

# Texas Commission on Environmental Quality

## Edwards Aquifer Application Cover Page

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### Our Review of Your Application

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

### Administrative Review

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

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

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.
3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.
4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

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

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.
6. If the geologic assessment was completed before October 1, 2004 and the site contains “possibly sensitive” features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

### Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.
2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

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

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

**Mid-Review Modifications**

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

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

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

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

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

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

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

<b>1. Regulated Entity Name:</b> Circle K Stores, Inc.				<b>2. Regulated Entity No.:</b> RN102432044					
<b>3. Customer Name:</b> Circle K				<b>4. Customer No.:</b> CN600134456					
<b>5. Project Type:</b> (Please circle/check one) <small>MODIFICATION</small>	New	Modification <input checked="" type="checkbox"/>			Extension	Exception			
<b>6. Plan Type:</b> (Please circle/check one)	WPAP	CZP	SCS	UST <input checked="" type="checkbox"/>	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
<b>7. Land Use:</b> (Please circle/check one)	Residential		Non-residential <input checked="" type="checkbox"/>			<b>8. Site (acres):</b>		<b>1.0090 AC</b>	
<b>9. Application Fee:</b>	\$1,300.00		<b>10. Permanent BMP(s):</b>			N/A			
<b>11. SCS (Linear Ft.):</b>	N/A		<b>12. AST/UST (No. Tanks):</b>			2			
<b>13. County:</b>	Bexar		<b>14. Watershed:</b>			Salado Creek			

# Application Distribution

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

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

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

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

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

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



Print Name of Customer/Authorized Agent

**Matthew Marek**

Signature of Customer/Authorized Agent

Date **7/7/2023**

**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: Matthew Marek

Date: 7/7/2023

Signature of Customer/Agent:



## Project Information

1. Regulated Entity Name: Circle K Stores, Inc.
2. County: Bexar
3. Stream Basin: Salado Creek
4. Groundwater Conservation District (If applicable): \_\_\_\_\_
5. Edwards Aquifer Zone:  
 Recharge Zone  
 Transition Zone
6. Plan Type:  
 WPAP  
 SCS  
 Modification  
 AST  
 UST  
 Exception Request

7. Customer (Applicant):

Contact Person: Doug Ford

Entity: Circle K Stores Inc.

Mailing Address: 19500 Bulverde Road

City, State: San Antonio, TX

Zip: 7 8 2 5 9

Telephone: 210-326-4607

FAX: -

Email Address: doug.ford@circlek.com

8. Agent/Representative (If any):

Contact Person: Matthew Marek

Entity: Morris + Associates, Engineers

Mailing Address: 14139 Huffmeister Road

City, State: Cypress, TX

Zip: 7 7 4 2 9

Telephone: 832-334-5001

FAX: -

Email Address: matt@morrisassoc.com

9. Project Location:

The project site is located inside the city limits of San Antonio

The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of \_\_\_\_\_.

The project site is not located within any city's limits or ETJ.

10.  The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

SWC of Bitters and Huebner Road - 16555 Huebner Road, San Antonio TX

11.  **Attachment A – Road Map.** A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

12.  **Attachment B - USGS / Edwards Recharge Zone Map.** A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:

Project site boundaries.

USGS Quadrangle Name(s).

Boundaries of the Recharge Zone (and Transition Zone, if applicable).

Drainage path from the project site to the boundary of the Recharge Zone.

13.  **The TCEQ must be able to inspect the project site or the application will be returned.** Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

Survey staking will be completed by this date: Completed

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

APPROVED PLAN SET FROM EAA HAS  
BEEN SUBMITTED WITH ALL  
INFORMATION REQUESTED IN THIS  
SECTION

15. Existing project site conditions are noted below:

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

### ***Prohibited Activities***

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

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

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

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

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

### ***Administrative Information***

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

- For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
- A request for an exception to any substantive portion of the regulations related to the protection of water quality.
- A request for an extension to a previously approved plan.

19.  Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

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

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

21.  No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.





**Edwards Aquifer  
Recharge Zone**

Solanazoe

CVS/pharmacy

W Bitters Rd

W Bitters Rd

W Bitters Rd

S Inwood Heights Dr

W Bitters Rd

Huebner Rd

W Bitters Rd

W Bitters Rd

W Bitters Rd

W Bitters Rd

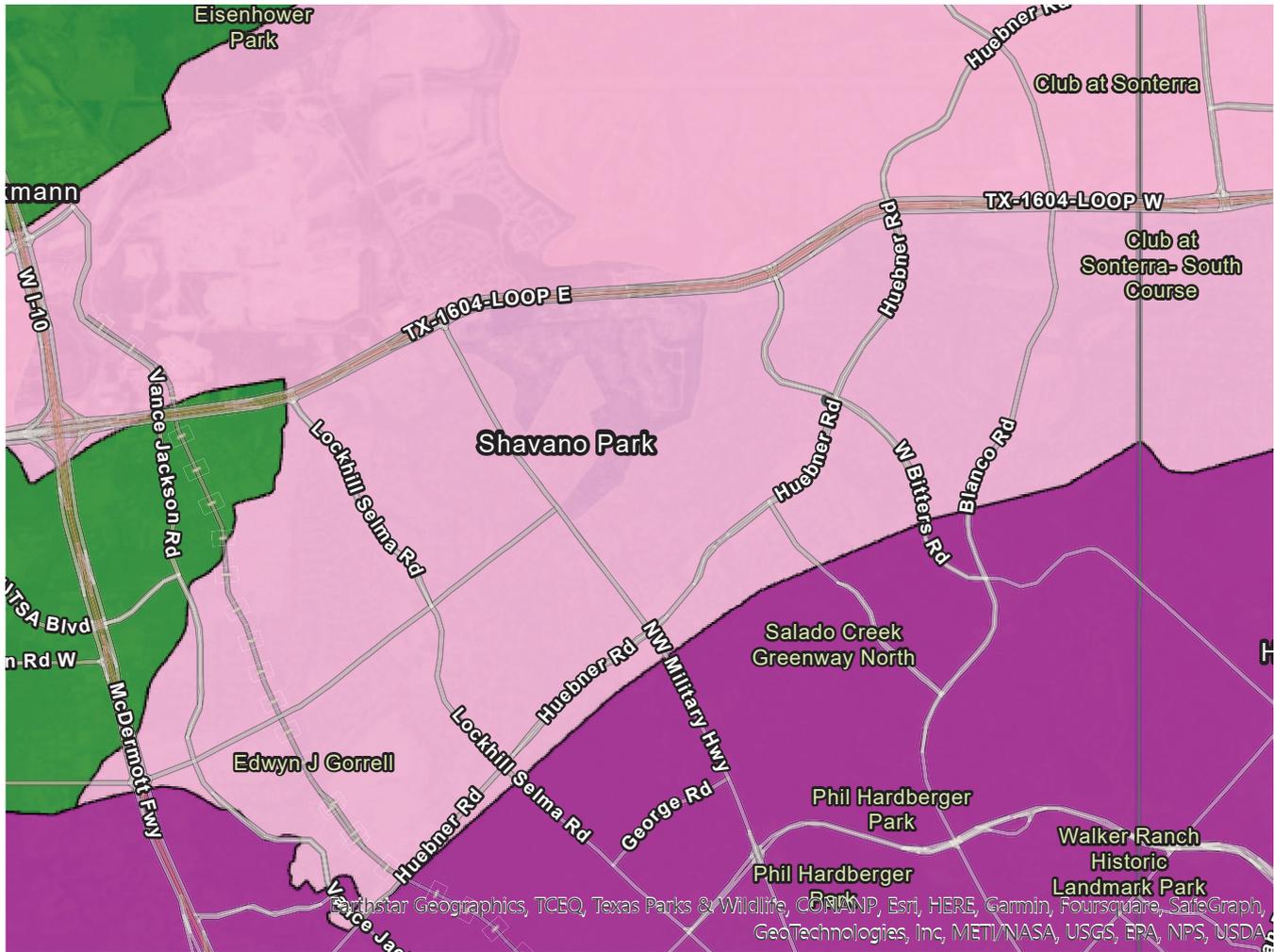
Huebner Rd

Huebner Rd

Huebner Rd

Huebner Rd

W Bitters Rd



Map data © Esri, HERE, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

E200-576  
S100-009



June 5, 2023

Mr. Doug Ford  
Circle K Stores Inc.  
3254 Roan Way  
San Antonio, Texas 78259

RE: **APPROVAL OF APPLICATION FOR MAJOR MODIFICATION (AMM)** for the installation of Underground Storage Tanks (USTs) at Circle K Store #2741039 located at 16555 Huebner Road, San Antonio, Texas 78248

Dear Mr. Marek:

This letter responds to the AMM plan submitted to the Edwards Aquifer Authority (EAA) on June 1, 2023, with additional information submitted on June 2, 2023. The plan was submitted as an amendment to the AMM previously approved on November 4, 2022. The EAA staff have determined that the amended AMM, as proposed, complies with §713.609 of the Edwards Aquifer Authority Rules. Therefore, the proposed AMM is **approved** as submitted. For a list of approved activities please see the attached document.

If there are any changes made to the approved AMM, you must inform the EAA and obtain approval for the desired changes before proceeding. The actions performed pursuant to this approval must also comply with all federal, state, and local requirements applicable to the activities. Please note, per EAA rule §713.609, a facility may not use a UST unless a registration form is on file and approved by the EAA. In order to approve the registration form, EAA staff must inspect the facility to confirm that the major modification was completed as approved. The inspection is to be completed before the tanks are filled with product.

If you have any questions regarding the information above or the EAA's rules regarding storage tanks on the Edwards Aquifer Recharge Zone, please contact Mr. Kyle Craig, Recharge Zone Regulation Supervisor at (210) 222-2204.

Sincerely,

A handwritten signature in black ink, appearing to read "Roland Ruiz".

Roland Ruiz  
General Manager

RR:KC/epg  
Enclosures: Attachment A

Cc: Matt Marek - Morris & Associates, Engineers Inc.

## DOCUMENT ALSO SERVES AS ATTACHMENT C

### **Attachment A - Summary of Approved Major Modification (AMM) for the installation of Underground Storage Tanks (USTs)**

The AMM approved by the EAA on November 4, 2022, along with the amendments submitted to the EAA on June 1, 2023, with additional information submitted on June 2, 2023, includes the following activities for Circle K #2741039 located at 16555 Huebner Road, San Antonio, Texas 78248:

- Removal of two (2) 12,098-gallon USTs and associated piping.
- Installation of two (2) Modern Welding double-walled fiberglass-wrapped steel USTs for a total capacity of 24,065-gallons, with single-wall pump sumps. One UST is 12,033-gallons for regular unleaded gasoline and the second UST has two (2) compartments, with a 4,011-gallon compartment for premium gasoline and an 8,022-gallon compartment for diesel. The interstitial space of the tanks will be equipped with non-discriminating interstitial monitors.
- Product piping will consist of two-inch double-wall Dualoy 3000/LCX piping with Dualoy 3000/LCX secondary containment fittings. The piping contained inside the tank sumps and Under Dispenser Cabinets (UDCs) will be two-inch single-wall Dualoy 3000/L. The double-wall piping will transition to the primary piping inside the sumps and UDCs using Ameron two-inch termination secondary containment fittings. The Schrader valves on the secondary containment fittings will remain open to allow the detection of leaks inside the secondary containment of the piping.
- The primary product piping will be equipped with a pressurized line leak detection system that is designed to stop product flow if a leak is detected.
- The tank pit and pipe trenches will be lined with MPC Containment Petrogard X which will provide tertiary containment for the systems. The liner is to encapsulate all components of the UST system. The pipe trench will be sloped to direct any leaks to the tank pit.
- Each fill port will be equipped with EMCO Wheaton A1004EVR Double-Wall Spill Containers.
- Each tank compartment will be equipped with two horsepower fixed-speed Franklin Fueling FE Petro submersible pumps.
- Overfill prevention for the USTs will be provided by an EMCO Wheaton A1100EVR overfill valve which will be installed below the fill connection of each compartment.
- Bravo B1000E Series single wall model will be used as the UDCs.
- An OPW-10 Series double poppet safety shear valve will be installed on each product line at the dispenser islands to assure automatic shut-off of product flow during emergencies.

- Each of the product piping lines will be monitored by a liquid sensor which will be installed adjacent to the submersible pump in the pump sumps and in the UDCs.
- Two (2) observation wells will be located within the liner and will be equipped with a vapor sensor which is designed to detect a release into the tertiary level.
- The sensors for all tank compartments, piping, and sumps will be connected to a Veeder Root TLS 450 Automated Compliance and Site Management located in the store building. This central monitoring unit is designed to provide visual and audible alarms when hydrocarbon liquids or water are detected.

**Requirements to Remember:**

1. Filling Requirements:

EAA rule §713.604 requires that an Owner or Operator of a regulated UST states that an Owner or Operator of a UST located on the Recharge Zone may not fill a UST unless a registration is on file and approved by the EAA.

2. Registration Requirements:

EAA rule §713.604 requires an Owner or Operator of a regulated UST located on the Recharge Zone to register their tank(s) with the EAA and renew the registration every three years after initial registration. In addition, an updated registration documenting any changes or additional information concerning the status of any regulated tanks or facilities shall be filed within 30 days of the occurrence of the change or addition.

3. Notice Requirements:

EAA rule §713.610 requires an Owner or Operator of a regulated UST to provide written notice to the EAA **at least thirty days** prior to any intended commencement of construction, and **at least two business days** prior to the actual commencement of construction associated with this approved major modification.

4. Spill Reporting Requirements:

EAA rules §713.616 requires any release, discharge, or spill from an AST or UST in a reportable quantity under § 713.405 of the Authority's rules to be reported and addressed in accordance with the requirements contained in Chapter 713, Subchapter E, of the Authority's rules.



CIRCLE K STORES, INC.  
 1130 WEST WARNER ROAD, SUITE B  
 TEMPE, ARIZONA 85284

**FUEL TANK REPLACEMENT**  
**16555 HUEBNER ROAD SAN ANTONIO TX 78248**

SHEET #	SHEET NAME
TK001	COVER
	SURVEY
TK002	GENERAL NOTES
TK006	EQUIPMENT LIST
TK100	DEMO PLAN
TK101	SITE PIPING PLAN
TK102	SCHEMATIC WIRING, PIPING & DETAILS
TK104	EROSION CONTROL PLAN
TK105	EROSION CONTROL DETAILS
TK201	STANDARD TANKS
TK301	UST PLAN AND SECTIONS
TK500	TANK SUMP DETAILS
TK501	TANK SUMP DETAILS
TK502	TANK TOP HARDWARE DETAILS
TK503	DISPENSER SUMP DETAILS
TK504	FUEL SYSTEM DETAILS
SE1.0	FUEL ISLAND ELECTRICAL PLAN
GE1.0	FUEL SYSTEM DIAGRAMS



CIRCLE K STORES INC.  
 1130 WEST WARNER ROAD  
 SUITE B  
 TEMPE, AZ 85284  
 602-728-8000



MORRIS + ASSOCIATES  
 14139 HUFFMEISTER ROAD  
 CYPRESS, TX, 77429  
 PHONE: (832) 334-5000  
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**DESIGN CODES**

ALL CONSTRUCTION SHALL COMPLY WITH:  
 LOCAL BUILDING CODES AND ORDINANCES  
 LOCAL FIRE CODE AND ORDINANCES  
 NFPA 30  
 NFPA 30A  
 LATEST EDITION OF API RECOMMENDED PRACTICES - 1615

**SYMBOLS LEGEND**

API	AMERICAN PETROLEUM INSTITUTE	VAC	VOLT AMP CURRENT
N.C.	NORMALLY CLOSED	ELD	ENHANCED LEAK DETECTION
&	AND	VIO.	VIOLET
NIP	NIPPLE	GAL.	GALLON
@	AT	V.R.	VAPOR RECOVERY
NO.	NUMBER	GALV.	GALVANIZED
A.C.	ASPHALT CONCRETE	WHT	WHITE HEX HEXAGON
N.O.	NORMALLY OPEN	W/	WITH
APPROX.	APPROXIMATE	H.P.	HORSEPOWER
N.T.S.	NOT TO SCALE	I.D.	INSIDE DIAMETER
AUX.	AUXILIARY	"	INCH
N/A	NOT APPLICABLE	J-BOX	JUNCTION BOX
BLU.	BLUE	MAX.	MAXIMUM
O.D.	OUTSIDE DIAMETER	MFRS	MANUFACTURERS
BLK.	BLACK	MNPT	MALE NATIONAL PIPE THREADS
P	PRODUCT LINE	MIN.	MINIMUM
€	CENTERLINE	NPT	NATIONAL PIPE THREAD
PVC	POLYVINYL CHLORIDE	(N)	NEW
COMB.	COMBINATION		
PLC.	PLACES		
CONN.	CONNECTOR/CONNECTION		
±	PLUS OR MINUS		
CORP.	CORPORATION		
#	POUND OR NUMBER		
CSLD	CONTINUOUS STATISTICAL LEAK DETECTION		
QTY.	QUANTITY		
Ø	DIAMETER		
REF.	REFERENCE		
DIM.	DIMENSION		
REQD.	REQUIRED		
D.C.	DIRECT CURRENT		
RSG.	RIGID STEEL GALVANIZED		
DWG.	DRAWING		
SCH.	SCHEDULE		
DBL.	DOUBLE		
SCR'D.	SCREWED		
(E)	EXISTING		
SEC.	SECTION		
ELECT.	ELECTRICAL		
SPEC'S.	SPECIFICATIONS		
E.S.O.	EMERGENCY SHUT OFF		
S.T.P.	SUBMERGED TURBINE PUMP		
EMT	ELECTRICAL METALLIC TUBING		
TYP.	TYPICAL		
ELL	ELBOW		
U.L.	UNDERWRITERS LABORATORY		
EMT	ELECTRICAL METALLIC TUBING		
U.F.C.	UNIFORM FIRE CODE		
FLEX.	FLEXIBLE		
U.G.	UNDER GROUND		
FRP	FIBERGLASS REINFORCED PLASTIC		
U.S.T.	UNDERGROUND STORAGE TANKS		
FNPT	FEMALE NATIONAL PIPE THREAD		
UNL	UNLEADED		
F.G.	FIBERGLASS		
V	VAPOR LINE		
'	FEET		

**REVISIONS**

#	DATE
1	03/15/2022
2	07/26/2022
3	09/22/2022
4	10/28/2022
5	06/13/2023

PROJECT: FUEL SYSTEM RENOVATION  
**CIRCLE K STORE #2741039**  
 16555 HUEBNER RD.  
 SAN ANTONIO TX 78248  
 SHEET TITLE: COVER SHEET

Drawn: KK  
 Checked: MM

PERMIT ISSUE

PROJECT #: 4602

SHEET NO.

**TK001**

GENERAL NOTE:

A. CONTRACTORS MUST HAVE AT LEAST 5 YEARS EXPERIENCE INSTALLING RETAIL FUEL SYSTEMS AND COMPLY WITH THE FOLLOWING IN ORDER TO BID ON ANY CIRCLE K PROJECT OR BE INVOLVED ON ANY CONSTRUCTION:

- A.1. AMERON CERTIFICATION
A.2. BRAVO CERTIFICATION
A.3. FLEXING CERTIFICATION
A.4. EMCO WHEATON CERTIFICATION
A.5. GILBARCO/VEEDER-ROOT CERTIFICATION
A.6. CONTAINMENT SOLUTIONS/XERXES/MODERN WELDING CERTIFICATION & COMPLY WITH INSTALLATION INSTRUCTIONS
A.7. HAZWOPPER & TRENCH EXCAVATION TRAINING

B. IT IS REQUIRED THAT ONLY "CERTIFIED INSTALLERS" BE USED FOR INSTALLATION OF THE PIPING SYSTEM TO INSURE THAT PROPER PIPE FABRICATION, COUPLING AND INSTALLATION PERFORMED. "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

C. ALL PRODUCT PIPING IS TO BE PRIMARY FUEL OF SPECIFIED DIAMETER IN SECONDARY PIPING OF SPECIFIED DIAMETER. PIPING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.

D. 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.

E. 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.

F. 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 MANUFACTURER'S 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:

PETROLEUM SYSTEM ELECTRICIAN IS RESPONSIBLE FOR ALL POWER WIRING, LOW VOLTAGE WIRING, ATG SENSOR/PROBE WIRING, AND SETUP.

PETROLEUM CONTRACTOR IS RESPONSIBLE FOR DISPENSER/SYSTEM START-UP AND CALIBRATION.

ON DAY OF SYSTEM STARTUP, DATA/NETWORK SUPPLIER, PETROLEUM CONTRACTOR, PETROLEUM ELECTRICIAN, AND CK CONSTRUCTION MANAGER MUST BE ON SITE.

PETROLEUM CONTRACTOR IS REQUIRED TO BE ON SITE FOR THE ENTIRETY OF THE FIRST DAY OF STORE OPERATION (7AM - 6PM)

CONCRETE NOTE:

UPON INSTALLATION & APPROVALS OF NEW PIPING, CONDUIT, PLUMBING, ETC. FOR THE TANK INSTALLATION, BACKFILL EXCAVATION AREAS WITH APPROVED BACKFILL, AND PROVIDE CONCRETE PAVING PER CIVIL. NOTE: MINIMUM REQUIREMENTS. 8" THICK, 4000 P.S.I. MIN. REQ'D @ TANK AREAS W/ NO. 4 BARS @ 12" O.C.E.W. (TYP). PROVIDE 6" THICK MIN. CONC W/ NO. 4S 18" O.C.E.W. REINFORCING AT PIPING TRENCHES. 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 CIRCLE K BUILDING. CONTRACTOR TO PROVIDE TEST AREA FOR CIRCLE K 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. 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 CIRCLE K 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. 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

UNDERGROUND STORAGE TANK BACKFILL MUST ADHERE TO MANUFACTURER 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 5% (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 5% (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 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.

CRUSHED STONE
A SAMPLE CONSISTING 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 IS 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.

ON CRUSHED STONE ONLY, CIRCLE K 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. CIRCLE K WILL ALSO REQUIRE TESTING COMPANY DOCUMENTATION TO VERIFY THAT THE MATERIAL PLACED IN THE TANK EXCAVATION REMAINS CONSISTENT THROUGHOUT THE BACKFILL PROCESS.

MATERIAL DISCOVERED ON SITE THAT DOES NOT MEET THE ASTM C-33 SPECIFICATION, FOR ANY REASON, WILL BE REMOVED AND REPLACED AT THE UST INSTALLERS EXPENSE.

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, 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 CIRCLE K. CONTRACTOR SHALL STORE, SAFEGUARD AND FURNISH ALL OTHER MATERIALS REQUIRED TO COMPLETE THE INSTALLATION.

E. MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION AND OPERATIONAL TESTING OF ALL TANKS, PIPING, DISPENSERS, AND MONITORING EQUIPMENT 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 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 AMERON DUALOY 3000/LCX. ALL VENT LINES SHALL BE AMERON DUALOY 3000/L.

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 NOTE:

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

FINISH NOTE:

(ALL PRODUCTS ARE SHERWIN-WILLIAMS)

- A. BOLLARDS: N/A - SLEEVED PER ARCH.
ISLAND FORMS (IF REQUIRED BY AHJ): AMARILLO WHITE
VENT PIPE: AMARILLO WHITE

CANOPY NOTE:

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

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 CIRCLE K 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 INSTALLATIONS 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 CIRCLE K REPRESENTATIVE FOR CLARIFICATION AND GUIDANCE.

G. 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 CIRCLE K REPRESENTATIVE.

J. TANK TIGHTNESS TESTING PROCEDURES SHALL BE FOLLOWED FOR ALL TANKS BEING INSTALLED. TESTING DATA LOG SHALL BE COMPLETED BY THE CONTRACTOR AND SUBMITTED TO THE CIRCLE K 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 AND CODES.

K. 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, TANK VATS, DITCHES, ETC.

L. 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 KEPT CLEAN.



CIRCLE K STORES INC.
1130 WEST WARNER ROAD
SUITE B
TEMPE, AZ 85284
602-728-8000



14139 HUFFMEISTER ROAD
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Table with 2 columns: #, DATE. Revisions list: 1 (03/15/2022), 2 (07/26/2022), 3 (09/22/2022), 4 (10/28/2022), 5 (06/13/2023)

PROJECT: FUEL SYSTEM RENOVATION
CIRCLE K STORE #2741039
16555 HUEBNER RD.
SAN ANTONIO TX 78248
GENERAL NOTES
SHEET TITLE:

Drawn: EC
Checked: MM
PERMIT ISSUE
PROJECT #: 4602

SHEET NO.
TK002

# EQUIPMENT LIST

#	PART DESCRIPTION	MANUFACTURER	MODEL NUMBER	FURN.	INST.	REMARKS
<b>PRODUCT TANKS</b>						
1	DOUBLEWALL FIBERGLASS WRAPPED STORAGE TANK	CONTAINMENT SOLUTIONS	20K - 10' DIA. 20K (12X/8K SPLIT) - 10' DIA	CK	GC	COMPLETE WITH FIBERGLASS TANK SUMPS, CONTAINMENT COLLARS AND MISCELLANEOUS PARTS INCLUDING FIBERGLASS STRAPS, GALVANIZED TIE-DOWNS, AND DEADMEN. HYDROSTATIC INTERSTITIAL FOR ALL TANKS. NO EXCEPTIONS.
2	DOUBLEWALL FIBERGLASS WRAPPED STORAGE TANK	XERXES	20K - 10' DIA. 20K (12X/8K SPLIT) - 10' DIA	CK	GC	COMPLETE WITH FIBERGLASS TANK SUMPS, CONTAINMENT COLLARS AND MISCELLANEOUS PARTS INCLUDING FIBERGLASS STRAPS, GALVANIZED TIE-DOWNS, AND DEADMEN. HYDROSTATIC INTERSTITIAL FOR ALL TANKS. NO EXCEPTIONS.
3	MODERN WELDING DOUBLEWALL FIBERGLASS WRAPPED STEEL UNDERGROUND STORAGE TANK	MODERN WELDING	12K - 8' DIA. 12K (8K/4K SPLIT) - 8' DIA	CK	GC	COMPLETE WITH FIBERGLASS TANK SUMPS, CONTAINMENT COLLARS AND MISCELLANEOUS PARTS INCLUDING FIBERGLASS STRAPS, GALVANIZED TIE-DOWNS, AND DEADMEN.
4						
5						
<b>PRODUCT AND VENT PIPING</b>						
6	2" DOUBLE WALL FIBERGLASS PIPING	AMERON	3000/LCX or RED THREAD (3/2)	CK	GC	33' STICK LENGTH. USE GLUE KIT FOR 100% ALCOHOL COMPATIBILITY.
7	2" SINGLE WALL FIBERGLASS PIPING	AMERON	3000/L or RED THREAD	CK	GC	33' STICK LENGTH. USE GLUE KIT FOR 100% ALCOHOL COMPATIBILITY. PROTECTIVE MESH IS REQUIRED FOR L PIPING
8						
9						
<b>TANK TOP PACKAGES, CONTAINMENT SUMPS, HARDWARE, AND MANHOLES</b>						
10	FILL SPILL BUCKET	EMCO WHEATON	A1004EVR-317S	CK	GC	NO DRAIN VALVES.
11	VAPOR BUCKET	EMCO WHEATON	A1004EVR-317A	CK	GC	NO DRAIN VALVES.
12	SWIVEL FILL ADAPTOR	EMCO WHEATON	A0030-124S	CK	GC	
13	4" FILL CAP	EMCO WHEATON	A0097-00S	CK	GC	
14	SWIVEL VAPOR ADAPTOR	EMCO WHEATON	A0076-124S	CK	GC	DO NOT INSTALL SWIVEL VAPOR ADAPTOR AT DIESEL.
15	VAPOR CAP	EMCO WHEATON	A0099-00Z	CK	GC	INSTALL A0099-00Z CAP AT DIESEL VAPOR ONLY. INSTALL A0097-00S AT ALL OTHER PRODUCTS
16	EXTRACTOR VALVE 4x4x2 (NO CAGE)	EMCO WHEATON	A0079-150	CK	GC	
17	COMPOSITE 42" MANHOLE W/CAM LOCK	EMCO WHEATON	A0716-042C	CK	GC	
18	15" OVERFILL DROP TUBE	EMCO WHEATON	A1100EVR-056CF	CK	GC	
19	4" x 16" SLOTTED SCH 40 PVC W/ PLUG	TITAN INDUSTRIES	MF-4X16WS	GC	GC	
20	12" x 16" SLOTTED SCH 40 PVC W/ PLUG	TITAN INDUSTRIES	TI-PVC12X16WELL	GC	GC	
21	12" MONITOR WELL MANHOLE	EMCO WHEATON	A0721-10I	CK	GC	Steel Skirt, White Lid
22	18" MONITOR WELL MANHOLE	EMCO WHEATON	A0721-018	CK	GC	
23	18" RAIN TITE BOLTED MANHOLE	EMCO WHEATON	A0717-018B	CK	GC	
24	4" WELL CAP	EMCO WHEATON	A0720-00I	CK	GC	
25	12" WELL CAP	TITAN INDUSTRIES	EM-P41208TPLUG	CK	GC	
26	UNITED SIGN FILL PIPE ID TAG, DIESEL	UNITED SIGN	US-FPI-125D	CK	GC	
27	UNITED SIGN FILL PIPE ID TAG, UNLEADED	UNITED SIGN	US-FPI-125U	CK	GC	
28	UNITED SIGN FILL PIPE ID TAG, PREMIUM	UNITED SIGN	US-FPI-125P	CK	GC	
29	UNITED SIGN FILL PIPE ID TAG, ED	UNITED SIGN	US-FPI-E0	CK	GC	
30	UNITED SIGN VAPOR RECOVERY ID TAG	UNITED SIGN	US-FPI-22	CK	GC	
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<b>TURBINE</b>						
40	FE PETRO 2 HP FIXED SPEED W/ MAG SHELL	FRANKLIN FUELING	FE-SPM200-VL2	CK	GC	REFER TO TK101 FOR PUMP QTY & SIZING CHART, ORDER RISER WITH PUMP
41	4" x 24" RISER - NPT THREADED 304L STAINLESS STEEL	FRANKLIN FUELING		CK	GC	
42	4" x 24" RISER - NPT THREADED EPOXY COATED (DIESEL ONLY)	FRANKLIN FUELING	FE-400168424	CK	GC	ORDER PRE-THREADED FROM MNFR.
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<b>TURBINE SUMP FITTINGS, PIPING, AND VENT HARDWARE</b>						
55	BRAVO 3/4 FIBERGLASS CONDUIT ENTRY 10 PACK W/ GLUE	BRAVO	BR-F-07-FF/BR-F-07R-FF	CK	GC	USE BR-F-07R-FF WHEN PVC COATED CONDUIT IS USED
56	BRAVO 2" LCX PRODUCT ENTRY - FIBERGLASS	BRAVO	BR-F20L-F	CK	GC	
57						
58	3" PIPE CLAMP	BRAVO	BR-T-FF-CLAMP-3	CK	GC	
59	ENTRY FITTING ADHESIVE KIT 7 OZ - 1 KIT PER FITTING	BRAVO	BR-ADHESIVE-EPOXY-KIT	CK	GC	
60	2" FIBERGLASS SPLIT TEST FITTING	NOV/AMERON	AM-22469208	CK	GC	
61	FLEX CONN 2" x 14" MM SWIVEL END	OMEGAFLEX	OF-2X14MMS	CK	GC	
62	FLEX CONN 2" x 18" MM SWIVEL END	OMEGAFLEX	OF-2X18MMS	CK	GC	
63	FLEX CONN 2" x 24" MM SWIVEL END	OMEGAFLEX	OF-2X24MMS	CK	GC	
64	ISOLATION BOOT 3x30"	CRUSHPROOF	CTC-450036	CK	GC	
65	2" THREAD, 3" WC PRESSURE VACUUM VENT	HUSKY	A0084-038	CK	GC	
66	2" ALUMINUM OPEN TANK VENT (DIESEL ONLY)	HUSKY	A4103-00Z	CK	GC	
67	2" BALL VALVE - STAINLESS STEEL	JOMAR	JI-T100-25S	CK	GC	
68	2" BALL VALVE - BRASS	JOMAR	JI-T100-2PC	CK	GC	
69	2" STEEL PIPING & FITTINGS - 304L STAINLESS STEEL - NPT THREADED			GC	GC	
70	2" STEEL PIPING & FITTINGS - SCH 40 BLACK STEEL - NPT THREADED (DIESEL ONLY)			GC	GC	
71	2" STEEL PIPING & FITTINGS - SCH 40 GALVANIZED - NPT THREADED (VENT RISER ONLY)			GC	GC	
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#	PART DESCRIPTION	MANUFACTURER	MODEL NUMBER	FURN.	INST.	REMARKS
<b>DISPENSER &amp; DISPENSER HARDWARE</b>						
81	MULTI-PRODUCT DISPENSER	GILBARCO	ENCORE 700S	CK	GC	REFER TO TK101 FOR PRODUCT QTY AND TYPE (3+1+1, 3+1, 3+0, ETC.)
82	HUSKY 3/4" UL2586 UNL W/CLP BLK W/SPLSH	HUSKY	HN-N10SUF-UL	CK	GC	
83	3/4" x 8" FS FUT HOSE - BLACK	CONTINENTAL/CONTITECH	CT-WHP3408	CK	GC	
84	3/4" x 9" FS FUT HOSE - BLACK	CONTINENTAL/CONTITECH	CT-3409	CK	GC	
85	3/4" MAGNETIC BREAKAWAY	HUSKY	HS-8330	CK	GC	
86	1+6 3/4 x 3/4 MULTIPLANE SWVL	HUSKY	HS-0350	CK	GC	
87	3/4" NEW UL2586 LFD W/CLP GRN W/SPLSH	HUSKY	HN-N10SUF-UL	CK	GC	
88	3/4" x 8" FS FUT HOSE - BLACK	CONTINENTAL/CONTITECH	CT-WHP3408	CK	GC	
89	3/4" x 9" FS FUT HOSE - BLACK	CONTINENTAL/CONTITECH	CT-3409	CK	GC	
90	BRAVO 1000E FIBERGLASS SUMP FOR ENCORE DISPENSER	BRAVO	BR-B1000-ENC	CK	GC	ECONOMY STYLE
91	BRAVO STABILIZER BAR	BRAVO	BR-BRKT-1000-ENC	CK	GC	
92	SHEAR VALVE - OPW 10 PLUS DOUBLE POPPET	OPW	10P-0152	CK	GC	
93	FLEX CONN 1.5" x 18" MM SWIVEL END	OMEGAFLEX	OF-112X18MMS	CK	GC	
94	3/4" UNLEADED HOSE KIT	HUSKY	HN-011154	CK	GC	ORDERING OPTION - INCLUDES PARTS 82, 83, 84, 85, 86
95	3/4" DIESEL HOSE KIT	HUSKY	HN-011463	CK	GC	ORDERING OPTION - INCLUDES PARTS 85, 86, 87, 88, 89
96						
97						
98						
99						
100						
101						
102						
103						
104						
<b>MISCELLANEOUS</b>						
105	6" BOLLARD COVER	POST-GUARD	GREY - 48"	CK	GC	
106	6" x 72" BOLLARDS			GC	GC	
107	3' x 5' x 13" DISPENSER ISLAND FORMS	RIVERSIDE STEEL	RS-3XSX13	CK	GC	USE ONLY IF REQUIRED BY AUTHORITY HAVING JURISDICTION. USE STAINLESS STEEL ISLAND FORMS IN SNOW SITES.
108	20 CHANNEL INTERCON SYSTEM-TRADEMARK	ESCO	ES-941-0114	CK	GC	
109	CONTAINMENT LINER	MPC	PETROGARD X	GC	GC	FOR PIPING AND TANK HOLES THAT REQUIRE "TERTIARY CONTAINMENT". VERIFY WITH CK REP AT TIME OF BIDDING
110	FILTER FABRIC	GSE	8 OZ GSE NW8	GC	GC	FOR STANDARD INSTALLATION IN TANK HOLES AND PIPING TRENCHES
111	FILTER FABRIC	GSE	16 OZ GSE NW16	GC	GC	FOR USE WITH ROCK HOLES. INCLUDE IN BID IF ROCK EXISTS.
112	TERTIARY CONTAINMENT LINER	MPC CONTAINMENT	MPC 10 LINER	GC	GC	
113						
114						
115						
116						
117						
118						
119						
120						
121						
122						
123						
124						
<b>MONITORING</b>						
125	TL5450PLUS W/ TCH DISPLAY & PRINT - CK	VEEDER-ROOT	VR-860091-301CK	CK	GC	
126	TL5450PLUS APPLICATION SOFTWARE - CK	VEEDER-ROOT	VR-333545-001CK	CK	GC	
127	RISK MGMT LEAK DETECTION DRPLD	VEEDER-ROOT	VR-333072-008CK	CK	GC	
128	UNIVERSAL SENSOR PROBE 16 INPUT MOD	VEEDER-ROOT	VR-332812-001CK	CK	GC	
129	UNIVERSAL INPUT/OUTPUT INTERFACE MOD	VEEDER-ROOT	VR-332813-001CK	CK	GC	
130	CSLD SOFTWARE ENHANCEMENT	VEEDER-ROOT	VR-332972-006CK	CK	GC	
131	DRPLD WITHOUT SWIFTCHECK	VEEDER-ROOT	VR-859080-001CK	CK	GC	
132	8" MAG PLUS TANK PROBE	VEEDER-ROOT	VR-846396-107CK	CK	GC	
133	10" MAG PLUS TANK PROBE	VEEDER-ROOT	VR-846396-109CK	CK	GC	
134	PHASE SEPARATION 4" GAS FLOAT KIT - 10' CABLE	VEEDER-ROOT	VR-886100-010CK	CK	GC	
135	4" NEW STYLE DIESEL FLOAT KIT - 10' CABLE	VEEDER-ROOT	VR-846400-011CK	CK	GC	
136	4" CAP AND RING KIT	VEEDER-ROOT	VR-312020-952CK	CK	GC	
137	PIPING SUMP SENSOR	VEEDER-ROOT	VR-794380-208CK	CK	GC	
138	SENSOR HOLDER FOR UDC	BRAVO	BR-SH-UDC	CK	GC	
139	SENSOR HOLDER FOR TANK SUMP	BRAVO	BR-SH-TS	CK	GC	
140	INTERSTITIAL SENSOR WITH VENTED CAP	VEEDER-ROOT	794390-420	CK	GC	
141	EMERGENCY SHUT OFF SIGN	UNITED SIGN	US-M576	GC	GC	
142	EMERGENCY SHUT OFF SWITCH	POWER INTEGRITY	PI-HA-ESOCAT	GC	GC	
143	OVERFILL ALARM	VEEDER-ROOT	VR-790091-001CK	CK	GC	
144	OVERFILL ALARM ACKNOWLEDGEMENT SWITCH	VEEDER-ROOT	VR-790095-001CK	CK	GC	
145	VAPOR SENSOR	VEEDER-ROOT	794390-700	CK	GC	INSTALL AT (2) OBSERVATION WELLS
146	VAPOR SENSOR CAP AND ADAPTER	VEEDER-ROOT	312020-939	CK	GC	INSTALL AT (2) OBSERVATION WELLS
147						
148						
149						
150						
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153						
154						
155						



**CIRCLE K STORES INC.**  
1130 WEST WARNER ROAD  
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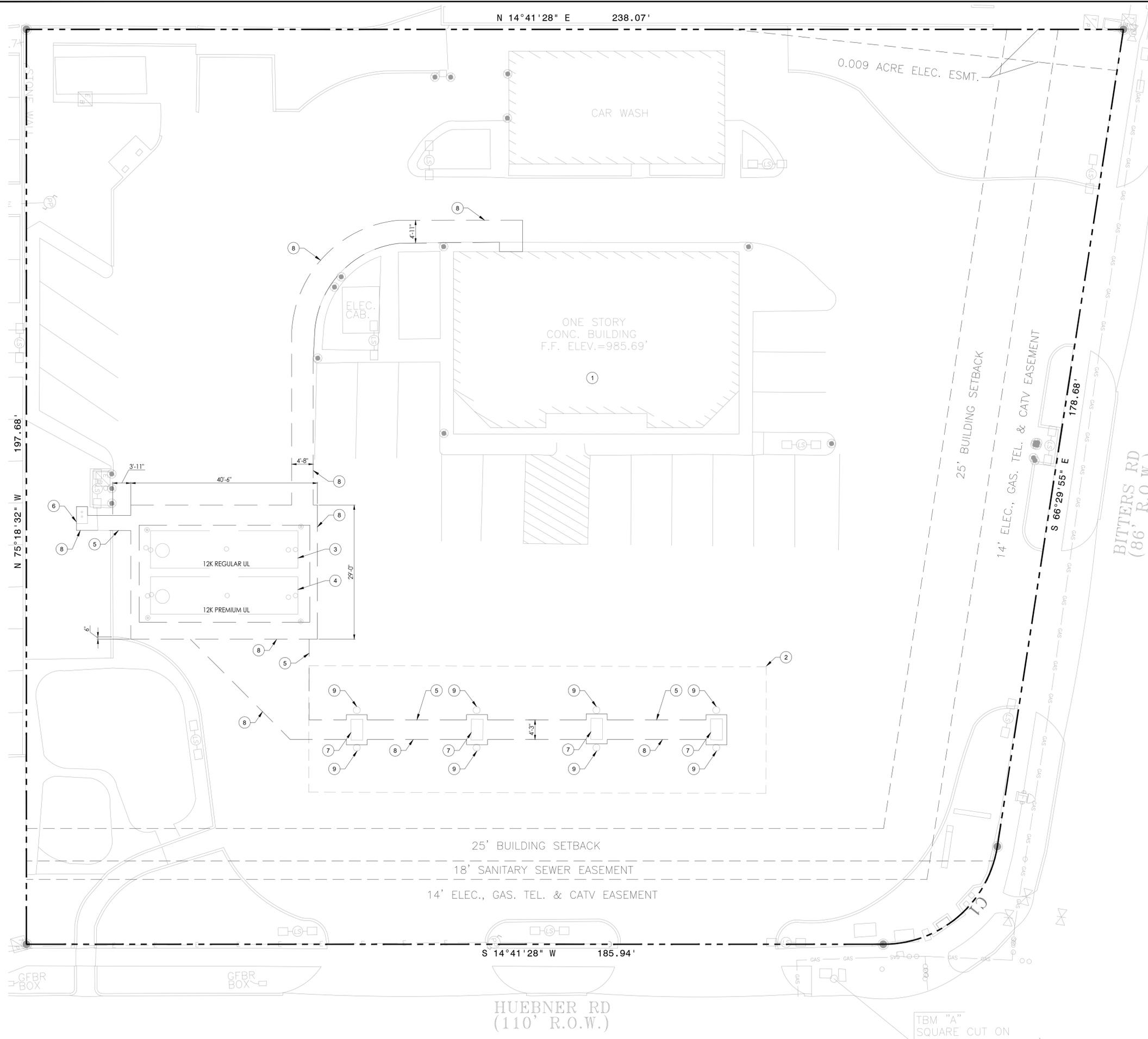
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REVISIONS	
#	DATE
1	03/15/2022
2	07/26/2022
3	09/22/2022
4	10/28/2022
5	06/13/2023

PROJECT: FUEL SYSTEM RENOVATION  
**CIRCLE K STORE #2741039**  
 16555 HUEBNER RD.  
 SAN ANTONIO TX 78248  
 SHEET TITLE: **EQUIPMENT LIST**

Drawn: KC  
Checked: MM  
PERMIT ISSUE  
PROJECT #: 4602  
SHEET NO. **TK006**



**KEY SCHEDULE: (#)**

1. EXIST. CIRCLE K STORE TO REMAIN
2. EXIST. FUEL CANOPY TO REMAIN
3. REMOVE/DEMO REGULAR UL DOUBLE WALL UNDERGROUND STORAGE TANK
4. REMOVE/DEMO PREMIUM UL DOUBLE WALL UNDERGROUND STORAGE TANK
5. REMOVE/DEMO UNDERGROUND FIBERGLASS PRODUCT AND VENT PIPING
6. REMOVE/DEMO VENT STACK
7. REMOVE/DEMO FUEL DISPENSER
8. REMOVE/DEMO CONCRETE PAVING
9. CANOPY COLUMN (TO REMAIN)

**GENERAL NOTES:**

1. ALL DEMOLISHED MATERIAL, EQUIPMENT, AND FLUIDS TO BE PROPERLY DISPOSED OF OFFSITE AND IN ACCORDANCE WITH ALL PERMITS, LOCAL JURISDICTION RULES, AND ENVIRONMENTAL REGULATIONS.
2. CONTRACTOR TO PLACE TEMPORARY CONSTRUCTION FENCING AROUND EACH PROJECT SITE AREA.
3. CONTRACTOR TO MINIMIZE TIME BETWEEN TANK REMOVAL AND FILL OF PITS. VEHICULAR BARRIERS TO BE PLACED AROUND ANY OPEN PITS.
4. CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED PRIOR TO CONSTRUCTION

**DEMOLITION NOTES**

1. UTILITIES SHOWN ARE FOR DIAGRAMMATIC REPRESENTATION AND MAY NOT REPRESENT ALL UTILITIES PRESENT IN AREA. CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES AT SITE.
2. CONTRACTOR TO DEMOLISH AND DISPOSE OF EXISTING IMPROVEMENTS AS REQUIRED TO COMPLETE REMOVAL OF ALL FUEL RELATED COMPONENTS OF THE EXISTING SYSTEM.
3. CONTRACTOR TO COMPLY WITH ALL APPLICABLE LAWS, CODES AND ORDINANCES IN REMOVAL AND DISPOSING OF EXISTING SITE IMPROVEMENTS
4. CONTRACTOR TO FAMILIARIZE HIMSELF WITH THE EXISTING SITE CONDITIONS AND DEMOLITION DRAWINGS PRIOR TO DEMOLITION. IF ANY DIFFERENCES OCCUR, CONTRACTOR TO NOTIFY M+A PROJECT MANAGER.
5. DURING DEMOLITION, CONTRACTOR TO KEEP SITE, ABUTTING PROPERTIES AND STREETS CLEAN AND FREE OF DEBRIS FROM DEMOLITION ACTIVITIES.
6. ALL DAMAGE TO EXISTING PAVEMENT/PARKING STRIPING AND LANDSCAPING WHICH RESULTS FROM NEW CONSTRUCTION SHALL BE REPLACED WITH LIKE MATERIALS AT CONTRACTOR'S EXPENSE. EXCESS MATERIAL SHALL BE DISPOSED OF OFF THE OWNER'S PROPERTY AT NO ADDITIONAL COST.
7. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN SAFE ACCESS TO PEDESTRIAN AND VEHICLE TRAFFIC.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE AND MAINTAIN POSITIVE DRAINAGE AT ALL TIMES.
9. CONTRACTOR SHALL BE RESPONSIBLE TO MINIMIZE OBSTRUCTIONS TO THE EXISTING FIRE LANE FD ACCESS ROAD.

