# WATER POLLUTION ABATEMENT PLAN

FOR

# PROMISE LAND SAN MARCOS

1650 LIME KILN ROAD
SAN MARCOS, HAYS COUNTY, TEXAS 78666

PREPARED FOR:

**Texas Commission on Environmental Quality (TCEQ)**
**12100 Park 35 Circle**
**Austin, Texas 78753**

PREPARED BY:

**WGI**
**4700 Mueller Boulevard, Suite 300**
**Austin, Texas 78723**

**Texas Engineering Firm # F-15085**
**WGI Project # 009624.00**

MARCH 2025

## TABLE OF CONTENTS

# Edwards Aquifer Application Cover Page, **1.0**

## 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:** PROMISELAND WATER SUPPLY | | | | | | **2. Regulated Entity No.:** RN106194194 | | | |
| **3. Customer Name:** PROMISELAND SAN MARCOS | | | | | | **4. Customer No.:** CN602942906 | | | |
| **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):** | | 19.72 | |
| **9. Application Fee:** | $6,500 | | **10. Permanent BMP(s):** | | | 3 Bioretention ponds | | | |
| **11. SCS (Linear Ft.):** | | | **12. AST/UST (No. Tanks):** | | | | | | |
| **13. County:** | Hays | | **14. Watershed:** | | | Upper 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.) | X | ___ | ___ |
| Region (1 req.) | X | ___ | ___ |
| County(ies) | X | ___ | ___ |
| Groundwater Conservation District(s) | X Edwards Aquifer Authority<br>X Barton Springs/ Edwards Aquifer<br>X Hays Trinity<br>X Plum Creek | ___Barton Springs/ Edwards Aquifer | NA |
| City(ies) Jurisdiction | ___Austin<br>___Buda<br>___Dripping Springs<br>___Kyle<br>___Mountain City<br>___San Marcos<br>___Wimberley<br>___Woodcreek | ___Austin<br>___Bee Cave<br>___Pflugerville<br>___Rollingwood<br>___Round Rock<br>___Sunset Valley<br>___West Lake Hills | ___Austin<br>___Cedar Park<br>___Florence<br>___Georgetown<br>___Jerrell<br>___Leander<br>___Liberty Hill<br>___Pflugerville<br>___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<br>___Trinity-Glen Rose | ___Edwards Aquifer Authority | ___Kinney | ___EAA<br>___Medina | ___EAA<br>___Uvalde |
| City(ies) Jurisdiction | ___Castle Hills<br>___Fair Oaks Ranch<br>___Helotes<br>___Hill Country Village<br>___Hollywood Park<br>___San Antonio (SAWS)<br>___Shavano Park | ___Bulverde<br>___Fair Oaks Ranch<br>___Garden Ridge<br>___New Braunfels<br>___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.

Cliff Kendall

uthorized Agent

10/21/2024

Signature of Customer/Authorized Agent Date

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

# General Information Form, **2.0**

# 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: Cliff Kendall

Date: 10/21/2024

Signature of Customer/Agent:

## *Project Information*

1. Regulated Entity Name: PROMISELAND WATER SUPPLY
2. County: Hays
3. Stream Basin: Guadalupe River Basin
4. Groundwater Conservation District (If applicable): Barton Springs/Edwards Aquifer CD
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☒ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

   Contact Person: Robin Steele
   Entity: PromiseLand San Marcos
   Mailing Address: 1650 Lime Kiln Rd
   City, State: San Marcos, TX Zip: 78666
   Telephone: 512-392-4357 FAX: _____
   Email Address: _____

8. Agent/Representative (If any):

   Contact Person: Cliff Kendall
   Entity: WGI
   Mailing Address: 4700 Mueller Blvd., Suite 300
   City, State: Austin, TX Zip: 78723
   Telephone: (512) 669-5560 FAX: 210.501.0899
   Email Address: Cliff.kendall@wginc.com

9. Project Location:

   ☐ The project site is located inside the city limits of _____.
   ☒ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of San Marcos.
   ☐ The project site is not located within any city's limits or ETJ.

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

    The site is located approximately 2 miles northwest of I-35 and 1400 LF northeast from the intersection of Lime Kiln Road and Pitt Road.

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: _____

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.

## General Information Form (TCEQ - 0587)

## Attachment A

## Road Map


**From Google Earth**

## General Information Form (TCEQ - 0587)

## Attachment B

## USGS / Edwards Recharge Zone Map

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

USGS science for a changing world

The National Map US Topo

# SAN MARCOS NORTH QUADRANGLE
TEXAS
7.5-MINUTE SERIES


## Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 14R
10 000-foot ticks: Texas Coordinate System of 1983 (south central zone)

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, August 2014
Roads..... U.S. Census Bureau, 2014 - 2015
Names.....GNIS, 2015
Hydrography.....National Hydrography Dataset, 2014
Contours.....National Elevation Dataset, 2004
Boundaries.....Multiple sources; see metadata file 1972 - 2015

Wetlands.....FWS National Wetlands Inventory 1977 - 2014

MN
4° 11'
74 MILS
GN
0° 32'
9 MILS
UTM GRID AND 2016 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

| U.S. National Grid |
|---|
| 100,000-m Square ID |
| 600 |
| NU PU |
| Grid Zone Designation 14R |

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 MILES 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.19

QUADRANGLE LOCATION

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | | 5 |
| 6 | 7 | 8 |

1 Driftwood
2 Mountain City
3 Buda
4 Wimberley
5 Uhland
6 Hunter
7 San Marcos South
8 Martindale
ADJOINING QUADRANGLES

**SAN MARCOS NORTH, TX**
**2016**

*764301639809 5*
NSN
NGA REF NO. USSX24K39669

October 17, 2024 009624.00

Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, Texas 78753

RE: Project Description for General Information Form (TCEQ-0587)
PROMISELAND SAN MARCOS
1650 Lime Kiln Road, San Marcos, Hays County, Texas 78666

To whom it may concern:

Please accept this Engineer's Summary Letter as our project narrative for the above referenced project. The project is located at 1650 Lime Kiln Road, Hays County, Texas 78666, within the San Marcos ETJ.

The proposed development site lies both within the Edwards Aquifer Contributing Zone within the Transition Zone and the Edwards Aquifer Recharge Zone on a 19.72-acre site. The pre-construction site is partially developed and will remain partially developed with proposed improvements only encompassing 3.85 acres of the site. The development of this site will include construction of an event center, two accessory buildings, and associated driveways/parking, which all includes necessary site improvements for access, utility services, and grading and drainage improvements. This project will add 0.34 acres of impervious cover consisting of structures and roof tops and 1.04 acres of impervious cover consisting of other paved spaces and sidewalk. The total impervious cover added by this project is 1.38 acres.

Offsite areas that apply towards the development of this project have been accounted for in the design choices for stormwater management. These offsite areas are shown in further detail on the Existing Drainage Area Map sheet in the site plans that are included in this package. The development of this project will require three bioretention permanent BMPs on-site.

The subject site is located both within the Edwards Aquifer Contributing Zone within the Transition Zone and the Edwards Aquifer Recharge Zone. Stormwater permitting for construction activities through the TCEQ is required because the construction of a building is a regulated activity.

To our knowledge, the enclosed application materials are complete, correct, and in full compliance with the TCEQ requirements. Should you have any questions regarding this project or application, please do not hesitate to contact our office.

Sincerely,
**WGI**

lo. F-15085

Justin Celentano, P.E.
Cliff Kendall / Market Leader

# Geologic Assessment Form, **3.0**

# SAN MARCOS LIME KILN RD GEOLOGIC ASSESSMENT

LIME KILN ROAD PARCEL
1650 LIME KILN ROAD
SAN MARCOS, HAYS COUNTY, TEXAS

ECS PROJECT NO. 51:4422

FOR

HADDON+COWAN ARCHITECTS

OCTOBER 11, 2024

October 11, 2024

Mr.Joe D'Elia
HADDON+COWAN ARCHITECTS
2301 E. Riverside Drive, Building A, Suite 80
Austin, Texas, 78741

ECS Project No. 51:4422

Reference: Geologic Assessment Report, Lime Kiln Road Parcel, 1650 Lime Kiln Road, San Marcos, Hays County Texas

Dear Mr. D'Elia:

ECS Southwest, LLP (ECS) is pleased to provide HADDON+COWAN ARCHITECTS with a Geologic Assessment for the above referenced property. ECS' services were conducted in accordance with the services outlined in ECS Proposal No. 51:6780 authorized on September 27, 2024

ECS observed one water well on the site. ECS would like to thank HADDON+COWAN ARCHITECTS for the opportunity to provide you with this Geologic Assessment. We look forward to assisting you further with this project and other environmental concerns you may have. If you have any questions, please feel free to contact us at any time at 512-837-8005.

Sincerely,

ECS Southwest, LLP

Amanda C. Vidal
Environmental Staff Project Manager
avidal@ecslimited.com
512-837-8005

Katherine Moore, P.G.
Environmental Principal
klmoore@ecslimited.com
512-837-8005

## TABLE OF CONTENTS

PAGE

## TABLE OF APPENDICES

## 1.0 INTRODUCTION

The geologic assessment provided here, as part of the applicant's plan, addresses the required items as cited in Title 30 of the Texas Administrative Code (TAC), Part 1, Chapter 213, Subchapter A, Rule 213.5, relating to development over the Edwards Aquifer This report identifies observed potential pathways for contaminant movement into the underlying Edwards Aquifer as required by the Texas Commission on Environmental Quality (TCEQ).

The subject property is comprised of approximately 19.72 acres containing an approximate 22,237 square foot building. An addition is planned to the existing facility. The subject property is identified by the Hays County Central Appraisal District as portions of parcels 135578 and 203011, located at 1650 Lime Kiln Road in San Marcos, Texas. The subject property is located over the Edwards Aquifer Recharge Zone.

The purpose of this Geologic Assessment is to fulfill the requirements for the applicant's plan for site improvements on the property. This report will describe surficial geologic units and identify the locations and extent of significant features that may impact the underlying Edwards Aquifer Recharge Zone.

## 2.0 SOIL UNITS

According to the United States Department of Agriculture (USDA) Soil Survey of Williamson County, Texas, there are three (3) soil units mapped on the site (Figure 5). The soils on site consist of Comfort-Rock outcrop complex, 1 to 8 percent slopes (CrD), Krum clay, 1 to 3 percent slopes (KrB), and Medlin, warm-Eckrant association, 8 to 30 percent slopes (MED.)

The Comfort series consists of soils that are shallow to indurated limestone bedrock. These well drained, slowly permeable soils that formed in clayey residuum derived from dolomitic limestone of Lower Cretaceous period. These nearly level to moderately sloping soils occur on ridges on dissected plateaus. Slopes are 0 to 8 percent. (USDA, 2018.) The Hydrologic Soil Group is listed as D, and the soil is well drained. Flooding or ponding is reported as “none.” The depth to a restrictive layer is reported to be 10 to 20 inches to lithic bedrock, and the available water capacity is listed as very low (about 0.8 inches).

