENCE W/BEHR DECK PLUS DP359 OXFORD BROWN (2 COATS MINIMUM). TOP AND BOTTOM OF FENCE ALSO TO BE SEALED.

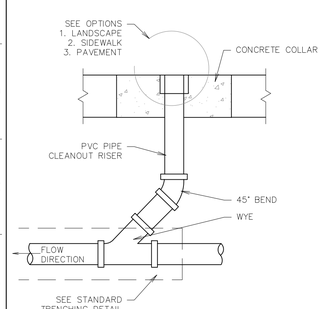


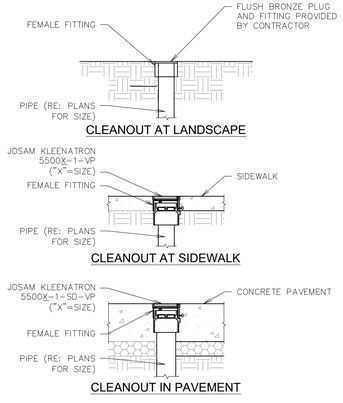
F1	WOODEN FENCE - SINGLE SIDED
NTS	SN: SD012A005

F6	NOT USED
NTS	SN:

F11	NOT USED
NTS	SN:

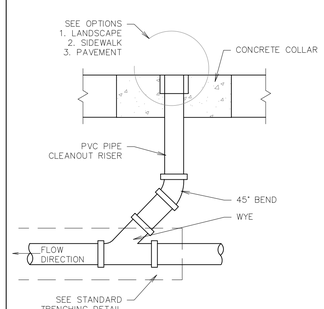
NOTE:
SANITARY SEWER CO'S TO BE GAS TIGHT
STORM SEWER CO'S TO BE WATER TIGHT

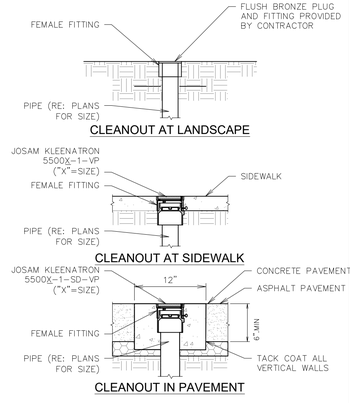




A1	CLEANOUT SECTION DETAIL
NTS	SN: SD016B007

NOTE:
SANITARY SEWER CO'S TO BE GAS TIGHT
STORM SEWER CO'S TO BE WATER TIGHT





A6	CLEANOUT SECTION DETAIL (ASPHALT)
NTS	SN: SD016A007

A11	NOT USED
NTS	SN:

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04/21/2023

PROJECT NO.:069304941

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TBPE #F928/NO.928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
MISCELLANEOUS SITE DETAILS I

SHEET NUMBER:
C500

FILE LOCATION:K:\SMA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\DETAILS MISC. SITE.dwg TAB NAME:SITE DETAIL SHEET 1 USER:Olivia.Watts SAVED:3/8/2023 5:32 PM PLOTTED:4/21/2023 10:32 AM

BACKFLOW PREVENTERS MUST BE TESTED BY A CERTIFIED TESTER BEFORE A FINAL APPROVAL IS ISSUED.

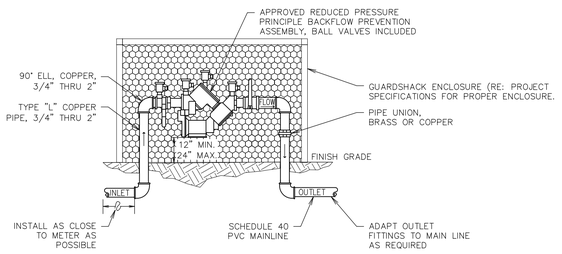
ALL COPPER PIPE JOINTS SHALL BE SOLDERED. THE SOLDER ALLOY SHALL COMPLY W/ASTM B 32 HAVING A SILVER CONTENT OF NOT LESS THAN 3.4% INTENDED FOR JOINING COPPER PIPES FOR POTABLE WATER SYSTEMS (GRADES SN 94, SN 95, OR SN 96). THE FLUX SHALL BE TYPE OA FOR GENERAL SOLDERING ON COPPER

INSTALL A BRASS PIPE PLUG IN EACH TEST COCK ON THE ASSEMBLY.

FINISHED GRADE UNDER THE BACKFLOW PREVENTER SHALL BE COMPACTED TO 95% OF MAX. DENSITY.

PROVIDE 12-INCH MIN. CLEARANCE BETWEEN BACKFLOW PREVENTION ASSEMBLY AND PERMANENT STRUCTURES OF LANDSCAPE VEGETATION.

FOR UNDERGROUND VAULT, REFERENCE OLDCASTLE MODEL 1730 OR EQUIVALENT.



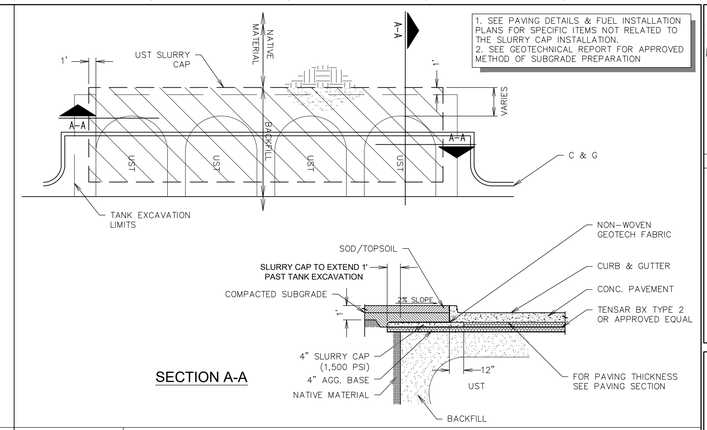
L1 OUTDOOR BACKFLOW PREVENTION ASSEMBLY

NTS | SN: SD029A002

L6 NOT USED

NTS | SN:

1. SEE PAVING DETAILS & FUEL INSTALLATION PLANS FOR SPECIFIC ITEMS NOT RELATED TO THE SLURRY CAP INSTALLATION.
2. SEE GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION

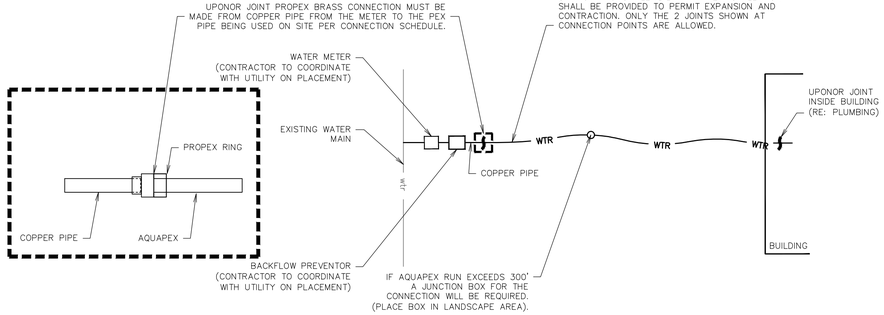


SECTION A-A

L11 UNDERGROUND STORAGE TANK (UST) SLURRY CAP DETAIL

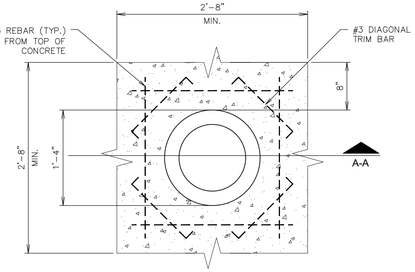
NTS | SN: SD020A008

1. ALL PIPE, JOINTS, AND ADAPTORS MUST BE STORED PER THE GUIDELINES LAID OUT IN UPONOR SPECIFICATIONS.
2. PIPE BE STORED IN A FLAT, DRY, WELL VENTILATED LOCATION, NOT EXPOSED TO DIRECT SUNLIGHT. NORMAL CARE IN HANDLING SHALL BE EXERCISED TO AVOID ABUSE OF THE TUBING. THE TUBING AND FITTINGS SHALL NOT BE THROWN OR DROPPED ON THE GROUND, WALKED ON, OR DRAGGED.
3. TUBING CONNECTION: ALL TUBING CONNECTIONS SHALL BE MADE STRICTLY PER THE MANUFACTURERS RECOMMENDATIONS.
4. CONNECTION TO OTHER MATERIALS: CONNECTIONS BETWEEN CROSS-LINKED POLYETHYLENE PLASTIC TUBING AND OTHER PIPING MATERIALS SHALL BE BY USE OF APPROVED ADAPTER FITTINGS. ADAPTER FITTINGS SHALL BE CONNECTED BY NPT THREADS, COPPER TUBING, COPPER FITTING OR PROPRESS FITTINGS. THE ADAPTER FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. EXPANSION AND CONTRACTION: PROVISION SHALL BE TAKEN FOR THE EXPANSION AND CONTRACTION OF THE CROSSLINKED POLYETHYLENE PLASTIC TUBING INSTALLATION. THE TUBING SHALL NOT BE INSTALLED IN TIGHT STRAIGHT RUNS. FLEXIBILITY IN THE INSTALLATION SHALL BE PROVIDED TO PERMIT EXPANSION AND CONTRACTION.
6. PIPE PROTECTION: CROSS-LINKED POLYETHYLENE PLASTIC TUBING SHALL BE INSTALLED IN A WORKMANLIKE MANNER TO AVOID DAMAGE TO THE TUBING AND SURROUNDING BUILDING SYSTEMS. CROSS-LINKED POLYETHYLENE PLASTIC TUBING SHALL BE PROTECTED TO AVOID ABRASION AND CONTACT WITH THE SURROUNDING BUILDING MATERIAL.
7. PIPING IDENTIFICATION: CROSS-LINKED POLYETHYLENE PLASTIC PIPING SYSTEMS FOR HOT AND COLD WATER DISTRIBUTION SHALL HAVE THE MARKINGS THAT CONFORM TO THE ASTM F876 MARKING REQUIREMENTS AND ALSO INCLUDE: NSF-PW, ES ER 5944 ES ER 5945 ES ER 5421.
8. CONNECTION SCHEDULE:
   - PROPEX FITTING # O 4502020 2" PEX x 2" COPPER FITTING
   - PROPEX FITTING # O 4512020 2" PEX x 2" COPPER PIPE
   - PROPEX FITTING # G 4501515 1.5" PEX x 1.5" COPPER FITTING
   - PROPEX FITTING # G 4511515 1.5" PEX x 1.5" COPPER PIPE



F1 PEX DETAIL - WATER METER & BFP @ STREET

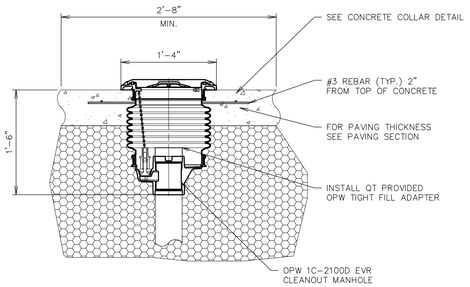
NTS | SN: SD023A004



F11 CONCRETE COLLAR DETAIL

NTS | SN: SD017A003

1. OPW SPILL BUCKET PROVIDED BY QT.
2. SEE GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION



A1 LOT SCRUBBER CLEANOUT IN PAVING SECTION A-A

NTS | SN: SD018A007

A6 NOT USED

NTS | SN:

A11 NOT USED

NTS | SN:

RACHEL M. ROBERTS 137594 REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn
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TBPE #F928/NO.928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

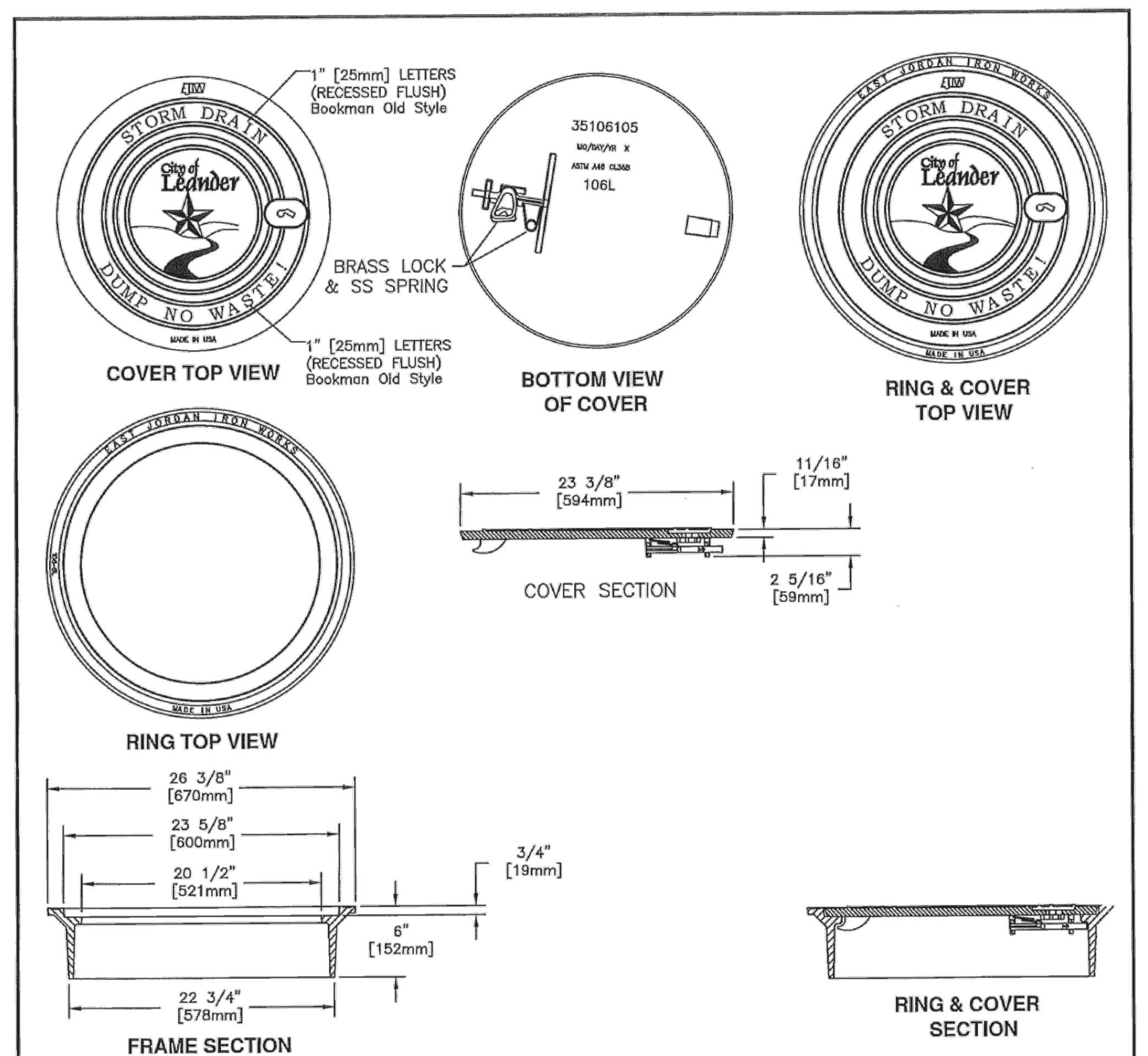
PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION
		ORIGINAL ISSUE DATE:

SHEET TITLE:
MISCELLANEOUS SITE DETAILS II

SHEET NUMBER:
C501

FILE LOCATION:K:\SNA_Civil\069304941 - QT 4160 Kaufman Loop & HWY29\Cad\QT\Plan Sheets\DETAILS MISC. SITE.dwg TAB NAME:MISCELLANEOUS SITE DETAILS II USER:Olivia.Watts SAVED:3/8/2023 5:32 PM PLOTTED:4/21/2023 10:32 AM



MANHOLE ASSEMBLY WITH LOCK	EST. WT. COVER: 86 LBS 39kg; RING: 95 LBS 43kg; TOTAL: 181 LBS 82kg
EAST JORDAN IRON WORKS PRODUCT NO. 35505205 OR APPROVED EQUAL	OPEN AREA N/A
	MAT'L SPEC. COVER – GRAY IRON ASTM A48 CL35B; FRAME – GRAY IRON ASTM A48 CL35B
	LOAD RATING: NON-TRAFFIC

WAYNE S. WATTS 02/04/14

City Of Leander, Texas
DETAIL #107-2
STORM SEWER INLET COVER (LOCKING)

FIRE HYDRANTS LACKING INTEGRAL STORZ CONNECTOR SHALL BE REJECTED (NO STORZ ADAPTERS ALLOWED)

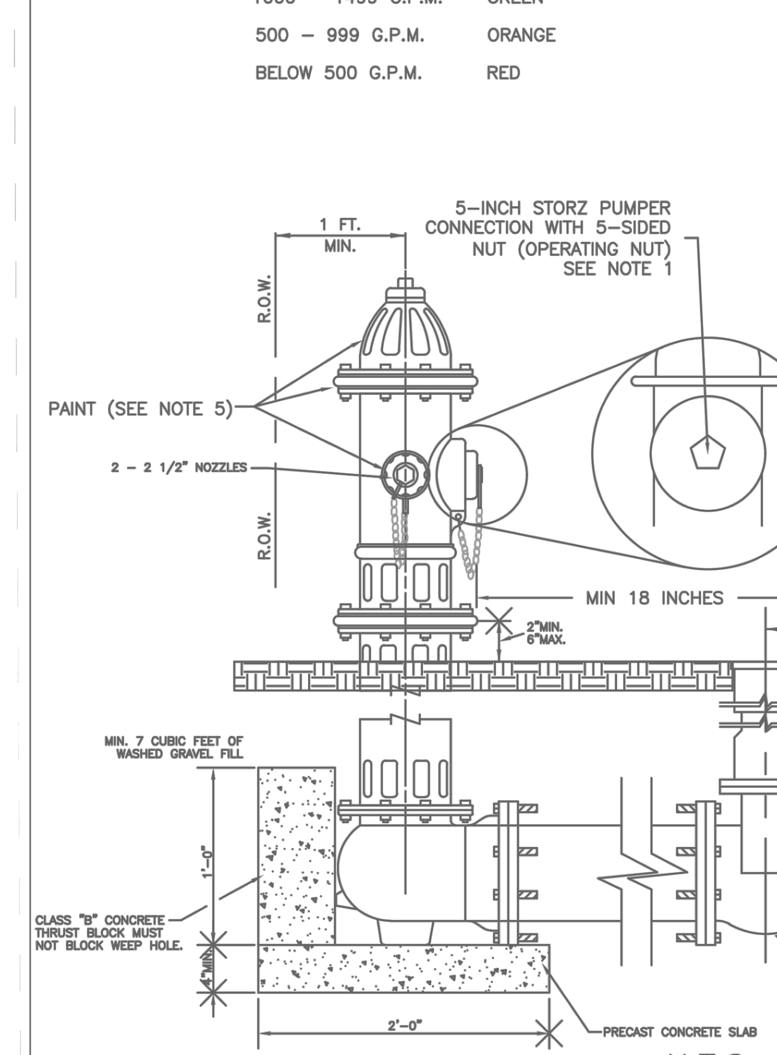
RATED FLOW	FIRE HYDRANT BONNET COLOR
1,500 G.P.M. +	LIGHT BLUE
1000 – 1499 G.P.M.	GREEN
500 – 999 G.P.M.	ORANGE
BELOW 500 G.P.M.	RED

NOTES:

1. FIRE HYDRANT BRAND AND MODEL SHALL BE APPROVED BY THE LOCAL WATER AUTHORITY DISTRICT. 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 ORDERED SILVER IN COLOR. HYDRANTS WILL NOT BE ACCEPTED IF PAINTED AFTER DELIVERY.
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. AFTER COMPLETION OF FIRE HYDRANT INSTALLATION, A FIRE FLOW TEST SHALL BE CONDUCTED BY A THIRD PARTY COMPANY. BASED ON FIRE FLOW TEST, THE FIRE HYDRANT BONNET SHALL BE PAINTED ACCORDING TO THE CHART ON THIS SHEET. THE HYDRANT BONNET TO FLANGE AND NOZZLE CAPS SHALL BE PAINTED THE APPROVED COLOR CORRESPONDING WITH THE APPROPRIATE FLOW RATE AS NOTED ON THE TABLE ON THIS SHEET.
6. BLUE, BI–DIRECTIONAL REFLECTIVE PAVEMENT MARKER, ULTIMATE WET NIGHT VISIBILITY SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATION AT THE CORRESPONDING ROADWAY STATION OFFSET 6 INCHES FROM CENTER OF STREET TO THE SIDE HYDRANT IS LOCATED. AT
7. INTERSECTIONS, MARKERS SHOULD BE PLACED ON BOTH ROADWAYS ADJACENT TO HYDRANT.

LOCATION:

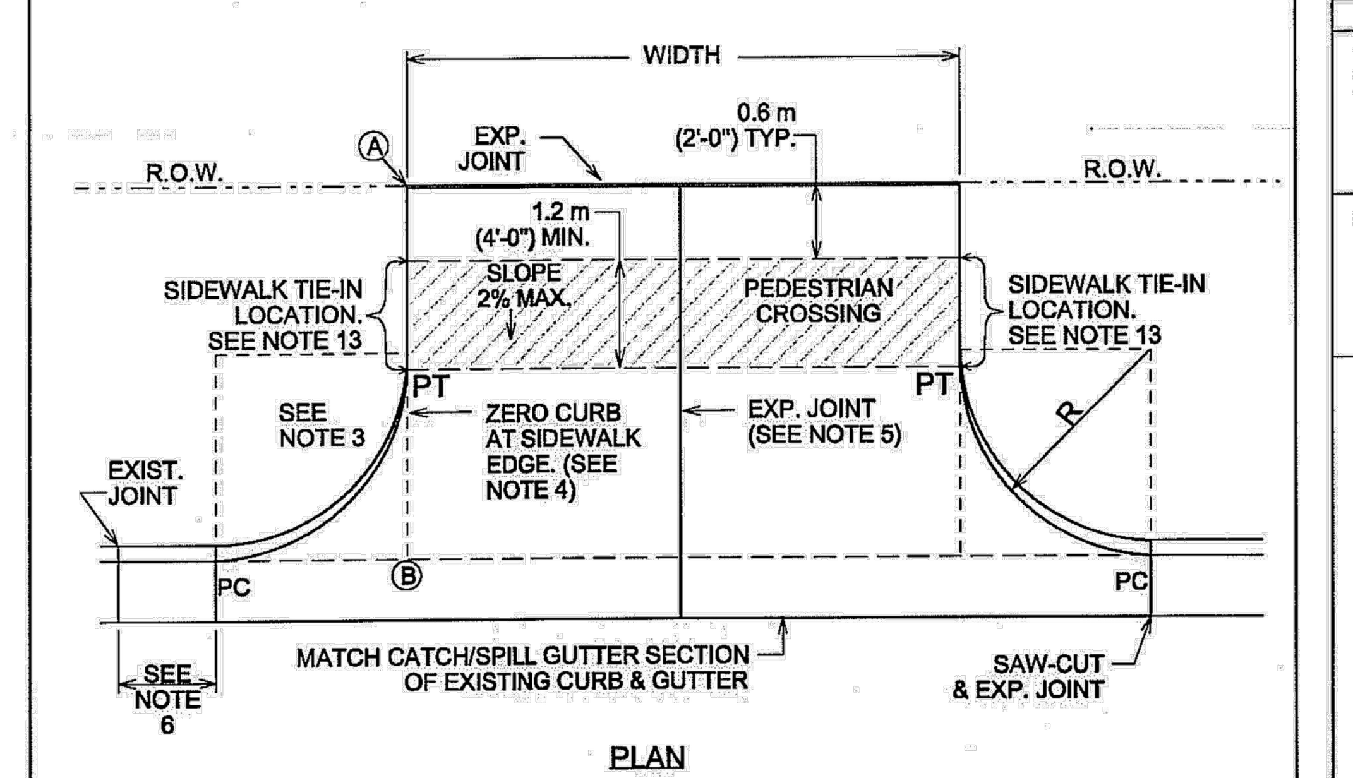
8. SET F.H. ON LOT LINE (EXTENDED WHEN POSSIBLE)
9. F.H. SHALL BE NO CLOSER THAN 18 INCHES FROM EXISTING OR PROPOSED SIDEWALKS
10. F.H. LOCATED AT STREET INTERSECTIONS SHALL BE PLACED A MINIMUM OF 10 FEET FROM RADIUS TANGENT POINT
11. NO OBSTRUCTIONS SHALL BE PERMITTED WITHIN 3 FEET IN ALL DIRECTIONS FROM F.H.
12. 5–INCH STORZ PUMPER NOZZLE SHALL FACE THE FIRE LANE OR TRAVEL WAY UNLESS OTHERWISE NOTED ON PLANS.