**PERMITS AND REGULATIONS**

1. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS.
2. COMPLY WITH E.P.A., ALL FEDERAL, STATE AND LOCAL REGULATIONS, INSPECTIONS AND TESTING REQUIREMENTS. MAKE ALL REQUIRED NOTIFICATIONS.

**CONTAMINATED SOILS (IF DISCOVERED)**

1. ALL CONTAMINATED BACKFILL REMOVED FROM TANK HOLE, PIPING TRENCHES AND PIPING SHALL BE COVERED WITH 6 MIL. VISQUEEN FOR ODOR AND DUST CONTROL. TO BE HAULED OFF BY CONTRACTOR AT CONTRACTOR'S EXPENSE PER ALL FEDERAL, STATE AND LOCAL REGULATIONS.

**CLEANING AND DEGASSING/ L.E.L. LEVELS**

1. PURGE ALL PRODUCT BACK INTO TANKS FROM PIPING.
2. REMOVE ALL LIQUID AND SLUDGE FROM TANKS.
3. CLEAN TANKS (TRIPLE RINSE) AND REMOVE LIQUID CREATED BY THIS PROCESS.
4. TANKS SHALL BE DEGASSED BEFORE THEY ARE REMOVED FROM THE TANK HOLE.
5. INSURE THE L.E.L. (LOWER EXPLOSIVE LIMIT) IS BELOW ACCEPTABLE LIMITS OR AS REQUIRED BY THE LOCAL OR GOVERNING AUTHORITIES/FIRE MARSHALL.
6. L.E.L. 10% OR LESS
7. DRY ICE MUST BE ADDED TO TANKS PRIOR TO THEM BEING REMOVED FROM THE SITE. THE DRY ICE MUST BE CRUSHED AND DISTRIBUTED THROUGH ALL AVAILABLE OPENINGS IN AN AMOUNT NO LESS THAN 1.5 LBS OF DRY ICE TO 1000 GALLONS OF STORAGE CAPACITY.

**TANK REMOVAL AND HAULING**

1. TANKS SHALL BE REMOVED, SECURED AND TRANSPORTED PER AMERICAN PETROLEUM INSTITUTE RECOMMENDED PRACTICE.
2. OUTSIDE SURFACE OF TANKS SHALL BE CLEANED AND SOIL PARTICLES REMOVED PRIOR TO LEAVING SITE.
3. TRUCKING COMPANY MUST BE AUTHORIZED FOR TANK HAULING.
4. PRIOR TO REMOVAL FROM SITE ALL TANKS MUST BE LABELED AS FOLLOWS
  - TANK #1 (BASED ON NUMBER OF TANK ON SITE).
  - PRODUCT
  - DATE REMOVED
  - NOT FOR STORAGE OR USE OF ANYTHING FOR HUMAN OR ANIMAL CONSUMPTION.
5. COORDINATE TRANSPORT AND TREATMENT/DISPOSAL OF CONTAMINATED SOILS WITH OWNER.

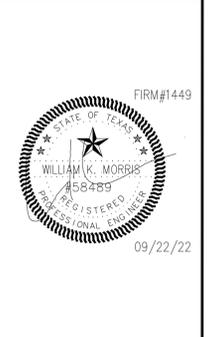


**CIRCLE K STORES INC.**  
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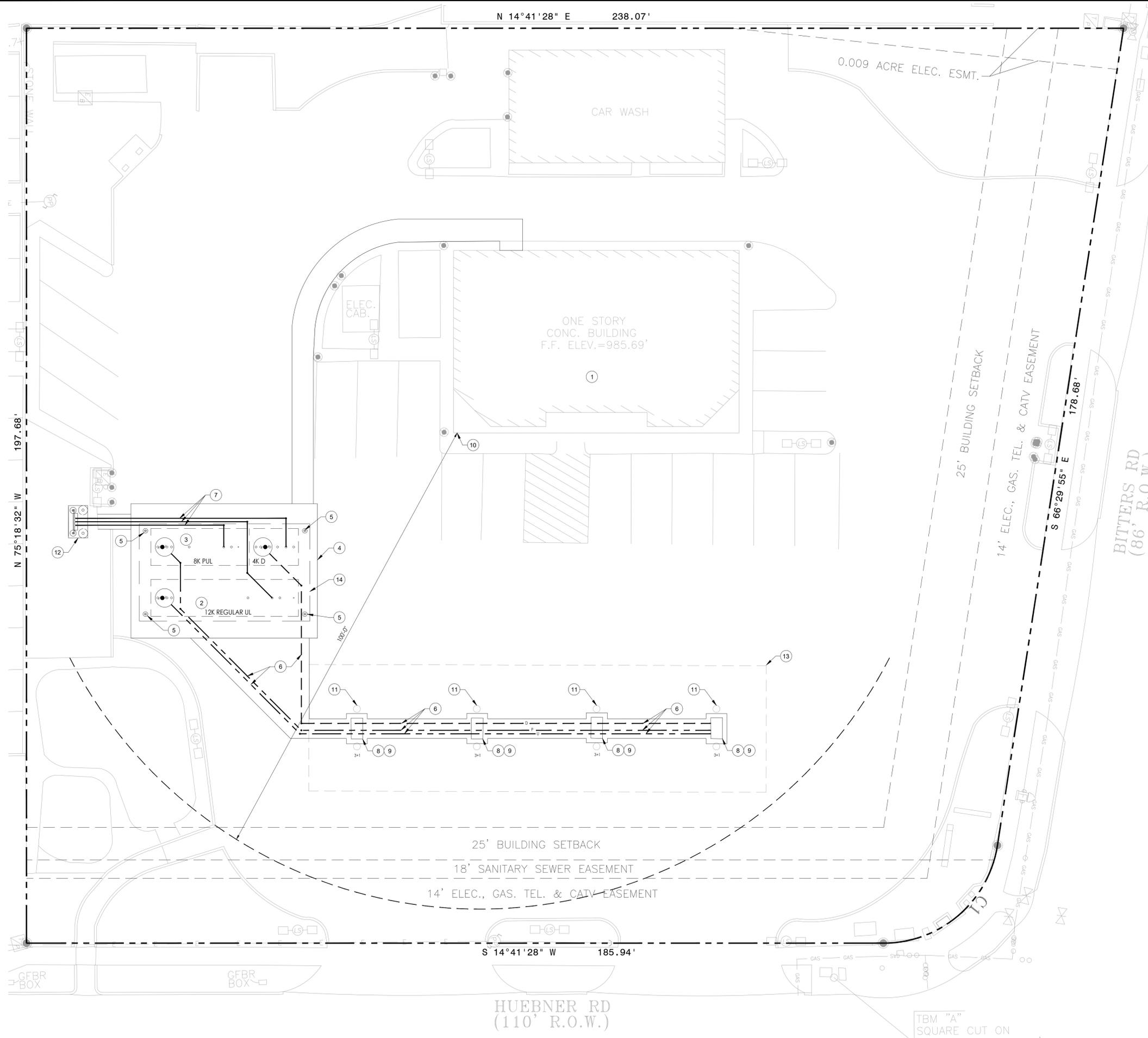


REVISIONS	
#	DATE
1	03/15/2022
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3	09/22/2022
4	10/28/2022
5	06/13/2023

PROJECT: FUEL SYSTEM RENOVATION  
**CIRCLE K STORE #2741039**  
 16555 HUEBNER RD.  
 SAN ANTONIO TX 78248  
 SHEET TITLE: **DEMO PLAN**

Drawn: KC  
 Checked: MM  
 PERMIT ISSUE  
 PROJECT #: 4602

SHEET NO. **TK100**



**KEY SCHEDULE: #**

- EXIST. CIRCLE K STORE; REF. ARCH
- REGULAR UL DOUBLE WALL UNDERGROUND STORAGE TANK; REF. TK301  
- TANK IS TO HAVE A TERTIARY CONTAINMENT LINER.
- PREMIUM UL/DIESEL DUAL COMPARTMENT DOUBLE WALL UNDERGROUND STORAGE TANK; REF. TK301  
- TANK IS TO HAVE A TERTIARY CONTAINMENT LINER.
- TANK PAD; REF. TK301
- OBSERVATION WELL (4"); REF. DTL. 1/TK502
- 2" DOUBLE WALL FIBERGLASS PRODUCT PIPING. PIPE TO SLOPE AT MINIMUM SLOPE OF 1/8" PER FOOT BACK TO TANK  
-PIPE TRENCH IS TO HAVE TERTIARY CONTAINMENT LINER
- 2" SINGLE WALL FIBERGLASS VENT PIPING. PIPE TO SLOPE AT MINIMUM SLOPE OF 1/8" PER FOOT BACK TO TANK  
-PIPE TRENCH IS TO HAVE TERTIARY CONTAINMENT LINER
- UNDER DISPENSER CONTAINMENT SUMP; REF. TK503
- DISPENSER; REF. TK504
- EMERGENCY STOP BUTTON PLACED 20' MINIMUM/100' MAXIMUM FROM DISPENSER PER NFPA 30A/LOCAL FIRE CODE; REF ELECTRICAL DWGS.
- CANOPY COLUMN
- VENT STACK; REF. TK504
- CANOPY
- LIMITS OF EXIST. TANK HOLE

**GENERAL NOTES:**

- CONTRACTOR TO FIELD VERIFY LOCATION AND ACCURACY OF ALL EXISTING ITEMS SHOWN ON THIS PLAN BEFORE CONSTRUCTION. CONTRACTOR TO REPORT ANY DISCREPANCIES TO MORRIS + ASSOCIATES PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED PRIOR TO CONSTRUCTION
- CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE THE AHJ A DEFERRED SUBMITTAL TO THE FIRE MARSHAL'S OFFICE TO OBTAIN A PERMIT FOR THE INSTALLATION OF THE USTs.
- CONTRACTOR TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND INSPECTIONS. ALL REQUIRED NOTIFICATIONS MUST BE MADE TO ANY FEDERAL, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION AS REQUIRED.
- CONTRACTOR TO PLACE TEMPORARY CONSTRUCTION FENCING AROUND EACH PROJECT SITE AREA.
- CONTRACTOR SHALL BE RESPONSIBLE TO MINIMIZE OBSTRUCTIONS TO THE EXISTING FIRE LAND FD ACCESS ROAD.

**GRADING NOTES:**

- SIDEWALKS SHALL NOT HAVE CROSS SLOPES GREATER THAN 2%
- CONTRACTOR SHALL PROVIDE A MINIMUM 1" DROP 18" FROM THE EDGE OF ALL FUEL TANK LIDS WITHOUT IMPACTING THE CURRENT DRAINAGE PATTERN THAT EXISTS AT THE SITE.
- THE CONTRACTOR SHALL CONFORM TO ALL LOCAL CODES AND OBTAIN ALL PERMITS PRIOR TO BEGINNING WORK.
- CONTRACTOR TO VERIFY ALL GRADES PRIOR TO FORMWORK OR PLACEMENT OF REINFORCEMENT AND CONCRETE.
- NO TREES SHALL BE REMOVED EXCEPT AS NECESSARY FOR GRADING PURPOSES AND ONLY AS APPROVED BY OWNER/AHJ.
- USE PEA GRAVEL IN NEW EXCAVATION AREA PER MANUFACTURERS SPECIFICATIONS.
- ALL CURBS SHALL BE BACK FILLED WITH TOP SOIL AND SOD

**TANK SLAB/PAVING NOTES:**

- TANK PAD SHALL BE 8" THICK W/ #4 BARS @ 14" O.C.E.W. W/ MEDIUM BROOM FINISH. NEW PADS/REPLACEMENT CONCRETE SHALL BE DOWELED INTO ADJACENT PAVEMENT WITH 24" #4 BARS @ 12" EMBEDMENT SPACED 24" O.C.E.W. ALL CONCRETE SHALL BE A MINIMUM 4000 PSI UNLESS OTHERWISE NOTED.
- CONTROL JOINTS SHALL BE SPACED AT 15' ON CENTER.
- EXPANSION JOINTS SHALL BE SPACED WITH DISTANCES NOT TO EXCEED 60'. EXPANSION JOINTS SHALL NOT CROSS TANK SLAB.
- WHERE EXPANSION JOINTS INTERSECT RADIUS CURVES, EDGE OF PAVEMENT, OR OTHER EXPANSION JOINTS AT ANGLES LESS THAN 90°, CONTRACTOR SHALL OFFSET FROM INTERSECTION 5' AND ADJUST JOINT TO INTERSECT AT 90°
- SITE GRADING SHALL BE COMPLETE PRIOR TO INSTALLATION OF ANY CONCRETED PAVING. CONTRACTOR SHALL NOTIFY OWNER OF GRADING COMPLETION TWO DAYS PRIOR TO SCHEDULING ANY CONCRETE POURS.
- PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING PAVEMENT AND ANY NEW PAVEMENT FIELD ADJUSTMENT OF FINAL GRADES MAY BE NECESSARY. INSTALL ALL NECESSARY UTILITIES PRIOR TO INSTALLATION OF NEW PAVEMENT.

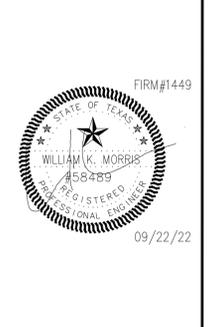


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5	06/13/2023

PROJECT: FUEL SYSTEM RENOVATION  
**CIRCLE K STORE #2741039**  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248

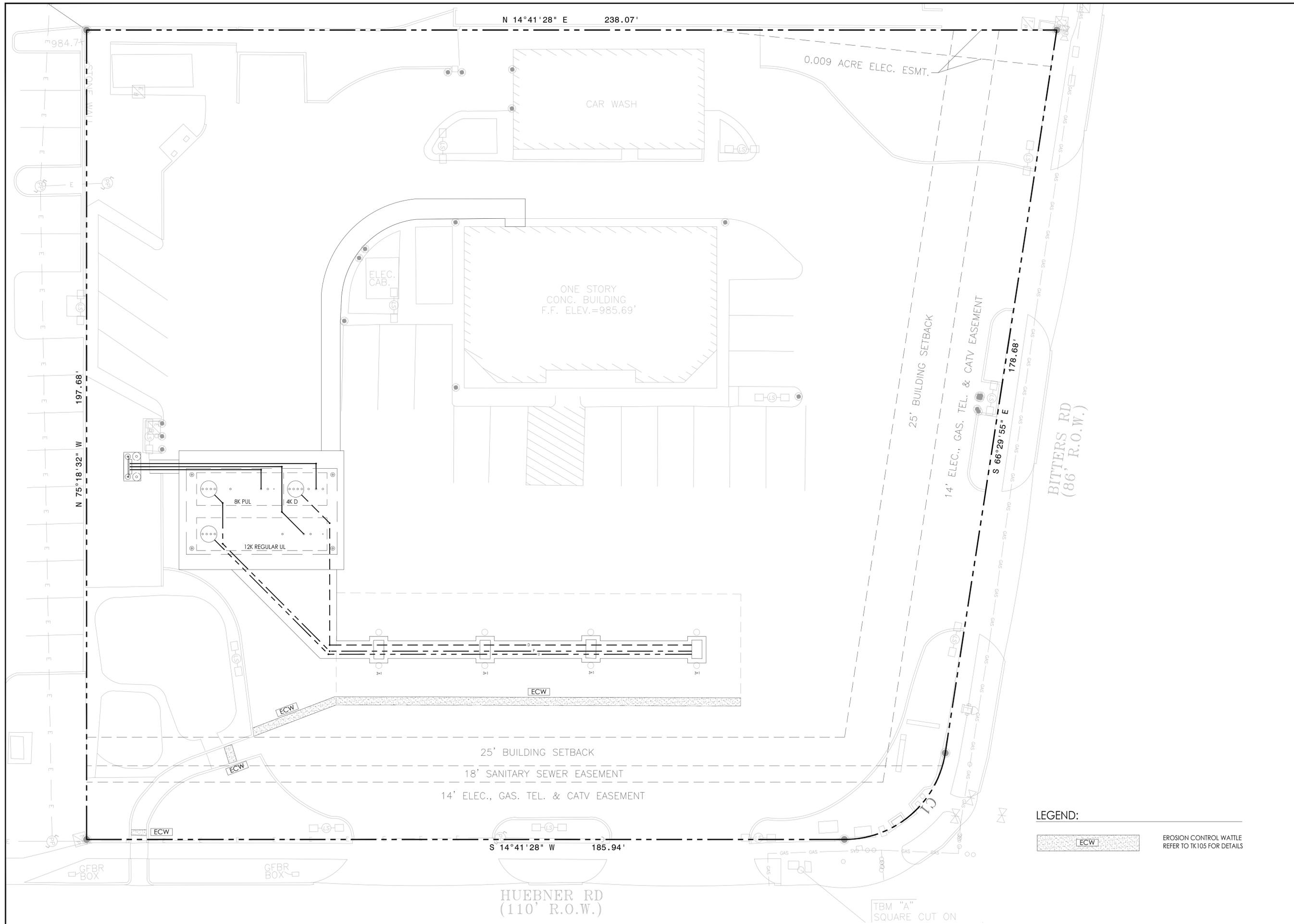
SHEET TITLE: **SITE PIPING PLAN**

Drawn: KC  
Checked: MM

PERMIT ISSUE

PROJECT #: 4602

SHEET NO. **TK100**

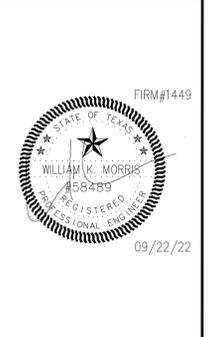


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PROJECT: FUEL SYSTEM RENOVATION  
**CIRCLE K STORE #2741039**  
 16555 HUEBNER RD.  
 SAN ANTONIO TX 78248  
 SHEET TITLE: **EROSION CONTROL PLAN**

Drawn: KC  
 Checked: MM  
 PERMIT ISSUE

PROJECT #: 4602

SHEET NO. **TK104**

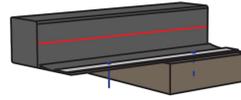
**LEGEND:**  
 EROSION CONTROL WATTLE  
 REFER TO TK105 FOR DETAILS



## INSTALL GUIDE for HARD SURFACES

Hard Surfaces include:

- Perimeter control where asphalt, concrete, or any other hard surface is present
- Driveways and entrance points
- Stockpile management



### Equipment Needed for Installation

- **Tools**
  - Rotary hammer and masonry bit (asphalt bit)
  - Impact driver
- **Materials**
  - Predrilled 2" steel strips (recommended) or 1" x 4" wood planks
  - Concrete anchor screws (Recommended: 2 3/4" Blue Tapcon hex head concrete anchor screw with nut driver)

### Inflating DuraWattle for First Use

- **Open bundle by cutting straps.**  
Each bundle of DuraWattle contains 300ft of product. There are 6 bundles per pallet.
- **Using one of the included pins, puncture each piece of DuraWattle through the filter fabric multiple times (at least 4 times).**

Inflation time can be affected by several factors, including climate and how long the compressed product has been stored.

- To expedite the inflation process, puncture each piece in several different areas.
- Call with concerns if it takes longer to inflate than expected.

1



## INSTALL GUIDE for HARD SURFACES

### Basic Removal

- Back out the concrete anchor screws.
- Remove the steel strip/wood planks.
- Pick up the product and store for further use.

### Storing DuraWattle and Inspection Before Reuse

- There are no specific storage recommendations.
  - DuraWattle cannot be recompressed.
  - Because DuraWattle does not absorb water, it can be stored outdoors or indoors.
  - If it is being stored for long periods of time outdoors, then covering will increase longevity of the product.
- Before reusing DuraWattle, consider the following:
  - Although small rips and tears will not affect the performance of a DuraWattle section, large tears can compromise the integrity of the product. In other words, if a tear is large enough to allow sediment laden water to flow through the product without being filtered, then the section should be replaced.
  - If the foam is flat and has not bounced back into form, then the section should be replaced. This can be caused by several factors, but usually it means the plastic seal has been severely torn or compromised and the core is absorbing water. Without a consistent barrier height, a perimeter of installed DuraWattle can be overwhelmed with concentrated water flow.

### A Site with Both Hard Surfaces and Soil Surfaces

- Installing DuraWattle on a Multi-Surface Site with both soil and a hard surface:  
The tail section allows pieces of DuraWattle to be trenched in soil as well as secured to hard surfaces using steel strips without a break in the barrier. Customers in the past have installed DuraWattle sections as a continuous barrier across soil and hard surfaces and kept their sites in compliance for the duration of their jobs. Contact us for more information on this unique installation.

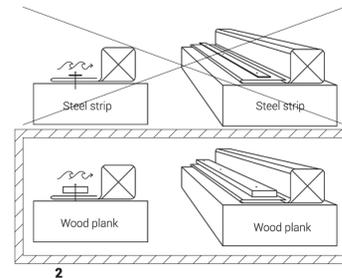
3



## INSTALL GUIDE for HARD SURFACES

### Installation Procedure

- Inflate the sections of DuraWattle as described on page 1.
- Clean the install surface of any debris. The install surface should be as flat as possible to maximize contact with the surface.
- Place the tail section *inside* the work area (upstream). This will place the core downstream.
- Connect sections of DuraWattle by inserting the closed end of one section into the open end of another.
  - Make sure the inner core of each piece touches and the tail is overlapping correctly.
- Fold the tail section over itself, then lay a predrilled 2in metal strip or wood plank over the folded tail.
  - Screws should be spaced 4ft apart along the length of the strip or wood plank.
- Use a rotary hammer and masonry (asphalt) bit to drill pilot holes into the hard surface.
- Drive 2 3/4" depth concrete screw anchors (Tapcon screws) with an impact driver to secure the steel strips/wood planks (do not overtighten the screws).
  - See Best Practices on page 4 for our recommendation when installing concrete anchors.
  - IMPORTANT: DuraWattle is secured to the surface via the tail section. Screws do not need to penetrate the core of the wattle.
- If DuraWattle is being used as a linear barrier and not installed around the entire perimeter of the site, then J-hook one section of DuraWattle at each end of the run.



2



## INSTALL GUIDE for HARD SURFACES

### Installation Best Practices

- When installing on hard surfaces, do not overtighten the concrete anchor screws. The threading in the asphalt can be stripped.
- We recommend installing DuraWattle as perpendicular to the contour of a slope as possible. Runoff can be diverted along the length of the installed product if it is installed along the contour.
- If the product is the sole barrier installed at a site with a single low point, then additional sections of DuraWattle in the form of J-hooks can be installed perpendicular to the contour of the slope to help dissipate concentrated flow before it reaches the single low point of the site.
- When installed in home developments, the increased site access from installing DuraWattle as perimeter control can interfere with other tracking control measures.

### Contact Us

- Feel free to contact us with unique installation challenges or any questions.  
(916) 822-2174  
contact@durawattle.com

4



Feb 2018

## DURAWATTLE® SPECIFICATIONS



### Description:

A durable and reusable synthetic wattle that is typically used for perimeter control, stockpile management, or sediment control at egress points.

Can be trenched in soil, installed on curbs, or secured onto hard surfaces. See installation guide for full details and best management practices.

Inner core is made from flexible polyurethane foam sealed in a polyethylene film. Outer cover is made from 6.2oz high tensile strength monofilament filter fabric.

DuraWattle is designed to trap sediment and reduce overall TSS in stormwater runoff. It is NOT designed to filter hydrocarbons or dissolved metals.

**Dimensions of each wattle (w/weight)**  
• 5.5inx12ft  
• 5lb

**Dimensions of bundle - 300ft of product (w/weight)**  
• 48inx45inx19in  
• 112lb  
• Dimensions may change slightly due to the product expanding in transit

**Dimensions of Pallet - 1800ft of product (w/weight)**  
• 44inx44x96in  
• 1010lb  
• Dimensions may change slightly due to the product expanding in transit

**Tensile strength of fabric**  
• 350 x 200 LBS

**AOS (US Sieve)**  
• 40 US Sieve

**UV Rating of outer filter fabric**  
• @ 1000 hrs - 90%

**Clean Water Flow Through Rate**  
• Approx. 100gpm/ft<sup>2</sup>

**POS (percent of open area)**  
• 6%



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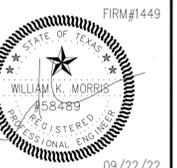
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4	10/28/2022
5	06/13/2023

PROJECT: FUEL SYSTEM RENOVATION  
CIRCLE K STORE #2741039  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248

SHEET TITLE: EROSION CONTROL DETAILS

Drawn: KK  
Checked: MM

PERMIT ISSUE

PROJECT #: 4602

SHEET NO.

TK105



CIRCLE K STORES INC.  
1130 WEST WARNER ROAD  
SUITE B  
TEMPE, AZ 85284  
602-728-8000



morris + associates  
14139 HUFFMEISTER ROAD  
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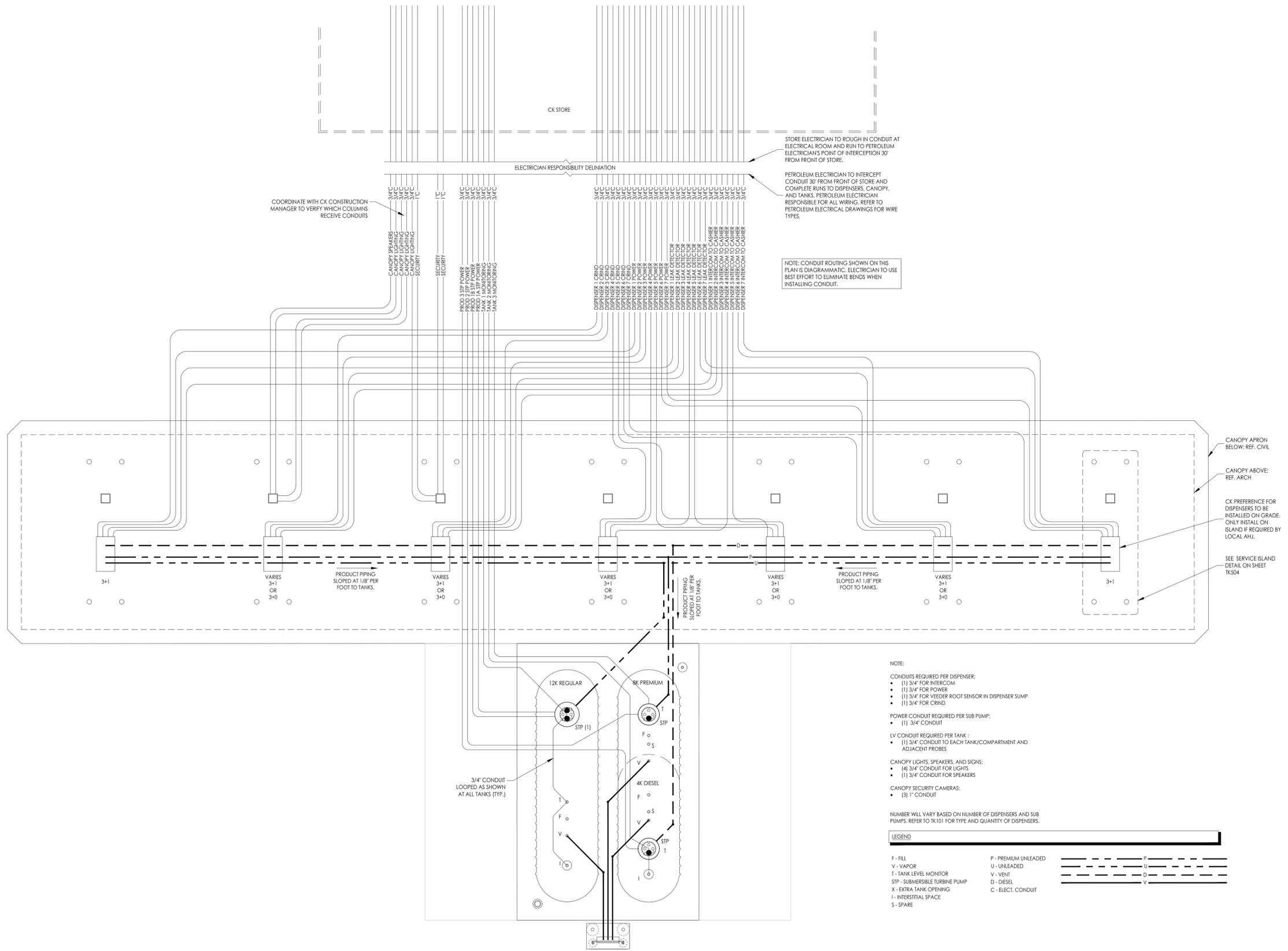


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PROJECT: FUEL SYSTEM RENOVATION  
**CIRCLE K STORE #2741039**  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248  
SHEET TITLE:  
**SCHEMATIC WIRING, PIPING & DETAILS**

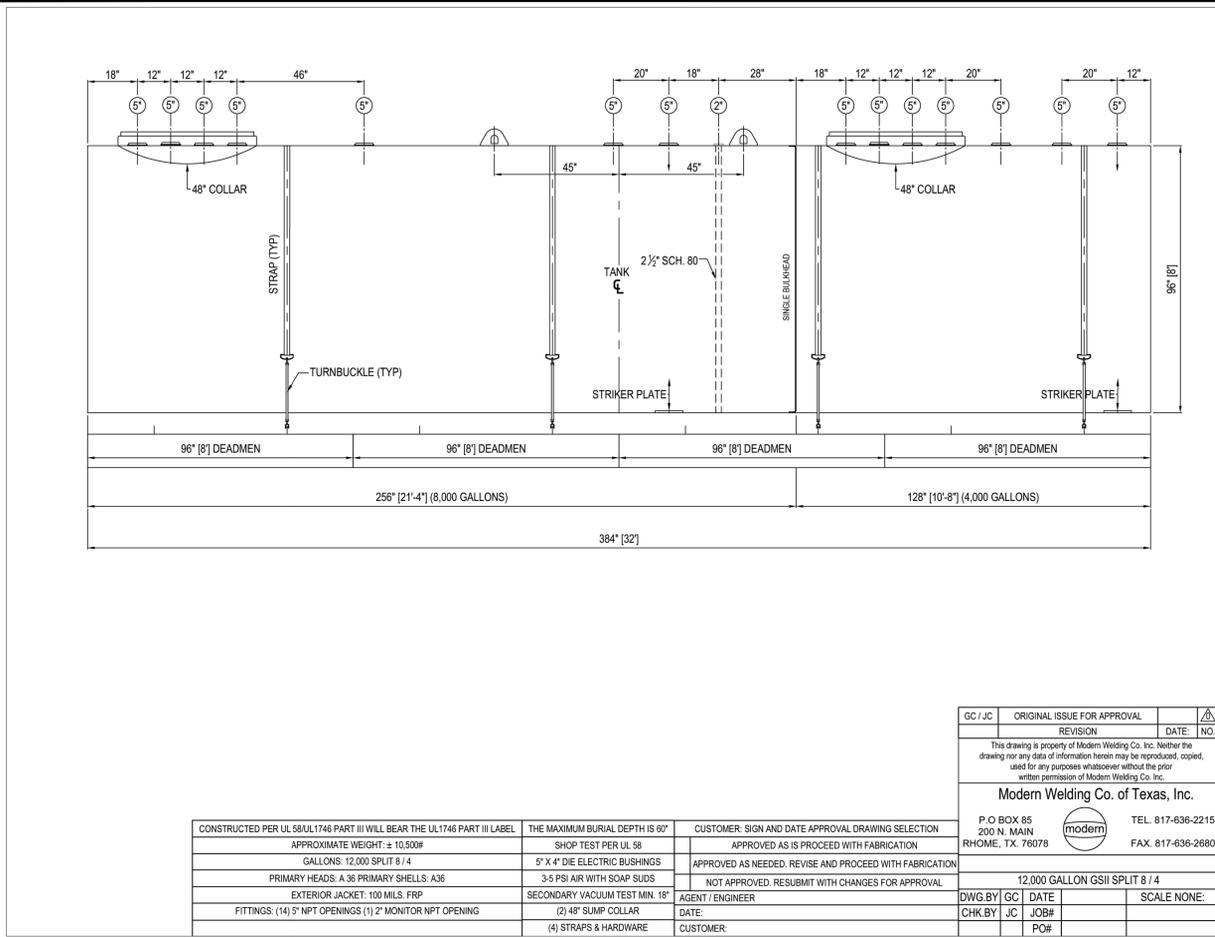
Drawn: KC  
Checked: MM  
PERMIT ISSUE  
PROJECT #: 4602

SHEET NO.  
**TK102**



**NOTE:**  
CONDUITS REQUIRED PER DISPENSER:  
• (1) 3/4" FOR INTERCOM  
• (1) 3/4" FOR POWER  
• (1) 3/4" FOR VEEDER ROOT SENSOR IN DISPENSER SUMP  
• (1) 3/4" FOR CRND  
POWER CONDUIT REQUIRED PER SUB PUMP:  
• (1) 3/4" CONDUIT  
LV CONDUIT REQUIRED PER TANK:  
• (1) 3/4" CONDUIT TO EACH TANK/COMPARTMENT AND ADJACENT PROBES  
CANOPY LIGHTS, SPEAKERS, AND SIGNS:  
• (4) 3/4" CONDUIT FOR LIGHTS  
• (1) 3/4" CONDUIT FOR SPEAKERS  
CANOPY SECURITY CAMERAS:  
• (3) 1" CONDUIT  
NUMBER WILL VARY BASED ON NUMBER OF DISPENSERS AND SUB PUMPS. REFER TO TK101 FOR TYPE AND QUANTITY OF DISPENSERS.