The Krum series consists of very deep to clayey alluvium, well drained soils that formed in calcareous clayey alluvium derived from interbedded chalk and marl. These nearly level to moderately sloping soils are on risers and treads of stream terraces on river valleys and dissected plains. Slopes range from 0 to 8 percent. (USDA, 2018.) The Hydrologic Soil Group is listed as C, and the soil is well drained. Flooding or ponding is reported as “none.” The depth to a restrictive layer is reported to be more than 80 inches, and the available water capacity is listed as high.

The Medlin series consists of deep, well drained, very slowly permeable soils that formed in clayey marine sediments. These soils are on narrow stream divides and slopes along drainageways. Slopes range from 1 to 20 percent. (USDA, 1997.) The Hydrologic Soil Group is listed as D, and the soil is well drained. Flooding or ponding is reported as “none.” The depth to a restrictive layer is reported to be 40 to 60 densic material, and the available water capacity is listed as moderate (about 7.0 inches).

## 3.0 GEOLOGY

### 3.1 Regional Geology

Ranging from north to south, two primary physiographic provinces are present in Hays County, the Great Southern Plains and the Gulf Coastal Plain. The Gulf Coastal Plain is comprised mainly of Blackland Prairie. The Great Southern Plain locally merges with the Edwards Plateau which is comprised chiefly of limestone plains.

Groundwater recharge and flow are controlled by faulted Edwards Aquifer and adjacent strata. Water enters the aquifer by means of solution features controlled by faults, fractures and solution conduits. Solution features are created by the dissolution of limestone primarily from rainwater and groundwater. Deformation of the Balcones fault system controls both the large- and small-scale flow barriers and pathways present in the Edwards Aquifer.

### 3.2 Site Geology

Geological information pertaining to the area was obtained from the Geologic Atlas of Texas, Seguin Sheet, published by University of Texas at Austin, Bureau of Economic Geology (BEG), 1997. The subject property is situated on Edwards Limestone, undivided (Ked) and Del Rio Clay and Georgetown Formation undivided (Kdg).

The Bureau of Economic Geology defines the Edwards Limestone (Ked) on the Seguin Sheet of the Geologic Atlas as follows: limestone, dolomite, and chert; limestone aphanitic to fine grained, massive to thin bedded, hard, brittle, in part rudistid biostromes, much miliolid biosparite; dolomite fine to very fine grained, porous, medium gray to grayish brown; nodules and plates common, varies in amount from bed to bed, some intervals free of chert, mostly white to light gray; in zone of weathering considerably recrystallized, "honeycombed" and cavernous forming an aquifer; forms flat areas and plateaus bordered by scarps; thickness 60 - 350 feet, thins northward.

The Bureau of Economic Geology defines the Del Rio Clay and Georgetown Formation (Kdg) on the Seguin Sheet of the Geologic Atlas as follows: Del Rio Clay: mostly clay, calcareous and gypsiferous, becoming less calcareous and more gypsiferous upward, pyrite common, blocky, medium gray, weathers light gray to yellowish gray, some thin lenticular beds of highly calcareios siltstone, some thin limestone beds composed of pelecypods, thickness 40-60 feet.

Georgetown Formation: mostly limestone, fine grained, argillaceous, nodular, mostly indurated, light gray, some limestone, hard, brittle, thick bedded, white, some shale, calcareios, soft, light gray to yellowish gray, thickness 10-45 feet.

ECS did not observe potable water wells on the subject property. Evidence of septic systems was observed adjacent to the building on the south portion of the subject property.

## 4.0 HYDROLOGY

### 4.1 Site Hydrology

Based upon interpretation of the United States Geological Survey 7.5 Minute Series topographic quadrangle map, San Marcos North Texas, Texas Quadrangle (2022), and the onsite reconnaissance, the estimated onsite shallow groundwater flow direction is southwestern. Regional flow generally flows to the Sink Creek and tributaries to the south. It should be noted that shallow groundwater flow direction is estimated based on a review of published maps, surface topography, and site reconnaissance. Local conditions that may influence the subsurface hydrology would be local topography (hills and valleys), geologic anomalies, utilities, and nearby wells or sumps. Improved drainage features were observed in the parking area that generally discharged storm water.

Seeps or springs were not observed on the subject property.

### 4.2 Surface Water Hydrology

Site drainage appears to slope generally to the south. Field observations and analysis are supported from the San Marcos North Texas USGS Topographic Quadrangles (USGS, 2022). We did not observe groundwater seeps or discharges of any type from bedrock observed on the subject site.

## 5.0 SITE INVESTIGATION

The site reconnaissance was performed on October 4, 2024. The site investigation was performed by traversing the subject property in meandering transects, spaced 10 to 15 meters apart depending on thickness of vegetation. Photographs were taken to document any features observed during the reconnaissance.

The subject property is currently improved and contains the PromiseLand San Marcos Church, and associated parking. Unimproved portions of the subject property are landscaped and maintained as lawn. The subject property is covered by native and naturalized grasses, herbs, forbs, shrubs and trees such as scrub live oak (*Quercus turbinella*), switchgrass (*Panicum virgatum*), bermuda grass (*Cynodon dactylon*), American elm (*Ulmus americana*), Texas live oak (*Quercus fusiformis*), boxwoods (Buxus spp.), Saint Augustine grass (Stenotaphrum secundatum) and other assorted ornamental vegetation.

Improved drainage features were observed in the parking area that generally discharged storm water.

Three (3) bedrock features were observed as well as one (1) manmade feature and two (2) solution cavities.

Other potential natural recharge features such as caves, sinkholes, closed depressions, fractured rock outcrops, faults or lineaments were not observed on the subject property. Additionally, seeps, springs, creeks, streams, or other aquatic features were not observed on the subject property.

## 6.0 SUMMARY

The subject property is comprised of approximately 19.72 acres containing an approximate 22,237 square foot building. An addition is planned to the existing facility. The subject property is identified by the Hays County Central Appraisal District as portions of parcels 135578 and 203011, located at 1650 Lime Kiln Road in San Marcos, Texas. The subject property is located over the Edwards Aquifer Recharge Zone

Improved drainage features were observed in the parking area that generally discharged storm water to the north and west to Smith Branch. Three (3) bedrock features were observed as well as one (1) manmade feature and two (2) solution cavities.

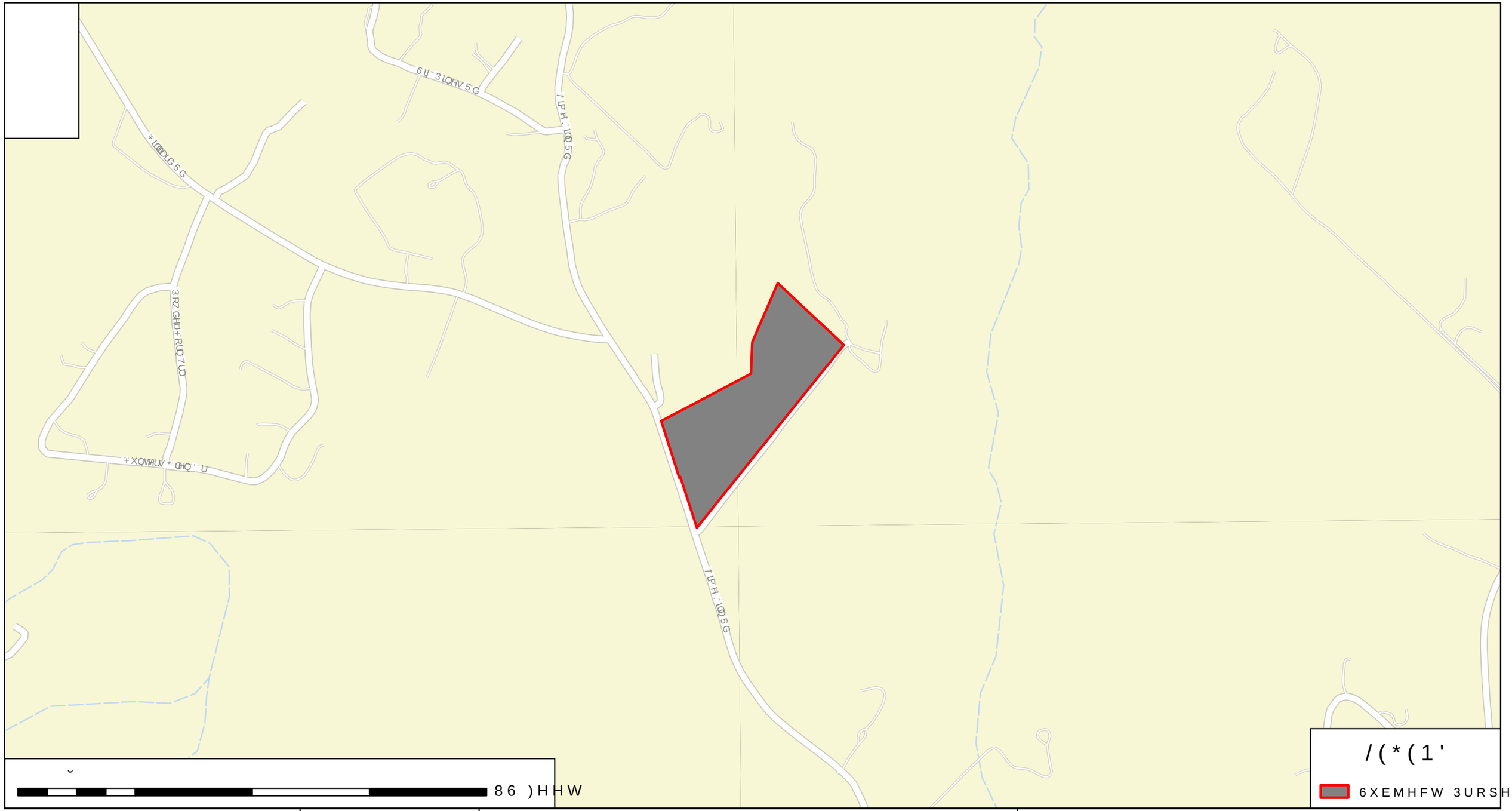
## 7.0 REFERENCES

Geologic Map of the San Marcos North Quadrangle and Adjacent Portions of the Mountain City and San Marcos South Quadrangles, Hays, Caldwell and Guadalupe Counties, Texas (Thomas W. Grimshaw, 2013, Jackson School of Geosciences, The University of Texas at Austin)

(USDA) United States Department of Agriculture (USDA) Custom Soil Survey of Hays County, 2024.

