KISSING TREE GOLF MAINTENANCE FACILITY

Aboveground Storage Tank Facility Plan

April 2024

PAPE-DAWSON ENGINEERS

Transportation | Water Resources | Land Development | Surveying | Environmental

PAPE-DAWSON ENGINEERS

April 4, 2024

Ms. Lillian Butler
Texas Commission on Environmental Quality (TCEQ)
Region 11
12100 Park 35 Circle, Bldg A, Rm 179
Austin, Texas 78753

Re: Kissing Tree Golf Maintenance Facility
Aboveground Storage Tank Application

Dear Ms. Butler:

Please find included herein the Kissing Tree Golf Maintenance Facility Aboveground Storage Tank Application. This Aboveground Storage Tank Application has been prepared to be consistent with the Texas Administrative Code (30 TAC 213) and current policies for development over the Edwards Aquifer Recharge Zone, Contributing Zone within Transition Zone and Transition Zone.

This Aboveground Storage Tank Application applies to two (2) aboveground storage tank(s) included in the project. Please review the plan information for the items it is intended to address. If acceptable, provide a written approval of the application in order that construction may begin at the earliest opportunity.

Appropriate review fees ($1,300) and fee application form are included. If you have questions or require additional information, please do not hesitate to contact me at your earliest convenience.

Sincerely,
Pape-Dawson Consulting Engineers, LLC
Texas Registered Engineering Firm # 470

Steven S. Crauford, P.E.
Vice President

Attachments

H:\Projects\508\48\34\301 Construction Documents\Documents\Reports\AST\240326a1.docx

KISSING TREE GOLF MAINTENACE FACILITY

Above Ground Storage Tank Facility Plan

4/10/24

April 2024

EDWARDS AQUIFER APPLICATION COVER PAGE (TCEQ-20705)

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

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

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

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

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

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

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

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

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

Technical Review

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

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

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

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.

4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

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

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

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

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

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

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

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

1. Regulated Entity Name: Kissing Tree Golf Maintenance Facility						**2. Regulated Entity No.:**			
3. Customer Name: Carma Paso Robles, LLC						**4. Customer No.:** 603437310			
5. Project Type: **(Please circle/check one)**	(New)		Modification			Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	(AST)	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		(Non-residential)			**8. Site (acres):**			1.62
9. Application Fee:	$1,300		**10. Permanent BMP(s):**					N/A	
11. SCS (Linear Ft.):			**12. AST/UST (No. Tanks):**					2	
13. County:	Hays		**14. Watershed:**					San Marcos River	

Application Distribution

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

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

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

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

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

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Steven S. Crauford, P.E.
Print Name of Customer/Authorized Agent
Signature of Customer/Authorized Agent — Date: 4/10/24

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 (TCEQ-0587)

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.

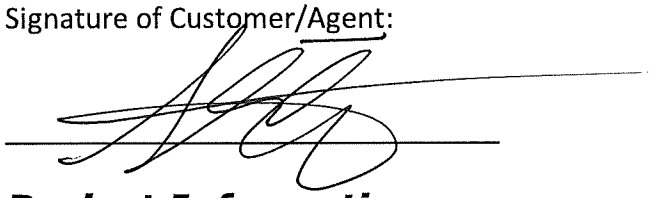
Signature

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: Steven S. Crauford, P.E.

Date: 4/10/24

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Kissing Tree Golf Maintenance Facility
2. County: Hays
3. Stream Basin: San Marcos River
4. Groundwater Conservation District (If applicable): Edwards Aquifer
5. Edwards Aquifer Zone:

   ☐ Recharge Zone
   ☒ Transition Zone

6. Plan Type:

   ☐ WPAP
   ☐ SCS
   ☐ Modification
   ☒ AST
   ☐ UST
   ☐ Exception Request

7. Customer (Applicant):

   Contact Person: Chad Matheson
   Entity: Carma Paso Robles, LLC
   Mailing Address: 9600 N Mopac Expy, Ste 750
   City, State: Austin, Texas Zip: 78759
   Telephone: (512) 391-4343 FAX: _____
   Email Address: chad.matheson@brookfieldpropertiesdevelopment.com

8. Agent/Representative (If any):

   Contact Person: Steven S. Crauford, P.E.
   Entity: Pape-Dawson Consulting Engineers, LLC
   Mailing Address: 10801 N Mopac Expy, Bldg 3, Ste 200
   City, State: Austin, Texas Zip: 78759
   Telephone: (512) 545-8711 FAX: _____
   Email Address: scrauford@pape-dawson.com

9. Project Location:

   ☒ The project site is located inside the city limits of San Marcos.
   ☐ 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.

    From TCEQ's regioinal office, turn right onto Park 35 Cir toward I-35 S. Merge onto I-35 S and travel southbound for 42.8 miles. Take the exit for Centerpoint Rd, and travel 2.1 miles on Centerpoint Rd. The site is located approximately 300 LF south of Centerpoint Rd and Golden Currant Ln.

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: when advised

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

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

15. Existing project site conditions are noted below:

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

Prohibited Activities

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

(1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

(2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

(3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

(4) The use of sewage holding tanks as parts of organized collection systems; and

(5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

(6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

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

(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

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

Administrative Information

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

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

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

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

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

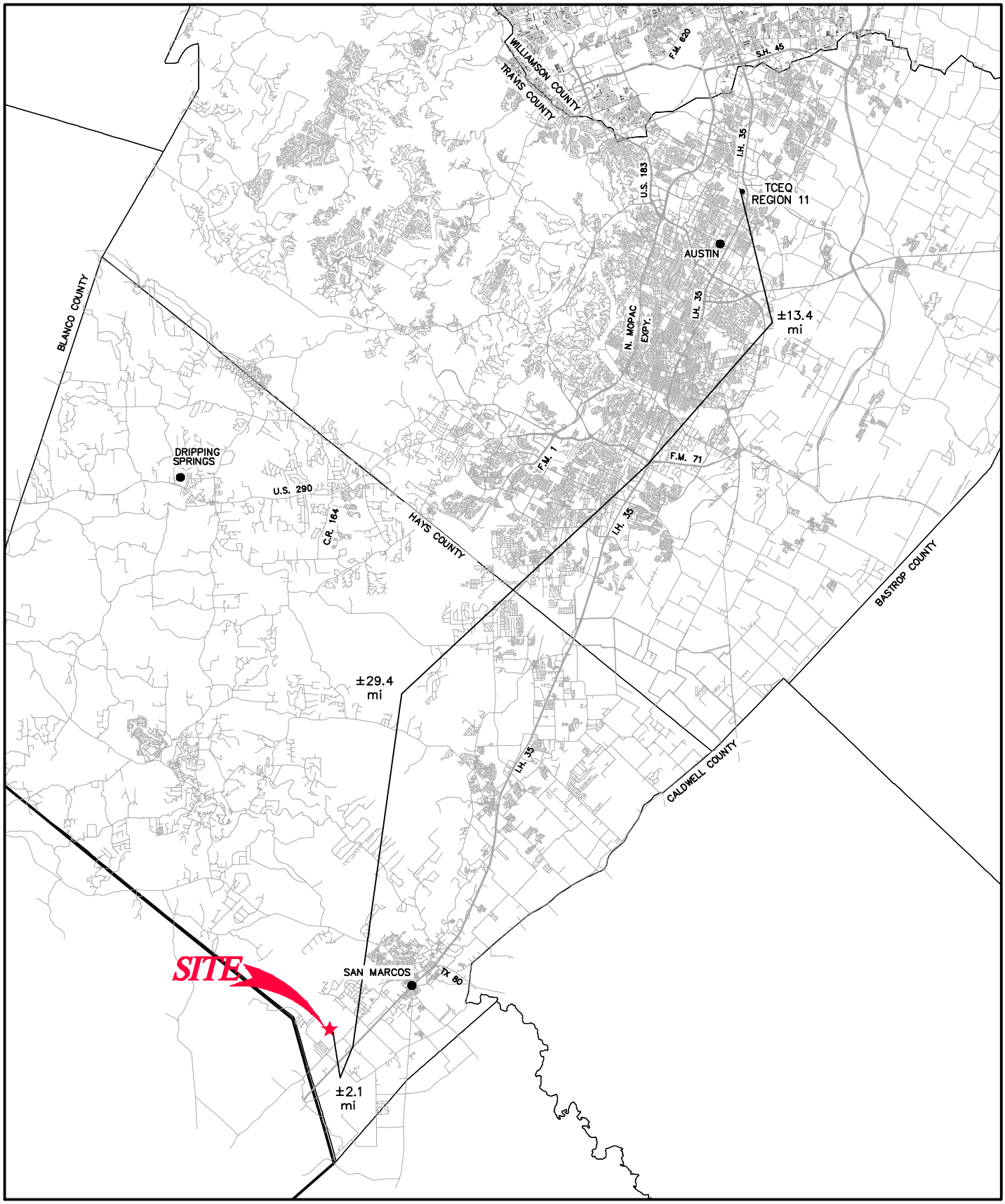
21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

ATTACHMENT A

KISSING TREE GOLF MAINTENANCE FACILITY

Aboveground Storage Tank Facility Plan

NOT TO SCALE



Pape-Dawson Consulting Engineers, LLC

Date: Mar 27, 2024, 9:43am User ID: mgregory
File: H:\Projects\508\48\34\301 Construction Documents\Exhibits\RM 5084834.dwg

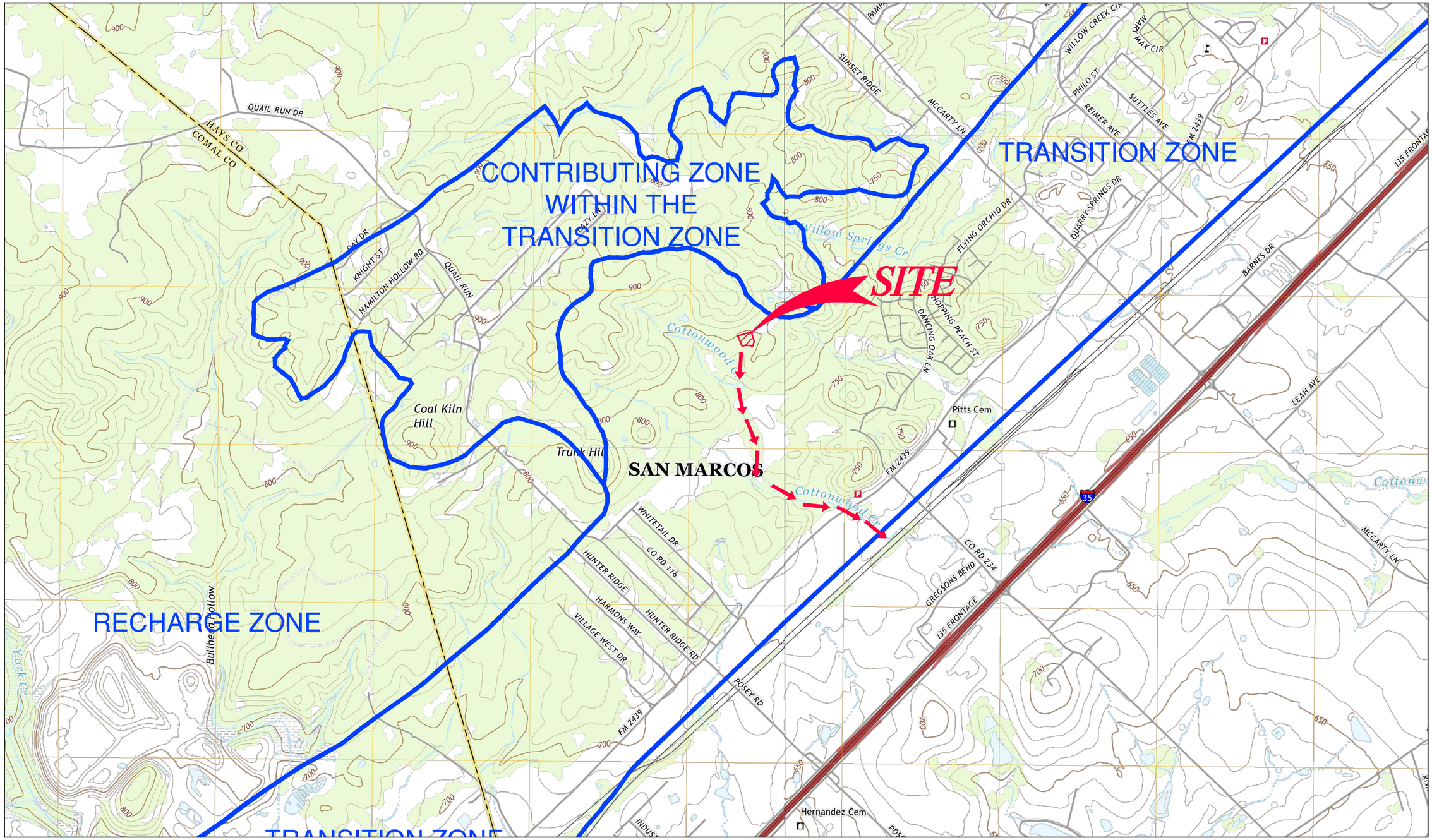
ATTACHMENT A
Road Map

ATTACHMENT B

KISSING TREE GOLF MAINTENANCE FACILITY
Aboveground Storage Tank Facility Plan

N

SCALE: 1" = 2000'



Date: Mar 27, 2024, 9:21am User ID: mgregory
File: H:\Projects\508\48\34\301 Construction Documents\Exhibits\Attachment A - Road Map.dwg

GENERAL LOCATION MAP - HUNTER, TX QUAD; SAN MARCOS SOUTH, TX QUAD

DRAINAGE FLOW → →

Pape-Dawson Consulting Engineers, LLC

USGS/EDWARDS RECHARGE ZONE MAP
ATTACHMENT B

ATTACHMENT C

KISSING TREE GOLF MAINTENANCE FACILITY
Aboveground Storage Tank Facility Plan

Attachment C – Project Description

The Kissing Tree Golf Maintenance Facility Aboveground Storage Tank (AST) Facility Plan proposes two (2) fuel tanks for storage of diesel and gasoline, respectively, to service machinery and vehicles needed for the golf course operations. These 515-gallon tanks are located within an overall fenced and gated 1.62-acre maintenance site. The tanks themselves will be located on a 500 square foot (SF) concrete pad surrounded by removable bollards.

This Kissing Tree Golf Maintenance Facility is located approximately 300 feet south of the W Centerpoint Road and Golden Currant Lane intersection within the city limits of San Marcos, Hays County, Texas. The site lies within the San Marcos River watershed and is completely within the Edwards Aquifer Transition Zone; therefore, no Permanent Best Management Practices (PBMPs) are required. The Geologic Assessment identified two (2) manmade sensitive features and no naturally occurring sensitive features within the project limits.

Fuel Tank Description

The two (2) proposed aboveground storage tanks will be used to store diesel and gasoline, respectively, to fuel machinery and vehicles utilized by the Kissing Tree Golf Maintenance Facility. The double-walled steel tanks are both constructed to the UL-142 standard and are fire safe. The proposed piping is fifteen-feet (15') of one-inch (1") hose from the tanks to nozzles with an automatic shut-off feature. The tanks are constructed of materials that are compatible with the liquids stored (diesel and gasoline) within and have the appropriate safety equipment, such as primary and emergency venting and overfill protection.

The primary tanks are wholly contained within secondary tanks, and the interstitial space between the tanks is hollow. If failure occurs in the primary tank, all fuel will be trapped within the secondary tank. The tanks will be placed within a containment pan able to hold 575 gallons. The pan will provide secondary containment for the piping, which would hold 0.6 gal within the hose between the automatic shutoff and tank. Additionally, these tanks will be visited several times daily by the site supervisor and golf facility maintenance team.

GEOLOGIC ASSESSMENT FORM (TCEQ-0585)

Geologic Assessment

Texas Commission on Environmental Quality

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

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

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

Signature

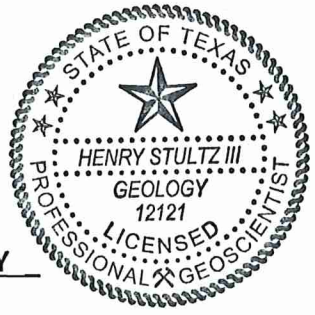
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: **Henry E. Stultz III, P.G.** Telephone: **210-375-9000**

Date: December 8, 2023 Fax: **210-375-9090**

Representing: **Pape-Dawson Engineers, Inc., TBPG registration number 50351**

Signature of Geologist:



Regulated Entity Name: KISSING TREE - GOLF MAINTENANCE FACILITY

Project Information

1. Date(s) Geologic Assessment was performed: **November 14, 2023**
2. Type of Project:
   - ☐ WPAP
   - ☐ SCS
   - ☒ AST
   - ☐ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

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

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Comfort-Rock outcrop complex, 1-8% slopes (CrD)	D	0-1
Medlin, warm-Eckrant association, 8-30% slopes (MED)	D	1-4

** Soil Group Definitions (Abbreviated)*

A. Soils having a high infiltration rate when thoroughly wetted.

B. Soils having a moderate infiltration rate when thoroughly wetted.

C. Soils having a slow infiltration rate when thoroughly wetted.

D. *Soils having a very slow infiltration rate when thoroughly wetted.*

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

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

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

   Applicant's Site Plan Scale: 1" = **20'**
   Site Geologic Map Scale: 1" = **20'**
   Site Soils Map Scale (if more than 1 soil type): 1" = **100'**

9. Method of collecting positional data:

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

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

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

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

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

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

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

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

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

Administrative Information

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

ATTACHMENT A
Geologic Assessment Table

GEOLOGIC ASSESSMENT TABLE			PROJECT NAME: Kissing Tree - Golf Maintenance Facility																
LOCATION			FEATURE CHARACTERISTICS											EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11	12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S-1	29.84217	-98.00259	F	20	Kep/Kpg				N55E	10			F	5	35	35		X		Hillside
S-2	29.84244	-98.00239	MB	30	Kep								F,C	20	50		50	X		Hillside
S-3	29.84207	-98.00265	MB	30	Kpg/Kep								F,C	20	50		50	X		Hillside

** DATUM: NAD 83

STATE OF TEXAS
HENRY STULTZ III
GEOLOGY
12121
LICENSED
PROFESSIONAL GEOSCIENTIST

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

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

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists.
The information presented here complies with that document and is a true representation of the conditions observed in the field.
My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Date 12·8·2023

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

ATTACHMENT A

ATTACHMENT B
Stratigraphic Column

KISSING TREE - GOLF MAINTENANCE FACILITY
Geologic Assessment (TCEQ-0585)

Attachment B – Stratigraphic Column

Period	Epoch	Group	Formation	Member	Thickness	Lithology	Hydro-logic Unit	Hydro-stratigraphic Unit	Hydrologic Function	Porosity	Cavern Development
Cretaceous	Late Cretaceous	Taylor	Pecan Gap	--	230–540	Marl and calcareous clay, blue in the subsurface, weathers greenish yellow; fossils are common; large *Exogyra ponderosa*	Confining Unit	--	Confining, locally water-bearing in cavernous zones	None	Essentially non-cavernous
		Austin	--	--	130–160	Massive, chalky, locally marly, mudstone; intervals of nodular (bioturbated) wackestone; commonly contains iron nodules; *Gryphaea aucella* , *Inoceramus* sp.; contains various ammounts of volcanoclastics and terrigenous clastics; fractures often contain void-filling calcite, sometimes in the form of dogtooth spar	Austin Chalk	--	Confining	IP, MO, FR, BP, CH, CV	Caves related to structure
		Eagle Ford	--	--	20–40	Brown, flaggy, sandy shale and argillaceous limestone; iron nodules; *Inoceramus* sp., shark teeth, and fossil fragments; some freshly fractured flagstone emits a petroliferous odor	Upper confining unit to the Edwards aquifer	--	Confining	IP, FR, BP	None
		Washita	Buda Limestone	--	40–50	Buff to light gray, dense nodular mudstone and wackestone containing calcite-filled veins and bluish dendrites; porcelaneous limestone that weathers from a smooth gray to grayish white; nodular surface has a conchoidal fracture; commonly contains iron nodules, iron staining, and shell frags		--	Confining	FR	Minor surface karst
			Del Rio Clay	--	40–50	Fossiliferous blue-green to yellow-brown clay with thin beds of packstone; contains iron nodules; *Ilymatogyra arietina*		--	Confining	None	None
			George-town	--	20–30	Reddish-brown, gray to light tan, shaley mudstone and wackestone; commonly contains black dendrites, iron nodules, and iron staining; often fossiliferous with *Plesioturrilites brazoensis* , *Waconella wacoensis* common	Edwards Aquifer	I	Confining	MO	None
	Early Cretaceous	Edwards	Person	Cyclic and marine, undivided	80–90	Pelletal limestone; ranges from chalk to mudstone and miliolid grainstone; thin to massive beds; some crossbedding evident; a packstone containing large caprinids is present near contact with the overlying Georgetown Formations; chert is common as beds and large nodules		II	Aquifer	MO, BU, VUG, BP, FR, CV	Many subsurface; might be associated with earlier karst development
				Leached and collapsed, undivided	70–90	Hard, dense, recrystallized limestone;mudstone, wackestone, packstone, and grainstone; contains chert as beds and large nodules; heavily bioturbated with iron-stained beds; often stromatolitic; *Toucasia* sp. Often found above contact with the underlying regional dense member; *Montastrea roemeriana* and oysters rare		III	Aquifer	BU, VUG, FR, BP, BR, CV	Extensive lateral development; large rooms
				Regional dense	20–24	Dense, shaly limestone; oyster shell mudstone and iron wackestone; wispy iron staining; chert nodules rarer than in the rest of the chert-bearing Edwards Group		IV	Confining	FR, CV	Very few; only vertical fracture enlargement
			Kainer	Grainstone	40–50	Hard, dense limestone that consists mostly of a tightly cemented miliolid skeletal fragment grainstone; contains interspersed chalky mudstone and wackestone; chert as beds and nodules; crossbedding and ripple marks are common primarily at the contact with the overlying regional dense bed		V	Aquifer	IP, IG, BU, FR, BP, CV	Few
				Kirsch-berg Evaporite	40–50	Highly altered crystalline limestone and chalky mudstone with occasional grainstone associated with tidal channels; chert as beds and nodules, boxwork molds are common, matrix recrystallized to a coarse grain spar; intervals of collapse breccia and travertine deposits		VI	Aquifer	IG, MO, VUG, FR, BR, CV	Probably extensive cave development
				Dolomitic	90–120	Hard, dense to granular, dolomitic limestone; chert as beds and nodules (absent in lower 20 ft); *Toucasia* sp. abundant; lower three-fourths composed of sucrosic dolomites and grainstones with hard, dense limestones interspersed; upper one-fourth composed mostly of hard, dense mudstone, wackestone, packstone, grainstone, and recrystallized dolomites with bioturbated beds		VII	Aquifer	IP, IC, IG, MO, BU, VUG, FR, BP, CV	Cave development as shafts with minor horizontal extent
				Basal nodular	40–50	Moderately hard, shaly, nodular, burrowed mudstone to miliolid grainstone that also contains dolomite; contains dark, spherical textural features known as black rotund bodies; *Ceratostreon texana* , *Caprina* sp., miliolids, and gastropods		VIII	Aquifer, confining unit in areas without caves	IP, MO, BU, BP, FR, CV	Large lateral caves at surface

Source: Clark, Golab, and Morris (2016); Cavern development modified from Stein and Ozuna (1995). Porosity types - Fabric selective: IP, interparticle porosity; IG, intergranular porosity; IC, intercrystalline porosity; SH, shelter porosity; MO, moldic porosity; BU, burrowed porosity; FE, fenestral; BP, bedding plane porosity. Not fabric selective: FR, fracture porosity; CH, channel porosity; BR, breccia; VUG, vug porosity; CV, cave porosity.

ATTACHMENT C
Site Geology

Attachment C – Site Geology

SUMMARY

The Kissing Tree - Golf Maintenance Facility is located at the northwest corner of Center Point Rd and Blushing Aster Dr in Hays County, Texas.

Based on the results of the field survey conducted in accordance with *Instructions for Geologists for Geologic Assessments in the Edwards Aquifer Recharge/Transition Zones (TCEQ-0585 Instructions),* no naturally occurring sensitive features were identified on site. No springs or streams were identified on site. The overall potential for fluid migration to the Edwards Aquifer for the site is low.

SITE GEOLOGY

As observed through field evidence, the geologic formation which outcrops at the surface within the subject site is the cyclic and marine member of the Person formation (Kepcm) and the Pecan Gap (Kpg). These units are described in detail below:

- The Kpg consists of chalk and chalky marl, is bluish gray in the subsurface and weathers to tan, gray, and buff. The Kpg has a blocky structure with closely spaced joints, often filled with calcite and gypsum. Karst development in the Kpg does not occur.

- The Kepcm is characterized by a mudstone to pack stone miliolid grainstone, and chert. Karst development within the Kepcm is characterized by small sinkholes and caves developed as vertical shafts as well as lateral rooms.

The predominant trend of faults in the vicinity of the site is approximately N55°E, based on faults identified during the previous mapping of the area.

FEATURE DESCRIPTIONS:

A description of the features observed onsite is provided below:

Feature S-1

Feature S-1 is an interformational fault that juxtaposes the Kpg to the northwest with the Kep to the southeast. It was identified by review of aerial photography and published maps. Lack of evidence of enhanced permeability and the presence of fine-grained soil cover suggests a low probability for rapid infiltration.

Feature S-2

Feature S-2 is an existing sewer line that is partially located beneath pavement. The sewer line has been trenched through bedrock and backfilled with a mix of fine and course fill material that may be more permeable than surrounding undisturbed areas. Therefore, the probability of rapid infiltration is intermediate.

Feature S-3

Feature S-3 is a series of existing storm drain lines that are partially located beneath pavement. The storm drain lines have been trenched through bedrock and backfilled with a mix of fine and course fill material that may be more permeable than surrounding undisturbed areas. Therefore, the probability of rapid infiltration is intermediate.

REFERENCES

Clark, A.K., Golab, J.A., and Morris, R.R., 2016, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers Within Northern Bexar and Comal Counties, Texas: U.S. Geological Survey Scientific Investigations Map 3366, scale 1:24,000, 20 p. pamphlet.