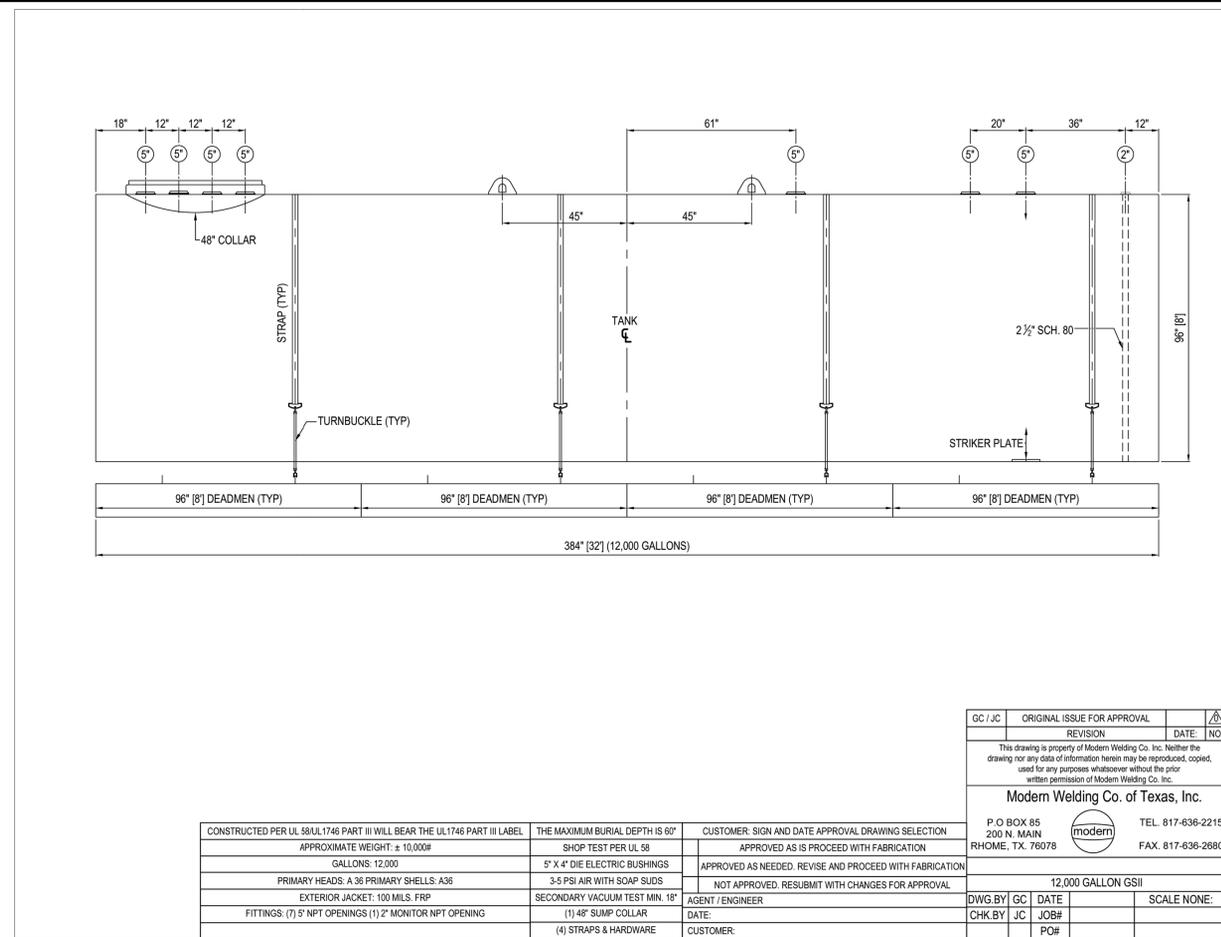
LEGEND	
F - FILL	P - PREMIUM UNLEADED
V - VAPOR	U - UNLEADED
T - TANK LEVEL MONITOR	V - VENT
STP - SUBMERSIBLE TURBINE PUMP	D - DIESEL
X - EXTRA TANK OPENING	C - ELECT. CONDUIT
I - INTERSTITIAL SPACE	
S - SPARE	



CONSTRUCTED PER UL 58UL1746 PART III WILL BEAR THE UL1746 PART III LABEL	THE MAXIMUM BURIAL DEPTH IS 60"	CUSTOMER: SIGN AND DATE APPROVAL DRAWING SELECTION
APPROXIMATE WEIGHT: ± 10,500#	SHOP TEST PER UL 58	APPROVED AS IS PROCEED WITH FABRICATION
GALLONS: 12,000 SPLIT 8 / 4	5" X 4" DIE ELECTRIC BUSHINGS	APPROVED AS NEEDED, REVISE AND PROCEED WITH FABRICATION
PRIMARY HEADS: A 36 PRIMARY SHELLS: A36	3-5 PSI AIR WITH SOAP SUDS	NOT APPROVED, RESUBMIT WITH CHANGES FOR APPROVAL
EXTERIOR JACKET: 100 MILS. FRP	SECONDARY VACUUM TEST MIN. 18"	AGENT / ENGINEER
FITTINGS: (14) 5" NPT OPENINGS (1) 2" MONITOR NPT OPENING	(2) 48" SUMP COLLAR	DATE:
	(4) STRAPS & HARDWARE	CUSTOMER:

GC / JC	ORIGINAL ISSUE FOR APPROVAL	DATE	NO.
REVISION			
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<b>Modern Welding Co. of Texas, Inc.</b>			
P O BOX 85 200 N. MAIN RHOME, TX. 76078		TEL. 817-636-2215 FAX. 817-636-2680	
12,000 GALLON GSII SPLIT 8 / 4			
DWG BY	GC	DATE	SCALE NONE:
CHK BY	JC	JOB#	
	PO#		

1 12K GALLON DUAL COMPARTMENT UNDERGROUND STORAGE TANK (8K/4K SPLIT) SCALE: NTS



CONSTRUCTED PER UL 58UL1746 PART III WILL BEAR THE UL1746 PART III LABEL	THE MAXIMUM BURIAL DEPTH IS 60"	CUSTOMER: SIGN AND DATE APPROVAL DRAWING SELECTION
APPROXIMATE WEIGHT: ± 10,000#	SHOP TEST PER UL 58	APPROVED AS IS PROCEED WITH FABRICATION
GALLONS: 12,000	5" X 4" DIE ELECTRIC BUSHINGS	APPROVED AS NEEDED, REVISE AND PROCEED WITH FABRICATION
PRIMARY HEADS: A 36 PRIMARY SHELLS: A36	3-5 PSI AIR WITH SOAP SUDS	NOT APPROVED, RESUBMIT WITH CHANGES FOR APPROVAL
EXTERIOR JACKET: 100 MILS. FRP	SECONDARY VACUUM TEST MIN. 18"	AGENT / ENGINEER
FITTINGS: (7) 5" NPT OPENINGS (1) 2" MONITOR NPT OPENING	(1) 48" SUMP COLLAR	DATE:
	(4) STRAPS & HARDWARE	CUSTOMER:

GC / JC	ORIGINAL ISSUE FOR APPROVAL	DATE	NO.
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P O BOX 85 200 N. MAIN RHOME, TX. 76078		TEL. 817-636-2215 FAX. 817-636-2680	
12,000 GALLON GSII			
DWG BY	GC	DATE	SCALE NONE:
CHK BY	JC	JOB#	
	PO#		

2 12K GALLON UNDERGROUND STORAGE TANK (8' DIAMETER) SCALE: NTS

3 NOT USED SCALE: NTS

4 NOT USED SCALE: NTS



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1130 WEST WARNER ROAD  
SUITE B  
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FIRM#1449  
09/22/22

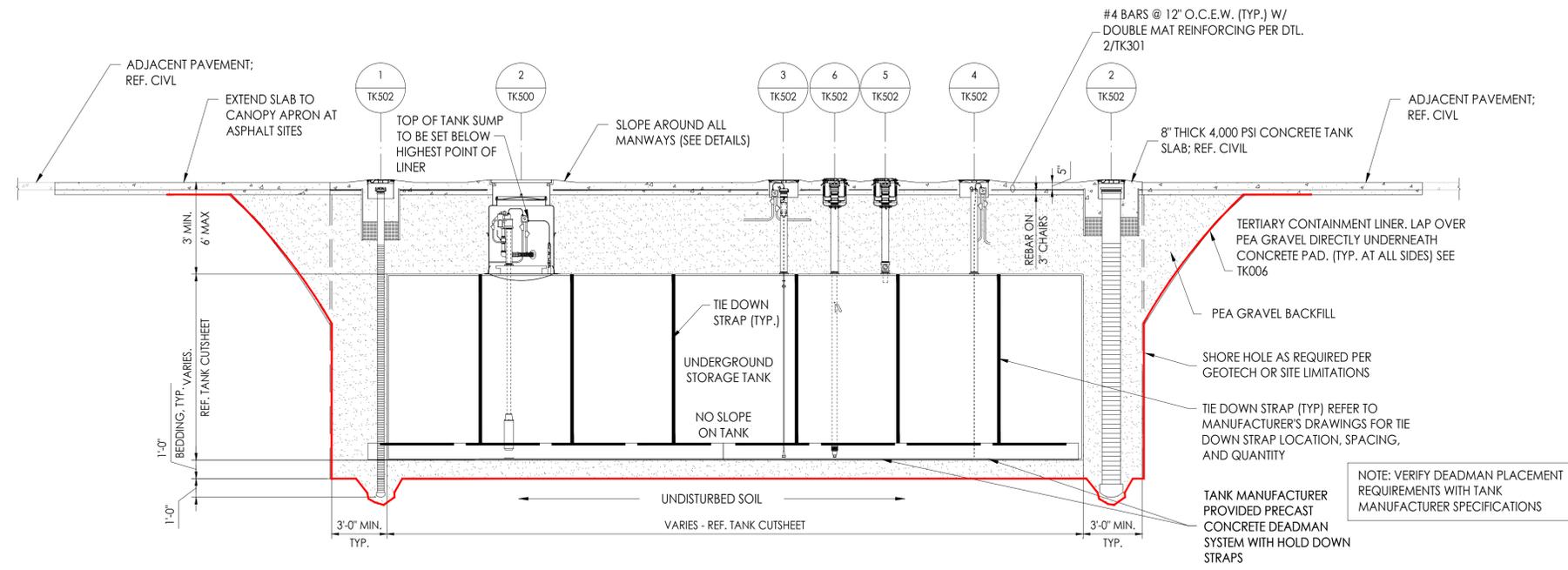
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PROJECT: FUEL SYSTEM RENOVATION  
CIRCLE K STORE #2741039  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248

STANDARD TANKS

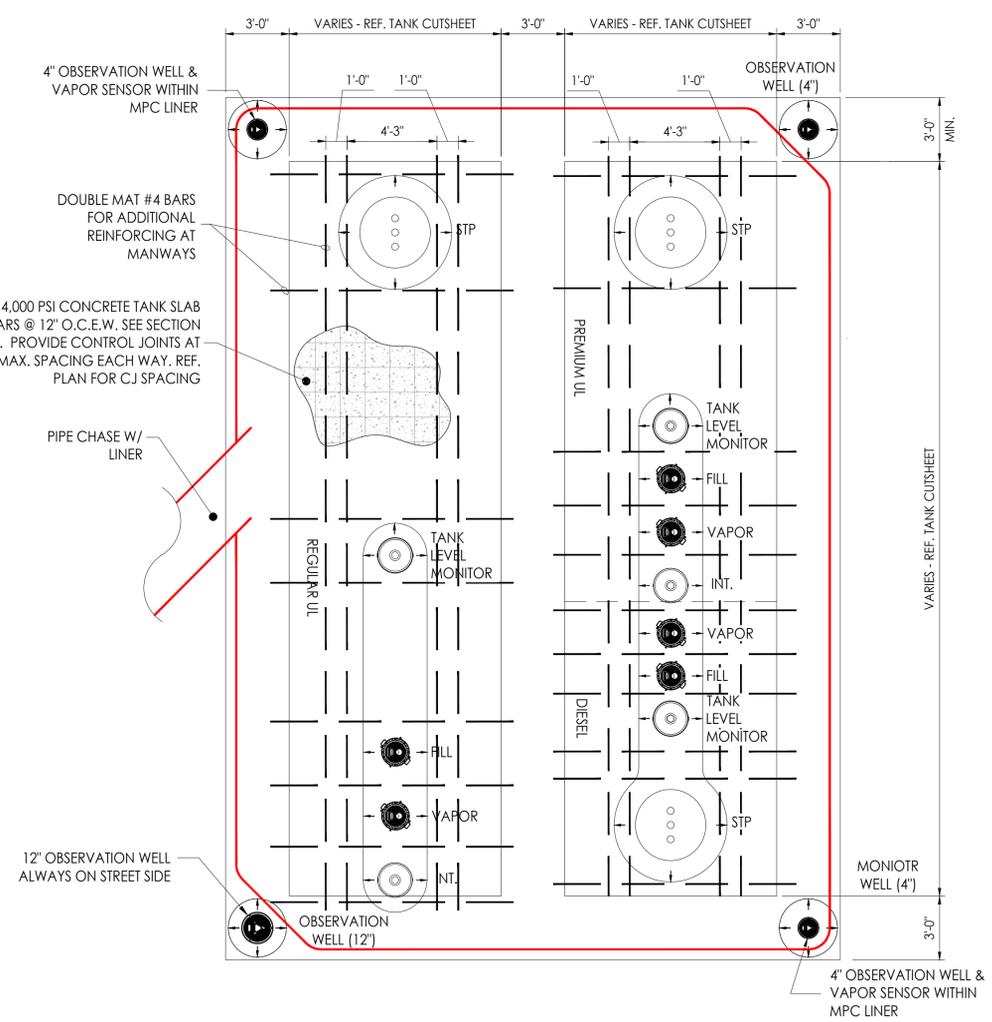
Drawn: KK  
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SHEET NO.  
TK201



1 UNDERGROUND STORAGE TANK PROFILE

SCALE: NONE



2 UNDERGROUND STORAGE TANK PLAN

SCALE: NONE



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PROJECT: FUEL SYSTEM RENOVATION  
CIRCLE K STORE #2741039  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248

TYPICAL UST PLAN AND SECTIONS

Drawn: KK  
Checked: MM  
PERMIT ISSUE  
PROJECT #: 4602

SHEET NO.  
**TK301**

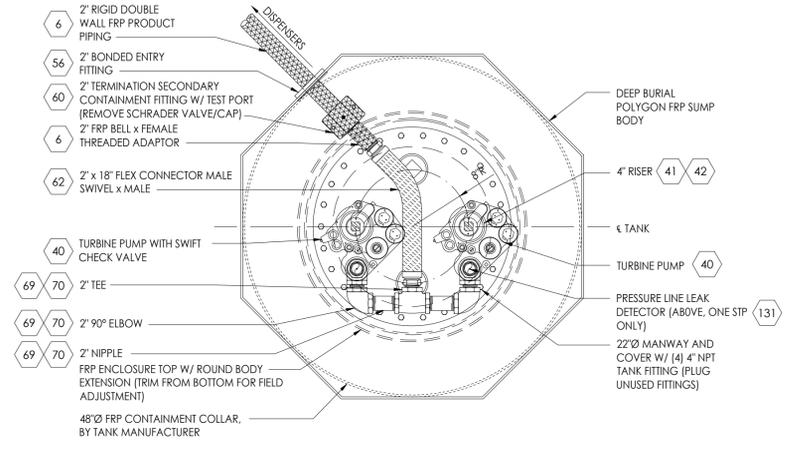


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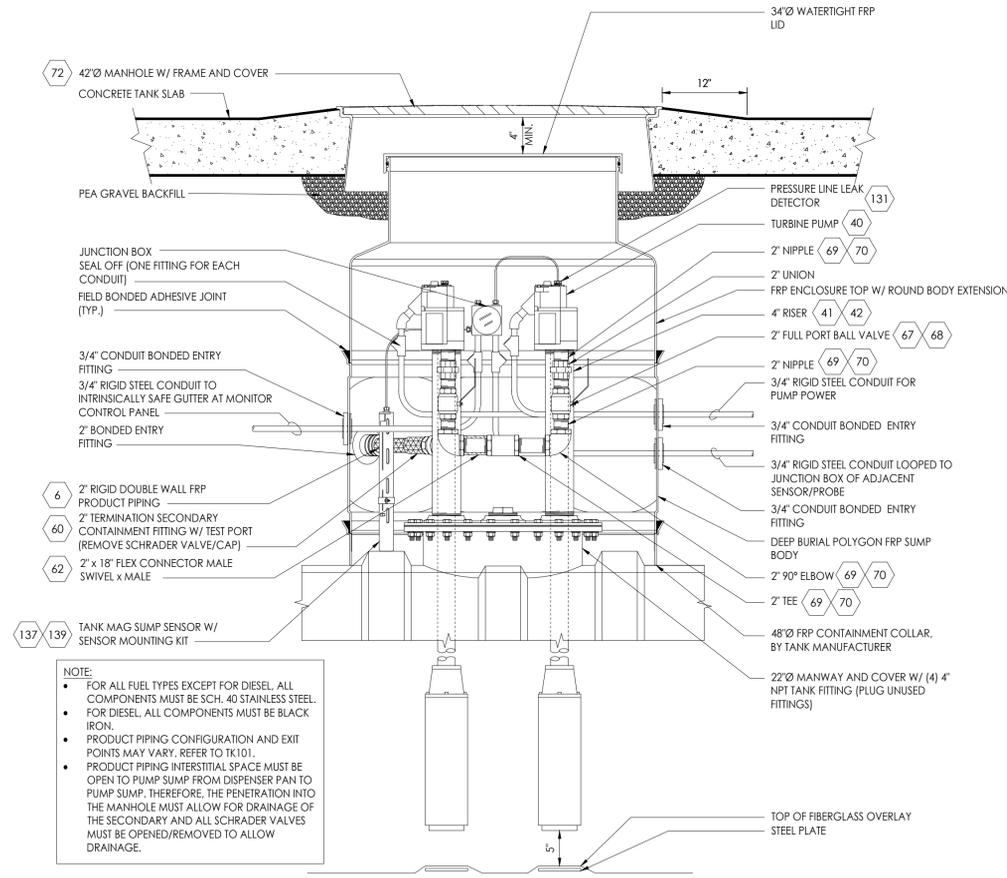


PLAN VIEW AT MANWAY

1 TANK SUMP DETAIL - PLAN

SCALE: NTS

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SECTION

**NOTE:**

- FOR ALL FUEL TYPES EXCEPT FOR DIESEL ALL COMPONENTS MUST BE SCH. 40 STAINLESS STEEL.
- FOR DIESEL ALL COMPONENTS MUST BE BLACK IRON.
- PRODUCT PIPING CONFIGURATION AND EXIT POINTS MAY VARY. REFER TO TK101.
- PRODUCT PIPING INTERSTITIAL SPACE MUST BE OPEN TO PUMP SUMP FROM DISPENSER PAN TO PUMP SUMP. THEREFORE, THE PENETRATION INTO THE MANHOLE MUST ALLOW FOR DRAINAGE OF THE SECONDARY AND ALL SCHRADER VALVES MUST BE OPENED/REMOVED TO ALLOW DRAINAGE.

2 TANK SUMP DETAIL - PROFILE

SCALE: NTS

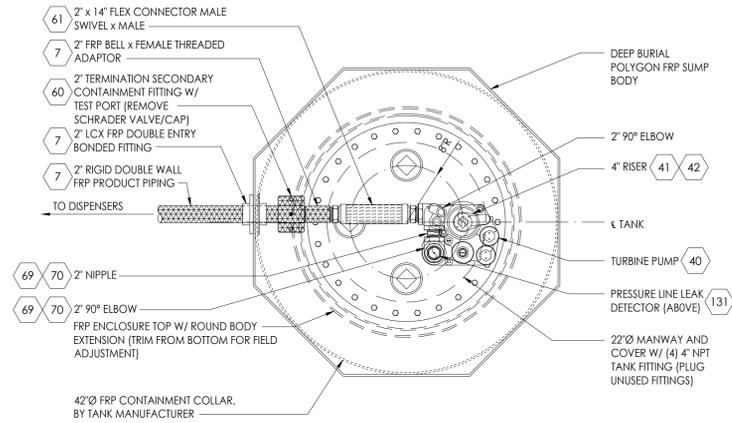
PROJECT: FUEL SYSTEM RENOVATION  
CIRCLE K STORE #2741039  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248  
SHEET TITLE: TANK SUMP DETAILS

Drawn: KK  
Checked: MM  
PERMIT ISSUE

PROJECT #: 4602

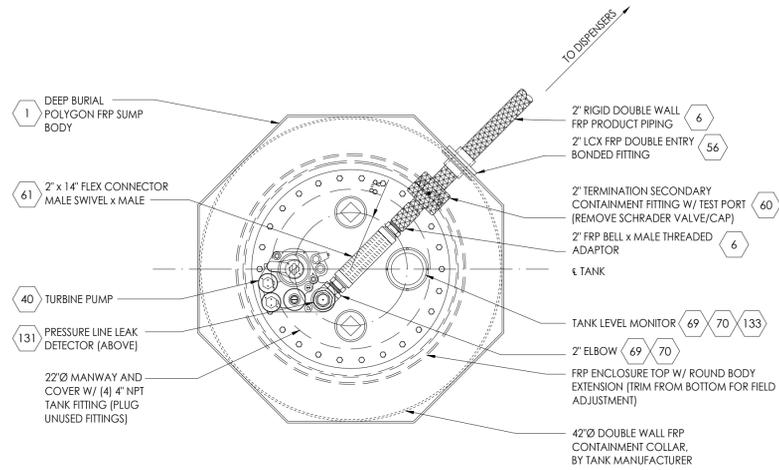
SHEET NO.

TK500



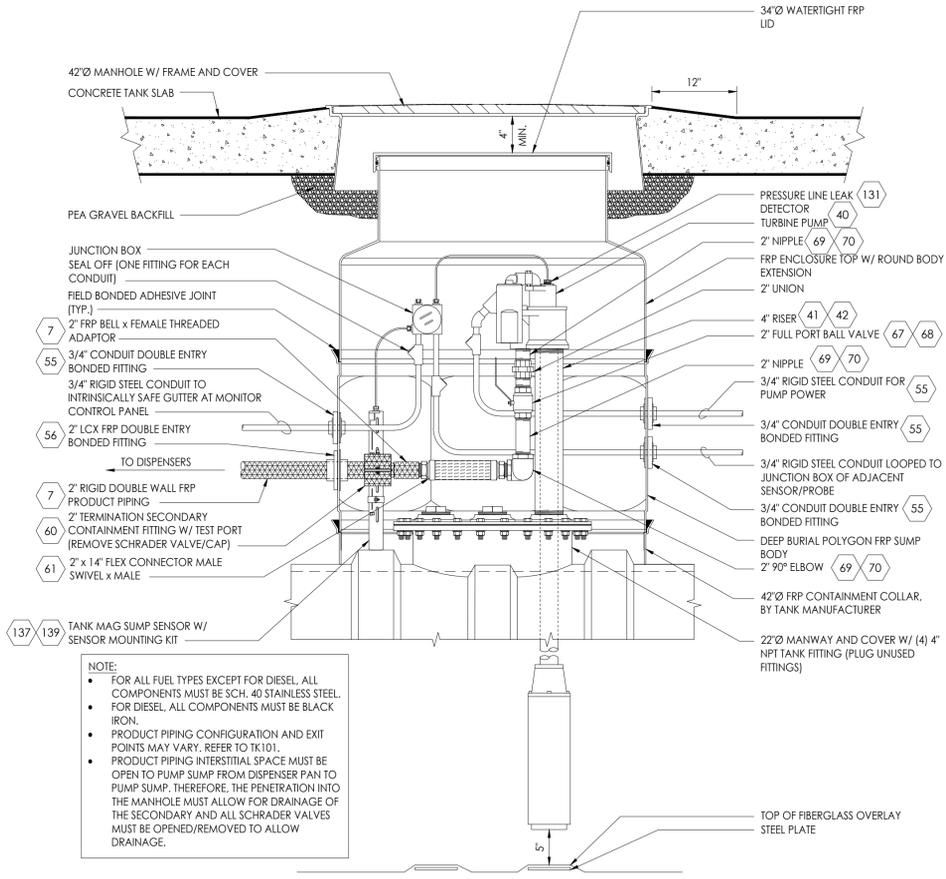
1 TANK SUMP DETAIL - PLAN

SCALE: NTS



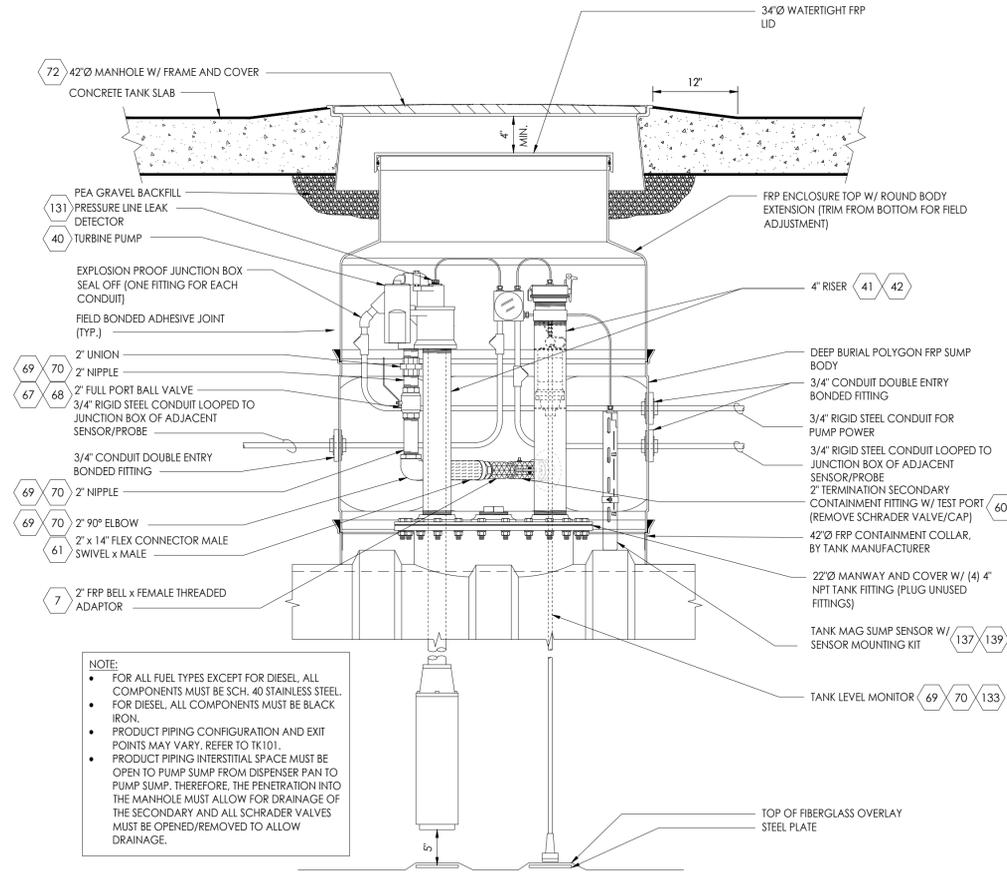
3 TANK SUMP DETAIL - PLAN

SCALE: NTS



2 TANK SUMP DETAIL - PROFILE

SCALE: NTS



4 TANK SUMP DETAIL - PROFILE

SCALE: NTS



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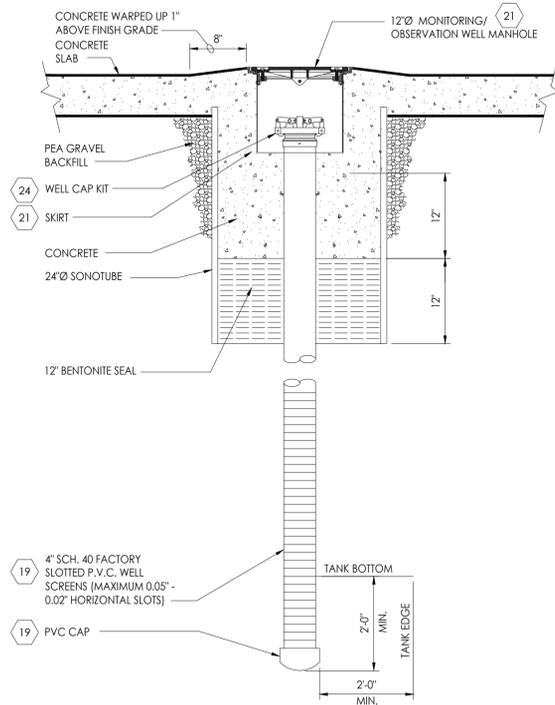
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CIRCLE K STORE #2741039  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248

TANK SUMP DETAILS

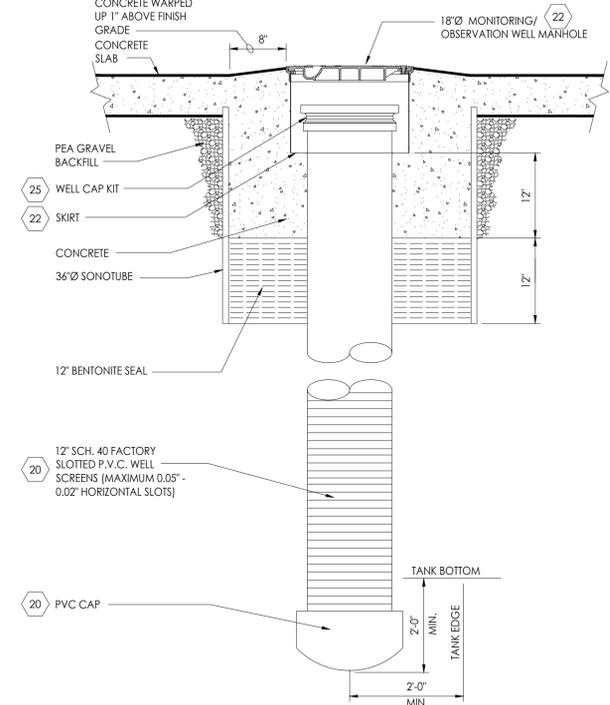
Drawn: KC  
Checked: MM  
PERMIT ISSUE

PROJECT #: 4602

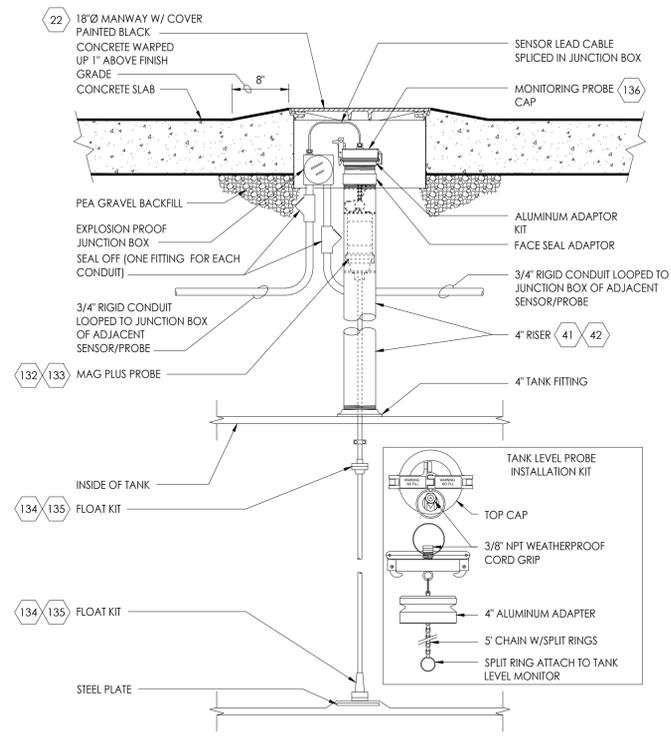
SHEET NO.  
**TK501**



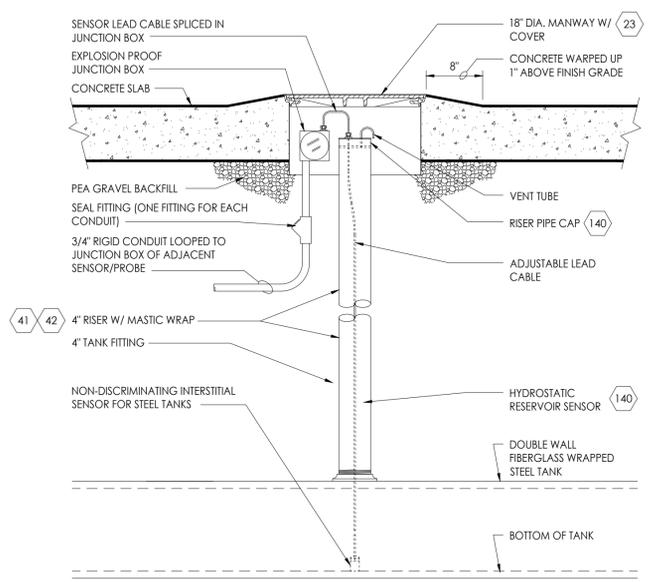
1 OBSERVATION WELL DETAIL (4") SCALE: NONE



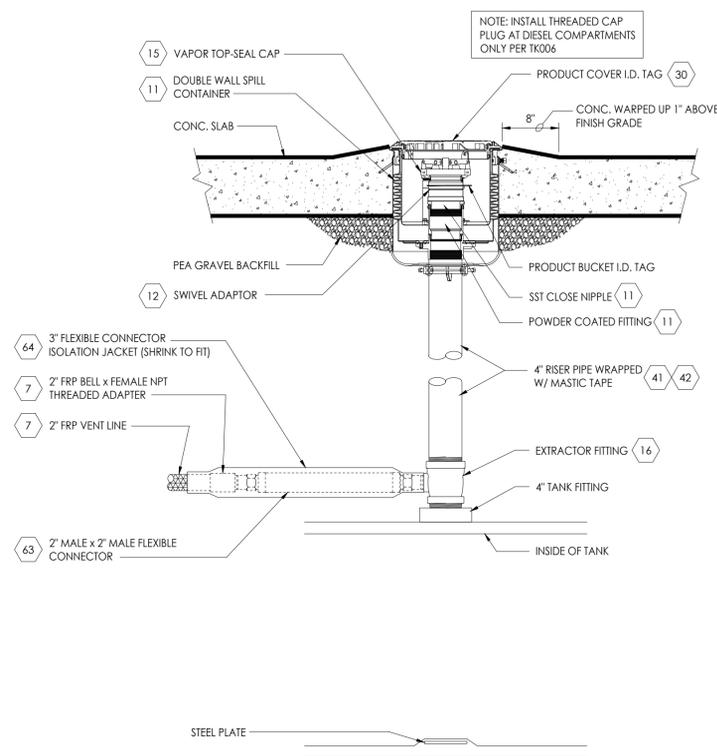
2 OBSERVATION WELL DETAIL (12") SCALE: NONE



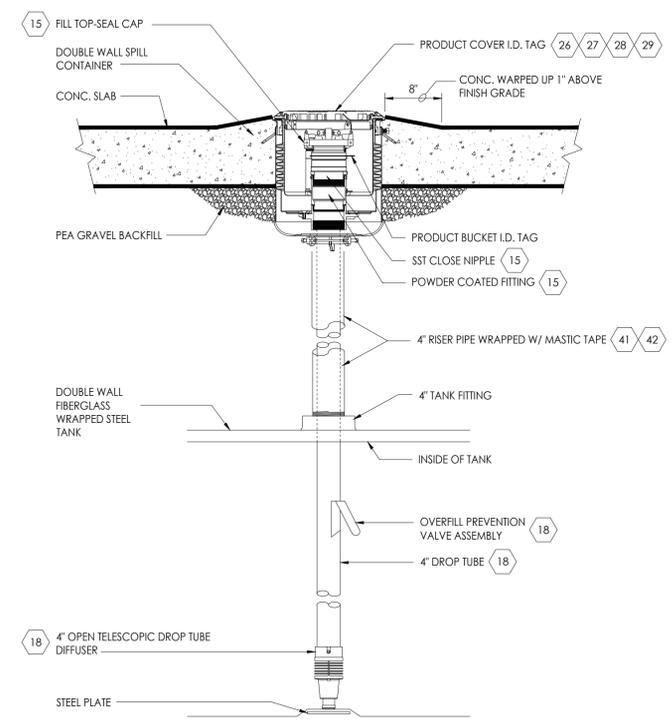
3 TANK LEVEL MONITOR DETAIL SCALE: NONE



4 INTERSTITIAL PROBE DETAIL SCALE: NONE



5 VAPOR RISER DETAIL SCALE: NONE



6 FILL RISER DETAIL SCALE: NONE



CIRCLE K STORES INC.  
1130 WEST WARNER ROAD  
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PROJECT: FUEL SYSTEM RENOVATION  
CIRCLE K STORE #2741039  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248

SHEET TITLE:  
TANK TOP HARDWARE DETAILS

Drawn: KC  
Checked: MM  
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PROJECT #: 4602

SHEET NO.  
**TK502**



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09/22/22

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PROJECT: FUEL SYSTEM RENOVATION  
**CIRCLE K STORE #2741039**  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248  
SHEET TITLE: **DISPENSER SUMP DETAILS**

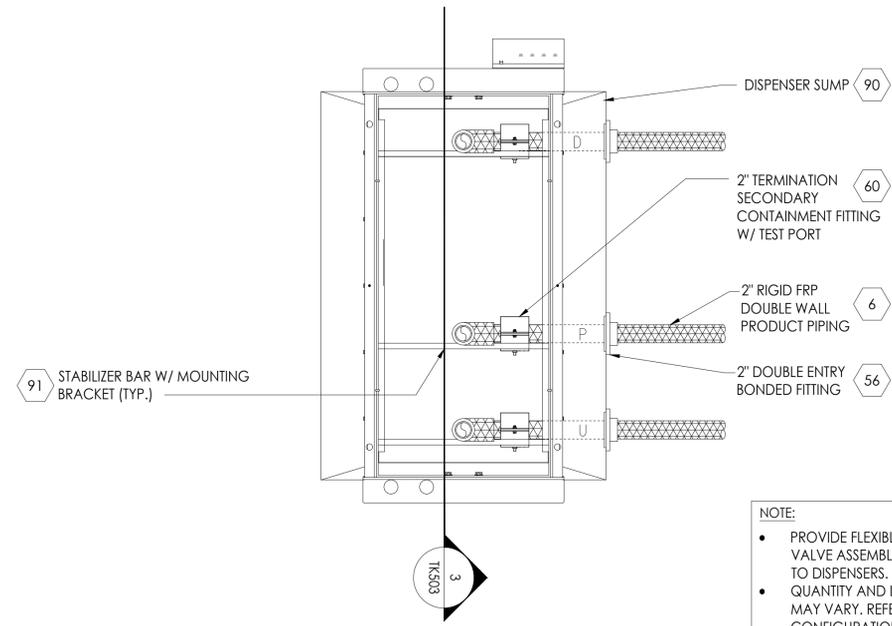
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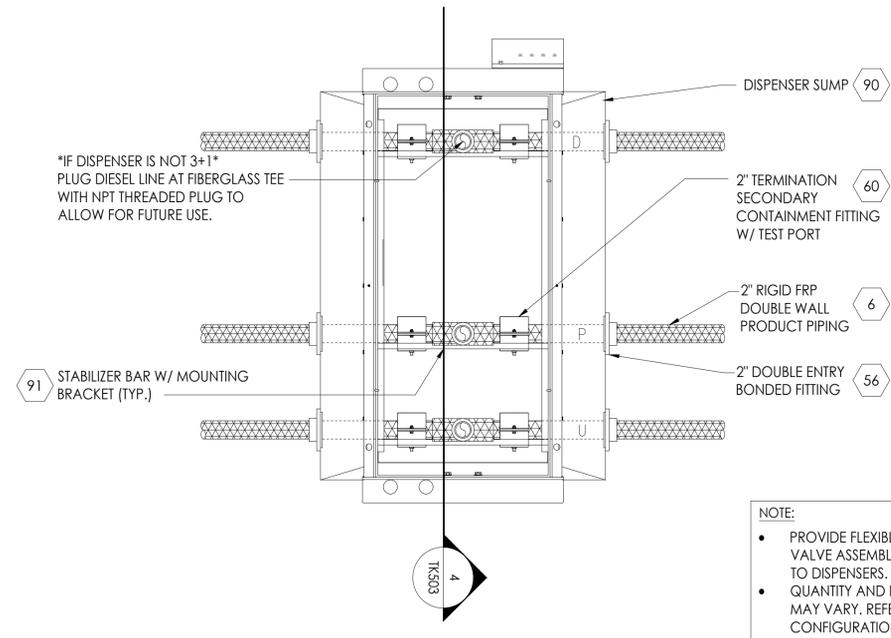
SHEET NO.