San Marcos North Texas USGS Topographic Quadrangles, (USGS, 2022)

# Appendix I: Figures




+D\V &RXQW\

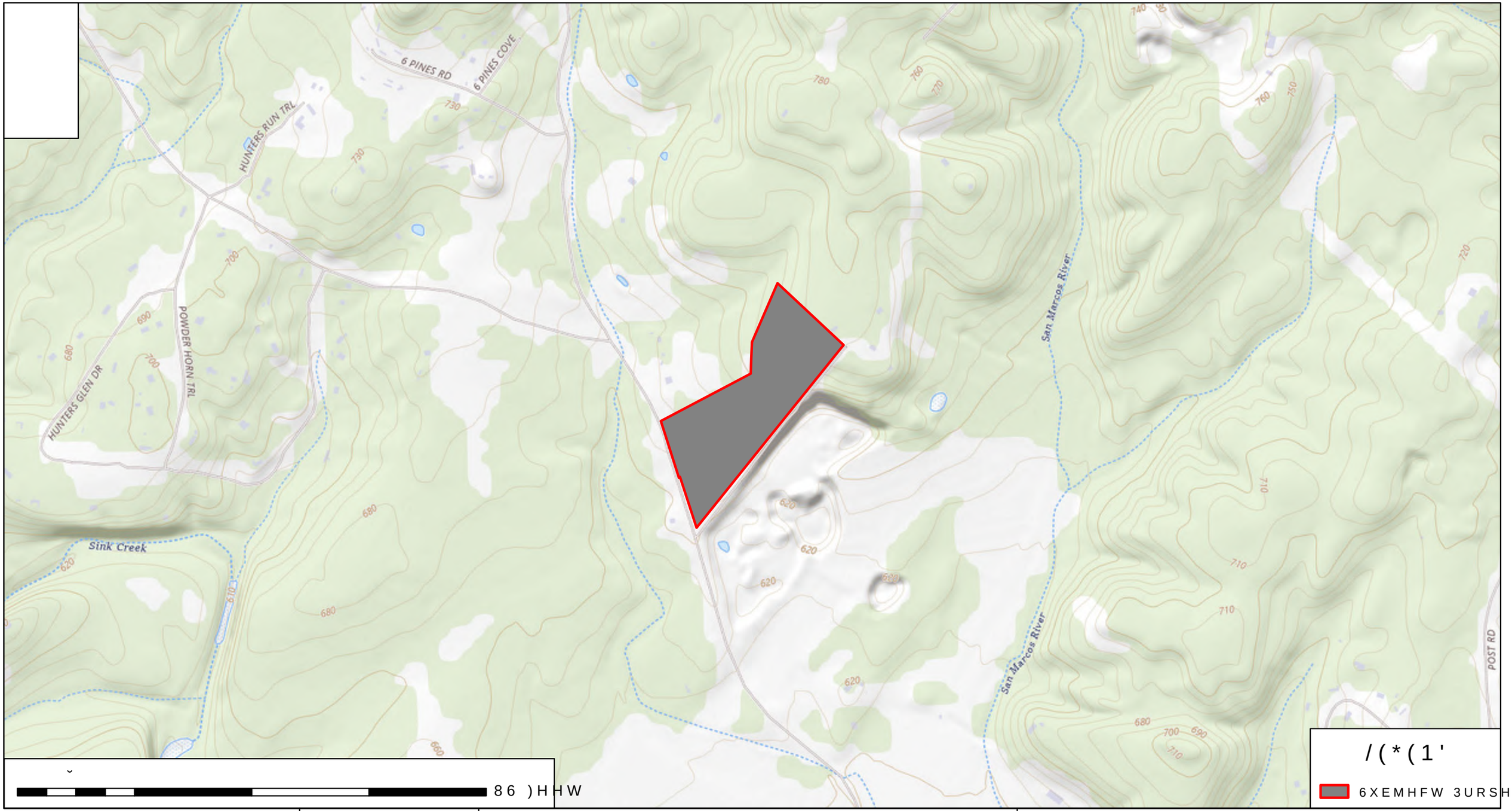
# )LJXUH 6LWH /RFDWLRQ0DS

/LPH .LOQ 5RDG *HRORJLF $VVHVVPHQW *$
/LPH .LOQ 5RDG 6DQ 0DUFRV 7H[DV
+D\V &RXQW\ 7H[DV
a ^ DFUHV

6HUYLFH /D\HU &UHGLWV
:RUOG 6WUHHW0DS &RPPXQLW\ 0DSV &RQWULEXWRUV &RPPXQLW\ 0DSV &RQWULEXWRUV &RPPXQLW\ 0DSV &RQWULEXWRUV *DUPLQ )RXUTXDUH 6DIH*UDSK *HR7HFK 86*6 (3$ 136 86 &HQVXV %XUHDX 86'$ 86):686*6 7RSRJUDSKL 1RUWK 7H[DV 4XDGUDQJOH
6RLOV 'WD 86'$ 15&6 :HE 6RLO 6XUYH\
:HWODQGV 'WD 1DWLRQDO :HWODQGV ,QYHQWRU\
)ORRGSODLQ 'WD )(0$ 1DWLRQDO )ORRG +D]DUG /D\HU
$ 86*6 DWD 86*6 ' (OHYDWLRQ 3URJUDP

(&6 6RXWKZHVW //3
6XPPLW 'ULYH 6XLWH
$XVWLQ 7H[DV
3KRQH
ZZZ HFVOLPLWHG FRP

(&6 3URMHFW 1R
2FWREHU




86 )HHW

+D\V &RXQW\

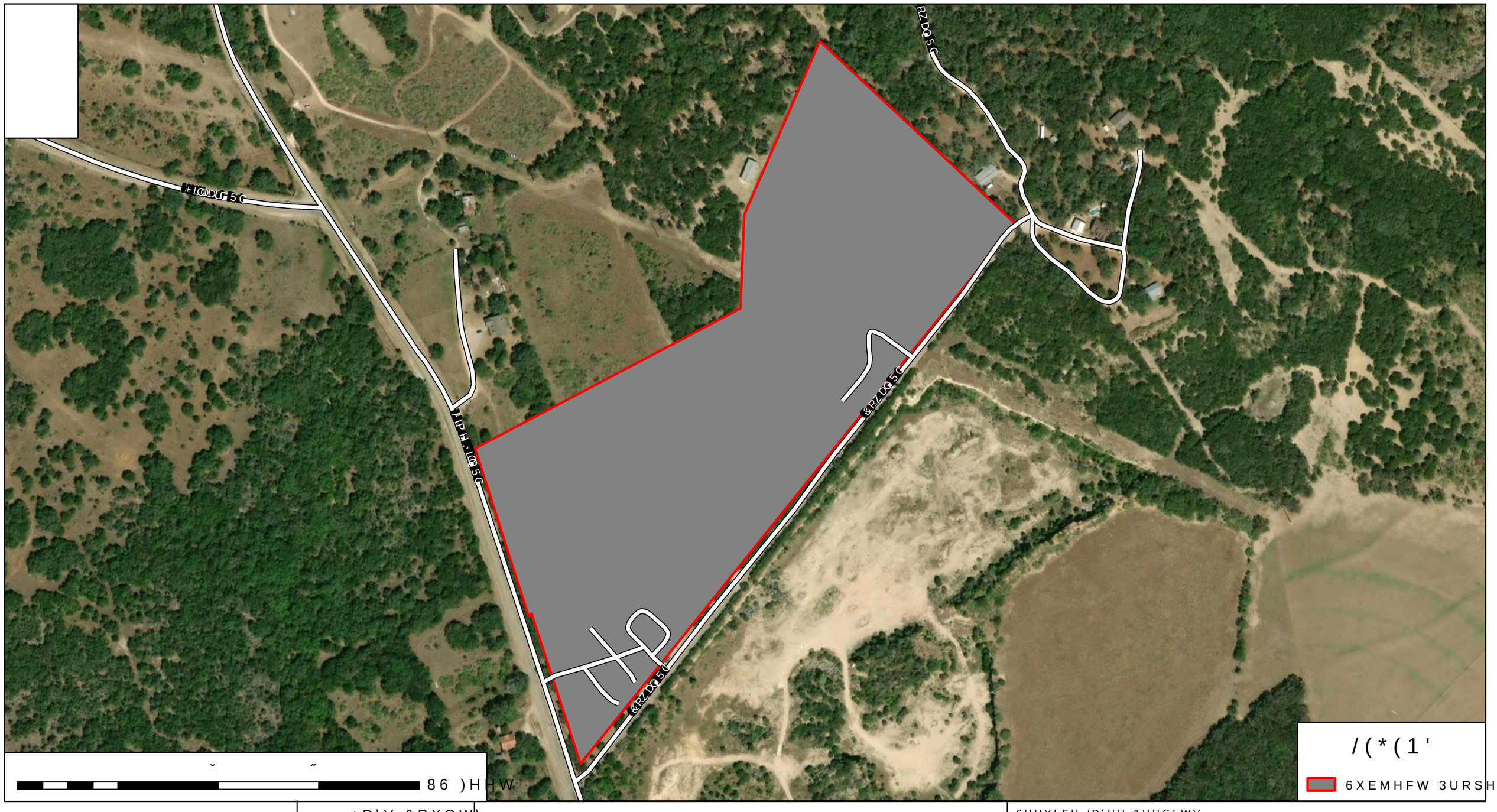
# )LJXUH 86*6 7RSRJUDSKLF 0DS

/LPH .LOQ 5RDG *HRORJLF $VVHVVPHQW *$
/LPH .LOQ 5RDG 6DQ 0DUFRV 7[ DWHUVKHG, 6DQ 0DUFRV
+D\V &RXQW\ 7H[DV 86*6 4XDGUDQJOH, 6DQ 0DUFRV 1RUWK 7H[DV 4XDGUDQJOH
a ^ DFUHV

(&6 6RXWKZHVW //3
6XPPLW 'ULYH 6XLWH
$XVWLQ 7H[DV
3KRQH
ZZZ HFVOLPLWHG FR

(&6 3URMHFW 1R
2FWREHU

6HUYLFH /D\HU &UHGLWV
86*6 7RSR, 86*6 7KHPDWLF 1DWLRQDO 0DS, 1DWLRQDO %RXQGDULHV 'DWDEDVH 1DWLRQDO 6WUXFWXUHV 'DWDVHW DQG 1DWLRQDO (FRV\VWHPV° 8 6 &HQVXV %XUHDX 7,*(5 /LQH GDWD° 86)6 5RDG 'HSDUWPHQW RI 6WDWH +,8° 12$$ 1DWLRQDO &HQWHUV IRU (QY 0DS RI WKH 6DQ 0DUFRV 1RUWK 7H[DV 4XDGUDQJOH 6RLOV 'DWD, 86'$ 15&6 :HE 6RLO 6XUYH\ !HWODQGV 'DWD, 1DWLRQDO :HWODQGV ,QYHQWRU\ )ORRGSODLQ 'DWD, )(0$ 1DWLRQDO )ORRG +D]DUG /D\HU /,'$5 'DWD, 86*6 ' (OHYDWLRQ 3URJUDP