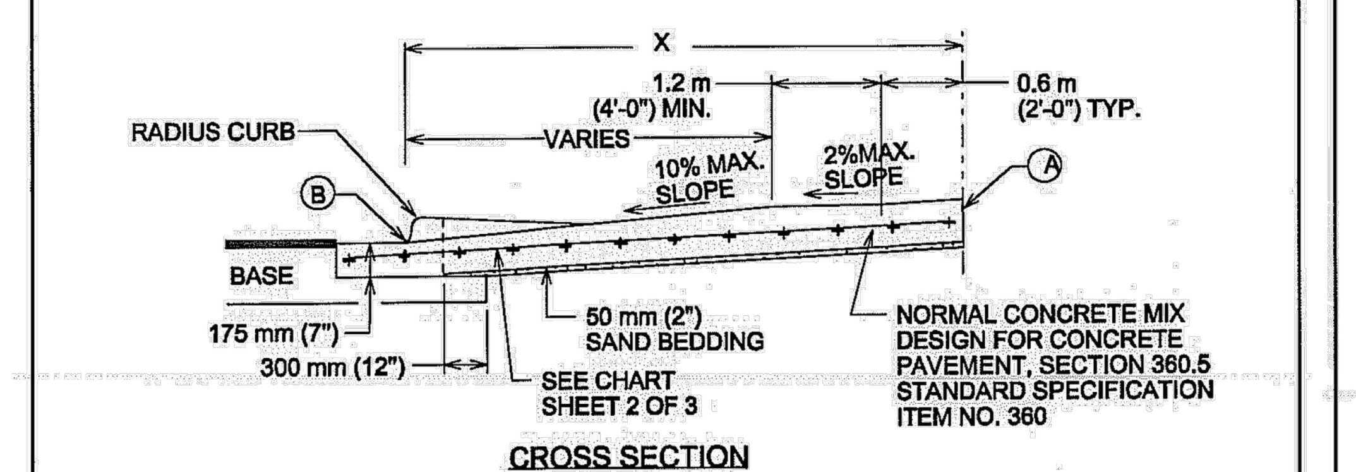
PER ORDER NO. 2007–01
(2) SECTION C105.2 INSTALLATION.
FIRE HYDRANTS MUST BE INSTALLED WITH THE CENTER OF THE FIVE (5) INCH STEAMER OPENING AT LEAST 18 INCHES ABOVE FINISHED GRADE. THE FIVE (5) INCH OPENING MUST FACE THE DRIVEWAY OR STREET AND MUST BE TOTALLY UNOBSTRUCTED TO THE STREET. FIRE HYDRANT DESIGN SHALL BE 2– 2.5" NST OUTLETS, 1 – 5.0" STORZ CONNECTION WITH A CAP TO INCLUDE A HEX NUT TO FIT A HYDRANT WRENCH ALONG WITH A REFLECTIVE BAND. THE FIRE HYDRANT SHALL BE PAINTED SILVER IN COLOR AND DESIGNATED BY A BLUE REFLECTOR IN THE CENTER OF THE STREET.

NOTE: STANDARD FIRE HYDRANT ASSEMBLY INCLUDES ALL COMPONENTS SHOWN HEREIN, EXCEPT WATER MAIN, INSTALLED COMPLETE AND IN–PLACE.

WILLIAMSON COUNTY EMERGENCY SERVICE DISTRICT NO. 4 | STANDARD FIRE HYDRANT ASSEMBLY

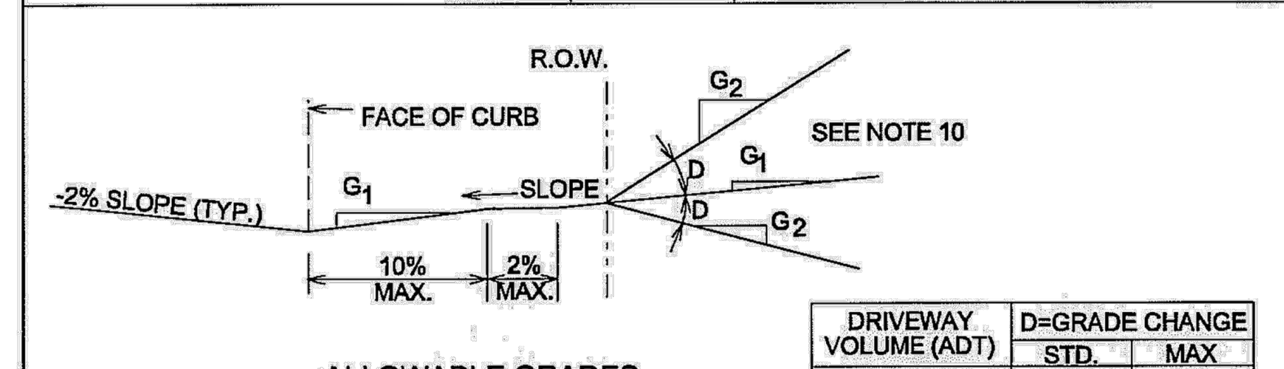


NOTE: ALL DRIVEWAYS SHALL BE SLOPED TOWARDS THE STREET FROM THE R.O.W. LINE. ELEVATION OF POINT (A) ABOVE POINT (B) IS, TYPICALLY A MINIMUM OF 150 mm (6") PLUS 20 mm/m (¼" RISE/FOOT) OVER DISTANCE "X" IN METERS (FEET).



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS | 2/24/10 ADOPTED | TYPE II DRIVEWAY | 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



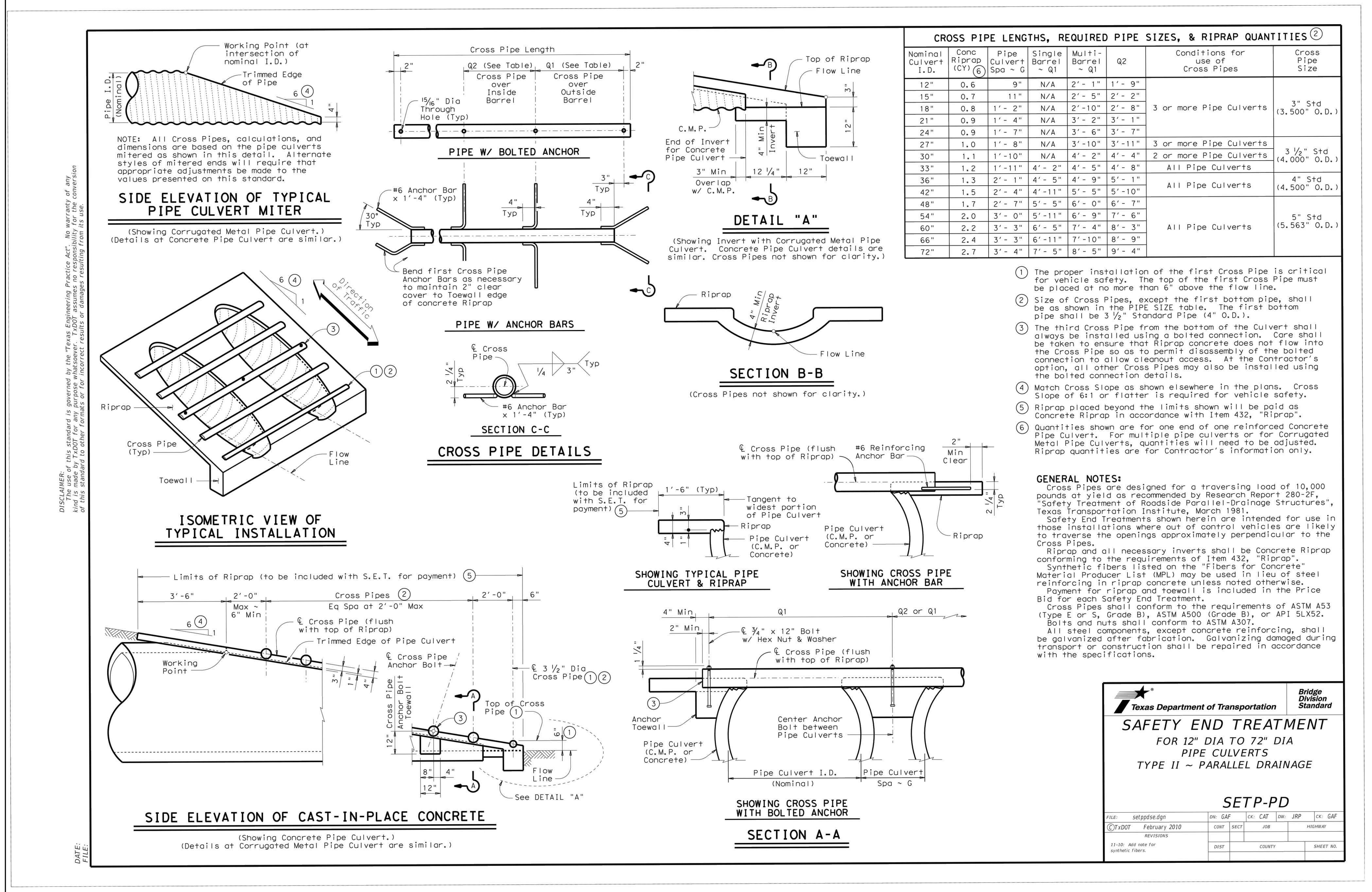
DRIVEWAY VOLUME (ADT)	D=GRADE CHANGE STD.	MAX
>1500	0%	3%
500-1500	3%	6%
<500	6%	15%

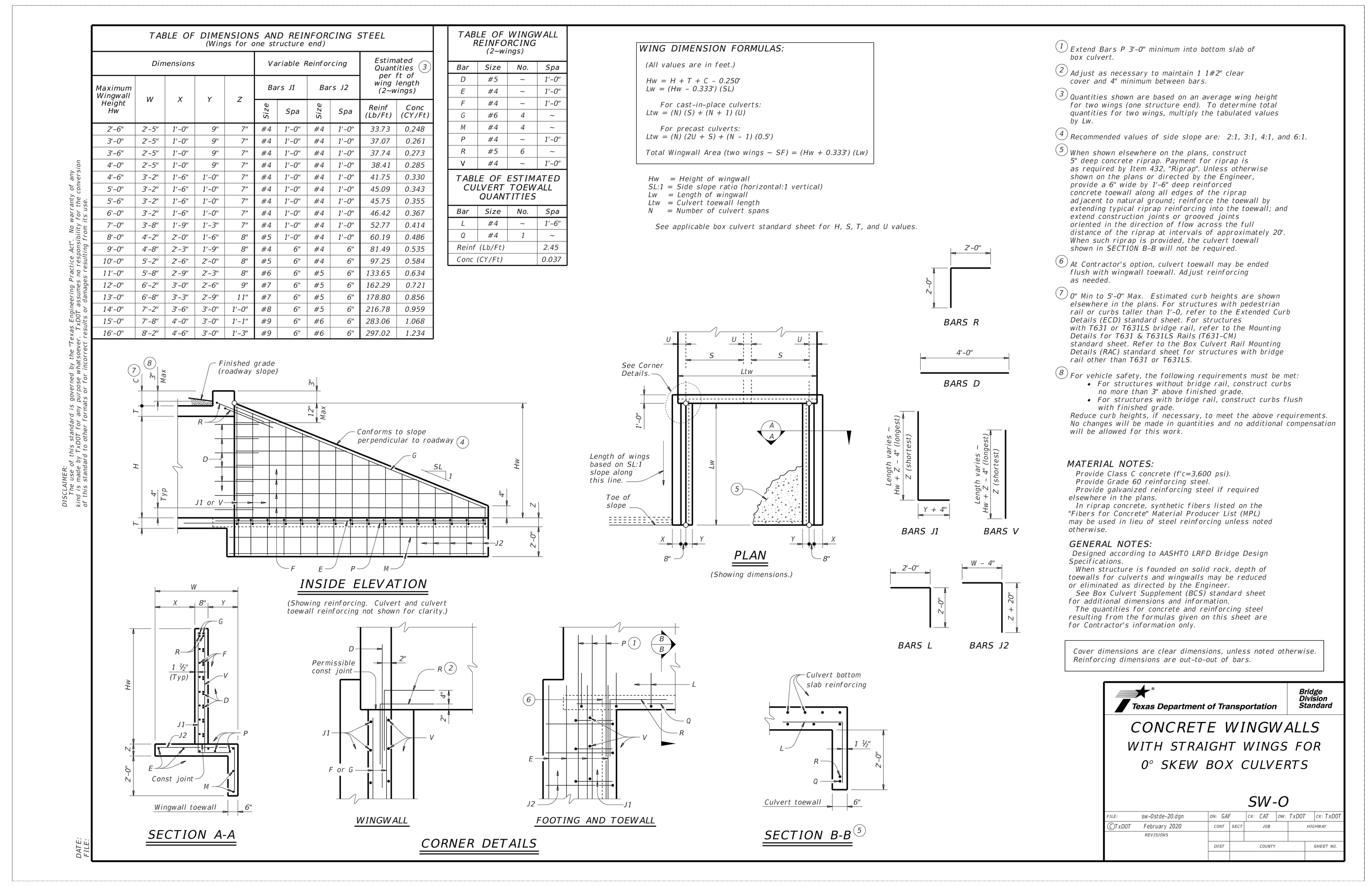
ALLOWABLE GRADES

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 | 2/24/10 ADOPTED | TYPE II DRIVEWAY | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | STANDARD NO. 433S-2 2 OF 2





RACHEL M. ROBERTS 137894 REGISTERED PROFESSIONAL ENGINEER — STATE OF TEXAS
04/21/2023

PROJECT NO.:069304941

Kimley»Horn

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TBPE FIRM NO. 928

QuikTrip No. 4160
7601 W SH 29
GEORGETOWN, TEXAS

QT

PROTOTYPE: P-112 (11/18/22)
DIVISION:
VERSION: 001
DESIGNED BY: OHW
DRAWN BY: OHW
REVIEWED BY: RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
MISCELLANEOUS SITE DETAILS III

SHEET NUMBER:
C502

PLAN VIEW

I. SPACING REQUIREMENTS

DIRECTION OF SURFACE FLOW

100' MAX.

NOTE: SPACING DISTANCES WILL VARY, BUT ARE NOT TO EXCEED 100 FEET.

II. SIZING REQUIREMENTS:

15'R

10'

UP-GRADIENT SILT FENCE AND J-HOOK ARE ONE CONTINUOUS LINE

START DOWN-GRADIENT SILT FENCE LINE AS CLOSE AS POSSIBLE TO THE UP-GRADIENT J-HOOK

FOR CATCHMENT AREA <0.25 ACRES

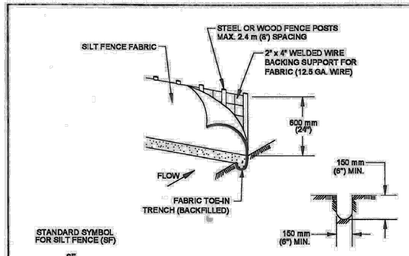
≥30 DEGREES

DIRECTION OF SURFACE FLOW

880 878 876

CONTOURS

NOTE: J-HOOKS SHALL ALSO BE USED WHEN THE SILT FENCE IS INSTALLED AT AN ANGLE OF 30 DEGREES OR GREATER FROM PARALLEL TO THE CONTOURS.



TRENCH CROSS SECTION

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 PROMPTLY 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.

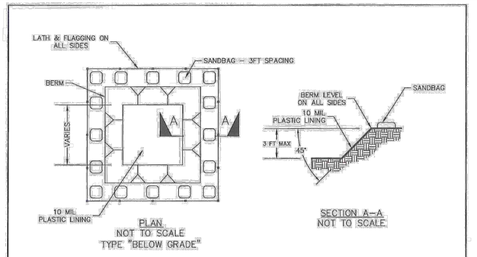
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

SILT FENCE

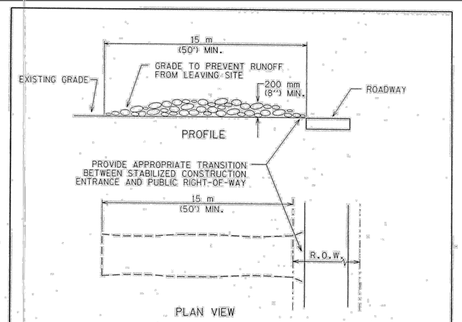
9/1/2011 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 642S-1



City Of Leander, Texas
304-1
CONCRETE WASHOUT



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.

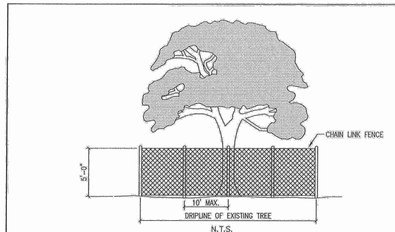
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

STABILIZED CONSTRUCTION ENTRANCE

5/23/06 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 641S-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.

WAYNE S. WATTS 88134 LICENSED PROFESSIONAL ENGINEER

08/21/15

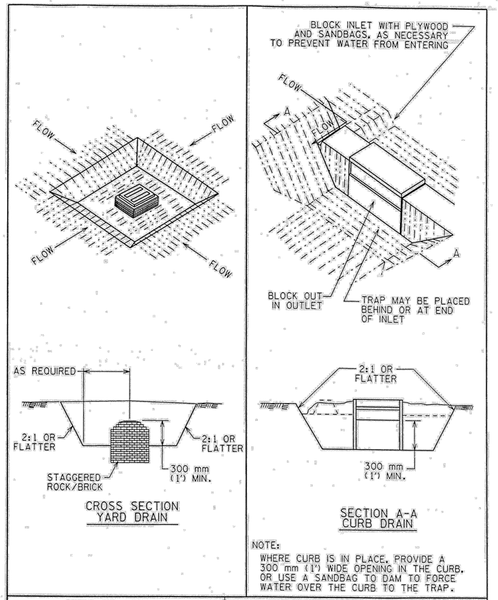
City Of Leander, Texas
303-2.
TREE PROTECTION

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

WAYNE S. WATTS 88134 LICENSED PROFESSIONAL ENGINEER

06/20/18

City Of Leander, Texas
DETAIL #303-3
STORM DRAIN MARKERS



NOTE:
WHERE CURB IS IN PLACE, PROVIDE A 300 mm (1') WIDE OPENING IN THE CURB. OR USE A SANDBAG TO DAM TO FORCE WATER OVER THE CURB TO THE TRAP.

CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

STORM INLET SEDIMENT TRAP

3-27-00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 632S-1

RACHEL M. ROBERTS 137894 REGISTERED PROFESSIONAL ENGINEER

04/21/2023

PROJECT NO.:069304941

Kimley»Horn
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TBPE F-928/BS F-928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

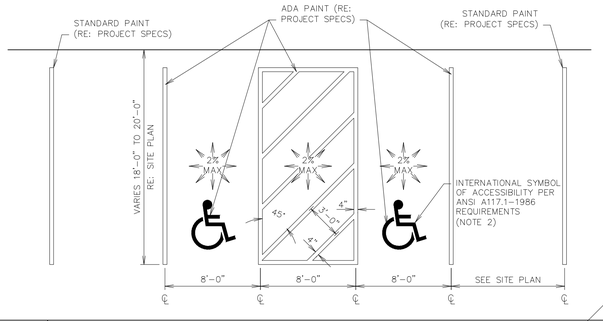
ORIGINAL ISSUE DATE:

SHEET TITLE:
EROSION CONTROL DETAILS

SHEET NUMBER:
C503

1. RE: SITE PLAN FOR LOCATION OF ADA PARKING SPACES AND ACCESS AISLE IN RELATIONSHIP TO THE DOOR LOCATION. (THIS DETAIL IS FOR STRIPING LAYOUT ONLY)

2. PARKING STRIPES AND THE ADA INTERNATIONAL HANDICAP SYMBOL ARE TO BE PAINTED PER THE MANUFACTURER'S RECOMMENDATIONS. (RE: PROJECT SPECS)



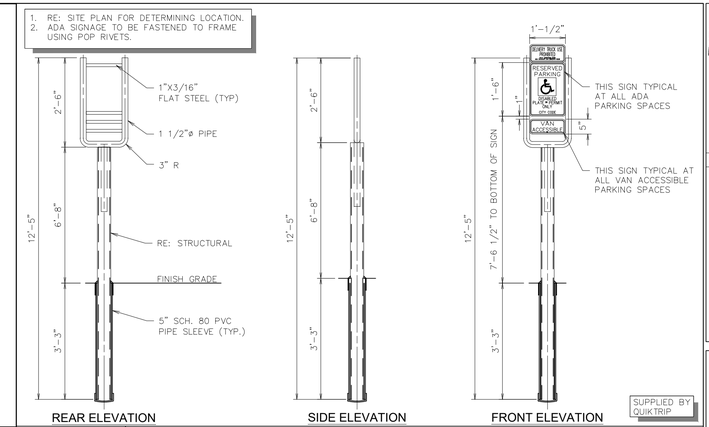
L1 DOUBLE STALL ADA PARKING STRIPING DETAIL

NTS | SN: AD001A009

L6 NOT USED

NTS | SN:

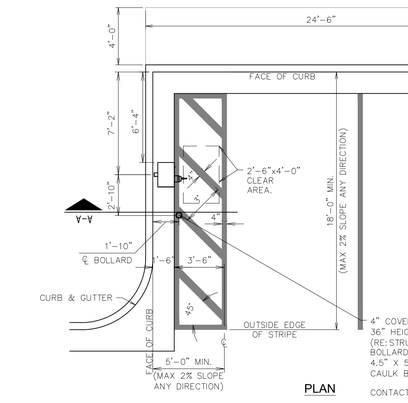
1. RE: SITE PLAN FOR DETERMINING LOCATION.
2. ADA SIGNAGE TO BE FASTENED TO FRAME USING POP RIVETS.