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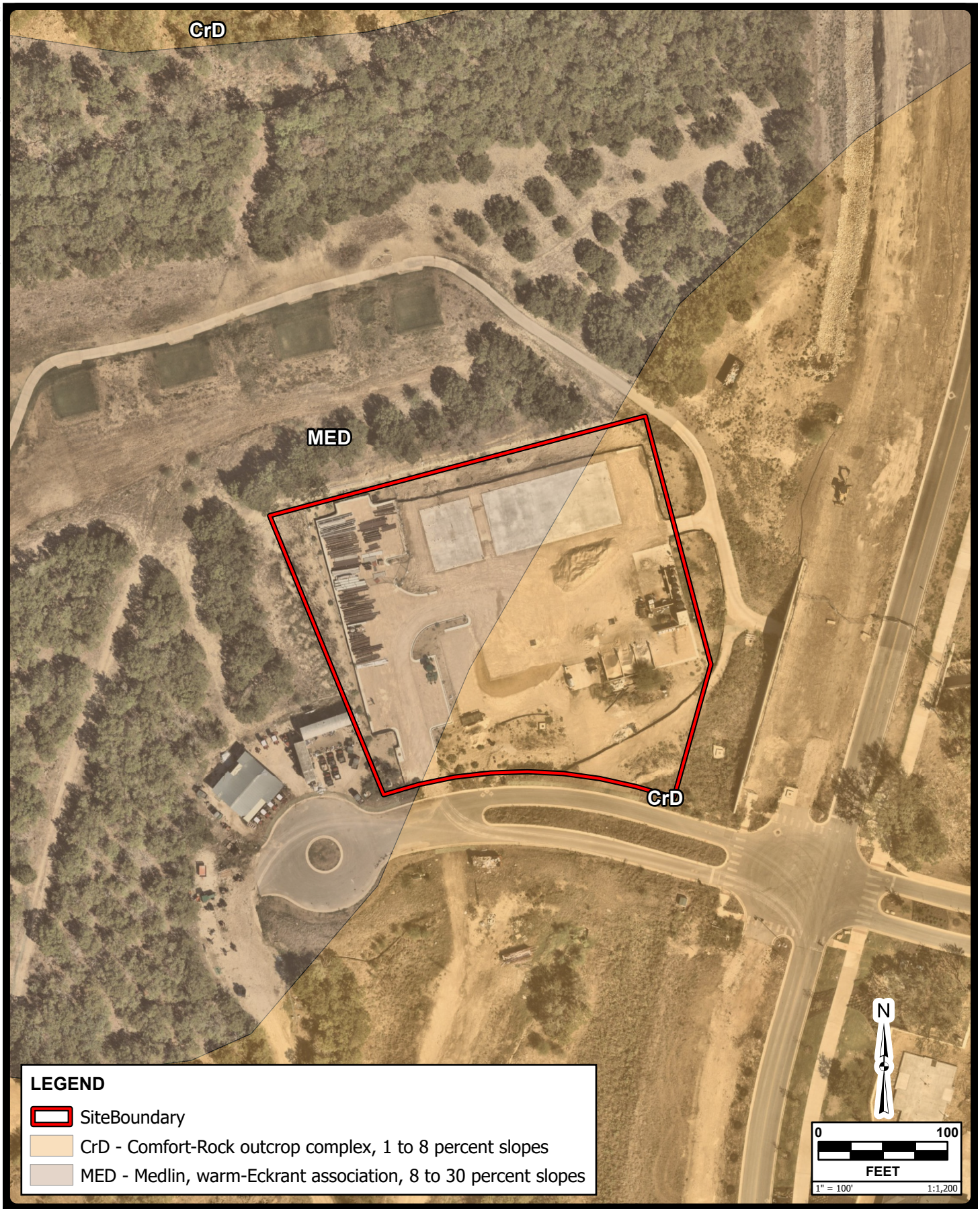
Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. http://websoilsurvey.sc.egov.usda.gov/, May 10, 2021.

Stein, W.G., and Ozuna, G.B., 1995, Geologic framework and hydrogeologic characteristics of the Edwards Aquifer recharge zone, Bexar County, Texas: U.S. Geological Survey Water-Resources Investigations Report 95–4030, 8 p.

Texas Water Development Board, Wells in TWDB Groundwater Database Viewer, https://www3.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer, May 10, 2021.

U.S. Geological Survey, National Water Information System: Mapper, https://maps.waterdata.usgs.gov/mapper/index.html, May 10, 2021. December 8, 2023.

ATTACHMENT D
Site Geologic Map(s)



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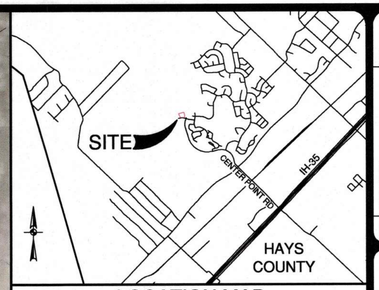
JOB NO.	50848-34
DATE	Nov 2023
DESIGNER	HS
CHECKED	HDJ
SHEET	ATTACHMENT D

KISSING TREE
GOLF MAINTENANCE FACILITY
HAYS COUNTY, TEXAS
SITE SOILS MAP

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800



LOCATION MAP
NOT-TO-SCALE

SCALE: 1" = 20'

0' 20' 40' 60'

LEGEND

PROJECT LIMITS
EXISTING CONTOUR LINE 760
100 YEAR FLOODPLAIN
STREAM

GEOLOGIC FORMATIONS

Kpg	PECAN GAP	Kgt	GEORGETOWN
Kef	EAGLE FORD	Kep	PERSON
Kbu	BUDA	Kek	KAINER
Kdr	DEL RIO	Kgr	GLEN ROSE

SYMBOLS AND LINES

- S-1 POTENTIAL RECHARGE FEATURE
- CONTACT, LOCATED APPROXIMATELY
- CONTACT, INFERRED
- FAULT, LOCATED APPROXIMATELY (D. DOWNTHROWN SIDE, U. UPTHROWN SIDE)
- FAULT, EXTRAPOLATED
- FAULT, INFERRED
- STRIKE AND DIP OF BEDDING
- STRIKE AND DIP OF JOINTS
- STRIKE OF VERTICAL JOINTS
- CAVE
- SOLUTION CAVITY
- SOLUTION ENLARGED FRACTURE
- SWALLOW HOLE
- SINKHOLE
- NON-KARST CLOSED DEPRESSION
- ZONE
- OTHER NATURAL BEDROCK FEATURES
- SPRING/SEEP
- MB MAN-MADE FEATURE IN BEDROCK
- W WATER WELL
- SANITARY SEWER LINE
- STORM DRAIN LINE

NOTE: THE GEOSCIENTIST SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR PURPOSES OF GEOLOGIC INFORMATION. ALL OTHER INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SIGNED AND SEALED CIVIL ENGINEERING DRAWINGS.

NOTE: THE RECHARGE ZONE BOUNDARY IS NOT WITHIN THE AREA SHOWN ON THIS SHEET. THE SITE IS LOCATED ENTIRELY WITHIN THE RECHARGE ZONE.

NOTE: ONLY THOSE GEOLOGIC FEATURES WITHIN THE AREA OF THIS ASSESSMENT ARE INCLUDED. THEREFORE, THE FEATURES MAY NOT BE NUMBERED SEQUENTIALLY.

NOTE: NO GEOLOGIC FEATURES WERE DISCOVERED DURING THIS ASSESSMENT.

NO.	REVISION	DATE

STATE OF TEXAS
HENRY STULTZ III
GEOLOGY
12121
LICENSED
PROFESSIONAL GEOSCIENTIST
Dec 8, 2023

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPG FIRM REGISTRATION #50351

KISSING TREE - GOLF MAINTENANCE FACILITY

HAYS COUNTY, TEXAS

SITE GEOLOGIC MAP
ABOVE GROUND STORAGE TANK

JOB NO. 50848-34
DATE NOVEMBER 2023
DESIGNER HS
CHECKED HDJ DRAWN HS

ATTACHMENT D

Date: Nov 17, 2023, 8:23am User ID: hstultz
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ABOVEGROUND STORAGE TANK FACILITY PLAN (TCEQ-0575)

Aboveground Storage Tank Facility Plan Application

Texas Commission on Environmental Quality

For Permanent Storage on The Edwards Aquifer Recharge and Transition Zones And Relating to 30 TAC §213.5(e), 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.

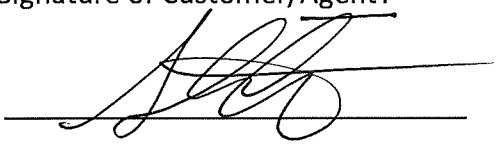
Signature

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 **Aboveground 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: Steven S. Crauford, P.E.

Date: 4/10/24

Signature of Customer/Agent:



Regulated Entity Name: Kissing Tree Golf Maintenance Facility

Aboveground Storage Tank (AST) Facility Information

1. Tanks and substance stored:

Table 1 - Tank and Substance Storage

AST Number	*Size (Gallons)*	*Substance to be Stored*	*Tank Material*
1	515	Diesel	Steel (DW)
2	515	Gasoline	Steel (DW)
3			
4			

AST Number	*Size (Gallons)*	*Substance to be Stored*	*Tank Material*
5			

Total x 1.5 = 1,545 **Gallons**

2. ☐ The AST will be placed within a containment structure that is sized to capture one and one-half (1 1/2) times the storage capacity of the system. For facilities with more than one tank system, the containment structure is sized to capture one and one-half (1 1/2) times the cumulative storage capacity of all systems.

   ☒ **Attachment A - Alternative Methods of Secondary Containment**. Alternative methods for providing secondary containment are proposed. Specifications that show equivalent protection for the Edwards Aquifer are attached.

3. Inside dimensions and capacity of containment structure(s):

Table 2 - Secondary Containment

Length (L) (Ft.)	*Width (W) (Ft.)*	*Height (H) (Ft.)*	*L x W x H = (Ft3)*	*Gallons*
6.16	3.83 (diameter)		70.97	531
6.16	3.83 (diameter)		70.97	531

Total: 1,062 **Gallons**

4. ☐ All piping, hoses, and dispensers will be located inside the containment structure.

   ☒ Some of the piping to dispensers or equipment will extend outside the containment structure.
   - ☒ The piping will be aboveground
   - ☐ The piping will be underground

5. ☒ The containment area must be constructed of and in a material impervious to the substance(s) being stored. The proposed containment structure will be constructed of steel (DW) tank.

6. ☒ **Attachment B - Scaled Drawing(s) of Containment Structure**. A scaled drawing of the containment structure that shows the following is attached:

   - ☒ Interior dimensions (length, width, depth and wall and floor thickness).
   - ☒ Internal drainage to a point convenient for the collection of any spillage.
   - ☒ Tanks clearly labeled.
   - ☐ Piping clearly labeled.
   - ☐ Dispenser clearly labeled.

Site Plan Requirements

Items 7 - 18 must be included on the Site Plan.

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

   Site Plan Scale: 1" = 40'.

8. 100-year floodplain boundaries:

   ☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
   ☒ No part of the project site is located within the 100-year floodplain.

   ☒ The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): DFIRM for Hays County, Texas panel 48209C0478F effective 9/2/2005.

9. ☒ 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.

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

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

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

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

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

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

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

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

16. ☐ Surface waters (including wetlands).

    ☒ N/A

17. ☐ Locations where stormwater discharges to surface water or sensitive features.

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

18. ☒ Legal boundaries of the site are shown.

Best Management Practices

19. ☒ Any spills must be directed to a point convenient for collection and recovery. Spills from storage tank facilities must be removed from the controlled drainage area for disposal within 24 hours of the spill.

    ☒ In the event of a spill, any spillage will be removed from the containment structure within 24 hours of the spill and disposed of properly.

    ☐ In the event of a spill, any spillage will be drained from the containment structure through a drain and valve within 24 hours of the spill and disposed of properly. The drain and valve system are shown in detail on the scaled drawing.

20. ☒ All stormwater accumulating inside the containment structure will be disposed of through an authorized waste disposal contractor.

    ☐ Containment area will be covered by a roof.

    ☒ Containment area will not be covered by a roof.

    ☐ A description of the alternate method of stormwater disposal is submitted for the executive director's review and approval and is attached.

21. ☒ **Attachment D - Spill and Overfill Control**. A site-specific description of the methods to be used at the facility for spill and overfill control is attached.

22. ☒ **Attachment E - Response Actions to Spills**. A site-specific description of the planned response actions to spills that will take place at the facility is attached.

Administrative Information

23. 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 AST 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).

24. ☒ This facility is subject to the requirements for the reporting and cleanup of surface spills and overfills pursuant to 30 TAC 334 Subchapter D relating to Release Reporting and Corrective Action.

25. ☒ 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.

26. ☒ Any modification of this AST Facility Plan application will require executive director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

ATTACHMENT A

KISSING TREE GOLF MAINTENANCE FACILITY
Aboveground Storage Tank Facility Plan

Attachment A – Alternative Methods of Secondary Containment

This Kissing Tree Golf Maintenance Facility Aboveground Storage Tank (AST) Facility Plan proposes two (2) base-mounted, double-wall, steel construction tanks for storage of 515 gallons, each, of diesel and gasoline to service machinery and vehicles needed for the golf course operations.

Fuel Tank Description

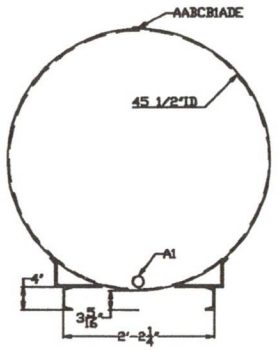
The proposed ASTs will be used to fuel machinery and vehicles utilized by the Kissing Tree Golf Maintenance Facility. These tanks are located within an overall fenced and gated 1.62-acre maintenance site. The tanks themselves will be located on a 500 square foot (SF) concrete pad surrounded by removable bollards. The double-walled steel fuel tanks are both constructed to the UL-142 standard. The proposed piping is fifteen-feet (15') of one-inch (1") hose from the tanks to nozzles with an automatic shut-off feature.

The tanks are constructed of materials that are compatible with the liquids stored (diesel and gasoline) within and have the appropriate safety equipment, such as primary and emergency venting and overfill protection.

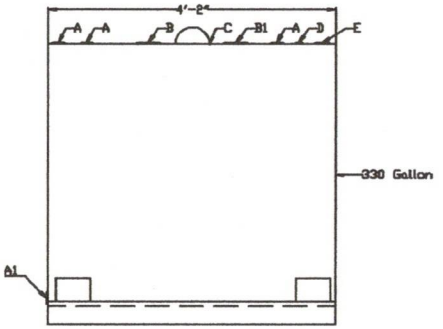
The primary tanks are wholly contained within secondary tanks, and the interstitial space between the tanks is hollow. If failure occurs in the primary tank, all fuel will be trapped within the secondary tank. The tanks will be placed within a containment pan able to hold 575 gallons. The pan will provide secondary containment for the piping, which would hold 0.6 gal within the hose between the automatic shutoff and tank. Additionally, these tanks will be visited several times daily by the site supervisor and golf facility maintenance team.

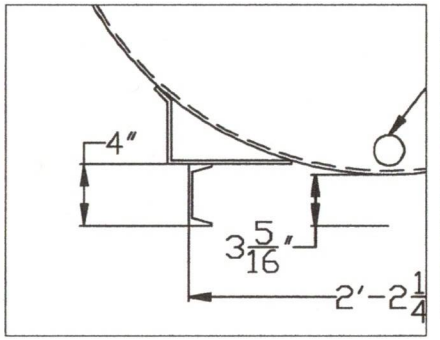
ATTACHMENT B

Front View



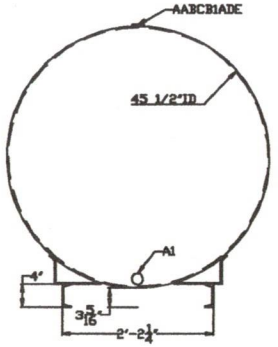
Elevation View

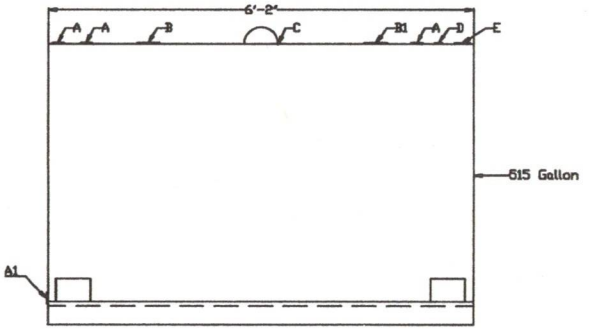




Scale 1" = 1'-0"

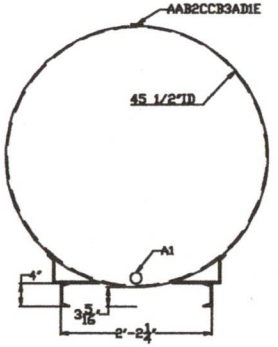
Schedule Of Fittings		
Ref	Qty	Description
A	3	2" NPT
A1	1	2" NPT Outer Shell Monitor
B	1	4" NPT + Inside EV
B1	1	4" NPT + Outside EV
B2	1	6" NPT + Inside EV
B3	1	6" NPT + Outside EV
C	1 or 2	Lifting Lug
D	1	1 1/4" NPT + T-Vent
D1	1	2" NPT + T-Vent
E	1	2 1/2" NPT + Fill Cap

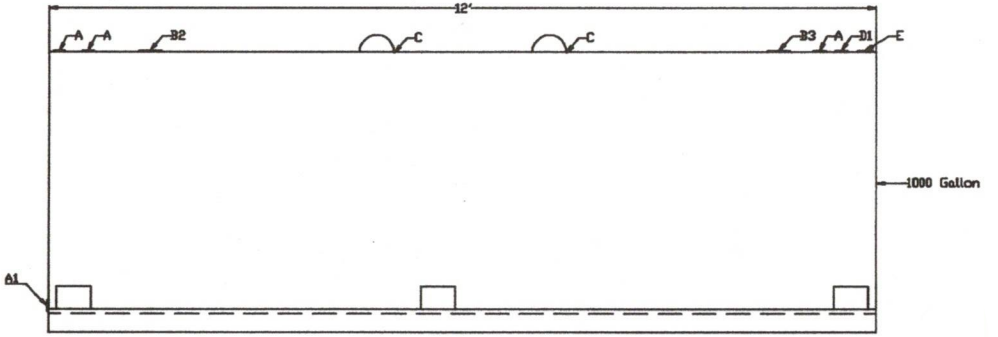




General Notes:
- Tank Type: Double Wall
- Construction Code: U/L 142
- Estimated Weight: 330 Gallon = 800 lbs
  515 Gallon = 1000 lbs
  1000 Gallon = 1900 lbs
- Material Type: Mild Carbon Steel A1011 or A-36 Type
- Tank Thickness: 330/515 Gallon = All 12 Gauge
  1000 Gallon = Inside 10 Gauge
  Outside 12 Gauge
- Structural Supports: Angle Iron + Channel Iron
- Design and Operating Temperature: Ambient Conditions
- Design and Operating Pressure: Atmospheric or 1.0 psi
- Radiography: N/A
- Corrosion Allowance: N/A
- Tested: 3-5 psi, soap and water
- Fitting Type: NPT Threadlets (National Pipe Thread)
- Internal Seal-Weld: N/A
- Internal Coating: N/A (Bare Metal)
- External Coating: Red Oxide Primer

Additional Notes:
1) Stationary use only. Move/lift tanks while empty.
2) All primary tank openings located on top
3) All top fittings may be spaced accordingly
4) Outside tank is a tight wrap





DIESEL TANK

- **500 GAL DOUBLE WALL UL142 SKID TANK**
- CONTAINMENT PAN FOR 500 GAL TANK - 48" X 93" X 30" - 575 GAL CAPACITY
- 4" MALE THREAD 8 OZ ALUMINUM EMERGENCY VENT
- 2" THREADED TEE VENT
- PREVENT FILL CAP ASSY - CAST IRON BASE W/PLATED CAP
- 2" PRESSURE VACUUM VENT
- FILL-RITE 12V (15 GPM) TRANSFER PUMP – PUMP ONLY - NEW "H" SERIES
- 3/4" AUTOMATIC NOZZLE W/ HOOK – GREEN COVER - DIESEL (NEW VERSION)
- 3/4" ALUMINUM FILTER HOUSING - 3/4" THREAD (EQUIVALENT TO CIM-TEK 200H-3-4 / 50003)
- 3/4" - 10 MICRON FILTER
- KRUEGER THERMA GAUGE (TYPE H) - 2" OPENING - 45" TANK HEIGHT (NO RISER) – DIESEL
- 1993 PLACARD DECAL – DIESEL
- "NO SMOKING" DECAL - 3" X 12" - WHITE ON RED WITH WHITE BORDER
- "COMBUSTIBLE" DECAL - 3" X 12" - WHITE ON RED WITH WHITE BORDER
- "DYED DIESEL FUEL...NON-TAXABLE USE ONLY - PENALTY FOR TAXABLE USE OFF HIGHWAY - NOT LEGAL FOR MOTOR VEHICLE USE " DECAL - 3" X 12" - WHITE ON RED WITH WHITE BORDER
- PAINTED DARK GRAY

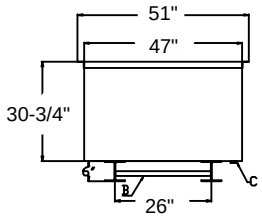
GASOLINE TANK

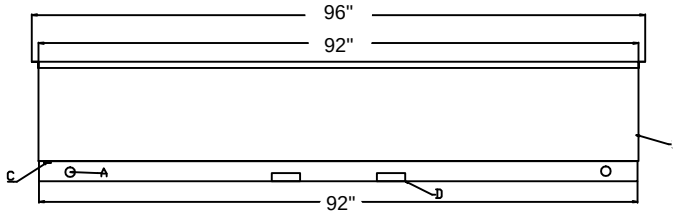
- **500 GAL DOUBLE WALL UL142 SKID TANK**
- CONTAINMENT PAN FOR 500 GAL TANK - 48" X 93" X 30" - 575 GAL CAPACITY
- 4" MALE THREAD 8 OZ ALUMINUM EMERGENCY VENT
- 2" THREADED TEE VENT
- PREVENT FILL CAP ASSY - CAST IRON BASE W/PLATED CAP
- 2" PRESSURE VACUUM VENT
- FILL-RITE 12V (15 GPM) TRANSFER PUMP – PUMP ONLY - NEW "H" SERIES
- 3/4" AUTOMATIC NOZZLE W/ HOOK – RED COVER - GASOLINE (NEW VERSION)
- 3/4" ALUMINUM FILTER HOUSING - 3/4" THREAD (EQUIVALENT TO CIM-TEK 200H-3-4 / 50003)
- 3/4" - 10 MICRON FILTER
- KRUEGER THERMA GAUGE (TYPE H) - 2" OPENING - 45" TANK HEIGHT (NO RISER) – GASOLINE
- 1203 PLACARD DECAL – GASOLINE
- "NO SMOKING" DECAL - 3" X 12" - WHITE ON RED WITH WHITE BORDER
- "FLAMMABLE" DECAL - 3" X 12" - WHITE ON RED WITH WHITE BORDER
- PAINTED DARK GRAY

Schedule Of Fittings		
Ref	Qty	Description
A	4	Hole Cut-Out
B	Varies	Braces
C	1	2" NPT
D	4	Forklift Slots

General Notes:
Secondary Containments
Code: N/A
Estimated Weight:

Material Type: Mild Carbon Steel
Structural Supports: Beams
Radiography: N/A
Corrosion Allowance: N/A
Fitting Type: NPT (National Pipe Thread)
Internal Seal-Weld: N/A





500 Gallon Containment Pan. Capacity 575 Gallons

FILL-RITE®

H-SERIES FUEL TRANSFER PUMPS

FR1200, FR2400, FR4200, FR4400, FR600, SD1200, SD600

Installation and Operation Manual

MADE IN USA
WITH GLOBAL MATERIALS

GORMAN-RUPP COMPANY

Table of Contents

Thank You!

Thank you for your loyalty to the Fill-Rite® brand of fuel transfer pumps. Your safety is important, so please read and thoroughly understand the procedures set forth in this manual. In addition, please save these instructions for future reference and record the model, serial number, and purchase date of your fuel transfer pump. Protect yourself as well as those around you by observing all safety instructions and adhering to all danger, warning, and caution symbols. Please register your Fill-Rite® product via **info.fillrite.com/product_registration**.

IMPORTANT RETURN POLICY

Please do not return this product to the store. For all warranty and product questions, please contact Fill-Rite Technical Support at 1 (800) 720-5192 or via email at FillRiteTech@fillrite.com (M-F, 8 AM – 5 PM ET).

MODEL#	
SERIAL#	
PURCHASE DATE:	

Limited Warranty Policy

Fill-Rite Company warrants the goods manufactured shall be free from defects of materials and workmanship. Specific warranty details for individual products can be found at fillrite.com.

H-Series Fuel Transfer Pumps Have the Following Features

- **Adjustable Electrical Junction Box**
  Rotates 180 degrees to provide ease of electrical wiring installation in tight quarters no matter the inlet bung location
- **Reliable, Heavy-Duty Power Switch Lever**
  Features a cast metal stop that withstands heavy use in the most rugged environments
- **Locking Bar Defense**
  Elongated bar simplifies the pad locking process to prevent theft
- **Focused Component Weight Reduction**
  Preserves expected heavy-duty performance while improving installation ease
- **Premium Paint Shield**
  An exemplary corrosion resistant barrier for long field life
- **Thermally Protected Motor**
  Prevents overheating to ensure maximum motor life
- **Telescoping Inlet Metal Suction Pipe***
  Adjustable from 20 to 34 inches in length, allowing for universal installation on a multitude of tank sizes and shapes

  **Not included with SD models*
- **Intake Strainer Safeguard**
  Protects the pump by blocking particles created by contamination
- **Certifications** – UL, cUL

About This Manual

From initial concept and design through final production, your Fill-Rite fuel transfer pump is built to provide years of trouble-free use. To ensure the safety of yourself and those around you, it is critical that this manual is read in its entirety prior to attempting to install or operate your new purchase. We strongly urge that any installer and operator become familiar with the terms, diagrams, and technical data in this manual and pay close attention to warning symbols and definitions. At Fill-Rite, your satisfaction with our products is paramount. If you have questions or need assistance with your product, please contact Fill-Rite Technical Support at 1 (800) 720-5192 (M-F, 8am-5pm ET).

Symbols and Definitions

⚠ DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a hazardous situation which, if not avoided, could result in moderate or minor injury.
NOTICE	Indicates information considered important but not directly hazard related.

Before You Begin

Fueling Requirements
The Fill-Rite FR1200, FR2400, FR4200, FR4400, FR600 as well as SD1200 and SD600 models are designed and approved for use with the following flammable and combustible fluids: gasoline and gasoline blends up to 15% or E15, diesel, biodiesel blends up to 20% or B20, kerosene, and mineral spirits. Please take all necessary precautions when handling flammable liquids.

Power Source Requirements
Depending on the Fill-Rite model, supply line power will either be 12V DC, 24V DC, or 115V AC. The pump motor nameplate located next to the switch lever will provide detailed electrical information. Please refer to the appropriate electrical instructions found starting on **Page 7** (DC power) or **Page 10** (AC power).

Items that may be needed for installation:
Steel pipe wrench 14-24", open end wrench or socket (7/16", 11mm), T-25 Torx driver, utility knife, angle grinder or hacksaw (optional), wire cutters, wire stripper/crimper, and thread sealant (optional).

NOTE: *Fill-Rite provides Teflon® tape for all models as listed on* ***Page 16.***

Safety Information

To ensure a safe installation and proper equipment operation, please read, understand, and adhere to all DANGER/WARNING/CAUTION and other NOTICES.

⚠ DANGER

Never smoke around or near a fuel tank or transfer pump. Open flames or a spark when pumping a flammable liquid will result in a fire. Improper electrical wiring or installation will result in serious injury or death.

⚠ WARNING

Electrical wiring should ONLY be performed by a licensed electrician in compliance with all local, state, and national electrical codes (NEC/ANSI/NFPA 30, NFPA 30A, and NFPA 70) as appropriate for the intended use of a Fill-Rite fuel transfer pump.

Threaded rigid conduit, sealed fittings, and conductor seal should be used where applicable and as defined by these codes.

This product must be properly bonded or grounded to avoid the build up of static electricity when handling flammable products. Static discharge may ignite vapors causing serious injury or death.

Fill-Rite pumps are not suited for use with water or fluids intended for human consumption. Do not use to fuel aircrafts.

To minimize static electricity build up, keep the nozzle in contact with the container being filled at all times during the filling process. Use only static wire conductive hose when pumping flammable liquid.

Improper mechanical installation or use can result in serious injury or death.

⚠ CAUTION

Threaded pipe joints and connections must be sealed with the appropriate sealant or sealant tape to prevent leaks.

All Fill-Rite pump models are equipped with thermal overload protection by which the motor will shut off to prevent heat damage. If motor is turned off by a thermal overload, turn the switch lever to the OFF position. Once the motor has cooled sufficiently, turn the switch lever to the ON position to resume fuel transfer.

Some Fill-Rite models will restart automatically if the switch lever is not in the OFF position once the thermal protector resets. As good practice, always place the switch lever in the OFF position when the motor overheats.

NOTICE

A filter should be used on the pump outlet to avoid contamination into the vehicle or equipment's fuel tank. We recommend Fill-Rite filters for best results.