(&6 6RXWKZHVW //3
6XPPLW 'ULYH 6XLWH
$XVWLQ 7H[DV
3KRQH
ZZZ HFVOLPLWHG FR

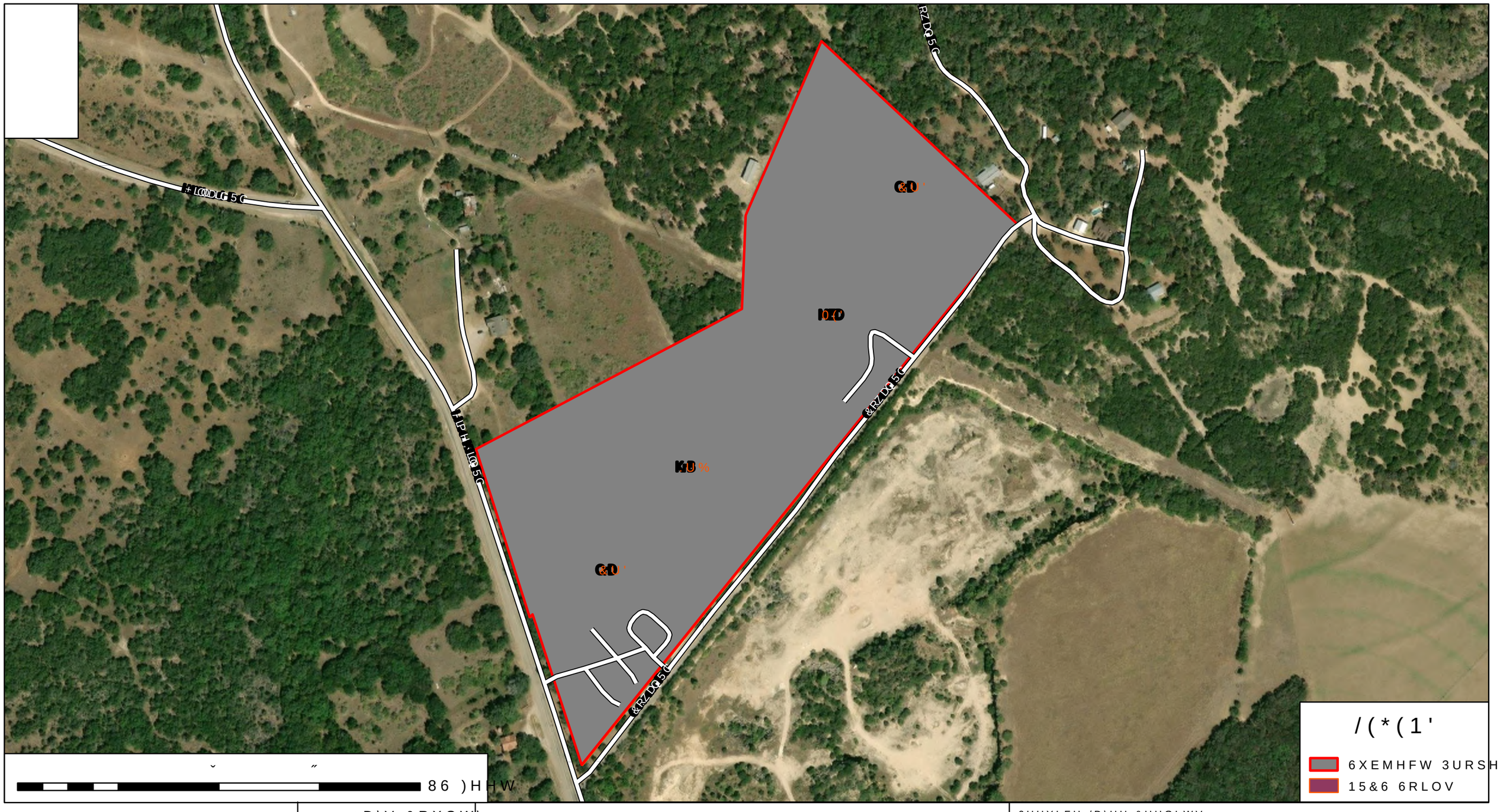
(&6 3URMHFW 1R
2FWREHU

+D\V &RXQW\

# )LJXUH $HULDO 0DS

/LPH .LOQ 5RDG *HRORJLF $VVHVVPHQW *$
/LPH .LOQ 5RDG 6DQ 0DUFRV 7H[DV
+D\V &RXQW\ 7H[DV
a ^ DFUHV

6HUYLFH /D\HU &UHGLWV
(VUL &RPPXQLW\ 0DS &RQWULEXWRUV &RPPXQLW\ 0DSV &RQWULEXWRUV &21$ 6DIH*UDSK *HR7HFKQRORJLHV ,QF 0(7, 1$6$ 86*6 (3$ 136 86):6
:RUOG ,PDJHU\ 0D[DU86*6 7RSRJUDSKLF 0DS RI WKH 6DQ 6RXWK 'DWD 86'$ 15&6 :HE 6RLO 6XUYH\ :HWODQGV 'DWD 1DWLRQDO :HWODQGV ,QYHQWRU\ )ORRGSODLQ 'DWD )(0$ 1DWLRQDO )ORRG +D]DUG /D\HU /,'$5 'DWD 86*6 ' (OHYDWLRQ 3URJUDP




86 )HHW

(&6 6RXWKZHVW //3
6XPPLW 'ULYH 6XLWH
$XVWLQ 7H[DV
3KRQH
ZZZ HFVOLPLWHG FR

(&6 3URMHFW 1R
2FWREHU

+D\V &RXQW\

# )LJXUH 15&6 6RLOV 0DS

/LPH .LOQ 5RDG *HRORJLF $VVHVVPHQW *$
/LPH .LOQ 5RDG 6DQ 0DUFRV 7H[DV
+D\V &RXQW\ 7H[DV
a ^ DFUHV

6HUYLFH /D\HU &UHGLWV
+\EULG 5HVLGXH /D\HU (VUL &RPPXQLW\ 0DS &RQWULEXWRUV
7H[DV 2SHQ6WUHHW0DS 0LFURVRIW &21$
6DIH*UDSK *HR7HFKQRORJLHV ,QF 0(7, 1$6$ 86*6 (3$ 136 8
86):6
:RUOG ,PDJHU\ 0D[DU 0LFURVRIW86*6 7RSRJUDSKLF 0DS
4XDGUDQJOH
6RLOV 'WD 86'$ 15&6 :HE 6RLO 6XUYH\
:HOODQGV 'WD 1DWLRQDO :HWODQGV ,QYHQWRU\
)ORRGSODLQ 'WD )(0$ 1DWLRQDO )ORRG +D]DUG /D\HU
/,'$5 'WD 86*6 ' (OHYDWLRQ 3URJUDP

k

+LOOBU 5C

+LOOBU 5C

+LOOBU 5C

&RZDU 5C

&RZDU 5C

&RZDU 5C

HP

(GZDUGV $TXLIHU
&RQWULEXWLQJ =RQH ZLWKLQ
WKH 7UDQVLWLRQ =RQH

(GZDUGV $TXLIHU
5HFKDUJH =RQH

/(*(1'

6XEMHFW 3URSHU

(GZDUGV $TXLIHU
&RQWULEXWLQJ =

(GZDUGV $TXLIHU
&RQWULEXWLQJ =
ZLWKLQ WKH 7UDQ
=RQH

(GZDUGV $TXLIHU
5HFKDUJH =RQH

(GZDUGV $TXLIHU
7UDQVLWLRQ =RQ

86 )HHW

+D\V &RXQW\

# )LJXUH ˘ (GZDUGV $TXLIHU 0DS

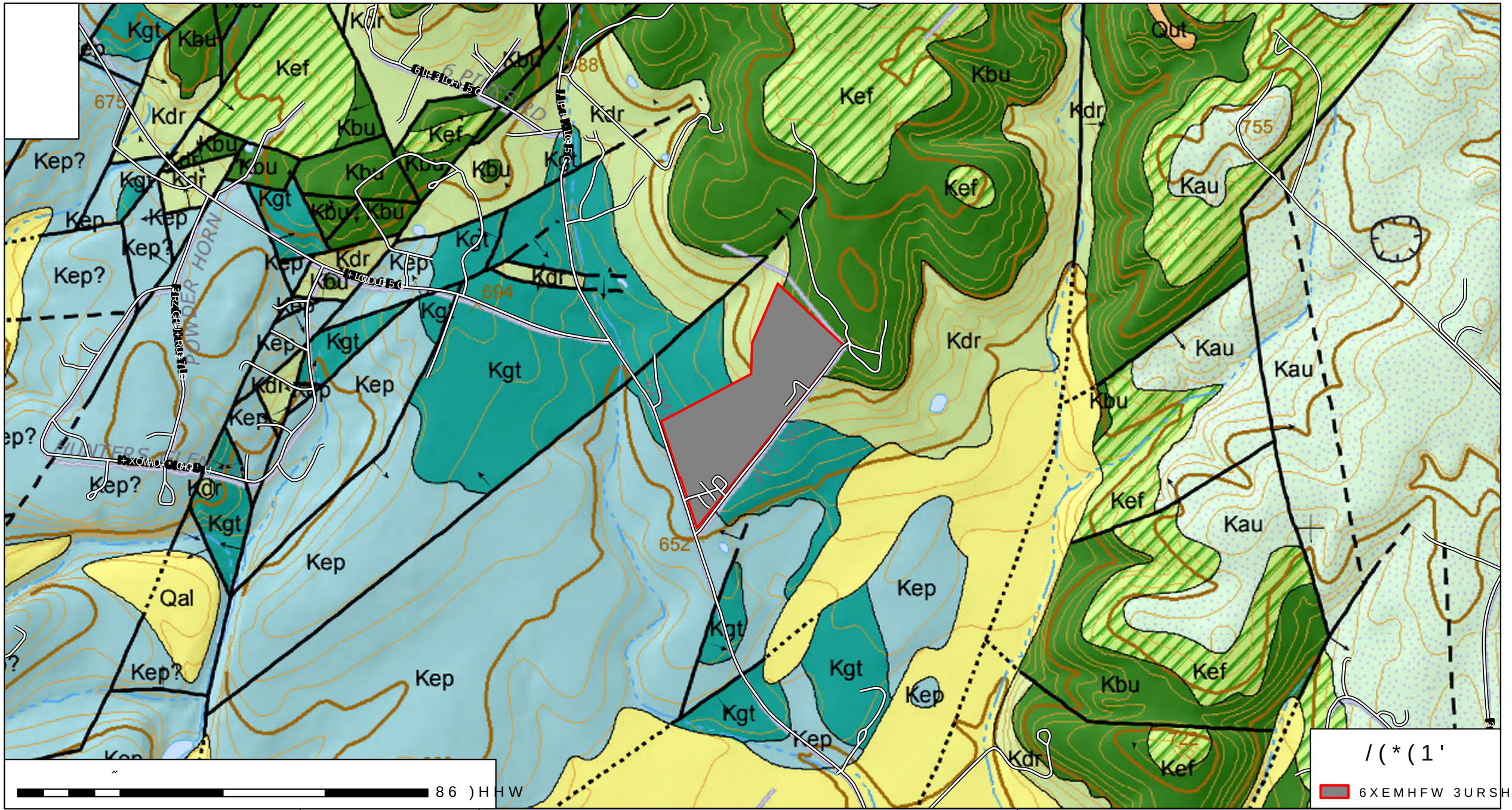
/LPH .LOQ 5RDG *HRORJLF $VVHVVPHQW *$
/LPH .LOQ 5RDG 6DQ 0DUFRV 7H[DV
+D\V &RXQW\ 7H[DV
a ^ DFUHV

(&6 6RXWKZHVW //3
˘ 6XPPLW 'ULYH 6XLWH
$XVWLQ 7H[DV ^ ^ ˘
3KRQH ˘ ^ ˘
ZZZ HFVOLPLWHG FR

(&6 3URMHFW 1R ˘
2FWREHU

6HUYLFH /D\HU &UHGLWV
\EULG5HUHHQHUJ\ (VUL &RPPXQLW\ 0DSV &RQWULEXWRU
7H[DV 3DUNV /LOOOLH ‰ 2SHQ6WUHHW0DS 0LFURVRIW &21$
6DIH*UDSK *HR7HFKQRORJLHV ,QF 0(7, 1$6$ 86*6 (3$ 136 8
86):6
:RUOG ,PDJHU\ 0D[DU86*6 7RSRJUDSKLF 0DS RI WKH 6DQ