SUPPLIED BY QUIKTRIP

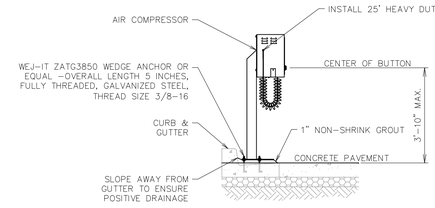
L11 ADA SIGN IN BOLLARD

NTS | SN: AD003C0011



4" COVERED STRUCTURAL BOLLARD (QT PROVIDED)
36" HEIGHT ABOVE FINISHED GRADE.
(RE:STRUCT FOR BOLLARD INSTALL).
BOLLARD TO BE COVERED WITH ENCORE COMMERCIAL PRODUCTS INC.
4.5" X 52" YELLOW SLEEVE, CUT TO FIT ONSITE (CONTRACTOR PROVIDED).
CAULK BASE W/MASTERSEAL SL-2 POLYURETHANE SEALANT.

CONTACT INFO: WWW.POSTGUARD.COM OR 1-866-737-8900.

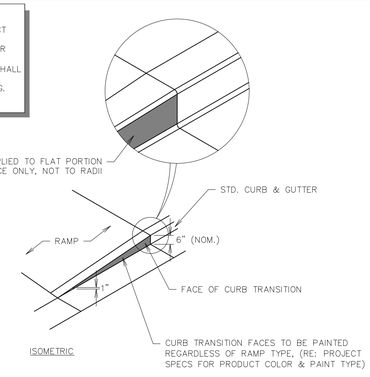


COMPRESSOR AND STAND SUPPLIED BY QUIKTRIP

F1 AIR SERVICE INSTALL PLAN (LEFT HAND INSTALL)

NTS | SN: AD004B015

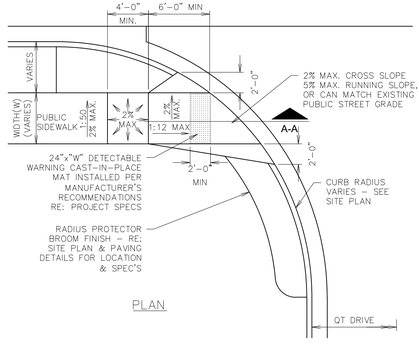
1. REQUIRED FOR ALL PRIVATE PROPERTY INTERIOR LOCATIONS.
2. RE: PROJECT SPECS FOR PRODUCT COLOR & TYPE.
3. PRODUCT SHOULD BE APPLIED PER MANUFACTURER'S SPECIFICATIONS.
4. PREPARATION OF THE SURFACE SHALL CONSIST OF A MINIMUM OF TWO APPLICATIONS OF POWER WASHING.
5. TWO APPLICATIONS OF PRODUCT SHALL BE ROLLED ON.



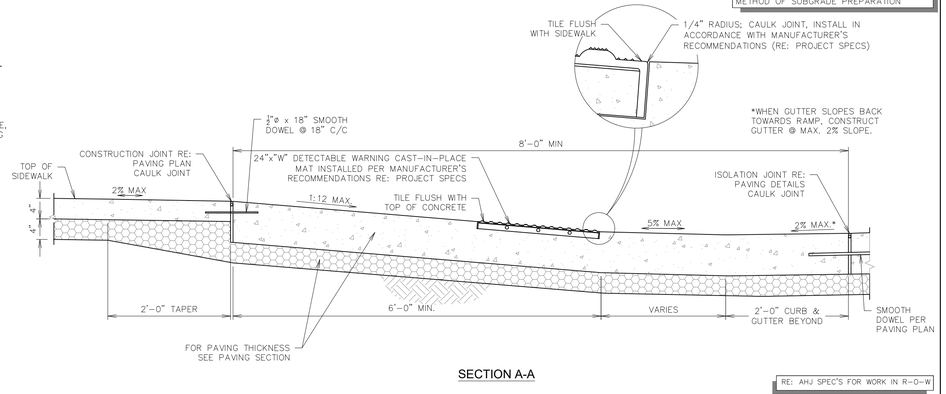
F11 RAMP - CURB TRANSITION PAINTING DETAIL

NTS | SN: AD015A002

RE: SITE PLAN FOR LOCATION OF ADA RAMP



RE: GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION



RE: AHJ SPEC'S FOR WORK IN R-O-W

A1 ADA ACCESS RAMP AT DRIVE

NTS | SN: AD006A013

A11 NOT USED

NTS | SN:

Rachel M. Roberts
RACHEL M. ROBERTS
137514
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
10101 REUNION PLACE, SUITE 400,
SAN ANTONIO, TX 78216
PHONE: 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM
TBPE F-928 TBPLS NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE: P-112 (11/18/22)
DIVISION:
VERSION: 001
DESIGNED BY: OHW
DRAWN BY: OHW
REVIEWED BY: RMR

REV	DATE	DESCRIPTION

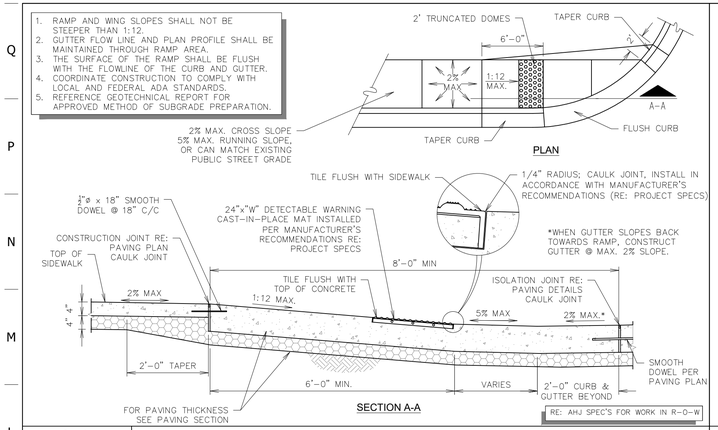
ORIGINAL ISSUE DATE:

SHEET TITLE:
ADA DETAILS I

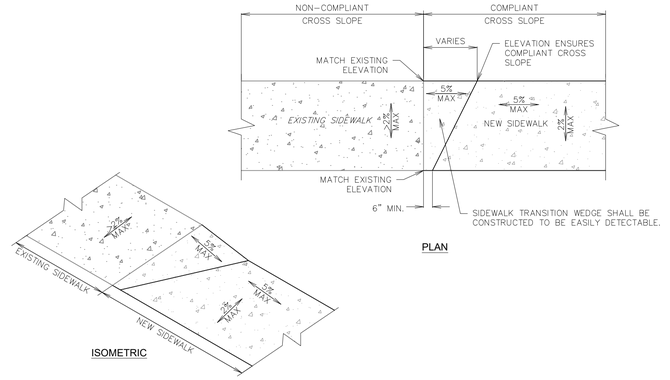
SHEET NUMBER:
C510

FILE LOCATION:K:\SNA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\DETAILS ADA.dwg TAB NAME:ADA DETAILS I USER:Olivia.Watts SAVED:2/15/2023 5:03 PM PLOTTED:4/21/2023 10:33 AM

1. RAMP AND WING SLOPES SHALL NOT BE STEEPER THAN 1:12.
2. GUTTER FLOW LINE AND PLAN PROFILE SHALL BE MAINTAINED THROUGH RAMP AREA.
3. THE SURFACE OF THE RAMP SHALL BE FLUSH WITH THE FLOWLINE OF THE CURB AND GUTTER.
4. COORDINATE CONSTRUCTION TO COMPLY WITH LOCAL AND FEDERAL ADA STANDARDS.
5. REFERENCE GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION.



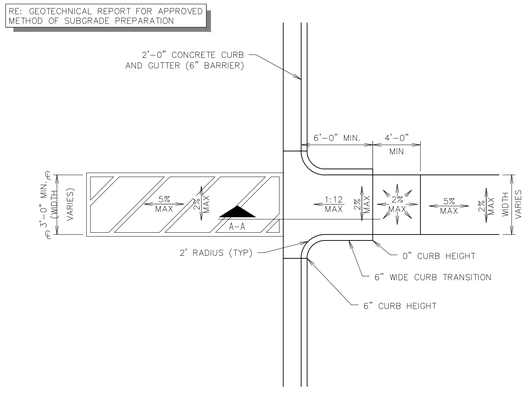
L1	CURB RAMP ADJACENT TO PUBLIC STREET CURB & GUTTER
NTS	SN: AD010A007



L6	SIDEWALK TRANSITION WEDGE DETAIL
NTS	SN: AD013A002

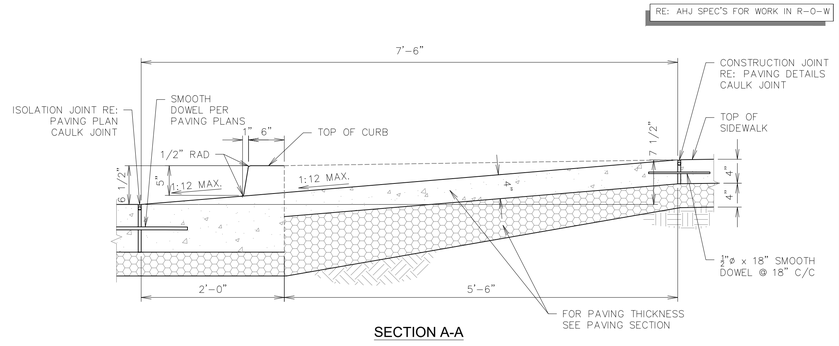
L11	NOT USED
NTS	SN:

RE: GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION



F1	PARKING LOT CURB RAMP @ ADA CROSSING
NTS	SN: AD012A007

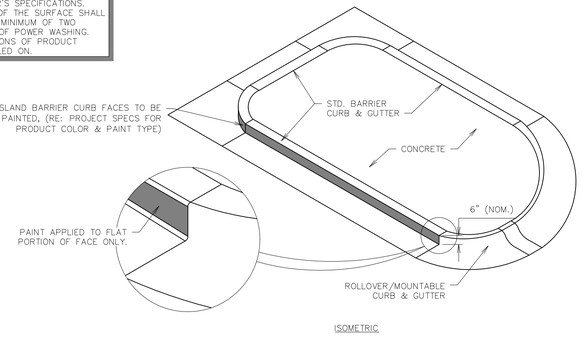
RE: AHJ SPEC'S FOR WORK IN R-O-W



A1	NOT USED
NTS	SN:

A6	NOT USED
NTS	SN:

1. REQUIRED FOR ALL PRIVATE PROPERTY INTERIOR LOCATIONS.
2. RE: PROJECT SPECS FOR PRODUCT COLOR & TYPE.
3. PRODUCT SHOULD BE APPLIED PER MANUFACTURER'S SPECIFICATIONS.
4. PREPARATION OF THE SURFACE SHALL CONSIST OF A MINIMUM OF TWO APPLICATIONS OF POWER WASHING.
5. TWO APPLICATIONS OF PRODUCT SHALL BE ROLLED ON.



F11	ISLAND - BARRIER CURB PAINTING DETAIL (NON-LANDSCAPED)
NTS	SN: AD016A001

A11	NOT USED
NTS	SN:

RACHEL M. ROBERTS
137884
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

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TBPE F-928/BS NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

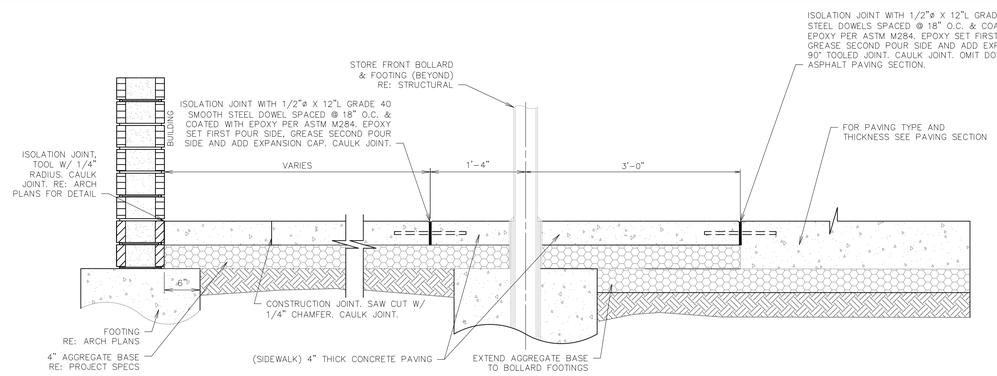
PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION
		ORIGINAL ISSUE DATE:

SHEET TITLE:
ADA DETAILS II

SHEET NUMBER:
C511

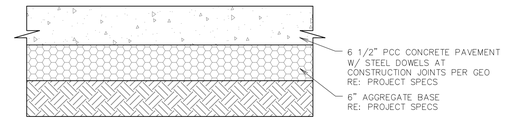
RE: GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION



L1 PAVING SECTION THROUGH SITE AT BUILDING

SN:PD001C015

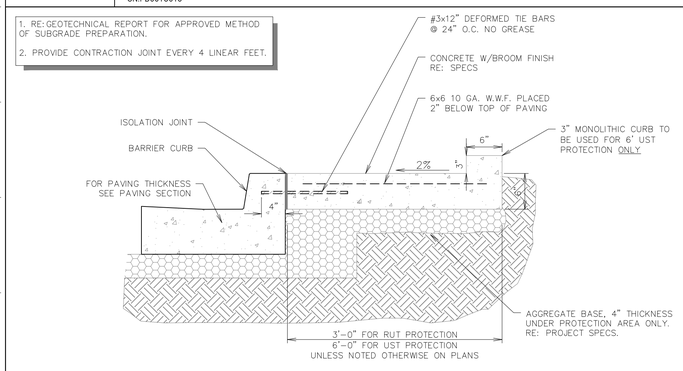
RE: GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION.



CONCRETE PAVING SECTION 2 - STORE SIDE

NTS | SN: PD055B005

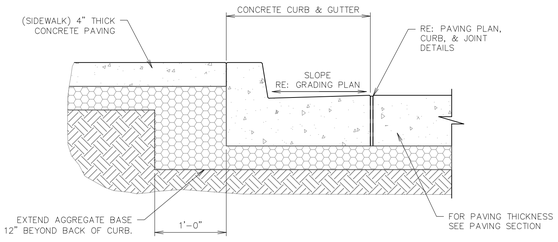
1. RE: GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION.
2. PROVIDE CONTRACTION JOINT EVERY 4 LINEAR FEET.



F1 UST/RUT PROTECTOR SECTION

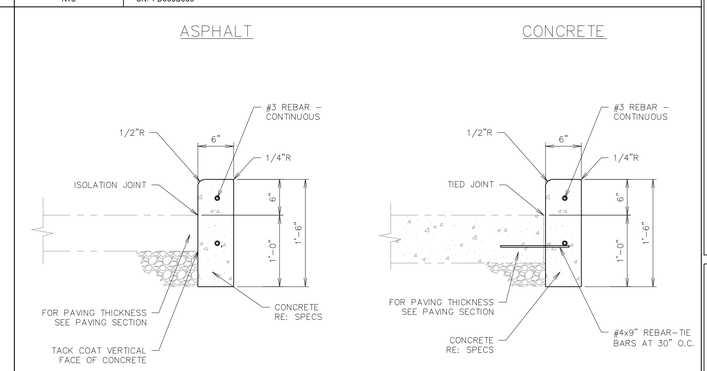
NTS | SN: PD060A006

RE: GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION.
RE: AHJ SPEC'S FOR WORK IN R-O-W



F6 SIDEWALK SECTION ABUTTING CURB & GUTTER

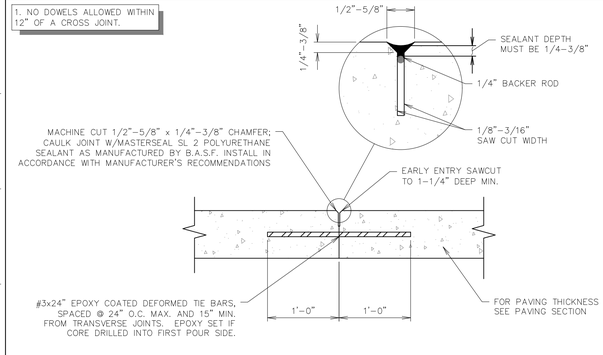
NTS | SN: PD002A010



F11 CURB DETAIL - TEMPORARY

NTS | SN: PD011A006

1. NO DOWELS ALLOWED WITHIN 12" OF A CROSS JOINT.

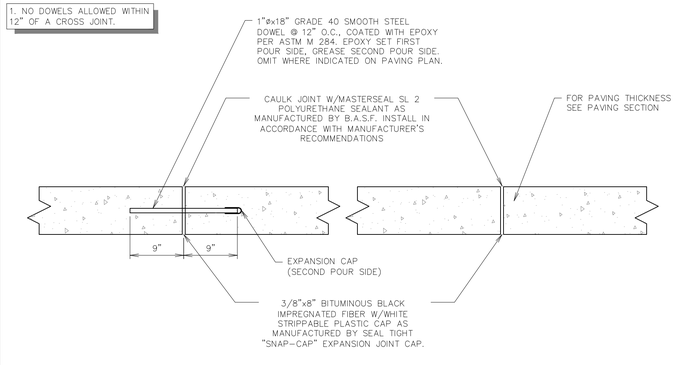


JOINT TO BE USED FOR CONCRETE REPAIR ONLY - CONTACT QT CM FOR DIRECTION

A1 PAVING JOINT - TIED

NTS | SN: PD004A009

1. NO DOWELS ALLOWED WITHIN 12" OF A CROSS JOINT.

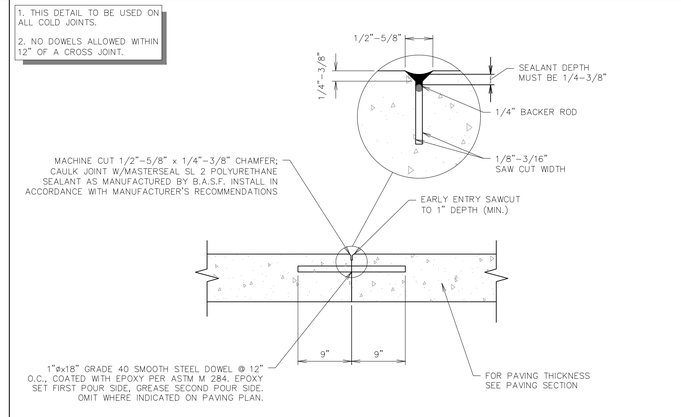


DOWEL SECTION NON-DOWEL SECTION

A6 PAVING JOINT - ISOLATION

NTS | SN: PD005A011

1. THIS DETAIL TO BE USED ON ALL COLD JOINTS.
2. NO DOWELS ALLOWED WITHIN 12" OF A CROSS JOINT.



A11 PAVING JOINT - CONSTRUCTION (PVR SITE)

NTS | SN: PD006B010

RACHEL M. ROBERTS
137584
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn
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WWW.KIMLEY-HORN.COM
TBPE FIRM NO. 928

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

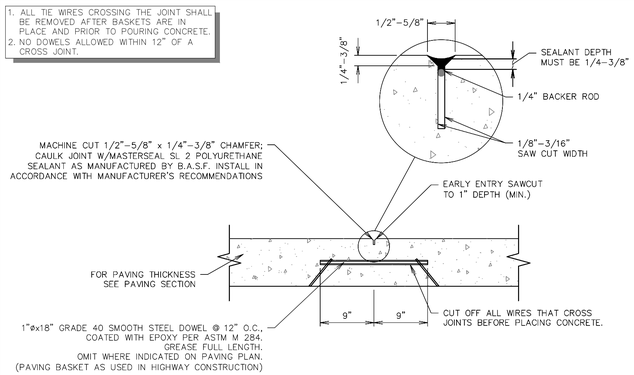
SHEET TITLE:

PAVING DETAILS I

SHEET NUMBER:

C520

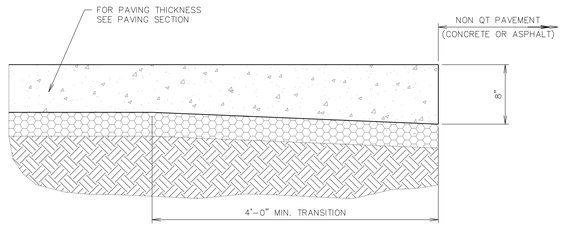
1. ALL TIE WIRES CROSSING THE JOINT SHALL BE REMOVED AFTER BASKETS ARE IN PLACE AND PRIOR TO POURING CONCRETE.
2. NO DOWELS ALLOWED WITHIN 12" OF A CROSS JOINT.



L1 PAVING JOINT - CONTRACTION (PVR SITE)

NTS | SN: PD007B013

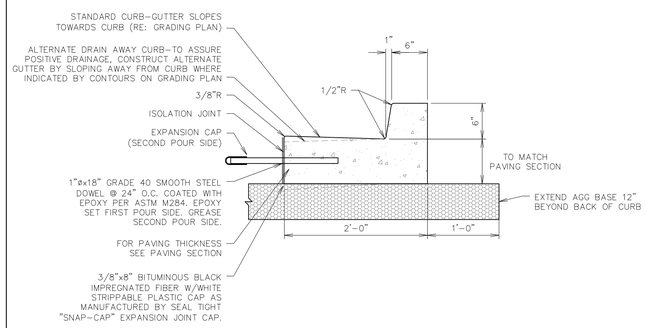
USE WHERE QT CONCRETE EDGE ABUTS EXISTING PAVING SECTION BY OTHERS.



L6 THICKENED EDGE SECTION

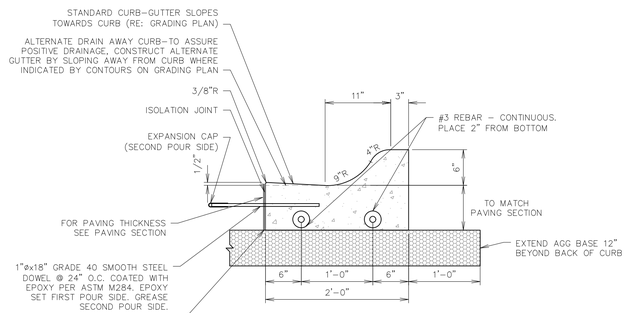
NTS | SN: PD008A008

RE: AHJ SPEC'S FOR WORK IN R–O–W



L11 CURB DETAIL - BARRIER (PVR SITE)

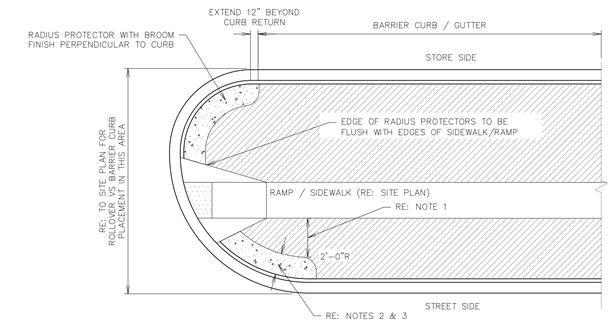
NTS | SN: PD009D016



F1 CURB DETAIL - ROLLOVER / MOUNTABLE

NTS | SN: PD010A014

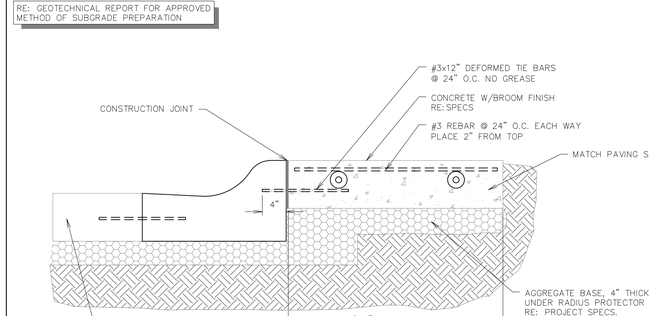
1. IF DISTANCE TO SIDEWALK IS LESS THAN 2', PLACE PROTECTOR TO SIDEWALK.
2. TOOLED CONTRACTION JOINTS TO BE ADDED @ 5' C/C (MAX.), MATCH CURB JOINTS WHEN POSSIBLE.
3. 5' ON EXTERIOR DRIVES, 3' ON INTERIOR.