To prevent fuel storage tanks from shifting or tipping, refer to tank manufacturer's guidelines on proper anchoring.

Installation

Your Fill-Rite pump is designed to be mounted on a fuel tank via a threaded inlet flange supplied with the pump. Typical installations are shown in Diagram 1 and 2. Your pump features an integral bypass valve to recirculate the fluid when the pump is operating with the nozzle closed.

⚠ CAUTION

Do not use additional check valves or foot valves unless they have a proper pressure relief valve built into them. Please be aware that additional check valves will reduce flow rates.

A pressure-retaining fill cap can be used to reduce fuel loss through evaporation.

Threaded pipe joints and connections must be sealed with the appropriate sealant to prevent leaks.

Use caution to prevent cross-threading during installation which can cause damage to either or both the inlet flange as well as storage tank bung.

NOTICE

In all tank applications, be sure the tank is properly secured per tank manufacturer's guidelines.

Stationary Tank

For stationary fuel tanks, the pump mounts to the tank bung by way of the pump inlet flange. Given the different sizes of stationary fuel tanks, a custom suction or inlet pipe may be necessary. We recommend 1" NPT black iron pipe that is extended to a length of at least 1-2" from the bottom of the tank, with the bottom of the pipe cut to an angle between 30-45 degrees for improved flow.

A stationary tank must be equipped with a vent cap. (Diagram 1)

Mobile Tank

For mobile fuel tanks, the pump mounts to the tank bung by way of the pump inlet flange.

For Telescoping Steel Suction Pipe
Allow telescoping tube to extend fully to the bottom of the tank.

For Custom or PVC Suction Pipe
To avoid penetrating the tank, we recommend leaving a minimum of 1-2" of the pipe off the bottom of tank. We further recommend cutting the suction pipe to a 30-45 degree angle for improved flow.

The mobile tank must be equipped with a vent cap. (Diagram 2)

Diagram 1

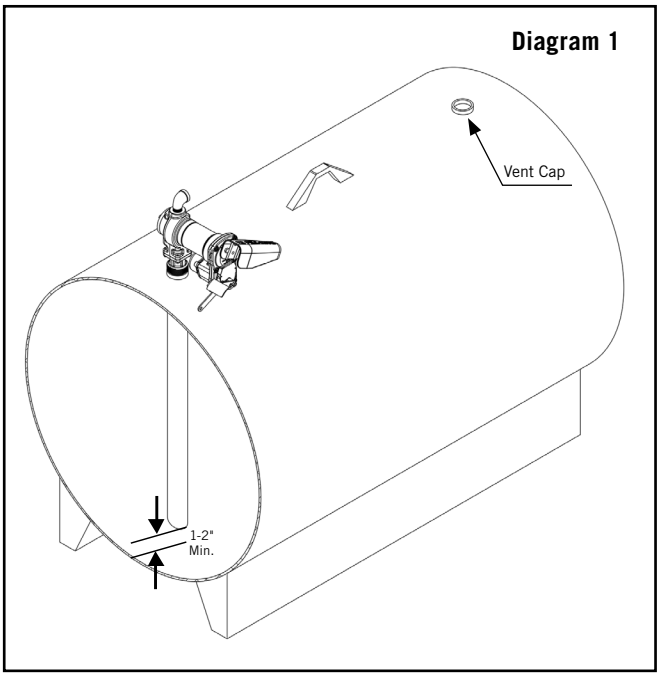
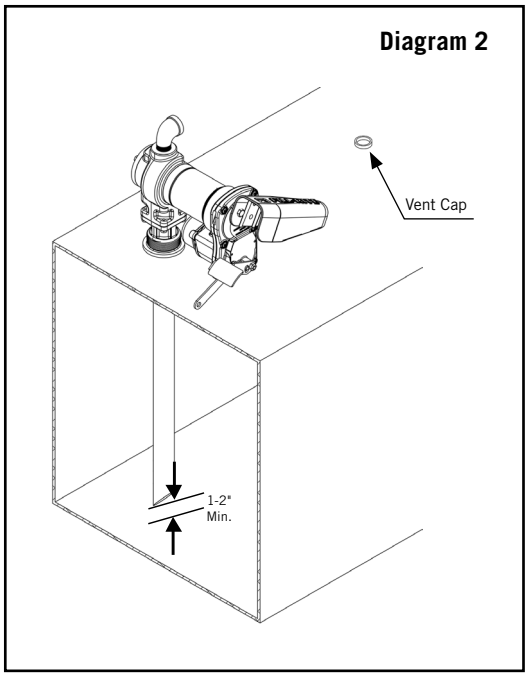


Diagram 2



Installation Procedure

Step 1: (Optional) Inlet Flange Removal
Loosen (4) 1/4" bolts using 7/16" wrench or socket. Detach inlet bung from pump, retain bolts, screen, and gasket.

Step 2: Using either included suction pipe or custom pipe, thread pipe into inlet bung 1.5 to 2.5 turns past hand tight with pipe wrench. Use appropriate sealant for fuel transfer.

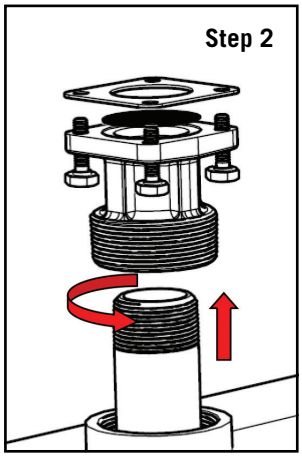
Step 3: Thread inlet bung with attached suction pipe onto tank 1.5 to 2.5 turns past hand tight. Use appropriate sealant for fuel transfer.

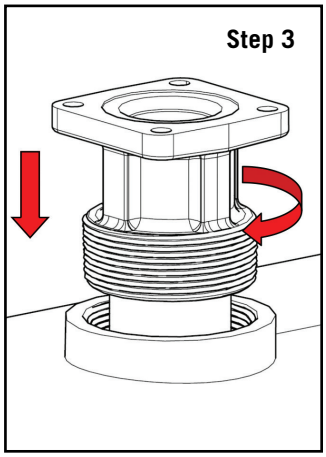
Step 4: (Only if Step 1 utilized) Place screen in screen pocket on the inlet bung, mount gasket, then place pump on tank bung. Align holes and insert (4) 1/4" bolts and tighten with 7/16" wrench to 40 in.-lbs. minimum.

Step 5: Remove junction box cover via (2) T-25 screws and locate wires. DC Voltage: 2 wires, Black and Red; AC Voltage: 3 wires, Black, White, and Green which is attached to internal ground screw. Ensure that gasket remains in place upon re-attachment of junction box.

Step 6: Feed wires from power source through NPT† opening into junction box. For DC models, use the black cable connector*. For AC models, attach conduit directly to NPT† opening.

Step 7: Nozzle boot is attached to switch plate via (1) 5/16" bolt torqued to 40 in-lbs. The nozzle boot has two available position placements.



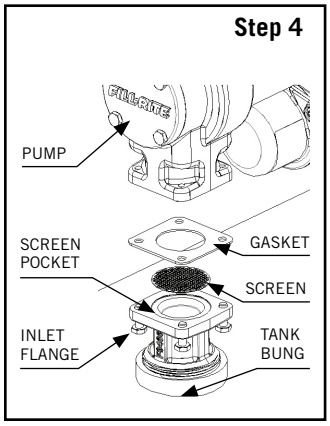


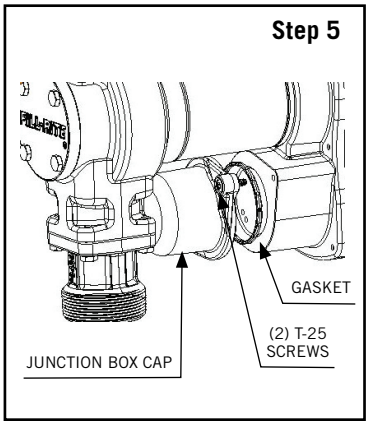
** Black cable gland only included with DC models*

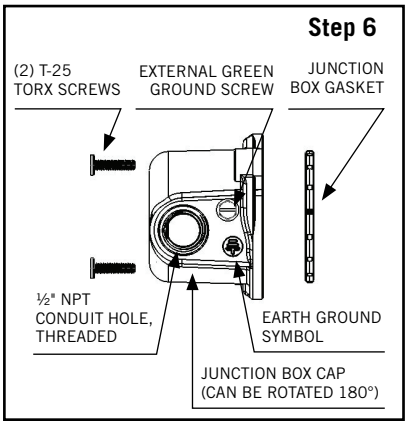
† 1/2" NPT to cable gland, bronze fitting per ATEX on HE Models

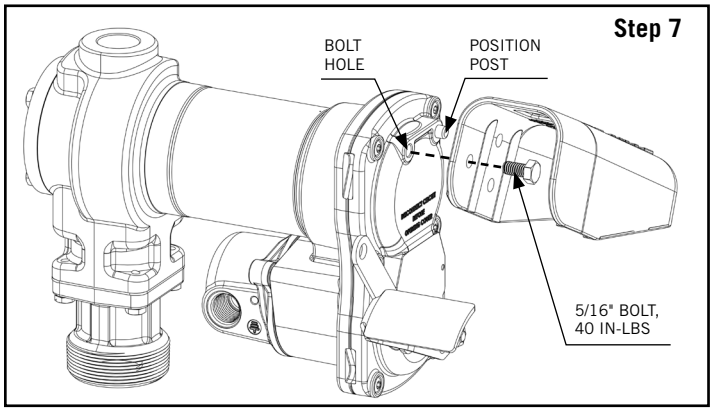
NOTICE

Maintain a minimum 1-2" separation from pipe end to bottom of tank.









12V DC and 24V DC Wiring Instructions

FR1200 / FR2400 / FR4200 / FR4400 / SD1200 Series DC Transfer Pump

⚠ DANGER

Electrical wiring should be performed ONLY by a licensed electrician in compliance with local, state, and national electrical codes (NEC/ANSI/NFPA 30, NFPA 30A, and NFPA 70) as appropriate to the intended use of the pump. Threaded rigid conduit, sealed fittings, and conductor seal should be used where applicable. The pump must be properly grounded. Improper installation or use of this pump can result in serious personal injury or death.

Do not connect the positive or negative power to the green ground/earth screw or ground/earth wire as this could cause a fire.

Do not attempt to power the pump from vehicle wiring smaller than 12 AWG such as the cigarette lighter wire because these thin wires could overheat and cause a fire.

For wiring up to upfitter switches, please contact Fill-Rite Technical Support at 1 (800) 720-5192 (M-F, 8am-5pm ET).

⚠ CAUTION

Fill-Rite DC fuel pumps are designed to operate at the rated nameplate voltage. Series FR1200, FR4200, and SD1200 are rated for 12V DC while FR2400 and FR4400 are rated for 24V DC. Regardless of how supply line power is provided (i.e. via a battery or hard line), Fill-Rite requires the circuit contain a fuse to prevent against electrical shorts. For 12V DC, a 30 amp fuse is necessary while for the 24V DC circuit, a 20 amp fuse.

Voltage drop in wiring varies depending on the distance from the battery to the pump and the gauge of the wire used. If the distance is greater than the supplied 18' 12 AWG power cable*, refer to local, state, and national electrical codes to ensure the wire is of the correct size for this application.

The following chart is to be used as a reference and is not a substitute for electrical codes:

Maximum Linear Distance (FT) of Stranded Copper Wire Length by Gauge				
10	8	6	4	2
27'	44'	69'	110'	175'

**12 AWG power cable not supplied with pump only models*

NOTICE

Electrical bonding is the process of connecting metallic parts such as a fuel storage tank or transfer pump which may be exposed to electrical faults to a grounding conductor to ensure a low-resistance path to the ground. Bonding also provides a path for static electricity and induced voltages to drain out through the grounding path. The most common way to bond is with a copper wire.

If the intention is to operate either a 12V or 24V DC fuel transfer pump from a power supply other than a vehicle battery system, please contact Fill-Rite Technical Support at 1 (800) 720-5192 (M-F, 8am-5pm ET).

Instructions Before Proceeding with DC Wiring

The pump needs to be electrically bonded to a vehicle frame for mobile tanks or a ground rod for stationary tanks. To electrically bond pump for mobile application, remove the external factory installed green bonding screw located on the junction box cover (Diagram 3). Insert this screw through eyelet of furnished green bonding wire assembly and refasten it securely to the junction box. The other end of the wire is to be stripped of insulation and the bare wire securely bonded to the vehicle or on/off road trailer frame for mobile tanks (Diagram 4). For bonding with stationary tanks, attach a ground wire to a ground rod and the tank itself (Diagram 5). The distance may be greater than the supplied grounding wire.

Diagram 3

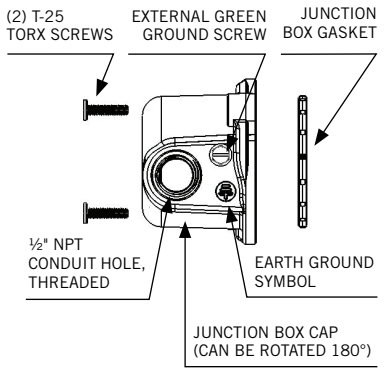


Diagram 4

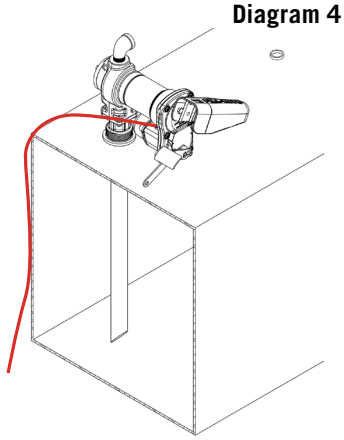
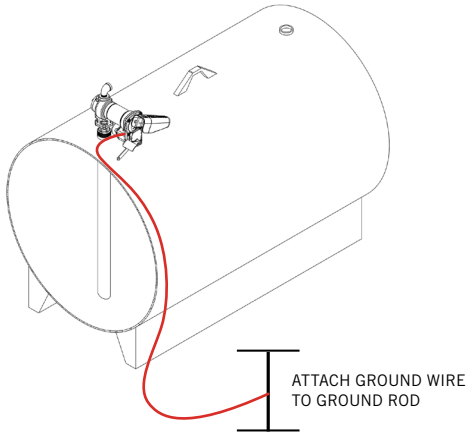


Diagram 5



DC Wiring Instructions

1. Remove pump's electrical junction box cover and straighten the red and black wire.
2. Screw the furnished cable connector into 1/2" NPT conduit opening on the junction box.
3. Strip 3" of the outer covering from one end of the furnished electrical supply cable.* Be careful not to damage the black and red wire insulation.
4. Loosen cable connector nut and pass the stripped end of the furnished cable through the cable connector. Tighten the cable connector nut.
5. Strip 1/2" of the insulation from the ends of the red and black cable wires. Using the furnished wire nuts, connect the cable wires to the pump wires matching the colors.
   IMPORTANT: Be sure no bare wire is exposed.
6. Fold wires into junction box and replace, making sure the cover gasket is in place. Make sure all screws are seated so there is no space between the frame and the junction box (see Step 6 diagram on **Page 6**).

**12 AWG cable not supplied with pump only models*

Mobile Tank Wiring to a Vehicle Electrical System

1. Before electrical installation, place the switch lever into the OFF position to prevent accidental spillage once power is engaged to the motor.
2. Pass the electrical wires to the source of the vehicle power system, supporting as necessary and protecting them from sharp edges, heat, or anything that could cause damage.
3. To determine if the vehicle electrical system is negative (-) or positive (+) ground, check the battery marking of the terminal that is wired to the vehicle frame or motor block. The red wire from the pump will connect to positive battery post and the black wire from the pump will connect to negative battery post. These instructions focus on COMMON negative ground systems. UNCOMMON positive systems are a rare occurrence. Reference the drawing on **Page 9** for information on positive ground systems.
4. Fill-Rite requires installing a fuse holder and fuse (not provided) for protection of the purchased pump. Attach one end of the fuse holder to the end of the ungrounded wire, making a solid connection. The other end of the fuse holder is then attached to the ungrounded side of the battery, as close to the battery as possible. Make a solid electrical connection to the grounded side of the battery with the remaining wire. Utilizing a battery terminal connection (not provided by Fill-Rite) is required for completion of the electrical circuit.
5. Check all connections to make sure they are connected per instructions and all electrical codes. Install fuse (30 amp fuse for 12V DC; 20 amp fuse for 24V DC) into the fuse holder. Installation is now complete.

Mobile Tank Wiring to a Non-Vehicle System

While rare, there are instances where a 12V or 24V DC Fill-Rite fuel pump does not operate from a vehicle's electrical system. In these cases, we recommend calling Fill-Rite Technical Support at 1 (800) 720-5192 (M-F, 8am-5pm ET) to discuss your specific situation. Most of these applications will require equipment not supplied by Fill-Rite. In addition, we want to ensure that the circuit will be able to handle the necessary power requirements of the pump.

Stationary Tank Wiring

1. Before electrical installation, place the switch lever into the OFF position to prevent accidental spillage once power is engaged to the motor.
2. Fill-Rite requires installing a fuse holder and fuse (not provided) for the protection of the purchased pump.
3. Attach one end of the fuse holder to the red pump wire, as close to the battery or power source as possible. Make a solid connection to the positive terminal of the power source with the other end of the fuse holder. Make a solid connection with the black pump wire to the negative terminal of the power source.
4. Check all connections to make sure they are connected per instructions and all electric codes.
5. Install fuse (30 amp fuse for 12V DC; 20 amp fuse for 24V DC) into the fuse holder.
6. The installation is now complete.

Negative Ground System (Common)

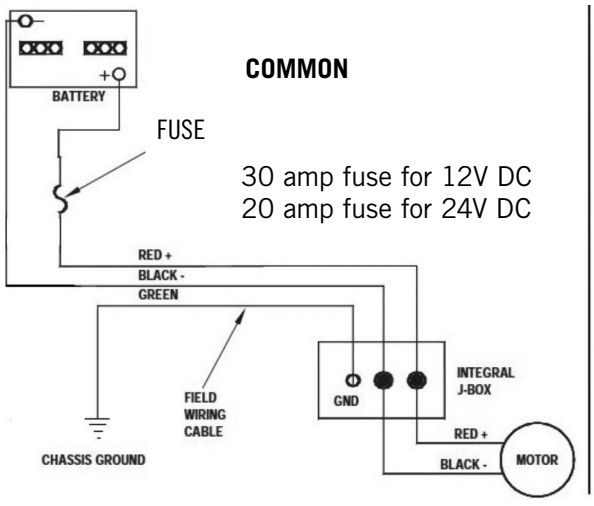
This electrical system is common within most vehicles utilizing a 12V DC power source. In this instance, the positive battery terminal supplies power to all devices such as the ignition system. The negative (-) terminal is connected to the vehicle's frame.

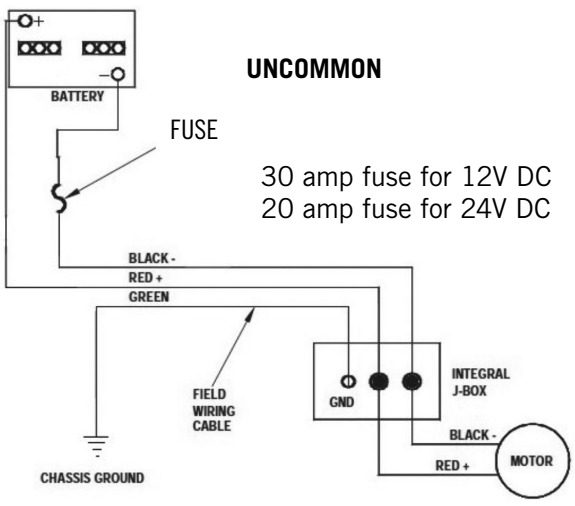
Fuse to be located outside of hazardous area, as close to the power source as possible. If the wiring from the power source to the pump is greater than 18', refer to the applicable Electrical Code (national, international, or local) to ensure the wire is of the correct size for the application.

Positive Ground System (Uncommon)

This electrical system is uncommon within most vehicles utilizing a 12V DC power source. The chassis of the vehicle is connected to the positive (+) terminal of the battery.

Fuse to be located outside of hazardous area, as close to the power source as possible. If the wiring from the power source to the pump is greater than 18', refer to the applicable Electrical Code (national, international, or local) to ensure the wire is of the correct size for the application.





115V AC Wiring Instructions for FR600 / SD600 AC Fuel Transfer Pumps

⚠ DANGER

- All pumps will operate at the rated nameplate voltage.
- AC power should be supplied to the pump from a dedicated circuit with a 15 amp circuit protection. No other equipment should be powered by this circuit.
- Wiring must be of sufficient size to carry the correct current for the pump.
- Voltage drop will vary with distance to pump and size of wire; refer to the National Electrical Code (NEC) or local codes for voltage drop compensation to be sure you are using the correct size wire for your application. Undersized wires can overheat and cause a fire.
- Ensure proper grounding to avoid electrocution.
- Each Fill-Rite motor is labeled as explosion-proof for hazardous locations Class I / Division 1. It is highly recommended that any repairs be done by an authorized distributor to avoid voiding the warranty. It is very important to maintain the explosion-proof integrity of the motor and system components.
- Electrical wiring should be performed ONLY by a licensed electrician in compliance with local, state, and national electrical codes (NEC/ANSI/NFPA 70, NFPA30, and NFPA 30A) as appropriate to the intended use of the pump.
  The pump must be properly grounded. Improper installation or use of this pump can result in serious bodily injury or death.

⚠ WARNING

- Ground wire in supply wiring MUST be connected to the ground screw inside the junction box.

⚠ CAUTION

Voltage drop in wiring varies depending on the distance from the electrical source to the pump and the gauge of the wire used. Fill-Rite recommends referring to national, international, or local electrical codes to ensure the wire is of the correct size for your application. The following chart is to be used as a reference and is not a substitute to electrical codes.

Maximum Linear Distance (FT) of Solid and Stranded Copper Wire Length by Gauge								
	AWG	16	14	12	10	8	6	4
Wire	Solid	39	62	99	158	250		
	Stranded	38	61	96	154	245	389	620

115V AC Wiring Procedure

1. Remove the junction box cover and straighten the wires to make sure the stripped wire ends are accessible outside the junction box.
2. Install rigid conduit and appropriate wiring from power source to the junction box to maintain the explosion-proof integrity.
3. Connect the pump wires to the power supply lines according to the wiring diagram. Be certain to properly insulate the connections with the appropriate wire nuts or other connectors. **NOTE**: The ground wire MUST be connected. Ground wire connection is inside the junction box (Diagram 6b).
4. Fold the wires back into the junction box and replace the cover, making sure the cover gasket is in place.

115V AC Pump Junction Box (FR/SD600 Series AC Fuel Transfer Pumps)

Diagram 6a

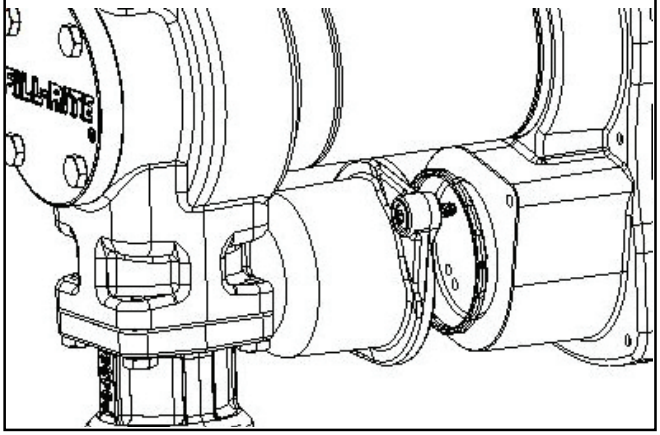
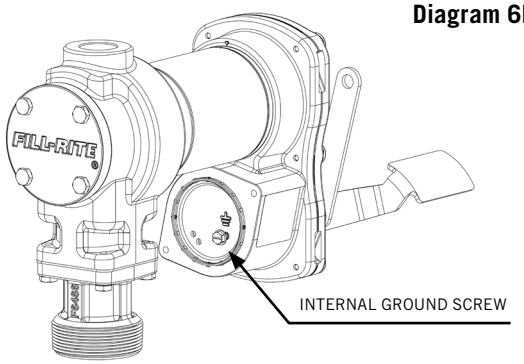


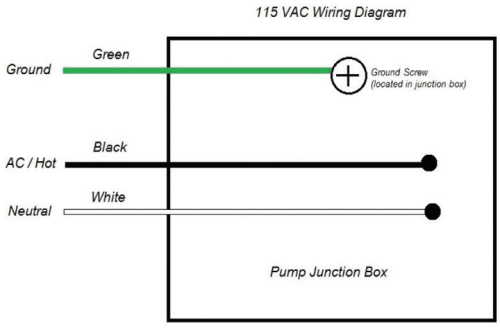
Diagram 6b



115V AC Wiring Diagram for FR/SD600 AC Fuel Transfer Pumps.

A ground wire must be included within the supply line power cable. This wire must be connected to the ground screw terminal on the inside of the junction box surface.

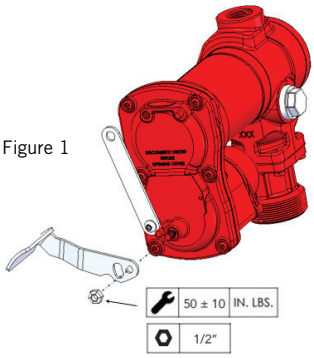
115V AC Wiring Diagram



Switch Level Installation Instructions

Effective March 7, 2022, the fuel transfer pump on/off switch lever will need to be installed in the field. Please see Figure 1 for a visual guide on the proper installation of this lever.

Figure 1



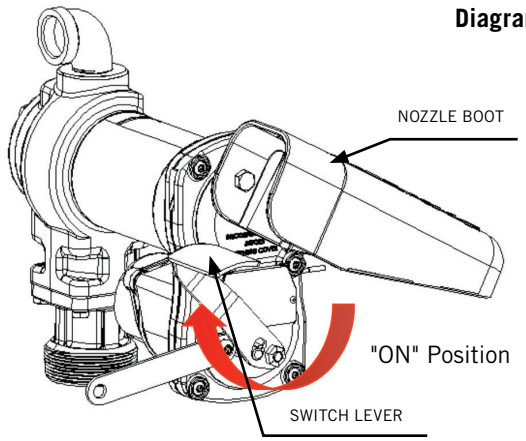
Operation Instructions

⚠ DANGER

Always keep the nozzle in contact with the container being filled during the filling process to minimize the possibility of static electricity build up. A spark around flammable vapors will cause an explosion resulting in death or serious injury.

1. If equipped, reset meter to "0" (do not reset while in use as this will cause damage to the meter).
2. Remove dispensing nozzle from nozzle boot.
3. Move the switch lever to the "ON" position to power the pump (Diagram 7).
4. Insert the dispensing nozzle into the container to be filled.
5. Operate the nozzle to dispense fluid; release nozzle when the desired amount of fluid has been dispensed.
6. Move switch lever to the "OFF" position (Diagram 8) to turn off the pump.
7. Remove the dispensing nozzle from the container being filled and store it in the nozzle boot.

Diagram 7



Security

Your Fill-Rite fuel transfer pump is equipped with a locking link located next to the switch lever for security. With the pump turned off and the nozzle in the stored position, a padlock can be inserted through the locking link and the nozzle handle.

Fill-Rite recommends a commercial grade laminated steel padlock with an adjustable shackle (Diagram 9).