6RLOV 'DWD 86'$ 15&6 :HE 6RLO 6XUYH\
!HWODQGV 'WD 1DWLRQDO :HWODQGV ,QYHQWRU\
)ORRGSODLQ 'DWD )(0$ 1DWLRQDO )ORRG +D]DUG /D\HU
/,'$5 'DWD 86*6 ' (OHYDWLRQ 3URJUDP




86 )HHW

/(*(1'

6XEMHFW 3URSHU

+D\V &RXQW\

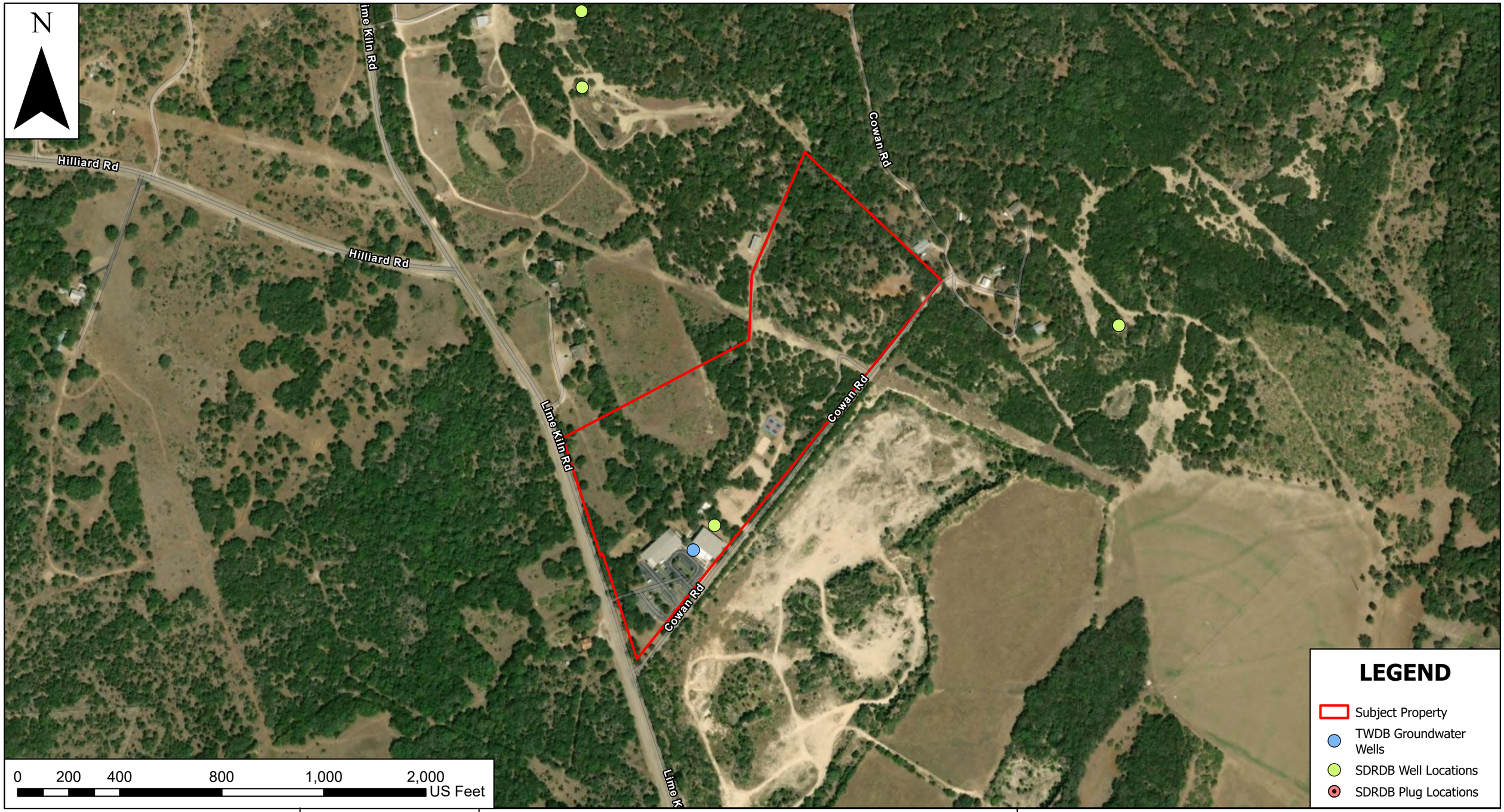
# )LJXUH ˇ $UHD *HRORJLF 0DS

/LPH .LOQ 5RDG *HRORJLF $VVHVVPHQW *$
/LPH .LOQ 5RDG 6DQ 0DUFRV +D\V &RXQW\ 7H[DV

(&6 6RXWKZHVW //3
6XPPLW 'ULYH 6XLWH
$XVWLQ 7H[DV
3KRQH
ZZZ HFVOLPLWHG FRP

(&6 3URMHFW 1R
2FWREHU

6HUYLFH /D\HU &UHGLWV
7RSR &RQWH[W 5HIHUHQFH /D\HU (VUL &RPPXQLW\ 0DSV &RQWULEXWRUV
(VUL &RPPXQLW\ 0DSV &RQWULEXWRUV &RPPXQLW\ 0DSV &RQWULEXWRUV
86*6 (3$ 136 86 &HQVXV %XUHDX 86'$ 86):6
:RUOG ,PDJHU\ 0D[DU86*6 7RSRJUDSKLF 0DS RI WKH 6DQ
6RLOV 'DWD 86'$ 15&6 :HE 6RLO 6XUYH\
:HWODQGV 'DWD 1DWLRQDO :HWODQGV ,QYHQWRU\
)ORRGSODLQ 'DWD )(0$ 1DWLRQDO )ORRG +D]DUG /D\HU
/,'$5 'DWD 86*6 ' (OHYDWLRQ 3URJUDP




ECS Southwest, LLP
14050 Summit Drive, Suite 104
Austin, Texas 78728
Phone: (512) 837-8005
www.ecslimited.com

ECS Project No. 51:4422
October 2024

Hays County

**Figure 7 - Texas Water Development Board (TWDB) Well Map**

**Lime Kiln Road Geologic Assessment (GA)**
**1650 Lime Kiln Road, San Marcos, TX**
**Hays County, Texas**
**(~27 acres)**

Watershed: San Marcos
USGS Quadrangle: San Marcos North, TX 2022

Service Layer Credits:
Hybrid Reference Layer: Esri Community Maps Contributors, City of Austin, City of San Marcos, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS
World Imagery: MaxarUSGS Topographic Map of the San Marcos North, Texas Quadrangle (2022)
Soils Data: USDA NRCS Web Soil Survey
Wetlands Data: National Wetlands Inventory
Floodplain Data: FEMA National Flood Hazard Layer
LIDAR Data: USGS 3D Elevation Program

N

Hilliard Rd

Lime Kiln Rd

Cowan Rd

Cowan Rd

Cowan Rd

F-1

F-2

F-3

F-4

F-5

F-6

0 100 300 600 900 1,000 US Feet

## LEGEND

- Subject Property
- Manmade feature in Bedrock
- Other natural bedrock features
- Solution cavity

ECS Southwest, LLP
14050 Summit Drive, Suite 104
Austin, Texas 78728
Phone: (512) 837-8005
www.ecslimited.com

ECS Project No. 51:4422
October 2024

Hays County

# Figure 8 - Geologic Features Map

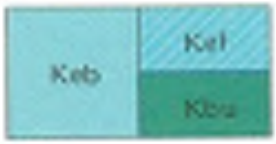
**Lime Kiln Road Geologic Assessment (GA)**
**1650 Lime Kiln Road, San Marcos, TX**
**Hays County, Texas**
**(~27 acres)**

Watershed: San Marcos
USGS Quadrangle: San Marcos North, TX 2022

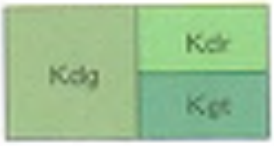
Service Layer Credits:
Hybrid Reference Layer: Esri Community Maps Contributors, City of Austin, City of San Marcos, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS
World Imagery: MaxarUSGS Topographic Map of the San Marcos North, Te (2022)
Soils Data: USDA NRCS Web Soil Survey
Wetlands Data: National Wetlands Inventory
Floodplain Data: FEMA National Flood Hazard Layer
LIDAR Data: USGS 3D Elevation Program

# Appendix II: Stratigraphic Column

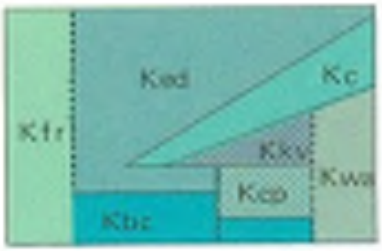
**Stratigraphic Column**
**Lime Kiln Road GA**
**1650 Lime Kiln Road**
**San Marcos, Texas**




Eagle Ford Group and Buda Limestone




Del Rio Clay ("Grayson Marl") and Georgetown Formation




Fredericksburg Group


Paluxy Sand


Glen Rose Formation


Hensell Sand

# Appendix III: Attachments

Soil Map—Comal and Hays Counties, Texas


Map Scale: 1:3,680 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

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

## MAP LEGEND

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

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

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

**Water Features**
- Streams and Canals

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

**Background**
- Aerial Photography

## MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Comal and Hays Counties, Texas
Survey Area Data: Version 21, Aug 30, 2024

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

Date(s) aerial images were photographed: Mar 13, 2022—Apr 6, 2022

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

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| CrD | Comfort-Rock outcrop complex, 1 to 8 percent slopes | 10.9 | 43.4% |
| KrB | Krum clay, 1 to 3 percent slopes | 5.1 | 20.3% |
| MED | Medlin, warm-Eckrant association, 8 to 30 percent slopes | 9.1 | 36.4% |
| **Totals for Area of Interest** | | **25.2** | **100.0%** |

# Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

*Sand* as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Silt* as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Clay* as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

*Moist bulk density* is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

*Saturated hydraulic conductivity (Ksat)* refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

*Available water capacity* refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

*Linear extensibility* refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

*Organic matter* is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

*Erosion factors* are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

*Erosion factor Kw* indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

*Erosion factor Kf* indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

*Erosion factor T* is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

*Wind erodibility groups* are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

*Wind erodibility index* is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (http://soils.usda.gov)