F6 RADIUS PROTECTOR PLAN

NTS | SN: PD016A006

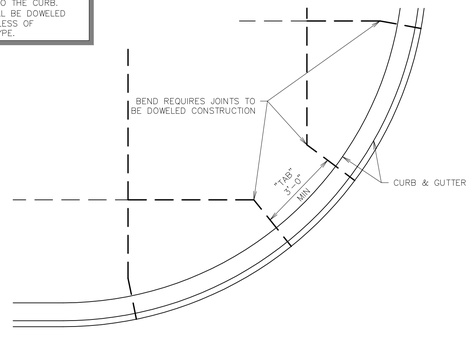
RE: GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION



F11 STANDARD RADIUS PROTECTOR SECTION

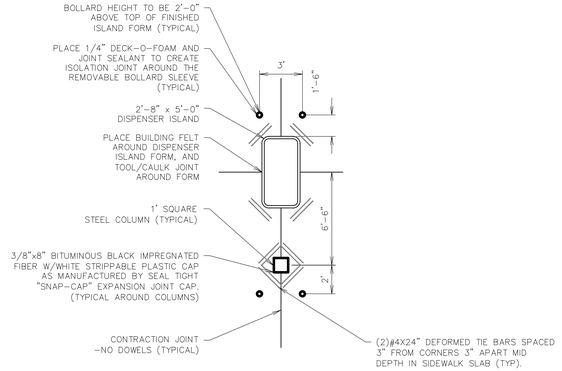
NTS | SN: PD017A013

1. "DOG LEGS" SHALL BE 3' MIN.
2. "TAB" PORTION OF SLAB SHALL BE 3' MIN.
3. "DOG LEG" TO BE 90° TO THE CURB.
4. "DOG LEG" JOINTS SHALL BE DOWELED CONSTRUCTION REGARDLESS OF REMAINDER OF JOINT TYPE.



A1 TYPICAL JOINT LAYOUT - AT RADIUS AND ANGLES

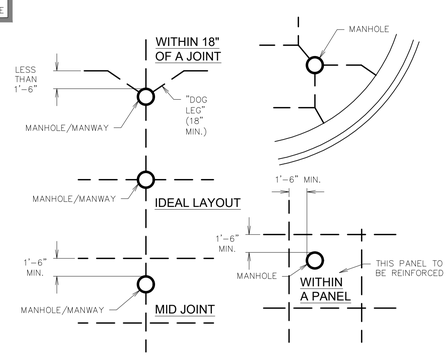
NTS | SN: PD019A007



A6 GAS ISLAND JOINTING - (G3S DS STEEL)

NTS | SN: PD077A004

FUEL MANWAYS DO NOT USE ISOLATION JOINTS, UTILITY MANHOLE STRUCTURES USE ISOLATION JOINT AT MANHOLE



A11 TYPICAL MANHOLE / FUEL MANWAY JOINT LAYOUTS

NTS | SN: PD021A003

RACHEL M. ROBERTS
137514
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

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PROTOTYPE: P-112 (11/18/22)
DIVISION:
VERSION: 001
DESIGNED BY: OHW
DRAWN BY: OHW
REVIEWED BY: RMR

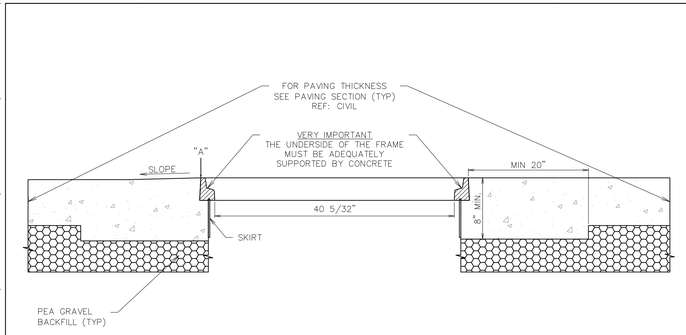
REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
PAVING DETAILS II

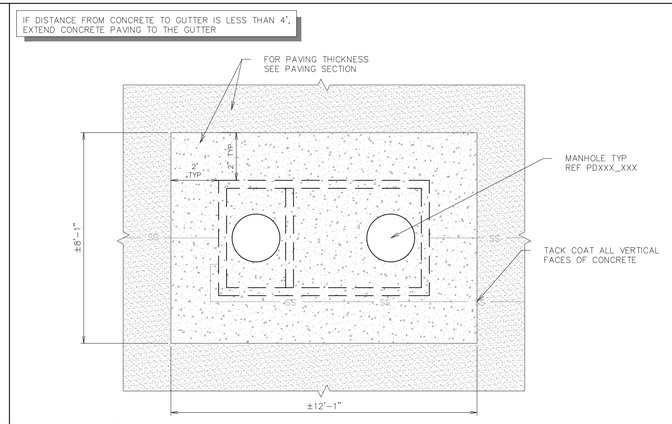
SHEET NUMBER:
C521

FILE LOCATION: K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\DETAILS PAVING.DWG TAB NAME: Paving Detail Sheet 2 USER: Olivia.Watts SAVED: 5/10/2023 6:01 PM PLOTTED: 4/21/2023 10:33 AM



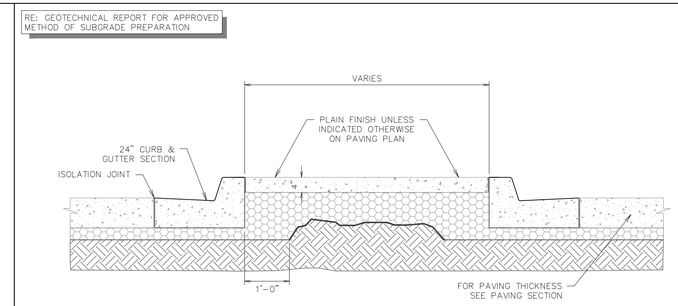
L1 FIBERLITE LID DETAIL

NTS SN: PD071A003



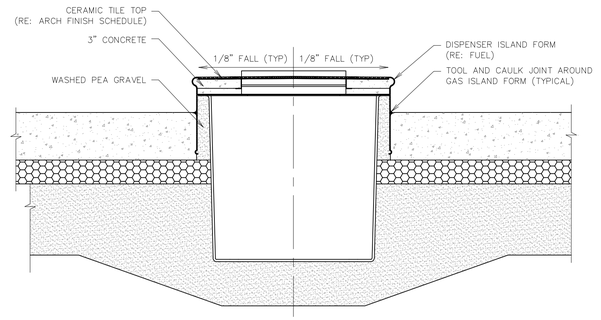
L6 GREASE TRAP PAVEMENT DETAIL

NTS SN: PD076A003



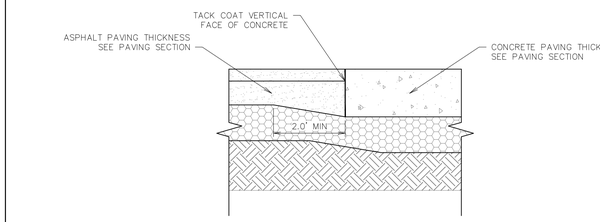
L11 ISLAND SECTION B-B-PAVED ISLAND

NTS SN: PD024A009



F1 DISPENSER ISLAND FORM - CONCRETE FILL & JOINTING DETAIL

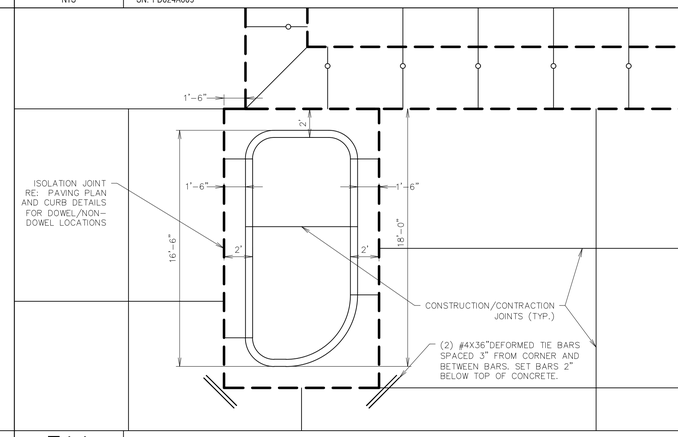
NTS SN: PD047A003



NOTE: BASE & SURFACE COURSE SPECIFICATION ARE MARKET SPECIFIC
REFER TO ASPHALT PAVING SPECIFICATION

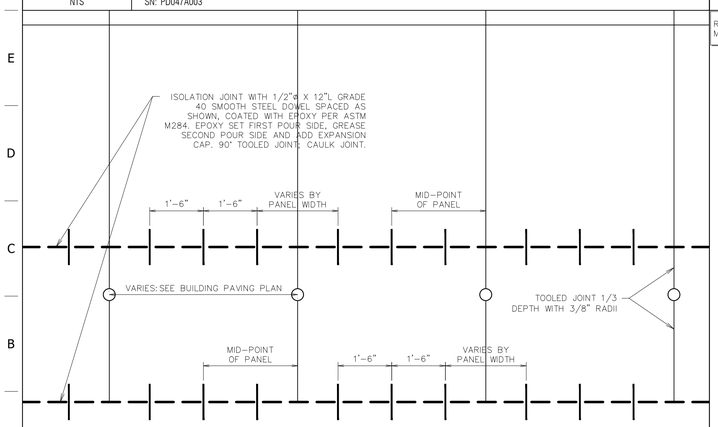
F6 ASPHALT TO CONCRETE TRANSITION PAVING SECTION

NTS SN: PD073A004



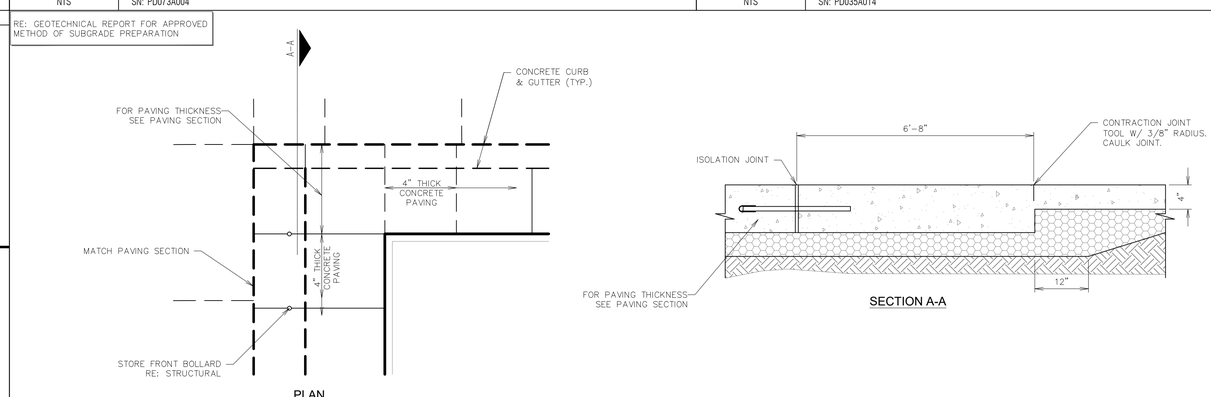
F11 TYPE A ISLAND JOINT DETAIL

NTS SN: PD035A014



A1 DOWELED EXPANSION JOINTS AT BOLLARD PAVEMENT SECTION

NTS SN: PD036A004



A6 G3S BUILDING SIDEWALK TRANSITION DETAIL

NTS SN: PD069A004

RACHEL M. ROBERTS
137584
REGISTERED
PROFESSIONAL
ENGINEER
04/21/2023

PROJECT NO.:069304941

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QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
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REVIEWED BY:	RMR

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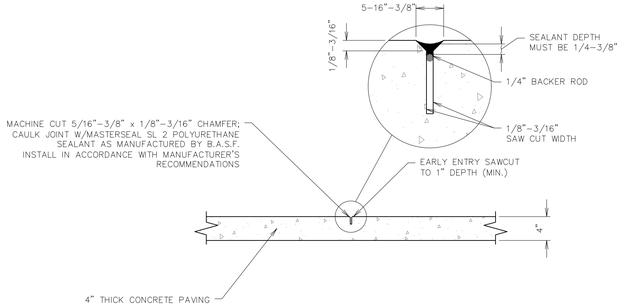
SHEET TITLE:

PAVING DETAILS III

SHEET NUMBER:

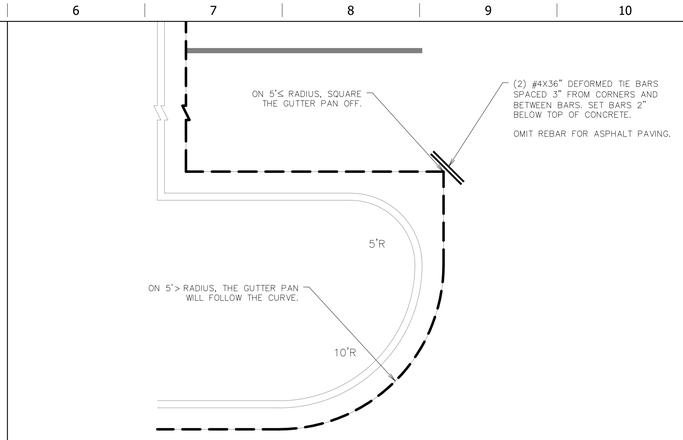
C522

FILE LOCATION:K:\SNA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\DETAILS PAVING.DWG TAB NAME:Paving Detail Sheet 3 USER:Olivia.Watts SAVED:3/10/2023 6:01 PM PLOTTED:4/21/2023 10:33 AM



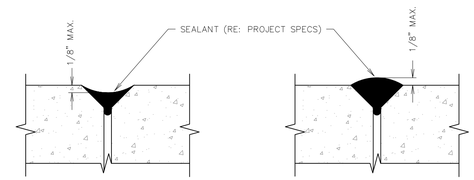
L1 BUILDING SIDEWALK JOINT - CONTRACTION

NTS | SN: PD061A004



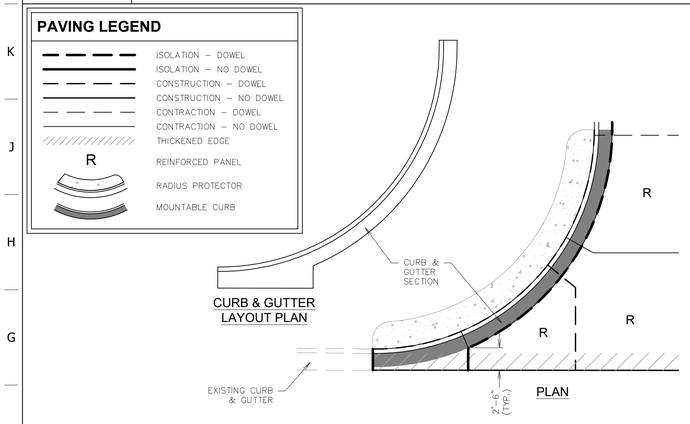
L6 GUTTER PAN RADIUS DETAIL

NTS | SN: PD070A004



L11 PAVING JOINT - SEALANT TOLERANCE DETAIL

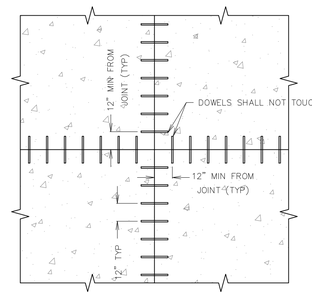
NTS | SN: PD042A003



F1 CURB DETAIL - DRIVE ENTRANCE

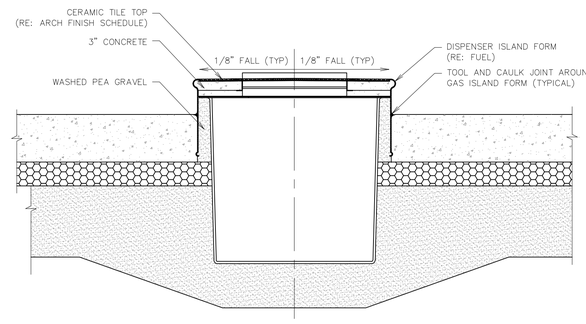
NTS | SN: PD043A004

1. 1"ø x18" SMOOTH STEEL DOWEL BARS @ 12" O.C., EPOXY COATED.
2. NOT REINFORCED EXCEPT WHEN PANELS WITH LENGTH TO WIDTH RATIO EXCEEDS 1.50, THEN #3 REBAR @ 16" O.C. BOTH WAYS, 2" CLEAR FROM TOP OF SLAB.
3. IF ADJACENT JOINT DOES NOT LINE UP (TEE JOINT) OMIT DOWELS ON THAT SIDE OF PANEL.
4. DOWEL BASKET WIRES SHALL NOT CROSS JOINTS. CROSS WIRES MUST BE CUT AND REMOVED PRIOR TO POUR.



F6 DOWEL - JOINT SEPARATION DETAIL

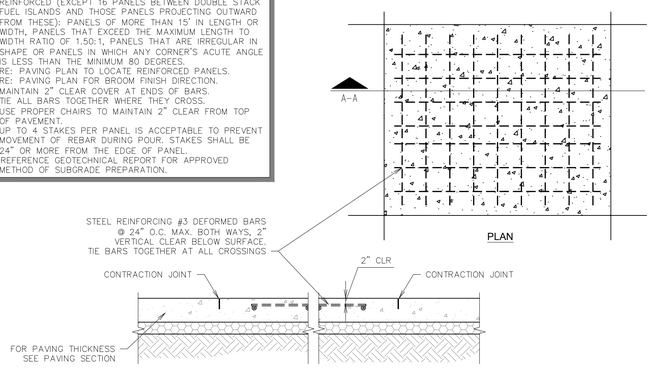
NTS | SN: PD046A002



F11 DISPENSER ISLAND FORM - CONCRETE FILL & JOINTING DETAIL

NTS | SN: PD047A003

1. PANELS WITH THE FOLLOWING CRITERIA SHALL BE REINFORCED (EXCEPT 16' PANELS BETWEEN DOUBLE STACK FUEL ISLANDS AND THOSE PANELS PROJECTING OUTWARD FROM THESE); PANELS OF MORE THAN 15' IN LENGTH OR WIDTH, PANELS THAT EXCEED THE MAXIMUM LENGTH TO WIDTH RATIO OF 1.50:1, PANELS THAT ARE IRREGULAR IN SHAPE OR PANELS IN WHICH ANY CORNER'S ACUTE ANGLE IS LESS THAN THE MINIMUM 80 DEGREES.
2. RE: PAVING PLAN TO LOCATE REINFORCED PANELS.
3. RE: PAVING PLAN FOR BROOM FINISH DIRECTION.
4. MAINTAIN 2" CLEAR COVER AT ENDS OF BARS.
5. TIE ALL BARS TOGETHER WHERE THEY CROSS.
6. USE PROPER CHAIRS TO MAINTAIN 2" CLEAR FROM TOP OF PAVEMENT.
7. UP TO 4 STAKES PER PANEL IS ACCEPTABLE TO PREVENT MOVEMENT OF REBAR DURING POUR. STAKES SHALL BE 24" OR MORE FROM THE EDGE OF PANEL.
8. REFERENCE GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION.

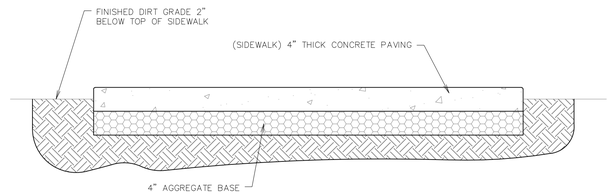


A1 PAVEMENT REINFORCING DETAIL (NON-DOWELED)

NTS | SN: PD003B013

RE: GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION.

RE: AHJ SPEC'S FOR WORK IN R-O-W

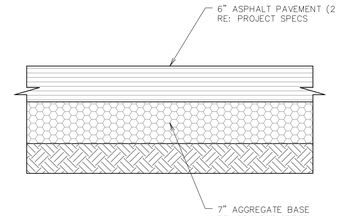


A6 SIDEWALK SECTION

NTS | SN: PD057A003

1.SEE TABLE LOCATED IN QT ASPHALT SPECS UNDER PART 2 FOR BASE AND SURFACE COURSE.

2.SEE GEOTECHNICAL REPORT FOR APPROVED METHOD OF SUBGRADE PREPARATION



* THE OPTION OF ALL WEAR COURSE LIFTS OR COMBINATION OF WEAR AND BASE COURSE LIFTS IS AT THE DISCRETION OF THE CONTRACTOR AND THEIR SPECIFIC STAGING PLAN. MINIMUM WEAR COURSE THICKNESS IS 3".

A11 ASPHALT PAVING SECTION 4 - STORE SIDE

NTS | SN: PD055F005

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7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE: P-112 (11/18/22)
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REVIEWED BY: RMR

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C523

FILE LOCATION:K:\SNA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\DETAILS PAVING.DWG TAB NAME:Paving Detail Sheet 4 USER:Olivia.Watts SAVED:5/10/2023 6:01 PM PLOTTED:4/21/2023 10:33 AM

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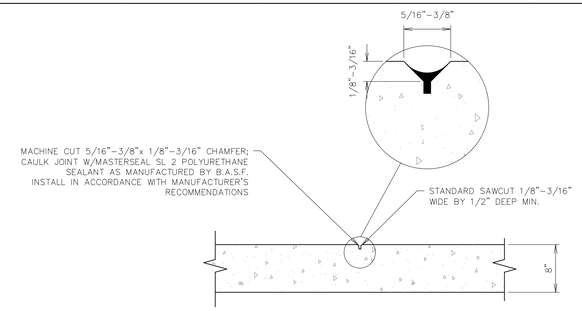
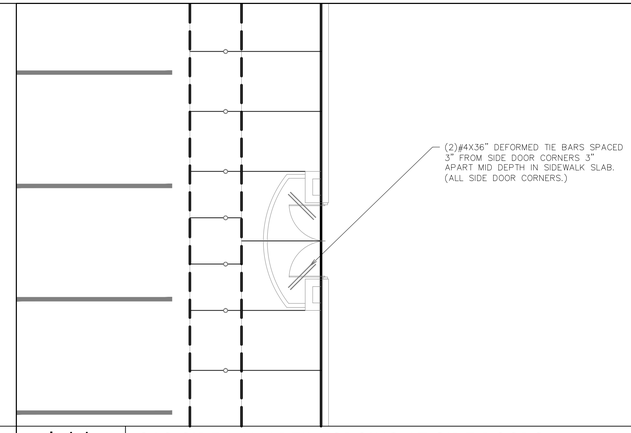
NTS	SN:

L6	DELINEATED CROSSWALK JOINTING SECTION DETAIL
NTS	SN: PD050A002



L11	G3S SIDEWALK REINFORCING AT SIDE DOORS
NTS	SN: RD078A003



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NTS	SN:

F6	NOT USED
NTS	SN:

F11	NOT USED
NTS	SN:

A1	NOT USED
NTS	SN:

A6	NOT USED
NTS	SN:

A11	NOT USED
NTS	SN:

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04/21/2023

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PROTOTYPE:	P-112 (11/18/22)
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DRAWN BY:	OHW
REVIEWED BY:	RMR

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PAVING DETAILS V

SHEET NUMBER:

C524

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L1 NOT USED

NTS | SN:

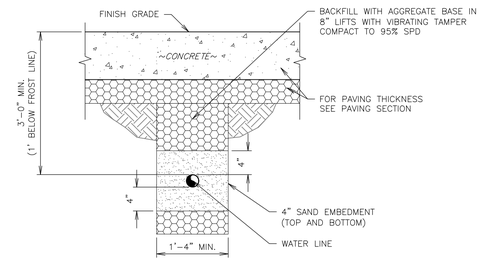
L6 ON-SITE WATER LINE TRENCH SECTION (PAVED)

NTS | SN: TD005A007

ALL COPPER PIPING SHALL BE TYPE K WRAPPED IN 3M VINYL TAPE FROM THE BUILDING TO THE METER.