Diagram 9

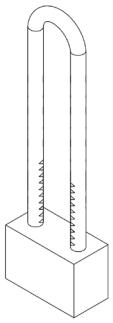
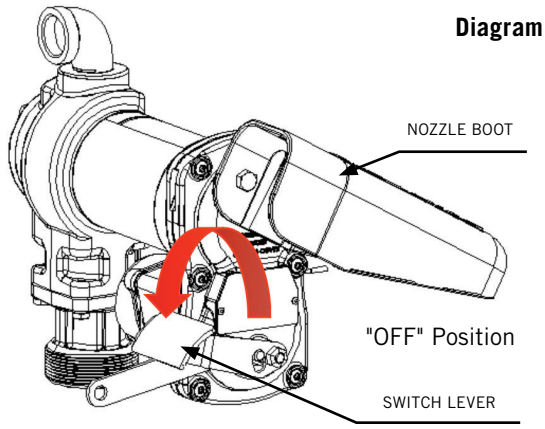


Diagram 8



Troubleshooting

The following troubleshooting guide is provided to offer basic diagnostic assistance in the event you encounter abnormal service from your Fill-Rite fuel transfer pump. If you have questions, please feel free to contact Fill-Rite Technical Support at 1 (800) 720-5192 (M-F, 8am-5pm ET) or by email at FillRiteTech@fillrite.com.

⚠ DANGER

Please disconnect all power supply sources from either your AC or DC pump prior to performing any service or maintenance, as well as relieve any pressure within either the suction tube or discharge hose. Failure to do so can result in damage to the equipment and personal injury or death.

Troubleshooting (continued)

Symptom	Cause	Cure
Pump will not prime	Suction line problem	Check for leaks or restrictions in suction line
	Bypass valve open	Remove and inspect valve; must move freely and be free of debris
	Vanes sticking	Check vanes and rotor slots for nicks, burrs, and wear
	Excessive rotor or vane wear	Inspect rotor and vanes for excessive wear or damage; replace if necessary
	Automatic nozzle	Remove to prime pump
	System blockages	Check filter and bypass valve for debris; remove nozzle and test flow with pump ON
Low capacity	Excessive dirt in screen	Remove and clean screen
	Suction line problems	Check for leaks or restrictions in suction line
	Bypass valve sticking	Remove and inspect valve; must move freely and be free of debris
	Outlet blocked	Check pump outlet hose, nozzle, and filter for blockage
	Vanes sticking	Check vanes and rotor slots for wear; replace if necessary
	Excessive rotor or vane wear	Inspect rotor and vanes for excessive wear or damage; replace if necessary
	Hose or nozzle damage	Replace hose or nozzle (Fill-Rite recommends UL-rated hoses and nozzles)
	Plugged filter	Replace filter
	Low fluid level	Fill tank
Pump runs slowly	Incorrect voltage	Check incoming supply line voltage
	Vanes sticking	Inspect vanes and rotor slots for nicks, burrs, and wear
	Wiring problem	Check for loose connections
	Motor problem	Contact Fill-Rite Technical Support at 1 (800) 720-5192 (M-F, 8am-5pm ET)
Motor stalls, fuse blows, thermal protector trips repeatedly	Bypass valve sticking	Remove and inspect valve; must move freely and be free of debris
	Low voltage	Check incoming supply line voltage
	Excessive rotor or vane wear	Check rotor and vanes for excessive wear or damage
	Debris in pump cavity	Clean debris from pump cavity
Motor overheats	Transferring high viscosity fluids	These fluids can only be pumped for short periods of time (less than 30 minute duty cycle)
	Clogged screen	Remove inlet and clean screen
	Restricted suction pipe	Remove and clean pipe
	Motor failure	Contact Fill-Rite Technical Support at 1 (800) 720-5192 (M-F, 8am-5pm ET)
	Pump rotor lock-up	Clean and check pump rotor and vanes
Motor inoperable	No power	Check incoming supply line power
	Wiring issue	Use multimeter to isolate issue with supply line power
	Motor failure	Contact Fill-Rite Technical Support at 1 (800) 720-5192 (M-F, 8am-5pm ET)
	Locked rotor	Clean and check pump rotor; repair as needed with KIT120RG
	Incorrect/loose wiring	Verify correct wire size with local, state, and national electric codes
Fluid leakage	Bad O-ring gasket	Check and replace all O-ring gaskets (Rotor Cover / Inlet Flange / Bypass Cap)
	Dirty/bad shaft seal	Replace shaft seal with KIT120SL
	Incompatible fluid	Refer wetted parts list on **Page 14** to the fluid manufacturer
	Loose fasteners	Tighten fasteners
Pump hums but will not operate	Motor failure	Contact Fill-Rite Technical Support at 1 (800) 720-5192 (M-F, 8am-5pm ET)
	Broken rotor key	Remove all debris and replace key

Specifications and Models

A series of fuel transfer pumps with UL/cUL, ATEX, IECEx, CE, EAC, and INMETRO certifications that are compatible with gasoline, diesel fuel, blended fuels such as biodiesel up to 20%, gasoline with up to 15% ethanol, mineral spirits, and kerosene.

Product Parts	Product Materials
Pump Housing	Cast Iron
Rotor	Powdered Iron
Vane	Sintered Bronze
Strainer Mesh	Stainless Steel
Wetted Components	Buna-N, Fluorocarbon, Ceramic, Cork, Thermoset, Steel, Stainless Steel

	Description		FR1200	FR4200	SD1200	FR4400	FR2400	FR600	SD600
Motor	Voltage, Supply (DC/AC)		12V DC			24V DC		115V AC / 60HZ	
	Power (HP)		1/4TH					1/6TH	
	Amps (Full Load)		26	28	26	18	15	2.5	
	Amps (Rated)		20	19	20	13	10	2.0	
	RPM		2600 RPM					2000 RPM	
	Power Cord*	Length	18'		15'	18'		Not Included	
		AWG	12						
	Duty Cycle		30 Minutes (on), then 30 Minutes (off)						
	Thermal Protection (motor)		Yes						
	Required Circuit Protection		30 AMP			20 AMP		15 AMP	

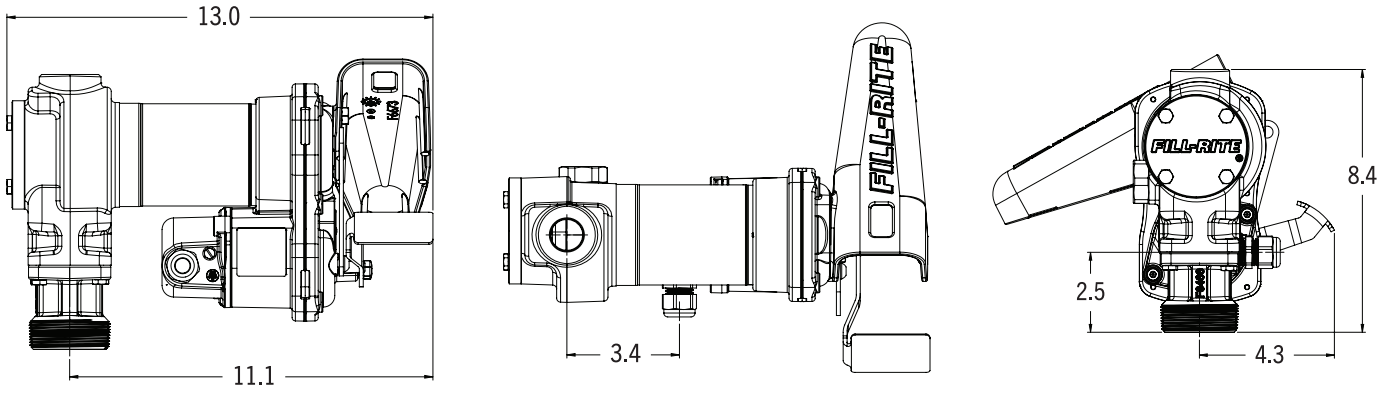
**Power cord not included in pump only models*

	Description		FR1200	FR4200	SD1200	FR4400	FR2400	FR600	SD600
Pump	Maximum GPM		15	20	13	20	15		13
	Bypass Pressure		16 PSI						
	Minimum Dry Vac		5 IN-HG						
	At Sea Level 70° F (21.1° C)	Suction Lift	8' Maximum						
		Outlet Head	37' Maximum						
	Inlet		1" NPT						
	Outlet		3/4" NPT*	1" NPT*	3/4" NPT*	1" NPT*	3/4" NPT*		
	Mount		H Models: 2" NPT Bung Adapter with 1" NPT Inlet HE Pump Only Models: 2" BSPT Bung Adapter with 1" BSPP Inlet						
	Warranty		Limited Lifetime Warranty†		1 Year	Limited Lifetime Warranty†			1 Year

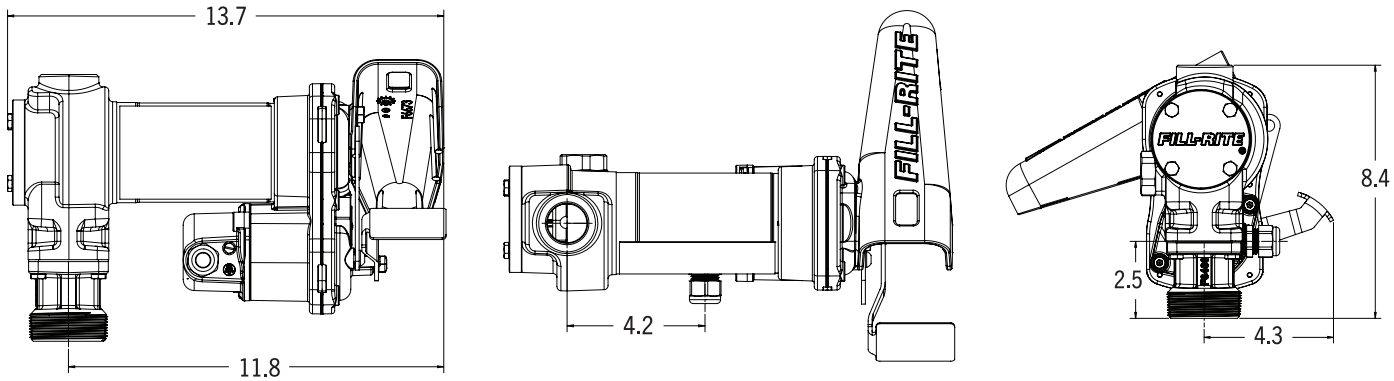
† Warranty details can be found at fillrite.com

** HE pump only models have BSPP outlets*

FR1200, FR2400, FR4400, FR600, SD1200, and SD600 *(Dimensions displayed in inches)*



FR4200 *(Dimensions displayed in inches)*



H-Series Model Information: FR1200, FR2400, FR4200, FR4400, FR600, SD1200, SD600

Model Number	Nozzle	Hose	Meter	Inlet Tube	Power Cord	Special	Voltage	Outlet
FR1204H	Pump Only Model							
FR1210H	Manual	12'		Metal Telescoping 20" - 34 ½"	12 AWG at 18'		12V DC	3/4"
FR1210HA	Auto Gasoline	12'						
FR1210HA1	Auto Diesel	12'						
FR1210HARC	Auto Arctic	15'				Swivel		
FR1210HN								
FR1211H	Manual	12'	807C					
FR1211HL	Manual	12'	807CL					
FR1211HLN			807CL					
FR1211HN			807C					
FR1219H	Manual	12'	TT10AN					
FR1220HDSQ	Auto Diesel	18'				Swivel		
FR1220HDSFQ	Auto Diesel	18'				Swivel Filter		
FR2404H	Pump Only Model							
FR2410H	Manual	12'		Metal Telescoping 20" - 34 ½"	12 AWG at 18'		24V DC	
FR2411H	Manual	12'	807C					
FR2411HL	Manual	12'	807CL					
FR4204H	Pump Only Model							
FR4210H	Manual	12'		Metal Telescoping 20" - 34 ½"	12 AWG at 18'		12V DC	1"
FR4210HARC	Auto Arctic	20'				Swivel		
FR4210HB	Ultra Hi-Flow	12'						
FR4210HD	Auto Diesel	12'						
FR4210HDS	Auto Diesel	12'				Swivel		
FR4210HBFQ	Ultra Hi-Flow	18'			10 AWG at 25' with clamps	Filter		
FR4210HN					12 AWG at 18'			
FR4211H	Manual	12'	901C					
FR4211HL	Manual	12'	901CL					
FR4211HLN			901CL					
FR4211HN			901C					
FR4219H	Manual	12'	TT10AN					
FR4220HDSQ	Auto Diesel	18'				Swivel		
FR4220HDSFQ	Auto Diesel	18'				Swivel Filter		

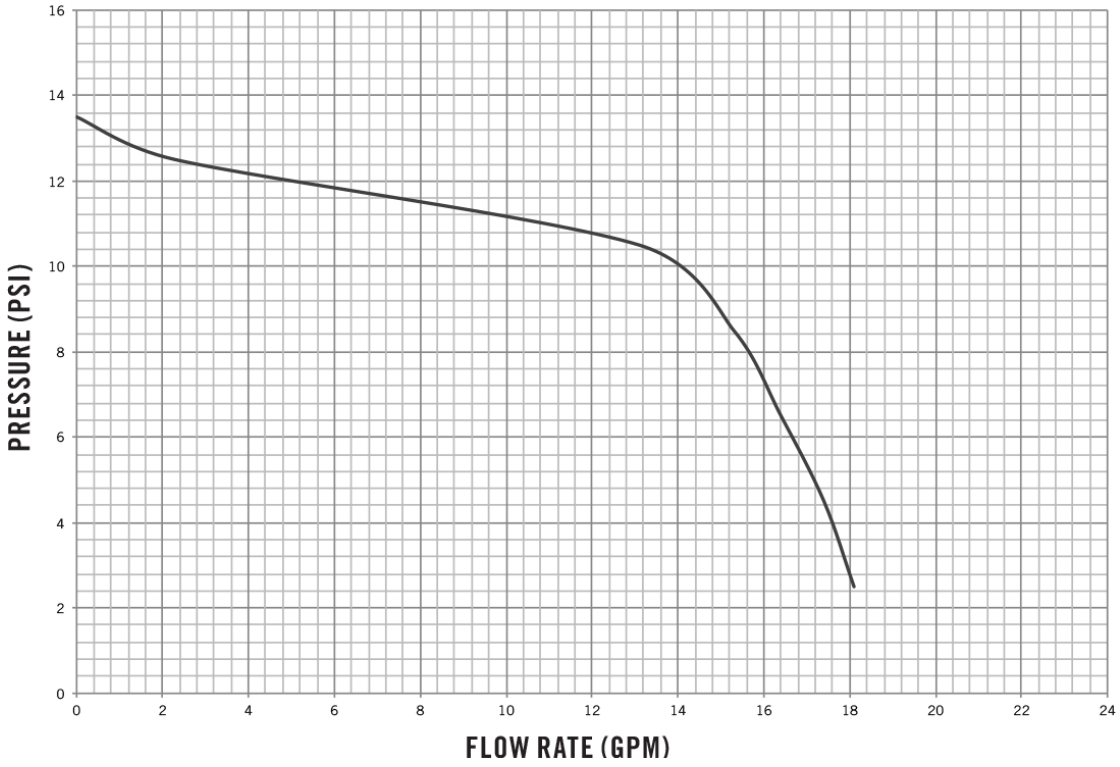
H-Series Model Information: FR1200, FR2400, FR4200, FR4400, FR600, SD1200, SD600 (continued)

Model Number	Nozzle	Hose	Meter	Inlet Tube	Power Cord	Special	Voltage	Outlet
FR4406H	Pump Only Model						24V DC	1"
FR4410H	Manual	12'		Metal Telescoping 20" - 34 ½"	12 AWG at 18'			
FR604H	Pump Only Model						115V AC	3/4"
FR610H	Manual	12' UL		Metal Telescoping 20" - 34 ½"				
FR610HA	Auto Gasoline	12' UL						
SD1202H	Manual	10'		PVC, 15 ¼" - 29 ¼"	12 AWG at 15'		12V DC	
SD1202HA	Auto Gasoline	10'			12 AWG at 15'			
SD602H	Manual	12' UL		PVC, 15 ¼" - 43 ¼"			115V AC	

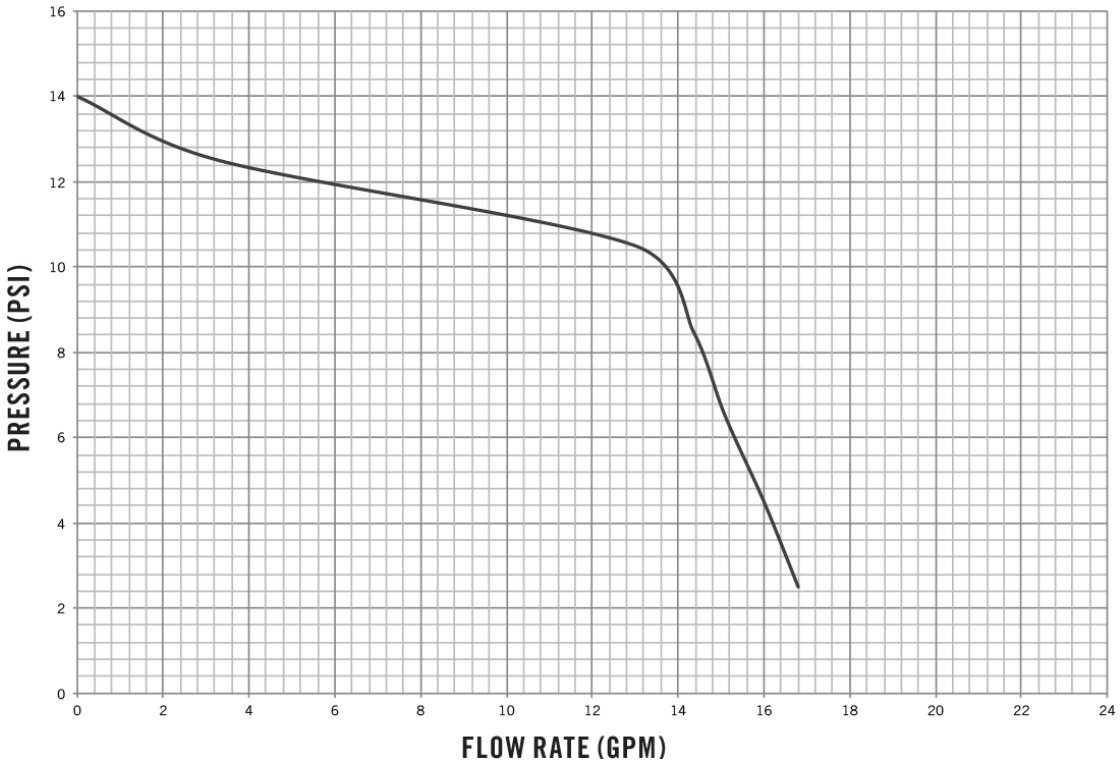
HE-Series Model Information: FR1200E, FR2400E, FR4200E, FR4400E

Model Number	Nozzle	Hose	Meter	Inlet Tube	Power Cord	Voltage	Outlet
FR1205HE	Pump Only Model					12V DC	3/4"
FR1210HE	Manual	12'		Metal Telescoping 20" - 34 ½"	12 AWG at 18'		
FR1210HEA	Auto Gasoline	12'					
FR1211HEL	Manual	12'	807CL				
FR1211HELA	Auto Gasoline	12’	807CL				
FR2405HE	Pump Only Model					24V DC	
FR2410HE	Manual	12'		Metal Telescoping 20" - 34 ½"	12 AWG at 18'		
FR2410HEA	Auto Gasoline	12’					
FR2411HEL	Manual	12'	807CL				
FR2411HELA	Auto Gasoline	12'	807CL				
FR4205HE	Pump Only Model					12V DC	1"
FR4210HE	Manual	12'		Metal Telescoping 20" - 34 ½"	12 AWG at 18'		
FR4210HEB	Ultra Hi-Flow	12’					
FR4210HEBL	Ultra Hi-Flow	12'	901CL				
FR4211HEL	Manual	12'	901CL				
FR4405HE	Pump Only Model					24V AC	