# Report—Physical Soil Properties

| Physical Soil Properties–Comal and Hays Counties, Texas | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Map symbol and soil name | Depth | Sand | Silt | Clay | Moist bulk density | Saturated hydraulic conductivity | Available water capacity | Linear extensibility | Organic matter | Erosion factors | | | Wind erodibility group | Wind erodibility index |
| | | | | | | | | | | Kw | Kf | T | | |
| | *In* | *Pct* | *Pct* | *Pct* | *g/cc* | *micro m/sec* | *In/In* | *Pct* | *Pct* | | | | | |
| CrD—Comfort-Rock outcrop complex, 1 to 8 percent slopes | | | | | | | | | | | | | | |
| Comfort | 0-6 | 12-25- 30 | 20-30- 40 | 37-45- 50 | 1.00-1.50 | 0.42-1.40 | 0.02-0.12 | 1.7-4.3 | 1.0-11.0 | .05 | .20 | 1 | 6 | 48 |
| | 6-13 | 3-10- 15 | 10-25- 40 | 55-65- 75 | 1.10-1.45 | 0.42-1.40 | 0.01-0.10 | 2.1-8.8 | 1.0-8.0 | .02 | .15 | | | |
| | 13-40 | — | — | — | — | 0.42-14.00 | — | — | — | | | | | |
| Rock outcrop | 0-80 | — | — | — | — | 0.42-14.00 | — | — | — | | | | | |
| KrB—Krum clay, 1 to 3 percent slopes | | | | | | | | | | | | | | |
| Krum | 0-16 | 5-26- 33 | 20-29- 45 | 37-45- 65 | 1.00-1.40 | 0.42-1.40 | 0.13-0.20 | 4.7-15.4 | 1.0-5.0 | .20 | .20 | 5 | 4 | 86 |
| | 16-58 | 5-22- 33 | 20-28- 50 | 40-50- 65 | 1.15-1.50 | 0.42-1.40 | 0.12-0.18 | 4.5-11.9 | 0.5-2.0 | .24 | .24 | | | |
| | 58-66 | 5-22- 33 | 20-28- 50 | 40-50- 65 | 1.15-1.50 | 0.42-1.40 | 0.12-0.18 | 4.3-11.7 | 0.3-1.5 | .24 | .24 | | | |
| | 66-80 | 5-23- 33 | 20-29- 55 | 35-48- 60 | 1.30-1.55 | 0.42-4.00 | 0.07-0.18 | 3.2-10.3 | 0.1-1.0 | .20 | .20 | | | |

| Physical Soil Properties–Comal and Hays Counties, Texas | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Map symbol and soil name** | **Depth** | **Sand** | **Silt** | **Clay** | **Moist bulk density** | **Saturated hydraulic conductivity** | **Available water capacity** | **Linear extensibility** | **Organic matter** | **Erosion factors** | | | **Wind erodibility group** | **Wind erodibility index** |
| | | | | | | | | | | **Kw** | **Kf** | **T** | | |
| | *In* | *Pct* | *Pct* | *Pct* | *g/cc* | *micro m/sec* | *In/In* | *Pct* | *Pct* | | | | | |
| MED—Medlin, warm-Eckrant association, 8 to 30 percent slopes | | | | | | | | | | | | | | |
| Medlin, warm | 0-11 | 10-22- 30 | 20-28- 40 | 40-50- 60 | 1.20-1.45 | 0.01-0.42 | 0.10-0.18 | 6.0-12.8 | 1.0-3.0 | .24 | .24 | 4 | 4 | 86 |
| | 11-32 | 5-22- 30 | 20-28- 50 | 40-50- 60 | 1.30-1.60 | 0.01-0.42 | 0.10-0.18 | 5.3-12.0 | 0.3-1.0 | .24 | .24 | | | |
| | 32-50 | 5-22- 30 | 20-28- 50 | 40-50- 60 | 1.30-1.60 | 0.01-0.42 | 0.08-0.15 | 5.3-12.0 | 0.3-1.0 | .24 | .24 | | | |
| | 50-80 | 5-22- 30 | 20-28- 50 | 40-50- 60 | 1.60-1.85 | 0.01-0.42 | 0.01-0.03 | 4.6-10.9 | 0.1-0.5 | .24 | .24 | | | |
| Eckrant | 0-7 | 2-18- 25 | 30-40- 52 | 38-42- 50 | 1.05-1.40 | 1.40-4.00 | 0.03-0.12 | 2.3-6.5 | 2.0-12.0 | .05 | .15 | 1 | 6 | 48 |
| | 7-12 | 2-18- 25 | 30-37- 54 | 40-45- 55 | 1.05-1.40 | 1.40-4.00 | 0.01-0.12 | 1.3-4.7 | 2.0-8.0 | .02 | .15 | | | |
| | 12-80 | — | — | — | — | 0.42-14.00 | — | — | — | | | | | |

# Data Source Information

Soil Survey Area: Comal and Hays Counties, Texas
Survey Area Data: Version 21, Aug 30, 2024

# Appendix IV: Completed 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*

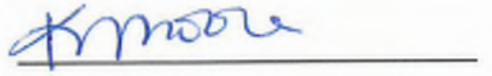
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Katherine Moore  Telephone: 726-437-1980

Date: October 10, 2024  Fax: _____

Representing: ECS Southwest, LLP (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:




10 Oct 2024

**Regulated Entity Name:** San Marcos Lime Kiln GA

## *Project Information*

1. Date(s) Geologic Assessment was performed: October 4, 2024
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 | D | 1-2 |
| Krum clay, 1-3% slopes | C | >6 |
| Medlin, warm-Eckrant association, 8-30% slopes | D | >6 |

| Soil Name | Group* | Thickness(feet) |
|---|---|---|
| | | |
| | | |

** 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" = _____'
   Site Geologic Map Scale: 1" = _____'
   Site Soils Map Scale (if more than 1 soil type): 1" = _____'

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.

## GEOLOGIC ASSESSMENT TABLE 51-3793 PROJECT NAME: Hyde Park High School GA

| 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 | |
| F-1 | 29.91793 | -97.93339 | O | 5 | Kdg | 5 | 5 | 1 | | | | | O | 15 | 20 | X | | X | | Hillside |
| F-2 | 29.9182 | -97.9332 | MB | 5 | Kdg | 20 | 10 | 5 | | | | | O | 10 | 15 | X | | X | | Hillside |
| F-3 | 29.91835 | -97.93292 | O | 20 | Kdg | 60 | 4 | 2 | | | | | O | 15 | 35 | X | | X | | Streambed |
| F-4 | 29.92068 | -97.93141 | O | 20 | Kdg | 1 | 1 | 2 | | | | | O | 10 | 30 | X | | X | | Hillside |
| F-5 | 29.92068 | -97.93037 | SC | 20 | Keb | 1 | 1 | 1 | | | | | O | 10 | 30 | X | | X | | Hillside |
| F-6 | 29.92186 | -97.93083 | SC | 10 | Keb | 1 | 1 | 1 | | | | | O | 10 | 20 | X | | X | | Hillside |

* DATUM:_____

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

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

12 TOPOGRAPHY

Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

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

Date 10-Oct-24

Sheet ___ 1 of 1

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

# Appendix V: Narrative

## NARRATIVE DESCRIPTION OF SITE-SPECIFIC GEOLOGY

Ranging from north to south, two primary physiographic provinces are present in Hays County, the Great Southern Plains and the Gulf Coastal Plain. The Gulf Coastal Plain is comprised mainly of Blackland Prairie. The Great Southern Plain locally merges with the Edwards Plateau which is comprised chiefly of limestone plains.

Groundwater recharge and flow are controlled by faulted Edwards Aquifer and adjacent strata. Water enters the aquifer by means of solution features controlled by faults, fractures and solution conduits. Solution features are created by the dissolution of limestone primarily from rainwater and groundwater. Deformation of the Balcones fault system controls both the large and small-scale flow barriers and flow pathways present in the Edwards Aquifer.

Geological information pertaining to the area was obtained from the Geologic Atlas of Texas, Seguin Sheet, published by University of Texas at Austin, Bureau of Economic Geology (BEG), 1997. The subject property is situated on Edwards Limestone, undivided (Ked) and Del Rio Clay and Georgetown Formation undivided (Kdg)

The Bureau of Economic Geology defines the Edwards Limestone (Ked) on the Seguin Sheet of the Geologic Atlas as follows: limestone, dolomite, and chert; limestone aphanitic to fine grained, massive to thin bedded, hard, brittle, in part rudistid biostromes, much miliolid biosparite; dolomite fine to very fine grained, porous, medium gray to grayish brown; nodules and plates common, varies in amount from bed to bed, some intervals free of chert, mostly white to light gray; in zone of weathering considerably recrystallized, "honeycombed" and cavernous forming an aquifer; forms flat areas and plateaus bordered by scarps; thickness 60 - 350 feet, thins northward.

The Bureau of Economic Geology defines the Del Rio Clay and Georgetown Formation (Kdg) on the Seguin Sheet of the Geologic Atlas as follows: Del Rio Clay: mostly clay, calcareous and gypsiferous, becoming less calcareous and more gypsiferous upward, pyrite common, blocky, medium gray, weathers light gray to yellowish gray, some thin lenticular beds of highly calcareios siltstone, some thin limestone beds composed of pelecypods, thickness 40-60 feet. Georgetown Formation: mostly limestone, fine grained, argillaceous, nodular, mostly indurated, light gray, some limestone, hard, brittle, thick bedded, white, some shale, calcareios, soft, light gray to yellowish gray, thickness 10-45 feet.

ECS did not observe potable water wells on the subject property. Evidence of septic systems was observed adjacent to the building on the south portion of the subject property.

The site investigation was performed by systematically traversing the subject tract, and mapping fractured or vuggy rock outcrops, closed depressions, sinkholes, caves, or indications of fault/fracture zones. The purpose of the site investigation was to delineate features with recharge potential that may warrant special protection or consideration. The results of the site investigation are included in the attached TCEQ report format.

# Appendix VI: Photographic Log

1 - Stormwater inlet observed on south portion of subject property.

2 - View across surface parking lot that is present on the south poriton of the subject site.

3 - Stormwater inlet observed in grassy area adjacent to south parking lot.

4 - View of live oak trees on site.

5 - View of a cedar (Juniperus ashei) and oak canopy on the subject property.

6 - Vuggy fractured outcrop (feature F-1) observed near the west property boundary (29.91793, -97.93339)

7 - Mesquite trees (Prosopus glandulosa) were observed throughout the subject property.

8 - Exposed bedrock and septic tank field (feature F-2) observed to the northwest of the building on the south portion of the site (29.91820, -97.93332)

9 - Stormwater drainage channel (feature F-3) observed in proximity to the onsite building (29.91835, -97.93292).

10 - Prairie tea (Croton monanthogynus) ground cover vegetation observed on the subject property.

11 - View across clearing on west central portion of the site.

12 - Power transmission line clearing on the north poriton of the site.

13 - Another view along the cleared power transmisison line.

14 - Vuggy fractured outcrop (feature F-4) observed north of the power transmission line (29.92068, -97.93141)

15 - Solution cavity feature F-5 observed on the north portion of the property, 29.92068, -97.93037.

16 - View along a walking trail on the subject property.

17 - Stormwater drainage inlet observed on the south portion of the property.

18 - Stormwater inlet on south portion of the property.

19 - Manmade, non-karst depression on far north portion of the subject property.

20 - Solution cavity feature F-6 observed at 29.92186, -97.93083.