**TK503**



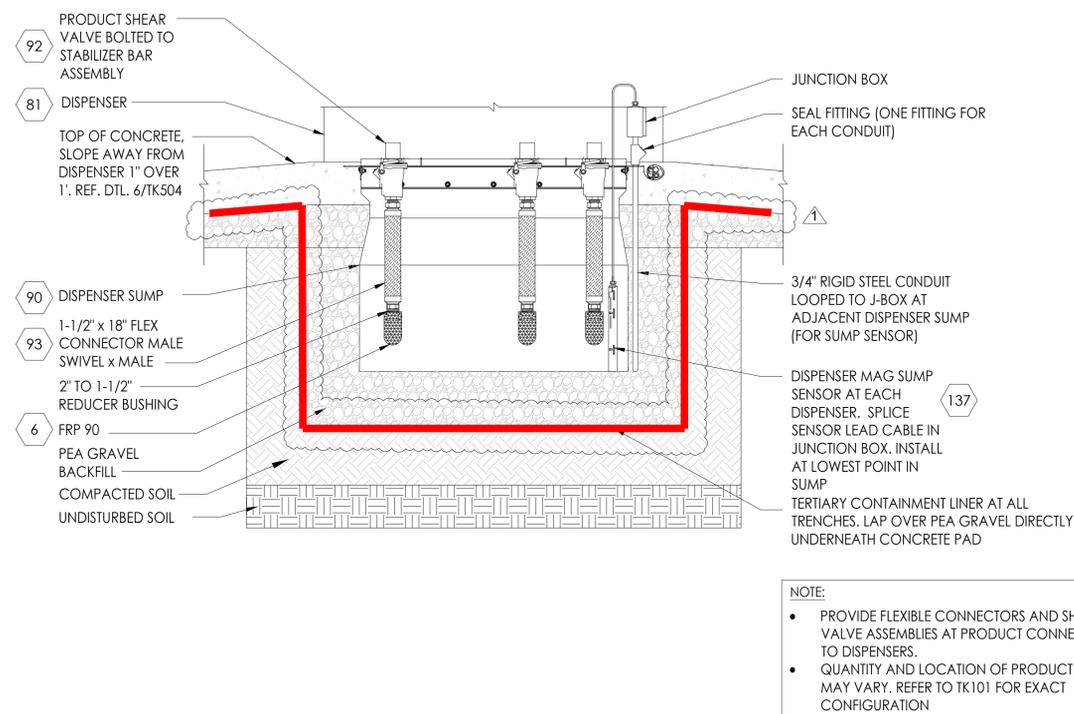
1 DISPENSER SUMP DETAIL (TERMINATION)

SCALE: NTS



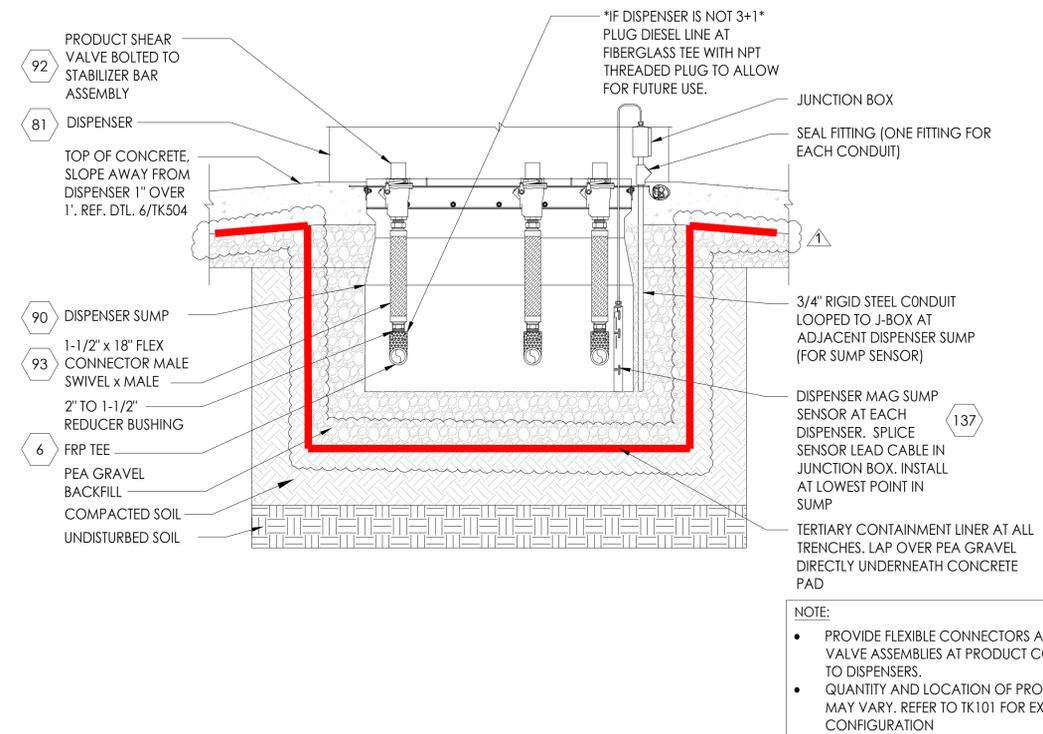
2 DISPENSER SUMP DETAIL (THRU & THRU)

SCALE: NTS



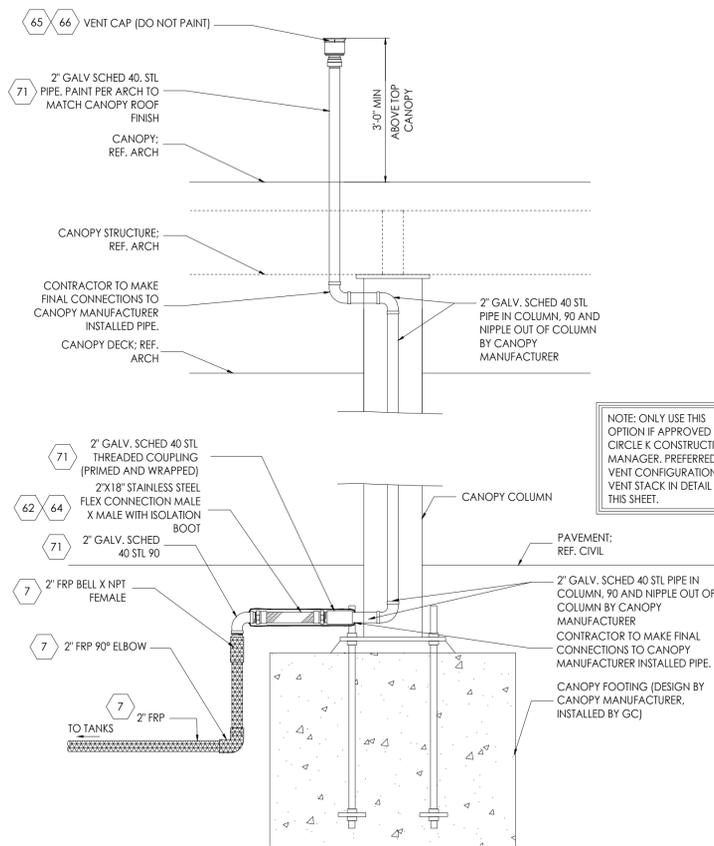
3 DISPENSER SUMP SECTION (TERMINATION)

SCALE: NTS



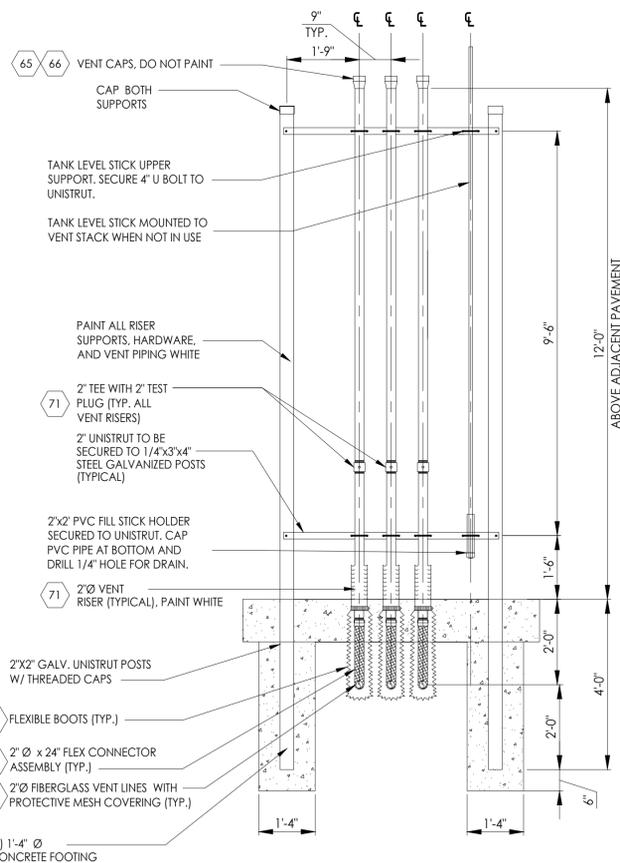
4 DISPENSER SUMP SECTION (THRU & THRU)

SCALE: NTS



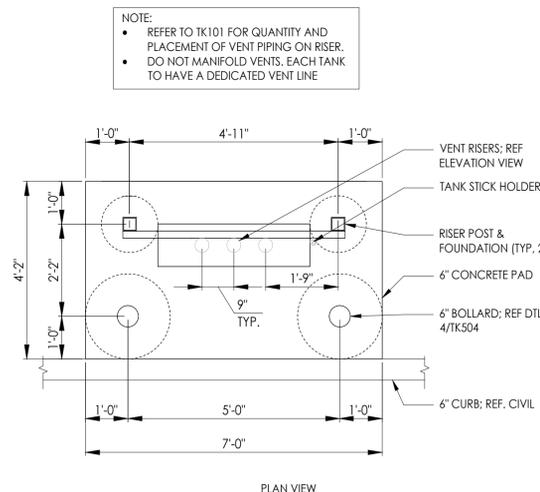
1b TYPICAL VENT THRU CANOPY COLUMN DETAIL

SCALE: 3/4" = 1'-0"



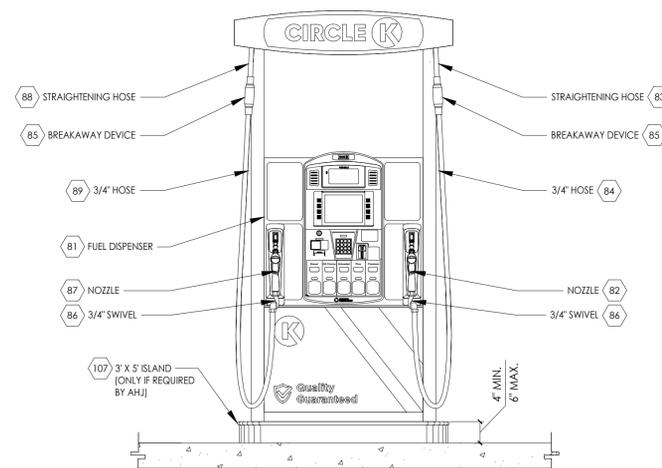
1a TYPICAL FREE STANDING VENT RISER

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



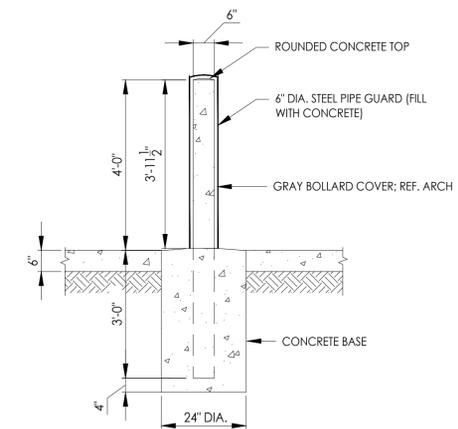
0	REGULAR E0 UNLEADED; LID PAINTED WHITE WITH "0" PAINTED IN BLACK	E15	E15 FUEL; LID PAINTED BROWN WITH "E15" PAINTED IN BLACK		BIODIESEL B100/B99.9; LID PAINTED LIGHT BLUE
0	MIDGRADE E0 UNLEADED; LID PAINTED BLUE WITH "0" PAINTED IN BLACK	E85	E85 FUEL; LID PAINTED BROWN WITH "E85" PAINTED IN BLACK		DIESEL EXHAUST FLUID; PAINT DARK BLUE
0	PREMIUM E0 UNLEADED; LID PAINTED RED WITH "0" PAINTED IN BLACK		ON-ROAD ULTRA LOW SULFUR DIESEL; LID PAINTED YELLOW	2	FUEL OIL #2; LID PAINTED GREEN WITH "2" PAINTED IN BLACK
	REGULAR E10 UNLEADED; LID PAINTED WHITE	B20	ON-ROAD ULTRA LOW SULFUR DIESEL 820% BIODESEL; LID PAINTED YELLOW WITH "B20" PAINTED IN BLACK		KEROSENE; LID PAINTED BROWN
	MIDGRADE E10 UNLEADED; LID PAINTED BLUE	OFF	OFF-ROAD ULTRA LOW SULFUR DIESEL; LID PAINTED YELLOW WITH "OFF" PAINTED IN RED		USED OIL; LID PAINTED GRAY
	PREMIUM E10 UNLEADED; LID PAINTED RED	OFF B20	OFF-ROAD ULTRA LOW SULFUR DIESEL; LID PAINTED YELLOW WITH "OFF" PAINTED IN RED AND "B20" PAINTED IN BLACK		MONITORING WELL; LID PAINTED WHITE WITH BLACK TRIANGLE
					VAPOR RECOVERY; LID PAINTED ORANGE

2 API COLOR CODES FOR MANWAYS



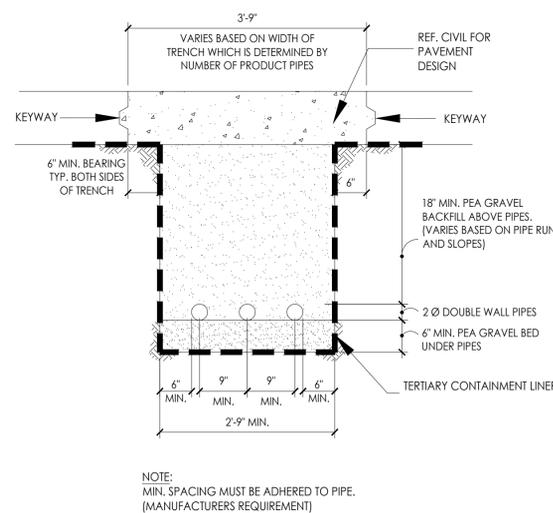
3 DISPENSER ELEVATION

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



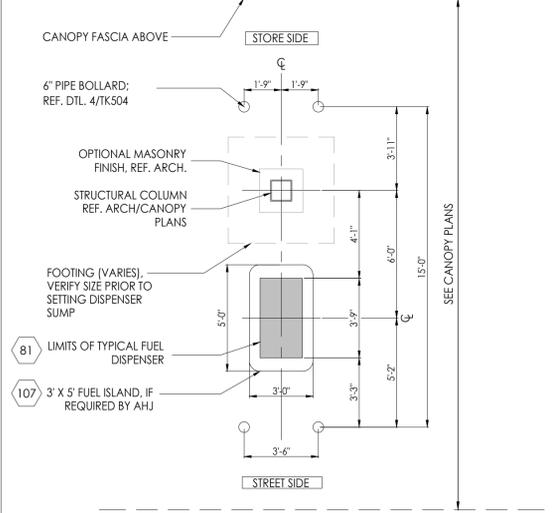
4 PIPE BOLLARD DETAIL

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



5 PIPE TRENCH

SCALE: 3/4" = 1'-0"



6 DISPENSER ISLAND DETAIL

SCALE: 1/4" = 1'-0"



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PROJECT: FUEL SYSTEM RENOVATION  
CIRCLE K STORE #2741039  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248

Drawn: KC  
Checked: MM

PERMIT ISSUE

PROJECT #: 4602

SHEET NO.

TK504

FUEL SYSTEM DETAILS



CIRCLE K STORES INC.  
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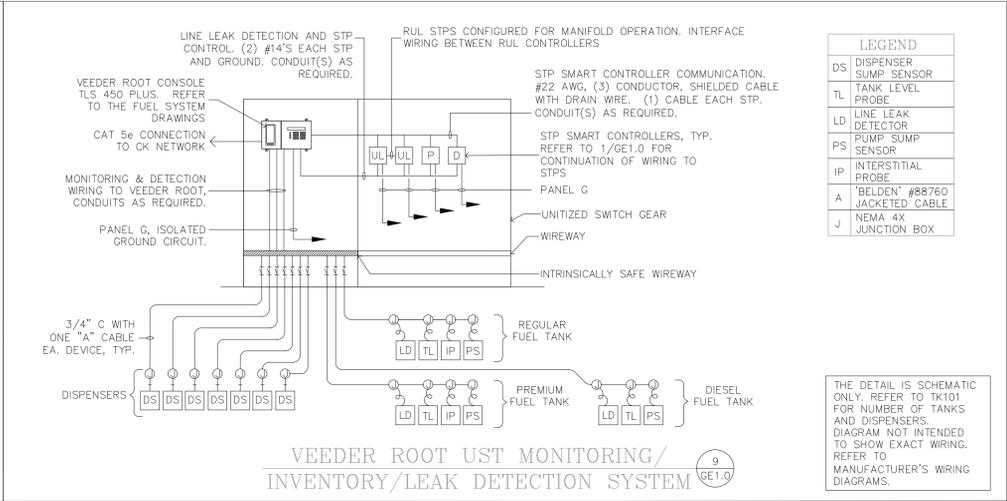


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4	10/28/2022
5	06/13/2023

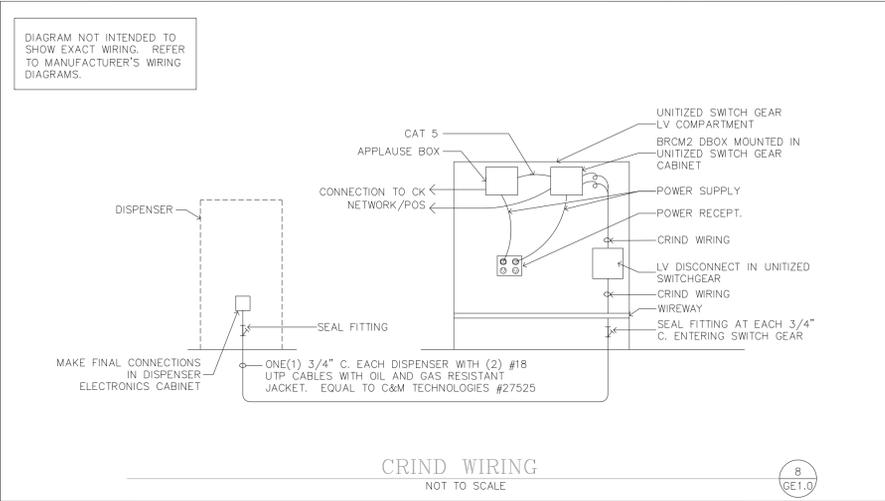
PROJECT: FUEL SYSTEM RENOVATION  
CIRCLE K STORE #2741039  
16555 HUBNER RD.  
SAN ANTONIO TX 78248  
SHEET TITLE:

Drawn: KC  
Checked: MM  
PERMIT ISSUE  
PROJECT #: 4602  
SHEET NO.

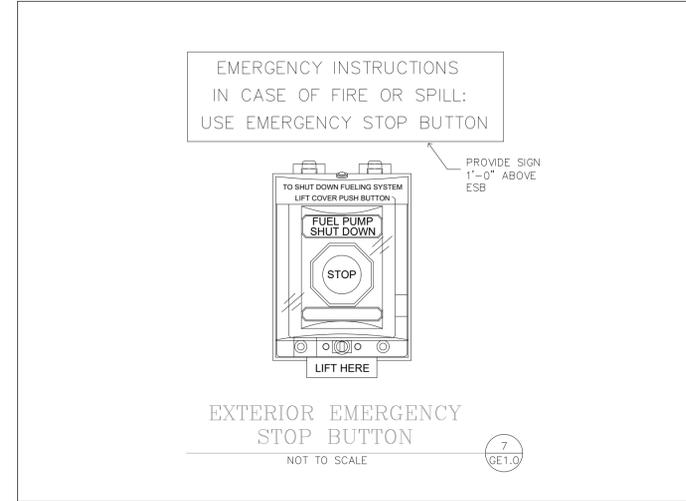
GE1.0



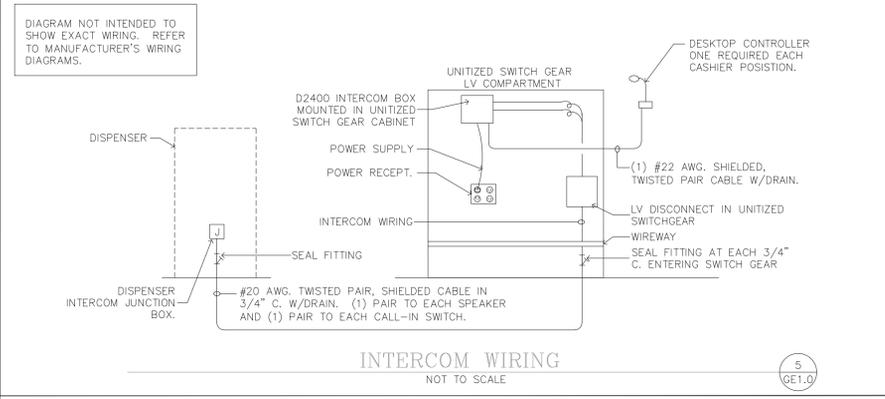
VEEDER ROOT UST MONITORING/INVENTORY/LEAK DETECTION SYSTEM (7) GE1.0



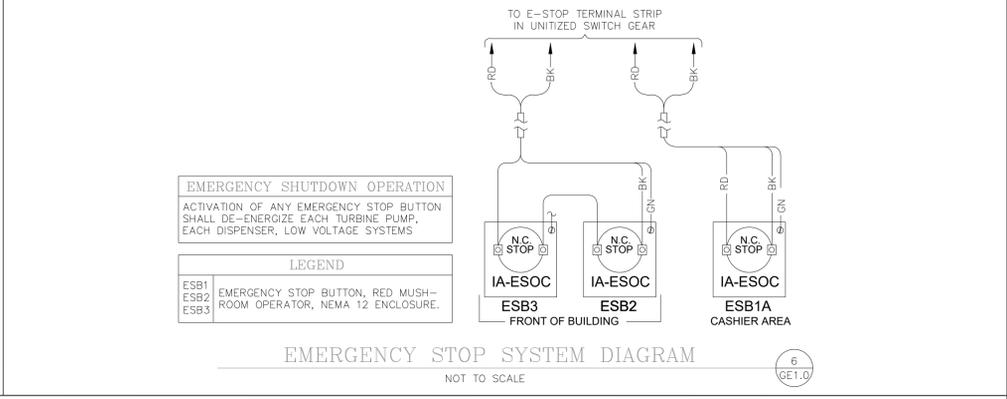
CRIND WIRING (8) GE1.0



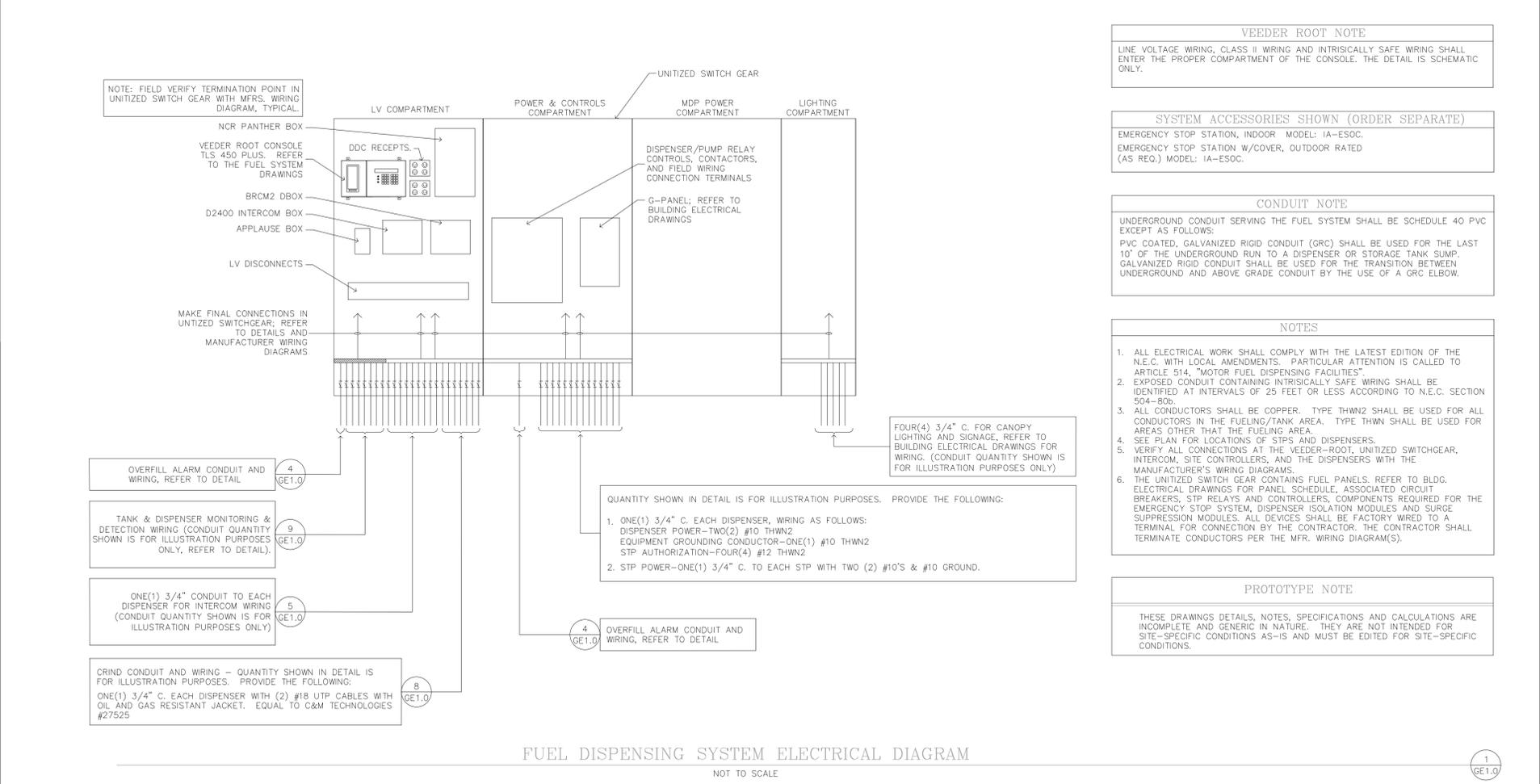
EXTERIOR EMERGENCY STOP BUTTON (7) GE1.0



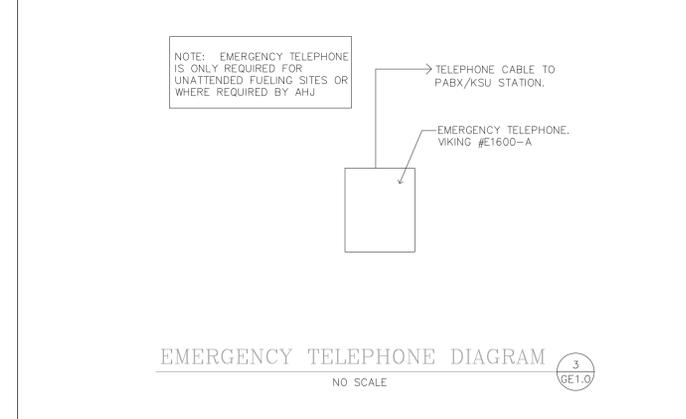
INTERCOM WIRING (5) GE1.0



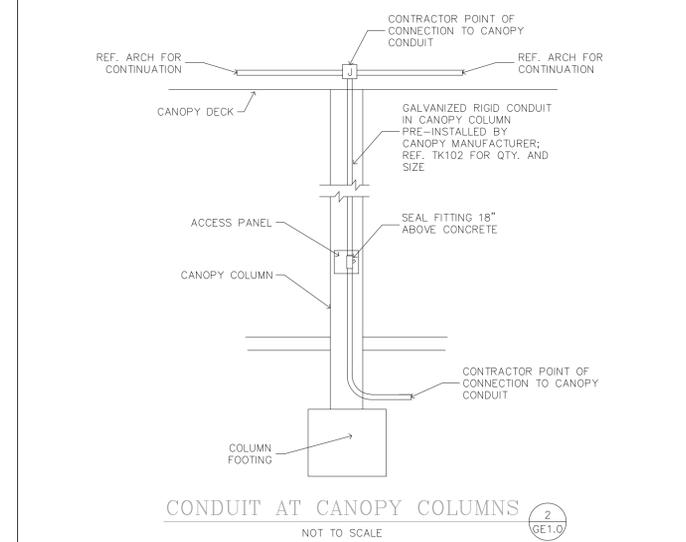
EMERGENCY STOP SYSTEM BUILDING (6) GE1.0



FUEL DISPENSING SYSTEM ELECTRICAL DIAGRAM (1) GE1.0



EMERGENCY TELEPHONE DIAGRAM (3) GE1.0



CONDUIT AT CANOPY COLUMNS (2) GE1.0

# Modification of a Previously Approved Plan

## Texas Commission on Environmental Quality

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

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

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

## Signature

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

Print Name of Customer/Agent: Matthew Marek

Date: 7/7/23

Signature of Customer/Agent:



## Project Information

1. Current Regulated Entity Name: Circle K Stores, Inc.  
Original Regulated Entity Name: Circle K Stores, Inc.  
Regulated Entity Number(s) (RN): RN102432044  
Edwards Aquifer Protection Program ID Number(s): \_\_\_\_\_  
 The applicant has not changed and the Customer Number (CN) is: CN600134456  
 The applicant or Regulated Entity has changed. A new Core Data Form has been provided.
2.  **Attachment A: Original Approval Letter and Approved Modification Letters.** A copy of the original approval letter and copies of any modification approval letters are attached.

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

<b><i>WPAP Modification</i></b>	<b><i>Approved Project</i></b>	<b><i>Proposed Modification</i></b>
<b><i>Summary</i></b>		
Acres	<u>1.0090</u>	<u>1.0090</u>
Type of Development	<u>Cstore</u>	<u>Cstore</u>
Number of Residential Lots	<u>0</u>	<u>0</u>
Impervious Cover (acres)	<u>.9081</u>	<u>.9081</u>
Impervious Cover (%)	<u>90%</u>	<u>90%</u>
Permanent BMPs	<u>Exists</u>	<u>None</u>
Other	<u>N/A</u>	<u>N/A</u>

<b><i>SCS Modification</i></b>	<b><i>Approved Project</i></b>	<b><i>Proposed Modification</i></b>
<b><i>Summary</i></b>		
Linear Feet	<u>N/A</u>	<u>N/A</u>
Pipe Diameter	<u>N/A</u>	<u>N/A</u>
Other	<u>N/A</u>	<u>N/A</u>

<b>AST Modification</b>	<b>Approved Project</b>	<b>Proposed Modification</b>
<b>Summary</b>		
Number of ASTs	<u>N/A</u>	<u>N/A</u>
Volume of ASTs	<u>N/A</u>	<u>N/A</u>
Other	<u>N/A</u>	<u>N/A</u>

<b>UST Modification</b>	<b>Approved Project</b>	<b>Proposed Modification</b>
<b>Summary</b>		
Number of USTs	<u>2</u>	<u>2</u>
Volume of USTs	<u>24,196</u>	<u>24,066</u>
Other	<u>N/A</u>	<u>N/A</u>

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

Jon Niermann, *Chairman*  
Emily Lindley, *Commissioner*  
Bobby Janecka, *Commissioner*  
Erin E. Chancellor, *Interim Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

March 3, 2023

Mr. Doug Ford  
Circle K Stores, Inc.  
19500 Bulverde Rd, Ste 100  
San Antonio, Texas 78259

Re: Edwards Aquifer, Bexar County

NAME OF PROJECT: Circle K Stores; Located at 16555 Huebner Rd.; San Antonio, Texas

TYPE OF PLAN: Request for Modification of an Approved Underground Storage Tank Facility Plan (UST); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Regulated Entity No. RN102432044; Additional ID No. 13001672

Dear Mr. Ford:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the UST Modification for the above-referenced project submitted to the San Antonio Regional Office by Circle K Stores, Inc. on behalf of Morris & Associates, Engineers, Inc. on December 21, 2023. Final review of the UST was completed after additional material was received on February 23, 2023, and February 28, 2023. As presented to the TCEQ, the UST Facility Plan proposed in the application was prepared to be in general compliance with the requirements of 30 TAC Chapter 334, Underground Storage Tanks, and 30 TAC §213.5(d). Therefore, based on the applicant's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this approval letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer protection plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

### BACKGROUND

The original UST for Diamond Shamrock No. 1039 was approved by letter dated October 4, 1993 and modified by letter dated October 12, 1999.

### PROJECT DESCRIPTION

This modification includes the removal of the existing tanks and piping on site, and the installation of two (2) new 20,074-gallon underground storage tanks and piping. One of the tanks will be for the storage of regular unleaded gasoline and the other tank is a compartmentalized tank for the storage of premium gasoline and diesel.

The tanks consist of steel primary tanks with external fiberglass reinforced plastic jackets. The piping will be double-wall fiberglass reinforced plastic piping. The tank pit and pipe trenches will be lined with an impermeable liner. Additional ancillary equipment includes: overfill prevention, spill containment, stainless steel flexible connectors, piping sumps, dispenser-end flexible connector isolation sleeves, dispenser-end containment sump, an electronic continuous leak detection system to monitor the tank and piping interstices and capable of notifying the system's owner, four observation wells, and all other equipment as required by 30 TAC Chapter 334.

#### GEOLOGY

A request for exception to submitting a geologic assessment was included with the application. The request is approved since the site was previously developed and no new areas are proposed to be disturbed. The site assessment conducted on February 10, 2023 revealed the site was generally as described in the application.

#### SPECIAL CONDITION

- I. This modification is subject to all Special and Standard Conditions listed in the UST approval letter dated October 4, 1993 and subsequent modification dated October 12, 1999.

#### STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.
2. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.
3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.
4. Installation, testing, and operation of the tanks, piping, and all other components of the proposed storage and monitoring systems shall be in conformance with the manufacturer's specifications.
5. All installations, repairs, and removals must be conducted by a registered UST contractor who has a licensed installer or on-site supervisor at the site during all critical junctures, as required by 30 TAC Chapter 334 Subchapter I.
6. The owner of the proposed facility shall assure that the storage tank system is installed, operated, and maintained in full compliance with the applicable provisions of 30 TAC Chapter 334 which establishes the requirements for the design, installation, operation, corrosion protection, construction notification, registration, fee assessment, financial responsibility, release reporting, corrective action related to such system, and all applicable federal, state and local regulations.

#### Prior to Commencement of Construction:

7. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed

Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved UST Facility Plan is enclosed.

8. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved UST Facility Plan and this notice of approval shall be maintained at the project location until all regulated activities are completed.
9. Prior to commencing construction, the applicant shall submit any modifications to this approved UST Facility Plan required by some other regulating authority or desired by the applicant.
10. Physical modification of the approved underground storage tank system requires the submittal of an Edwards Aquifer protection plan application to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
11. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
12. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved UST Facility Plan, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
13. All borings with depths greater than or equal to 20 feet must be plugged with a non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

14. A geologist must inspect the completed tankhold for the presence of geologic features. Certification that the tankhold excavation has been inspected must be submitted to the San Antonio Regional Office. If a geologic feature is discovered, the applicant must propose methods to protect the feature and the Edwards Aquifer from potentially adverse impacts to water quality from the underground storage tank system. Installation activities may not proceed until the executive director has reviewed and approved the proposed methods. The protection methods must be consistent with 30 TAC §213.5(d)(1)(B). Construction may continue without written approval from the TCEQ if the geologist certifies that no sensitive features were present.
15. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
16. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the <Austin/San Antonio> Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature

Mr. Doug Ford  
Page 4  
March 3, 2023

and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

17. No wells exist on site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
18. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
19. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
20. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.
21. Intentional discharges of sediment laden water during construction are not allowed. If dewatering of excavated areas becomes necessary, the discharge will be filtered through appropriately selected temporary best management practices. These may include vegetative filter strips, sediment traps, rock berms, silt fence rings, etc.

After Completion of Construction:

22. The leak detection system must provide continuous monitoring of the system and must be capable of immediately alerting the system's owner or their representative of possible leakages.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mr. Joshua Vacek of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4028.

Sincerely,



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

LIB/jv

Enclosures: Deed Recordation Affidavit, Form TCEQ-0625

cc: Mr. Matthew Marek, Morris & Associates, Engineers, Inc.

**Deed Recordation Affidavit**  
Edwards Aquifer Protection Plan

THE STATE OF TEXAS     §

County of \_\_\_\_\_ §

BEFORE ME, the undersigned authority, on this day personally appeared \_\_\_\_\_ who, being duly sworn by me, deposes and says:

- (1) That my name is \_\_\_\_\_ and that I own the real property described below.
- (2) That said real property is subject to an EDWARDS AQUIFER PROTECTION PLAN which was required under the 30 Texas Administrative Code (TAC) Chapter 213.
- (3) That the EDWARDS AQUIFER PROTECTION PLAN for said real property was approved by the Texas Commission on Environmental Quality (TCEQ) on \_\_\_\_\_.

A copy of the letter of approval from the TCEQ is attached to this affidavit as Exhibit A and is incorporated herein by reference.

- (4) The said real property is located in \_\_\_\_\_ County, Texas, and the legal description of the property is as follows:

\_\_\_\_\_  
LANDOWNER-AFFIANT

SWORN AND SUBSCRIBED TO before me, on this \_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

THE STATE OF \_\_\_\_\_ §

County of \_\_\_\_\_ §

BEFORE ME, the undersigned authority, on this day personally appeared \_\_\_\_\_ 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 \_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

\_\_\_\_\_  
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: \_\_\_\_\_

John Hall, *Chairman*  
Pam Reed, *Commissioner*  
Peggy Garner, *Commissioner*  
Anthony Grigsby, *Executive Director*



## TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

*Protecting Texas by Reducing and Preventing Pollution*

October 4, 1993

Mr. Ed Kress  
Diamond Shamrock Company  
P.O. Box 696000  
9830 Colonnade Boulevard  
San Antonio, Texas 78230

Re: Edwards Aquifer, Bexar County.

PROJECT NAME: Diamond Shamrock #1039, Located on the Southwest corner of the intersection of Huebner Rd. and Bitters Rd., San Antonio, Texas.

PLAN TYPE: Request for Approval of Underground Storage Tank (UST) Facility Construction Plans and Specifications; 31 Texas Administrative Code (TAC) §313.10; Edwards Aquifer Protection Program.

Dear Mr. Ed Kress:

The Texas Natural Resource Conservation Commission (TNRCC) has completed its review of the plans and specifications for the referenced project that were submitted by KEI., Consultants on behalf of Diamond Shamrock Company and received by the Region 13 Office on August 12, 1993.

The proposed UST facility is located on the Southwest corner of the intersection of Huebner Rd. and Bitters Rd., San Antonio, Bexar County, Texas.

A site inspection was conducted by a Region 13 field investigator on June 10, 1993. The field investigator found no karst features, or fractures on the site.

### PROJECT DESCRIPTION

The proposed new underground static hydrocarbon storage system will consist of the installation of three (3) 12,000 gallon double-wall Steel Fiberglass coated tank (manufactured by Watco) to be used for the storage of gasoline. In accordance with city of San Antonio requirements the UST system will be placed within a pit liner for tertiary containment.

REPLY TO: REGION 13 • 140 HEIMER RD., SUITE 360 • SAN ANTONIO, TEXAS 78232-5028 • AREA CODE 210/490-3096

P.O. Box 13087 • Austin, Texas 78711-3087 • 512/908-1000

THIS DOCUMENT IS UNCLASSIFIED

Mr. Ed Kress  
Page 2  
October 4, 1993

Overfill prevention for each tank will be provided by an automatic shut off valve which will be installed in the tank below the fill tube and must be set to shut off flow into the tank when the volume of liquid in the tank reaches no more than 90% of the tank capacity. Spill protection for each tank will be provided by a spill containment manhole (OPW Model No. 1-4000) which will be fitted on the fill tube of each tank.

Each pump will be fitted with a Red Jacket (Model 116-036-5-XLD) leak detector designed to detect a leak in the product piping between the detector and the dispenser.

Product lines will be U.L. listed and of double-wall construction. They will consist of a 2-inch diameter primary pipe within a 3-inch diameter secondary containment pipe. Vent lines will be U.L. listed and be 2-inch diameter single-wall pipe. A safety shear valve (OPW Model No. 10-RMSP 5826) 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 connectors (Tite Flex Model Nos. 111504D-24-L24) will be installed at both ends of each product line to connect to the dispenser unit and the submersible pump.

The UST will have an STI-P3 rating to protect it from corrosion. Corrosion protection for the metallic components of the underground storage systems will be provided by electrical isolation, coating and sacrificial anodes as listed in the application. The submersible pump housings and pump-end flexible connectors will be installed within a liquid-tight fiberglass-reinforced plastic piping sump which will provide electrical 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 a fire-rated stainless steel braid flex connector installed within a Total Containment brand sump located under the dispenser to contain any potential leaks from the dispenser. 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 thoroughly wrapped with a suitable dielectric material.

The proposed tank and piping will be monitored for leaks by means of the existing Red Jacket 9000 multi-channel inventory leak detection. This tank will be equipped with liquid discrimination sensors (Red Jacket Model No. 400-051-5) which will be installed in the interstitial space between the walls of the double-wall tanks.

Mr. Ed Kress  
Page 3  
October 4, 1993

Each of the product piping systems will be monitored by a liquid discrimination sensor (Red Jacket Model No. 400-069-5) which will be installed adjacent to the submersible pump in the piping sump. Four 6-inch diameter slotted PVC observation wells will be installed in the corners of the tank pit excavation, of which two wells will be equipped with a monitor well probe with a 4-inch float (Red Jacket Model No. 400-049-5) to provide a means of monitoring the backfilled tank pit area. 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 hydrocarbon liquids, hydrocarbon vapors, or water is detected.

#### APPROVAL

The planning materials for the proposed underground static hydrocarbon storage facility have been reviewed by the Commission's staff and have been found to be in general agreement with the requirements of 31 TAC §334, Underground Storage Tanks, and 31 TAC §313.10, which establishes the criteria for static hydrocarbon and hazardous substance storage facilities located in the Edwards Aquifer Recharge Zone. Therefore, the planning materials for construction of the proposed facilities are hereby approved, subject to the following conditions.

**Failure to comply with any of the following conditions or any other specific conditions of approval is a violation of these rules. Pursuant to Section 26.136 of the Texas Water Code, violations of these rules may result in administrative penalties of up to \$10,000 for each act of violation and for each day of violation.**

#### Special Conditions

1. A water quality pond shall be excavated and used as a sedimentation basin during construction. The sedimentation basin shall be converted to the permanent sedimentation/filtration basins prior to placement of any hydrocarbon products in any on site underground storage tank.
2. The UST tankpit shall be inspected by the TWC prior to placement of any bedding, tanks, or backfill. Additional protection, such as but not limited to tank relocation or tertiary containment, may be required if recharge features are present.
3. The UST system shall be inspected in accordance with applicable provisions of 31 TAC 334 prior to being placed into service.

**After Construction:**

1. The sedimentation/filtration basins, designed in accordance with the City of Austin Environmental Criteria Manual, shall be capable of containing any fuel or other hazardous substances spilled at the subject site.

Standard Conditions

1. For projects on the recharge zone all temporary erosion and sedimentation (E&S) controls shall be installed prior to all other construction at the site. (1) **Silt fences** should be used when the drainage area is less than 2 acres and the slope is less than 10%. (2) **Rock berms with filtration** should be used when the drainage areas are greater than two acres or when the slopes are in excess of 10%. The bottom edge of the filter fabric must be buried a minimum of 6 inches below grade.
2. The TNRCC may monitor stormwater discharges from the site to evaluate the adequacy of the temporary erosion and sedimentation control measures. Additional protection may be necessary if excessive solids are being discharged from the site.
3. **A copy of any local construction permit should be submitted to Region 13 within 30 days of the issuance of this approval.**
4. Prior to commencing construction, the applicant shall submit any modifications to this approved UST facility required by some other regulating authority or desired by the applicant. To amend this approval copies of any changes to the plans and specifications shall be submitted to this office and all other permitting authorities. **As indicated in 31 TAC §313.4 and 31 TAC §313.27, an application to amend any approved regulated activity shall include payment of appropriate fees and all information necessary for its review and Executive Director approval.**
5. All contractors conducting regulated activities associated with this proposed regulated development shall be provided with copies of this approval letter and the entire contents of the submitted UST Plans & Specifications so as to convey to

the contractors the specific conditions of approval. During the course of regulated activities, the contractors shall be required to keep on-site copies of the UST Plans and this approval letter.

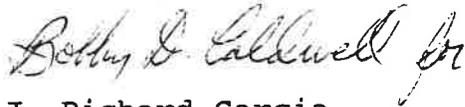
6. Pursuant to 31 TAC §313.4(d)(1), prior to commencing construction, the applicant must notify the Region 13 Office at least 48 hours prior to initiation of construction.
7. If any solution openings or sinkholes are discovered during the construction of the tank excavation, all excavation and installation activities shall be immediately suspended, and the owner or his designated representative shall notify the Commission's Region 13 Office. Upon completion of the excavation, a qualified geologist shall inspect the pit. Further excavation and installation activities shall not proceed until the Commission has reviewed and approved the methods proposed to protect such features from any potential adverse impacts of the hydrocarbon storage facility.
8. All UST installations, repairs, and removals must be conducted by a registered UST contractor who has a licensed installer or on-site supervisor at the site during all critical junctures, as required by 31 TAC §334 Subchapter I.
9. Installation, testing, and operation of the tanks, piping, and all other components of the proposed storage and monitoring systems shall be in conformance with the manufacturer's specifications and the procedures described in this letter.
10. An "as-built" project-specific site design plan shall be drawn to scale and of sufficient accuracy, clarity, and detail to depict the specific locations and dimensions of all components of the underground storage tank system, including the tanks, piping and fittings, pumps, observation wells, containment equipment, release detection devices, and other auxiliary equipment. Also, detailed construction drawings of plan and profile views and detail drawings of specific components shall be prepared. A copy of such "as-built" site plan and construction drawings, as well as operating instructions for all major system components and written records of all tank tests, piping tests, release detection monitoring results, and other inspections, shall be maintained in a secure location at the site of the proposed facility and shall be available for examination by Commission personnel.
11. The owner of the proposed facility shall assure that the storage tank system is installed, operated, and maintained in full compliance with the applicable provisions of 31 TAC §334

- of Commission rules, which establishes the requirements for the design, installation, operation, construction notification, registration, fee assessment, financial responsibility, release reporting, and corrective action related to such system.
12. All underground metallic components of the proposed system which are not electrically isolated from the backfill material (including any vent line fittings and connectors, risers for monitoring equipment and fill tubes, containment manholes, etc.) must be properly protected from corrosion in accordance with 31 TAC §334.49 of Commission rules.
  13. The flexible connectors at the dispenser-end of the product piping lines, which are enclosed within secondary containment sleeves and which cannot be visibly inspected for evidence of corrosion, shall be periodically tested by a qualified corrosion technician or specialist to ensure that the metal components of such connectors remain electrically isolated from the surrounding backfill, groundwater, and other metal components. Such tests shall be conducted within three to six months after installation and at least once every three years thereafter, in full conformance with the requirements in 31 TAC §334.49(d)(1) of Commission rules.
  14. All piping must slope at least one-eighth inch per foot in the direction of the tank [as required by 31 TAC §334.46(c)(1)].
  15. When applicable, field-installed cathodic protection systems shall be designed by a qualified corrosion specialist [as required by 31 TAC §334.49(c)(2)]. Additionally, all factory-installed and field-installed cathodic protection systems shall be properly tested for operability and adequacy of protection by a qualified corrosion technician or corrosion specialist after the UST system installation is completed but prior to placing the system into operation [as required by 31 TAC §334.46(d)(4)(c)].
  16. The facility owner should be aware of the proposed federal EPA regulations for benzene emissions (40 CFR Part 61). The proposed regulations will require the addition of Stage I vapor recovery equipment by 1991 or 1992 (depending on volume of throughput) for all service stations with an annual throughput greater than 120,000 gallons. The owner should consider the feasibility of installing the Stage I vapor recovery equipment as part of this installation project to preclude the need for additional construction in the future.