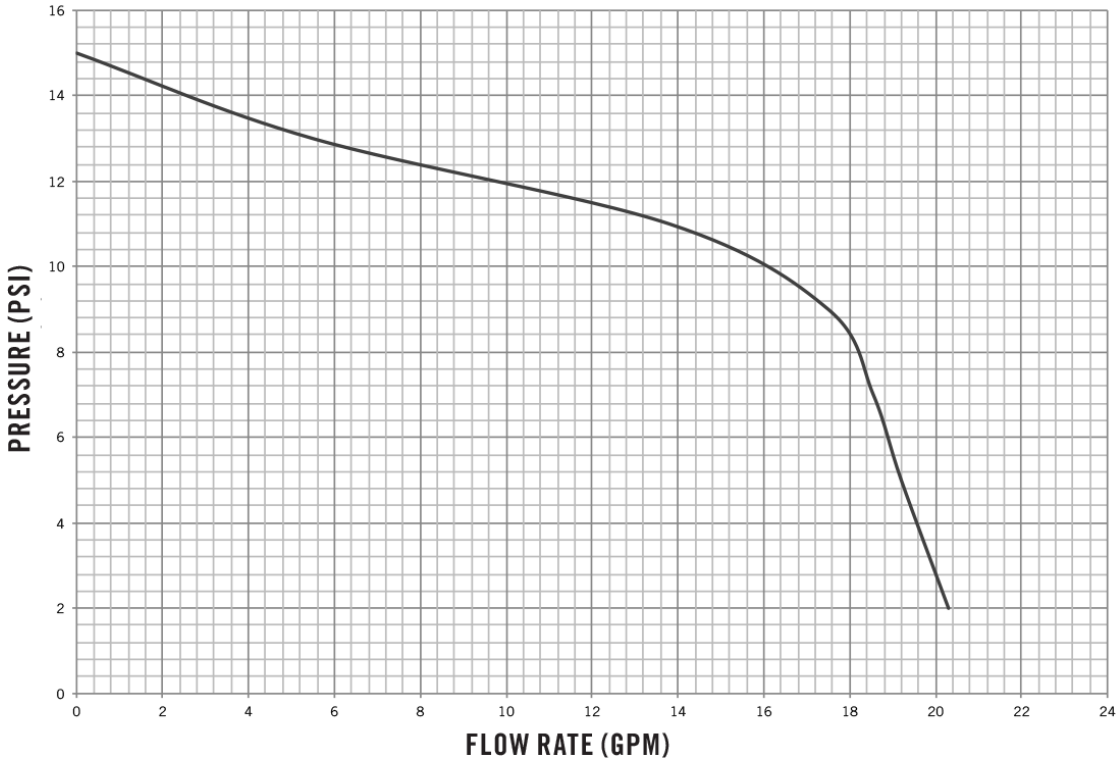
1200 Series Performance Curve



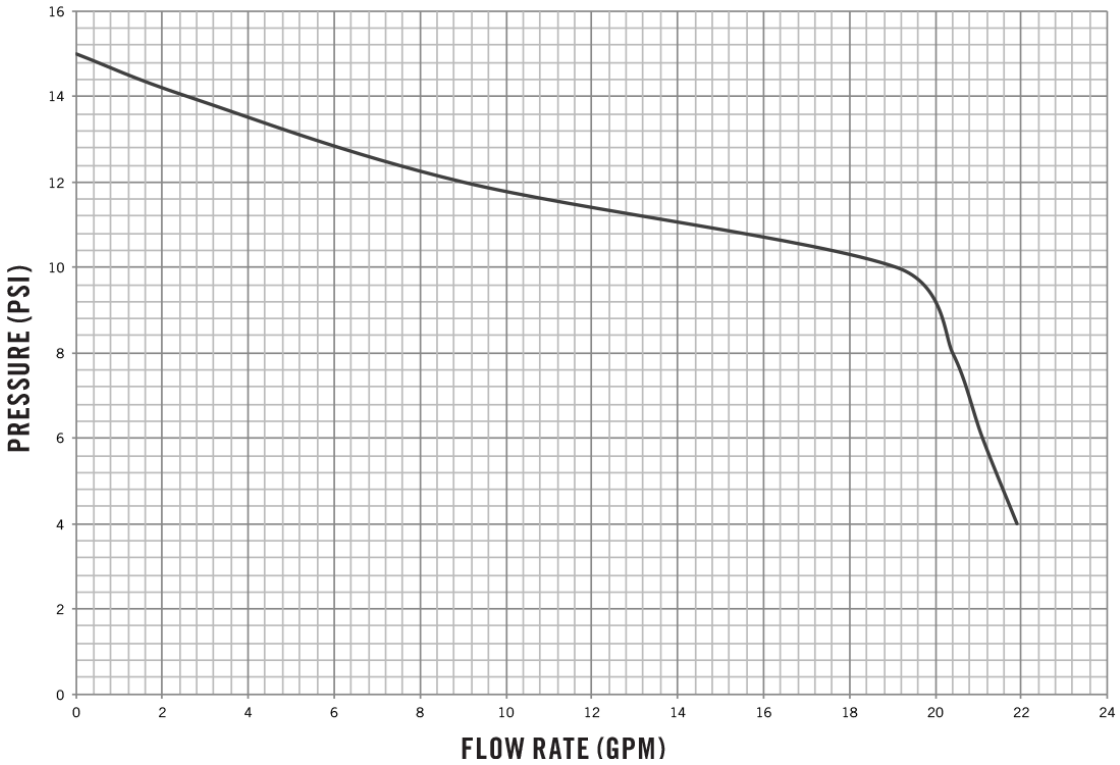
2400 Series Performance Curve



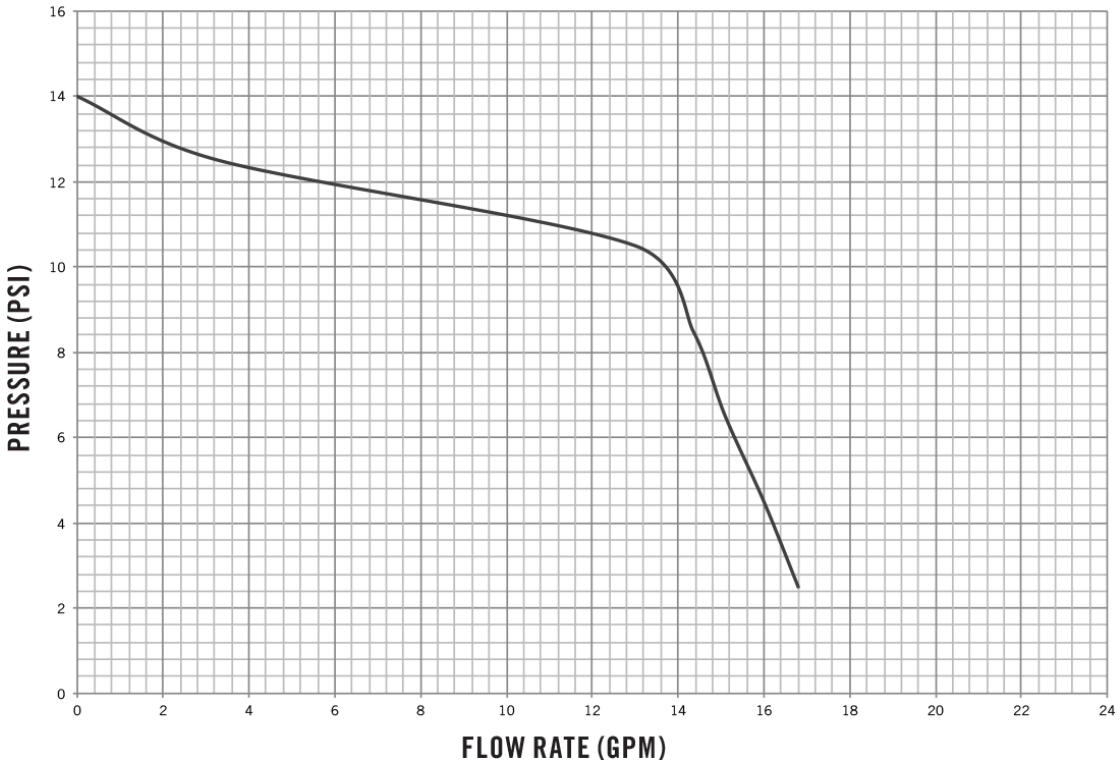
4200 Series Performance Curve



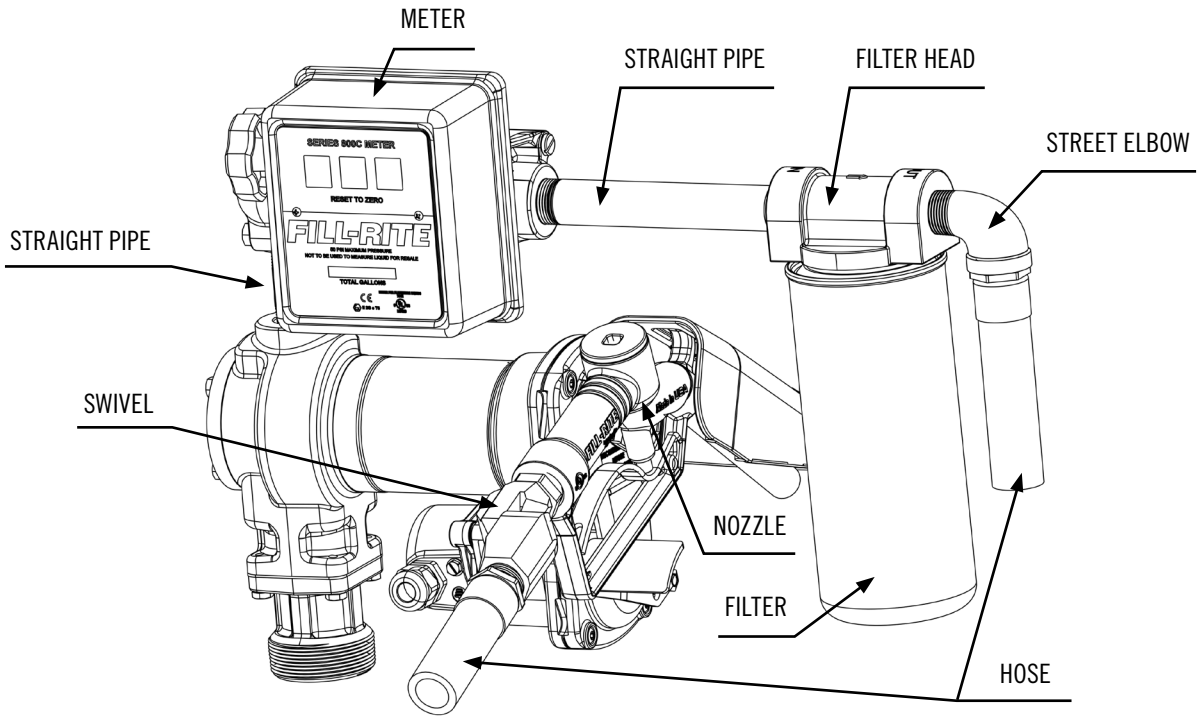
4400 Series Performance Curve



600 Series Performance Curve



Accessories

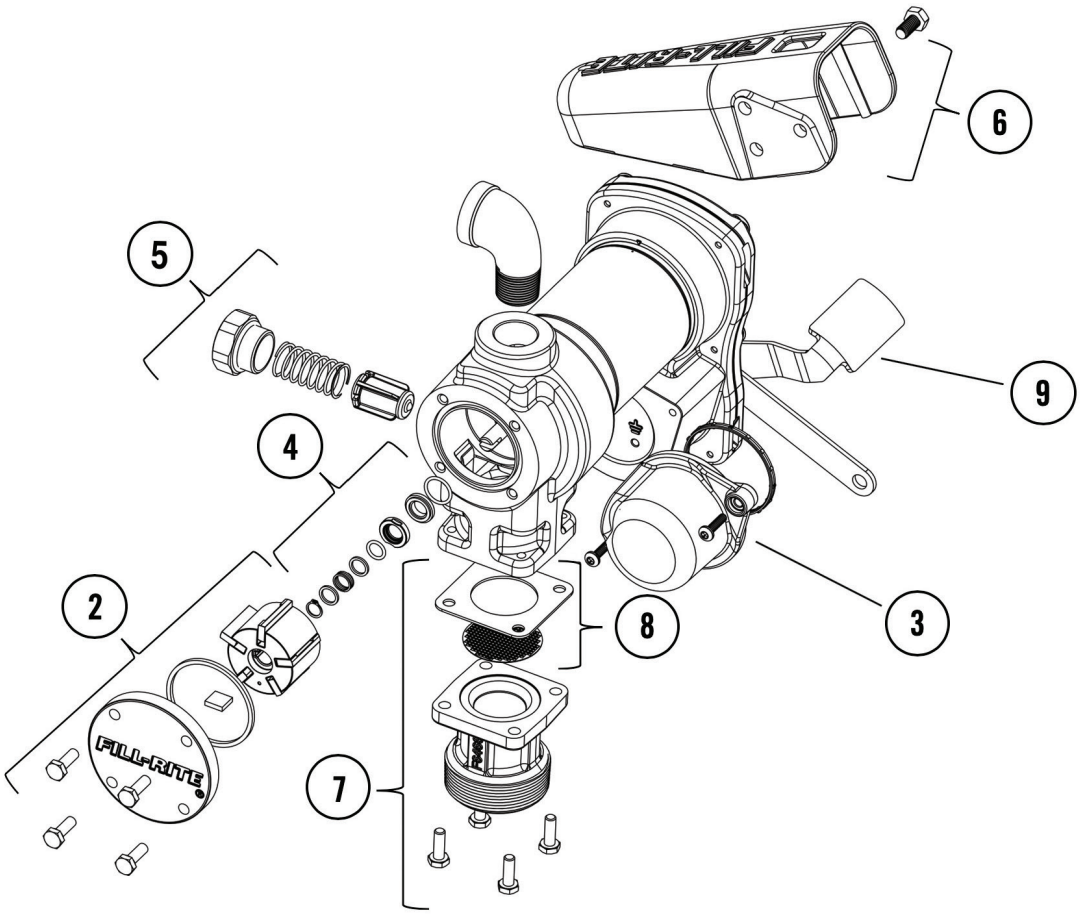


Proper Accessory Configuration

Accessories (continued)

Accessory	Series		Outlet Size		Notes
			3/4"	1"	
Nozzle	Manual		FRHMAN075S	FRHMN1005	Gasoline/Diesel
	Automatic	Hi-Flow	N075UAU10	N100DAU12	Red Boot
			N075DAU10	N100DAU12G	Green Boot
		Arctic	FRNA075DAU10	FRNA100DAU00	Cold Weather (-40˚F/˚C)
		Ultra Hi-Flow		N100DAU13	Red Boot
				N100DAU13G	Green Boot
				N100DAU13Y	Yellow Boot
Hose	12', UL Rated		700F3135	300F7773	Gasoline, Diesel, Kerosene, and Petroleum Oils compatible
	12'		FRH07512	FRH10012	
	14'		FRH07514	FRH10014	
	20'		FRH07520	FRH10020	
Meter	Mechanical	800	807CMK		Gallons
			807CLMK		Liters
		900		901CMK4200	Gallons
				901CLMK4200	Liters
	Digital	900		900CD	Programmable
				900CDP	Programmable with Integral Pulsar
		TT		TT10AB	BSPP, Aluminum
				TT10ABC	BSPP, Nickel-Plated
				TT10AN	NPT, Aluminum
				TT10ANC	NPT, Nickel-Plated
Swivel	Multi-Plane		S075H1314	S100H1315	360˚ Rotation
Filter	Heads		1200KTG9075 (F18 Filters)	700ACCF7017 (F40 Filters)	Gasoline/Diesel compatible
	Particulate		F1810PM0 (10 Micron/18GPM)	F4010PM0 (10 Micron/40GPM)	
				F4030PM0 (30 Micron/40GPM)	
	Hydrosorb		F1810HM0 (10 Micron/18GPM)		

Pump Service Kits



#	Kit	Description	Parts
1	KIT120BD*	BioDiesel Kit	O-ring, inlet and bypass cap seals, bypass valve poppet
2	KIT120RGG	Rotor and Vane Kit	Rotor cover, rotor, vanes, rotor key, O-ring seal, attaching hardware
3	KIT120JCH	Junction Cover Kit	Junction cover, seal, fasteners
4	KIT120SL	Seal Kit	O-ring, shaft seals, retainer clip
5	KIT120BV	Bypass Service Kit	Bypass valve, valve spring, bypass cap, O-ring seal
6	KIT120NB	Nozzle Boot Kit	Nozzle boot, attaching hardware
7	KIT120BG	Inlet Flange Kit	Inlet flange (bung), attaching hardware, inlet seal, screen
8	KIT120SG	Inlet Gasket and Screen	Gasket for inlet (bung) and screen
9	KIT120SWH	Switch Lever Kit	Switch lever, mounting hardware

**KIT120BD not called out in diagram above*

Safety Testing Approvals

The Fill-Rite line of pumps have been safety tested for regulatory compliance. This product family is approved by UL/cUL. For the "E" series products they are approved to ATEX, IECEx, INMETRO, EAC, and CE.

Segurança

c UL us LISTED | CE 2809 | IEx OCP 0064 | INMETRO | EAC | Ex ATEX

The following standards were used to show compliance in the European Union:

EN IEC 60079-0:2018, Ed 7 "Explosive atmospheres – Part 0: Equipment – General requirements"

EN 60079-1:2014, Ed 7 "Explosive atmospheres – Part 1: Equipment protection by flameproof enclosures "d""

EN ISO 80079-36:2016, Ed 1 "Explosive atmospheres – Part 36: Non-electrical equipment for explosive atmospheres – Basic method and requirements"

EN ISO 80079-37:2016, Ed 1 "Explosive atmospheres – Part 37: Non-electrical equipment for explosive atmospheres – Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k""

Directive 2014/34/EU – Equipment and protective systems intended for use in potentially explosive atmospheres.

Directive 2011/65/EU – Restrictions of the use of certain hazardous substances in electrical and electronic equipment.

The following standards were used to show compliance for IECEx certification:

IEC 60079-0:2017, Ed 7
IEC 60079-1:2014, Ed 7

Motor Tag Information

The Motor Tag on your Fill-Rite pump contains important technical and performance information. Be certain this label remains affixed to the pump at all times.

Ex
II 2 G
Ex db h IIA T5 or T6 Gb
FM19ATEX0019X
IECEx FMG19.0013X
Ex db IIA T5 or T6 Gb

Installation

Pump must be installed in compliance with EN 60079-14 or IEC 60079-14, as applicable.

Material of Construction

Materials of construction of the external surface of the unit: painted steel, painted cast iron, painted aluminum, zinc plated steel.

Materials of construction of the wetted parts: cast iron, zinc plated steel, 300 series stainless steel, bronze, carbon, ceramic, polyester, fiber, fluorocarbon, buna.

Repair and Maintenance

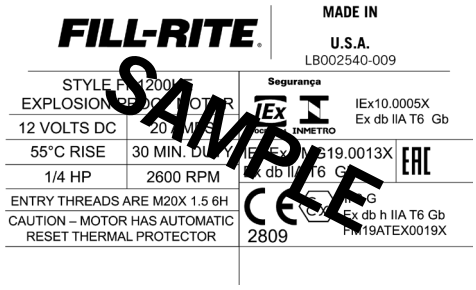
Contact the place of purchase for warranty repair and maintenance.

Specific Conditions of Use

1. Consult the manufacturer if dimensional information on the flameproof joints is necessary.
2. ISO Class 4.6, M5 hex-head screws (Yield Stress 240 MPa) shall be used to replace the DC Motor terminal cover fasteners.
3. ISO Class 8.8, M6 hex-head screws (Yield Stress 640 MPa) shall be used to replace the DC Motor motor tie-rod fasteners.
4. An electrically conductive hose and nozzle must be used with flammable liquids. To minimize static electricity buildup, always keep the nozzle in contact with the container being filled during the fueling process.

Motor Tag Information

The motor tag on your Fill-Rite pump contains important technical and performance information. Be certain this label remains affixed to the pump at all times.



FILL-RITE
A GORMAN-RUPP COMPANY

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Fort Wayne, Indiana 46809 USA

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1 (260) 747-7524
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GORMAN-RUPP COMPANY

fillrite.com | sotera.com | gormanrupp.com

ATTACHMENT D

KISSING TREE GOLF MAINTENANCE FACILITY
Aboveground Storage Tank Facility Plan

Attachment D – Spill and Overfill Control

The Kissing Tree Golf Maintenance Facility Aboveground Storage Tank (AST) Facility Plan proposes two (2) fuel tanks for storage of diesel and gasoline, respectively, to service machinery and vehicles needed for the golf course operations. These 515-gallon tanks are located within an overall fenced and gated 1.62-acre maintenance site. The tanks themselves will be located on a 500 square foot (SF) concrete pad surrounded by removable bollards.

Fuel Tank Description

The two (2) proposed aboveground storage tanks will be used to store diesel and gasoline, respectively, to fuel machinery and vehicles utilized by the Kissing Tree Golf Maintenance Facility. The double-walled steel tanks are both constructed to the UL-142 standard. The proposed piping is fifteen-feet (15') of one-inch (1") hose from the tanks to nozzles with an automatic shut-off feature. The tanks are constructed of materials that are compatible with the liquids stored (diesel and gasoline) within and have the appropriate safety equipment, such as primary and emergency venting and overfill protection.

The primary tanks are wholly contained within secondary tanks, and the interstitial space between the tanks is hollow. If failure occurs in the primary tank, all fuel will be trapped within the secondary tank. The tanks will be placed within a containment pan able to hold 575 gallons. Additionally, these tanks will be visited several times daily by the site supervisor and golf facility maintenance team.

Base-Mounted Fuel Tank factory installed and piped includes the following features:

a. Double-wall, steel construction tanks
b. Mechanical fuel level gauge
c. A manual shutoff valve
d. All interconnecting pipes and hoses; threaded pipe connections
e. Emergency vents on primary and secondary tanks in accordance with NFPA 30

AST Filling

Spill prevention for the AST filling will be achieved at the fuel filling with a lockable cap. This system includes all valves and fittings necessary for hose connection from the pumper truck. Human presence and observation of the filling process is another means to prevent spills and overfills. There shall be an experienced, trained person at the fill point at all times that a fill operation is taking place. The refueling tanker trucks are equipped with fuel spill containment kits for minor spills.

ATTACHMENT E

Attachment E – Response Actions to Spills

General Measures:

- To the extent that the work product can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- Develop an inventory of potentially polluting materials, including their estimated quantities and size and number of storage containers. Use inventory to determine the size and type of spill kits that should be present at the site.
- Store hazardous materials and wastes in covered containers and prevent form vandalism.
- Provide spill-cleanup kits at locations where spills are most likely to occur, such as fueling and maintenance areas. Kits are available from several manufacturers or may be prepared by the facility owner. Each spill kit should have sufficient adsorbent capacity to handle a spill of the largest movable container at that location.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals to oversee and enforce control measures.
- Spills should be covered and protected from stormwater run-on during rainfall to the extent that it does not compromise clean-up activities.
- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup and spill reporting instructions for hazardous materials stored or used on the site in an open, conspicuous, and accessible location.

In the event of an accidental leak or spill:

- Spill must be contained and cleaned up immediately.
- Spills will not be merely buried or washed with water.
- Contractor shall take action to contain spill. Contractor may use sand or other absorbent material stockpiled on site to absorb spill. Absorbent material should be spread over the spill area to absorb the spilled product.

- In the event of an uncontained discharge the contractor shall utilize onsite equipment to construct berms downgradient of the spill with sand or other absorbent material to contain and absorb the spilled product.

- Spill containment/absorbent materials along with impacted media must be collected and stored in such a way so as not to continue to affect additional media (soil/water). Once the spill has been contained, collected material should be placed on poly or plastic sheeting until removed from the site. The impacted media and cleanup materials should be covered with plastic sheeting and the edges weighed down with paving bricks or other similarly dense objects as the material is being accumulated. This will prevent the impacted media and cleanup materials from becoming airborne in windy conditions or impacting runoff during a rain event. The stockpiled materials should not be located within an area of concentrated runoff such as along a curb line or within a swale.

- Contaminated soils and cleanup materials will be sampled for waste characterization. When the analysis results are known the contaminated soils and cleanup materials will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.

- The contractor will be required to notify the owner, who will in turn contact TCEQ to notify them in the event of a significant hazardous/reportable quantity spill. Additional notifications as required by the type and amount of spill will be conducted by owner or owner's representative.

In the event of an accidental significant or hazardous spill:

The contractor will be required to report significant or hazardous spills in reportable quantities to:

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

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

- Notification should first be made by telephone and followed up with a written report.

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

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

- Contaminated soils will be sampled for waste characterization. When the analysis results are known the contaminated soils will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.

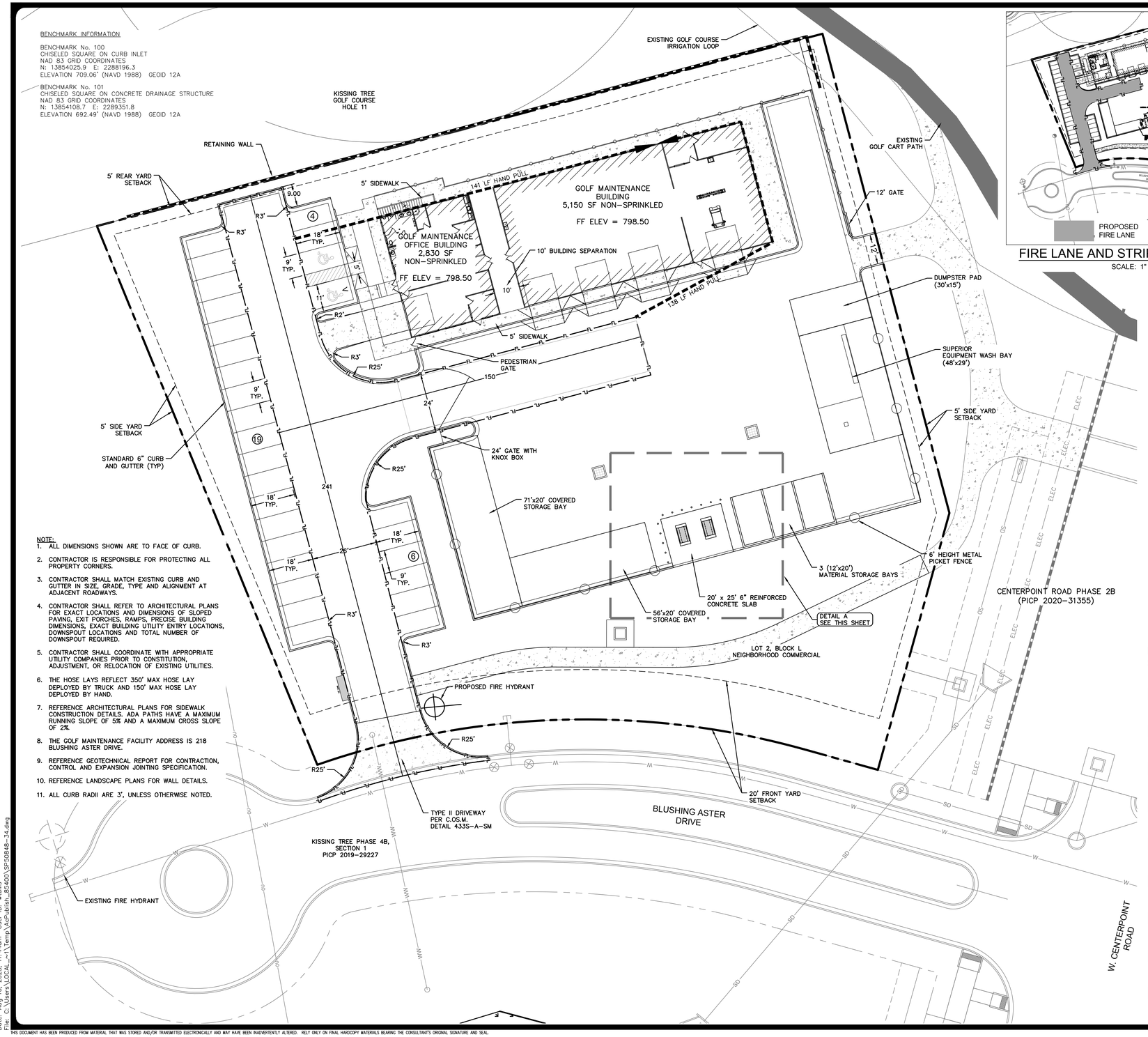
Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 1.4.16. Contractor shall review this section.

SITE PLAN

BENCHMARK INFORMATION

BENCHMARK No. 100
CHISELED SQUARE ON CURB INLET
NAD 83 GRID COORDINATES
N: 13854025.9 E: 2288196.3
ELEVATION 709.06' (NAVD 1988) GEOID 12A

BENCHMARK No. 101
CHISELED SQUARE ON CONCRETE DRAINAGE STRUCTURE
NAD 83 GRID COORDINATES
N: 13854108.7 E: 2289351.8
ELEVATION 692.49' (NAVD 1988) GEOID 12A



NOTE:
1. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB.
2. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL PROPERTY CORNERS.
3. CONTRACTOR SHALL MATCH EXISTING CURB AND GUTTER IN SIZE, GRADE, TYPE AND ALIGNMENT AT ADJACENT ROADWAYS.
4. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF SLOPED PAVING, EXIT PORCHES, RAMPS, PRECISE BUILDING DIMENSIONS, EXACT BUILDING UTILITY ENTRY LOCATIONS, DOWNSPOUT LOCATIONS AND TOTAL NUMBER OF DOWNSPOUT REQUIRED.
5. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANIES PRIOR TO CONSTITUTION, ADJUSTMENT, OR RELOCATION OF EXISTING UTILITIES.
6. THE HOSE LAYS REFLECT 350' MAX HOSE LAY DEPLOYED BY TRUCK AND 150' MAX HOSE LAY DEPLOYED BY HAND.
7. REFERENCE ARCHITECTURAL PLANS FOR SIDEWALK CONSTRUCTION DETAILS. ADA PATHS HAVE A MAXIMUM RUNNING SLOPE OF 5% AND A MAXIMUM CROSS SLOPE OF 2%.
8. THE GOLF MAINTENANCE FACILITY ADDRESS IS 218 BLUSHING ASTER DRIVE.
9. REFERENCE GEOTECHNICAL REPORT FOR CONTRACTION, CONTROL AND EXPANSION JOINTING SPECIFICATION.
10. REFERENCE LANDSCAPE PLANS FOR WALL DETAILS.
11. ALL CURB RADII ARE 3', UNLESS OTHERWISE NOTED.

FIRE LANE AND STRIPING LIMIT DETAIL
SCALE: 1" = 100'

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

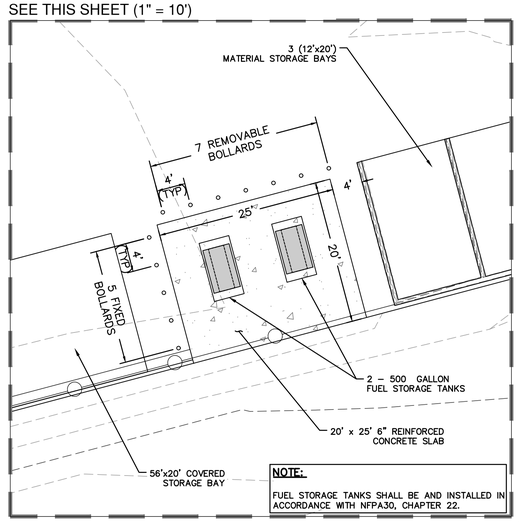
LEGEND
- PROPOSED PHASE LINE
- SIDEWALK THIS CONTRACT
- CURB STOP
- ADA PATH
- ADA RAMP SLOPE AT 12:1 MAX, TRANSITION CURB AS REQUIRED
- PARKING SPACES
- RETAINING WALL
- REINFORCED CONCRETE PAVEMENT (JRPCC)
- HMAC PAVEMENT (RESIDENTIAL STREETS)
- FIRE LANE
- 6' HEIGHT METAL PICKET FENCE

RECOMMENDATIONS - PAVEMENT THICKNESS SECTIONS

Street Classification	Subgrade Material	Flexible Pavement, in		Rigid Pavement, in
		HMAC	CLB	JRPCC
Residential Streets	More Than 2 Feet of High PI Clay (PI>20)	3.0	12	6
	Less Than 2 Feet of High PI Clay (PI>20)	2.5	8	6
Residential Collectors	More Than 2 Feet of High PI Clay (PI>20)	3.0	15	6
	Less Than 2 Feet of High PI Clay (PI>20)	2.5	10	6
Neighborhood Collectors	More Than 2 Feet of High PI Clay (PI>20)	3.0	23	7
	Less Than 2 Feet of High PI Clay (PI>20)	2.5	12	7
Minor Arterial	More Than 2 Feet of High PI Clay (PI>20)	4.0	25	-
	Less Than 2 Feet of High PI Clay (PI>20)	4.0	12	-
Major Arterial	More Than 2 Feet of High PI Clay (PI>20)	4.5	35	-
	Less Than 2 Feet of High PI Clay (PI>20)	4.0	20	-

Notes:
1. Abbreviations: HMAC - Hot Mixed Asphalt Concrete, CLB - Crushed Limestone Base, JRPCC - Jointed, Reinforced Portland Cement Concrete
2. These pavement thickness designs are intended to transfer the load from the anticipated traffic conditions.
3. The responsibility of assigning street classification to the streets in this project is left to the civil engineer.
4. If pavement designs other than those listed above are desired, please contact MLA Labs, Inc.
5. **Delineation between these different pavement thickness sections should be completed in the field by observation of open utilities trenches and the pavement subgrade by the Geotechnical Engineer of his designate.** Given the known variability of surface soils and the presence of faults at this site, the geotechnical engineer must verify the subgrade before installation of the pavement system can proceed. Multiple site visits may be required depending upon the construction schedule. Finalized distinction between pavement thickness section options shall be provided as addendums to this report as these observations are completed. Please contact the geotechnical engineer when the utility trenches are open.

FUEL STORAGE AREA
SEE THIS SHEET (1" = 10')



NOTE:
FUEL STORAGE TANKS SHALL BE AND INSTALLED IN ACCORDANCE WITH NFPA30, CHAPTER 22.

DATE
NO. REVISION

STATE OF TEXAS
STEVEN S. CRAUFORD
92677
LICENSED PROFESSIONAL ENGINEER
8/10/23

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

KISSING TREE - GOLF MAINTENANCE FACILITY
CITY OF SAN MARCOS, TEXAS

FUEL STORAGE PLAN

CITY JOB No. 2020-34265
JOB NO. 50848-34
DATE August 10, 2023
DESIGNER
CHECKED SC DRAWN
SHEET 01 OF 03

Date: Aug 10, 2023, 11:44am User ID: whillis
File: C:\Users\LOCAL ~1\Temp\AcPublish_8540\DWG\SP50848-34.dwg

CSP 2020-34265

TEMPORARY STORMWATER SECTION (TCEQ-0602)

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: Steven S. Crauford, P.E.

Date: 4/10/24

Signature of Customer/Agent:

Regulated Entity Name: Kissing Tree Golf Maintenance Facility

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: finished concrete pad. No construction activity is proposed with this AST.

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

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

☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

☒ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

☐ Fuels and hazardous substances will not be stored on the site.

2. ☒ **Attachment A - Spill Response Actions**. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.

3. ☒ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. ☒ **Attachment B - Potential Sources of Contamination**. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

5. ☒ **Attachment C - Sequence of Major Activities**. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.

   ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

   ☒ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: Cottonwood Creek

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

8. ☒ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

☐ **Attachment E - Request to Temporarily Seal a Feature**. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

☒ There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. ☒ **Attachment F - Structural Practices**. A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.