ALWAYS ATTEMPT TO RUN UTILITY TRENCH OUTSIDE OF PAVED AREA WHEN AVAILABLE – RE: PLAN SHEETS.

RE. PROJECT SPECS FOR GRADATION TABLE.



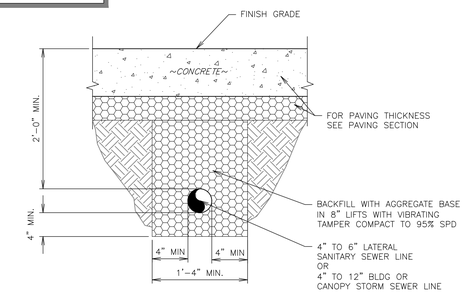
L11 BUILDING OR CANOPY DRAINAGE TRENCH SECTION (PAVED)

NTS | SN: TD006A005

EXTEND 18" BEYOND BACK OF CURB (OUTSIDE OF ALL PAVED AREAS) BEFORE TRANSITIONING TO NON-PAVED TRENCH DETAIL.

MIN. DRAIN PIPE CLEARANCE MAY BEGIN @ 1'-0" FROM T.O.P. TO FINISH GRADE IF CONDITIONS WARRANT DUE TO GRADES, ROCK, ETC.

RE. PROJECT SPECS FOR GRADATION TABLE.



F1 BUILDING OR CANOPY DRAINAGE TRENCH SECTION (NON PAVED)

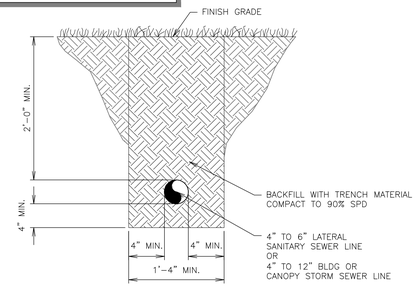
NTS | SN: TD007A002

TRENCH MATERIAL SHALL CONSIST OF DRY, ROCK-FREE DIRT.

MIN. DRAIN PIPE CLEARANCE MAY BEGIN @ 1'-0" FROM T.O.P. TO FINISH GRADE IF CONDITIONS WARRANT DUE TO GRADES, ROCK, ETC.

UNDER PAVEMENT, CURB, & FRENCH DRAIN PIPE MUST BE TAKEN TO STORM STRUCTURE, OR TO SURFACE DRAINAGE SWALE.

SEE GRADING PLAN FOR LOCATION BEFORE TRANSITION TO NON PAVED TRENCH SECTION.



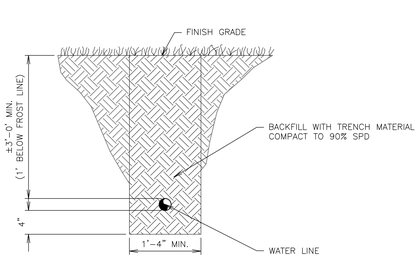
F6 ON-SITE WATER LINE TRENCH SECTION (NON PAVED)

NTS | SN: TD008A003

TRENCH MATERIAL SHALL CONSIST OF DRY, ROCK-FREE DIRT.

ALL COPPER PIPING SHALL BE TYPE K WRAPPED IN 3M VINYL TAPE FROM THE BUILDING TO THE METER.

ALWAYS ATTEMPT TO RUN UTILITY TRENCH OUTSIDE OF PAVED AREA WHEN AVAILABLE – RE: PLAN SHEETS



F11 PRIMARY ELECTRICAL & TELEPHONE CONDUIT TRENCH SECTION (PAVED)

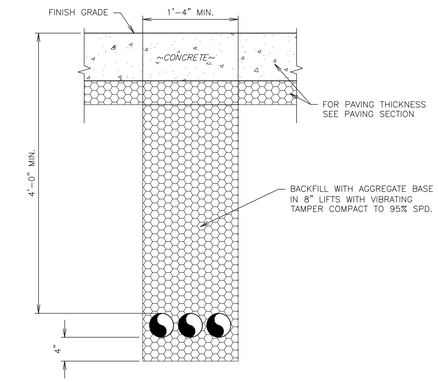
NTS | SN: TD010A005

EXTEND 18" BEYOND BACK OF CURB (OUTSIDE OF ALL PAVED AREAS) BEFORE TRANSITIONING TO NON-PAVED TRENCH DETAIL.

ALWAYS ATTEMPT TO RUN UTILITY TRENCH OUTSIDE OF PAVED AREA WHEN AVAILABLE – RE: PLAN SHEETS

RE. PROJECT SPECS FOR GRADATION TABLE.

IF CONDUITS ARE TO BE STACKED, UPPERMOST CONDUIT TO REMAIN MIN. OF 4'-0" BELOW GRADE WITH MIN. 12" VERTICAL CLEARANCE BETWEEN CONDUITS



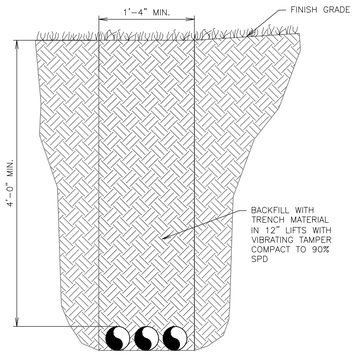
A1 PRIMARY ELECTRICAL & TELEPHONE CONDUIT TRENCH SECTION (NON PAVED)

NTS | SN: TD011A003

TRENCH MATERIAL SHALL CONSIST OF DRY, ROCK-FREE DIRT.

ALWAYS ATTEMPT TO RUN UTILITY TRENCH OUTSIDE OF PAVED AREA WHEN AVAILABLE – RE: PLAN SHEETS

IF CONDUITS ARE TO BE STACKED, UPPERMOST CONDUIT TO REMAIN MIN. OF 4'-0" BELOW GRADE WITH MIN. 12" VERTICAL CLEARANCE BETWEEN CONDUITS



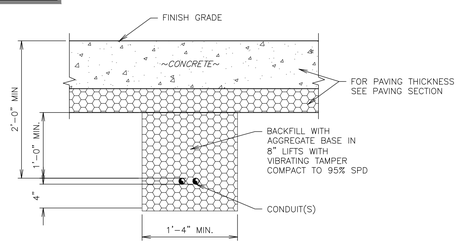
A6 1" Ø OR SMALLER ELECTRICAL CONDUIT TRENCH SECTION (PAVED)

NTS | SN: TD012A005

EXTEND 18" BEYOND BACK OF CURB (OUTSIDE OF ALL PAVED AREAS) BEFORE TRANSITIONING TO NON-PAVED TRENCH DETAIL.

ALWAYS ATTEMPT TO RUN UTILITY TRENCH OUTSIDE OF PAVED AREA WHEN AVAILABLE – RE: PLAN SHEETS

RE. PROJECT SPECS FOR GRADATION TABLE.

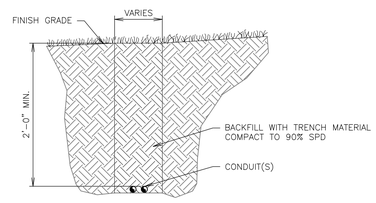


A11 1" Ø OR SMALLER ELECTRICAL CONDUIT TRENCH SECTION (UNPAVED)

NTS | SN: TD013A003

TRENCH MATERIAL SHALL CONSIST OF DRY, ROCK-FREE DIRT.

ALWAYS ATTEMPT TO RUN UTILITY TRENCH OUTSIDE OF PAVED AREA WHEN AVAILABLE – RE: PLAN SHEETS



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PROTOTYPE:	P-112 (11/18/22)
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REVIEWED BY:	RMR

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ORIGINAL ISSUE DATE:

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TRENCHING DETAILS I

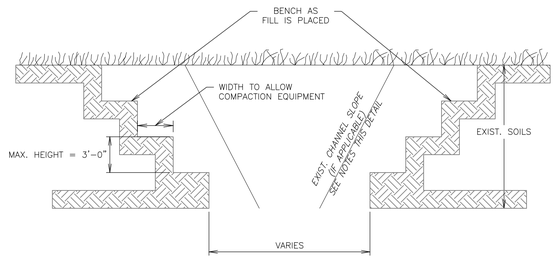
SHEET NUMBER:

C530

FILE LOCATION:K:\SNA_Civil\069304941 - QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\DETAILS TRENCHING.dwg TAB NAME:Trenching Detail Sheet 1 USER:Olivia.Watts SAVED:2/15/2023 5:05 PM PLOTTED:4/21/2023 10:33 AM

EXISTING CHANNEL EXCAVATION NOTES:
1. MUCK TO SUITABLE SOIL OR BEDROCK (SEE QT REP).

2. #57 STONE WITH FILTER FABRIC AT BOTTOM OF FINISHED CHANNEL – TO BE PLACED IF BEDROCK IS ENCOUNTERED.

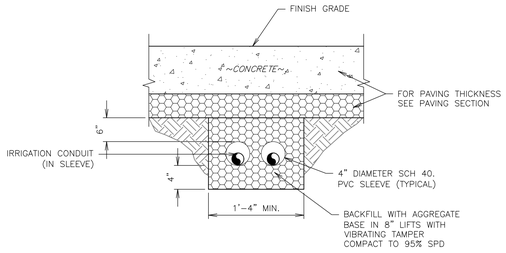


L1 EXCAVATION BENCHING DETAIL

NTS | SN: TD014A002

EXTEND THIS SECTION 5' BEYOND BACK OF CURB (OUTSIDE EDGE OF DRIVE)

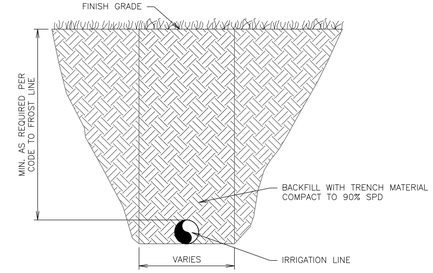
RE. PROJECT SPECS FOR GRADATION TABLE.



L6 TYPICAL IRRIGATION PIPING TRENCH SECTION (PAVED)

NTS | SN: TD015A006

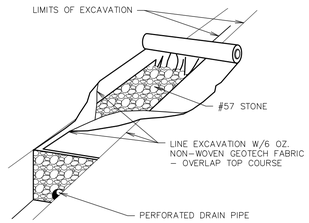
TRENCH MATERIAL SHALL CONSIST OF DRY, ROCK-FREE DIRT.



L11 TYPICAL IRRIGATION PIPING TRENCH SECTION (NON PAVED)

NTS | SN: TD016A002

GEOTECH FABRIC LINED TRENCH SHALL BE UTILIZED WITH A "PERFORATED" DRAIN DETAIL, SUCH AS A FRENCH DRAIN OR BACK OF CURB DRAIN.



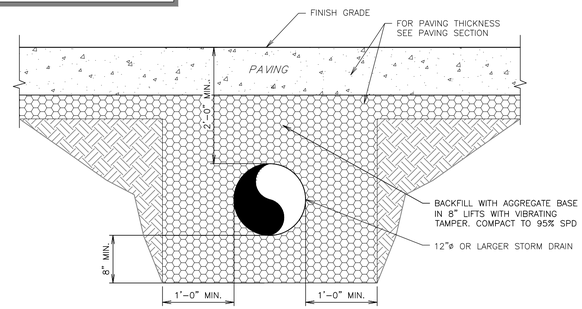
F1 GEOTECH FABRIC IN SUB-SURFACE DRAIN

NTS | SN: TD017A003

EXTEND 18" BEYOND BACK OF CURB (OUTSIDE OF ALL PAVED AREAS) BEFORE TRANSITIONING TO NON-PAVED TRENCH DETAIL.

MIN. DRAIN PIPE CLEARANCE MAY BEGIN @ 1'-0" FROM T.O.P. TO FINISH GRADE IF CONDITIONS WARRANT DUE TO GRADES, ROCK, ETC.

RE. PROJECT SPECS FOR GRADATION TABLE.



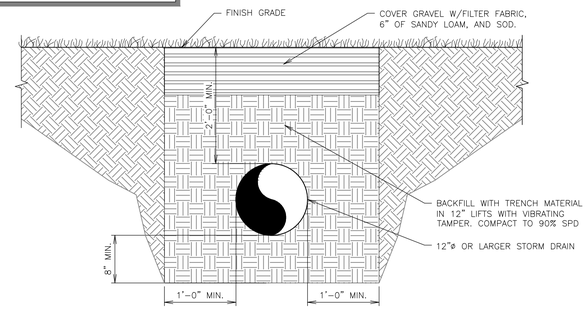
F6 12" DIAMETER OR LARGER STORM DRAIN (PAVED)

NTS | SN: TD018A001

EXTEND 18" BEYOND BACK OF CURB (OUTSIDE OF ALL PAVED AREAS) BEFORE TRANSITIONING TO NON-PAVED TRENCH DETAIL.

MIN. DRAIN PIPE CLEARANCE MAY BEGIN @ 1'-0" FROM T.O.P. TO FINISH GRADE IF CONDITIONS WARRANT DUE TO GRADES, ROCK, ETC.

RE. PROJECT SPECS FOR GRADATION TABLE.



F11 12" DIAMETER OR LARGER STORM DRAIN (NON PAVED)

NTS | SN: TD018B001

A1 NOT USED

NTS | SN:

A6 NOT USED

NTS | SN:

A11 NOT USED

NTS | SN:

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REVIEWED BY:	RMR

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		ORIGINAL ISSUE DATE:

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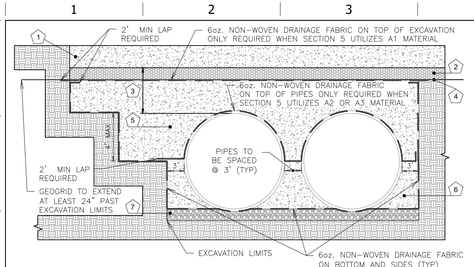
SHEET NUMBER:
C531

FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\DETAILS TRENCHING.dwg TAB NAME:Trenching Details Sheet 2 USER:Olivia.Watts SAVED:2/15/2023 5:05 PM PLOTTED:4/21/2023 10:33 AM



KEY

1. RIGID/ FLEXIBLE PAVEMENT
2. AGGREGATE BASE
3. 12" MIN. FOR DIAMETERS THROUGH 96" 18" MIN. FOR DIAMETERS FROM 102" AND LARGER MEASURED TO TOP OF RIGID, OR BOTTOM OF FLEXIBLE PAVEMENT.
4. TENSAR BX TYPE 2, OR APPROVED EQUAL. GEOGRID, EXTEND AT LEAST 24 INCHES PAST EXCAVATION LIMITS.
5. SELECT GRANULAR FILL PER AASHTO M145 A1, A2 OR A3, OR APPROVED EQUAL. PLACED IN 8" LIFTS (COMPACTED TO MIN. 95% STANDARD DENSITY PER AASHTO T99.)
6. SELECT GRANULAR FILL PER AASHTO M145 A1, OR APPROVED EQUAL. PLACED IN 8" LIFTS (COMPACTED TO MIN. 90% STANDARD DENSITY PER AASHTO T99.)
7. GRANULAR BEDDING, ROUGHLY SHAPED TO FIT THE BOTTOM OF PIPE, 4" TO 6" IN DEPTH. (SEE NOTE BELOW ON FOUNDATION PREP.)

FOUNDATION/BEDDING PREPARATION

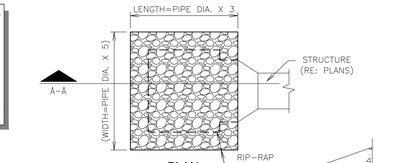
PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE OWNERS TESTING COMPANY. ONCE THE FOUNDATION PREPARATION IS COMPLETE, 4" – 6" OF A WELL-GRADED GRANULAR MATERIAL SHALL BE PLACED AS THE BEDDING.

BACKFILL

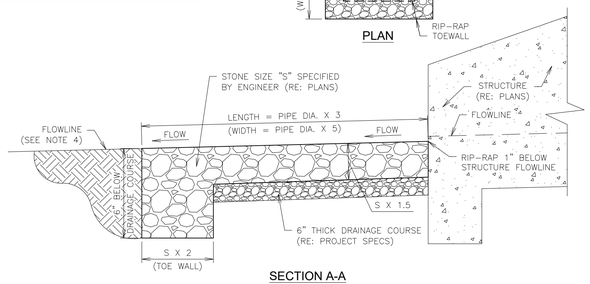
THE BACKFILL SHALL BE PER AASHTO M145, OR A WELL-GRADED GRANULAR FILL AS APPROVED BY THE OWNERS TESTING COMPANY. THE MATERIAL SHALL BE PLACED IN 8" LOOSE LIFTS AND COMPACTED TO 90% OR 95% AASHTO T99 STANDARD PROCTOR DENSITY (AS NOTED IN KEYNOTES 5 & 6). WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT (16") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE DETENTION SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON THE PIPE.

L1	BACKFILL FOR UGD PIPE
NTS	SN: DD026A003

1. TOE WALLS SHALL BE INSTALLED AT ALL EXPOSED EDGES OF RIP-RAP.
2. GROUTING OF THE SURFACE RIP-RAP SHALL NOT BE PERFORMED UNLESS SPECIFIED OTHERWISE.
3. ALL RIP-RAP SHALL BE NATURAL STONE. NEITHER CONCRETE, FABRIC ENVELOPE, NOR PREMIXED DRY PACKAGE CONCRETE BAG ALTERNATED WILL BE ALLOWED.
4. OVER EXCAVATE BELOW THE PLAN FLOWLINE AS REQUIRED TO INSTALL THE RIP-RAP & BASE COURSE TO PREVENT THE OBSTRUCTION OF THE DRAINAGE FLOW.



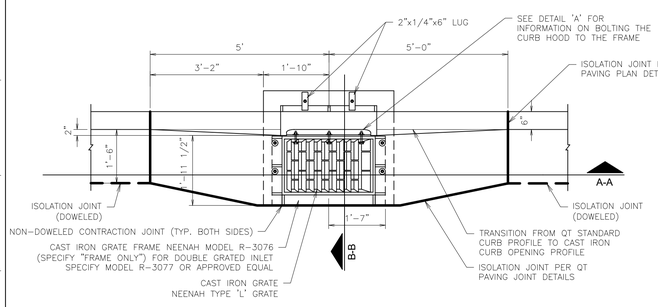
PLAN



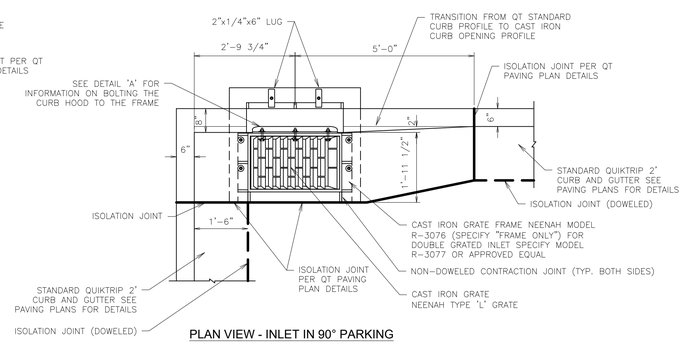
SECTION A-A

L6	RIP-RAP PLACEMENT DETAIL
NTS	SN: DD023A002

L11	NOT USED
NTS	SN:

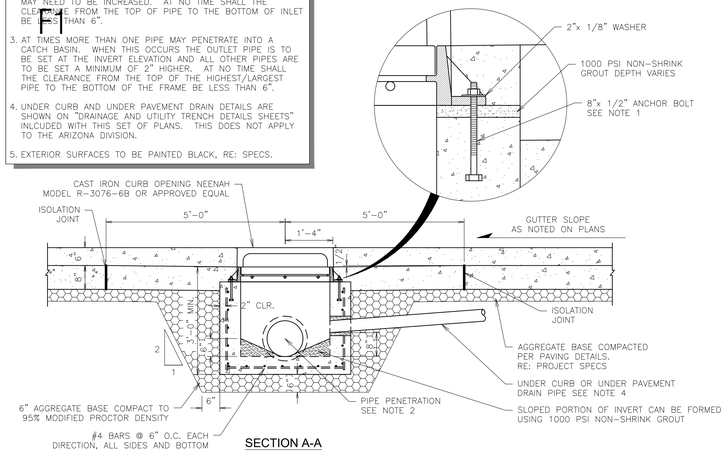


PLAN VIEW - INLET ON CONTINUOUS GRADE

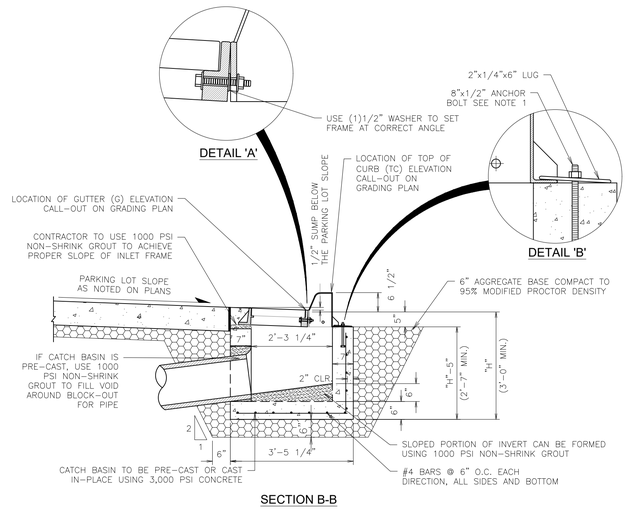


PLAN VIEW - INLET IN 90° PARKING

1. CONTRACTOR CAN SUBSTITUTE HILTI DRILLED BOLT SYSTEM FOR ANCHOR BOLT SET IN CONCRETE FOR EASE OF CONSTRUCTION
2. 12" PIPE IS THE MINIMUM PIPE SIZE ACCEPTED BY QUIKTRIP. PIPE TYPE MAY VARY BY REGION AND MUNICIPALITY. IF HYDRAULICS REQUIRES A LARGER PIPE, DEPTH OF THE INLET MAY NEED TO BE INCREASED. AT NO TIME SHALL THE CLEARANCE FROM THE TOP OF PIPE TO THE BOTTOM OF INLET BE LESS THAN 6".
3. AT TIMES MORE THAN ONE PIPE MAY PENETRATE INTO A CATCH BASIN. WHEN THIS OCCURS THE OUTLET PIPE IS TO BE SET AT THE INVERT ELEVATION AND ALL OTHER PIPES ARE TO BE SET A MINIMUM OF 2" HIGHER. AT NO TIME SHALL THE CLEARANCE FROM THE TOP OF THE HIGHEST/LARGEST PIPE TO THE BOTTOM OF THE FRAME BE LESS THAN 6".
4. UNDER CURB AND UNDER PAVEMENT DRAIN DETAILS ARE SHOWN ON "DRAINAGE AND UTILITY TRENCH DETAILS SHEETS" INLCUDED WITH THIS SET OF PLANS. THIS DOES NOT APPLY TO THE ARIZONA DIVISION.
5. EXTERIOR SURFACES TO BE PAINTED BLACK, RE: SPECS.