# Water Pollution Abatement Plan, **4.0**

# Water Pollution Abatement Plan Application

**Texas Commission on Environmental Quality**

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

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

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

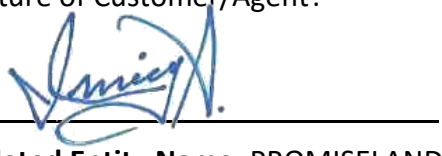
## *Signature*

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

Print Name of Customer/Agent: Irving Aguilar

Date: 6/30/2025

Signature of Customer/Agent:



**Regulated Entity Name:** PROMISELAND WATER SUPPLY

## *Regulated Entity Information*

1. The type of project is:

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

2. Total site acreage (size of property):19.72

3. Estimated projected population:_____

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

**Table 1 - Impervious Cover Table**

| Impervious Cover of Proposed Project | Sq. Ft. | Sq. Ft./Acre | Acres |
|---|---|---|---|
| Structures/Rooftops | 46,989.35 | ÷ 43,560 = | 1.08 |
| Parking | 134,759.62 | ÷ 43,560 = | 3.09 |
| Other paved surfaces | 12,141.13 | ÷ 43,560 = | 0.28 |
| Total Impervious Cover | 193,890.10 | ÷ 43,560 = | 4.45 |

**Total Impervious Cover** 4.45 **÷ Total Acreage** 19.72 **X 100 =** 22.57**% Impervious Cover**

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

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

## *For Road Projects Only*

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

7. Type of project:

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

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

   ☐ Concrete
   ☐ Asphaltic concrete pavement
   ☐ Other: _____

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

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

10. Length of pavement area: _____ feet.

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

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

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

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

## *Stormwater to be generated by the Proposed Project*

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

## *Wastewater to be generated by the Proposed Project*

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

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

15. Wastewater will be disposed of by:

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

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

☐ Sewage Collection System (Sewer Lines):

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

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

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

☐ Existing.
☐ Proposed.

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

## *Site Plan Requirements*

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

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

Site Plan Scale: 1" = 30'.

18. 100-year floodplain boundaries:

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☒ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA Flood Map, 48209C0391F eff. 9/2/2005

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

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

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

☒ There are 1 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

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

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

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

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

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

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

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

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

26. ☐ Surface waters (including wetlands).

    ☒ N/A

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

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

28. ☒ Legal boundaries of the site are shown.

## *Administrative Information*

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

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

**Water Pollution Abatement Plan (TCEQ - 0584)**

**Attachment A**

## Factors Affecting Surface Water Quality

Urbanization will affect water quality by increasing sediment loading and introducing nutrients pathogens, oxygen-demanding matter, and toxic pollutants to receiving waters.

Factors affecting water quality for the proposed development include the following:

1) Proposed road and vehicular traffic
2) Human litter and pet waste

The proposed bioretention ponds will provide water quality for the project site. These bioretention ponds will mitigate pollutants from the factors listed above.

**Water Pollution Abatement Plan (TCEQ - 0584)**

**Attachment B**

## Volume and Character of Stormwater

The total project site area is 19.72-acres. The total project impervious cover after construction will be 1.38-acres (6.998%).

Three proposed bioretention ponds are designed to treat stormwater runoff quality and two proposed detention ponds will be designed to control runoff from exceeding existing conditions.

TSS calculations show that each of the proposed bioretention pond is sufficiently sized to provide 89% removal for the proposed development. (Reference overall TSS Removal Calculations).

Stormwater runoff from all proposed impervious area will be collected in a proposed bioretention pond where it will be treated and then directed via on-site storm lines to either a proposed detention pond or to an outlet and released on-site. All treated stormwater directed to the proposed detention pond will be released to a separate point on-site.

Comparisons of the existing and proposed flow calculations are included on the following pages. Please refer to the plan set for more information, including drainage area maps.

**Water Pollution Abatement Plan (TCEQ - 0584)**

**Attachment C**

**Suitability Letter from Authorized Agent (if OSSF is proposed)**

The on-site sewage facility will be designed by others. See WGI Civil Plan set sheet CS100 for reference. Refer to drawings by Burrier Nixon Engineers dated 04/12/2024 for detailed design.

**BURRIER NIXON ENGINEERS**
Reg. No. F-24967
CHRISTINE NIXON, P.E.
9901 BRODIE LN, STE 160, PMB 195
AUSTIN, TX 78748
(512) 694-0537

August 13, 2024

Hays County Comments Response

1650 Lime Kiln Rd, San Marcos, TX (OSSF-2024-3839)

1) This tract of land lies within the ETJ of the City of San Marcos. The property owner/applicant must provide documentation that the parcel is compliant with their development regulations.
   The tract now lies outside the ETJ of the City of San Marcos.
2) A portion of the property lies within the Edwards Aquifer Recharge Zone. The property owner/applicant must provide documentation from the TCEQ that an Edwards Aquifer Protection Plan is approved or not required.
   The civil engineers are submitting a plan to the TCEQ.
3) The property owner/applicant needs to contact the Fire Marshal to find out if they have any requirements that are required for this project.
   The drawings are under review by a third party per FM direction.
4) Design parameters and BOD calculations must be revised. The floor plans for the building indicate a large commercial kitchen that includes 3 refrigerators, multiple prep tables, an oven, a 6-8 burner stove, a flat top stove, prep sinks, and warewashing sinks along with the dishwashing machine. The property owner may need to apply for and obtain a retail food establishment permit from Hays County prior to serving the public.
   The BOD calculations have been updated. On Friday and Saturday nights, we are assuming 4 gpd/person at 1200 mg/l and 4 gpd/person at 300 mg/l.
5) There is plumbing in both bridal suites, but no sewer lines are indicated leaving these buildings.
   The gravity lines from the bridal suites are now shown.
6) There are multiple features on the site plan that are illegible and not labeled. A new site plan is required that is clearly legible.
   The site plan is now more legible and labeled.
7) Design calculations indicate and cross section of treatment tanks indicate a ProFlo 1500, but the site plan indicates ProFlo 1000 treatment tanks. The planning materials must be consistent.
   The typo has been corrected.

8) The property owner/applicant needs to apply for and obtain a development permit before any new construction can begin.
   The civil engineer is currently working on a development permit.
9) Page 12 of the planning materials indicates a 1000-gallon one-compartment septic tank. There are no 1000- gallon septic tanks in the design. You need to provide a cut sheet for a grease tank instead of this tank.
   A new spec is now included.
10) Page 12 of the plans is missing part of the page. Provide a full sheet.
   Page 12 has been updated.
11) The site plan indicates a field box, which is detailed on page 24 of the plans, but it does not include the flow meter. Indicate the location of the flow meters on the site plan.
   The flow meter is now shown on the site plan.

BURRIER NIXON ENGINEERS
Reg. No. F-24967
CHRISTINE NIXON, P.E.
9901 BRODIE LN, STE 160, PMB 195
AUSTIN, TX 78748
(512) 694-0537

August 13, 2024

Hays County Comments Response

12612 Live Oak Lane, Buda, TX (OSSF-2024-3792)

1) This tract of land lies within the ETJ of the City of San Marcos. The property owner/applicant must provide documentation that the parcel is compliant with their development regulations.
   The tract now lies outside the ETJ of the City of San Marcos.
2) A portion of the property lies within the Edwards Aquifer Recharge Zone. The property owner/applicant must provide documentation from the TCEQ that an Edwards Aquifer Protection Plan is approved or not required.
   The civil engineers are submitting a plan to the TCEQ.
3) The property owner/applicant needs to contact the Fire Marshal to find out if they have any requirements that are required for this project.
   The drawings are under review by a third party per FM direction.
4) Design parameters and BOD calculations must be revised. The floor plans for the building indicate a large commercial kitchen that includes 3 refrigerators, multiple prep tables, an oven, a 6-8 burner stove, a flat top stove, prep sinks, and warewashing sinks along with the dishwashing machine. The property owner may need to apply for and obtain a retail food establishment permit from Hays County prior to serving the public.
   The BOD calculations have been updated. On Friday and Saturday nights, we are assuming 4 gpd/person at 1200 mg/l and 4 gpd/person at 300 mg/l.
5) There is plumbing in both bridal suites, but no sewer lines are indicated leaving these buildings.
   The gravity lines from the bridal suites are now shown.
6) There are multiple features on the site plan that are illegible and not labeled. A new site plan is required that is clearly legible.
   The site plan is now more legible and labeled.
7) Design calculations indicate and cross section of treatment tanks indicate a ProFlo 1500, but the site plan indicates ProFlo 1000 treatment tanks. The planning materials must be consistent.
   The typo has been corrected.

BURRIER NIXON ENGINEERS
Reg. No. F-24967
CHRISTINE NIXON, P.E.
9901 BRODIE LN, STE 160, PMB 195
AUSTIN, TX 78748
(512) 694-0537

STATE OF TEXAS
CHRISTINE NIXON
137050
LICENSED
PROFESSIONAL ENGINEER
8/13/24

August 13, 2024

***SITE DESCRIPTION / EVALUATION***

The site is located in Hays County, 1650 Lime Kiln Rd, San Marcos, TX. The owner, the Promiseland Church, wishes to design an OSSF for a wedding venue. There will be a maximum of 300 people and 30 staff per week. The largest single event will be 200 people and 25. Occasionally, they will hold church events during the week. These events will have a maximum of 50 people. There are two bridal suite rooms. We will allow 100 gpd per room and assume a maximum occupancy of 2 nights per week. The venue will have a kitchen. The kitchen oven and dishwasher are provided for church events only. Food for the weddings will be prepared offsite, and dishes will be washed offsite. Catered food can be warmed in the kitchen.

Saturday (peak day): (8 gpd x 225 people) + (2 x 100 gpd) = 2000 gpd
Friday: (8 gpd x 105 people) + (2 x 100 gpd) = 1040 gpd
Wednesday and Sunday: (20 gpd x 50 people) = 1000 gpd
Total: 2000 + 1040 + 1000 + 1000 = 5040 gallons per week / 7 days = 720 gpd

We will design the system for 800 gallons per day.

The total acreage of the lot is 19.7197 acres. According to Hays County Rules, we are allowed to discharge 19.7197 x 300 gpd = 5916 gpd. The combined outflows of the existing church is 300 gpd and the proposed wedding venue is 800 gpd. The combined daily flows will, therefore, not exceed 5000 gpd.

Because this is a proposed commercial OSSF, we will be designing an aerobic drip system. The drainage on the lot will be such that it will not adversely affect the performance of the on-site sewage facility. The sizing was determined as specified in the Texas Commission on Environmental Quality On-Site Sewage Facility-§285.33 (d) (1) (1), and in accordance with design criteria in the North Carolina State University Sea Grant College Publication UNC-S82-03 (1982). Vegetation at the proposed site consists of natural grasses and no recharge features are located within the area. To prevent driving on the proposed field, curb stops should be placed along the proposed drive. Water saving devices are being utilized. A public water well is provided.