10. ☒ **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

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

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

☒ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

ATTACHMENT A

Attachment A – Spill Response Actions

In the event of an accidental leak or spill:

- Spill must be contained and cleaned up immediately.
- Spills will not be merely buried or washed with water.
- Contractor shall take action to contain spill. Contractor may use sand or other absorbent material stockpiled on site to absorb spill. Absorbent material should be spread over the spill area to absorb the spilled product.
- In the event of an uncontained discharge the contractor shall utilize onsite equipment to construct berms downgradient of the spill with sand or other absorbent material to contain and absorb the spilled product.
- Spill containment/absorbent materials along with impacted media must be collected and stored in such a way so as not to continue to affect additional media (soil/water). Once the spill has been contained, collected material should be placed on poly or plastic sheeting until removed from the site. The impacted media and cleanup materials should be covered with plastic sheeting and the edges weighed down with paving bricks or other similarly dense objects as the material is being accumulated. This will prevent the impacted media and cleanup materials from becoming airborne in windy conditions or impacting runoff during a rain event. The stockpiled materials should not be located within an area of concentrated runoff such as along a curb line or within a swale.
- Contaminated soils and cleanup materials will be sampled for waste characterization. When the analysis results are known the contaminated soils and cleanup materials will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.
- The contractor will be required to notify the owner, who will in turn contact TCEQ to notify them in the event of a significant hazardous/reportable quantity spill. Additional notifications as required by the type and amount of spill will be conducted by owner or owner's representative.

In the event of an accidental significant or hazardous spill:

The contractor will be required to report significant or hazardous spills in reportable quantities to:

- Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site. https://www.tceq.texas.gov/response/spills/spill_rq.html
- For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.

- Notification should first be made by telephone and followed up with a written report.

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

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

- Contaminated soils will be sampled for waste characterization. When the analysis results are known the contaminated soils will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.

Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 1.4.16. Contractor shall review this section.

ATTACHMENT B

Attachment B – Potential Sources of Contamination

Other potential sources of contamination during construction include:

- Potential Source
  - Asphalt products used on this project.
- Preventative Measure
  - After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.
- Potential Source
  - Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.
- Preventative Measure
  - Vehicle maintenance when possible will be performed within the construction staging area.
  - Construction vehicles and equipment shall be checked regularly for leaks and repaired immediately.
- Potential Source
  - Accidental leaks or spills of oil, petroleum products and substances listed under 40 CFR parts 110, 117, and 302 used or stored temporarily on site.
- Preventative Measure
  - Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures.
  - Contractor's superintendent or representative overseer shall enforce proper spill prevention and control measures.
  - Hazardous materials and wastes shall be stored in covered containers and protected from vandalism.
  - A stockpile of spill cleanup materials shall be stored on site where it will be readily accessible.
- Potential Source
  - Miscellaneous trash and litter from construction workers and material wrappings.
- Preventive Measure
  - Trash containers will be placed throughout the site to encourage proper trash disposal.
- Potential Source
  - Construction debris.
- Preventive Measure
  - Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.

Potential Source	● Spills/Overflow of waste from portable toilets
Preventative Measure	■ Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets. ■ Portable toilets will be placed on a level ground surface. ■ Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.

ATTACHMENT C

Attachment C – Sequence of Major Activities

All site construction is anticipated to be complete prior to AST installation: however, the sequence of major activities which disturb soil during construction on this site will be divided into two stages. The first is site preparation that will include installation of TBMPs, clearing and grubbing of vegetation where applicable. This will disturb approximately 1.62 acres. The second is construction of the maintenance facility with associated parking and drives, and installation of two (2) aboveground storage tanks on a concrete pad once the site construction has been completed. This will disturb approximately 1.62 acres.

ATTACHMENT D

Attachment D – Temporary Best Management Practices and Measures

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.

No upgradient water will cross the site. All TBMPs are adequate for the drainage areas they serve.

b. 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.

All site construction is anticipated to be complete prior to AST installation; however, site preparation, which is the initiation of all activity on the project, will disturb the largest amount of soil. Therefore, before any of this work can begin, the clearing and grading contractor will be responsible for the installation of all on-site control measures. The methodology for pollution prevention of on-site stormwater will include: (1) erection of silt fences along the downgradient boundary of construction activities for temporary erosion and sedimentation controls, (2) maintenance of existing rock berms downgradient from areas of concentrated stormwater flow for temporary erosion control, (3) installation of stabilized construction entrance/exit(s) to reduce the dispersion of sediment from the site, and (4) installation of construction staging area(s).

Prior to the initiation of construction, all previously installed control measures will be repaired or reestablished for their designed or intended purpose. This work, which is the remainder of all activity on the project, may also disturb additional soil. The construction contractor will be responsible for the installation of all remaining on-site control measures that includes installation of the concrete truck washout pit(s), as construction phasing warrants.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.

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

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.

d. 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.

BMP measures utilized in this plan are intended to allow stormwater to continue downstream after passing through the BMPs. This will allow stormwater runoff to continue downgradient to streams or features that may exist downstream of the site.

ATTACHMENT F

Attachment F – Structural Practices

The following structural measures will be installed prior to the initiation of site preparation activities:

- Erection of silt fences along the downgradient boundary of construction activities and maintenance of existing rock berms, as located on Sheet 6 of 35 and illustrated on Sheet 21 of 35.
- Installation of stabilized construction entrance/exit(s) and construction staging area(s), as located on Sheet 6 of 35, and illustrated on Sheet 21 of 35.

The following structural measures will be installed at the initiation of construction activities or as appropriate based on the construction sequencing:

- Installation of concrete truck washout pit(s), as required and located on Sheet 6 of 35 and illustrated on Sheet 22 of 35.

ATTACHMENT G

Attachment G – Drainage Area Map

No more than ten (10) acres will be disturbed for the proposed project. All TBMPs utilized are adequate for the drainage areas served.

ATTACHMENT I

INSPECTIONS

Designated and qualified person(s) shall inspect Pollution Control Measures weekly and within 24 hours after a storm event. An inspection report that summarizes the scope of the inspection, names and qualifications of personnel conducting the inspection, date of the inspection, major observations, and actions taken as a result of the inspection shall be recorded and maintained as part of Storm Water TPDES data for a period of three years after the Notice of Termination (NOT) has been filed. A copy of the Inspection Report Form is provided in this Storm Water Pollution Prevention Plan.

As a minimum, the inspector shall observe: (1) significant disturbed areas for evidence of erosion, (2) storage areas for evidence of leakage from the exposed stored materials, (3) structural controls (rock berm outlets, silt fences, drainage swales, etc.) for evidence of failure or excess siltation (over 6 inches deep), (4) vehicle exit point for evidence of off-site sediment tracking, (5) vehicle storage areas for signs of leaking equipment or spills, (6) concrete truck rinse-out pit for signs of potential failure, (7) embankment, spillways, and outlet of sediment basin (where applicable) for erosion damage, and (8) sediment basins (where applicable) for evidence that basin has accumulated 50% of its volume in silt. Deficiencies noted during the inspection will be corrected and documented within seven calendar days following the inspection or before the next anticipated storm event if practicable.

Contractor shall review Sections 1.3 and 1.4 of TCEQ's Technical Guidance Manual for additional BMP inspection and maintenance requirements.

Pollution Prevention Measure	Inspected in Compliance	Corrective Action Required	
		Description (use additional sheet if necessary)	Date Completed
Best Management Practices			
Natural vegetation buffer strips			
Temporary vegetation			
Permanent vegetation			
Sediment control basin			
Silt fences			
Rock berms			
Gravel filter bags			
Drain inlet protection			
Other structural controls			
Vehicle exits (off-site tracking)			
Material storage areas (leakage)			
Equipment areas (leaks, spills)			
Concrete washout pit (leaks, failure)			
General site cleanliness			
Trash receptacles			
Evidence of Erosion			
Site preparation			
Roadway or parking lot construction			
Utility construction			
Drainage construction			
Building construction			
Major Observations			
Sediment discharges from site			
BMPs requiring maintenance			
BMPs requiring modification			
Additional BMPs required			

_____ A brief statement describing the qualifications of the inspector is included in this SWP3.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

"I further certify I am an authorized signatory in accordance with the provisions of 30 TAC §305.128."

Inspector's Name _____ Inspector's Signature _____ Date _____

PROJECT MILESTONE DATES

Date when major site grading activities begin:

Construction Activity	Date
Installation of BMPs	

Dates when construction activities temporarily or permanently cease on all or a portion of the project:

Construction Activity	Date

Dates when stabilization measures are initiated:

Stabilization Activity	Date
Removal of BMPs	

ATTACHMENT J

Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

Interim on-site stabilization measures, which are continuous, will include minimizing soil disturbances by exposing the smallest practical area of land required for the shortest period of time and maximizing use of natural vegetation. As soon as practical, all disturbed soil will be stabilized as per project specifications in accordance with pages 1-35 to 1-60 of TCEQ's Technical Guidance Manual (TGM) RG-348 (2005). Mulching, netting, erosion blankets and seeding are acceptable.

Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided below, will be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practicable.

AGENT AUTHORIZATION FORM (TCEQ-0599)

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

I Chad Matheson,
Print Name

Regional Vice President, Finance,
Title - Owner/President/Other

of Carma Paso Robles, LLC,
Corporation/Partnership/Entity Name

have authorized **Pape-Dawson Consulting Engineers, LLC**
Print Name of Agent/Engineer

of **Pape-Dawson Consulting Engineers, LLC**
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

4/4/2024
Date

THE STATE OF Texas §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Chad Matheson 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 4 day of April, 2024.

Kathleen M Sepulveda II
NOTARY PUBLIC

KATHLEEN M. SEPULVEDA II
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 2-11-2026

KATHLEEN M. SEPULVEDA, II
Notary Public, State of Texas
Comm. Expires 02-11-2026
Notary ID 133585119

APPLICATION FEE FORM (TCEQ-0574)

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Kissing Tree Golf Maintenance Facility
Regulated Entity Location: 300 LF south of W Centerpoint Rd & Golden Currant Ln intersection
Name of Customer: Carma Paso Robles, LLC
Contact Person: Chad Matheson Phone: (512) 391-4343
Customer Reference Number (if issued):CN 603437310
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☒ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

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

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

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	$
Sewage Collection System	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: _____

Application Fee Schedule

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

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	***Fee***
Extension of Time Request	$150

CORE DATA FORM
(TCEQ-10400)

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 603437310		RN

SECTION II: Customer Information

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

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

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

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

Carma Paso Robles, LLC

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

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

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

13. Independently Owned and Operated?
☐ **Yes** ☐ **No**

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

☐ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:

City		State		ZIP		ZIP + 4	

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

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

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (*If 'New Regulated Entity" is selected below this form should be accompanied by a permit application*)

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

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

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

Kissing Tree Golf Maintenance Facility

23. Street Address of the Regulated Entity: *(No PO Boxes)*								
	City		**State**		**ZIP**		**ZIP + 4**	
24. County	Hays							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Approximately 300 LF south og W Centerpoint Rd & Golden Currant Lane intersection				
26. Nearest City			**State**	**Nearest ZIP Code**	
San Marcos			TX	78666	
27. Latitude (N) In Decimal:	29.842297 N	**28. Longitude (W) In Decimal:**	-98.002719 W		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	50	32.3	-98	00	09.8

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)
7992		713910	

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

Golf course maintenance facility

34. Mailing Address:	**9600 N Mopac Expressway, Ste 750**							
	City	**Austin**	**State**	**TX**	**ZIP**	**78759**	**ZIP + 4**	

35. E-Mail Address:	**chad.matheson@brookfieldpropertiesdevelopment.com**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 391-4343		**( ) -**

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

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

SECTION IV: Preparer Information

40. Name:	Jean Autrey, P.E., CESSWI	**41. Title:**	Project Manager

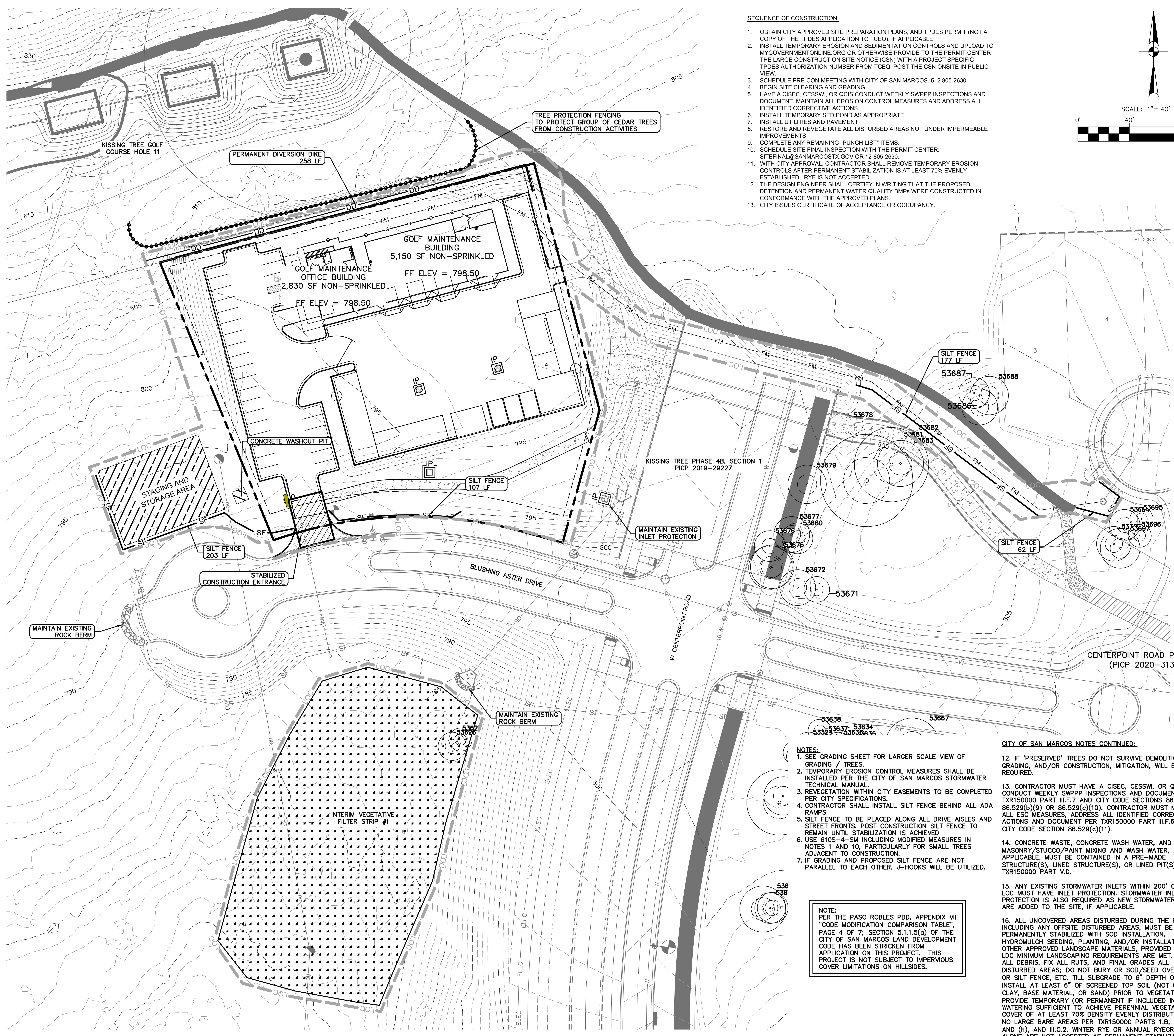
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(210) 375-9000		(210) 375-9010	jautrey@pape-dawson.com

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:	Pape-Dawson Consulting Engineers, LLC	**Job Title:**	Vice President
Name *(In Print):*	Steven Crauford, P.E.	**Phone:**	(512) 454- 8711
Signature:		**Date:**	4/10/24

EXHIBITS



SEQUENCE OF CONSTRUCTION:

1. OBTAIN CITY APPROVED SITE PREPARATION PLANS, AND TPDES PERMIT (NOT A COPY OF THE TPDES APPLICATION TO TCEQ), IF APPLICABLE.
2. INSTALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS AND UPLOAD TO MYGOVERNMENTONLINE.ORG OR OTHERWISE PROVIDE TO THE PERMIT CENTER THE LARGE CONSTRUCTION SITE NOTICE (CSN) WITH A PROJECT SPECIFIC TPDES AUTHORIZATION NUMBER FROM TCEQ. POST THE CSN ONSITE IN PUBLIC VIEW.
3. SCHEDULE PRE-CON MEETING WITH CITY OF SAN MARCOS. 512 805-2630.
4. BEGIN SITE CLEARING AND GRADING.
5. HAVE A CISEC, CESSWI, OR QCIS CONDUCT WEEKLY SWPPP INSPECTIONS AND DOCUMENT. MAINTAIN ALL EROSION CONTROL MEASURES AND ADDRESS ALL IDENTIFIED CORRECTIVE ACTIONS.
6. INSTALL TEMPORARY SED POND AS APPROPRIATE.
7. INSTALL UTILITIES AND PAVEMENT.
8. RESTORE AND REVEGETATE ALL DISTURBED AREAS NOT UNDER IMPERMEABLE IMPROVEMENTS.
9. COMPLETE ANY REMAINING "PUNCH LIST" ITEMS.
10. SCHEDULE SITE FINAL INSPECTION WITH THE PERMIT CENTER: SITEFINAL@SANMARCOSTX.GOV OR 12-805-2630.
11. WITH CITY APPROVAL, CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROLS AFTER PERMANENT STABILIZATION IS AT LEAST 70% EVENLY ESTABLISHED. RYE IS NOT ACCEPTED.
12. THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DETENTION AND PERMANENT WATER QUALITY BMPs WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
13. CITY ISSUES CERTIFICATE OF ACCEPTANCE OR OCCUPANCY.

NOTES:
1. SEE GRADING SHEET FOR LARGER SCALE VIEW OF GRADING / TREES.
2. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED PER THE CITY OF SAN MARCOS STORMWATER TECHNICAL MANUAL.
3. REVEGETATION WITHIN CITY EASEMENTS TO BE COMPLETED PER CITY SPECIFICATIONS.
4. CONTRACTOR SHALL INSTALL SILT FENCE BEHIND ALL ADA RAMPS.
5. SILT FENCE TO BE PLACED ALONG ALL DRIVE AISLES AND STREET FRONTS. POST CONSTRUCTION SILT FENCE TO REMAIN UNTIL STABILIZATION IS ACHIEVED
6. USE 610S-4-SM INCLUDING MODIFIED MEASURES IN NOTES 1 AND 10, PARTICULARLY FOR SMALL TREES ADJACENT TO CONSTRUCTION.
7. IF GRADING AND PROPOSED SILT FENCE ARE NOT PARALLEL TO EACH OTHER, J-HOOKS WILL BE UTILIZED.

NOTE:
PER THE PASO ROBLES PDD, APPENDIX VII "CODE MODIFICATION COMPARISON TABLE", PAGE 4 OF 7; SECTION 5.1.1.5(a) OF THE CITY OF SAN MARCOS LAND DEVELOPMENT CODE HAS BEEN STRICKEN FROM APPLICATION ON THIS PROJECT. THIS PROJECT IS NOT SUBJECT TO IMPERVIOUS COVER LIMITATIONS ON HILLSIDES.

LEGEND

Symbol	Description
SD	PROPOSED STORM DRAIN
SD	EXISTING STORM DRAIN
W	PROPOSED WATER LINE
W	EXISTING WATER LINE
	PROPOSED RIGHT OF WAY
	PROPOSED EASEMENT
725	PROPOSED MAJOR CONTOUR
724	PROPOSED MINOR CONTOUR
724	EXISTING MAJOR CONTOUR
724	EXISTING MINOR CONTOUR
200 (TREE PROTECTION FENCING)	PROTECTED TREES (SEE COSM DETAIL 610S-2-SM, SHEET 93)
200	REMOVED TREES
IP	CURB INLET PROTECTION
IP	AREA INLET PROTECTION
	ROCK BERM
LOC	LIMITS OF CONSTRUCTION
SF	SILT FENCE
DD	DIVERSION DIKE
	STABILIZED CONSTRUCTION ENTRANCE
	STAGING AND STORAGE AREA/ CONCRETE WASHOUT AREA
	AREA TO REMAIN NATURAL (NO GRADING)
	1% ANNUAL CHANCE FLOODPLAIN (DEVELOPED CONDITIONS) PER STUDY BY PAPE-DAWSON ENGINEERS
SF	POST CONSTRUCTION EROSION CONTROLS SILT FENCE PLACED AT EASEMENT LINE OR VEGETATION ESTABLISHMENT BEHIND CURB TO EASEMENT LINE.

CITY OF SAN MARCOS NOTES:

1. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) MUST BE DEVELOPED/AMENDED AND STAMPED BY A TX PE, CPESC, OR QPSWPPP [CITY CODE SECTION 86.529(b)(2) IR 86.529(c)(3)], AVAILABLE (HARD COPY, INCLUDING A FULL-SIZE SITE MAP) AT THE PRE-CON MEETING, KEPT ONSITE, AND UPDATED TO MATCH SITE CONDITIONS DURING THE PROJECT. THE ASSOCIATED TCEQ CONSTRUCTION SITE NOTICE MUST BE SUBMITTED TO THE PERMIT CENTER TO SCHEDULE THE PRE-CON MEETING AND POSTED IN PUBLIC VIEW (TXR150000 PART III.D.2.) PRIOR TO/AT THE PRE-CON MEETING.
2. IF THERE IS A BREAK OF MORE THAN 14 DAYS DURING THE PROJECT WHERE NO WORK IS DONE ON A SITE PORTION(S) WITHIN THE LOC, TEMPORARY (OR PERMANENT) STABILIZATION IS REQUIRED PER TXR150000 PART III.F.2.(b).iii/CITY CODE SECTION 86.529(a)(1)(g). SUCH DIRT WORK STOPPAGE INCLUDES TIME PERIODS BETWEEN ROUGH GRADING COMPLETION AND CONSTRUCTION START, BETWEEN CONSTRUCTION START AND FINAL GRADING, BETWEEN CONSTRUCTION AND FINAL STABILZATION, ETC.. USE TEMPORARY (OR PERMANENT) SEEDING, ROCK, GRAVEL (1" MINIMUM), CONCRETE RIP-RAP, DEGRADABLE STRAW MATTING, SHREDDED HARDWOOD MULCH, DEGRADABLE SOIL RETENTION BLANKETS, OR SIMILAR. NOTE THAT MATTING, MULCH, OR BLANKETS REQUIRE ONGOING MAINTENANCE.
3. BEFORE ANY DIRT WORK STARTS, ALL EROSION AND SEDIMENTATION CONTROLS (ESCs), AND TREE PROTECTION IF APPLICABLE, MUST BE INSTALLED PER CoSM STANDARD DETAILS AND THIS CITY-APPROVED PLAN AND THEIR INSTALLATION APPROVED BY A CITY ENVIRONMENTAL INSPECTOR AT AN ONSITE PRE-CON MEETING. CALL PERMIT CENTER AT 512-805-2630 TO SCHEDULE. [TXR150000 PART III.G.1. AND CITY CODE SECTION 86.529.(a)(1)]
4. SAN MARCOS CITY CODE SUBPART A, CHAP. 14, ART. 2, SEC. 14.026, §3305.2 CONSTRUCTION DEBRIS / TRASH CONTAINMENT. CONTRACTORS SHALL ENSURE THAT EVERY CONSTRUCTION, REMODEL, REPAIR, OR RENOVATION SITE HAS A METHOD OF CONTAINMENT FOR CONSTRUCTION DEBRIS AND TRASH. THE CONTRACTOR SHALL ENSURE THAT CONSTRUCTION DEBRIS AND TRASH ARE REMOVED FROM THE SITE ON A REGULAR BASIS SO THAT THE SITE IS MAINTAINED IN A CLEAN, SANITARY, AND SAFE CONDITION AT ALL TIMES
5. SAN MARCOS CITY CODE SUBPART A, CHAP. 14, ART. 2, SEC. 14.026, §3305.4 STREET CLEANING. ADJACENT STREETS TO THE CONSTRUCTION SITE SHALL BE MAINTAINED AND FREE OF DIRT, MUD, ROCKS AND OTHER CONSTRUCTION DEBRIS AT ALL TIMES. DIRT, GRAVEL, ETC., SHALL NOT BE SWEPT, WASHED, OR OTHERWISE DEPOSITED INTO UNPROTECTED STORM WATER CONVEYANCE SYSTEMS
6. SAN MARCOS CITY CODE SUBPART A, CHAP. 14, ART. 2, SEC. 14.026, §3305.5 SPOILS PILES. ALL SPOILS PILES SHALL BE UTILIZED ON SITE OR REMOVED FROM CONSTRUCTION SITES AS SOON AS POSSIBLE. WHILE ONSITE, ALL PILES MUST BE MINIMIZED IN HEIGHT, VOLUME AND FOOTPRINT, AND IN NO CASE SHALL PILES EXCEED EIGHT FEET IN HEIGHT. SEEDING OR COVERING OF UNDISTURBED PORTIONS OF SPOILS PILES IS REQUIRED IF THE PILES WILL NOT BE INCREASED OR DECREASED FOR MORE THAN 14 CALENDAR DAYS, AS SPECIFIED IN TPDES CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN REGULATIONS, REGARDLESS OF THE SIZE OF THE SITE AND/OR PILE. IN NO CASE SHALL SITE AND/OR BUILDING FINAL INSPECTIONS BE APPROVED UNTIL ALL SPOILS PILES HAVE BEEN REMOVED FROM CONSTRUCTION SITES
7. PER TXR150000 PART III.F.1(m)., LOCATIONS OF THE FOLLOWING, AS APPLICABLE, MUST BE MARKED ON THIS SHEET IN THE FIELD: THE TPDES CONSTRUCTION SITE NOTICE POSTING IN PUBLIC VIEW, SPOILS STORAGE, CONCRETE WASHOUT, DUMPSTERS, PORTABLE TOLIET(S), FUELING POINT(S), AND/OR OTHER POTENTIAL CONTAMINANT SOURCES. THIS SHEET MUST ALSO BE UPDATED AS THESE POTENTIAL CONTAMINANT SOURCES ARE MOVED OR OTHER CHANGES OCCUR ONSITE. DATE AND INITIAL ALL PEN AN DINK CHANGES.
8. THE LIMITS OF CONSTRUCTION SHALL BE ADJUSTED AS NEEDED DURING THE PROJECT TO COVER ALL AREAS DISTURBED DURING DEMOLITION, GRADING, CONSTRUCTION, STORAGE, STOCKPILING, PARKING, ETC., PER TXR150000 PARTS I AND III.G.4.(c) AND (d) ADDITIONAL ESCs MAY BE REQUIRED
9. POND OR OTHER DISTURBED SLOPES 3:1 OF FLATTER MUST BE PERMANENTLY STABILIZED WITH SEED AND BIODEGRADABLE SOIL RETENTION BLANKETS WITH NO PLASTIC NETTING. DISTURBED SLOPES EXCEEDING 3:1 REQUIRE SEED AND BLANKETS OR EQUIVALENT UNTIL REVEGETATION IS ESTABLISHED. OR SOD. [CoSM 2/15/2019 MODIFICATIONS TO THE CoA AND TXDOT STANDARD SPECIFICATIONS.]
10. PER LDC SECTION 6.4.2.4.A., ALL PRESERVED TREES ON A DEMOLITION OR CONSTRUCTION SITE SHALL BE PROVIDED PROTECTION FOR A MINIMUM OF 75% OF THEIR ROOT PROTECTION ZONE IN ACCORDANCE WITH CITY OF SAN MARCOS STANDARD DETAILS AND TECHNICAL SPECIFICATIONS. TREE PROTECTION IS REQUIRED TO KEEP ALL FORMS OF ACTIVITY OUTSIDE OF ROOT PROTECTION ZONES INCLUDING VEHICLE PARKING, GRADING OPERATIONS, CONSTRUCTION, NEEDED WORKSPACE ALONG THE EDGE(S) OF CONSTRUCTION, STORAGE OF MATERIALS, EQUIPMENT, OR SPOILS, ETC. TREE PROTECTION SHOULD NOT BE MOVED DURING DEMOLITION, GRADING OR CONSTRUCTION.
11. INSTALL TREE PROTECTION AS SHOWN AT EDGES OF ROOT PROTECTION ZONES, TO THE EXTENT FEASIBLE NEAR GRADING, CONSTRUCTION, ETC., FOR ALL TREES TO BE PRESERVED, PER LDC SECTION 6.4.2.4.A. AND STANDARD DETAILS 610S-1-SM, 610S-2-SM, 610S-4-SM. USE MODIFIED MEASURES IN NOTES 1 AND 10 OF STANDARD DETAIL 610S-4-SM SINCE TREE PROTECTION LOCATION HAD TO BE ADJUSTED FOR GRADING AND CONSTRUCTION IN THIS PROJECT.