SECTION A-A



SECTION B-B

A1	CATCH BASIN INLET DETAIL (SINGLE)
NTS	SN: DD001A010

A11	NOT USED
NTS	SN:

F1	

F11	NOT USED
NTS	SN:

RACHEL M. ROBERTS 137884 REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
10101 REUNION PLACE, SUITE 400,
SAN ANTONIO, TX 78216
PHONE: 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM
TBPE F-928/BS NO. 926

QuikTrip No. 4160

7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION
		ORIGINAL ISSUE DATE:

SHEET TITLE:

DRAINAGE DETAILS

SHEET NUMBER:

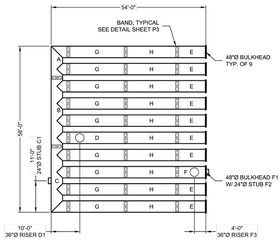
C540

FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Cad\QT\Plan Sheets\DETAILS DRAINAGE.dwg TAB NAME:Drainage Detail Sheet 1 USER:Olivia.Watts SAVED:2/15/2023 5:06 PM PLOTTED:4/21/2023 10:33 AM

STUB INFORMATION		
PIECE	STUB INVERT	SYSTEM INVERT
24"Ø STUB C1	980.10	979.80
24"Ø STUB F2	979.80	979.80

RISER INFORMATION		
PIECE	RIM ELEV.	SYSTEM INVERT
36"Ø RISER D1	TBD	979.80
36"Ø RISER F3	TBD	979.80

EOR TO CONFIRM ALL ELEVATIONS



ASSEMBLY
SCALE: 1" = 20'
LOADING: H20
PIPE INV. = 979.80'±

NOTES
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE.
- ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD (EOR) PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 2⅔" x ½" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE AS REQUIRED, BY CONTRACTOR.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL ACCESS CASTINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE NOT SUPPLIED BY CONTECH.

THE UNDERSIGNED HEREBY APPROVES THE ATTACHED (4) PAGES INCLUDING THE FOLLOWING:
- **PIPE STORAGE = 7,012 CF**
- **MAINLINE PIPE GAGE = 16**
- **WALL TYPE = SOLID**
- **DIAMETER = 48"**
- **FINISH = ALT2**
- **CORRUGATION = 2 2/3x1/2**

CUSTOMER _____ DATE _____

NORTH ARROW PROVIDED FOR REFERENCE ONLY.
REFER TO ENGINEERED SITE PLANS FOR EXACT LOCATION AND ORIENTATION

MARK	DATE	REVISION DESCRIPTION	BY

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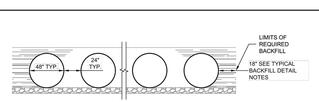
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

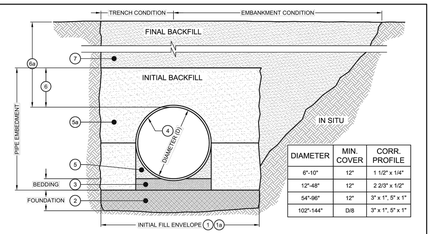
CONTECH CMP DETENTION SYSTEMS
CONTECH PROPOSAL DRAWING

48"Ø UNDERGROUND DETENTION SYSTEM - 715972-020
QUIKTRIP 4160 GEORGETOWN
LEANDER, TX
SITE DESIGNATION: UNDERGROUND DETENTION

PROJECT No.:	REV. No:	DATE:
715972	020	3/9/2023
DESIGNED: JGB	DRAWN: JGB	
CHECKED: RKD	APPROVED: RKD	
SHEET NO.: P1	OF: 4	



TYPICAL SECTION VIEW
NOT TO SCALE



DIAMETER	MIN. COVER	CORR. PROFILE
6"-10"	12"	1 1/2" x 1/4"
12"-48"	12"	2 2/3" x 1/2"
54"-96"	12"	3" x 1", 5" x 1"
102"-144"	D/8	3" x 1", 5" x 1"

BACKFILL REQUIREMENTS FOLLOW THE GUIDELINES OF AASHTO LRFD BRIDGE DESIGN (SEC 12) AND CONSTRUCTION (SEC 26)

1 MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE.
THE MINIMUM TRENCH WIDTH (12.6.6.1):
PIPE ≤ 12": D + 16"
PIPE > 12": 1.5D + 12"

1a MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE (12.6.6.2):
PIPE < 24": 3.0D
PIPE 24" - 144": D + 4'0"
PIPE > 144": D + 10'0"

2 THE FOUNDATION UNDER THE PIPE AND SIDE BACKFILL SHALL BE ADEQUATE TO SUPPORT THE LOADS ACTING UPON IT (26.5.2).

3 ENGINEER TO DETERMINE IF BEDDING IS REQUIRED. BEDDING MATERIAL SHALL BE A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, AND A MINIMUM OF TWICE THE CORRUGATION DEPTH IN THICKNESS, WITH THE MAXIMUM PARTICLE SIZE OF ONE-HALF OF THE CORRUGATION DEPTH (26.3.8.1, 26.5.3).

4 CORRUGATED STEEL PIPE (CSP / HEL-COR).

5 HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION (26.5.4).

5a INITIAL BACKFILL FOR PIPE EMBEDMENT TO MEET AASHTO A-1, A-2 OR A-3 CLASSIFICATION, OR APPROVED EQUAL, COMPACTED TO 90% STANDARD PROCTOR (T 99). MAXIMUM PARTICLE SIZE NOT TO EXCEED 3" (12.4.1.2). ALL LIFTS PLACED IN A CONTROLLED MANNER. IT IS RECOMMENDED THAT LIFTS NOT EXCEED AN 8" UNCOMPACTED LIFT HEIGHT TO PREVENT UNEVEN LOADING, AND THE LESSER OF 1/3 THE DIAMETER OR 24" AS THE MAXIMUM DIFFERENTIAL SIDE-TO-SIDE (26.5.4).

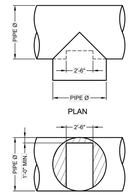
6 INITIAL BACKFILL ABOVE PIPE MAY INCLUDE ROAD BASE MATERIAL (AND RIGID PAVEMENT IF APPLICABLE). SEE TABLE ABOVE.

6a TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT (12.6.6.3).

7 FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD (26.5.4.1).

NOTES:
- ENGINEER TO DETERMINE IF GEOTEXTILE SHOULD BE USED TO PREVENT SOIL MIGRATION INTO VARYING SOIL TYPES (PROJECT ENGINEER).
- FOR MULTIPLE BARREL INSTALLATIONS THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE PIPE DIA./2 BUT NO LESS THAN 12", OR 36" FOR PIPE DIAMETERS 72" AND LARGER.
- CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING (TABLE C12.8.7-1).

TYPICAL BACKFILL DETAIL
NOT TO SCALE



48"Ø to 90"Ø FITTING REINFORCEMENT MAY BE REQUIRED BASED ON HEIGHT OF COVER AND LIVE LOAD CONDITION

TYPICAL MANWAY DETAIL
NOT TO SCALE

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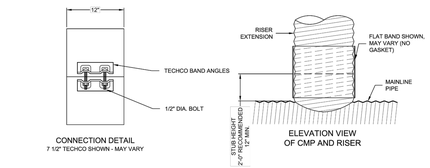
DESIGNED: JGB	DRAWN: JGB	
CHECKED: RKD	APPROVED: RKD	
SHEET NO.: P2	OF: 4	

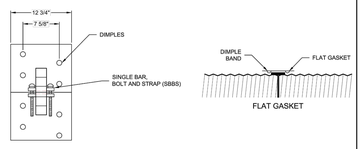


PLAIN END CMP RISER PIPE

GENERAL NOTES:

1. **DELIVERED BAND STYLE AND FASTENER TYPE MAY VARY BY FABRICATION PLANT.**
2. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
3. BAND MATERIAL AND GAGE TO BE SAME AS RISER MATERIAL.
4. IF RISER HAS A HEIGHT OF COVER OF 10' OR MORE, USE A SLIP JOINT.
5. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
   - 12" THRU 48" 1-PIECE
   - 54" 2-PIECES
6. ALL RISER JOINT COMPONENTS WILL BE FIELD ASSEMBLED.
7. MANHOLE RISERS IN APPLICATIONS WHERE TRAFFIC LOADS ARE IMPOSED REQUIRE SPECIAL DESIGN CONSIDERATIONS.
8. DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES.

12" RISER BAND DETAIL
NOT TO SCALE



PLAIN END CMP PIPE

GENERAL NOTES:

1. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
2. BAND MATERIALS AND/OR COATING CAN VARY BY LOCATION. CONTACT YOUR CONTECH REPRESENTATIVE FOR AVAILABILITY.
3. BANDS ARE SHAPED TO MATCH THE PIPE-ARCH WHEN APPLICABLE.
4. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
   - 12" THRU 48" 1-PIECE
   - 54" THRU 96" 2-PIECES
   - 102" THRU 144" 3-PIECES
5. BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS.
6. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
7. ORDER SHALL DESIGNATE GASKET OPTION, IF REQUIRED (SEE DETAILS ABOVE).

D-12 DIMPLE BAND DETAIL
NOT TO SCALE

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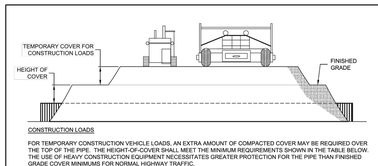
CHECKED: RKD	APPROVED: RKD	
SHEET NO.: P3	OF: 4	



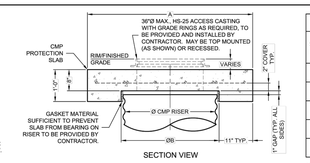
CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM
NOT TO SCALE

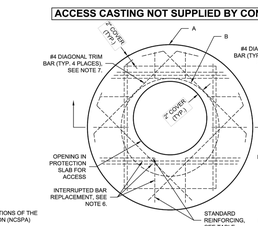


SECTION VIEW

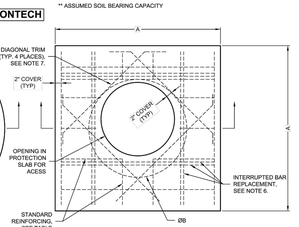
REINFORCING TABLE				
Ø CMP RISER	A	B Ø	REINFORCING	**BEARING PRESSURE (PSF)
24"	4'0" 4'x4'	26"	#5 @ 10" OCEW #5 @ 10" OCEW	2,540 1,900
30"	4'-6"Ø 4'-6" x 4'-6"	32"	#5 @ 10" OCEW #5 @ 9" OCEW	2,260 1,670
36"	5'Ø 5' x 5'	38"	#5 @ 9" OCEW #5 @ 8" OCEW	2,060 1,500
42"	5'-6"Ø 5'-6" x 5'-6"	44"	#5 @ 8" OCEW #5 @ 7" OCEW	1,490 1,370
48"	6'Ø 6' x 6'	50"	#5 @ 7" OCEW #5 @ 7" OCEW	1,210 1,270

** ASSUMED SOIL BEARING CAPACITY

ACCESS CASTING NOT SUPPLIED BY CONTECH



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

NOTES:
1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION AND ACI 350.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 4,000 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERS, ARCHITECTS AND LAND SURVEYORS, ENGWELL, NY.

MANHOLE CAP DETAIL
NOT TO SCALE

MATERIAL SPECIFICATION
NOT TO SCALE

SPECIFICATION FOR CORRUGATED STEEL PIPE-ALUMINIZED TYPE 2 STEEL

SCOPE

THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE CORRUGATED STEEL PIPE (CSP) DETAILED IN THE PROJECT PLANS.

MATERIAL

THE ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M274 OR ASTM A929.

PIPE

THE CSP SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M36 OR ASTM A760. THE PIPE SIZES, GAGES AND CORRUGATIONS SHALL BE AS SHOWN ON THE PROJECT PLANS.

ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.

HANDLING AND ASSEMBLY

SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF THE NATIONAL CORRUGATED STEEL PIPE ASSOCIATION (NCSPA)

INSTALLATION

SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II OR ASTM A798 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

ANTI-FLOTATION PROVISIONS DUE TO HIGH GROUNDWATER OR OTHER FLOTATION CONCERNS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH PROPOSAL DRAWING

48"Ø UNDERGROUND DETENTION SYSTEM - 715972-020
QUIKTRIP 4160 GEORGETOWN
LEANDER, TX
SITE DESIGNATION: UNDERGROUND DETENTION

PROJECT No.:	REV. No:	DATE:
715972	020	3/9/2023
DESIGNED: JGB	DRAWN: JGB	
CHECKED: RKD	APPROVED: RKD	
SHEET NO.: P4	OF: 4	

RACHEL M. ROBERTS
137594
REGISTERED PROFESSIONAL ENGINEER
04/21/2023
PROJECT NO.: 069304941
Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
10101 REUNION PLACE, SUITE 400,
SAN ANTONIO, TX 78216
PHONE: 210-541-9166 FAX: 210-541-8699
WWW.KIMLEY-HORN.COM
TBPE #F-928 TBPLS #10193877

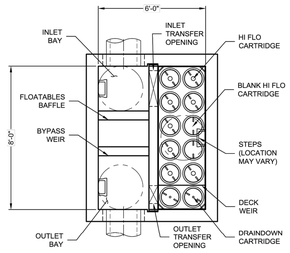
QuikTrip No. 4160
7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

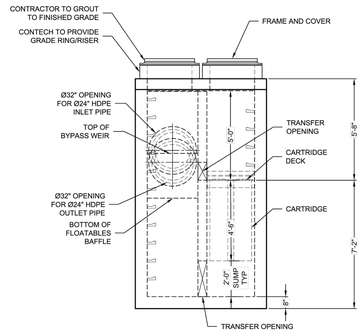
REV	DATE	DESCRIPTION
		ORIGINAL ISSUE DATE:

SHEET TITLE:
CONTECH DRAINAGE DETAILS 1 OF 2

SHEET NUMBER:
C541



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



ELEVATION VIEW

RIM
ELEV. = 987.59'

TOP OF STRUCTURE
ELEV. = 985.82'

WEIR ELEV. =981.65'
INLET INV. ELEV. = 980.65'
OUTLET INV. ELEV. = 980.15'

STRUCTURE INV.
ELEV. = 973.65'

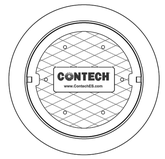
BOTTOM OF STRUCTURE
ELEV. = 972.98'

Jellyfish® Filter

JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VAULT AND/OR SHALLOW ORIENTATIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD

CARTRIDGE LENGTH	54"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"
FLOW RATE HI-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089
MAX. TREATMENT (CFS)	1.96
DECK TO INSIDE TOP (MIN) (B)	5.00



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID					WQU
WATER QUALITY FLOW RATE (cfs)					1.60
PEAK FLOW RATE (cfs)					14.56
RETURN PERIOD OF PEAK FLOW (yrs)					25
# OF CARTRIDGES REQUIRED (HF / DD)					7 / 2
CARTRIDGE LENGTH					54"
PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	980.65'	HDPE	24"	*	*
INLET #2	*	*	*	*	*
OUTLET	980.15'	HDPE	24"	*	*
SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.					
RIM ELEVATION					987.59'
ANTI-FLOTATION BALLAST		WIDTH		HEIGHT	
		*		*	
NOTES/SPECIAL REQUIREMENTS: * PER ENGINEER OF RECORD					

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 10', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
D. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

CONTECH ENGINEERED SOLUTIONS LLC
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8' x 6' JELLYFISH - 715972- 010
QUIKTRIP 4160 GEORGETOWN
LEANDER, TX
SITE DESIGNATION: WQU

Contech Engineered Solutions Calculations for Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: QuikTrip No. 4160 - Leander TX
Date Prepared: 2/16/2023

1. The Required Load Reduction for the total project:

Calculations from RG-348 — Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$
Pages 3-27 to 3-30

$L_{M\,TOTAL\,PROJECT}$ = 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 * =	**1.89**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan* =	**1.83**	acres
Total post-development impervious cover fraction * =	**0.97**	
P =	**32**	inches
$L_{M\,TOTAL\,PROJECT}$ =	**1593**	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 =	**1.32**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**1.32**	acres
Post-development impervious fraction within drainage basin/outfall area =	**1.00**	
$L_{M\,THIS\,BASIN}$ =	**1149**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	**JF**	abbreviation
Removal efficiency =	**86**	percent

4. Calculate Maximum TSS Load Removed (L_M) 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_N x 34.9 + A_P x 0.54)

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 =	**1.32**	acres
A_I =	**1.32**	acres
A_P =	**0.00**	acres
L_R =	**1257**	lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\,THIS\,BASIN}$ =	**1149**	lbs.
F =	**0.91**	

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Offsite area draining to BMP =	**0.08**	acres
Offsite impervious cover draining to BMP =	**0.08**	acres

Calculations from RG-348 — Pages Section 3.2.22

Rainfall Intensity =	**1.15**	inches per hour
Effective Area =	**1.26**	acres
Cartridge Length =	**54**	inches
Peak Treatment Flow Required =	**1.46**	cubic feet per second

7. Jellyfish
Designed as Required in RG-348
Section 3.2.22

Flow Through Jellyfish Size

Jellyfish Size for Flow-Based Configuration =	**JFPDo806-S-2**	
Jellyfish Treatment Flow Rate =	**1.60**	cfs

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Additional information is provided for cells with a red triangle in the upper right corn
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will

1. The Required Load Reduction for the total project: Calculations from RG-348

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where: $L_{M\,TOTAL\,PROJECT}$ = Required TSS removal resul
A_N = Net increase in impervious a
P = Average annual precipitation

Site Data: Determine Required Load Removal Based on the Entire Project

County =	**Williamson**	
Total project area included in plan * =	**14.54**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan* =	**1.94**	acres
Total post-development impervious cover fraction * =	**0.13**	
P =	**32**	inches
$L_{M\,TOTAL\,PROJECT}$ =	**1689**	lbs.

*** The values entered in these fields should be for the total project area.**

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = **2**

Total drainage basin/outfall area =	**0.29**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**0.29**	acres
Post-development impervious fraction within drainage basin/outfall area =	**1.00**	
$L_{M\,THIS\,BASIN}$ =	**255**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	**Vegetated Filter Strips**	
Removal efficiency =	**85**	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 3

where: A_C = Total On-Site drainage area
A_I = Impervious area proposed in
A_P = Pervious area remaining in tl
L_R = TSS Load removed from this

A_C =	**0.29**	acres
A_I =	**0.29**	acres
A_P =	**0.00**	acres
L_R =	**276**	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\,THIS\,BASIN}$ =	**276**	lbs.
F =	**1.00**	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Rainfall Depth =	**4.00**	inches
Post Development Runoff Coefficient =	**0.82**	
On-site Water Quality Volume =	**3473**	cubic feet

Calculations from RG-348

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 =	**695**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**4167**	cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMF
The values for BMP Types not selected in cell C45 will show NA.

16. Vegetated Filter Strips Designed as Required in RG

There are no calculations required for determining the load or size of vegetative filter strips.
The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction c
the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with n
across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as lo

If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described

RACHEL M. ROBERTS
137894
REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

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WWW.KIMLEY-HORN.COM
TBPE # FIRM NO. 928

QuikTrip No. 4160
7601 W SH 29
GEORGETOWN, TEXAS

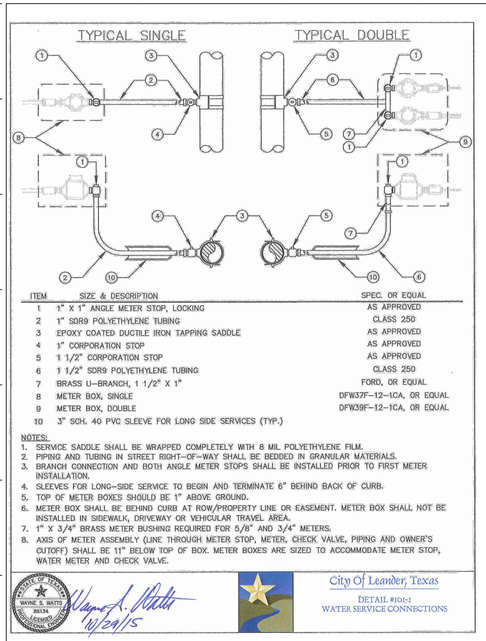
PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
CONTECH DRAINAGE DETAILS 2 OF 2

SHEET NUMBER:
C542

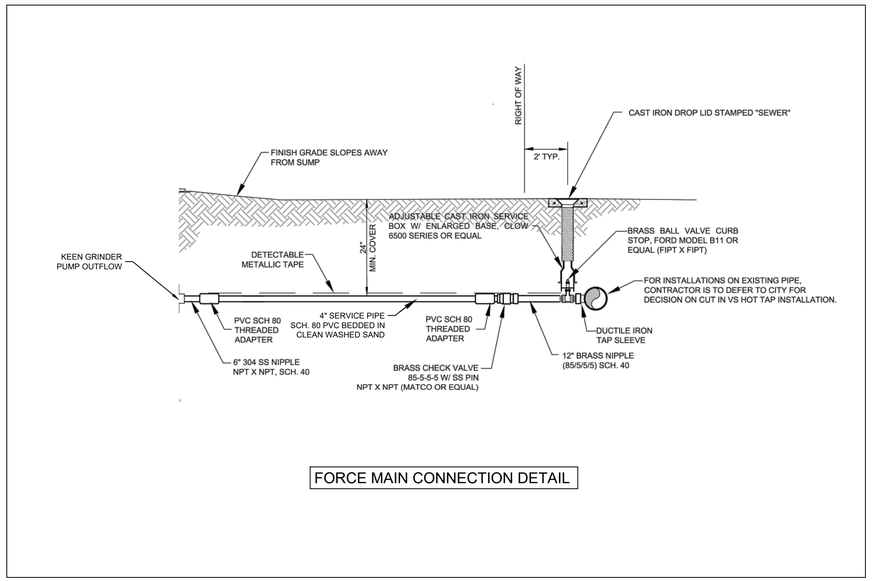


ITEM	SIZE & DESCRIPTION	SPEC. OR EQUAL
1	1" X 1" ANGLE METER STOP, LOCKING	AS APPROVED
2	1" SDR9 POLYETHYLENE TUBING	CLASS 250
3	EPOXY COATED DUCTILE IRON TAPPING SADDLE	AS APPROVED
4	1" CORPORATION STOP	AS APPROVED
5	1 1/2" CORPORATION STOP	AS APPROVED
6	1 1/2" SDR9 POLYETHYLENE TUBING	CLASS 250
7	BRASS U-BRANCH, 1 1/2" X 1"	FORD, OR EQUAL
8	METER BOX, SINGLE	DFW37F-12-1CA, OR EQUAL
9	METER BOX, DOUBLE	DFW39F-12-1CA, OR EQUAL
10	3" SCH. 40 PVC SLEEVE FOR LONG SIDE SERVICES (TYP.)	