Mr. Ed Kress  
Page 7  
October 4, 1993

If you have any questions contact Mr. Tom Gutierrez of the Commission's Region 13 (San Antonio) Office at 210/490-3096.

Sincerely,



J. Richard Garcia,  
Regional Manager for

Tony Grigsby  
Executive Director

JRG-TCG\tcg

cc: KEI Consultants.  
Rebecca Cedillo, Director, City of San Antonio Department of Planning  
Ron Pena, P.E., Environmental Engineer, Bexar County Public Works Department  
Russell L. Masters, Edwards Underground Water District  
Allen Martinets, Technical Services, PST Division  
Tom Gutierrez, Texas Natural Resource Conservation Commission, Region 13 Office  
Hank Smith, Edwards Aquifer Program Coordinator, TNRCC  
TNRCC - Central Records (with attachment)

Robert J. Huston, *Chairman*  
R. B. "Ralph" Marquez, *Commissioner*  
John M. Baker, *Commissioner*  
Jeffrey A. Saitas, *Executive Director*



## TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

*Protecting Texas by Reducing and Preventing Pollution*

October 12, 1999

Mr. Chris D. Trinkle  
Operations & Environmental Specialist  
Ultramar Diamond Shamrock Corporation  
P.O. Box 696000  
San Antonio, TX 78269-6000

Re: EDWARDS AQUIFER, Bexar County  
PROJECT: Diamond Shamrock No. 1039, Project number -502.01, Located at 16555 Huebner Road, San Antonio, Texas  
TYPE: Request for Modification of Underground Storage Tank (UST) Facility Construction Plans and Specifications; 30 Texas Administrative Code (TAC) §213.5(d); Edwards Aquifer Protection Program

Dear Mr. Trinkle:

The Texas Natural Resource Conservation Commission (TNRCC) has completed its review of the request for modification of an approved UST application for the referenced project that was submitted on behalf of Ultramar Diamond Shamrock Corporation by you and received by the San Antonio office on September 23, 1999. Final review was completed after additional material was received on September 30, 1999.

### PROJECT DESCRIPTION

This facility was previously approved by letter dated October 4, 1993. As presented, the proposed modification to the UST piping will consist of adding one dispenser island shown on the 1993 site plan. This will include double-wall fiberglass piping placed inside a synthetic liner, and equipped with a leak detection probe (to be connected to the existing in-store leak detection monitor). The dispenser will be connected to the piping by a flex hose and shear valve within an enclosed containment sump to provide corrosion protection. Prior to placing the synthetic liner in the trench, a geologist will inspect the trench for any geologic features.

REPLY TO: REGION 13 • 140 HEIMER RD., STE. 360 • SAN ANTONIO, TEXAS 78232-5042 • 210/490-3096 • FAX 210/545-4329

P.O. Box 13087 • Austin, Texas 78711-3087 • 512/239-1000 • Internet address: [www.tnrcc.state.tx.us](http://www.tnrcc.state.tx.us)

printed on recycled paper using soy-based ink

### APPROVAL

The planning materials for the proposed underground static hydrocarbon storage facility have been reviewed by the Commission's staff. As presented the system was designed by a TNRCC Registered Contractor or Texas Registered Professional Engineer to be in accordance with the requirements of 30 TAC §334, Underground Storage Tanks, and 30 TAC §213.5(d), which establishes the criteria for static hydrocarbon and hazardous substance storage facilities located in the Edwards Aquifer Recharge Zone. Therefore, based on the UST system owner's certification of compliance the planning materials for construction of the proposed modification are hereby approved, subject to the following conditions.

Failure to comply with any of the following conditions or any other specific conditions of approval is a violation of these rules. Pursuant to Section 26.136 of the Texas Water Code, violations of these rules may result in administrative penalties of up to \$10,000 for each act of violation and for each day of violation.

### SPECIAL CONDITIONS OF APPROVAL

1. The TNRCC confirms that the subject dispenser and associated piping were proposed with the original UST application, and that their addition is a minor modification. Therefore no application fee will be required.
2. A geologist must inspect the completed pipe trench for the presence of sensitive or possible sensitive features. Certification that the pipe trench excavation has been inspected must be submitted to the appropriate regional office. If a sensitive feature or possibly sensitive feature is discovered, the applicant must propose methods to protect the feature and the Edwards Aquifer from potentially adverse impacts to water quality from the underground storage tank system. Installation activities may not proceed until the executive director has reviewed and approved the proposed methods. The protection methods must be consistent with 30 TAC §213.5(d)(1)(B). Construction may continue without written approval from the TNRCC if the geologist certifies that no sensitive feature or features were present.
3. This modification is subject to all applicable Standard Conditions listed below.

### STANDARD CONDITIONS OF APPROVAL

1. If any potential recharge features are encountered during construction, a geologist shall evaluate the significance of the features. The evaluation shall include representative photographs and a description of the feature forwarded to the San Antonio office.

Construction in the vicinity of the features may only continue with written approval from the TNRCC.

2. The UST tank pit shall be inspected by the TNRCC prior to placement of any bedding, tanks or backfill. Additional protection, such as but not limited to tank relocation or tertiary containment, may be required if recharge features are present.
3. The UST system shall be inspected in accordance with applicable provisions of 30 TAC §334 prior to being placed into service.
4. For projects on the recharge zone all temporary erosion and sedimentation (E&S) controls shall be installed prior to all other construction at the site. (1) Silt fences should be used when the drainage area is less than 2 acres and the slope is less than 10%. (2) Rock berms with filtration should be used when the drainage areas are greater than two acres or when the slopes are in excess of 10%. The bottom edge of the filter fabric must be buried a minimum of 6 inches below grade.
5. The TNRCC may monitor stormwater discharges from the site to evaluate the adequacy of the temporary erosion and sedimentation control measures. Additional protection may be necessary if excessive solids or other contaminants are being discharged from the site.
6. A copy of any local construction permit should be submitted to the San Antonio office within 30 days of the issuance of this approval.
7. Prior to commencing construction, the applicant shall submit any modifications to this approved UST facility required by some other regulating authority or desired by the applicant. To amend this approval copies of any changes to the plans and specifications shall be submitted to this office and all other permitting authorities. As indicated in 30 TAC §213.4(j) and 30 TAC §213.14, an application to amend any approved regulated activity shall include payment of appropriate fees and all information necessary for its review and Executive Director approval.
8. All contractors conducting regulated activities associated with this proposed regulated development shall be provided with copies of this approval letter and the entire contents of the submitted UST Plans & Specifications so as to convey to the contractors the specific conditions of approval. During the course of regulated activities, the contractors shall be required to keep on-site copies of the UST Plans and this approval letter.
9. Pursuant to 30 TAC §213.5(f)(1), prior to commencing construction, the applicant must notify the San Antonio office at least 48 hours prior to initiation of construction.

Mr. Chris D. Trinkle

October 12, 1999

Page 4

10. If any solution openings or sinkholes are discovered during the construction of the tank excavation, all excavation and installation activities shall be immediately suspended, and the owner or his designated representative shall notify the San Antonio office. Upon completion of the excavation, a qualified geologist shall inspect the pit. Further excavation and installation activities shall not proceed until the Commission has reviewed and approved the methods proposed to protect such features from any potential adverse impacts of the hydrocarbon storage facility.
11. All UST installations, repairs, upgrades, and removals must be conducted by a registered UST contractor who has a licensed installer or on-site supervisor at the site during all critical junctures, as required by 30 TAC §334 Subchapter I.
12. Installation, testing, and operation of the tanks, piping, and all other components of the proposed storage and monitoring systems shall be in conformance with the manufacturer's specifications and the procedures described in this letter.
13. An "as-built" project-specific site design plan shall be drawn to scale and of sufficient accuracy, clarity, and detail to depict the specific locations and dimensions of all components of the underground storage tank system, including the tanks, piping and fittings, pumps, observation wells, containment equipment, release detection devices, and other auxiliary equipment. Also, detailed construction drawings of plan and profile views and detail drawings of specific components shall be prepared. A copy of such "as-built" site plan and construction drawings, as well as operating instructions for all major system components and written records of all tank tests, piping tests, release detection monitoring results, and other inspections, shall be maintained in a secure location at the site of the proposed facility and shall be available for examination by Commission personnel.
14. The owner of the proposed facility shall assure that the storage tank system is installed, operated, and maintained in full compliance with the applicable provisions of 30 TAC §334 of Commission rules, which establishes the requirements for the design, installation, operation, construction notification, registration, fee assessment, financial responsibility, release reporting, and corrective action related to such system.
15. The owner/applicant of the UST system shall provide the TNRCC with written certification within 30 days and/or prior to dispensing fuel that all components listed and described in this application are U.L. listed or certified by a 3<sup>rd</sup> party and are compatible and will function to provide the required release detection, corrosion protection and overfill and spill prevention pursuant to 30 TAC §213.5(d) and 30 TAC §334, Subchapter C.

16. All underground metallic components of the proposed system which are not electrically isolated from the backfill material (including any vent line fittings and connectors, risers for monitoring equipment and fill tubes, containment manholes, etc.) must be properly protected from corrosion in accordance with 30 TAC §334.49 of Commission rules.
17. The flexible connectors at the dispenser-end of the product piping lines, which are enclosed within secondary containment sleeves and which cannot be visibly inspected for evidence of corrosion, shall be periodically tested by a qualified corrosion technician or specialist to ensure that the metal components of such connectors remain electrically isolated from the surrounding backfill, groundwater, and other metal components. Such tests shall be conducted within three to six months after installation and at least once every three years thereafter, in full conformance with the requirements in 30 TAC §334.49(d)(1) of Commission rules.
18. All piping must slope at least one-eighth inch per foot in the direction of the tank [as required by 30 TAC §334.46(c)(1)].
19. When applicable, field-installed cathodic protection systems shall be designed by a qualified corrosion specialist [as required by 30 TAC §334.49(c)(2)]. Additionally, all factory installed and field-installed cathodic protection systems shall be properly tested for operability and adequacy of protection by a qualified corrosion technician or corrosion specialist after the UST system installation is completed but prior to placing the system into operation [as required by 30 TAC §334.46(d)(4)(c)].
20. The facility owner should be aware of the proposed federal EPA regulations for benzene emissions (40 CFR Part 61). The proposed regulations will require the addition of Stage I vapor recovery equipment by 1991 or 1992 (depending on volume of throughput) for all service stations with an annual throughput greater than 120,000 gallons. The owner should consider the feasibility of installing the Stage I vapor recovery equipment as part of this installation project to preclude the need for additional construction in the future.
21. A release contingency training program shall be established for on-site personnel, in addition to release detection equipment training seminars. Simple instructions, outlining the employee's responsibilities in the event of a release, shall be located in an area which is readily accessible to employees at all times.
22. Documentation of continuing training on leak detection equipment shall be maintained on-site.

E200-576  
S100-009



June 5, 2023

Mr. Doug Ford  
Circle K Stores Inc.  
3254 Roan Way  
San Antonio, Texas 78259

RE: **APPROVAL OF APPLICATION FOR MAJOR MODIFICATION (AMM)** for the installation of Underground Storage Tanks (USTs) at Circle K Store #2741039 located at 16555 Huebner Road, San Antonio, Texas 78248

Dear Mr. Marek:

This letter responds to the AMM plan submitted to the Edwards Aquifer Authority (EAA) on June 1, 2023, with additional information submitted on June 2, 2023. The plan was submitted as an amendment to the AMM previously approved on November 4, 2022. The EAA staff have determined that the amended AMM, as proposed, complies with §713.609 of the Edwards Aquifer Authority Rules. Therefore, the proposed AMM is **approved** as submitted. For a list of approved activities please see the attached document.

If there are any changes made to the approved AMM, you must inform the EAA and obtain approval for the desired changes before proceeding. The actions performed pursuant to this approval must also comply with all federal, state, and local requirements applicable to the activities. Please note, per EAA rule §713.609, a facility may not use a UST unless a registration form is on file and approved by the EAA. In order to approve the registration form, EAA staff must inspect the facility to confirm that the major modification was completed as approved. The inspection is to be completed before the tanks are filled with product.

If you have any questions regarding the information above or the EAA's rules regarding storage tanks on the Edwards Aquifer Recharge Zone, please contact Mr. Kyle Craig, Recharge Zone Regulation Supervisor at (210) 222-2204.

Sincerely,

A handwritten signature in black ink, appearing to read "Roland Ruiz".

Roland Ruiz  
General Manager

RR:KC/epg  
Enclosures: Attachment A

Cc: Matt Marek - Morris & Associates, Engineers Inc.

## **Document Serves as Attachment B**

### **Attachment A - Summary of Approved Major Modification (AMM) for the installation of Underground Storage Tanks (USTs)**

The AMM approved by the EAA on November 4, 2022, along with the amendments submitted to the EAA on June 1, 2023, with additional information submitted on June 2, 2023, includes the following activities for Circle K #2741039 located at 16555 Huebner Road, San Antonio, Texas 78248:

- Removal of two (2) 12,098-gallon USTs and associated piping.
- Installation of two (2) Modern Welding double-walled fiberglass-wrapped steel USTs for a total capacity of 24,065-gallons, with single-wall pump sumps. One UST is 12,033-gallons for regular unleaded gasoline and the second UST has two (2) compartments, with a 4,011-gallon compartment for premium gasoline and an 8,022-gallon compartment for diesel. The interstitial space of the tanks will be equipped with non-discriminating interstitial monitors.
- Product piping will consist of two-inch double-wall Dualoy 3000/LCX piping with Dualoy 3000/LCX secondary containment fittings. The piping contained inside the tank sumps and Under Dispenser Cabinets (UDCs) will be two-inch single-wall Dualoy 3000/L. The double-wall piping will transition to the primary piping inside the sumps and UDCs using Ameron two-inch termination secondary containment fittings. The Schrader valves on the secondary containment fittings will remain open to allow the detection of leaks inside the secondary containment of the piping.
- The primary product piping will be equipped with a pressurized line leak detection system that is designed to stop product flow if a leak is detected.
- The tank pit and pipe trenches will be lined with MPC Containment Petrogard X which will provide tertiary containment for the systems. The liner is to encapsulate all components of the UST system. The pipe trench will be sloped to direct any leaks to the tank pit.
- Each fill port will be equipped with EMCO Wheaton A1004EVR Double-Wall Spill Containers.
- Each tank compartment will be equipped with two horsepower fixed-speed Franklin Fueling FE Petro submersible pumps.
- Overfill prevention for the USTs will be provided by an EMCO Wheaton A1100EVR overfill valve which will be installed below the fill connection of each compartment.
- Bravo B1000E Series single wall model will be used as the UDCs.
- An OPW-10 Series double poppet safety shear valve will be installed on each product line at the dispenser islands to assure automatic shut-off of product flow during emergencies.

- Each of the product piping lines will be monitored by a liquid sensor which will be installed adjacent to the submersible pump in the pump sumps and in the UDCs.
- Two (2) observation wells will be located within the liner and will be equipped with a vapor sensor which is designed to detect a release into the tertiary level.
- The sensors for all tank compartments, piping, and sumps will be connected to a Veeder Root TLS 450 Automated Compliance and Site Management located in the store building. This central monitoring unit is designed to provide visual and audible alarms when hydrocarbon liquids or water are detected.

**Requirements to Remember:**

1. Filling Requirements:

EAA rule §713.604 requires that an Owner or Operator of a regulated UST states that an Owner or Operator of a UST located on the Recharge Zone may not fill a UST unless a registration is on file and approved by the EAA.

2. Registration Requirements:

EAA rule §713.604 requires an Owner or Operator of a regulated UST located on the Recharge Zone to register their tank(s) with the EAA and renew the registration every three years after initial registration. In addition, an updated registration documenting any changes or additional information concerning the status of any regulated tanks or facilities shall be filed within 30 days of the occurrence of the change or addition.

3. Notice Requirements:

EAA rule §713.610 requires an Owner or Operator of a regulated UST to provide written notice to the EAA **at least thirty days** prior to any intended commencement of construction, and **at least two business days** prior to the actual commencement of construction associated with this approved major modification.

4. Spill Reporting Requirements:

EAA rules §713.616 requires any release, discharge, or spill from an AST or UST in a reportable quantity under § 713.405 of the Authority's rules to be reported and addressed in accordance with the requirements contained in Chapter 713, Subchapter E, of the Authority's rules.

# 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: Matthew Marek

Date: 7/7/23

Signature of Customer/Agent:



Regulated Entity Name: Circle K Stores, Inc.

## Underground Storage Tank (UST) System Information

- 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)
- Tanks and substance to be stored:

**Table 1 - Tanks and Substances Stored**

<i>UST Number</i>	<i>Size(Gallons)</i>	<i>Substance to be Stored</i>	<i>Double-wall Tank Material</i>
1	12,033	Regular UL Gasoline	Steel/Fiberglass wrapped

<i>UST Number</i>	<i>Size(Gallons)</i>	<i>Substance to be Stored</i>	<i>Double-wall Tank Material</i>
2	12,033	Diesel/Super UL Gasoline	Steel/Fiberglass wrapped
3			
4			
5			

3. Tanks:

- Attachment B – Manufacturer Information for Tanks.** New or replacement systems for the underground storage of static hydrocarbons or hazardous substances must be double-walled or provide an equivalent method of protection approved by the executive director. Tanks must comply with technical standards as required by 30 TAC 334.45(b) relating to technical standards for new tanks. Manufacturer information is attached.
- Attachment C – Alternative Design and Protection Method for Tanks.** Information required by 30 TAC 334.43, relating to variances and alternative procedures is attached.

4. Piping:

- Attachment D – Manufacturer Information for Piping.** Piping must comply with technical standards as required by 30 TAC 334.45(c) relating to technical standards for new piping. Manufacturer information is attached.
- Attachment E – Alternative Design and Protection Method for Piping.** Information required by 30 TAC 334.43, relating to variances and alternative procedures is attached.

5.  Any new underground storage tank system that does not incorporate a method for tertiary containment shall be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature as required by 30 TAC §213.5(d)(1)(B).
- The UST system(s) will not be installed within 150 feet of a domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
  - Attachment F - Tertiary Containment Method.** The UST system(s) will be required to have tertiary containment provided. A description of the method proposed to provide tertiary containment is attached.

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

**Table 2 - Corrosion Protection**

<i>Equipment</i>	<i>Corrosion Protection (Method)</i>
Tanks	Fiberglass Wrapped Steel tanks
Product Delivery Piping	Fiberglass piping

<b>Equipment</b>	<b>Corrosion Protection (Method)</b>
Vapor Recovery Piping	N/A
Submersible Pumps	In Sump
Flex Connector (dispenser end)	In Sump - Stainless Steel
Flex Connector (pump end)	In Sump - Stainless Steel
Riser	Wrapped with Mastic tape when buried or inside sump

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 13-15 feet.
10.  The minimum thickness of the tank bedding will conform to 30 TAC §334.46(a)(5)(C and D).
- The tank bedding thickness will be 12 inches.
11.  The material to be used as backfill will conform to 30 TAC §334.46(a)(5)(A and B) and will consist of:
- Clean washed non-corrosive sand
  - Pea gravel
  - Crushed rock
  - Other: \_\_\_\_\_

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

## **Site Plan Requirements**

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

13.  The Site Plan must have a minimum scale of 1" = 400'.  
Site Plan Scale: 1" = 10'.
14. 100-year floodplain boundaries:
- The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA MAP - PANEL 48029C0235G - 9/29/2010
  - 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 4 (#) 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. DEFERRED SUBMITTAL
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. DEFERRED SUBMITTAL

### ***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 \_\_\_\_\_, 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.

E200-576  
S100-009



June 5, 2023

Mr. Doug Ford  
Circle K Stores Inc.  
3254 Roan Way  
San Antonio, Texas 78259

RE: **APPROVAL OF APPLICATION FOR MAJOR MODIFICATION (AMM)** for the installation of Underground Storage Tanks (USTs) at Circle K Store #2741039 located at 16555 Huebner Road, San Antonio, Texas 78248

Dear Mr. Marek:

This letter responds to the AMM plan submitted to the Edwards Aquifer Authority (EAA) on June 1, 2023, with additional information submitted on June 2, 2023. The plan was submitted as an amendment to the AMM previously approved on November 4, 2022. The EAA staff have determined that the amended AMM, as proposed, complies with §713.609 of the Edwards Aquifer Authority Rules. Therefore, the proposed AMM is **approved** as submitted. For a list of approved activities please see the attached document.

If there are any changes made to the approved AMM, you must inform the EAA and obtain approval for the desired changes before proceeding. The actions performed pursuant to this approval must also comply with all federal, state, and local requirements applicable to the activities. Please note, per EAA rule §713.609, a facility may not use a UST unless a registration form is on file and approved by the EAA. In order to approve the registration form, EAA staff must inspect the facility to confirm that the major modification was completed as approved. The inspection is to be completed before the tanks are filled with product.

If you have any questions regarding the information above or the EAA's rules regarding storage tanks on the Edwards Aquifer Recharge Zone, please contact Mr. Kyle Craig, Recharge Zone Regulation Supervisor at (210) 222-2204.

Sincerely,

A handwritten signature in black ink, appearing to read "Roland Ruiz".

Roland Ruiz  
General Manager

RR:KC/epg  
Enclosures: Attachment A

Cc: Matt Marek - Morris & Associates, Engineers Inc.

## **Attachment A - Summary of Approved Major Modification (AMM) for the installation of Underground Storage Tanks (USTs)**

The AMM approved by the EAA on November 4, 2022, along with the amendments submitted to the EAA on June 1, 2023, with additional information submitted on June 2, 2023, includes the following activities for Circle K #2741039 located at 16555 Huebner Road, San Antonio, Texas 78248:

- Removal of two (2) 12,098-gallon USTs and associated piping.
- Installation of two (2) Modern Welding double-walled fiberglass-wrapped steel USTs for a total capacity of 24,065-gallons, with single-wall pump sumps. One UST is 12,033-gallons for regular unleaded gasoline and the second UST has two (2) compartments, with a 4,011-gallon compartment for premium gasoline and an 8,022-gallon compartment for diesel. The interstitial space of the tanks will be equipped with non-discriminating interstitial monitors.
- Product piping will consist of two-inch double-wall Dualoy 3000/LCX piping with Dualoy 3000/LCX secondary containment fittings. The piping contained inside the tank sumps and Under Dispenser Cabinets (UDCs) will be two-inch single-wall Dualoy 3000/L. The double-wall piping will transition to the primary piping inside the sumps and UDCs using Ameron two-inch termination secondary containment fittings. The Schrader valves on the secondary containment fittings will remain open to allow the detection of leaks inside the secondary containment of the piping.
- The primary product piping will be equipped with a pressurized line leak detection system that is designed to stop product flow if a leak is detected.
- The tank pit and pipe trenches will be lined with MPC Containment Petrogard X which will provide tertiary containment for the systems. The liner is to encapsulate all components of the UST system. The pipe trench will be sloped to direct any leaks to the tank pit.
- Each fill port will be equipped with EMCO Wheaton A1004EVR Double-Wall Spill Containers.
- Each tank compartment will be equipped with two horsepower fixed-speed Franklin Fueling FE Petro submersible pumps.
- Overfill prevention for the USTs will be provided by an EMCO Wheaton A1100EVR overfill valve which will be installed below the fill connection of each compartment.
- Bravo B1000E Series single wall model will be used as the UDCs.
- An OPW-10 Series double poppet safety shear valve will be installed on each product line at the dispenser islands to assure automatic shut-off of product flow during emergencies.

- Each of the product piping lines will be monitored by a liquid sensor which will be installed adjacent to the submersible pump in the pump sumps and in the UDCs.
- Two (2) observation wells will be located within the liner and will be equipped with a vapor sensor which is designed to detect a release into the tertiary level.
- The sensors for all tank compartments, piping, and sumps will be connected to a Veeder Root TLS 450 Automated Compliance and Site Management located in the store building. This central monitoring unit is designed to provide visual and audible alarms when hydrocarbon liquids or water are detected.

**Requirements to Remember:**

1. Filling Requirements:

EAA rule §713.604 requires that an Owner or Operator of a regulated UST states that an Owner or Operator of a UST located on the Recharge Zone may not fill a UST unless a registration is on file and approved by the EAA.

2. Registration Requirements:

EAA rule §713.604 requires an Owner or Operator of a regulated UST located on the Recharge Zone to register their tank(s) with the EAA and renew the registration every three years after initial registration. In addition, an updated registration documenting any changes or additional information concerning the status of any regulated tanks or facilities shall be filed within 30 days of the occurrence of the change or addition.

3. Notice Requirements:

EAA rule §713.610 requires an Owner or Operator of a regulated UST to provide written notice to the EAA **at least thirty days** prior to any intended commencement of construction, and **at least two business days** prior to the actual commencement of construction associated with this approved major modification.

4. Spill Reporting Requirements:

EAA rules §713.616 requires any release, discharge, or spill from an AST or UST in a reportable quantity under § 713.405 of the Authority's rules to be reported and addressed in accordance with the requirements contained in Chapter 713, Subchapter E, of the Authority's rules.



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**Tank Calibration Chart**  
 Cylindrical Tank / Horizontal Orientation  
 Striker Plate: 0.25 inches  
 Diameter: 96 inches  
 Length: 128 inches  
 Total Volume: 4,011 gallons

Depth (inches)	Volume (gallons)												
0	1	4 1/4	68	8 1/2	182	12 3/4	325	17	490	21 1/4	671	25 1/2	866
1/8	2	4 3/8	71	8 5/8	186	12 7/8	330	17 1/8	495	21 3/8	677	25 5/8	872
1/4	3	4 1/2	74	8 3/4	190	13	334	17 1/4	500	21 1/2	682	25 3/4	877
3/8	4	4 5/8	77	8 7/8	194	13 1/8	339	17 3/8	505	21 5/8	688	25 7/8	883
1/2	5	4 3/4	80	9	198	13 1/4	344	17 1/2	510	21 3/4	693	26	889
5/8	6	4 7/8	83	9 1/8	202	13 3/8	348	17 5/8	515	21 7/8	699	26 1/8	895
3/4	7	5	86	9 1/4	206	13 1/2	353	17 3/4	521	22	705	26 1/4	901
7/8	9	5 1/8	89	9 3/8	210	13 5/8	357	17 7/8	526	22 1/8	710	26 3/8	907
1	10	5 1/4	92	9 1/2	214	13 3/4	362	18	531	22 1/4	716	26 1/2	913
1 1/8	12	5 3/8	95	9 5/8	218	13 7/8	367	18 1/8	536	22 3/8	721	26 5/8	919
1 1/4	13	5 1/2	98	9 3/4	222	14	372	18 1/4	541	22 1/2	727	26 3/4	925
1 3/8	15	5 5/8	101	9 7/8	226	14 1/8	376	18 3/8	547	22 5/8	733	26 7/8	931
1 1/2	17	5 3/4	104	10	230	14 1/4	381	18 1/2	552	22 3/4	738	27	937
1 5/8	18	5 7/8	108	10 1/8	234	14 3/8	386	18 5/8	557	22 7/8	744	27 1/8	943
1 3/4	20	6	111	10 1/4	238	14 1/2	391	18 3/4	563	23	750	27 1/4	949
1 7/8	22	6 1/8	114	10 3/8	242	14 5/8	395	18 7/8	568	23 1/8	755	27 3/8	955
2	24	6 1/4	117	10 1/2	246	14 3/4	400	19	573	23 1/4	761	27 1/2	961
2 1/8	26	6 3/8	121	10 5/8	251	14 7/8	405	19 1/8	579	23 3/8	767	27 5/8	967
2 1/4	28	6 1/2	124	10 3/4	255	15	410	19 1/4	584	23 1/2	773	27 3/4	973
2 3/8	31	6 5/8	128	10 7/8	259	15 1/8	415	19 3/8	589	23 5/8	778	27 7/8	979
2 1/2	33	6 3/4	131	11	263	15 1/4	420	19 1/2	595	23 3/4	784	28	985
2 5/8	35	6 7/8	135	11 1/8	268	15 3/8	425	19 5/8	600	23 7/8	790	28 1/8	991
2 3/4	37	7	138	11 1/4	272	15 1/2	430	19 3/4	605	24	796	28 1/4	997
2 7/8	40	7 1/8	142	11 3/8	276	15 5/8	434	19 7/8	611	24 1/8	801	28 3/8	1,003
3	42	7 1/4	145	11 1/2	281	15 3/4	439	20	616	24 1/4	807	28 1/2	1,010
3 1/8	44	7 3/8	149	11 5/8	285	15 7/8	444	20 1/8	622	24 3/8	813	28 5/8	1,016
3 1/4	47	7 1/2	152	11 3/4	289	16	449	20 1/4	627	24 1/2	819	28 3/4	1,022
3 3/8	49	7 5/8	156	11 7/8	294	16 1/8	454	20 3/8	633	24 5/8	825	28 7/8	1,028
3 1/2	52	7 3/4	160	12	298	16 1/4	459	20 1/2	638	24 3/4	830	29	1,034
3 5/8	55	7 7/8	163	12 1/8	303	16 3/8	464	20 5/8	643	24 7/8	836	29 1/8	1,040
3 3/4	57	8	167	12 1/4	307	16 1/2	469	20 3/4	649	25	842	29 1/4	1,046
3 7/8	60	8 1/8	171	12 3/8	312	16 5/8	474	20 7/8	654	25 1/8	848	29 3/8	1,052
4	63	8 1/4	175	12 1/2	316	16 3/4	480	21	660	25 1/4	854	29 1/2	1,059
4 1/8	65	8 3/8	178	12 5/8	321	16 7/8	485	21 1/8	666	25 3/8	860	29 5/8	1,065

*This volumetric tank chart is supplied to you for informational purposes only. These capacity calculations are based on theoretical volumes not actual volumes, and do not reflect atmospheric conditions or thermal expansion/contraction due to temperature changes. If internal accessories such as pumps are present, displacement of these accessories must be considered. Therefore, neither Modern Welding Company nor its officers, directors, employee affiliates or subsidiaries shall be liable for the use of this information covered within. This information is advisory only and the use of the material and methods is solely at the risk of the user.*

Cylindrical Tank / Horizontal Orientation  
 Striker Plate: 0.25 inches | Diameter: 96 inches | Length: 128 inches | Total Volume: 4,011 gallons

Depth (inches)	Volume (gallons)												
29 3/4	1,071	34 7/8	1,329	40	1,595	45 1/8	1,866	50 1/4	2,138	55 3/8	2,409	60 1/2	2,676
29 7/8	1,077	35	1,335	40 1/8	1,601	45 1/4	1,872	50 3/8	2,145	55 1/2	2,416	60 5/8	2,682
30	1,083	35 1/8	1,342	40 1/4	1,608	45 3/8	1,879	50 1/2	2,152	55 5/8	2,422	60 3/4	2,688
30 1/8	1,089	35 1/4	1,348	40 3/8	1,615	45 1/2	1,886	50 5/8	2,158	55 3/4	2,429	60 7/8	2,695
30 1/4	1,096	35 3/8	1,354	40 1/2	1,621	45 5/8	1,892	50 3/4	2,165	55 7/8	2,436	61	2,701
30 3/8	1,102	35 1/2	1,361	40 5/8	1,628	45 3/4	1,899	50 7/8	2,172	56	2,442	61 1/8	2,708
30 1/2	1,108	35 5/8	1,367	40 3/4	1,634	45 7/8	1,906	51	2,178	56 1/8	2,449	61 1/4	2,714
30 5/8	1,114	35 3/4	1,374	40 7/8	1,641	46	1,912	51 1/8	2,185	56 1/4	2,455	61 3/8	2,720
30 3/4	1,120	35 7/8	1,380	41	1,648	46 1/8	1,919	51 1/4	2,191	56 3/8	2,462	61 1/2	2,727
30 7/8	1,127	36	1,387	41 1/8	1,654	46 1/4	1,926	51 3/8	2,198	56 1/2	2,468	61 5/8	2,733
31	1,133	36 1/8	1,393	41 1/4	1,661	46 3/8	1,932	51 1/2	2,205	56 5/8	2,475	61 3/4	2,739
31 1/8	1,139	36 1/4	1,400	41 3/8	1,667	46 1/2	1,939	51 5/8	2,211	56 3/4	2,481	61 7/8	2,746
31 1/4	1,145	36 3/8	1,406	41 1/2	1,674	46 5/8	1,946	51 3/4	2,218	56 7/8	2,488	62	2,752
31 3/8	1,152	36 1/2	1,412	41 5/8	1,680	46 3/4	1,952	51 7/8	2,225	57	2,494	62 1/8	2,758
31 1/2	1,158	36 5/8	1,419	41 3/4	1,687	46 7/8	1,959	52	2,231	57 1/8	2,501	62 1/4	2,765
31 5/8	1,164	36 3/4	1,425	41 7/8	1,694	47	1,966	52 1/8	2,238	57 1/4	2,507	62 3/8	2,771
31 3/4	1,170	36 7/8	1,432	42	1,700	47 1/8	1,972	52 1/4	2,244	57 3/8	2,514	62 1/2	2,777
31 7/8	1,177	37	1,438	42 1/8	1,707	47 1/4	1,979	52 3/8	2,251	57 1/2	2,520	62 5/8	2,784
32	1,183	37 1/8	1,445	42 1/4	1,713	47 3/8	1,985	52 1/2	2,258	57 5/8	2,527	62 3/4	2,790
32 1/8	1,189	37 1/4	1,451	42 3/8	1,720	47 1/2	1,992	52 5/8	2,264	57 3/4	2,533	62 7/8	2,796
32 1/4	1,195	37 3/8	1,458	42 1/2	1,727	47 5/8	1,999	52 3/4	2,271	57 7/8	2,540	63	2,803
32 3/8	1,202	37 1/2	1,464	42 5/8	1,733	47 3/4	2,005	52 7/8	2,278	58	2,546	63 1/8	2,809
32 1/2	1,208	37 5/8	1,471	42 3/4	1,740	47 7/8	2,012	53	2,284	58 1/8	2,553	63 1/4	2,815
32 5/8	1,214	37 3/4	1,477	42 7/8	1,747	48	2,019	53 1/8	2,291	58 1/4	2,559	63 3/8	2,822
32 3/4	1,221	37 7/8	1,484	43	1,753	48 1/8	2,025	53 1/4	2,297	58 3/8	2,566	63 1/2	2,828
32 7/8	1,227	38	1,490	43 1/8	1,760	48 1/4	2,032	53 3/8	2,304	58 1/2	2,572	63 5/8	2,834
33	1,233	38 1/8	1,497	43 1/4	1,766	48 3/8	2,039	53 1/2	2,311	58 5/8	2,579	63 3/4	2,840
33 1/8	1,240	38 1/4	1,503	43 3/8	1,773	48 1/2	2,045	53 5/8	2,317	58 3/4	2,585	63 7/8	2,847
33 1/4	1,246	38 3/8	1,510	43 1/2	1,780	48 5/8	2,052	53 3/4	2,324	58 7/8	2,592	64	2,853
33 3/8	1,252	38 1/2	1,516	43 5/8	1,786	48 3/4	2,059	53 7/8	2,330	59	2,598	64 1/8	2,859
33 1/2	1,259	38 5/8	1,523	43 3/4	1,793	48 7/8	2,065	54	2,337	59 1/8	2,605	64 1/4	2,866
33 5/8	1,265	38 3/4	1,529	43 7/8	1,799	49	2,072	54 1/8	2,344	59 1/4	2,611	64 3/8	2,872
33 3/4	1,271	38 7/8	1,536	44	1,806	49 1/8	2,079	54 1/4	2,350	59 3/8	2,618	64 1/2	2,878
33 7/8	1,278	39	1,543	44 1/8	1,813	49 1/4	2,085	54 3/8	2,357	59 1/2	2,624	64 5/8	2,884
34	1,284	39 1/8	1,549	44 1/4	1,819	49 3/8	2,092	54 1/2	2,363	59 5/8	2,631	64 3/4	2,890
34 1/8	1,290	39 1/4	1,556	44 3/8	1,826	49 1/2	2,098	54 5/8	2,370	59 3/4	2,637	64 7/8	2,897
34 1/4	1,297	39 3/8	1,562	44 1/2	1,833	49 5/8	2,105	54 3/4	2,376	59 7/8	2,643	65	2,903
34 3/8	1,303	39 1/2	1,569	44 5/8	1,839	49 3/4	2,112	54 7/8	2,383	60	2,650	65 1/8	2,909
34 1/2	1,310	39 5/8	1,575	44 3/4	1,846	49 7/8	2,118	55	2,390	60 1/8	2,656	65 1/4	2,915
34 5/8	1,316	39 3/4	1,582	44 7/8	1,853	50	2,125	55 1/8	2,396	60 1/4	2,663	65 3/8	2,921
34 3/4	1,322	39 7/8	1,588	45	1,859	50 1/8	2,132	55 1/4	2,403	60 3/8	2,669	65 1/2	2,928

Cylindrical Tank / Horizontal Orientation  
 Striker Plate: 0.25 inches | Diameter: 96 inches | Length: 128 inches | Total Volume: 4,011 gallons

Depth (inches)	Volume (gallons)										
65 5/8	2,934	70 3/4	3,180	75 7/8	3,411	81	3,620	86 1/8	3,801	91 1/4	3,943
65 3/4	2,940	70 7/8	3,186	76	3,416	81 1/8	3,625	86 1/4	3,805	91 3/8	3,945
65 7/8	2,946	71	3,192	76 1/8	3,422	81 1/4	3,630	86 3/8	3,809	91 1/2	3,948
66	2,952	71 1/8	3,198	76 1/4	3,427	81 3/8	3,634	86 1/2	3,813	91 5/8	3,951
66 1/8	2,958	71 1/4	3,204	76 3/8	3,432	81 1/2	3,639	86 5/8	3,817	91 3/4	3,954
66 1/4	2,965	71 3/8	3,209	76 1/2	3,438	81 5/8	3,644	86 3/4	3,821	91 7/8	3,956
66 3/8	2,971	71 1/2	3,215	76 5/8	3,443	81 3/4	3,649	86 7/8	3,825	92	3,959
66 1/2	2,977	71 5/8	3,221	76 3/4	3,448	81 7/8	3,653	87	3,829	92 1/8	3,961
66 5/8	2,983	71 3/4	3,227	76 7/8	3,454	82	3,658	87 1/8	3,832	92 1/4	3,964
66 3/4	2,989	71 7/8	3,232	77	3,459	82 1/8	3,663	87 1/4	3,836	92 3/8	3,966
66 7/8	2,995	72	3,238	77 1/8	3,464	82 1/4	3,667	87 3/8	3,840	92 1/2	3,969
67	3,001	72 1/8	3,244	77 1/4	3,469	82 3/8	3,672	87 1/2	3,844	92 5/8	3,971
67 1/8	3,007	72 1/4	3,250	77 3/8	3,475	82 1/2	3,676	87 5/8	3,847	92 3/4	3,974
67 1/4	3,013	72 3/8	3,255	77 1/2	3,480	82 5/8	3,681	87 3/4	3,851	92 7/8	3,976
67 3/8	3,019	72 1/2	3,261	77 5/8	3,485	82 3/4	3,686	87 7/8	3,855	93	3,978
67 1/2	3,026	72 5/8	3,267	77 3/4	3,490	82 7/8	3,690	88	3,858	93 1/8	3,980
67 5/8	3,032	72 3/4	3,272	77 7/8	3,495	83	3,695	88 1/8	3,862	93 1/4	3,982
67 3/4	3,038	72 7/8	3,278	78	3,501	83 1/8	3,699	88 1/4	3,866	93 3/8	3,984
67 7/8	3,044	73	3,284	78 1/8	3,506	83 1/4	3,704	88 3/8	3,869	93 1/2	3,987
68	3,050	73 1/8	3,289	78 1/4	3,511	83 3/8	3,708	88 1/2	3,873	93 5/8	3,989
68 1/8	3,056	73 1/4	3,295	78 3/8	3,516	83 1/2	3,713	88 5/8	3,876	93 3/4	3,990
68 1/4	3,062	73 3/8	3,301	78 1/2	3,521	83 5/8	3,717	88 3/4	3,880	93 7/8	3,992
68 3/8	3,068	73 1/2	3,306	78 5/8	3,526	83 3/4	3,721	88 7/8	3,883	94	3,994
68 1/2	3,074	73 5/8	3,312	78 3/4	3,531	83 7/8	3,726	89	3,887	94 1/8	3,996
68 5/8	3,080	73 3/4	3,317	78 7/8	3,536	84	3,730	89 1/8	3,890	94 1/4	3,998
68 3/4	3,086	73 7/8	3,323	79	3,541	84 1/8	3,735	89 1/4	3,893	94 3/8	3,999
68 7/8	3,092	74	3,329	79 1/8	3,546	84 1/4	3,739	89 3/8	3,897	94 1/2	4,001
69	3,098	74 1/8	3,334	79 1/4	3,551	84 3/8	3,743	89 1/2	3,900	94 5/8	4,002
69 1/8	3,104	74 1/4	3,340	79 3/8	3,556	84 1/2	3,747	89 5/8	3,903	94 3/4	4,004
69 1/4	3,110	74 3/8	3,345	79 1/2	3,561	84 5/8	3,752	89 3/4	3,906	94 7/8	4,005
69 3/8	3,116	74 1/2	3,351	79 5/8	3,566	84 3/4	3,756	89 7/8	3,910	95	4,006
69 1/2	3,121	74 5/8	3,356	79 3/4	3,571	84 7/8	3,760	90	3,913	95 1/8	4,007
69 5/8	3,127	74 3/4	3,362	79 7/8	3,576	85	3,764	90 1/8	3,916	95 1/4	4,008
69 3/4	3,133	74 7/8	3,367	80	3,581	85 1/8	3,769	90 1/4	3,919	95 3/8	4,009
69 7/8	3,139	75	3,373	80 1/8	3,586	85 1/4	3,773	90 3/8	3,922	95 1/2	4,010
70	3,145	75 1/8	3,378	80 1/4	3,591	85 3/8	3,777	90 1/2	3,925	95 5/8	4,010
70 1/8	3,151	75 1/4	3,384	80 3/8	3,596	85 1/2	3,781	90 5/8	3,928	95 3/4	4,011
70 1/4	3,157	75 3/8	3,389	80 1/2	3,601	85 5/8	3,785	90 3/4	3,931		
70 3/8	3,163	75 1/2	3,395	80 5/8	3,606	85 3/4	3,789	90 7/8	3,934		
70 1/2	3,169	75 5/8	3,400	80 3/4	3,611	85 7/8	3,793	91	3,937		
70 5/8	3,174	75 3/4	3,405	80 7/8	3,615	86	3,797	91 1/8	3,940		