CITY OF SAN MARCOS NOTES CONTINUED:

12. IF 'PRESERVED' TREES DO NOT SURVIVE DEMOLITION, GRADING, AND/OR CONSTRUCTION, MITIGATION, WILL BE REQUIRED.

13. CONTRACTOR MUST HAVE A CISEC, CESSWI, OR QCIS CONDUCT WEEKLY SWPPP INSPECTIONS AND DOCUMENT OER TXR150000 PART III.F.7 AND CITY CODE SECTIONS 86.523 AND 86.529(b)(9) OR 86.529(c)(10). CONTRACTOR MUST MAINTAIN ALL ESC MEASURES, ADDRESS ALL IDENTIFIED CORRECTIVE ACTIONS AND DOCUMENT PER TXR150000 PART III.F.6-7 AND CITY CODE SECTION 86.529(c)(11).

14. CONCRETE WASTE, CONCRETE WASH WATER, AND MASONRY/STUCCO/PAINT MIXING AND WASH WATER, AS APPLICABLE, MUST BE CONTAINED IN A PRE-MADE STRUCTURE(S), LINED STRUCTURE(S), OR LINED PIT(S) PER TXR150000 PART V.D.

15. ANY EXISTING STORMWATER INLETS WITHIN 200' OF THE LOC MUST HAVE INLET PROTECTION. STORMWATER INLET PROTECTION IS ALSO REQUIRED AS NEW STORMWATER INLETS ARE ADDED TO THE SITE, IF APPLICABLE.

16. ALL UNCOVERED AREAS DISTURBED DURING THE PROJECT, INCLUDING ANY OFFSITE DISTURBED AREAS, MUST BE PERMANENTLY STABILIZED WITH SOD INSTALLATION, HYDROMULCH SEEDING, PLANTING, AND/OR INSTALLATION OF OTHER APPROVED LANDSCAPE MATERIALS, PROVIDED THAT LDC MINIMUM LANDSCAPING REQUIREMENTS ARE MET. REMOVE ALL DEBRIS, FIX ALL RUTS, AND FINAL GRADES ALL DISTURBED AREAS; DO NOT BURY OR SOD/SEED OVER DEBRIS OR SILT FENCE, ETC. TILL SUBGRADE TO 6" DEPTH OR INSTALL AT LEAST 6" OF SCREENED TOP SOIL (NOT GRADED CLAY, BASE MATERIAL, OR SAND) PRIOR TO VEGETATING. PROVIDE TEMPORARY (OR PERMANENT IF INCLUDED IN PLANS) WATERING SUFFICIENT TO ACHIEVE PERENNIAL VEGETATIVE COVER OF AT LEAST 70% DENSITY EVENLY DISTRIBUTED WITH NO LARGE BARE AREAS PER TXR150000 PARTS 1.B, III.G.1.(g) AND (h), AND III.G.2. WINTER RYE OR ANNUAL RYEGRASS ALONE ARE NOT ACCEPTED AS PERMANENT STABILIZATION.

NO.	REVISION	DATE

STATE OF TEXAS
STEVEN S. CRAUFORD
92677
LICENSED PROFESSIONAL ENGINEER
9/22/21

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

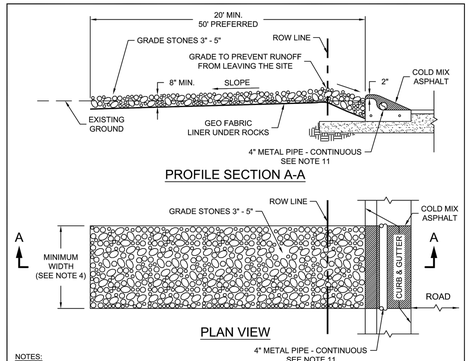
KISSING TREE - GOLF MAINTENANCE FACILITY
CITY OF SAN MARCOS, TEXAS

EROSION AND SEDIMENTATION CONTROL PLAN

CITY JOB No. 2020-34265
JOB NO. 50848-34
DATE September 22, 2021
DESIGNER
CHECKED SC DRAWN
SHEET 06 OF 35

CSP 2020-[illegible]

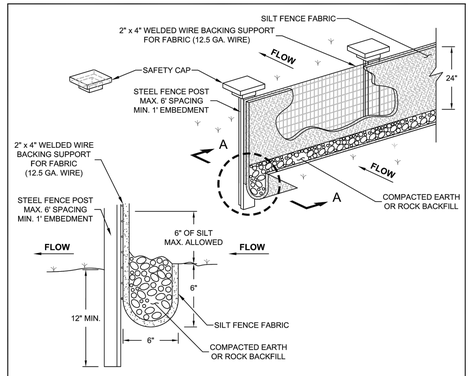
City Set



NOTES:

1. STONE SIZE: 3-5" OPEN GRADED ROCK.
2. LENGTH: 50' PREFERRED OR AS EFFECTIVE BUT NOT LESS THAN 20'.
3. THICKNESS: NOT LESS THAN 8".
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. DIMENSIONS OF SITE WILL DICTATE THE DIMENSIONS OF THE STABILIZED CONSTRUCTION ENTRANCES IF THE PREFERRED DIMENSIONS ARE NOT POSSIBLE ON SITE.
6. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
7. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASUREMENT DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENT THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
8. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
9. WHEN ALL SITE WORK IS COMPLETED, REMOVE STABILIZED CONSTRUCTION ENTRANCE COMPLETELY. REGRADE TO ORIGINAL CONDITION, ELEVATION AND RESTORE TO MATCH EXISTING OR PROPOSED CONDITIONS.
10. TOP OF GRADE STONES SHALL MATCH TOP OF EXISTING PAVEMENT OR CURB. COLD MIX ASPHALT & 4" METAL PIPE OR ALTERNATIVE WILL NOT BE REQUIRED WHERE THERE IS NO CATCH OR SPILL CURB.
11. PRE-FABRICATED CURB RAMPS ARE AN ACCEPTABLE ALTERNATIVE TO COLD MIX ASPHALT AND 4" METAL PIPE.

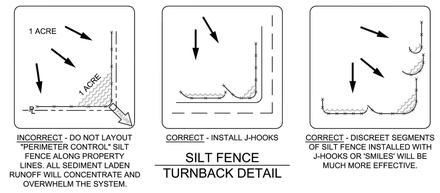
The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2021	STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY	1/1/2021	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1-SM
LAURIE MOYER, P.E.	ADOPTED		1 OF 1



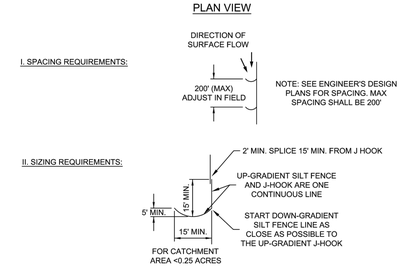
NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS SHALL MATCH THE TOP OF THE FENCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1'.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH MUST BE A MINIMUM OF 6" DEEP AND 6" WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY AND REPAIR OR REPLACEMENT SHALL BE MADE WITHIN 24 HOURS OF INSPECTION.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS PERMANENTLY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WITHIN 24 HOURS WHEN IT REACHES A DEPTH OF 6" OR AS DIRECTED BY OWNER. THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8. INSTALL J-HOOK SPACING PER ENGINEER'S DESIGN , BUT NOT TO EXCEED 200'.

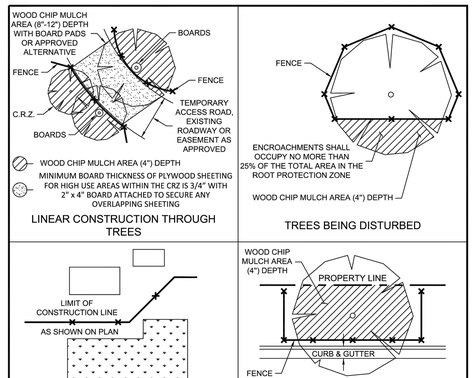
The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2021	SILT FENCE	
RECORD COPY SIGNED BY	1/1/2020	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1-SM
LAURIE MOYER, P.E.	ADOPTED		1 OF 2



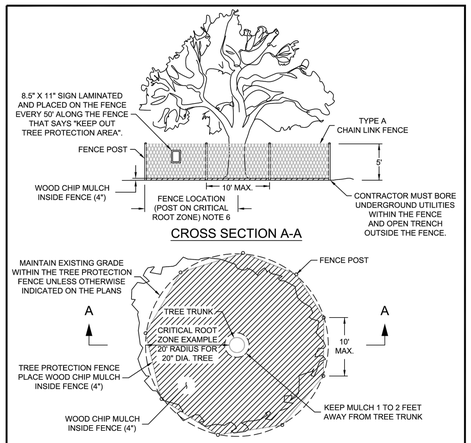
SILT FENCE PLACEMENT FOR PERIMETER CONTROL



The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2021	SILT FENCE	
RECORD COPY SIGNED BY	1/1/2020	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1-SM
LAURIE MOYER, P.E.	ADOPTED		2 OF 2



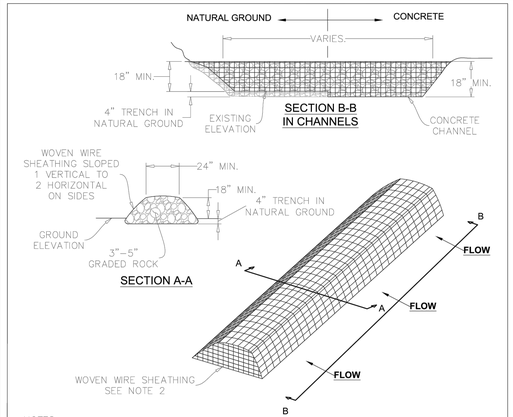
The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2021	TREE PROTECTION FENCE LOCATION	
RECORD COPY SIGNED BY	3/17/2017	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-1-SM
LAURIE MOYER, P.E.	ADOPTED		1 OF 1



NOTES:

1. SEE SPECIFICATIONS FOR ADDITIONAL TREE PROTECTION REQUIREMENTS.
2. IF THERE IS NO EXISTING IRRIGATION, SEE SPECIFICATIONS FOR WATERING REQUIREMENTS.
3. NO PRUNING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST.
4. NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
5. SEE TREE PRESERVATION PLAN FOR ANY MODIFICATIONS WITHIN THE TREE PROTECTION AREA.
6. ROOT PROTECTION ZONE EQUALS TO CRITICAL ROOT ZONE AND IS DETERMINED BY MEASURING THE TREE'S DIAMETER AT 54 INCHES FROM THE NATURAL GROUND LEVEL. FOR EVERY INCH IN DIAMETER THERE IS 1 FOOT RADIUS TREE PROTECTION.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2021	TREE PROTECTION FENCE TYPE A - CHAIN LINK	
RECORD COPY SIGNED BY	3/17/2017	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-2-SM
LAURIE MOYER, P.E.	ADOPTED		1 OF 1



NOTES

1. USE ONLY OPEN GRADED ROCK 3"-5" IN DIAMETER.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1" OPENINGS AND MINIMUM WIRE DIAMETER OF 20 GAUGE.
3. THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN WIRE SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT CONSTRUCTION, TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO 6", THE SILT WILL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SEVERE SERVICE ROCK BERMS.
6. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2021	ROCK BERM DETAIL	
RECORDED COPY SIGNED BY	8/4/2014	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	639S-1-SM
LAURIE MOYER, P.E.	ADOPTED	N.T.S.	STANDARD DETAIL

NO.	REVISION	DATE

STATE OF TEXAS
STEVEN S. CRAUFORD
92677
LICENSED PROFESSIONAL ENGINEER
9/22/21

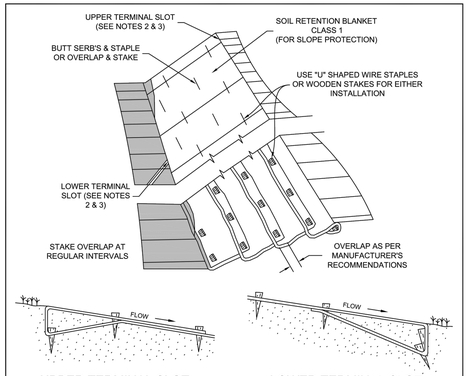
PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

KISSING TREE - GOLF MAINTENANCE FACILITY
CITY OF SAN MARCOS, TEXAS
ESC DETAILS 1 OF 2

CITY JOB No. 2020-34265
JOB NO. 50848-34
DATE September 22, 2021
DESIGNER
CHECKED SC DRAWN
SHEET 21 OF 35

Date: Sep 22, 2021, 5:39pm User ID: WTullis
File: I:\Projects\50848\34\301 Construction Documents\Civil\D750848-34.dwg

CSP 2020-4265



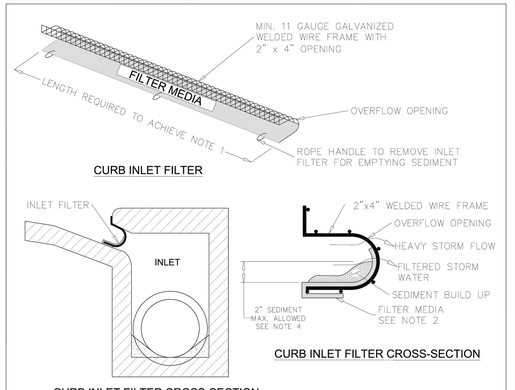
UPPER TERMINAL SLOT

LOWER TERMINAL SLOT

NOTES

1. INSTALL SOIL RETENTION BLANKETS (SERB'S) BEGINNING AT THE DOWNSTREAM END AND PROCEED UPSTREAM.
2. THE LOCATION, SPACING AND CONFIGURATION OF UPPER AND LOWER TERMINAL SLOTS, CHECK SLOTS, ETC. MAY VARY FOR EACH CLASS AND TYPE OF SERB ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. FIRMLY TAMP TOPSOIL BACKFILL INTO ALL TERMINAL SLOTS.
3. SERB EDGES ALONG THE TOP SLOPE OR TOE OF SLOPE SHALL BE ANCHORED AS PER MANUFACTURER'S RECOMMENDATIONS.
4. THE "U" SHAPED WIRE STAPLES ARE TO BE INSTALLED AT 90° TO THE SLOPE PLANE. IF WIRE STAPLES PROVE TO BE AN UNSATISFACTORY METHOD OF SECURING THE SERB IN AREAS OF ROCK, RAILROAD SPIKES OR 60 PENNY NAILS MAY BE SUBSTITUTED WITH APPROVAL OF THE ENGINEER.
5. WIRE STAPLES SHALL BE MADE FROM NOT LESS THAN 13° LENGTHS OF NO. 11 WIRE BENT TO FORM A "U" APPROXIMATELY 1" IN WIDTH.
6. WOOD STAKES SHALL BE A MINIMUM LENGTH OF 10". WOOD DIAGONAL STAKES MAY BE USED.
7. IMMEDIATELY AFTER THE SERB HAS BEEN SECURED TO THE GROUND, THE AREA COVERED SHALL BE SPRINKLED AND ROLLED WITH A LIGHT ROLLER OF SUFFICIENT WEIGHT TO PRESS THE BLANKET INTO THE SURFACE OF THE SOIL. THE ROLLER SHALL BE OF SUCH WEIGHT TO AVOID OVER-COMPACTION OF THE SEEDBED.
8. FOLLOW MANUFACTURERS SPECIFICATIONS FOR INSTALLMENT.
9. REFER TO COSM SPECIFICATION 605S FOR ADDITIONAL DETAILS.
10. SOD MAY BE USED IN LIEU OF SOIL RETENTION BLANKETS FOR SLOPE LESS THAN 4H:1V.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2021	SOIL RETENTION BLANKET	
RECORD COPY SIGNED BY	1/1/2021	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 605S-1-SM
LAURIE MOYER, P.E.	ADOPTED		1 OF 1



CURB INLET FILTER

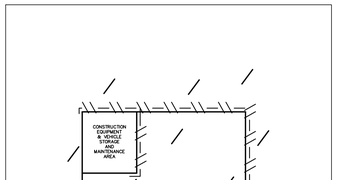
CURB INLET FILTER CROSS-SECTION

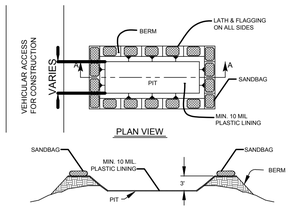
CURB INLET FILTER CROSS-SECTION
SHOWING INLET PLACEMENT

NOTE:
1. THE INLET FILTER SHALL BE INSERTED INTO THE CURB INLET TO CREATE A COMPRESSION FIT IN THE INLET.
2. THE FILTER MEDIA FOR PROJECTS WITHIN CITY OF SAN MARCOS JURISDICTION IS TO BE WOVEN FILTER FABRIC WITH A MINIMUM WATER FLOW RATE OF 300 GALLONS A MINUTE PER SQUARE FOOT(300 GAL/MIN/SF).
3. THE FILTER MEDIA IS TO BE ATTACHED TO THE WIRE FRAME WITH HOG RINGS LEAVING AN OVERFLOW OPENING ABOVE THE FILTER MEDIA.
4. INSPECTION SHALL BE MADE BY THE CONTRACTOR WEEKLY AND WITHIN 24 HOURS OF A RAIN EVENT AND SILT ACCUMULATION MUST BE REMOVED WHEN THE DEPTH REACHES 2 INCHES.
5. INLET FILTER WILL BE REMOVED UPON STABILIZATION OF SEDIMENT SOURCES

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2021	CURB INLET PROTECTION	
RECORDED COPY SIGNED BY	2-15-2015	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	628S-1-SM
LAURIE MOYER, P.E.	ADOPTED		N.T.S. STANDARD DETAIL

TYP. CONSTRUCTION STAGING AREA





PLAN VIEW

SECTION A-A

MATERIALS:

1) Plastic lining material should be a minimum of 10 mil in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.

INSPECTION AND MAINTENANCE GUIDELINES:

1) When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and disposed of.

2) Materials used to construct temporary concrete washout facilities should be removed from the site of the work and disposed of.

3) Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

GENERAL NOTES:

1) Detail above illustrates minimum dimensions. Pit can be increased in size depending on expected frequency of use.

2) Washout pit shall be located in an area easily accessible to construction traffic.

3) Washout pit shall not be located in areas subject to inundation from storm water runoff.

4) Locate washout area at least 50 feet from sensitive features, storm drains, open ditches, or water bodies.

5) Temporary concrete washout facility should be constructed with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations.

CONCRETE TRUCK WASHOUT PIT

NO.	REVISION	DATE

STATE OF TEXAS
STEVEN S. CRAUFORD
92677
LICENSED
PROFESSIONAL ENGINEER
9/22/21

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

KISSING TREE - GOLF MAINTENANCE FACILITY
CITY OF SAN MARCOS, TEXAS

ESC DETAILS 2 OF 2

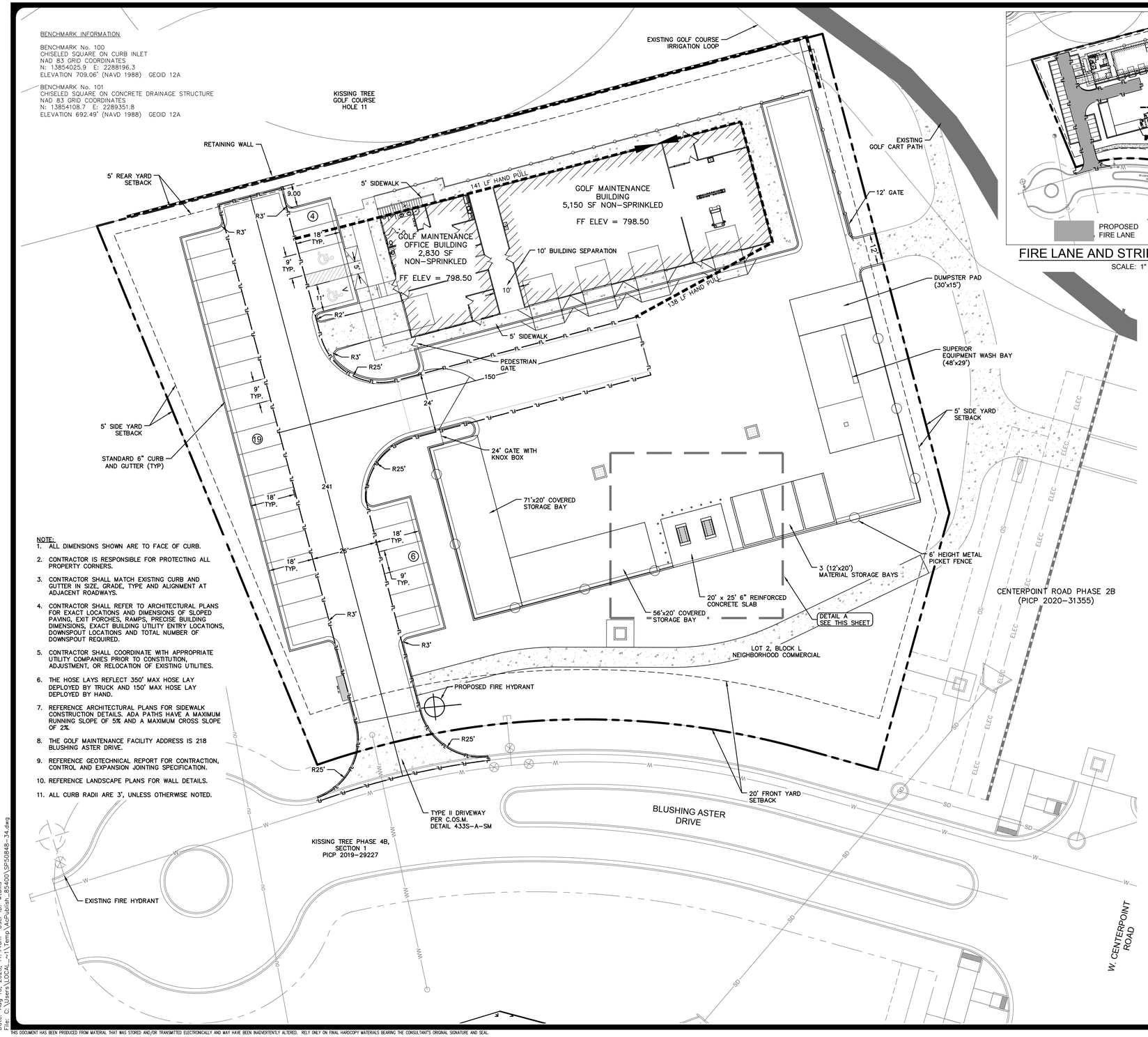
CITY JOB No. 2020-34265
JOB NO. 50848-34
DATE September 22, 2021
DESIGNER
CHECKED SC DRAWN
SHEET 22 OF 35

CSP 2020-4265

BENCHMARK INFORMATION

BENCHMARK No. 100
CHISELED SQUARE ON CURB INLET
NAD 83 GRID COORDINATES
N: 13854025.9 E: 2288196.3
ELEVATION 709.06' (NAVD 1988) GEOID 12A

BENCHMARK No. 101
CHISELED SQUARE ON CONCRETE DRAINAGE STRUCTURE
NAD 83 GRID COORDINATES
N: 13854108.7 E: 2289351.8
ELEVATION 692.49' (NAVD 1988) GEOID 12A



NOTE:
1. ALL DIMENSIONS SHOWN ARE TO FACE OF CURB.
2. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL PROPERTY CORNERS.
3. CONTRACTOR SHALL MATCH EXISTING CURB AND GUTTER IN SIZE, GRADE, TYPE AND ALIGNMENT AT ADJACENT ROADWAYS.
4. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF SLOPED PAVING, EXIT PORCHES, RAMPS, PRECISE BUILDING DIMENSIONS, EXACT BUILDING UTILITY ENTRY LOCATIONS, DOWNSPOUT LOCATIONS AND TOTAL NUMBER OF DOWNSPOUT REQUIRED.
5. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANIES PRIOR TO CONSTITUTION, ADJUSTMENT, OR RELOCATION OF EXISTING UTILITIES.
6. THE HOSE LAYS REFLECT 350' MAX HOSE LAY DEPLOYED BY TRUCK AND 150' MAX HOSE LAY DEPLOYED BY HAND.
7. REFERENCE ARCHITECTURAL PLANS FOR SIDEWALK CONSTRUCTION DETAILS. ADA PATHS HAVE A MAXIMUM RUNNING SLOPE OF 5% AND A MAXIMUM CROSS SLOPE OF 2%.
8. THE GOLF MAINTENANCE FACILITY ADDRESS IS 218 BLUSHING ASTER DRIVE.
9. REFERENCE GEOTECHNICAL REPORT FOR CONTRACTION, CONTROL AND EXPANSION JOINTING SPECIFICATION.
10. REFERENCE LANDSCAPE PLANS FOR WALL DETAILS.
11. ALL CURB RADII ARE 3', UNLESS OTHERWISE NOTED.

FIRE LANE AND STRIPING LIMIT DETAIL
SCALE: 1" = 100'

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

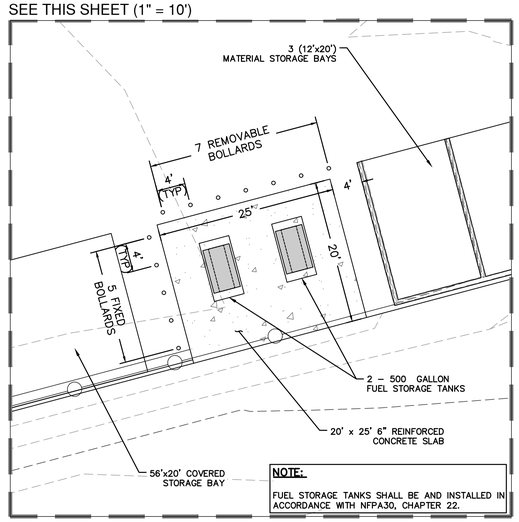
LEGEND
- PROPOSED PHASE LINE
- SIDEWALK THIS CONTRACT
- CURB STOP
- ADA PATH
- ADA RAMP SLOPE AT 12:1 MAX, TRANSITION CURB AS REQUIRED
- PARKING SPACES
- RETAINING WALL
- REINFORCED CONCRETE PAVEMENT (JRPCC)
- HMAC PAVEMENT (RESIDENTIAL STREETS)
- FIRE LANE
- 6' HEIGHT METAL PICKET FENCE

RECOMMENDATIONS - PAVEMENT THICKNESS SECTIONS

Street Classification	Subgrade Material	Flexible Pavement, in		Rigid Pavement, in
		HMAC	CLB	JRPCC
Residential Streets	More Than 2 Feet of High PI Clay (PI>20)	3.0	12	6
	Less Than 2 Feet of High PI Clay (PI>20)	2.5	8	6
Residential Collectors	More Than 2 Feet of High PI Clay (PI>20)	3.0	15	6
	Less Than 2 Feet of High PI Clay (PI>20)	2.5	10	6
Neighborhood Collectors	More Than 2 Feet of High PI Clay (PI>20)	3.0	23	7
	Less Than 2 Feet of High PI Clay (PI>20)	2.5	12	7
Minor Arterial	More Than 2 Feet of High PI Clay (PI>20)	4.0	25	-
	Less Than 2 Feet of High PI Clay (PI>20)	4.0	12	-
Major Arterial	More Than 2 Feet of High PI Clay (PI>20)	4.5	35	-
	Less Than 2 Feet of High PI Clay (PI>20)	4.0	20	-

Notes:
1. Abbreviations: HMAC - Hot Mixed Asphalt Concrete, CLB - Crushed Limestone Base, JRPCC - Jointed, Reinforced Portland Cement Concrete
2. These pavement thickness designs are intended to transfer the load from the anticipated traffic conditions.
3. The responsibility of assigning street classification to the streets in this project is left to the civil engineer.
4. If pavement designs other than those listed above are desired, please contact MLA Labs, Inc.
5. **Delineation between these different pavement thickness sections should be completed in the field by observation of open utilities trenches and the pavement subgrade by the Geotechnical Engineer of his designate.** Given the known variability of surface soils and the presence of faults at this site, the geotechnical engineer must verify the subgrade before installation of the pavement system can proceed. Multiple site visits may be required depending upon the construction schedule. Finalized distinction between pavement thickness section options shall be provided as addendums to this report as these observations are completed. Please contact the geotechnical engineer when the utility trenches are open.