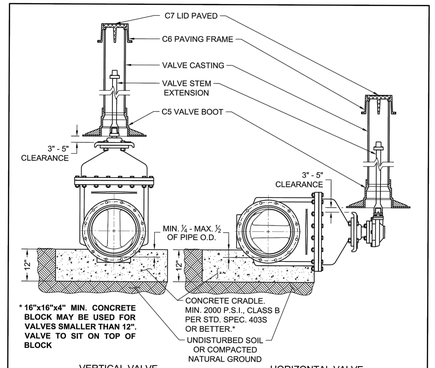
NOTES:
1. SERVICE SADDLE SHALL BE WRAPPED COMPLETELY WITH 8 MIL POLYETHYLENE FILM.
2. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR MATERIALS.
3. BRANCH CONNECTION AND BOTH ANGLE METER STOPS SHALL BE INSTALLED PRIOR TO FIRST METER INSTALLATION.
4. SLEEVES FOR LONG-SIDE SERVICE 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 11" BELOW TOP OF BOX. METER BOXES ARE SIZED TO ACCOMMODATE METER STOP, WATER METER AND CHECK VALVE.

STATE OF TEXAS · WAYNE S. WATTS · 86534 · LICENSED · PROFESSIONAL ENGINEER · 11/24/15

City Of Leander, Texas
DETAIL #101-1
WATER SERVICE CONNECTIONS



FORCE MAIN CONNECTION DETAIL



*** 16"x16"x4" MIN. CONCRETE BLOCK MAY BE USED FOR VALVES SMALLER THAN 12". VALVE TO SIT ON TOP OF BLOCK**

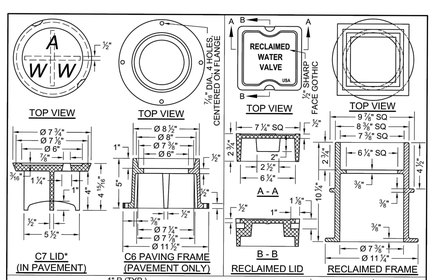
VERTICAL VALVE

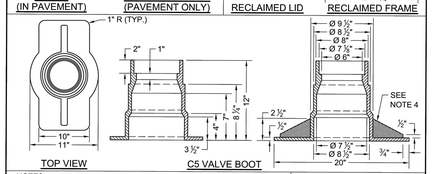
HORIZONTAL VALVE
ONLY TO BE USED WHEN CALLED OUT ON THE DRAWINGS.

NOTES:
1. WELD SOCKET 3/8" 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 SPI, WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPI. WW-27D. ALL COVERS SHALL HAVE **"RECLAIMED WATER"** CAST INTO THEM.

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 1 OF 4





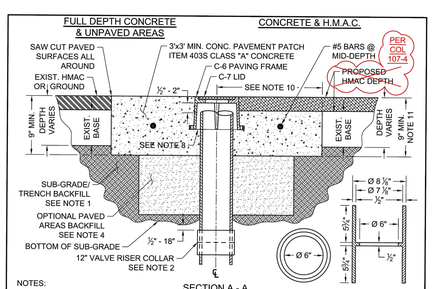
NOTES:
1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID, FRAME, COLLAR AND BASE.
3. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
4. 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"	
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 2 OF 4

FULL DEPTH CONCRETE & UNPAVED AREAS

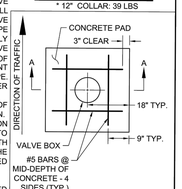


CONCRETE & H.M.A.C.

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

12" VALVE RISER COLLAR
* 12" COLLAR: 39 LBS



PLAN VIEW

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

RACHEL M. ROBERTS · 137894 · REGISTERED · PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

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TBPE #F-928 | TBPLS #10193,100

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GEORGETOWN, TEXAS

QT

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

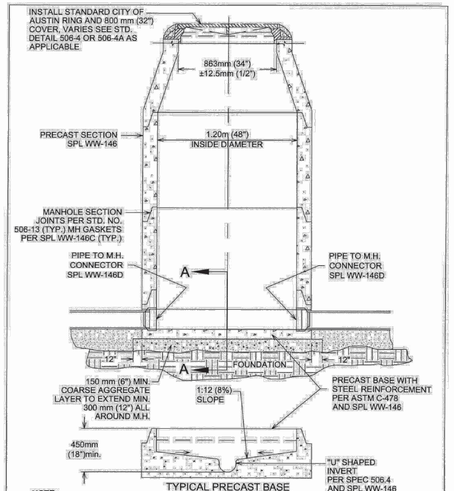
REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

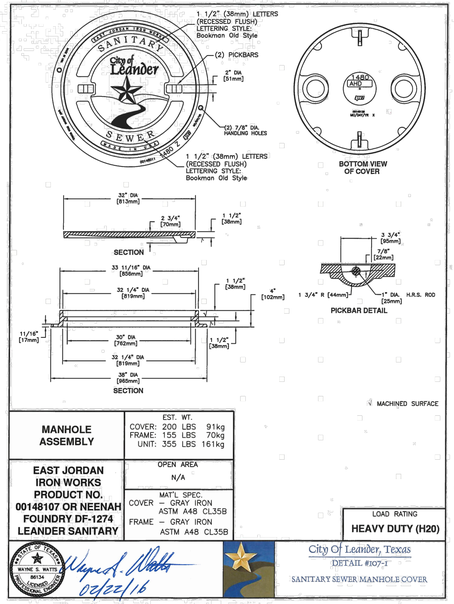
SHEET TITLE:
UTILITY DETAILS I

SHEET NUMBER:
C550

FILE LOCATION:K:\SNA_Civil\069304941 – QT 4160 Kauffman Loop & HWY29\Civil\QT\Plan Sheets\C – Utility Details.dwg TAB NAME:UTILITY DETAILS I USER:Olivia.Watts SAVED:3/27/2023 5:43 PM PLOTTED:4/21/2023 10:34 AM



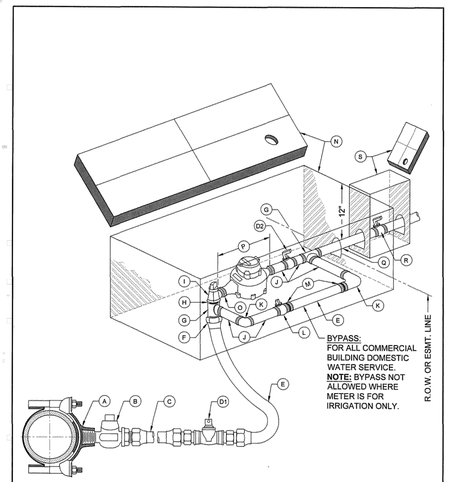
CITY OF AUSTIN AUSTIN WATER UTILITY	WASTEWATER MANHOLE ON PRECAST BASE	
Kathi L. Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-10



MANHOLE ASSEMBLY	EST. WT. COVER: 200 LBS 91kg FRAME: 155 LBS 70kg UNIT: 355 LBS 161kg	LOAD RATING HEAVY DUTY (H20)
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	

WAYNE S. WATTS 88134 LICENSED PROFESSIONAL ENGINEER
Wayne S. Watts 06/02/16

City Of Leander, Texas
DETAIL #107-1
SANITARY SEWER MANHOLE COVER



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

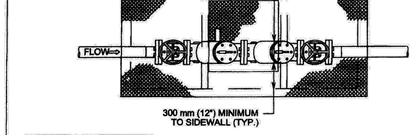
NOTES:

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.

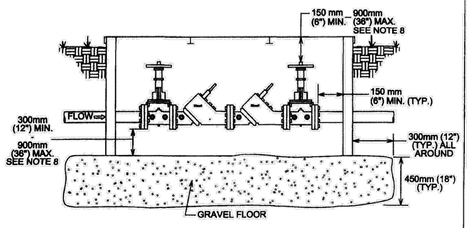
RECLAIMED WATER:

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



RESTRAINED DUCTILE IRON PIPE AND FITTINGS REQUIRED FROM BACKFLOW ASSEMBLY TO CITY MAIN. RESTRAIN EACH WAY AS DESIGNED AND REQUIRED BY AN ENGINEER LICENSED BY THE STATE OF TEXAS.



CITY OF AUSTIN AUSTIN WATER UTILITY	STANDARD BACKFLOW PREVENTER ON FIRE LINE WITH MASTER METER	
Kathi L. Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-19B 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-148A 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 AUSTIN WATER UTILITY	STANDARD BACKFLOW PREVENTER ON FIRE LINE WITH MASTER METER	
Kathi L. Flowers 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-19B 2 OF 2

RACHEL M. ROBERTS 137894 REGISTERED PROFESSIONAL ENGINEER
04/21/2023

PROJECT NO.:069304941

Kimley»Horn
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TBPE #F-928 NO. 928

QuikTrip No. 4160
7601 W SH 29
GEORGETOWN, TEXAS

PROTOTYPE:	P-112 (11/18/22)
DIVISION:	
VERSION:	001
DESIGNED BY:	OHW
DRAWN BY:	OHW
REVIEWED BY:	RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
UTILITY DETAILS II

SHEET NUMBER:
C551

Grinder Pumps — KEEN PUMP

KGP(X)

FM (PENDING)

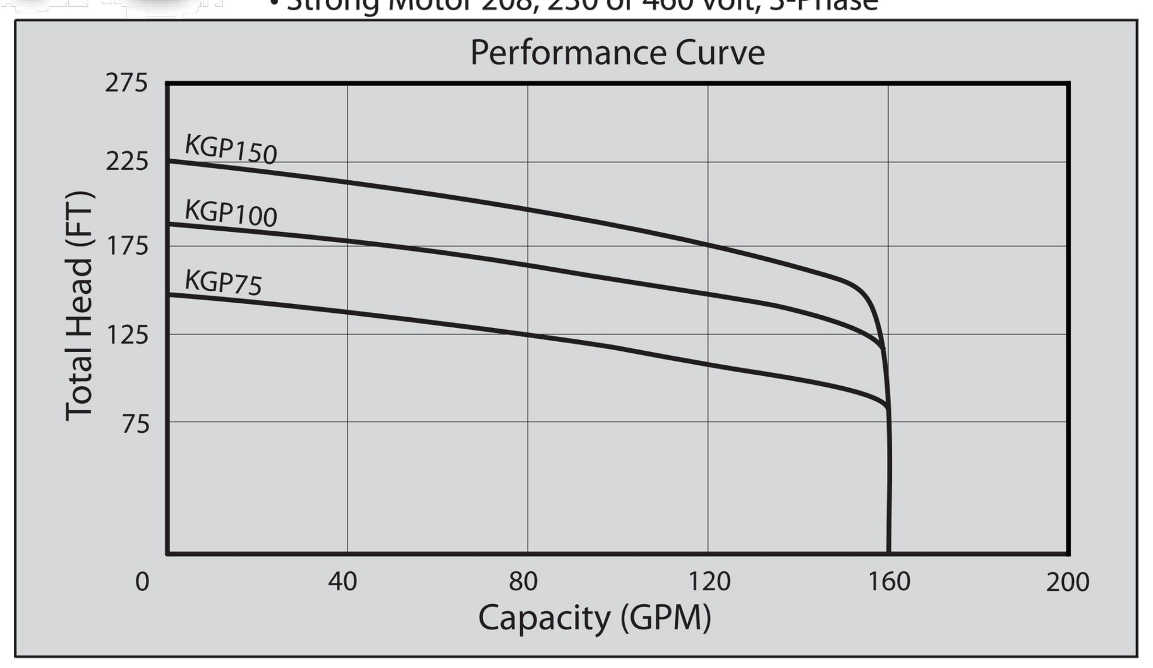
7.5 - 15HP Grinder Pump, 3 Phase (Class 1, Div. 1, Groups C & D Hazardous Location)

The KEEN PUMP **KGP(X)** series centrifugal grinder pumps are designed for municipal, commercial or industrial applications. The **KGP(X)** pump is also designed for use in pressure sewer applications or any piping network with long discharge distances or high heads.

The recessed vortex impeller design of the **KGP(X)** grinder pump provides trouble-free, non-overloading operation over the entire performance curve. The modular design provides quick and easy serviceability. The hardened stainless steel grinder assembly provides many years of dependable operation.

The **KGP(X)** series pump features:

- Interchangeable with Competitor Installations
- Dual Silicon-Carbide Mechanical Shaft Seals w/ Viton® Elastomers
- Slip-Fit Motor with Internal Overload Protection
- 3-Bearing Shaft Support (Upper / Lower / Sleeve)
- Internal Moisture Detection
- Strong Motor 208, 230 or 460 volt, 3-Phase



Rev. 09/2022

Features and Benefits

1. Watertight Cable Entrance
Agency-approved, watertight strain relief cord grips with compression grommets protects outer cord jacket. Epoxy-filled inner cord cap provides anti-wicking moisture protection to the motor even if power cable is cut or damaged. 40' UL power & control cords. Additional sealing is accomplished by wire terminal plate, separating cord cap from motor housing.

2. Modular Pump Design
Commonality of parts across the Keen product line minimizes the amount of parts required for servicing. Heavy-duty ASTM A48, Class 35 cast iron components.

3. Strong Motor (U.S. Motor Manufacturer)
Powerful high-torque motor for strong pumping. 208/230/460 Volt, 3-phase. Slip-Fit stator efficiently transfers heat to cast housing. Class H construction with overload protection in oil-filled chamber for cool operation and long motor life. Inverter-duty capable for VFD / soft start operation.

3a. Oil
Proprietary Keen oil ensures industry-low operating temperatures.

4. Solid Bearing Support
Two-bearing design featuring high load-rated angular contact for 100,000 hour B-10 life.

5. Severe Duty Dual Mechanical Seals
Dual silicon carbide mechanical shaft seals w/ Viton® Elastomers provide twice the moisture and grit protection for the motor. Dual seals are housed in a secondary oil-filled seal chamber. Tougher silicon carbide seals better handle sand, grit and abrasive materials. ** Additional bronze labyrinth seal for explosion-proof model.

6. Moisture Detection
Seal leak probe signals alarm in control panel for scheduled maintenance.

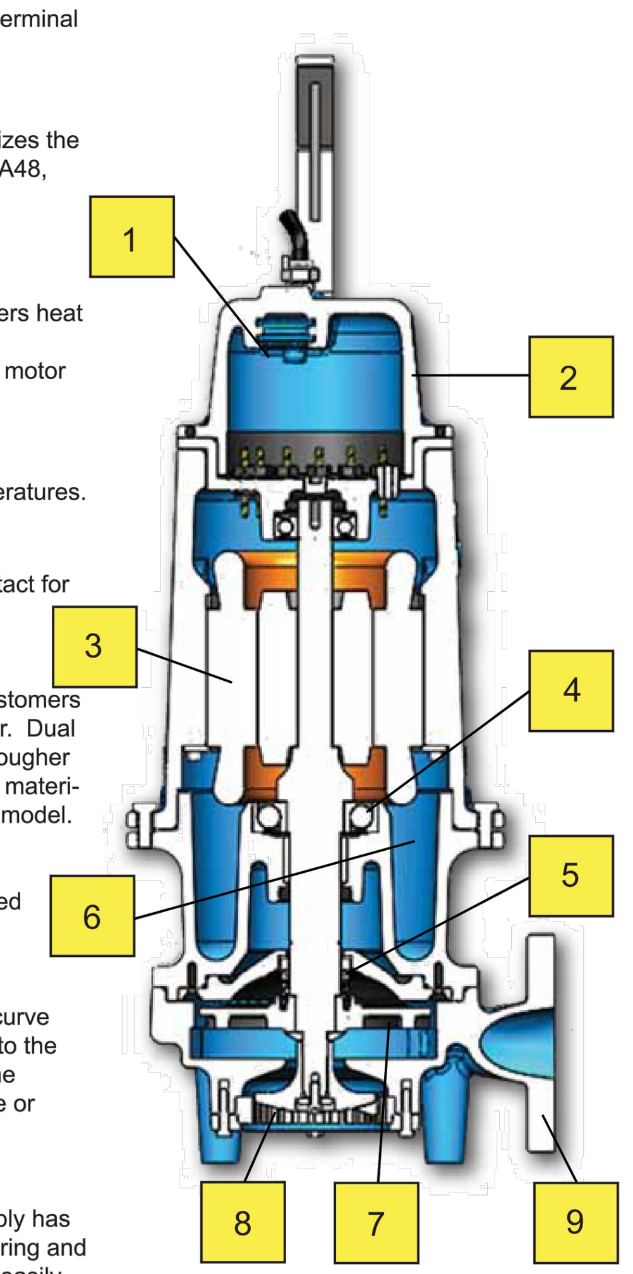
7. Non-Overloading Hydraulic Design
Recessed centrifugal impeller allows 100% performance curve operation from shut-off to maximum flow without damage to the pump or system. The recessed, vortex impeller is out of the passageway of fluid flow, eliminating concerns of blockage or wear.

8. Proven Grinder Assembly
Hardened (Rockwell 58-60) stainless steel grinder assembly has 30+ years proven field experience. The reversible grinder ring and grinder impeller effectively reduce solids into a fine slurry, easily passable in a piping system without concerns of clogging. Highly efficient 17,250 cuts/secon.

9. Standard Flange Connection
2-1/2" / 3" Horizontal, Class 125 ANSI discharge flange. Industry standard, 4-bolt pattern.

7.5-15HP Grinder Pump KGP(X)75/100/150

FM (PENDING)

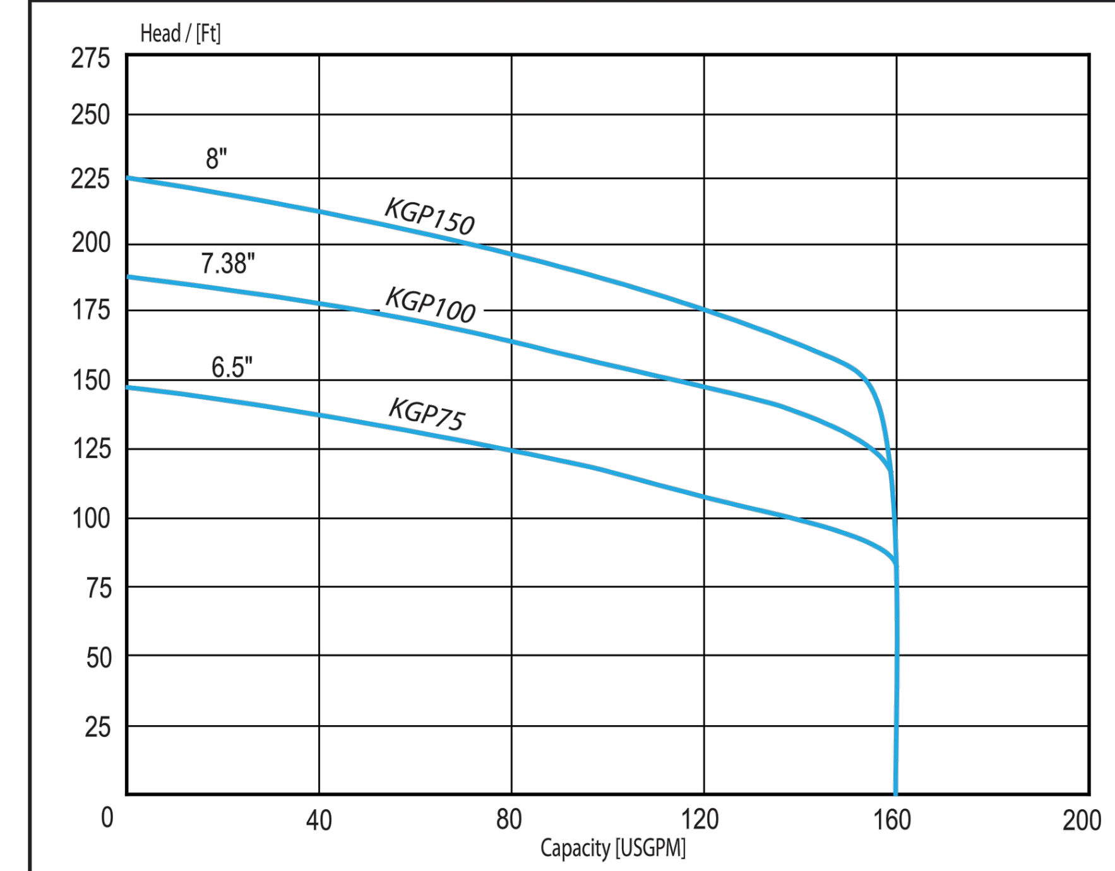


KEEN PUMP
471 US HWY 250 East · Ashland, Ohio 44805
419.207.9400 fax 419.207.8031
www.keenpump.com

KEEN PUMP

GENERAL		MOTOR DATA	
Pump Model	KGP(X)75/100/150	HP / Power Supply	7.5-15HP / 3 ϕ, 60 Hz
PUMP DATA		Poles / Rated Speed	2 P / 3450 rpm
Date	09/2022	Insulation Class	H Class
Discharge Flange	2-1/2 & 3" ANSI Horizontal	Full Load Amps	See Chart
Grinder Ring	Hardened SST		
Impeller Type / Std. Dia.	Recessed / As Shown		

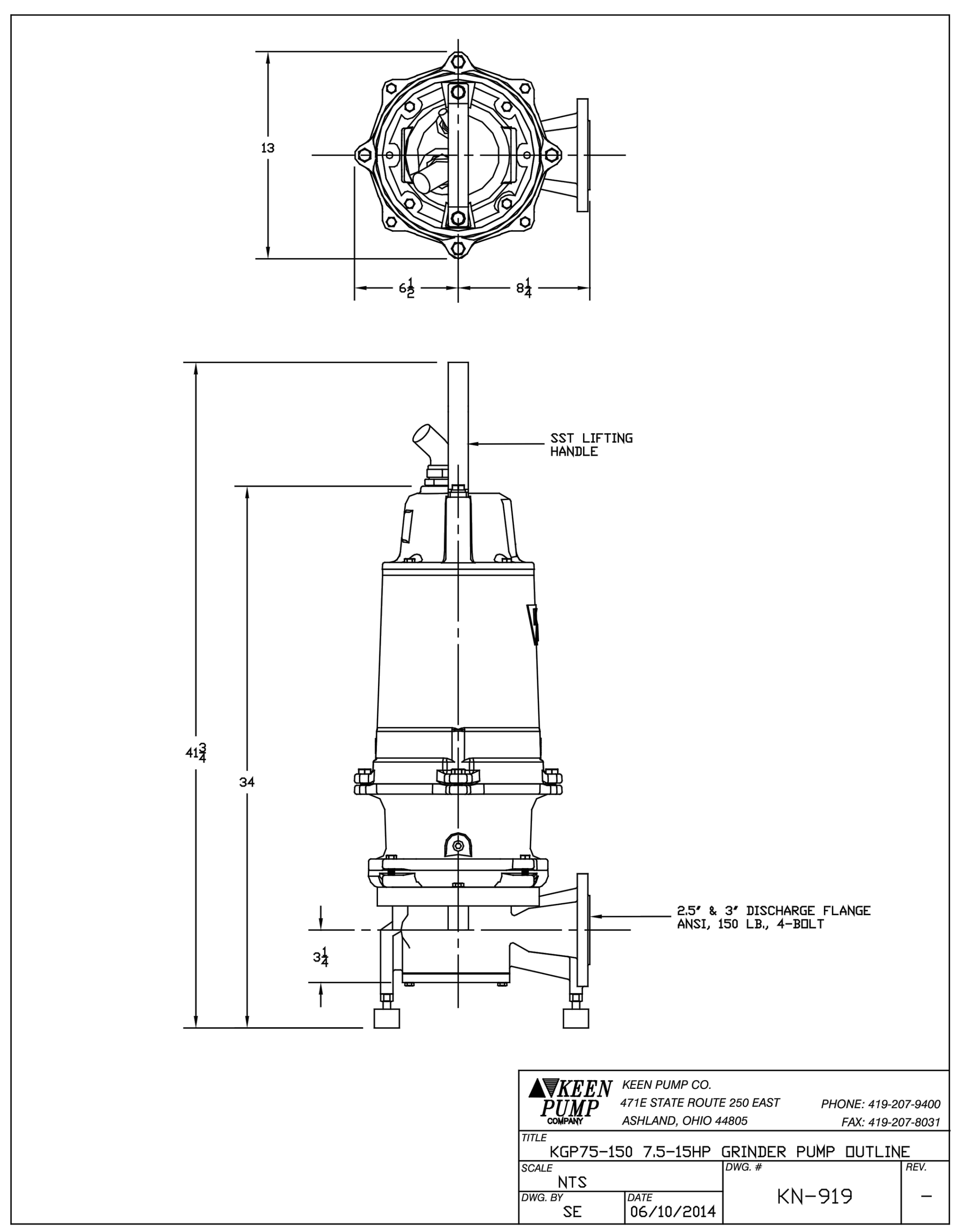
PERFORMANCE CURVE



Models	Electrical Data			
	HP	Volts	Phase	Full Load Amps
KGP(X)75-03	7.5	208	3	39.8
KGP(X)75-23	7.5	230	3	34.5
KGP(X)75-43	7.5	460	3	17.3
KGP(X)100-03	10	208	3	55.6
KGP(X)100-23	10	230	3	48.5
KGP(X)100-43	10	460	3	24.3
KGP(X)150-03	15	208	3	68.5
KGP(X)150-23	15	230	3	59.5
KGP(X)150-43	15	460	3	29.8