# Modern Welding Company

Subsidiaries Nationwide

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## Tank Calibration Chart

Cylindrical Tank / Horizontal Orientation

Striker Plate: 0.25 inches

Diameter: 96 inches

Length: 256 inches

Total Volume: 8,022 gallons

Depth (inches)	Volume (gallons)												
0	2	4 1/4	136	8 1/2	364	12 3/4	650	17	979	21 1/4	1,342	25 1/2	1,731
1/8	3	4 3/8	142	8 5/8	372	12 7/8	659	17 1/8	990	21 3/8	1,353	25 5/8	1,743
1/4	5	4 1/2	148	8 3/4	380	13	669	17 1/4	1,000	21 1/2	1,364	25 3/4	1,755
3/8	7	4 5/8	153	8 7/8	387	13 1/8	678	17 3/8	1,010	21 5/8	1,375	25 7/8	1,767
1/2	9	4 3/4	159	9	395	13 1/4	687	17 1/2	1,020	21 3/4	1,387	26	1,779
5/8	12	4 7/8	165	9 1/8	403	13 3/8	696	17 5/8	1,031	21 7/8	1,398	26 1/8	1,791
3/4	14	5	171	9 1/4	411	13 1/2	706	17 3/4	1,041	22	1,409	26 1/4	1,802
7/8	17	5 1/8	177	9 3/8	419	13 5/8	715	17 7/8	1,052	22 1/8	1,420	26 3/8	1,814
1	20	5 1/4	184	9 1/2	427	13 3/4	724	18	1,062	22 1/4	1,432	26 1/2	1,826
1 1/8	23	5 3/8	190	9 5/8	435	13 7/8	734	18 1/8	1,072	22 3/8	1,443	26 5/8	1,838
1 1/4	26	5 1/2	196	9 3/4	443	14	743	18 1/4	1,083	22 1/2	1,454	26 3/4	1,850
1 3/8	30	5 5/8	202	9 7/8	451	14 1/8	753	18 3/8	1,093	22 5/8	1,465	26 7/8	1,862
1 1/2	33	5 3/4	209	10	460	14 1/4	762	18 1/2	1,104	22 3/4	1,477	27	1,874
1 5/8	37	5 7/8	215	10 1/8	468	14 3/8	772	18 5/8	1,115	22 7/8	1,488	27 1/8	1,886
1 3/4	41	6	222	10 1/4	476	14 1/2	781	18 3/4	1,125	23	1,499	27 1/4	1,898
1 7/8	45	6 1/8	228	10 3/8	484	14 5/8	791	18 7/8	1,136	23 1/8	1,511	27 3/8	1,910
2	49	6 1/4	235	10 1/2	493	14 3/4	800	19	1,146	23 1/4	1,522	27 1/2	1,922
2 1/8	53	6 3/8	242	10 5/8	501	14 7/8	810	19 1/8	1,157	23 3/8	1,534	27 5/8	1,934
2 1/4	57	6 1/2	248	10 3/4	510	15	820	19 1/4	1,168	23 1/2	1,545	27 3/4	1,946
2 3/8	61	6 5/8	255	10 7/8	518	15 1/8	830	19 3/8	1,178	23 5/8	1,557	27 7/8	1,958
2 1/2	65	6 3/4	262	11	527	15 1/4	839	19 1/2	1,189	23 3/4	1,568	28	1,970
2 5/8	70	6 7/8	269	11 1/8	535	15 3/8	849	19 5/8	1,200	23 7/8	1,580	28 1/8	1,983
2 3/4	75	7	276	11 1/4	544	15 1/2	859	19 3/4	1,211	24	1,591	28 1/4	1,995
2 7/8	79	7 1/8	283	11 3/8	553	15 5/8	869	19 7/8	1,222	24 1/8	1,603	28 3/8	2,007
3	84	7 1/4	290	11 1/2	561	15 3/4	879	20	1,232	24 1/4	1,614	28 1/2	2,019
3 1/8	89	7 3/8	297	11 5/8	570	15 7/8	889	20 1/8	1,243	24 3/8	1,626	28 5/8	2,031
3 1/4	94	7 1/2	305	11 3/4	579	16	899	20 1/4	1,254	24 1/2	1,638	28 3/4	2,043
3 3/8	99	7 5/8	312	11 7/8	588	16 1/8	909	20 3/8	1,265	24 5/8	1,649	28 7/8	2,056
3 1/2	104	7 3/4	319	12	596	16 1/4	919	20 1/2	1,276	24 3/4	1,661	29	2,068
3 5/8	109	7 7/8	327	12 1/8	605	16 3/8	929	20 5/8	1,287	24 7/8	1,673	29 1/8	2,080
3 3/4	114	8	334	12 1/4	614	16 1/2	939	20 3/4	1,298	25	1,684	29 1/4	2,092
3 7/8	120	8 1/8	342	12 3/8	623	16 5/8	949	20 7/8	1,309	25 1/8	1,696	29 3/8	2,105
4	125	8 1/4	349	12 1/2	632	16 3/4	959	21	1,320	25 1/4	1,708	29 1/2	2,117
4 1/8	131	8 3/8	357	12 5/8	641	16 7/8	969	21 1/8	1,331	25 3/8	1,720	29 5/8	2,129

*This volumetric tank chart is supplied to you for informational purposes only. These capacity calculations are based on theoretical volumes not actual volumes, and do not reflect atmospheric conditions or thermal expansion/contraction due to temperature changes. If internal accessories such as pumps are present, displacement of these accessories must be considered. Therefore, neither Modern Welding Company nor its officers, directors, employee affiliates or subsidiaries shall be liable for the use of this information covered within. This information is advisory only and the use of the material and methods is solely at the risk of the user.*

Cylindrical Tank / Horizontal Orientation  
 Striker Plate: 0.25 inches | Diameter: 96 inches | Length: 256 inches | Total Volume: 8,022 gallons

Depth (inches)	Volume (gallons)												
29 3/4	2,142	34 7/8	2,658	40	3,190	45 1/8	3,732	50 1/4	4,277	55 3/8	4,819	60 1/2	5,351
29 7/8	2,154	35	2,670	40 1/8	3,203	45 1/4	3,745	50 3/8	4,290	55 1/2	4,832	60 5/8	5,364
30	2,166	35 1/8	2,683	40 1/4	3,216	45 3/8	3,758	50 1/2	4,303	55 5/8	4,845	60 3/4	5,377
30 1/8	2,179	35 1/4	2,696	40 3/8	3,229	45 1/2	3,772	50 5/8	4,316	55 3/4	4,858	60 7/8	5,390
30 1/4	2,191	35 3/8	2,709	40 1/2	3,242	45 5/8	3,785	50 3/4	4,330	55 7/8	4,871	61	5,402
30 3/8	2,203	35 1/2	2,722	40 5/8	3,256	45 3/4	3,798	50 7/8	4,343	56	4,884	61 1/8	5,415
30 1/2	2,216	35 5/8	2,735	40 3/4	3,269	45 7/8	3,811	51	4,356	56 1/8	4,897	61 1/4	5,428
30 5/8	2,228	35 3/4	2,748	40 7/8	3,282	46	3,825	51 1/8	4,370	56 1/4	4,910	61 3/8	5,441
30 3/4	2,241	35 7/8	2,760	41	3,295	46 1/8	3,838	51 1/4	4,383	56 3/8	4,923	61 1/2	5,453
30 7/8	2,253	36	2,773	41 1/8	3,308	46 1/4	3,851	51 3/8	4,396	56 1/2	4,937	61 5/8	5,466
31	2,266	36 1/8	2,786	41 1/4	3,321	46 3/8	3,865	51 1/2	4,409	56 5/8	4,950	61 3/4	5,479
31 1/8	2,278	36 1/4	2,799	41 3/8	3,335	46 1/2	3,878	51 5/8	4,423	56 3/4	4,963	61 7/8	5,492
31 1/4	2,291	36 3/8	2,812	41 1/2	3,348	46 5/8	3,891	51 3/4	4,436	56 7/8	4,976	62	5,504
31 3/8	2,303	36 1/2	2,825	41 5/8	3,361	46 3/4	3,904	51 7/8	4,449	57	4,989	62 1/8	5,517
31 1/2	2,316	36 5/8	2,838	41 3/4	3,374	46 7/8	3,918	52	4,462	57 1/8	5,002	62 1/4	5,530
31 5/8	2,328	36 3/4	2,851	41 7/8	3,387	47	3,931	52 1/8	4,476	57 1/4	5,015	62 3/8	5,542
31 3/4	2,341	36 7/8	2,864	42	3,401	47 1/8	3,944	52 1/4	4,489	57 3/8	5,028	62 1/2	5,555
31 7/8	2,353	37	2,877	42 1/8	3,414	47 1/4	3,958	52 3/8	4,502	57 1/2	5,041	62 5/8	5,568
32	2,366	37 1/8	2,890	42 1/4	3,427	47 3/8	3,971	52 1/2	4,515	57 5/8	5,054	62 3/4	5,580
32 1/8	2,378	37 1/4	2,903	42 3/8	3,440	47 1/2	3,984	52 5/8	4,529	57 3/4	5,067	62 7/8	5,593
32 1/4	2,391	37 3/8	2,916	42 1/2	3,453	47 5/8	3,997	52 3/4	4,542	57 7/8	5,080	63	5,606
32 3/8	2,403	37 1/2	2,929	42 5/8	3,467	47 3/4	4,011	52 7/8	4,555	58	5,093	63 1/8	5,618
32 1/2	2,416	37 5/8	2,942	42 3/4	3,480	47 7/8	4,024	53	4,568	58 1/8	5,106	63 1/4	5,631
32 5/8	2,429	37 3/4	2,955	42 7/8	3,493	48	4,037	53 1/8	4,581	58 1/4	5,119	63 3/8	5,643
32 3/4	2,441	37 7/8	2,968	43	3,506	48 1/8	4,051	53 1/4	4,595	58 3/8	5,132	63 1/2	5,656
32 7/8	2,454	38	2,981	43 1/8	3,520	48 1/4	4,064	53 3/8	4,608	58 1/2	5,145	63 5/8	5,668
33	2,467	38 1/8	2,994	43 1/4	3,533	48 3/8	4,077	53 1/2	4,621	58 5/8	5,158	63 3/4	5,681
33 1/8	2,479	38 1/4	3,007	43 3/8	3,546	48 1/2	4,091	53 5/8	4,634	58 3/4	5,171	63 7/8	5,693
33 1/4	2,492	38 3/8	3,020	43 1/2	3,559	48 5/8	4,104	53 3/4	4,647	58 7/8	5,184	64	5,706
33 3/8	2,505	38 1/2	3,033	43 5/8	3,572	48 3/4	4,117	53 7/8	4,661	59	5,197	64 1/8	5,719
33 1/2	2,517	38 5/8	3,046	43 3/4	3,586	48 7/8	4,130	54	4,674	59 1/8	5,210	64 1/4	5,731
33 5/8	2,530	38 3/4	3,059	43 7/8	3,599	49	4,144	54 1/8	4,687	59 1/4	5,222	64 3/8	5,743
33 3/4	2,543	38 7/8	3,072	44	3,612	49 1/8	4,157	54 1/4	4,700	59 3/8	5,235	64 1/2	5,756
33 7/8	2,555	39	3,085	44 1/8	3,625	49 1/4	4,170	54 3/8	4,713	59 1/2	5,248	64 5/8	5,768
34	2,568	39 1/8	3,098	44 1/4	3,639	49 3/8	4,184	54 1/2	4,727	59 5/8	5,261	64 3/4	5,781
34 1/8	2,581	39 1/4	3,111	44 3/8	3,652	49 1/2	4,197	54 5/8	4,740	59 3/4	5,274	64 7/8	5,793
34 1/4	2,594	39 3/8	3,124	44 1/2	3,665	49 5/8	4,210	54 3/4	4,753	59 7/8	5,287	65	5,806
34 3/8	2,606	39 1/2	3,137	44 5/8	3,679	49 3/4	4,224	54 7/8	4,766	60	5,300	65 1/8	5,818
34 1/2	2,619	39 5/8	3,151	44 3/4	3,692	49 7/8	4,237	55	4,779	60 1/8	5,313	65 1/4	5,831
34 5/8	2,632	39 3/4	3,164	44 7/8	3,705	50	4,250	55 1/8	4,792	60 1/4	5,325	65 3/8	5,843
34 3/4	2,645	39 7/8	3,177	45	3,718	50 1/8	4,263	55 1/4	4,805	60 3/8	5,338	65 1/2	5,855

Cylindrical Tank / Horizontal Orientation  
 Striker Plate: 0.25 inches | Diameter: 96 inches | Length: 256 inches | Total Volume: 8,022 gallons

Depth (inches)	Volume (gallons)										
65 5/8	5,868	70 3/4	6,361	75 7/8	6,822	81	7,240	86 1/8	7,603	91 1/4	7,885
65 3/4	5,880	70 7/8	6,372	76	6,832	81 1/8	7,250	86 1/4	7,610	91 3/8	7,891
65 7/8	5,892	71	6,384	76 1/8	6,843	81 1/4	7,259	86 3/8	7,618	91 1/2	7,896
66	5,905	71 1/8	6,396	76 1/4	6,854	81 3/8	7,269	86 1/2	7,626	91 5/8	7,902
66 1/8	5,917	71 1/4	6,407	76 3/8	6,865	81 1/2	7,278	86 5/8	7,634	91 3/4	7,907
66 1/4	5,929	71 3/8	6,419	76 1/2	6,875	81 5/8	7,288	86 3/4	7,642	91 7/8	7,912
66 3/8	5,941	71 1/2	6,430	76 5/8	6,886	81 3/4	7,297	86 7/8	7,650	92	7,918
66 1/2	5,954	71 5/8	6,442	76 3/4	6,896	81 7/8	7,307	87	7,657	92 1/8	7,923
66 5/8	5,966	71 3/4	6,453	76 7/8	6,907	82	7,316	87 1/8	7,665	92 1/4	7,928
66 3/4	5,978	71 7/8	6,465	77	6,918	82 1/8	7,325	87 1/4	7,672	92 3/8	7,933
66 7/8	5,990	72	6,476	77 1/8	6,928	82 1/4	7,335	87 3/8	7,680	92 1/2	7,938
67	6,002	72 1/8	6,488	77 1/4	6,939	82 3/8	7,344	87 1/2	7,688	92 5/8	7,942
67 1/8	6,015	72 1/4	6,499	77 3/8	6,949	82 1/2	7,353	87 5/8	7,695	92 3/4	7,947
67 1/4	6,027	72 3/8	6,511	77 1/2	6,960	82 5/8	7,362	87 3/4	7,702	92 7/8	7,952
67 3/8	6,039	72 1/2	6,522	77 5/8	6,970	82 3/4	7,371	87 7/8	7,710	93	7,956
67 1/2	6,051	72 5/8	6,533	77 3/4	6,980	82 7/8	7,380	88	7,717	93 1/8	7,961
67 5/8	6,063	72 3/4	6,545	77 7/8	6,991	83	7,389	88 1/8	7,724	93 1/4	7,965
67 3/4	6,075	72 7/8	6,556	78	7,001	83 1/8	7,398	88 1/4	7,731	93 3/8	7,969
67 7/8	6,087	73	6,568	78 1/8	7,011	83 1/4	7,407	88 3/8	7,738	93 1/2	7,973
68	6,099	73 1/8	6,579	78 1/4	7,022	83 3/8	7,416	88 1/2	7,745	93 5/8	7,977
68 1/8	6,112	73 1/4	6,590	78 3/8	7,032	83 1/2	7,425	88 5/8	7,752	93 3/4	7,981
68 1/4	6,124	73 3/8	6,601	78 1/2	7,042	83 5/8	7,434	88 3/4	7,759	93 7/8	7,985
68 3/8	6,136	73 1/2	6,613	78 5/8	7,052	83 3/4	7,443	88 7/8	7,766	94	7,988
68 1/2	6,148	73 5/8	6,624	78 3/4	7,063	83 7/8	7,452	89	7,773	94 1/8	7,992
68 5/8	6,160	73 3/4	6,635	78 7/8	7,073	84	7,460	89 1/8	7,780	94 1/4	7,995
68 3/4	6,172	73 7/8	6,646	79	7,083	84 1/8	7,469	89 1/4	7,787	94 3/8	7,998
68 7/8	6,183	74	6,657	79 1/8	7,093	84 1/4	7,478	89 3/8	7,793	94 1/2	8,001
69	6,195	74 1/8	6,668	79 1/4	7,103	84 3/8	7,486	89 1/2	7,800	94 5/8	8,004
69 1/8	6,207	74 1/4	6,680	79 3/8	7,113	84 1/2	7,495	89 5/8	7,806	94 3/4	8,007
69 1/4	6,219	74 3/8	6,691	79 1/2	7,123	84 5/8	7,503	89 3/4	7,813	94 7/8	8,010
69 3/8	6,231	74 1/2	6,702	79 5/8	7,133	84 3/4	7,512	89 7/8	7,819	95	8,012
69 1/2	6,243	74 5/8	6,713	79 3/4	7,143	84 7/8	7,520	90	7,826	95 1/8	8,014
69 5/8	6,255	74 3/4	6,724	79 7/8	7,153	85	7,529	90 1/8	7,832	95 1/4	8,016
69 3/4	6,267	74 7/8	6,735	80	7,163	85 1/8	7,537	90 1/4	7,838	95 3/8	8,018
69 7/8	6,278	75	6,746	80 1/8	7,172	85 1/4	7,545	90 3/8	7,844	95 1/2	8,020
70	6,290	75 1/8	6,757	80 1/4	7,182	85 3/8	7,554	90 1/2	7,850	95 5/8	8,021
70 1/8	6,302	75 1/4	6,767	80 3/8	7,192	85 1/2	7,562	90 5/8	7,856	95 3/4	8,022
70 1/4	6,314	75 3/8	6,778	80 1/2	7,202	85 5/8	7,570	90 3/4	7,862		
70 3/8	6,325	75 1/2	6,789	80 5/8	7,211	85 3/4	7,578	90 7/8	7,868		
70 1/2	6,337	75 5/8	6,800	80 3/4	7,221	85 7/8	7,586	91	7,874		
70 5/8	6,349	75 3/4	6,811	80 7/8	7,231	86	7,595	91 1/8	7,880		



# Modern Welding Company

Subsidiaries Nationwide

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## Tank Calibration Chart

Cylindrical Tank / Horizontal Orientation

Striker Plate: 0.25 inches

Diameter: 96 inches

Length: 384 inches

Total Volume: 12,032 gallons

Depth (inches)	Volume (gallons)												
0	3	4 1/4	204	8 1/2	546	12 3/4	975	17	1,469	21 1/4	2,013	25 1/2	2,597
1/8	5	4 3/8	213	8 5/8	558	12 7/8	989	17 1/8	1,484	21 3/8	2,030	25 5/8	2,615
1/4	8	4 1/2	221	8 3/4	570	13	1,003	17 1/4	1,500	21 1/2	2,046	25 3/4	2,632
3/8	11	4 5/8	230	8 7/8	581	13 1/8	1,017	17 3/8	1,515	21 5/8	2,063	25 7/8	2,650
1/2	14	4 3/4	239	9	593	13 1/4	1,031	17 1/2	1,531	21 3/4	2,080	26	2,668
5/8	18	4 7/8	248	9 1/8	605	13 3/8	1,044	17 5/8	1,546	21 7/8	2,097	26 1/8	2,686
3/4	22	5	257	9 1/4	617	13 1/2	1,058	17 3/4	1,562	22	2,114	26 1/4	2,704
7/8	26	5 1/8	266	9 3/8	629	13 5/8	1,072	17 7/8	1,577	22 1/8	2,130	26 3/8	2,721
1	30	5 1/4	275	9 1/2	641	13 3/4	1,086	18	1,593	22 1/4	2,147	26 1/2	2,739
1 1/8	35	5 3/8	285	9 5/8	653	13 7/8	1,101	18 1/8	1,609	22 3/8	2,164	26 5/8	2,757
1 1/4	40	5 1/2	294	9 3/4	665	14	1,115	18 1/4	1,624	22 1/2	2,181	26 3/4	2,775
1 3/8	45	5 5/8	304	9 7/8	677	14 1/8	1,129	18 3/8	1,640	22 5/8	2,198	26 7/8	2,793
1 1/2	50	5 3/4	313	10	689	14 1/4	1,143	18 1/2	1,656	22 3/4	2,215	27	2,811
1 5/8	55	5 7/8	323	10 1/8	702	14 3/8	1,157	18 5/8	1,672	22 7/8	2,232	27 1/8	2,829
1 3/4	61	6	333	10 1/4	714	14 1/2	1,172	18 3/4	1,688	23	2,249	27 1/4	2,847
1 7/8	67	6 1/8	343	10 3/8	727	14 5/8	1,186	18 7/8	1,704	23 1/8	2,266	27 3/8	2,865
2	73	6 1/4	352	10 1/2	739	14 3/4	1,201	19	1,720	23 1/4	2,283	27 1/2	2,883
2 1/8	79	6 3/8	363	10 5/8	752	14 7/8	1,215	19 1/8	1,736	23 3/8	2,301	27 5/8	2,901
2 1/4	85	6 1/2	373	10 3/4	764	15	1,230	19 1/4	1,752	23 1/2	2,318	27 3/4	2,919
2 3/8	92	6 5/8	383	10 7/8	777	15 1/8	1,244	19 3/8	1,768	23 5/8	2,335	27 7/8	2,938
2 1/2	98	6 3/4	393	11	790	15 1/4	1,259	19 1/2	1,784	23 3/4	2,352	28	2,956
2 5/8	105	6 7/8	404	11 1/8	803	15 3/8	1,274	19 5/8	1,800	23 7/8	2,370	28 1/8	2,974
2 3/4	112	7	414	11 1/4	816	15 1/2	1,289	19 3/4	1,816	24	2,387	28 1/4	2,992
2 7/8	119	7 1/8	425	11 3/8	829	15 5/8	1,303	19 7/8	1,832	24 1/8	2,404	28 3/8	3,010
3	126	7 1/4	435	11 1/2	842	15 3/4	1,318	20	1,849	24 1/4	2,422	28 1/2	3,029
3 1/8	133	7 3/8	446	11 5/8	855	15 7/8	1,333	20 1/8	1,865	24 3/8	2,439	28 5/8	3,047
3 1/4	141	7 1/2	457	11 3/4	868	16	1,348	20 1/4	1,881	24 1/2	2,457	28 3/4	3,065
3 3/8	148	7 5/8	468	11 7/8	881	16 1/8	1,363	20 3/8	1,898	24 5/8	2,474	28 7/8	3,084
3 1/2	156	7 3/4	479	12	895	16 1/4	1,378	20 1/2	1,914	24 3/4	2,491	29	3,102
3 5/8	164	7 7/8	490	12 1/8	908	16 3/8	1,393	20 5/8	1,930	24 7/8	2,509	29 1/8	3,120
3 3/4	172	8	501	12 1/4	921	16 1/2	1,408	20 3/4	1,947	25	2,527	29 1/4	3,139
3 7/8	180	8 1/8	512	12 3/8	935	16 5/8	1,423	20 7/8	1,963	25 1/8	2,544	29 3/8	3,157
4	188	8 1/4	524	12 1/2	948	16 3/4	1,439	21	1,980	25 1/4	2,562	29 1/2	3,176
4 1/8	196	8 3/8	535	12 5/8	962	16 7/8	1,454	21 1/8	1,997	25 3/8	2,579	29 5/8	3,194

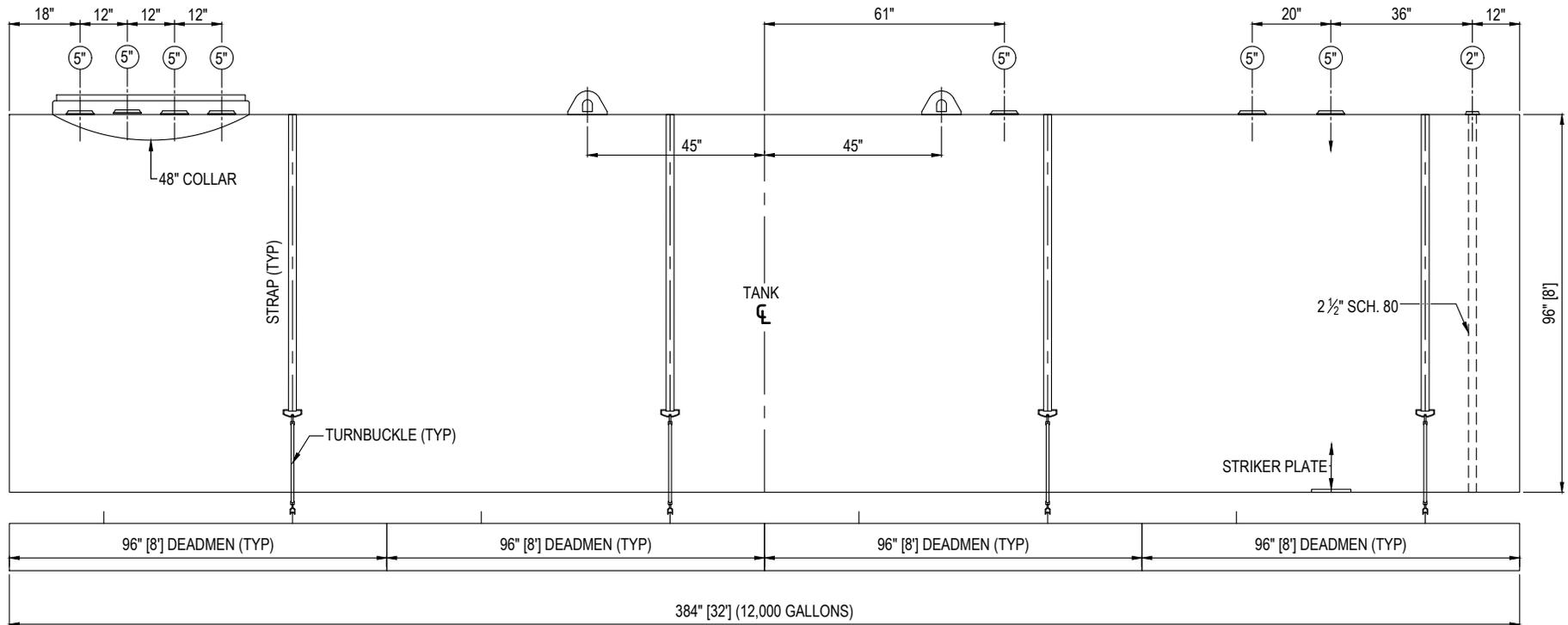
*This volumetric tank chart is supplied to you for informational purposes only. These capacity calculations are based on theoretical volumes not actual volumes, and do not reflect atmospheric conditions or thermal expansion/contraction due to temperature changes. If internal accessories such as pumps are present, displacement of these accessories must be considered. Therefore, neither Modern Welding Company nor its officers, directors, employee affiliates or subsidiaries shall be liable for the use of this information covered within. This information is advisory only and the use of the material and methods is solely at the risk of the user.*

Cylindrical Tank / Horizontal Orientation  
 Striker Plate: 0.25 inches | Diameter: 96 inches | Length: 384 inches | Total Volume: 12,032 gallons

Depth (inches)	Volume (gallons)												
29 3/4	3,212	34 7/8	3,986	40	4,785	45 1/8	5,597	50 1/4	6,415	55 3/8	7,228	60 1/2	8,027
29 7/8	3,231	35	4,006	40 1/8	4,804	45 1/4	5,617	50 3/8	6,435	55 1/2	7,248	60 5/8	8,046
30	3,250	35 1/8	4,025	40 1/4	4,824	45 3/8	5,637	50 1/2	6,455	55 5/8	7,267	60 3/4	8,065
30 1/8	3,268	35 1/4	4,044	40 3/8	4,844	45 1/2	5,657	50 5/8	6,475	55 3/4	7,287	60 7/8	8,084
30 1/4	3,287	35 3/8	4,063	40 1/2	4,864	45 5/8	5,677	50 3/4	6,495	55 7/8	7,307	61	8,104
30 3/8	3,305	35 1/2	4,083	40 5/8	4,883	45 3/4	5,697	50 7/8	6,515	56	7,326	61 1/8	8,123
30 1/2	3,324	35 5/8	4,102	40 3/4	4,903	45 7/8	5,717	51	6,534	56 1/8	7,346	61 1/4	8,142
30 5/8	3,342	35 3/4	4,121	40 7/8	4,923	46	5,737	51 1/8	6,554	56 1/4	7,366	61 3/8	8,161
30 3/4	3,361	35 7/8	4,141	41	4,943	46 1/8	5,757	51 1/4	6,574	56 3/8	7,385	61 1/2	8,180
30 7/8	3,380	36	4,160	41 1/8	4,962	46 1/4	5,777	51 3/8	6,594	56 1/2	7,405	61 5/8	8,199
31	3,398	36 1/8	4,179	41 1/4	4,982	46 3/8	5,797	51 1/2	6,614	56 5/8	7,424	61 3/4	8,218
31 1/8	3,417	36 1/4	4,199	41 3/8	5,002	46 1/2	5,817	51 5/8	6,634	56 3/4	7,444	61 7/8	8,237
31 1/4	3,436	36 3/8	4,218	41 1/2	5,022	46 5/8	5,837	51 3/4	6,654	56 7/8	7,464	62	8,256
31 3/8	3,455	36 1/2	4,237	41 5/8	5,041	46 3/4	5,857	51 7/8	6,674	57	7,483	62 1/8	8,275
31 1/2	3,473	36 5/8	4,257	41 3/4	5,061	46 7/8	5,877	52	6,694	57 1/8	7,503	62 1/4	8,294
31 5/8	3,492	36 3/4	4,276	41 7/8	5,081	47	5,897	52 1/8	6,713	57 1/4	7,522	62 3/8	8,313
31 3/4	3,511	36 7/8	4,296	42	5,101	47 1/8	5,916	52 1/4	6,733	57 3/8	7,542	62 1/2	8,332
31 7/8	3,530	37	4,315	42 1/8	5,121	47 1/4	5,936	52 3/8	6,753	57 1/2	7,561	62 5/8	8,351
32	3,549	37 1/8	4,335	42 1/4	5,140	47 3/8	5,956	52 1/2	6,773	57 5/8	7,581	62 3/4	8,370
32 1/8	3,567	37 1/4	4,354	42 3/8	5,160	47 1/2	5,976	52 5/8	6,793	57 3/4	7,600	62 7/8	8,389
32 1/4	3,586	37 3/8	4,373	42 1/2	5,180	47 5/8	5,996	52 3/4	6,813	57 7/8	7,620	63	8,408
32 3/8	3,605	37 1/2	4,393	42 5/8	5,200	47 3/4	6,016	52 7/8	6,833	58	7,639	63 1/8	8,427
32 1/2	3,624	37 5/8	4,412	42 3/4	5,220	47 7/8	6,036	53	6,852	58 1/8	7,659	63 1/4	8,446
32 5/8	3,643	37 3/4	4,432	42 7/8	5,240	48	6,056	53 1/8	6,872	58 1/4	7,678	63 3/8	8,465
32 3/4	3,662	37 7/8	4,451	43	5,259	48 1/8	6,076	53 1/4	6,892	58 3/8	7,698	63 1/2	8,484
32 7/8	3,681	38	4,471	43 1/8	5,279	48 1/4	6,096	53 3/8	6,912	58 1/2	7,717	63 5/8	8,503
33	3,700	38 1/8	4,491	43 1/4	5,299	48 3/8	6,116	53 1/2	6,932	58 5/8	7,737	63 3/4	8,521
33 1/8	3,719	38 1/4	4,510	43 3/8	5,319	48 1/2	6,136	53 5/8	6,951	58 3/4	7,756	63 7/8	8,540
33 1/4	3,738	38 3/8	4,530	43 1/2	5,339	48 5/8	6,156	53 3/4	6,971	58 7/8	7,776	64	8,559
33 3/8	3,757	38 1/2	4,549	43 5/8	5,359	48 3/4	6,176	53 7/8	6,991	59	7,795	64 1/8	8,578
33 1/2	3,776	38 5/8	4,569	43 3/4	5,379	48 7/8	6,196	54	7,011	59 1/8	7,814	64 1/4	8,597
33 5/8	3,795	38 3/4	4,588	43 7/8	5,398	49	6,216	54 1/8	7,031	59 1/4	7,834	64 3/8	8,615
33 3/4	3,814	38 7/8	4,608	44	5,418	49 1/8	6,236	54 1/4	7,050	59 3/8	7,853	64 1/2	8,634
33 7/8	3,833	39	4,628	44 1/8	5,438	49 1/4	6,256	54 3/8	7,070	59 1/2	7,872	64 5/8	8,653
34	3,852	39 1/8	4,647	44 1/4	5,458	49 3/8	6,275	54 1/2	7,090	59 5/8	7,892	64 3/4	8,671
34 1/8	3,871	39 1/4	4,667	44 3/8	5,478	49 1/2	6,295	54 5/8	7,110	59 3/4	7,911	64 7/8	8,690
34 1/4	3,891	39 3/8	4,686	44 1/2	5,498	49 5/8	6,315	54 3/4	7,129	59 7/8	7,930	65	8,709
34 3/8	3,910	39 1/2	4,706	44 5/8	5,518	49 3/4	6,335	54 7/8	7,149	60	7,950	65 1/8	8,727
34 1/2	3,929	39 5/8	4,726	44 3/4	5,538	49 7/8	6,355	55	7,169	60 1/8	7,969	65 1/4	8,746
34 5/8	3,948	39 3/4	4,745	44 7/8	5,558	50	6,375	55 1/8	7,188	60 1/4	7,988	65 3/8	8,764
34 3/4	3,967	39 7/8	4,765	45	5,578	50 1/8	6,395	55 1/4	7,208	60 3/8	8,007	65 1/2	8,783

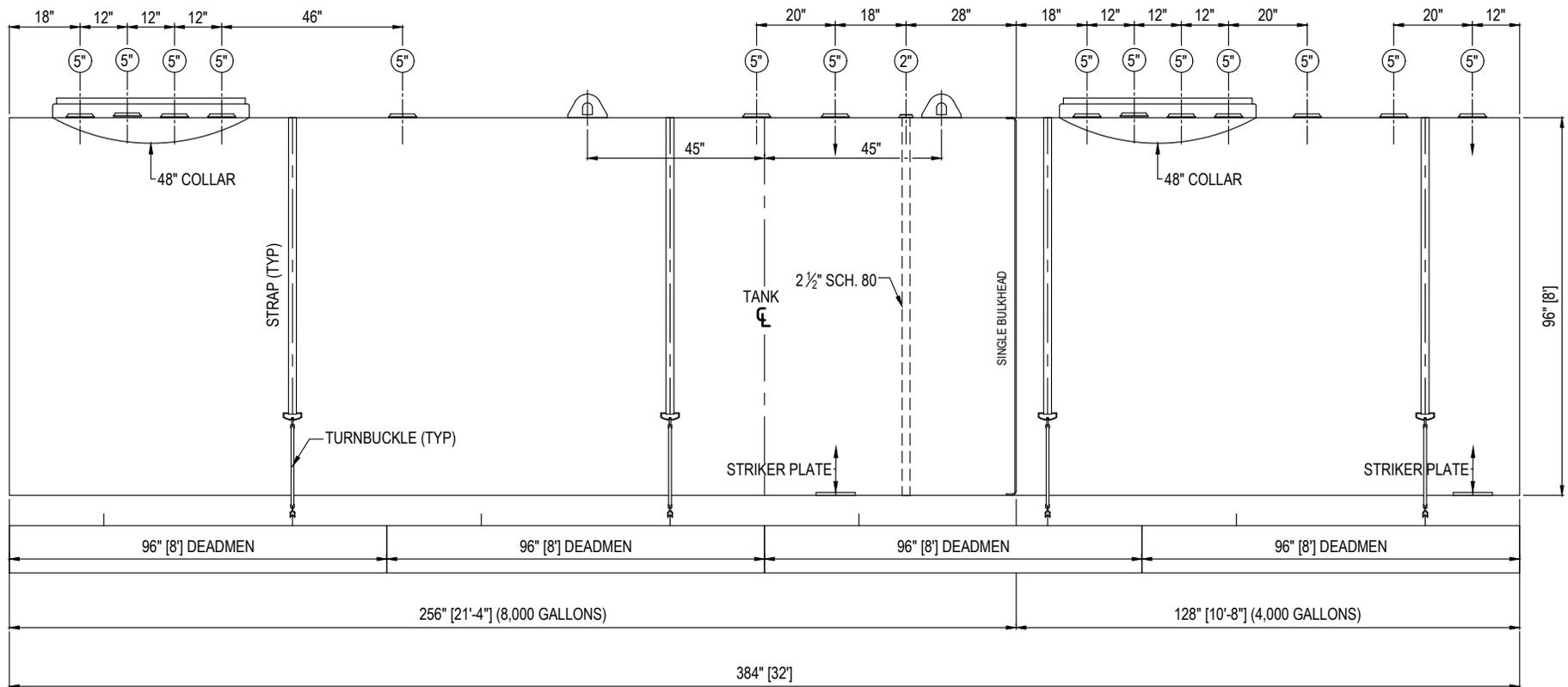
Cylindrical Tank / Horizontal Orientation  
 Striker Plate: 0.25 inches | Diameter: 96 inches | Length: 384 inches | Total Volume: 12,032 gallons

Depth (inches)	Volume (gallons)										
65 5/8	8,801	70 3/4	9,541	75 7/8	10,232	81	10,861	86 1/8	11,404	91 1/4	11,828
65 3/4	8,820	70 7/8	9,558	76	10,249	81 1/8	10,875	86 1/4	11,416	91 3/8	11,836
65 7/8	8,838	71	9,576	76 1/8	10,265	81 1/4	10,889	86 3/8	11,428	91 1/2	11,845
66	8,857	71 1/8	9,593	76 1/4	10,281	81 3/8	10,903	86 1/2	11,439	91 5/8	11,853
66 1/8	8,875	71 1/4	9,611	76 3/8	10,297	81 1/2	10,918	86 5/8	11,451	91 3/4	11,861
66 1/4	8,894	71 3/8	9,628	76 1/2	10,313	81 5/8	10,932	86 3/4	11,463	91 7/8	11,869
66 3/8	8,912	71 1/2	9,645	76 5/8	10,329	81 3/4	10,946	86 7/8	11,474	92	11,877
66 1/2	8,930	71 5/8	9,663	76 3/4	10,345	81 7/8	10,960	87	11,486	92 1/8	11,884
66 5/8	8,949	71 3/4	9,680	76 7/8	10,361	82	10,974	87 1/8	11,497	92 1/4	11,892
66 3/4	8,967	71 7/8	9,697	77	10,376	82 1/8	10,988	87 1/4	11,509	92 3/8	11,899
66 7/8	8,985	72	9,715	77 1/8	10,392	82 1/4	11,002	87 3/8	11,520	92 1/2	11,906
67	9,004	72 1/8	9,732	77 1/4	10,408	82 3/8	11,016	87 1/2	11,531	92 5/8	11,914
67 1/8	9,022	72 1/4	9,749	77 3/8	10,424	82 1/2	11,029	87 5/8	11,542	92 3/4	11,921
67 1/4	9,040	72 3/8	9,766	77 1/2	10,439	82 5/8	11,043	87 3/4	11,553	92 7/8	11,927
67 3/8	9,058	72 1/2	9,783	77 5/8	10,455	82 3/4	11,057	87 7/8	11,564	93	11,934
67 1/2	9,077	72 5/8	9,800	77 3/4	10,471	82 7/8	11,071	88	11,575	93 1/8	11,941
67 5/8	9,095	72 3/4	9,817	77 7/8	10,486	83	11,084	88 1/8	11,586	93 1/4	11,947
67 3/4	9,113	72 7/8	9,834	78	10,502	83 1/8	11,098	88 1/4	11,597	93 3/8	11,953
67 7/8	9,131	73	9,851	78 1/8	10,517	83 1/4	11,111	88 3/8	11,608	93 1/2	11,960
68	9,149	73 1/8	9,868	78 1/4	10,533	83 3/8	11,124	88 1/2	11,618	93 5/8	11,966
68 1/8	9,167	73 1/4	9,885	78 3/8	10,548	83 1/2	11,138	88 5/8	11,629	93 3/4	11,971
68 1/4	9,185	73 3/8	9,902	78 1/2	10,563	83 5/8	11,151	88 3/4	11,639	93 7/8	11,977
68 3/8	9,203	73 1/2	9,919	78 5/8	10,579	83 3/4	11,164	88 7/8	11,649	94	11,982
68 1/2	9,221	73 5/8	9,936	78 3/4	10,594	83 7/8	11,177	89	11,660	94 1/8	11,988
68 5/8	9,239	73 3/4	9,952	78 7/8	10,609	84	11,191	89 1/8	11,670	94 1/4	11,993
68 3/4	9,257	73 7/8	9,969	79	10,624	84 1/8	11,204	89 1/4	11,680	94 3/8	11,998
68 7/8	9,275	74	9,986	79 1/8	10,639	84 1/4	11,217	89 3/8	11,690	94 1/2	12,002
69	9,293	74 1/8	10,003	79 1/4	10,654	84 3/8	11,230	89 1/2	11,700	94 5/8	12,007
69 1/8	9,311	74 1/4	10,019	79 3/8	10,669	84 1/2	11,242	89 5/8	11,710	94 3/4	12,011
69 1/4	9,329	74 3/8	10,036	79 1/2	10,684	84 5/8	11,255	89 3/4	11,719	94 7/8	12,015
69 3/8	9,347	74 1/2	10,052	79 5/8	10,699	84 3/4	11,268	89 7/8	11,729	95	12,018
69 1/2	9,364	74 5/8	10,069	79 3/4	10,714	84 7/8	11,281	90	11,738	95 1/8	12,022
69 5/8	9,382	74 3/4	10,086	79 7/8	10,729	85	11,293	90 1/8	11,748	95 1/4	12,025
69 3/4	9,400	74 7/8	10,102	80	10,744	85 1/8	11,306	90 1/4	11,757	95 3/8	12,027
69 7/8	9,418	75	10,118	80 1/8	10,759	85 1/4	11,318	90 3/8	11,766	95 1/2	12,030
70	9,435	75 1/8	10,135	80 1/4	10,773	85 3/8	11,331	90 1/2	11,775	95 5/8	12,031
70 1/8	9,453	75 1/4	10,151	80 3/8	10,788	85 1/2	11,343	90 5/8	11,784	95 3/4	12,032
70 1/4	9,471	75 3/8	10,168	80 1/2	10,803	85 5/8	11,355	90 3/4	11,793		
70 3/8	9,488	75 1/2	10,184	80 5/8	10,817	85 3/4	11,368	90 7/8	11,802		
70 1/2	9,506	75 5/8	10,200	80 3/4	10,832	85 7/8	11,380	91	11,811		
70 5/8	9,523	75 3/4	10,216	80 7/8	10,846	86	11,392	91 1/8	11,820		