FUEL STORAGE AREA
SEE THIS SHEET (1" = 10')



NOTE:
FUEL STORAGE TANKS SHALL BE AND INSTALLED IN ACCORDANCE WITH NFPA30, CHAPTER 22.

DATE
NO. REVISION

STATE OF TEXAS
STEVEN S. CRAUFORD
92677
LICENSED PROFESSIONAL ENGINEER
8/10/23

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
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TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

KISSING TREE - GOLF MAINTENANCE FACILITY
CITY OF SAN MARCOS, TEXAS

FUEL STORAGE PLAN

CITY JOB No. 2020-34265
JOB NO. 50848-34
DATE August 10, 2023
DESIGNER
CHECKED SC DRAWN
SHEET 01 OF 03

Date: Aug 10, 2023, 11:44am User ID: whillis
File: C:\Users\LOCAL ~1\Temp\AcPublish_8540\DWG\SP50848-34.dwg

CSP 2020-34265

NFPA 30

Aboveground Tank Installation

Chapter 4 Tank Storage

4.1 General.

4.1.1 Scope. This chapter shall apply to the following:

(1) The storage of flammable and combustible liquids, as defined in 1.7.3, in fixed aboveground tanks
(2) The storage of flammable and combustible liquids in portable tanks and bulk containers whose capacity exceeds 250 gal (1136 Liters)
(3) The design, installation, operation and maintenance of such tanks, portable tanks, and bulk containers.

4.2 Design and Construction of Tanks.

4.2.1 General Requirements. Tanks shall be permitted to be of any shape, size, or type consistent with sound engineering. Metal tanks shall be welded according to ASME standards

4.2.2 Materials of Construction. Tanks shall be designed and built in accordance with recognized good engineering standards for the material of construction being used. Tanks shall be of steel or other approved noncombustible material, with the following limitations and exceptions:

(a) The materials of construction for tanks and their appurtenances shall be compatible with the liquid to be stored. In case of doubt about the properties of the liquid to be stored, the supplier, producer of the liquid, or other competent authority shall be consulted.

(b) Tanks shall be permitted to be constructed of combustible materials only when approved by the authority having jurisdiction.

4.2.3 Design Standards

4.2.3.1 Design Standards for Atmospheric Tanks

2.2.3.1.1 Atmospheric tanks, including those incorporating secondary containment, shall be designed and constructed in accordance with recognized standards or approved equivalents. Atmospheric tanks that meet any of the following standards shall be deemed as meeting the requirements of 4.2.3.1

(1) UL 142, *Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids;* UL 2080 *Standard for Fire Resistant Tanks for Flammable and Combustible Liquids;* or UL 2085, *Standard for Protected Aboveground Tanks for Flammable and Combustible Liquids*
(2) API Standard 650. *Welded Steel Tanks for Oil Storage*

4.2.4 Design of Tank Supports

4.2.4.1 Supports for tanks shall be designed and constructed in accordance with recognized standards or approved equivalents
4.2.4.2 Tanks shall be supported in a manner that prevents excessive concentration of loads on the supported portion of the shell
4.2.4.3 In areas subject to earthquakes, tank supports and connections shall be designed to resist damage as a result of such shocks

4.2.5 Design of Tank Vents

4.2.5.1 Normal Venting for Tanks
4.2.5.1.2 Normal vents shall be sized in accordance with API Standard 2000, *Venting Atmospheric and Low-Pressure Storage Tanks,* or another accepted standard. Alternatively the normal vent shall be at least as large as the largest filling or withdrawal connection but in no case shall it be less than 1.25 in. (32 mm) nominal inside diameter.

4.2.7 Vaults for Aboveground Tanks

4.2.7.2 General. Aboveground tanks shall be permitted to be installed in vaults that meet the requirements of 4.2.7. Except as modified by the provisions of 4.2.7, vaults shall meet all other applicable provisions of this code. Vaults shall be constructed and listed in accordance with UL 2245, *Standard for Below-Grade Vaults for Flammable Liquid Storage Tanks.* Vaults shall be permitted to be either above or below grade.

4.2.7.3 Vault Design and Construction. Vaults shall be designed and constructed to meet the following requirements:

(a) The walls and floor of the vault shall be constructed of reinforced concrete at least 6 in. (150 mm) thick.
(b) The top of an above grade vault that contains a tank storing Class I flammable liquid or Class II liquid when stored at temperatures above its flash point shall be constructed of noncombustible material and shall be designed to be weaker than the walls of the vault to ensure that the thrust of any explosion occurring inside the vault is directed upward before destructive internal pressure develops within the vault. The top of an at grade or below grade vault that contains a tank storing Class I flammable liquid or ClassII liquid when stored at temperatures above their flash point shall be designed to relieve or contain the force of any explosion occurring inside the vault.

DIESEL TANK

- **500 GAL DOUBLE WALL UL142 SKID TANK**
- CONTAINMENT PAN FOR 500 GAL TANK - 48" X 93" X 30" - 575 GAL CAPACITY
- 4" MALE THREAD 8 OZ ALUMINUM EMERGENCY VENT
- 2" THREADED TEE VENT
- PREVENT FILL CAP ASSY - CAST IRON BASE W/PLATED CAP
- 2" PRESSURE VACUUM VENT
- FILL-RITE 12V (15 GPM) TRANSFER PUMP – PUMP ONLY - NEW "H" SERIES
- 3/4" AUTOMATIC NOZZLE W/ HOOK – GREEN COVER - DIESEL (NEW VERSION)
- 3/4" ALUMINUM FILTER HOUSING - 3/4" THREAD (EQUIVALENT TO CIM-TEK 200H-3-4 / 50003)
- 3/4" - 10 MICRON FILTER
- KRUEGER THERMA GAUGE (TYPE H) - 2" OPENING - 45" TANK HEIGHT (NO RISER) – DIESEL
- 1993 PLACARD DECAL – DIESEL
- "NO SMOKING" DECAL - 3" X 12" - WHITE ON RED WITH WHITE BORDER
- "COMBUSTIBLE" DECAL - 3" X 12" - WHITE ON RED WITH WHITE BORDER
- "DYED DIESEL FUEL...NON-TAXABLE USE ONLY - PENALTY FOR TAXABLE USE OFF HIGHWAY - NOT LEGAL FOR MOTOR VEHICLE USE " DECAL - 3" X 12" - WHITE ON RED WITH WHITE BORDER
- PAINTED DARK GRAY

GASOLINE TANK

- **500 GAL DOUBLE WALL UL142 SKID TANK**
- CONTAINMENT PAN FOR 500 GAL TANK - 48" X 93" X 30" - 575 GAL CAPACITY
- 4" MALE THREAD 8 OZ ALUMINUM EMERGENCY VENT
- 2" THREADED TEE VENT
- PREVENT FILL CAP ASSY - CAST IRON BASE W/PLATED CAP
- 2" PRESSURE VACUUM VENT
- FILL-RITE 12V (15 GPM) TRANSFER PUMP – PUMP ONLY - NEW "H" SERIES
- 3/4" AUTOMATIC NOZZLE W/ HOOK – RED COVER - GASOLINE (NEW VERSION)
- 3/4" ALUMINUM FILTER HOUSING - 3/4" THREAD (EQUIVALENT TO CIM-TEK 200H-3-4 / 50003)
- 3/4" - 10 MICRON FILTER
- KRUEGER THERMA GAUGE (TYPE H) - 2" OPENING - 45" TANK HEIGHT (NO RISER) – GASOLINE
- 1203 PLACARD DECAL – GASOLINE
- "NO SMOKING" DECAL - 3" X 12" - WHITE ON RED WITH WHITE BORDER
- "FLAMMABLE" DECAL - 3" X 12" - WHITE ON RED WITH WHITE BORDER
- PAINTED DARK GRAY

NO.	REVISION	DATE

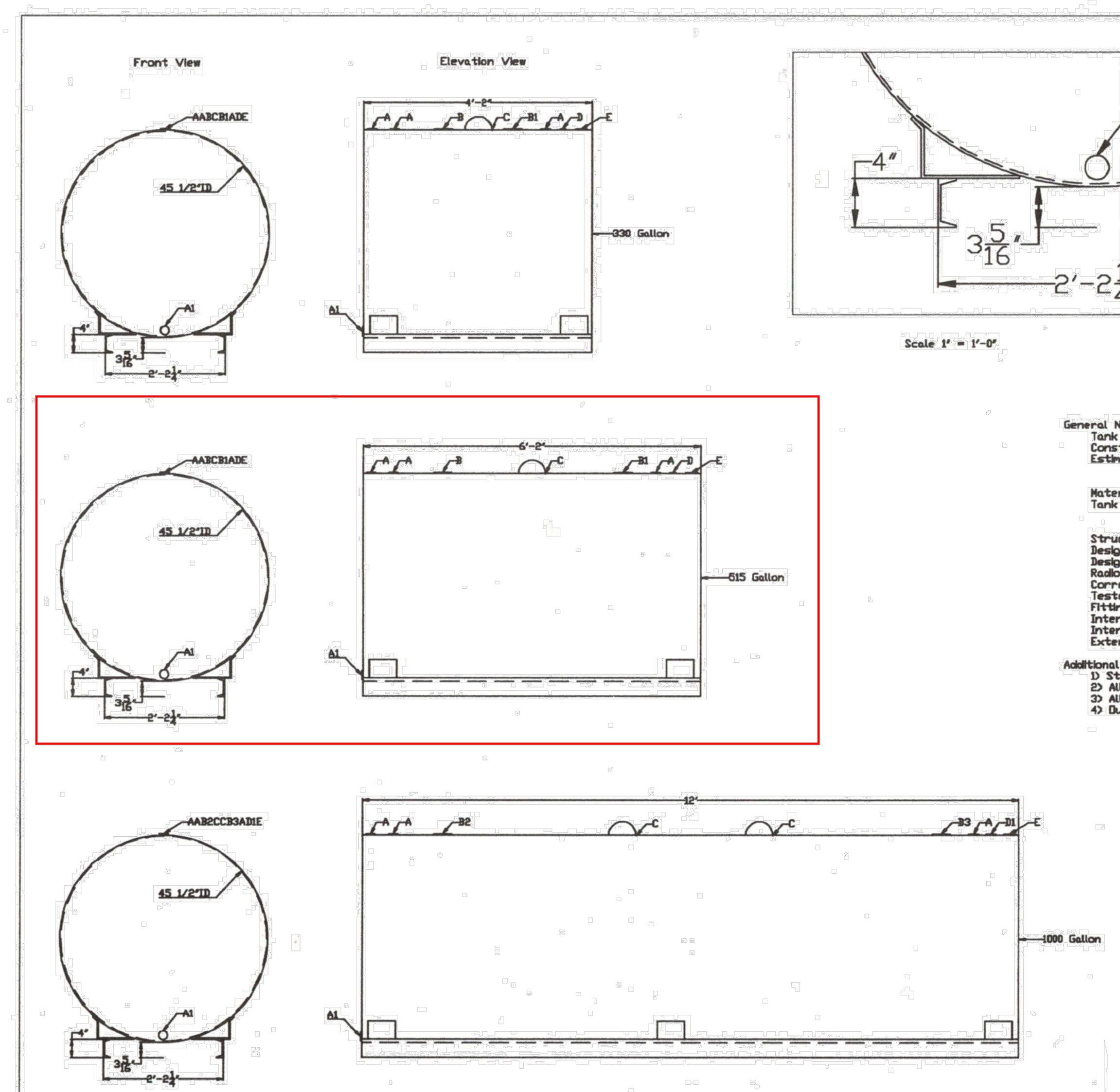
STATE OF TEXAS
STEVEN S. CRAUFORD
92677
LICENSED
PROFESSIONAL ENGINEER
8/10/23

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

KISSING TREE - GOLF MAINTENANCE FACILITY
CITY OF SAN MARCOS, TEXAS

FUEL STORAGE NOTES

CITY JOB No. 2020-34265
JOB NO. 50848-34
DATE August 10, 2023
DESIGNER
CHECKED SC DRAWN
SHEET 02 OF 03



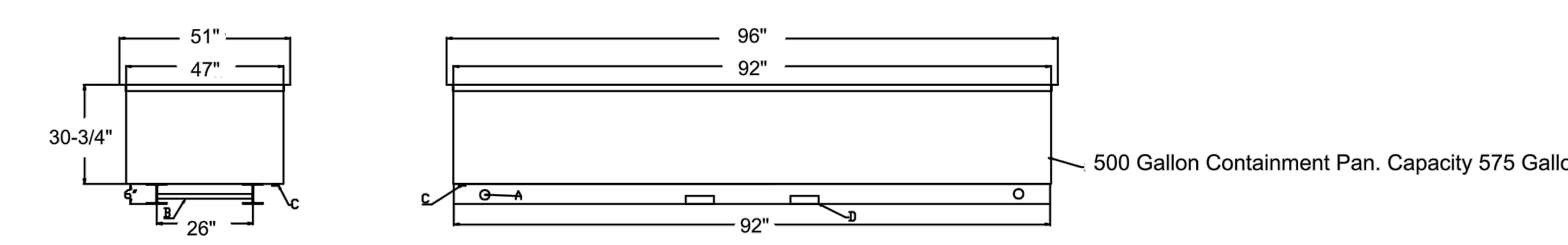
Schedule Of Fittings		
Ref	Qty	Description
A	3	2" NPT
A1	1	2" NPT Outer Shell Monitor
B	1	4" NPT + Inside EV
B1	1	4" NPT + Outside EV
B2	1	6" NPT + Inside EV
B3	1	6" NPT + Outside EV
C	1 or 2	Lifting Lug
D	1	1 1/4" NPT + T-Vent
D1	1	2" NPT + T-Vent
E	1	2 1/2" NPT + Fill Cap

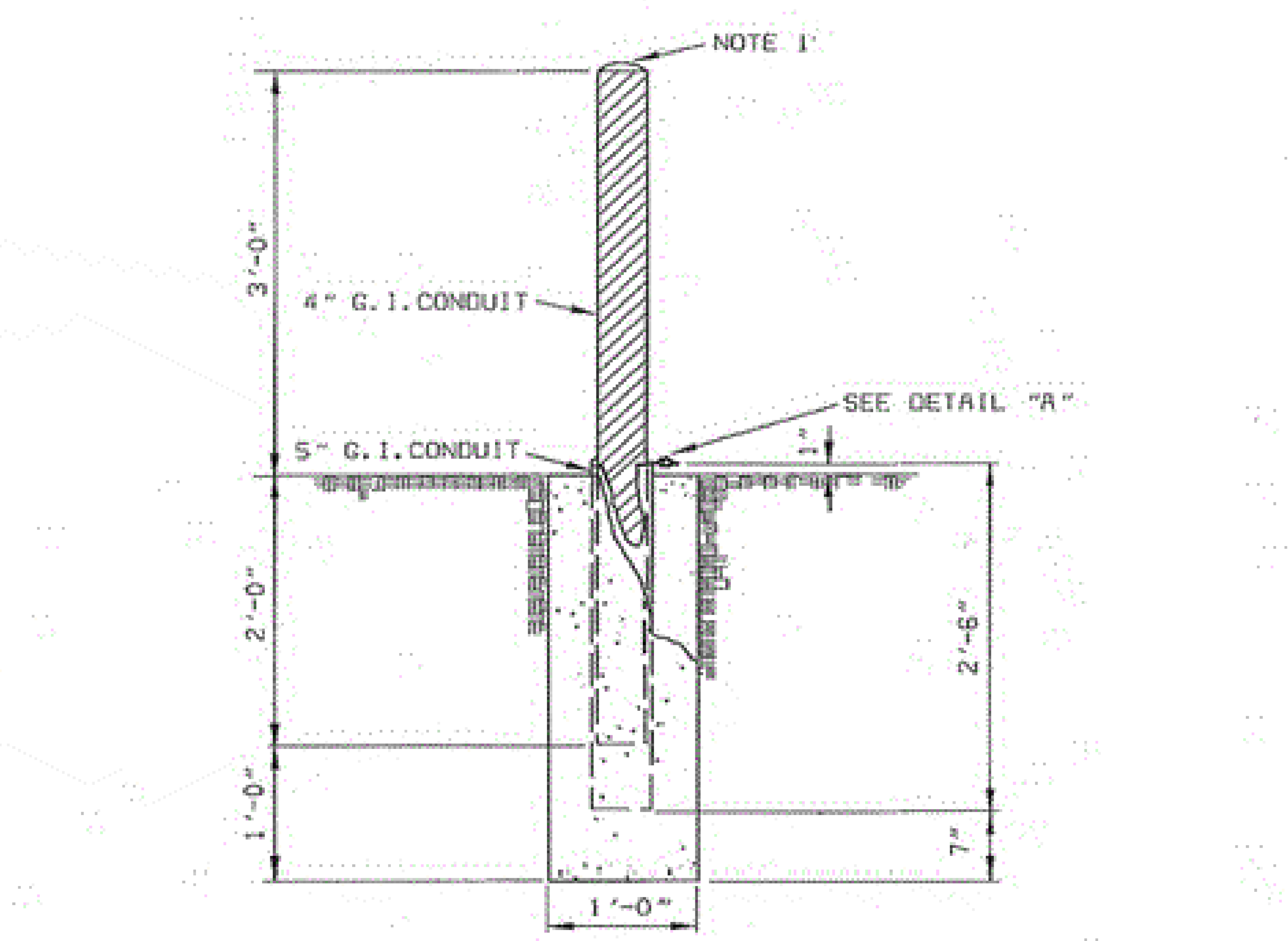
General Notes:
- Tank Type: Double Wall
- Construction Code: U/L 142
- Estimated Weight: 330 Gallon = 800 lbs
  - 515 Gallon = 1000 lbs
  - 1000 Gallon = 1900 lbs
- Material Type: Mild Carbon Steel A1011 or A-36 Type
- Tank Thickness: 330/515 Gallon = All 12 Gauge
  - 1000 Gallon = Inside 10 Gauge
  - Outside 12 Gauge
- Structural Supports: Angle Iron + Channel Iron
- Design and Operating Temperature: Ambient Conditions
- Design and Operating Pressure: Atmospheric or 1.0 psi
- Radiography: N/A
- Corrosion Allowance: N/A
- Tested: 3-5 psi, soap and water
- Fitting Type: NPT Threadlets (National Pipe Thread)
- Internal Seal-Weld: N/A
- Internal Coating: N/A (Bare Metal)
- External Coating: Red Oxide Primer

Additional Notes:
1) Stationary use only. Move/lift tanks while empty.
2) All primary tank openings located on top
3) All top fittings may be spaced accordingly
4) Outside tank is a tight wrap

Schedule Of Fittings		
Ref	Qty	Description
A	4	Hole Cut-Out
B	Varies	Braces
C	1	2" NPT
D	4	Forklift Slots

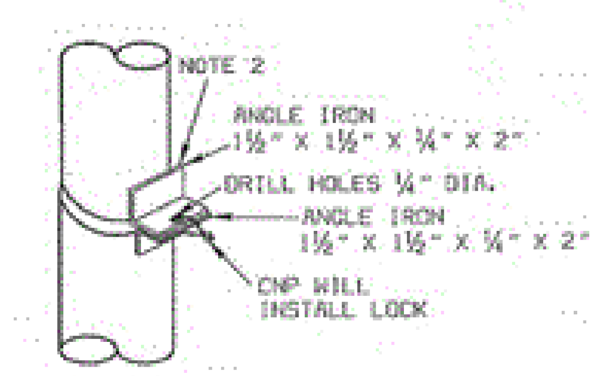
General Notes:
- Secondary Containments
- Code: N/A
- Estimated Weight:
- Material Type: Mild Carbon Steel
- Structural Supports: Beams
- Radiography: N/A
- Corrosion Allowance: N/A
- Fitting Type: NPT (National Pipe Thread)
- Internal Seal-Weld: N/A





PROTECTIVE BARRIER
(REMOVABLE)

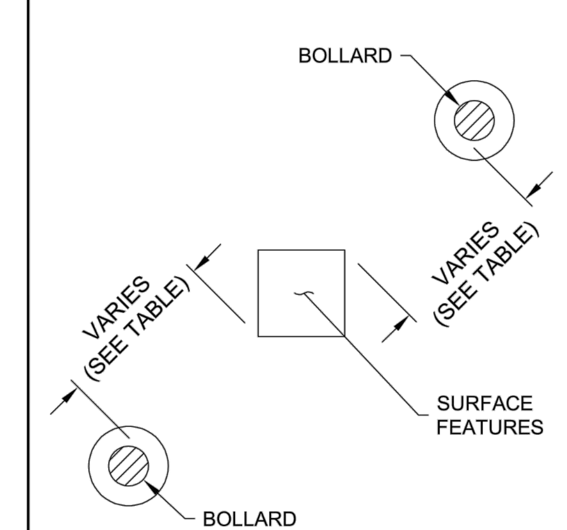
INSTALL ON APPROXIMATELY 4' CENTERS AS SPECIFIED ON SKETCH



DETAIL "A"

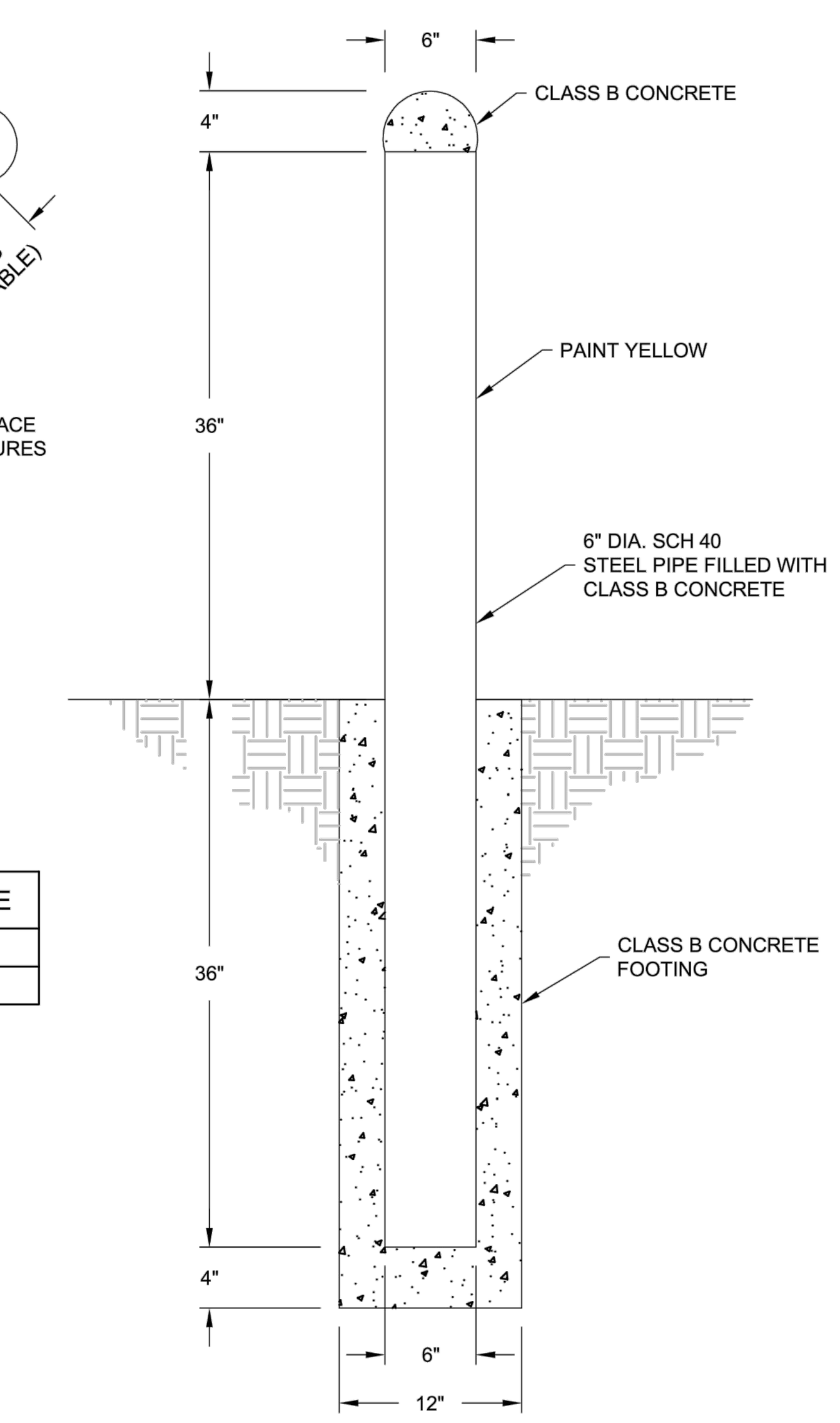
NOTES:
1. 4" G.I. CONDUIT TO BE FILLED WITH CONCRETE.
2. ANGLE TO BE WELDED TO G.I. CONDUIT. ALL EXPOSED METAL TO BE PAINTED WITH GALVANOX PAINT.
3. SEAL CAP BETWEEN CONDUITS WITH DUCT SEAL FOR WATER TIGHT FIT.
4. USE 5" PLUG TO PREVENT CONCRETE FROM COMING UP 5" G.I. CONDUIT.

PROTECTIVE BARRIER
(REMOVABLE)



PLACEMENT

FEATURES	DISTANCE
FIRE HYDRANT	5'
ALL OTHERS	2'



NOTES
1. TWO BOLLARDS SHALL BE INSTALLED AT A DIAGONAL ADJACENT TO ALL VALVES, PORTS AND ALL OTHER SURFACE FEATURES CALLED OUT IN PLANS OR REQUIRED BY INSPECTOR.
2. BOLLARD INSTALLATION SHALL BE SUBSIDIARY TO INSTALLATION OF SURFACE FEATURE.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2023	TYPICAL CONCRETE FILLED STEEL PIPE BOLLARD
RECORD COPY SIGNED BY / LAURIE MOYER, P.E.	1/1/2020 / ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 500S-B-SM, 1 OF 1

NO.	REVISION	DATE

STATE OF TEXAS
STEVEN S. CRAUFORD
92677
LICENSED PROFESSIONAL ENGINEER
4/10/24

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

KISSING TREE - GOLF MAINTENANCE FACILITY
CITY OF SAN MARCOS, TEXAS
FUEL STORAGE DETAILS

CITY JOB No. 2020-34265
JOB NO. 50848-34
DATE April 10, 2024
DESIGNER
CHECKED SC DRAWN
SHEET 03 OF 03

Date: Apr 10, 2024, 11:16am User ID: jbennett
File: H:\Projects\508\48\34\301 Construction Documents\FUEL TANK STORAGE\SP50848-34.dwg

CSP 2020-34265