* Performance with clear water and ambient temp 20ºC (68ºF)

Rev. 09/2022

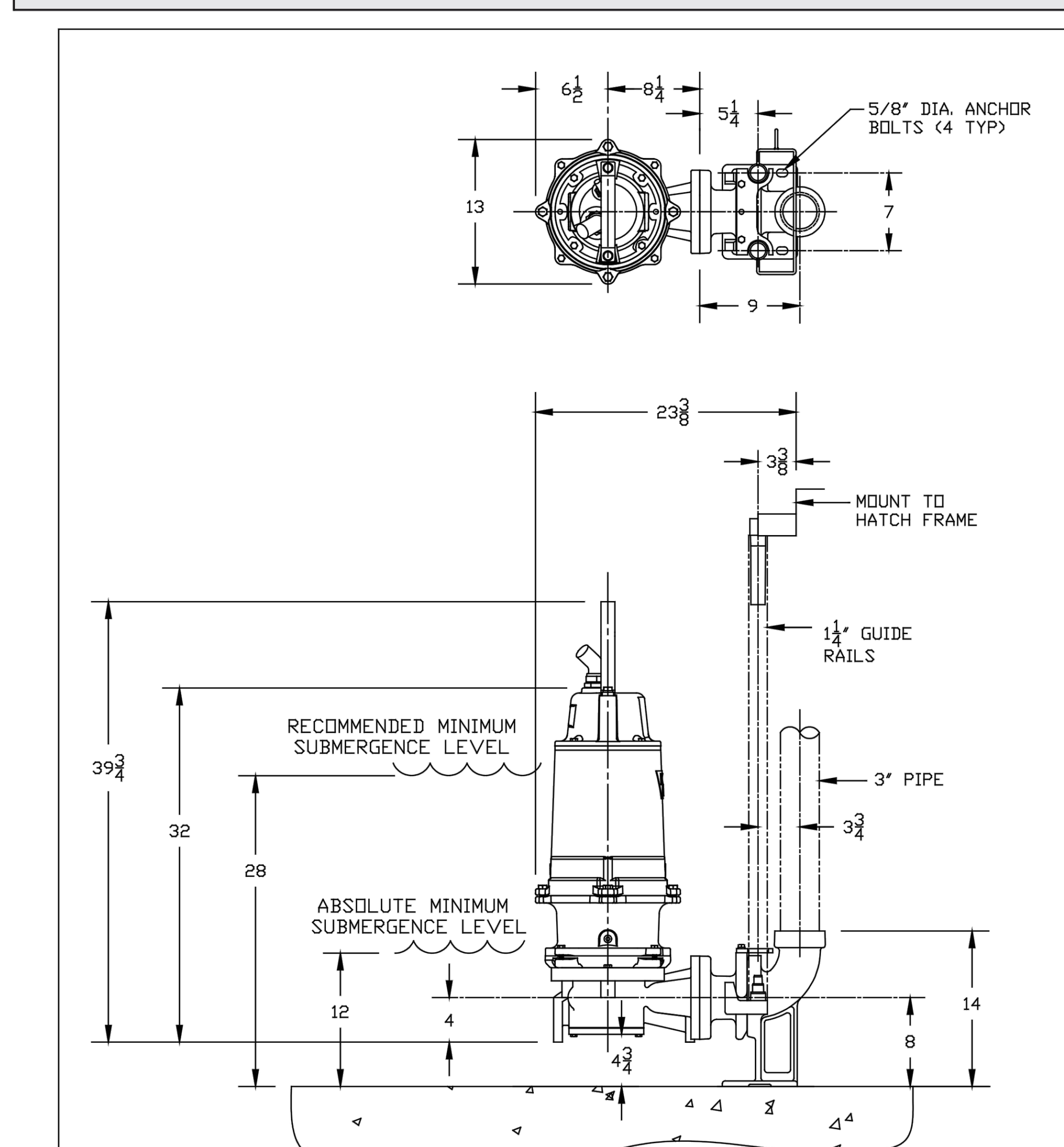


KEEN PUMP

Section GRINDERS
Date Sept. 2022

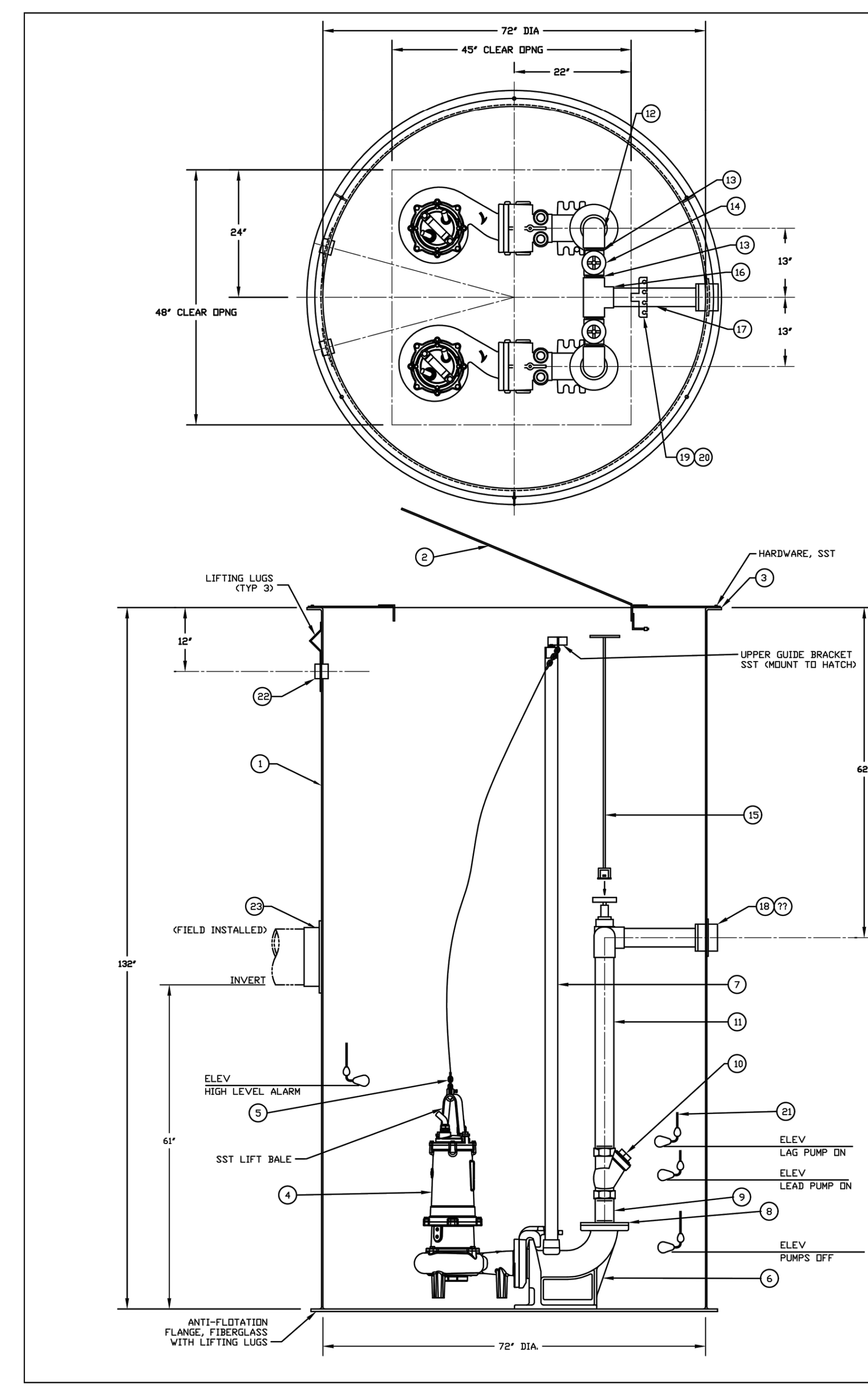
Pump Series	KGP	SUBMERSIBLE GRINDER PUMPS

LIFTOUT DIMENSIONAL DATA



Notes:
1. All dimensions in inches unless noted.
2. Discharge flange 3" NPT.
3. Absolute minimum and recommended minimum submergence levels noted.
4. Dimensions may vary due to normal manufacturing tolerances.
5. If discharge pipe is larger than discharge elbow, eccentric reducer must be used limited to 2X larger maximum.

File: KGP Liftout Dimensions



BILL OF MATERIAL			
1	B72132SD4-SQ	BASIN	1
2	C72HSA-SAFE-KL4	COVER	1
3	GASK-BCVR	BASIN GASKET	19
4	KGP75M2-03SL	GRINDER PUMP	2
5	KCP650-11	CHAIN PACKAGE	2
6	KL4	LIFT OUT ASSEMBLY	2
7	PIPE200A295	PIPE 2" X 113" CUT SST40	4
8	B4X3SS	REDUCER BUSHING SST	3
9	PIPE300A010	PIPE 3" X 8-1/2" TBE PVC80	2
10	BCV300	BALL CHECK VALVE 3" CI	2
11	PIPE300A106	PIPE 3" X 40" TOE PVC80	2
12	90EL300S	ELBOW 3" PVC80	2
13	PIPE300A003	PIPE 3" X 4-1/2" TOE PVC80	4
14	GV300	GATE VALVE 3" BRASS	2
15	EHGV3SSA023	SST EXTENSION HANDLE	2
16	TEE300S	TEE 3" PVC	1
17	PIPE300A103	PIPE 3" X 20" TOE PVC80	1
18	DF400SS	DISCHARGE FLANGE SST	1
19	KP-4FB	FLOAT BRACKET	1
20	1214	RELIEF BUSHING	4
21	KP-CF40	CONTROL FLOATS	4
22	CF200P	CONDUIT FLANGE 2"	2
23	KP-4ADF	INLET HUB 4"	1
24	SUPPLIED WITH BASIN	LIFT LUGS	3
25	KCP7-40-03D (NOT SHOWN)	CONTROL PANEL	1
26	CRADLE (NOT SHOWN)	SHIPPING CRADLE (2 IN SET)	1
27	SEALERRIBBON (NOT SHOWN)	RIBBON SEALER	2.00Ft

APPROVED BY: ____________
DATE: ____________

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

KEEN PUMP CO. — BASIN 72X132 KGP75M2-03SL KL4 DUPLEX ALUM COVER — NTS — DLM — 03-22-23 — KN-716_37503 — 0

RACHEL M. ROBERTS 137894 REGISTERED PROFESSIONAL ENGINEER 04/21/2023

PROJECT NO.:069304941

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TBPE FIRM NO. 928

QuikTrip No. 4160
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GEORGETOWN, TEXAS

PROTOTYPE: P-112 (11/18/22)
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VERSION: 001
DESIGNED BY: OHW
DRAWN BY: OHW
REVIEWED BY: RMR

REV	DATE	DESCRIPTION

ORIGINAL ISSUE DATE:

SHEET TITLE:
KEEN GRINDER PUMP DETAILS

SHEET NUMBER:
C552

Inspection, Maintenance, Repair, and Retrofit Plan

MAINTENANCE

The Jellyfish Unit is a proprietary BMP manufactured by Contech Engineered Solutions and placed in line with the storm drainage system. The upstream facilities of the storm drainage system, including the combo inlets, HDPE pipes, and ADS detention system must be maintained to properly maintain and inspect the Jellyfish unit. The inlets and pipes should be checked regularly for signs of clogging or other defects in the system. The Jellyfish maintenance includes the removal of pollutants such as oil, trash, and debris, the removal of collected sediments, rinsing and re-installing the filters, and the replacement of the filters as needed. The inspection activities include observing for standing water, physical damage to the deck or cartridge lid, and the amount of debris in the Maintenance Access Wall or inlet bay for vault systems.

Jellyfish Maintenance

Requirements Sediment removal for depths reaching 12 inches or greater, or within 3 years of the most recent sediment cleaning, whichever occurs sooner. Floatable trash, debris, and oil removal. Deck cleaned and free from sediment. Filter cartridges rinsed and re-installed as required by the most recent inspection results, or within 12 months of the most recent filter rinsing, whichever occurs sooner. Replace tentacles if rinsing does not restore adequate hydraulic capacity, remove accumulated sediment, or if damaged or missing. It is recommended that tentacles should remain in service no longer than 5 years before replacement. Damaged or missing cartridge deck components must be repaired or replaced as indicated by results of the most recent inspection. The unit must be cleaned out and filter cartridges inspected immediately after an upstream oil, fuel, or chemical spill. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.

Procedure Provide traffic control measures as necessary. Open all covers and hatches. Use ventilation equipment as required. To access the cartridge deck for filter cartridge service, descend into the structure and step directly onto the deck. Caution: Do not step onto the maintenance access wall (MAW) or backwash pool weir, as damage may result. Note that the cartridge deck may be slippery. Maximum weight of maintenance crew and equipment on the cartridge deck not to exceed 450 lbs.

Filter Cartridge Removal Remove a cartridge lid. Remove cartridges from the deck using the lifting loops in the cartridge head plate. Rope should be used. Replace and secure the cartridge lid on the exposed empty receptacle as a safety precaution. Do not expose more than one empty cartridge receptacle at a time.

Filter Cartridge Rinsing Remove all tentacles from the cartridge head plate. Position tentacles in a container (or over the MAW), with the threaded connector (open end) facing down, so rinse water is flushed through the membrane and captured in the container. Using a low-pressure garden hose sprayer, direct water spray onto the tentacle membrane, sweeping from top to bottom along the length of the tentacle. Rinse until all sediment is removed from the membrane.

Sediment and Floatables Extraction Perform vacuum cleaning of the Jellyfish Filter only after filter cartridges have been removed from the system. Access the lower chamber for vacuum cleaning only through the maintenance access wall (MAW) opening. Do not lower the vacuum wand through a cartridge receptacle, as damage to the receptacle will result. Vacuum floatable trash, debris, and oil,

from the MAW opening or inlet bay. Alternatively, floatable solids may be removed by a net or skimmer. Pressure wash cartridge deck and receptacles to remove all sediment and debris. Sediment should be rinsed into the sump area. Remove water from the sump area. Vacuum or pump equipment should only be introduced through the MAW or inlet bay. Remove the sediment from the bottom of the unit through the MAW or inlet bay opening.

Chemical Spills Caution: If a chemical spill has been captured, do not attempt maintenance. Immediately contact the local hazard response agency and contact Contech.

Material Disposal The accumulated sediment must be handled and disposed of in accordance with regulatory protocols. Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local wastewater treatment plant or on-site treatment and discharge.

Contech Storage System Maintenance

Underground detention vaults are similar in function as open detention basins. They have moderate to high maintenance requirements, depending on the extent to which future maintenance needs are anticipated during the design stage. Responsibilities for both routine and non-routine maintenance tasks need to be clearly understood and enforced. If regular maintenance and inspections are not undertaken, the basin will not achieve its intended purposes.

Inspections. Storage vaults should be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. When possible, inspections should be conducted during wet weather to determine if the vault is meeting the target detention times. In particular, the vault's flow control device should be regularly inspected for evidence of clogging, or conversely, for too rapid a release. If the design drawdown times are exceeded by more than 24 hours, then repairs should be scheduled immediately.

Debris and Litter Removal. Debris and litter will accumulate near the vault's flow control device. Particular attention should be paid to floating debris that can eventually clog the control device or riser or orifice.

Structural Repairs and Replacement. With each inspection, any damage to the structural elements of the system (pipes, concrete drainage structures, etc.) should be identified and repaired immediately.

Nuisance Control. Standing water within the bottom of the basin can create nuisance conditions for nearby residents. Odors, mosquitoes, and litter are all occasionally perceived to be problems. Most of these problems are generally a sign that regular inspections and maintenance are not being performed.

Sediment Removal. When properly designed, storage vaults will accumulate quantities of sediment over time. Sediment accumulation is a serious maintenance concern in vaults for several reasons. First, the sediment gradually reduces available stormwater management storage capacity within the vault. Second sediment tends to accumulate around the control device. Sediment deposition increases the risk that the orifice will become clogged, and gradually reduces storage capacity reserved for pollutant removal. Sediment can also be re-suspended if allowed to accumulate over time. For these reasons, accumulated sediment needs to be removed from the lower stage when sediment buildup fills 20% of the volume of the vault or at least every 10 years.

INSPECTION

Inspection Timing A minimum of quarterly inspections during the first year of operation to assess the sediment and floatable pollutant accumulation, and to ensure proper functioning of the system. Minimum frequency should be once per year after first year. Inspection is recommended after each major storm event. Inspection is required immediately after an upstream oil, fuel or other chemical spill.

Procedure Provide traffic control measures as necessary. Inspect the MAW or inlet bay for floatable pollutants such as trash, debris, and oil sheen. Measure oil and sediment depth in several locations, by lowering a sediment probe until contact is made with the floor of the structure. Record sediment depth, and presences of any oil layers. Inspect cartridge lids. Missing or damaged cartridge lids to be replaced. Inspect the MAW (where appropriate), cartridge deck and receptacles, and backwash pool weir, for damaged or broken components.

Dry weather inspections Inspect the cartridge deck for standing water, and/or sediment on the deck. There is no standing water under normal operating conditions. Standing water inside the backwash pool, but not outside the backwash pool, indicates that the filter cartridges need to be rinsed. Standing water outside the backwash pool is not anticipated and may indicate a backwater condition caused by high water elevation in the receiving water body, or possibly a blockage in downstream infrastructure. Any appreciable sediment (≥1/16”) accumulated on the deck surface should be removed.

Wet weather inspections Observe the rate and movement of water in the unit. Note the depth of water above deck elevation within the MAW or inlet bay. Less than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges (i.e. cartridges located outside the backwash pool). Greater than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges and each of the hi-flow cartridges (i.e. cartridges located inside the backwash pool), and water should be overflowing the backwash pool weir. 18 inches or greater and relatively little flow is exiting the cartridge lids and outlet pipe, this condition indicates that the filter cartridges need to be rinsed.

REPAIR, REPLACEMENTS & RETROFITS

Filter Cartridge Reinstallation and Replacement Cartridges should be installed after the deck has been cleaned. It is important that the receptacle surfaces be free from grit and debris. Remove cartridge lid from deck and carefully lower the filter cartridge into the receptacle until head plate gasket is seated squarely in receptacle. Replace the cartridge lid and check to see that both male threads are properly seated before rotating approximately 1/3 of a full rotation until firmly seated. If rinsing is ineffective in removing sediment from the tentacles, or if tentacles are damaged, provisions must be made to replace the spent or damaged tentacles with new tentacles. Contact Contech to order replacement tentacles.

In the event that the Jellyfish vault or other unit components need to be repaired or retrofit, the responsible party shall reach out to Contech Engineered Solutions to determine the best course of action.

RECORDKEEPING PROCEDURES

The attached Inspection and Maintenance Log should be used to monitor the status of the Jellyfish.

Responsible Party: Kyla Rudd, Environmental Project Manager

Signature of Responsible Party

3/21/2023
Date

Design Engineer: Rachel Roberts, P.E.

Signature of Design Engineer

03/21/2023
Date

(this space is intentionally left blank)

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

I Kyla Rudd,
Print Name

Environmental Project Manager,
Title - Owner/President/Other

of QT South LLC,
Corporation/Partnership/Entity Name

have authorized Rachel Roberts
Print Name of Agent/Engineer

of Kimley-Horn
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:

Kyla Rudd
Applicant's Signature

3/21/2023
Date

THE STATE OF Oklahoma §

County of Tulsa §

BEFORE ME, the undersigned authority, on this day personally appeared Kyla Rudd 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 21 day of March, 2023.

PAIGE HEFLIN NOTARY # 20013729 EXP. 11/06/24 PUBLIC STATE OF OKLAHOMA

Paige Heflin
NOTARY PUBLIC

Paige Heflin
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11/06/24

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: QT 4160
Regulated Entity Location: Georgetown, Texas
Name of Customer: QT South LLC
Contact Person: Kyla Rudd Phone: 918-615-7233
Customer Reference Number (if issued):CN _____
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☑ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

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

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

Site Location (Check All That Apply):

☑ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	1.89 Acres	$ 4,000
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	5 Tanks	$ 3,250
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: Rachel Roberts Date: 04/21/2023

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 605786011		RN

SECTION II: Customer Information

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

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

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

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

QT South, 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)*
12299906	17306753751	73-0675375	

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

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

13. Independently Owned and Operated?
☒ Yes ☐ No

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

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

15. Mailing Address:

QT South, LLC
4705 South 129th East Avenue

City	State	ZIP	ZIP + 4
Tulsa	OK	74134	

16. Country Mailing Information *(if outside USA)*

17. E-Mail Address *(if applicable)*
krudd@quiktrip.com

18. Telephone Number | **19. Extension or Code** | **20. Fax Number** *(if applicable)*

(918) 615-7233		( ) -

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.)*

QT 4160

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	7601 W SH 29							
	City	Georgetown	**State**	TX	**ZIP**	78628	**ZIP + 4**	
24. County	Williamson							

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

25. Description to Physical Location:	1.89-acre property located southeast of Highway 29 and Kauffman Loop outside the city limits but inside the ETJ of Leander, Texas				
26. Nearest City			**State**	**Nearest ZIP Code**	
Leander			TX	78628	

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:	30.637127		**28. Longitude (W) In Decimal:**	-97.817061	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

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.)*

Gas Station with convenience store

34. Mailing Address:	**7601 W SH 29**							
	City	Georgetown	**State**	TX	**ZIP**	78628	**ZIP + 4**	
35. E-Mail Address:	krudd@quiktrip.com							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(918) 615-7233		( ) -

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

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

SECTION IV: Preparer Information

40. Name:	Rachel Roberts		**41. Title:**	Project Engineer
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**	
(210) 762-5289		( ) -	Rachel.Roberts@kimley-horn.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:	QT South, LLC	**Job Title:**	Environmental Project Manager	
Name *(In Print):*	Kyla Rudd		**Phone:**	(918) 615- **7233**
Signature:			**Date:**	3/21/2023