CONSTRUCTED PER UL 58/UL1746 PART III WILL BEAR THE UL1746 PART III LABEL	THE MAXIMUM BURIAL DEPTH IS 60"	CUSTOMER: SIGN AND DATE APPROVAL DRAWING SELECTION	GC / JC		ORIGINAL ISSUE FOR APPROVAL				
APPROXIMATE WEIGHT: ± 10,000#	SHOP TEST PER UL 58	APPROVED AS IS PROCEED WITH FABRICATION	REVISION		DATE:				
GALLONS: 12,000	5" X 4" DIE ELECTRIC BUSHINGS	APPROVED AS NEEDED. REVISE AND PROCEED WITH FABRICATION	NOT APPROVED. RESUBMIT WITH CHANGES FOR APPROVAL		This drawing is property of Modern Welding Co. Inc. Neither the drawing nor any data of information herein may be reproduced, copied, used for any purposes whatsoever without the prior written permission of Modern Welding Co. Inc.				
PRIMARY HEADS: A 36 PRIMARY SHELLS: A36	3-5 PSI AIR WITH SOAP SUDS	AGENT / ENGINEER	12,000 GALLON GSI		<b>Modern Welding Co. of Texas, Inc.</b> P.O BOX 85 200 N. MAIN RHOME, TX. 76078				
EXTERIOR JACKET: 100 MILS. FRP	SECONDARY VACUUM TEST MIN. 18"	DATE:	DWG.BY	GC	DATE				SCALE NONE:
FITTINGS: (7) 5" NPT OPENINGS (1) 2" MONITOR NPT OPENING	(1) 48" SUMP COLLAR	CUSTOMER:	CHK.BY	JC	JOB#				
	(4) STRAPS & HARDWARE				PO#				





CONSTRUCTED PER UL 58/UL1746 PART III WILL BEAR THE UL1746 PART III LABEL	THE MAXIMUM BURIAL DEPTH IS 60"	CUSTOMER: SIGN AND DATE APPROVAL DRAWING SELECTION	<table border="1"> <tr> <td>GC / JC</td> <td>ORIGINAL ISSUE FOR APPROVAL</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>REVISION</td> <td></td> <td>DATE:</td> <td></td> <td>NO.</td> </tr> </table>				GC / JC	ORIGINAL ISSUE FOR APPROVAL						REVISION		DATE:		NO.
GC / JC	ORIGINAL ISSUE FOR APPROVAL																	
	REVISION		DATE:		NO.													
APPROXIMATE WEIGHT: ± 10,500#	SHOP TEST PER UL 58	APPROVED AS IS PROCEED WITH FABRICATION	<p>This drawing is property of Modern Welding Co. Inc. Neither the drawing nor any data of information herein may be reproduced, copied, used for any purposes whatsoever without the prior written permission of Modern Welding Co. Inc.</p> <p><b>Modern Welding Co. of Texas, Inc.</b></p> <p>P.O BOX 85 200 N. MAIN RHOME, TX. 76078</p>  <p>TEL. 817-636-2215 FAX. 817-636-2680</p>															
GALLONS: 12,000 SPLIT 8 / 4	5" X 4" DIE ELECTRIC BUSHINGS	APPROVED AS NEEDED. REVISE AND PROCEED WITH FABRICATION	12,000 GALLON GSII SPLIT 8 / 4															
PRIMARY HEADS: A 36 PRIMARY SHELLS: A36	3-5 PSI AIR WITH SOAP SUDS	NOT APPROVED. RESUBMIT WITH CHANGES FOR APPROVAL																
EXTERIOR JACKET: 100 MILS. FRP	SECONDARY VACUUM TEST MIN. 18"	AGENT / ENGINEER	DWG.BY	GC	DATE	SCALE NONE:												
FITTINGS: (14) 5" NPT OPENINGS (1) 2" MONITOR NPT OPENING	(2) 48" SUMP COLLAR	DATE:	CHK.BY	JC	JOB#													
	(4) STRAPS & HARDWARE	CUSTOMER:			PO#													

# Fuel Handling Piping Systems

RED THREAD™ IIA, DUALOY™ 3000/LCX, 3000/L

**BOOST  
YOUR  
BOTTOM  
LINE**

1st to  
**50**  
Red Thread™ IIA



1968-2018  
Fiber Glass Systems



# Fuel Handling: The Industry Leader

Fiber Glass Systems is the leader for time-tested piping systems for underground fueling systems. We have proven our leadership with almost 50 years of continuous supply of two brands of UL Listed products for underground fuel handling. With a combined experience approaching 100 years, Red Thread IIA, Dualoy 3000/L and 3000/LCX have never been removed due to fuel incompatibility. Our products are manufactured for today's fuel blends and tomorrow's.

## Lower Your Total Cost of Ownership

Our products are made with thermosetting, aromatic amine cured epoxy resin, ensuring no maintenance or replacement costs due to fuel incompatibility. In addition, our superior flow capabilities mean more flow at significantly lower pumping costs when compared to competitive products. Finally, using our Bonded Sump Entry Fitting – Termination Style helps eliminate the expense of pumping out leaking sumps, which can be substantial.

**100+**  
Million Feet

Over 100 million feet of Red Thread IIA and Dualoy fiberglass piping systems have been installed.

**2.1+**  
Trillion Gallons

Over 2.1 trillion gallons of gasoline and diesel have been pumped using Red Thread IIA and Dualoy fiberglass piping systems in the last 30 years

**30**  
Year Warranty

30-year pipe warranty for both internal/external corrosion when using our Red Thread IIA and Dualoy fiberglass piping systems.

**50**  
Years UL LISTED

Our Red Thread IIA product line was the FIRST composite pipe to receive UL LISTED (UL 971) approval in 1968 for underground fuel handling.

# HISTORY OF FIBERGLASS PIPE IN FUEL HANDLING

Fiberglass pipe was first listed by Underwriters Laboratories Inc. (UL) in 1968. The product was a welcome addition to the market due to the corrosion and thread leak problems associated with single-wall steel pipe, the incumbent material.

UL physical requirements for pressure, bending and tensile performance vs. rating have remained virtually unchanged since that time. The “chemical” requirements have changed significantly since the original draft of UL Subject 971, “Standard for Nonmetallic Underground Piping for Flammable Liquids”. The original requirements of the standard allowed no measurable weight change of the product holding a variety of fuels and liquids over a 180 day period. Both of the NOV products, Red Thread IIA and Dualoy 3000/L met this requirement. Another stringent requirement passed by fiberglass pipe was the required strength retention after 270 days of total immersion (open, square-cut pieces of pipe immersed in a battery of fuels and other liquids).

Since the initial authorization to apply the Listing Mark was given, the fuel market has changed, most notably with the use of alcohol in fuel (both ethanol and methanol) and the requirement for secondary containment. Requirements for the piping have changed, also. In 1995, UL relaxed the requirements for fuel permeation (tested in terms of weight loss) and also allowed candidate products to be tested with “single-sided immersion” where the test fuel or liquid was only in contact with the interior surface of the product. With fiberglass pipe already passing the more demanding test criteria, this level of performance was easily demonstrated.

In 2004, after poor field experience with several products, UL “tightened” the requirements on permeation and instituted new criteria for dimensional stability and weight gain, and also increased the percent strength retention requirements. Following the permeation requirements for primary pipe through this chronology reveals the allowable fluid migration through piping to go from zero (from 1968 to 1995) to 4 grams per square meter per day (to 2004) to the current 1 gram per square meter per day.

Put in more practical terms, this equates to a little over 1/20 (one-twentieth) of a gallon per day per 100 ft. of 2-inch pipe. This is down from the 1/5 of a gallon per day per 100 ft. of 2-inch pipe that existed between 1995 and 2004, but is still higher than the “zero” originally allowed.

The 30-year warranty against internal and external corrosion when used for underground transfer of fuels has been proven repeatedly through almost 50 years of unparalleled performance by any other product offered, ever.

Fiber Glass Systems offers piping products for all fuel types, services and product types. These include:

## Red Thread IIA

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

## Dualoy 3000/L

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.

## Dualoy 3000/LCX

Listed in the United States with Underwriters Laboratories for nonmetallic underground piping for motor vehicle (MV), high blend (HB), concentrated (CT) and aviation and marine (A&M) under File MH9162. Dualoy 3000/LCX pipe and fittings are also Listed with Underwriters Laboratories of Canada for Petroleum Products and Oxygenated Fuels (File CMH715). Underwriters Laboratories has also approved Dualoy 3000/L-A and Dualoy 3000/LCX for use with MTBE fluids.



# RED THREAD IIA PIPE SYSTEMS

Red Thread IIA piping systems are made of fiberglass reinforced, aromatic amine cured, rigid, thermosetting epoxy resin. The pipe is manufactured using the classical reciprocal filament winding process where fibers are wound around a steel mandrel under controlled tension at a prescribed angle, optimized for stresses caused by pressure. Most fittings are made in matched-die compression molds where the pre-impregnated (pre-preg) fiberglass bands are chopped and placed in the mold cavities where heat and pressure are applied to form the consolidated part. Fittings can also be made by the filament winding process, where efficiency and practicality make this possible.

Pipe and fittings are bonded together using a two-part adhesive, specially formulated for strength, fuel resistance and ease of handling, including the ability to mix, apply and cure at ambient temperatures above the minimum.

## Joining Methods

The primary method of joining pipe-to-pipe is with a T. A. B. (threaded and bonded) coupling. Matching, low profile threads on the pipe and in the coupling allow a mechanical fit of the components while the adhesive cures, assuring a tight make-up.

Pipe-to-fittings bonds are made with matching tapers that “lock” together as they are joined with either an axial force or a slight twist while a “push” is being applied by hand (for 2-inch pipe only). Pipe with T. A. B. threads can also be bonded into smooth, tapered ends of fittings using the same method.

Complete joining instructions are available, along with a comprehensive set of tools to perform the installation procedures.

## Secondary Containment

Where secondary containment is needed, Red Thread IIA provides a true pipe-in-a-pipe system. Containment pipe is identical to the primary pipe. Sections are joined together with matching two-piece clamshells that are bonded and bolted together. One half of the clamshell fitting is pre-fitted with female threaded fasteners to make assembly fast and easy from one side of the fitting.



**Old vs. New - Pipe in the foreground was installed in 1973 and removed 27 years later when the station closed.**

# DUALOY™ 3000/LCX PIPE SYSTEMS

The Dualoy 3000/LCX product was developed on the technology used for the Dualoy 3000/L system. The addition of the “CX” to the product name indicated the product is of coaxial construction. The common term in the marketplace for the product is “LCX” and that will be used here, also.

To build this product, first the Dualoy 3000/L primary pipe is made on a proprietary continuous process. Adhesive-backed tape is used to carry size-graded glass beads and is wrapped over the primary pipe. Another layer of adhesive-backed tape is then wound over it to form a complete, dry, porous layer, which is then over-wrapped with the containment layer (or jacket) of fiberglass and resin.

## Benefits of LCX

First installed in 1995, the LCX product has since gained in popularity and market share. In addition to having the benefits of fiberglass compared to other materials, the unique coaxial construction has other practical and theoretical benefits. Some of these benefits are obvious, while others are less so, but probably more significant. Both pipe walls are together, making it easier to carry and requiring fewer trips into the ditch.

- No measuring is required for containment pipe, cutting down on potential mistakes and waste.
- The pipe is compact, allowing less trenching, backfill and haul-off, as well as taking less warehouse space for inventory.
- Fittings design makes series lay-out easy and allows cross-overs for parallel systems to be made to the same dimensions as a single-wall system.
- The two pipe layers do not move relative to each other. This causes each one to support the other and enhance the strength of the pipe and the joints.

The two layers are very close to each other, although totally separated. This narrow distance and low volume have benefits that may not be obvious:

- No backfill or debris can get between the layers. This, along with there being no movement between the layers prevents any abrasive wear that may cause damage later.
- If water would get between the layers (unlikely), the volume is insufficient to allow any damage to occur, should that water freeze and expand (crushing primary in other cases).

- Should a leak occur (also very unlikely), only a very small amount will be needed before it will travel to a detection point.
- During testing at installation, any communication between the two layers will be seen as it will cause a large change in the gauge pressure in the containment (because the volume of the containment is small relative to the primary – 15:1 for 2-inch pipe).
- If a leak needs to be located, the “soapy water” test can be used to inspect the whole system (joints, fittings and pipe) – soaping the cut end of the jacket will show any leaks in that primary pipe section.

Continuous monitoring can be done with any of the approved methods, Vacuum, Pressure or Hydrostatic, with the Hydrostatic method approved by the NWGLDE and the state of California Fiber Glass Systems has the fiberglass pipe to suit all services and product type preferences.



Dualoy 3000/LCX pipe

# DUALOY™ 3000/L PIPE SYSTEMS

Like Red Thread IIA, Dualoy 3000/L piping systems are made of fiberglass reinforced, aromatic amine cured, rigid, thermosetting epoxy resin. This pipe is manufactured using a unique process where a continuous cylinder is generated with the fibers oriented more near the circumferential and axial directions than with the reciprocal process. Dualoy 3000/L also includes a resin-rich liner. Fittings are compression molded or filament wound, as is further described in the Red Thread IIA text.

Dualoy 3000/L Pipe and fittings are also bonded using a 2-part adhesive.

## Joining Methods

All primary system bonds are made with matching tapers with the Dualoy 3000/L system. The same “lock” is made as they are joined with either an axial force or a slight twist while the force is being applied. Instructions and tools are also available.

## Secondary Containment

Where secondary containment is needed, Dualoy 3000/L is very much the same as Red Thread IIA.



Dualoy Secondary Containment

# ADHESIVES

Fiber Glass Systems offers two adhesive lines: Series 8000 and PSX. Both lines can be used on Red Thread IIA and Dualoy pipe. Series 8000 is typically used for bonding primary pipe and fittings. A thickening agent is offered for bonding secondary containment fittings, particularly in warmer weather. PSX-20 is typically used for bonding primary pipe and fittings, and PSX-34, with a higher viscosity, is typically used for bonding secondary containment fittings.

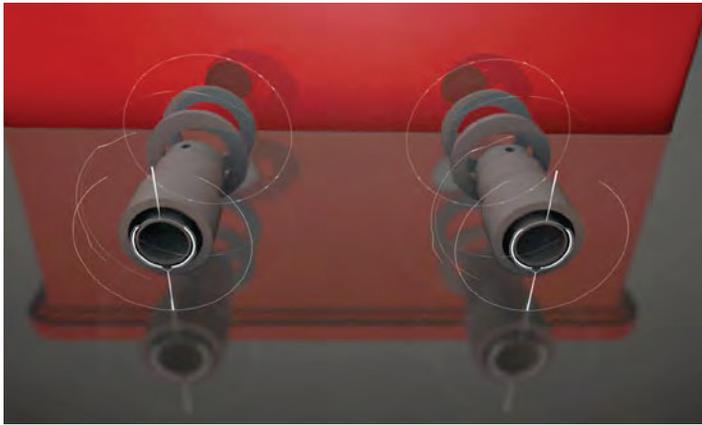


Adhesive Series 8000



Adhesive Series PSX

# FIBERGLASS SUMP PENETRATION FITTINGS FOR PERMANENT SUMP BONDS



**Bonded Sump Entry Fitting - Termination Style** for double-containment systems. Works with 3"-over-2" and 4"-over-3" Red Thread IIA and Dualoy 3000/L; and 2" and 3" Dualoy 3000/LCX. A 30-year Water Intrusion Warranty is offered with this fitting.

**Bonded Sump Entry Fitting - Pass-thru Style** for LCX. Works with 2" and 3" Dualoy 3000/LCX.

**Bonded Single-Wall Sump Entry Fitting** for 2" - 6" Red Thread IIA Installations.

## TOOLS AND EQUIPMENT



**Model 2100 Tool** - Tapers 2"-3" Red Thread IIA pipe, scarfs 3"-4" pipe. Taper mandrels are available for Dualoy 3000/L products.



**Model 3000 Tool** - Tapers and scarfs 2" and 3" Dualoy 3000/LCX pipe.



**Jacket Cutter Tool** - Cuts containment jacket from 2"-4" Dualoy 3000/LCX pipe

## SOFTWARE

**StationWare 3000** is a stand-alone CAD program that will provide a professional looking station lay-out drawing and a bill of materials for the site. Users can select a variety of products and configurations to meet specifications or find the most efficient and economical design.

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FH1000 February 2018

**Fiber Glass Systems**

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

# Geotextiles

## GSE NONWOVEN NEEDLEPUNCHED GEOTEXTILES

GSE nonwoven needlepunched geotextiles are manufactured at our state-of-the-art needlepunching plant in Kingstree, South Carolina. GSE manufactures 4 to 32 oz/yd<sup>2</sup> geotextiles designated as NW4, NW6, NW8, NW10, NW12, NW16, NW20, NW24, NW28, and NW32. The most common function and usage of these products is shown below. However, the actual selection of the product depends on the specific needs of a project. For example, while NW16 is commonly used for geomembrane protection, it can also be used in filtration and separation because of specific design needs.



Used for Drainage



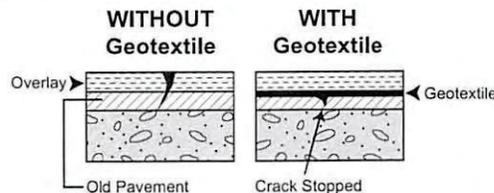
Nonwoven Geotextile



[GSE Nonwoven Geotextile]

## ASPHALT OVERLAY

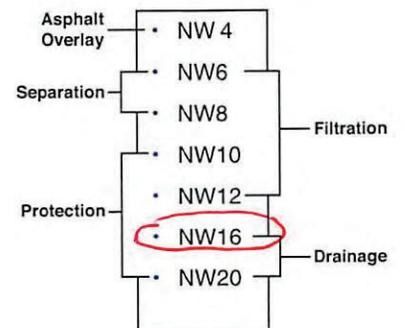
It is common for asphalt pavements to crack prematurely because of design flaws, material limitations or environmental reasons. A fresh layer of asphalt is the most common remedy for this problem. However, reflective cracking - the propagation of cracks from old cracked surface into the new surface - limits the performance of the fresh asphalt overlay. To prevent reflective cracking, a nonwoven needlepunched geotextile must be placed above the cracked surface before placing the new layer. The geotextile works as a sealant and stress absorbing layer. There are comprehensive design and construction methods available for this purpose. GSE NW4 is ideal for preventing reflective cracking. The drawing below shows the use of geotextiles to prevent reflective cracking.



[Crack Prevention with GSE Geotextiles]

## NONWOVEN TEXTILES

A family of geotextiles manufactured and used for soil separation, filtration, protection and drainage applications.



[Most Common Usage]

## SEPARATION

Intermixing of two dissimilar materials always leads to the deterioration of their engineering performance. For example, contamination of aggregate by fine particles always leads to a decrease in the permeability of the aggregate. The separation function refers to the use of geotextiles to maintain physical separation between two adjacent materials.

GSE geotextiles are ideal for this purpose because of their strength, durability, flexibility and a highly porous structure.

## FILTRATION

When used as filters, GSE nonwoven needlepunched geotextiles allow the passage of liquid while preventing the loss of soil particles. GSE offers a range of products with opening size to meet filtration needs for different types of soils. For relatively coarse soils, lower mass products – NW4, NW6 and NW8 are recommended. For fine soil particles, it is better to use heavier mass geotextiles such as NW10, NW12 or NW16. Depending on the needs of a specific project, GSE has a geotextile available which will perform the intended design function, and demanding filtration needs.

## PROTECTION

Geomembrane liners are very sensitive to damage and puncture during construction as well as over the life of a project. Therefore, geomembranes must be protected both from top and bottom. GSE nonwoven needlepunched geotextiles are ideal for this purpose because of their cushioning ability. Depending on soil size and overburden loads, one of the many geotextiles offered by GSE can be selected to ensure that geomembrane



[Geotextile Installation] performance is not compromised.

## DRAINAGE

Liners are used typically to prevent infiltration of liquids into environmentally sensitive areas. In certain cases, trapped gases and vapors must be vented to prevent uplifting of the liner. GSE nonwoven needlepunched geotextiles are ideal for gas and vapor drainage from under the liners.

The high porosity of GSE geotextiles facilitates drainage while providing added benefit of cushion for the liners.

## THE GEOMEMBRANE PROTECTION DESIGN MANUAL



GSE offers a comprehensive design manual that provides a simple step by step design method to protecting geomembranes from punctures during construction and over the design life of a project. For a free copy, please contact GSE.

## ENGINEERING SUPPORT

The GSE Engineering Support Staff is comprised of multidisciplinary product professionals to support you across a range of project requirements. This includes knowledge in geomembrane, geosynthetic clay liners, geonet, geocomposite, nonwoven geotextile and concrete protection products and application solutions. Rely on our technical staff to help you solve your project issues.

## CUSTOM FABRICATION

The GSE Custom Fabrication Group builds products to your exact specifications. We have extensive experience in prefabricated polyethylene products and components. A few examples of our custom fabricated products are Aqua Tanks, Quick Containment, concrete protection liners, boots, sumps, pads, pipes, daily covers, temporary containment, containment boom and other products to fulfill your fabrication needs.

## INSTALLER NETWORK

The GSE Installer Network leads the industry with the most experienced, large, and flexible crews available around the world to meet your installation requirements. Each installer is equipped with state-of-the-art welding and testing equipment to ensure a successful installation. Selecting a qualified installer with the right product knowledge is critical to your success. Let GSE connect you to the right installer to handle your installation project of any size from start to finish.

GSE is a leading manufacturer and marketer of geosynthetic lining products and services. We've built a reputation of reliability through our dedication to providing consistency of product, price and protection to our global customers.

Our commitment to innovation, our focus on quality and our industry expertise allow us the flexibility to collaborate with our clients to develop a custom, purpose-fit solution.

**[ DURABILITY RUNS DEEP ]** For more information on this product and others, please visit us at [GSEworld.com](http://GSEworld.com), call 800.435.2008 or contact your local sales office.



**PETROGARD™ X**

	Standard	SI Units
Base Fabric Type	Nylon	Nylon
Base Fabric Weight (nominal)	13.0 oz/yd <sup>2</sup>	441 g/m <sup>2</sup>
Coating Type	Polyester based polyurethane	Polyester based polyurethane
Thickness		
ASTM D751	38 ± 3 mil 0	.97 ± 0.08 mm
Weight		
ASTM D751	38 oz/yd <sup>2</sup> ± 2 oz/yd <sup>2</sup>	1221 g/m <sup>2</sup> ± 102 g/m <sup>2</sup>
Grab Tensile		
ASTM D751	1100/1100 lb	4895/4895 N
Strip Tensile		
ASTM D751 Procedure B	775/725 lb/in	679/635 daN/5 cm
Low Temperature		
ASTM D2136	1/8 in mandrel, 4 hr Pass @ -30° F	3 mm mandrel, 4 hr Pass @ -34° C
Adhesion		
ASTM D751 Dielectric Weld	20 lb/in 1	7.5 daN/5 cm
Dead Load		
ASTM D751	2 in. seam, 4 hr, 1 in strip 200 lb @ 70° F 8 100 lb @ 160° F	50 mm seam, 4 hr, 25 mm strip 90 N @ 21° C 445 N @ 71° C
Bursting Strength		
ASTM D751 (Ball Tip)	1750 lb	7788 N
Hydrostatic Resistance		
ASTM D751 Procedure A	800 psi	5.52 MPa
Blocking Resistance		
ASTM D751 180°F/82°C	# 2 rating (max.)	#2 rating (max.)
Weathering Resistance		
ASTM G23 (Carbon-Arc)	8000 hrs (minimum) - No appreciable changes or stiffening or cracking of coating	
Abrasion Resistance		
ASTM D3389 H-22 wheel/1000g load	10,000 cycles (minimum) before fabric exposure	

Our Experience
Geomembranes
Safety Program
Repair, Maintenance, & Construction Services
Primary Containment Liners
Secondary Containment Liners
API 650 Tank Leak Detection Liner Systems
Dike Liners
<b>Fuel Containment Liners</b>
Tank Farm Liners
Vapor Barriers
Floating Covers
Baffle & Turbidity Curtains
Containment Boom
Custom Environmental Solutions

## Fuel Containment Liners

MPC Containment provides the highest quality and reliable materials to fabricate your liner for containment of fuel and oil, oil based liquids, sludge or contaminated soils, and other chemicals. Some facilities anticipate fuel and oil spills, while others will install a liner after the spill has occurred. In any case, MPC offers long term containment to weather against extreme elements, UV resistance, and high puncture resistant or short term containment which will meet your specific job requirement.

### Featured Installation: Lexington Pump Station in Chicago, Illinois

The Lexington Pumping Station is an existing City of Chicago, Department of Water Management Facility that sends treated drinking water from Lake Michigan to DuPage County. Lexington Pump Station needed secondary containment for their underground tank. This installation involved lining the cavity walls prior to the tank installation. MPC used our exclusive Petrogard™ IV to ensure the containment of any seepage from the tank into the sub-grade.

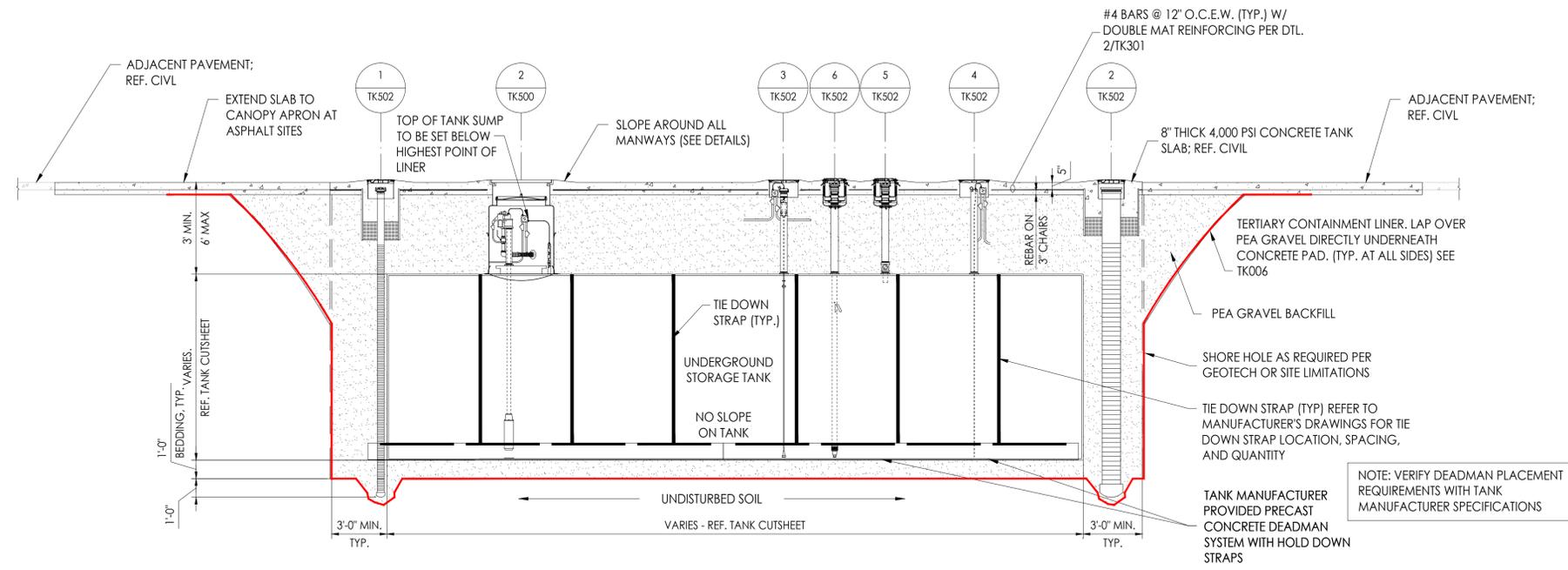


### Featured Installation: GIWW West Closure Project- Fuel Impermeable Liner in Belle Chasse, Louisiana

This project exhibits MPC Containment's dedication to design and innovation. While designing this liner, our engineers had to take into consideration the concrete columns within the job site. To ensure the liner was secure around those areas, MPC fabricated custom column clamps to boot the concrete columns.

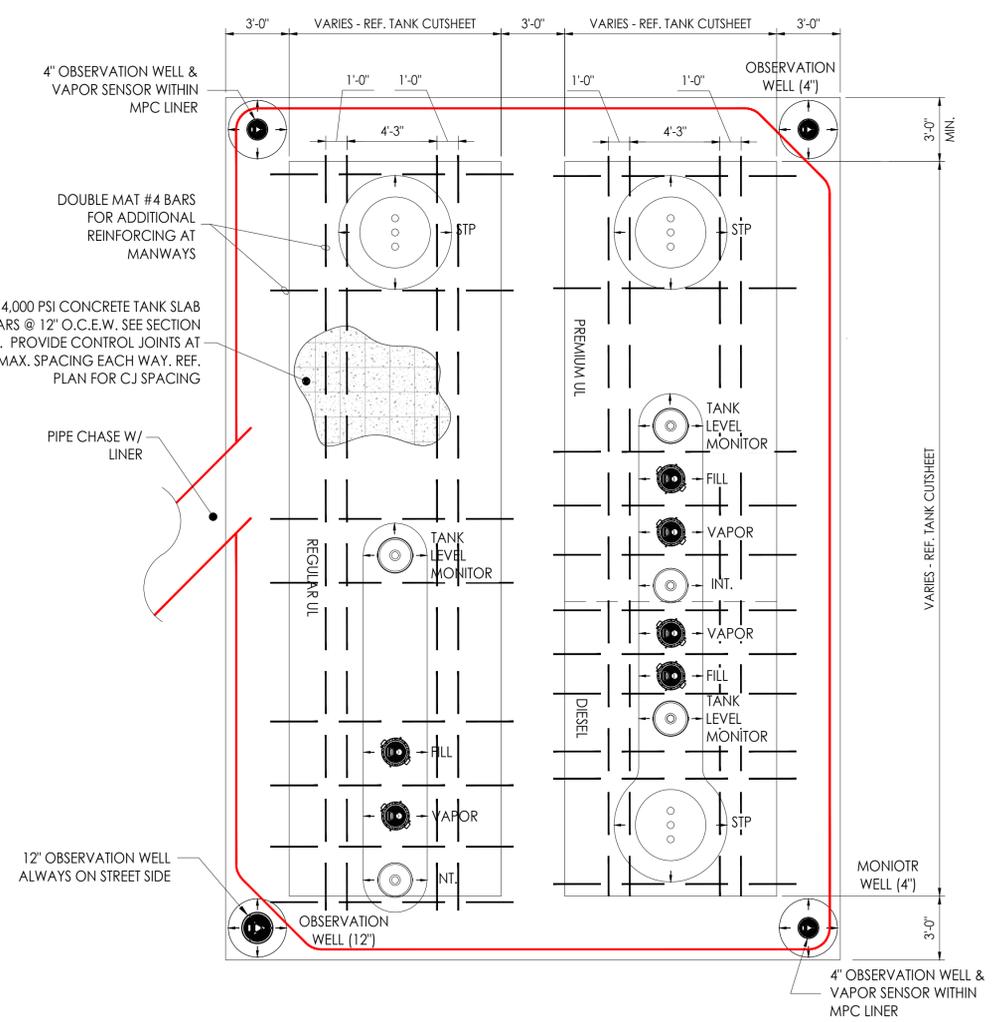


MPC  
Petro Guard 10



1 UNDERGROUND STORAGE TANK PROFILE

SCALE: NONE



2 UNDERGROUND STORAGE TANK PLAN

SCALE: NONE



CIRCLE K STORES INC.  
1130 WEST WARNER ROAD  
SUITE B  
TEMPE, AZ 85284  
602-728-8000



MORRIS + ASSOCIATES  
14139 HUFFMEISTER ROAD  
CYPRESS, TX, 77429  
PHONE: (832) 334-5000  
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REVISIONS	
#	DATE
1	03/15/2022
2	07/26/2022
3	09/22/2022
4	10/28/2022
5	06/13/2023

PROJECT: FUEL SYSTEM RENOVATION  
CIRCLE K STORE #2741039  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248

SHEET TITLE:  
TYPICAL UST PLAN AND SECTIONS

Drawn: KK  
Checked: MM  
PERMIT ISSUE  
PROJECT #: 4602

SHEET NO.  
TK301



CIRCLE K STORES INC.  
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TEMPE, AZ 85284  
602-728-8000



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09/22/22

REVISIONS

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5	06/13/2023

PROJECT: FUEL SYSTEM RENOVATION  
CIRCLE K STORE #2741039  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248  
SHEET TITLE: DISPENSER SUMP DETAILS

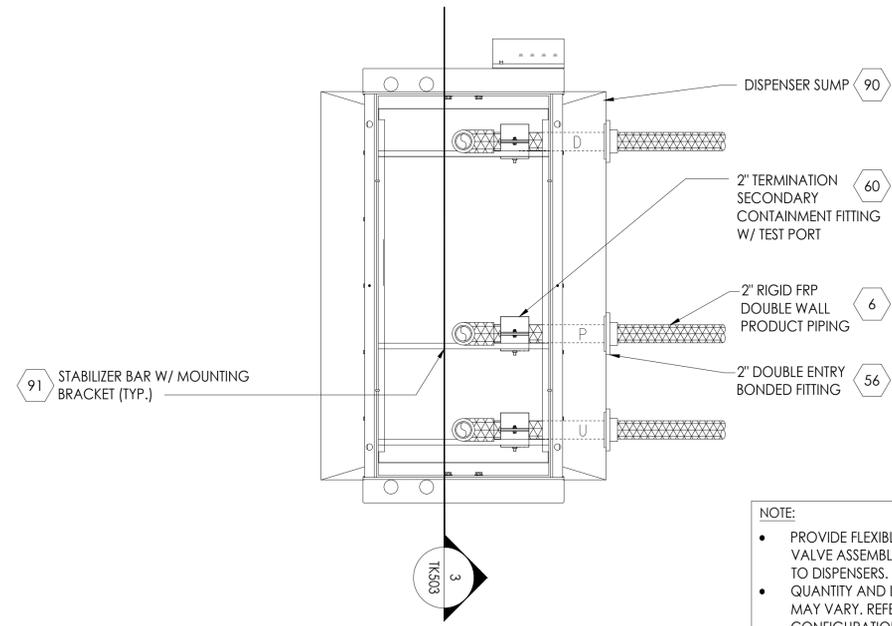
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PERMIT ISSUE

PROJECT #: 4602

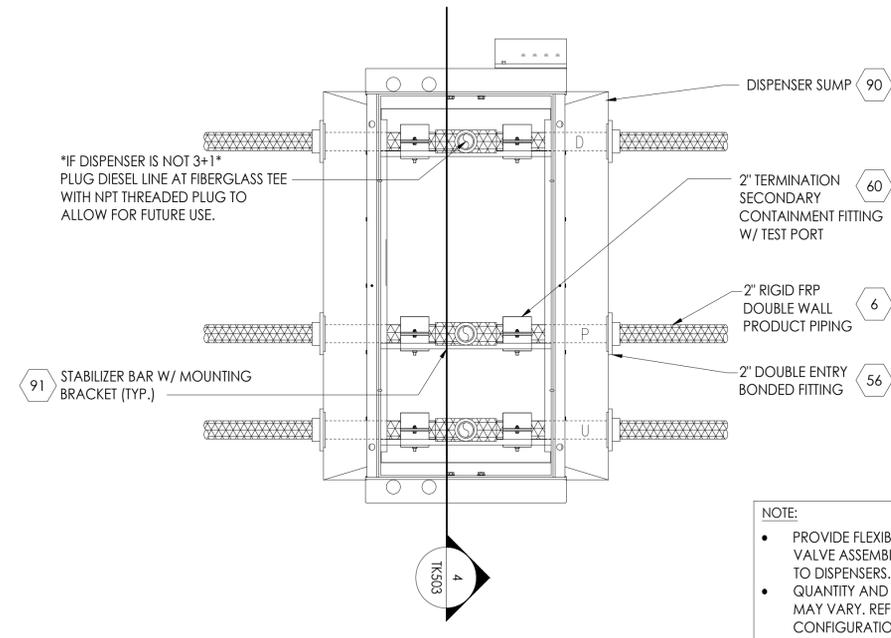
SHEET NO.

TK503



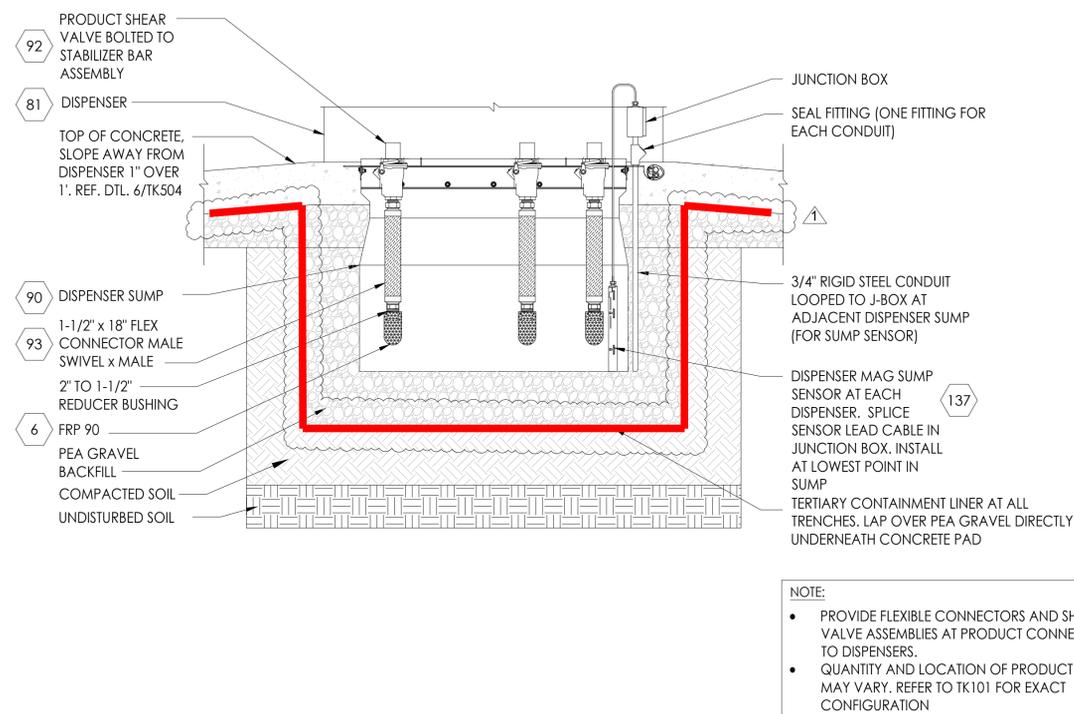
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SCALE: NTS



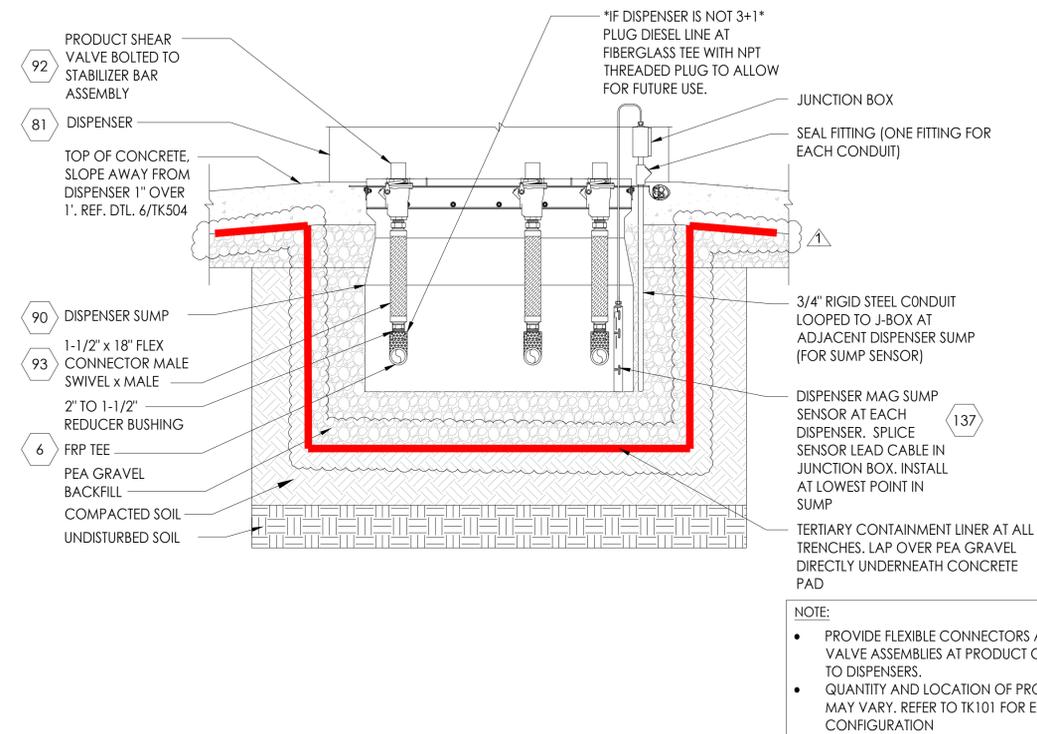
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SCALE: NTS



3 DISPENSER SUMP SECTION (TERMINATION)

SCALE: NTS



4 DISPENSER SUMP SECTION (THRU & THRU)

SCALE: NTS

7/7/2023

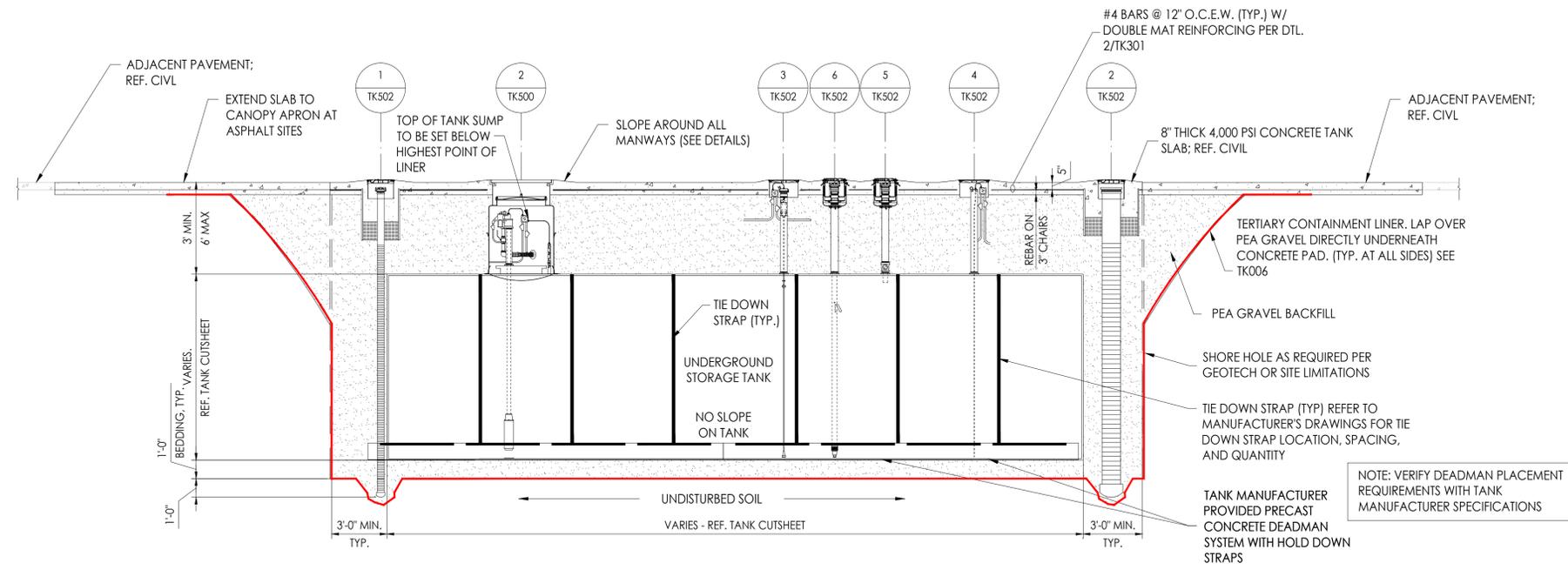
To whom it may concern,

This letter is to serve as a request for an exception to the Geologic Assessment as outlined in application form TCEQ-0583. The site is existing, and the project scope is to replace existing underground storage tanks within an existing tank hold. The existing hold currently has pea-gravel in place and will have the same material in the hold after the completion of this project.

Sincerely,

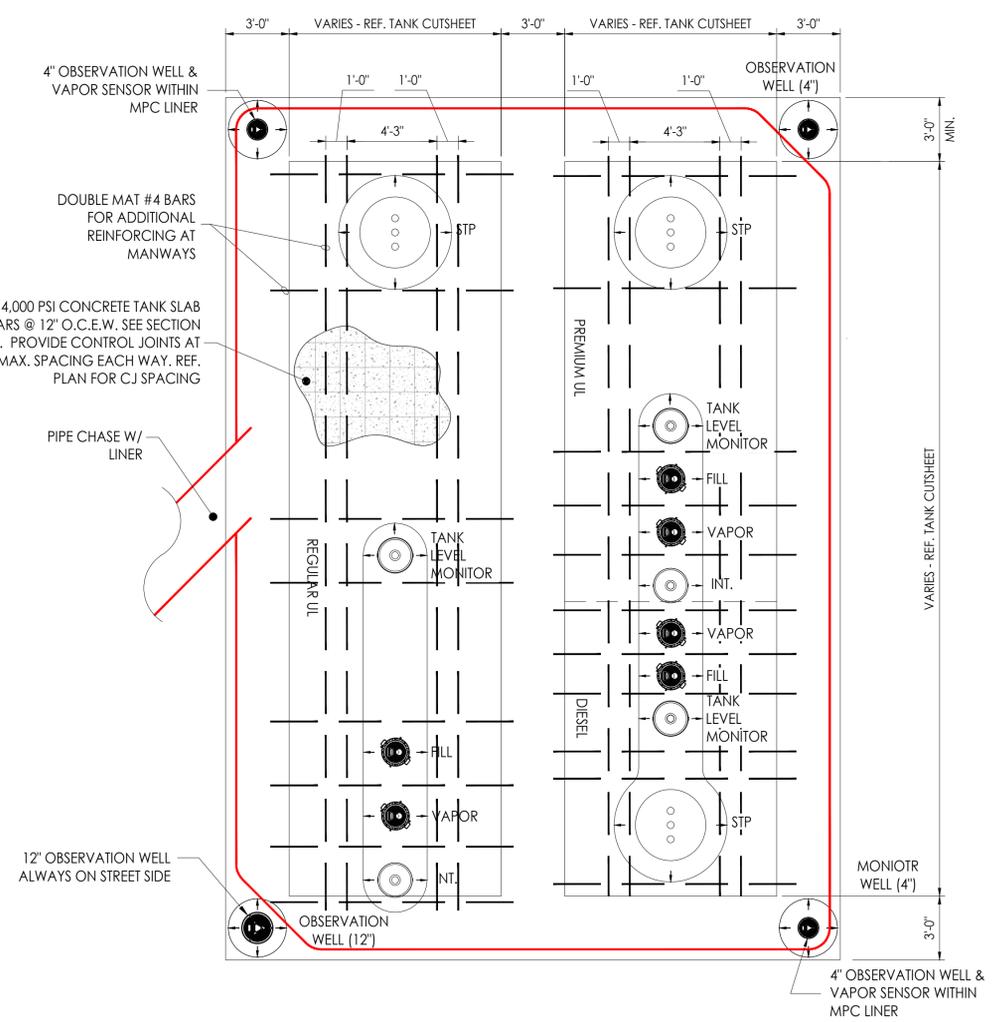


Matt Marek  
Vice President  
Morris + Associates  
[matt@morrisassoc.com](mailto:matt@morrisassoc.com)  
832-334-5001



1 UNDERGROUND STORAGE TANK PROFILE

SCALE: NONE



2 UNDERGROUND STORAGE TANK PLAN

SCALE: NONE



CIRCLE K STORES INC.  
1130 WEST WARNER ROAD  
SUITE B  
TEMPE, AZ 85284  
602-728-8000



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16555 HUEBNER RD.  
SAN ANTONIO TX 78248

SHEET TITLE:  
TYPICAL UST PLAN AND SECTIONS

Drawn: KK  
Checked: MM  
PERMIT ISSUE  
PROJECT #: 4602

SHEET NO.  
TK301



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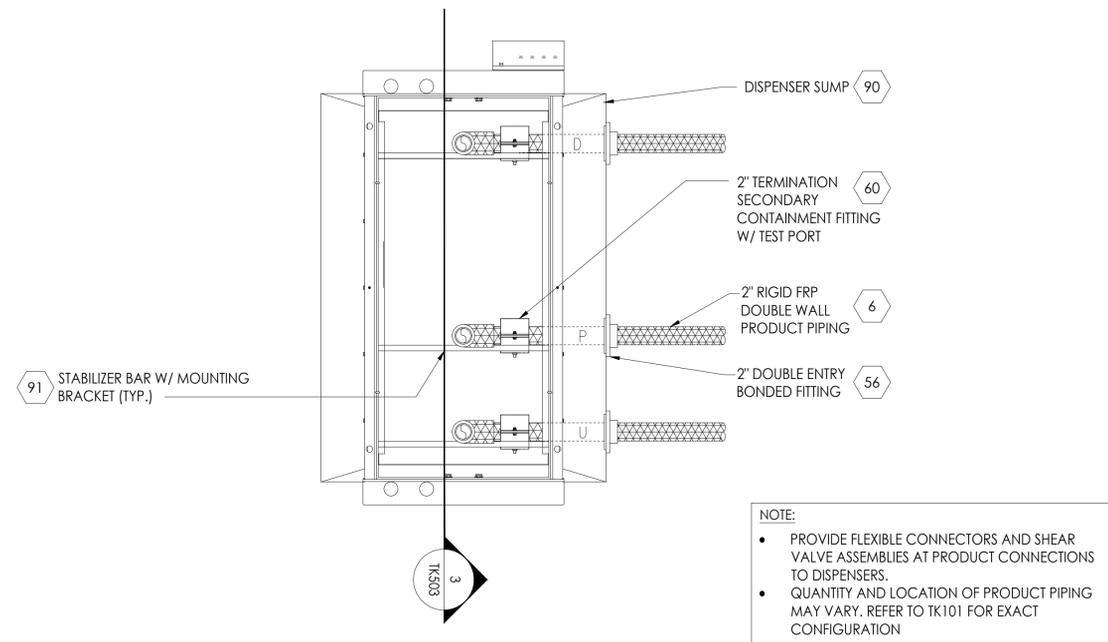


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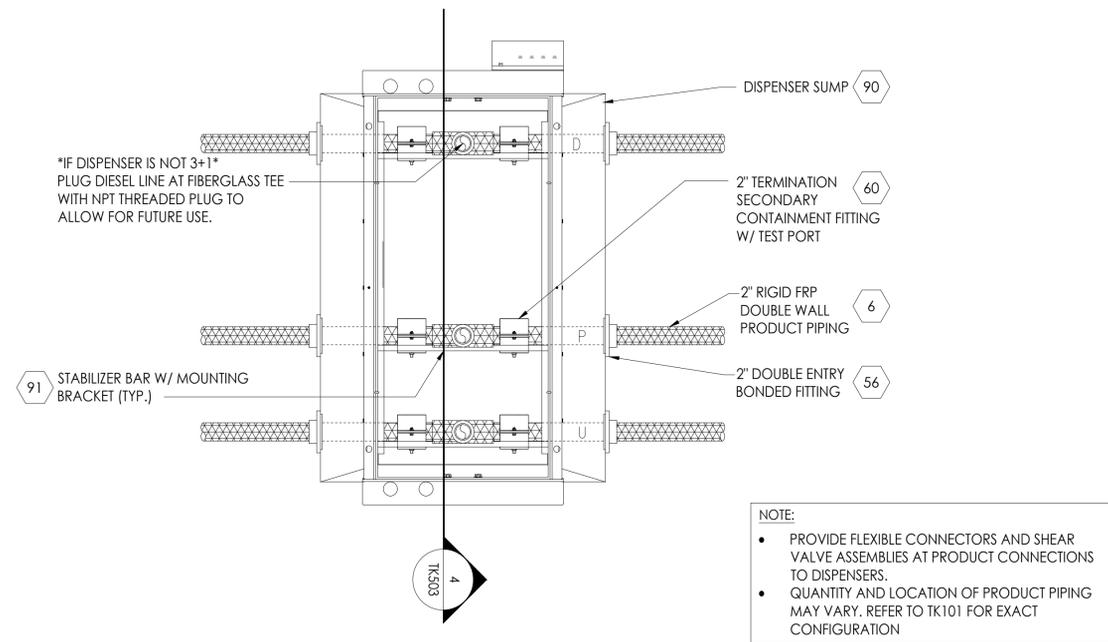
PROJECT: FUEL SYSTEM RENOVATION  
CIRCLE K STORE #2741039  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248  
SHEET TITLE: DISPENSER SUMP DETAILS

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PROJECT #: 4602

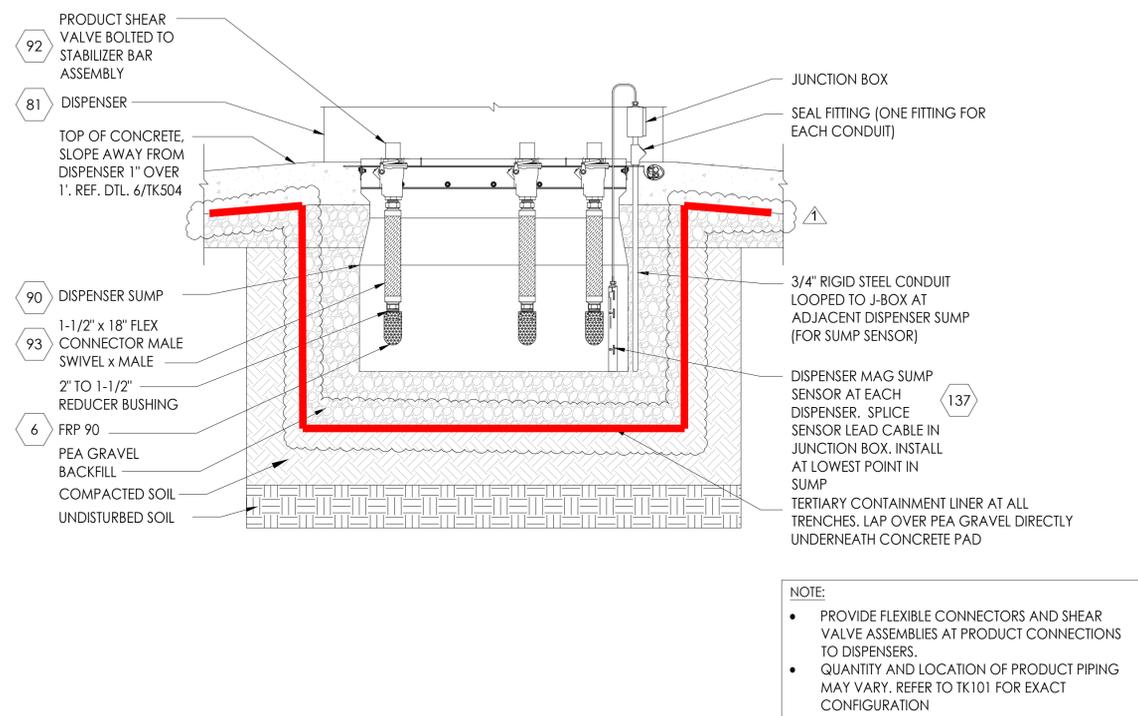
SHEET NO. TK503



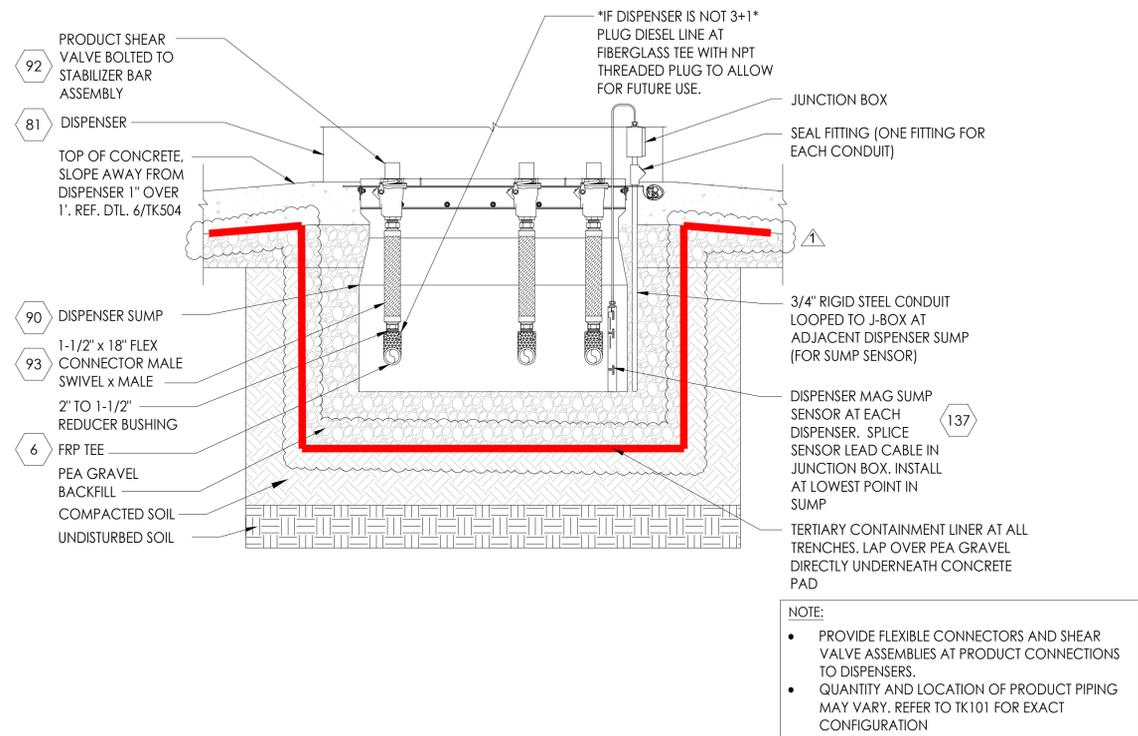
1 DISPENSER SUMP DETAIL (TERMINATION) SCALE: NTS



2 DISPENSER SUMP DETAIL (THRU & THRU) SCALE: NTS



3 DISPENSER SUMP SECTION (TERMINATION) SCALE: NTS



4 DISPENSER SUMP SECTION (THRU & THRU) SCALE: NTS

# Owner Authorization Form

Texas Commission on Environmental Quality  
for Required Signature  
Edwards Aquifer Protection Program  
Relating to 30 TAC Chapter 213  
Effective June 1, 1999

## Land Owner Authorization

I, Marcella Rocha of BIG DIAMOND INC  
Land Owner Signatory Name Land Owner Name (Legal Entity or Individual)

am the owner of the property located at  
NCB 17857 BLK 7 LOT 2 DIAMOND SHAMROCK @ BITTERS  
Legal description of the property referenced in the application

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

I do hereby authorize Doug Ford @ Circle K Stores Inc.  
Applicant Name (Legal Entity or Individual)

to conduct Underground Storage Tank (UST) Replacement Project  
Description of the proposed regulated activities

at 16555 HUEBNER RD, SAN ANTONIO, TX 78248  
Precise location of the authorized regulated activities

## Land Owner Acknowledgement

I understand that BIG DIAMOND INC  
Land Owner Name (Legal Entity or Individual)

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

**Land Owner Signature**

\_\_\_\_\_  
Land Owner Signature - Assistant Secretary

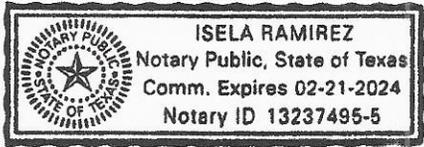
07/07/2023  
Date

THE STATE OF § \_\_\_\_\_

County of § \_\_\_\_\_

BEFORE ME, the undersigned authority, on this day personally appeared \_\_\_\_\_ 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 7<sup>th</sup> day of July



\_\_\_\_\_  
NOTARY PUBLIC  
Isela Ramirez  
Typed or Printed Name of Notary  
MY COMMISSION EXPIRES: 02/21/2024

Attached: (Mark all that apply)

- Lease Agreement
- Signed Contract
- Deed Recorded Easement
- Other legally binding document

**Applicant Acknowledgement**

I, Doug Ford of Circle K Stores Inc.  
Applicant Signatory Name Applicant Name (Legal Entity or Individual)

acknowledge that BIG DIAMOND INC  
Land Owner Name (Legal Entity or Individual)

has provided Circle K Stores Inc.  
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.  
I understand that Circle K Stores Inc.  
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

**Applicant Signature**

Doug Ford  
Applicant Signature

07/10/2023  
Date

THE STATE OF § Texas  
County of § Kendall

BEFORE ME, the undersigned authority, on this day personally appeared Doug Ford  
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 11th day of July

Joey Langley  
NOTARY PUBLIC

Joey Langley  
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 2025



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

I Doug Ford  
Print Name

Circle K TXBU Project Manager  
Title - Owner/President/Other

of Circle K Stores Inc.  
Corporation/Partnership/Entity Name

have authorized Matthew Marek  
Print Name of Agent/Engineer

of Morris & Associates, Engineers  
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:

Doug Ford 07/07/2023  
Applicant's Signature Date

THE STATE OF TX §  
County of Kendall §

BEFORE ME, the undersigned authority, on this day personally appeared Doug Ford 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 7<sup>th</sup> day of July 2023

Joey Langley  
NOTARY PUBLIC



JOAY Langlay  
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 03/01/2025

# Application Fee Form

## Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Circle K Stores, Inc.

Regulated Entity Location: 16555 Huebner Road, San Antonio Texas

Name of Customer: Circle K

Contact Person: Matthew Marek

Phone: 832-334-5001

Customer Reference Number (if issued): CN CN600134456

Regulated Entity Reference Number (if issued): RN RN102432044

### Austin Regional Office (3373)

Hays

Travis

Williamson

### San Antonio Regional Office (3362)

Bexar

Medina

Uvalde

Comal

Kinney

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

Austin Regional Office

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

Mail Code 214

P.O. Box 13088

Austin, TX 78711-3088

12100 Park 35 Circle

Building A, 3rd Floor

Austin, TX 78753

(512)239-0357

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

Recharge Zone

Contributing Zone

Transition Zone

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	\$
Sewage Collection System	L.F.	\$
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	2 Tanks	\$ 1,300
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$

Signature: 

Date: 7/7/23

# 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***

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

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

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

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

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

### ***Exception Requests***

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

### ***Extension of Time Requests***

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



23. Street Address of the Regulated Entity: <i>(No PO Boxes)</i>	16555 Huebner Road							
	City	San Antonio	State	TX	ZIP	78248	ZIP + 4	
24. County	Bexar							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:								
26. Nearest City						State	Nearest ZIP Code	
27. Latitude (N) In Decimal:				28. Longitude (W) In Decimal:				
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? <i>(Do not repeat the SIC or NAICS description.)</i>								
Circle K Convenience Store								
34. Mailing Address:	16555 Huebner Road							
	City	San Antonio	State	TX	ZIP	78248	ZIP + 4	
35. E-Mail Address:	matt@morrisassoc.com							
36. Telephone Number			37. Extension or Code		38. Fax Number <i>(if applicable)</i>			
( ) -			7134198320		( ) -			

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

<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input checked="" type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
		13-93081201		
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input checked="" type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
			67648	
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

**SECTION IV: Preparer Information**

40. Name:	Matthew Marek		41. Title:	Vice President	
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address		
( ) -	7134198320	( ) -	matt@morrisassoc.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:	Morris+Associates	Job Title:	Vice President		
Name <i>(In Print)</i> :	Matthew Marek		Phone:	713-419-8320	
Signature:			Date:	7/7/2023	

## Central Registry

The Customer Name displayed may be different than the Customer Name associated to the Additional IDs related to the customer. This name may be different due to ownership changes, legal name changes, or other administrative changes.

Detail of: **Edwards Aquifer Permit 13-05102701**

For: **DIAMOND SHAMROCK 1039 (RN102432044 ...)**

16555 HUEBNER RD, SAN ANTONIO

Permit Status: **ACTIVE**

Held by: **Valero Energy Corporation (CN600881148 ...)** [View 'Issued To' History ...](#)

**OWNER** Since 02/18/2003 [View Compliance History ...](#)

Mailing Address: PO BOX 696000 SAN ANTONIO, TX 78269 -6000

Legal	Description	Start Date	End Date	Type	Status	Status Date
13-05102701	EDWARDS AQUIFER	10/27/2005		PERMIT	APPROVED	02/17/2006

Tracking No.	Type	Value	Start Date	End Date
16396808	Plan Type	WPAP	10/27/2005	
16396804	File number	501.03	10/27/2005	
16396811	Fee Amount	2000 \$	10/27/2005	
16396805	Distribution Date	10/27/2005	10/27/2005	

Physical	Description	Start Date	Type	Status	Status Date
VALERO CORNER STORE 1039	VALERO CORNER STORE 1039	10/27/2005	EDWARDS AQUIFER SITE	SEE LEGAL STATUS	10/27/2005

Tracking No.	Type	Value	Start Date	End Date
16396814	Project Area	1.01 ACRES	01/01/1800	
16396812	<a href="#">Permanent BMP Name</a>	MIGRATED	01/01/1800	

**Contact Us | Central Registry | Search Hints | Report Data Errors**

Statewide Links: **Texas.gov | Texas Homeland Security | TRAIL Statewide Archive | Texas Veterans Portal**

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**Last Modified 2022-04-04 - Production v2.1.5a**

## Central Registry

The Customer Name displayed may be different than the Customer Name associated to the Additional IDs related to the customer. This name may be different due to ownership changes, legal name changes, or other administrative changes.

Detail of: **Edwards Aquifer Permit 13-93081201A**

For: **DIAMOND SHAMROCK 1039 (RN102432044 ...)**

16555 HUEBNER RD, SAN ANTONIO

Permit Status: **ACTIVE**

Held by: **Valero Energy Corporation (CN600881148 ...)** [View 'Issued To' History ...](#)

**OWNER** Since 02/18/2003 [View Compliance History ...](#)

Mailing Address: PO BOX 696000 SAN ANTONIO, TX 78269 -6000

Legal	Description	Start Date	End Date	Type	Status	Status Date
13-93081201A	EDWARDS AQUIFER	08/12/1993		PERMIT	APPROVED	10/12/1999

Tracking No.	Type	Value	Start Date	End Date
16396796	Plan Type	WPAP	08/12/1993	
16396792	File number	501.01	08/12/1993	
16396799	Fee Amount	2000 \$	08/12/1993	
16396793	Distribution Date	08/12/1993	08/12/1993	

Physical	Description	Start Date	Type	Status	Status Date
VALERO CORNER STORE 1039	VALERO CORNER STORE 1039	08/12/1993	EDWARDS AQUIFER SITE	SEE LEGAL STATUS	08/12/1993

Tracking No.	Type	Value	Start Date	End Date
16396802	Project Area	1.01 ACRES	01/01/1800	
16396800	<a href="#">Permanent BMP Name</a>	MIGRATED	01/01/1800	

**Contact Us | Central Registry | Search Hints | Report Data Errors**

Statewide Links: **Texas.gov | Texas Homeland Security | TRAIL Statewide Archive | Texas Veterans Portal**

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**Last Modified 2022-04-04 - Production v2.1.5a**

# 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: Matthew Marek

Date: 7/7/23

Signature of Customer/Agent:



Regulated Entity Name: Circle K Stores, Inc.

## Project Information

### Potential Sources of Contamination

*Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.*

1. Fuels for construction equipment and hazardous substances which will be used during construction:

The following fuels and/or hazardous substances will be stored on the site: \_\_\_\_\_

These fuels and/or hazardous substances will be stored in:

- Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.

- Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.
  - Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.
  - Fuels and hazardous substances will not be stored on the site.
2.  **Attachment A - Spill Response Actions.** A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached. **N/A**
  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. **N/A**

### ***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: \_\_\_\_\_

### ***Temporary Best Management Practices (TBMPs)***

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

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

- A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.
  - A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.
  - A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
  - A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.
8.  The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided. **N/A**
- Attachment E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.
  - There will be no temporary sealing of naturally-occurring sensitive features on the site.
9.  **Attachment F - Structural Practices.** A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided. **N/A**
10.  **Attachment G - Drainage Area Map.** A drainage area map supporting the following requirements is attached: **N/A**
- 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. N/A

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.

7/7/23

Attachment C

Underground storage tank removal and replacement will affect roughly .10 acres of the total site area. Erosion control waddles will be placed at all inlets in the drainage area of the affected work.

Sincerely,



Matt Marek  
Morris + Associates  
[matt@morrisassoc.com](mailto:matt@morrisassoc.com)  
832-334-5001

7/7/23

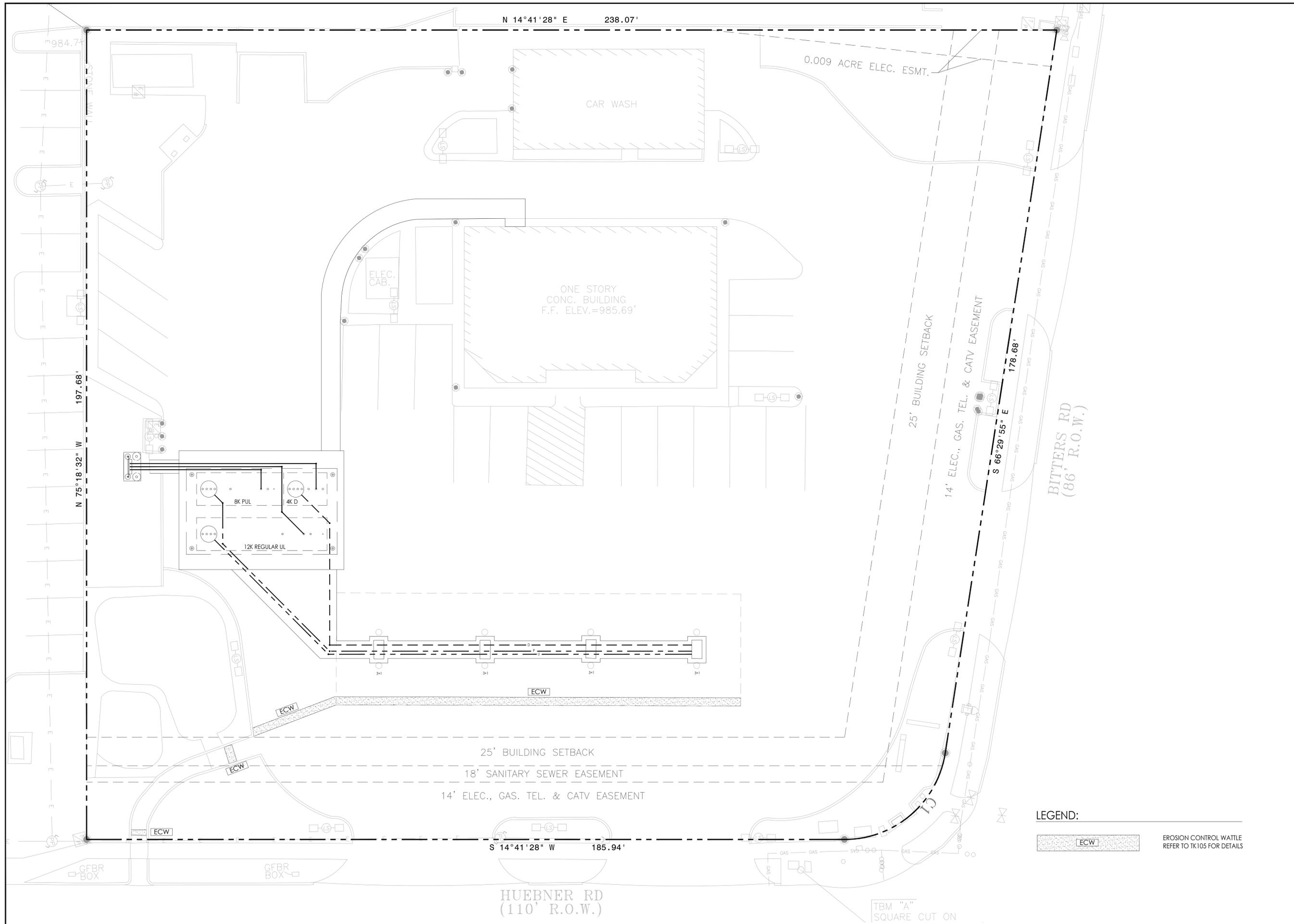
Attachment D

Regarding stormwater BMPs, Erosion control waddles and filter fabric fencing will be utilized at all areas that may receive runoff. This will keep sediment on site and from entering the city storm system. The native soil that is present is pea gravel, which will reduce the amount of sedimentation running off during the project.

Sincerely,



Matt Marek  
Morris + Associates  
[matt@morrisassoc.com](mailto:matt@morrisassoc.com)  
832-334-5001



**LEGEND:**

- ECW EROSION CONTROL WATTLE REFER TO TK105 FOR DETAILS

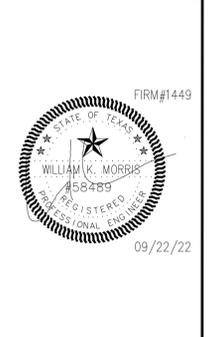


**CIRCLE K STORES INC.**  
 1130 WEST WARNER ROAD  
 SUITE B  
 TEMPE, AZ 85284  
 602-728-8000



**morris + associates**  
 14139 HUFFMEISTER ROAD  
 CYPRESS, TX, 77429  
 PHONE: (832) 334-5000  
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REVISIONS	
#	DATE
1	03/15/2022
2	07/26/2022
3	09/22/2022
4	10/28/2022
5	06/13/2023

PROJECT: FUEL SYSTEM RENOVATION  
**CIRCLE K STORE #2741039**  
 16555 HUEBNER RD.  
 SAN ANTONIO TX 78248  
 SHEET TITLE: **EROSION CONTROL PLAN**

Drawn: KC  
 Checked: MM  
 PERMIT ISSUE

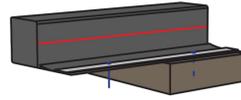
PROJECT #: 4602  
 SHEET NO. **TK104**



## INSTALL GUIDE for HARD SURFACES

Hard Surfaces include:

- Perimeter control where asphalt, concrete, or any other hard surface is present
- Driveways and entrance points
- Stockpile management



### Equipment Needed for Installation

- **Tools**
  - Rotary hammer and masonry bit (asphalt bit)
  - Impact driver
- **Materials**
  - Predrilled 2" steel strips (recommended) or 1" x 4" wood planks
  - Concrete anchor screws (Recommended: 2 3/4" Blue Tapcon hex head concrete anchor screw with nut driver)

### Inflating DuraWattle for First Use

- **Open bundle by cutting straps.**  
Each bundle of DuraWattle contains 300ft of product. There are 6 bundles per pallet.
- **Using one of the included pins, puncture each piece of DuraWattle through the filter fabric multiple times (at least 4 times).**

Inflation time can be affected by several factors, including climate and how long the compressed product has been stored.

- To expedite the inflation process, puncture each piece in several different areas.
- Call with concerns if it takes longer to inflate than expected.

1



## INSTALL GUIDE for HARD SURFACES

### Basic Removal

- Back out the concrete anchor screws.
- Remove the steel strip/wood planks.
- Pick up the product and store for further use.

### Storing DuraWattle and Inspection Before Reuse

- There are no specific storage recommendations.
  - DuraWattle cannot be recompressed.
  - Because DuraWattle does not absorb water, it can be stored outdoors or indoors.
  - If it is being stored for long periods of time outdoors, then covering will increase longevity of the product.
- Before reusing DuraWattle, consider the following:
  - Although small rips and tears will not affect the performance of a DuraWattle section, large tears can compromise the integrity of the product. In other words, if a tear is large enough to allow sediment laden water to flow through the product without being filtered, then the section should be replaced.
  - If the foam is flat and has not bounced back into form, then the section should be replaced. This can be caused by several factors, but usually it means the plastic seal has been severely torn or compromised and the core is absorbing water. Without a consistent barrier height, a perimeter of installed DuraWattle can be overwhelmed with concentrated water flow.

### A Site with Both Hard Surfaces and Soil Surfaces

- Installing DuraWattle on a Multi-Surface Site with both soil and a hard surface:  
The tail section allows pieces of DuraWattle to be trenched in soil as well as secured to hard surfaces using steel strips without a break in the barrier. Customers in the past have installed DuraWattle sections as a continuous barrier across soil and hard surfaces and kept their sites in compliance for the duration of their jobs. Contact us for more information on this unique installation.

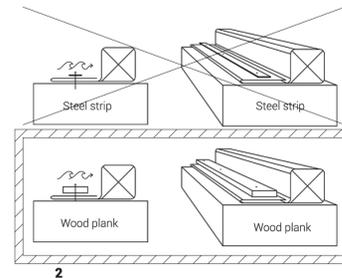
3



## INSTALL GUIDE for HARD SURFACES

### Installation Procedure

- Inflate the sections of DuraWattle as described on page 1.
- Clean the install surface of any debris. The install surface should be as flat as possible to maximize contact with the surface.
- Place the tail section *inside* the work area (upstream). This will place the core downstream.
- Connect sections of DuraWattle by inserting the closed end of one section into the open end of another.
  - Make sure the inner core of each piece touches and the tail is overlapping correctly.
- Fold the tail section over itself, then lay a predrilled 2in metal strip or wood plank over the folded tail.
  - Screws should be spaced 4ft apart along the length of the strip or wood plank.
- Use a rotary hammer and masonry (asphalt) bit to drill pilot holes into the hard surface.
- Drive 2 3/4" depth concrete screw anchors (Tapcon screws) with an impact driver to secure the steel strips/wood planks (do not overtighten the screws).
  - See Best Practices on page 4 for our recommendation when installing concrete anchors.
  - IMPORTANT: DuraWattle is secured to the surface via the tail section. Screws do not need to penetrate the core of the wattle.
- If DuraWattle is being used as a linear barrier and not installed around the entire perimeter of the site, then J-hook one section of DuraWattle at each end of the run.



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## INSTALL GUIDE for HARD SURFACES

### Installation Best Practices

- When installing on hard surfaces, do not overtighten the concrete anchor screws. The threading in the asphalt can be stripped.
- We recommend installing DuraWattle as perpendicular to the contour of a slope as possible. Runoff can be diverted along the length of the installed product if it is installed along the contour.
- If the product is the sole barrier installed at a site with a single low point, then additional sections of DuraWattle in the form of J-hooks can be installed perpendicular to the contour of the slope to help dissipate concentrated flow before it reaches the single low point of the site.
- When installed in home developments, the increased site access from installing DuraWattle as perimeter control can interfere with other tracking control measures.

### Contact Us

- Feel free to contact us with unique installation challenges or any questions.  
(916) 822-2174  
contact@durawattle.com

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Feb 2018

## DURAWATTLE® SPECIFICATIONS



### Description:

A durable and reusable synthetic wattle that is typically used for perimeter control, stockpile management, or sediment control at egress points.

Can be trenched in soil, installed on curbs, or secured onto hard surfaces. See installation guide for full details and best management practices.

Inner core is made from flexible polyurethane foam sealed in a polyethylene film. Outer cover is made from 6.2oz high tensile strength monofilament filter fabric.

DuraWattle is designed to trap sediment and reduce overall TSS in stormwater runoff. It is NOT designed to filter hydrocarbons or dissolved metals.

**Dimensions of each wattle (w/weight)**  
• 5.5inx12ft  
• 5lb

**Dimensions of bundle - 300ft of product (w/weight)**  
• 48inx45inx19in  
• 112lb  
• Dimensions may change slightly due to the product expanding in transit

**Dimensions of Pallet - 1800ft of product (w/weight)**  
• 44inx44x96in  
• 1010lb  
• Dimensions may change slightly due to the product expanding in transit

**Tensile strength of fabric**  
• 350 x 200 LBS

**AOS (US Sieve)**  
• 40 US Sieve

**UV Rating of outer filter fabric**  
• @ 1000 hrs - 90%

**Clean Water Flow Through Rate**  
• Approx. 100gpm/ft<sup>2</sup>

**POS (percent of open area)**  
• 6%



DURAWATTLE.COM • (916) 822-2174



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SUITE B  
TEMPE, AZ 85284  
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### REVISIONS

#	DATE
1	03/15/2022
2	07/26/2022
3	09/22/2022
4	10/28/2022

PROJECT: FUEL SYSTEM RENOVATION  
CIRCLE K STORE #2741039  
16555 HUEBNER RD.  
SAN ANTONIO TX 78248

SHEET TITLE:  
EROSION CONTROL DETAILS

Drawn: KK  
Checked: MM

PERMIT ISSUE

PROJECT #: 4602

SHEET NO.

TK105

7/7/23

Attachment I – Inspection and Maintenance of Temporary BMPS

This project will adhere TCEQ RG-348 requirements for maintenance and inspections. Inspections are to be made weekly and after rainfall events.

Sincerely,



Matt Marek  
Morris + Associates  
[matt@morrisassoc.com](mailto:matt@morrisassoc.com)  
832-334-5001