Equalization is provided to avoid the construction of a large drain field. The system is designed to dose the effluent periodically over a week.

| Day of the Week | In flow | Out flow | Remaining in storage tank |
|---|---|---|---|
| Friday | 1040 gal | 800 gal | 240 gal |
| Saturday | 2000 gal | 800 gal | 1440 gal |
| Sunday | 1000 gal | 800 gal | 1640 gal |
| Monday | 0 gal | 800 gal | 840 gal |
| Tuesday | 0 gal | 800 gal | 40 gal |
| Wednesday | 1000 gal | 800 gal | 240 gal |
| Thursday | 0 gal | 240 gal | 0 gal |

***SYSTEM DESCRIPTION***

The on-site sewage facility will utilize a proprietary treatment plant with drip irrigation disposal. Wastewater from the kitchen will flow into a 1000 gallon grease trap, then flow into a 5000 gallon, dual compartment septic tank. Wastewater from the bathrooms will flow directly into the 5000 gallon septic tank. From the septic, we will gravity flow into a 4000 gal EQ tank, then dose into two ProFlo 1500S ATUs, alternating between the two tanks through a K-Rain Alt valve 6402. Each ATU will then gravity flow into a 1500 gallon pump tank. Each pump will distribute through a K-Rain Model 6402 Valve, then discharged through a drip irrigation pressure emitter system. A timer will be set to dose 50 gallons eight times per day. Additionally, the floats will be adjusted according to the attached pump tank cross section. The drip emitter system will have four zones, each zone will have 3 loops, 336 LF each. The surface of the existing soil must be scarified (any large rocks greater than 6" in diameter must be removed during scarification and replaced with suitable soil). After scarification, the drip lines will be placed on the scarified soil and then covered with 8" of soil (Ty III). A spin filter will be installed in the pressure lines that is 155 mesh or greater. A pressure regulator (set at 51 psi) with bypass will be installed in the supply line (see diagram). The drip emitter line must be flushed periodically. This is accomplished by opening the return line from the drip field to the pre-treatment tank. In this process, the velocity of water moving through the tubing must be at least 2 feet per second. To prevent plugging of the emitters, it is recommended that field flushing take place on a regular basis. Field flushing should be done at least several times per year. This will clean out the emitter lines, and will help prevent emitter blockage, slime buildup, and inorganic scale buildup. THE FLUSH RETURN SHOULD RETURN TO THE TRASH TANK. All drip line connections to manifolds should have at least 18" of PVC (see detail). When running drip lines that take turns, loops or series of loops back to the return flush line before making a connection, make a transition to solid tubing that will resist kinking and will not emit effluent in the turns.

The installer will provide the owner with an owner's manual containing the maintenance and operation instructions.

***$BOD_5$ CONSIDERATIONS***

Weekly average:
Saturday: 900 gpd @ 1200  900 gpd @ 300mg/l  200 gpd @ 300 mg/l

Friday: 420 gpd @ 1200 mg/l  420 gpd at 300 mg/l  200 gpd at 300 mg/l

Wednesday and Sunday: 400 gpd @ 1200 mg/l  600 gpd @ 300 mg/l;

Weighted *weekly* average: [(900+420+400+400) / 5040 x 1200 mg/l] + [(1100+620+600+600) / 5040 x 300 mg/l)] = 504.8 + 173.8 mg/l = 678.6 mg/l

$$mg / l = \frac{lbs\ BOD_5 \times 1{,}000{,}000\ gal / 8.34\ lbs/gal}{gpd}$$

678.6 mg/l = (lbs $BOD_5$ x 1,000,000 gal / 8.34 lbs/gal) / 5040 gpd
lbs $BOD_5$= 28.5 lbs $BOD_5$ per week
lbs $BOD_5$= 4.1 lbs per day

Since we are taking weekly average, we will size the ATU up by 25% for peak concentration.
1.25 x 4.1 lbs $BOD_5$ = 5.1 lbs $BOD_5$ per day

A ProFlo 1500S will treat up to 3.75 lbs per day. We will be dosing to two 1500 gpd ATUs.
2 x 3.7 = 7.4 lbs $BOD_5$ per day > 5.1 lbs $BOD_5$ per day

***CALCULATIONS AND SPECIFICATIONS***

1. Required Drip Area (SA) = Q / Ri

where Q = daily usage rate
Ri = effluent loading rate in gal/sq. ft./day

Therefore: S.A. = 800 / 0.1
S.A. = 8000 sq. ft

2. Septic Tank Minimum Liquid Capacity

Note: The trash tank and pump tank must comply with the applicable structural requirements from TCEQ OSSF Rules Sect. 285.32 and 285.34 (b)

Since Q = 800 gal / day
Required Septic Tank Volume = 2.5Q = 2000 gallons

Risers to 2" above grade required on all tank compartments
Two 1500 gallon single compartment pump tanks; capacity is available for at least 1 day's flow above the alarm-on level. See pump tank cross section for float settings. A 155 mesh filter will be installed.

3. Flow Rates

Emitter spacing---2 ft centers
Emitter line required 8000 sq ft / 2 ft spacing = 4000 ft. (4032 ft proposed)

Number of emitters = 8068 sq ft / (4 sq ft / emitter) = 2016 emitters
Number of emitters per zone = 2016 / 4= 504 emitters

Emitter flow rate = 0.6 Gal / Hr
Total flow = 504 emitters x 0.6 gal / emitter / hr = 302 gal / hr
302 gph / 60 min / hr = 5.0 gpm

It has been established that proper scouring and flushing of any pipe system will require at least 1.6 gallons per minute flow at the outflow end of any pipe. Therefore, we should require a flow of at least 1.6 gallons per minute out of each dipper line connection that has been made to the return flush manifold pipe. The field will have 12 loops, 336 LF each (see site plan) which will be divided into four zones, each having 3 loops, 336 LF each.

Flow rates and pump sizing:

3 connections x 1.6 gpm = 4.8 gpm
Total flow = 5.0 gpm + 4.8 gpm = 9.8 gpm

Head Calculation

Supply Line Loss for 1½" Header = .83 x 200 ft / 100 ft = 1.6 ft
Return Flush Line for 1½" Header = .83 x 200 ft / 100 ft = 1.6 ft

| | |
|---|---|
| Pressure required at the inlet of the drip tubing 40 psi x 2.3 ft/psi: | 92.0 ft |
| Elevation from the pump to the highest drip tubing inlet: = | 10.0 ft |
| Supply line loss = | 1.6 ft |
| Return line loss = | 1.6 ft |
| K-Rain Alt Valve 6604 | 9.0 ft |
| Seametrics Flow Meter | 2.5 ft |
| 100 micron filter | |
| Amiad 2" T Super filter <0.28 psi = | <0.12 ft |
| Total | 117 ft |

117 ft / 2.3 ft/psi = 50.7 psi

Pump Requirement = 9.8 gpm @ 117 ft
Pump – Franklin Electric 20XC1-05P4-2W115 ½ HP

To deliver the required 50 gallons eight times per day (400 gpd/ 8) at 5.0 gpm, the Omron Timer Model H3CR-F8-120 timer should be set to run for (50/5.0) 10 minutes (600 seconds) every 4 hours.

4. Flow, Dosing and Head Calculations for EQ TANK PUMP

Equalization tank
$V_{pumping}$ = Qx2 = 1640 gal x 2 = 3280 gal
Operating volume: 2000 gal (peak flow) x 1.2 = 2400 gallons
Use two Gatco DZ-1600 PUMP tanks booted together at the bottom and vented

Total Head = Elevation Head + Pressure Head + Friction Head
Elevation Head = 3 ft
Pressure Head = 1 ft

Friction Head
Fr.Hd. loss per 50' of 2" Sch 40 PVC @ 50 GPM = 4.67 ft
Total Pipe Length = 10' of 2" SCH 40 PVC
Total Friction Head = 10' x 4.67 ft / 100 ft = .5 ft

Total Head = 3 ft + 1 ft + .5 ft = 4.5 OK, within pump curve

A Liberty Model FL-30 1/3 hp (see attached) will deliver 50 gallons a minute at 5 feet of head. To deliver the required 44 gallons eighteen times per day (800 gpd/ 18 doses), the pump needs to run 53 seconds (0.88 minutes) every 1.5 hours. To do this, the pump must be on an Omron Timer Model H3CR-F8-120.

The pump shall include elapsed time meters and cycle counters.

***TANKS***

The risers to all tanks must be permanently fastened to the tank lid or cast into the tank. The connection between the riser and the tank lid must be water tight and the risers must be fitted with a removable water tight cap and protected against unauthorized intrusions. Acceptable protection measures include a padlock, a cover that can be removed with tools, a cover having a minimum weight of 65 pounds sit into a recess of the tank lid or any other means approve by TCEQ. A secondary provision such as a plug, net or mesh in the riser is also required.

***CONSTRUCTION / INSTALLATION***

Installer shall follow all manufacturers' instructions for installation of treatment plant, wiring, and aerator. All required setbacks are to be followed by the installer. After tank holes are dug, a minimum of four inches of sand, sandy loam clay, or pea gravel, free of rock shall be placed in the holes. Tanks may them be placed in the holes, which shall be left open until inspection, then backfilled with sand, sandy loam clay, or pea gravel, free of rock.

***ELECTRICAL***

All electrical wiring shall be in accordance with the most recent edition of the National electric Code. Connections shall be in approved junction boxes and all external power wiring shall be in approved electrical conduit, buried and terminated at a main circuit breaker panel or sub-panel.

***LANDSCAPING***

The drip irrigation area must be contoured to a uniform slope such that the drip tubing may be placed to avoid any sharp slopes. After contouring, the ground must be scarified and a thin layer of Ty III soil shall be placed over natural ground and then the drip lines may be placed on this Ty III soil. Areas that are bare or have been disturbed must be seeded or sodded with a mix of rye and bermuda grasses prior to system operation. It is highly recommended that a good stand of vegetation be established prior to system operation.

## INSPECTION

One open pit inspection will be performed when the system components are in place and operational. Hays County may require more inspections. Installer will give 48 hours notice to the designer for inspections.

## MAINTENANCE REQUIREMENTS

Permit approval requires the applicant to furnish to the regulatory authority a valid maintenance contract with a maintenance company. The maintenance company will verify that the system is operating properly and that they will provide on-going maintenance of the installation. The initial maintenance contract must be valid for a minimum of two years. A maintenance contract will authorize the maintenance company to maintain and repair the system as needed. Again, a copy of the signed maintenance contract between the property owner and an approved maintenance company shall be provided to the permitting authority prior to final permit approval.

The owner shall continuously maintain a signed written contract with a valid maintenance company and shall submit a copy of the contract to the permitting authority at least 30 days prior to the date service will cease.

If a maintenance company discontinues business, the property owner shall, within 30 days of the termination date, contract with another approved maintenance company and provide the permitting authority with a copy of the newly signed maintenance contract.

## AFFIDAVIT

Prior to issuance of a permit, a certified copy of an affidavit, which has been duly recorded at the Hays County Clerk's office and filed in reference to the real property deed on which the aerobic system with drip emitters is to be installed, must be submitted. Such an affidavit shall state that the property shall not be transferred to a new owner without:

1. the new owner being advised that the property contains an aerobic treatment system with sub-surface drip emitters for wastewater disposal;

2. the permit issued to the previous owner of the property being transferred to the new owner in accordance with Sect. 285.20(5) of the TCEQ OSSF Rules, i.e.; the permit will be issued in the name of the owner of the OSSF. Permits shall be transferred to the new owner automatically upon legal sale of the OSSF. The transfer of an OSSF permit under this section shall occur upon actual transfer of the property on which the OSSF is located unless the ownership of the OSSF has been severed from the property;
3. the new owner submitting a valid signed maintenance contract to the permitting authority.

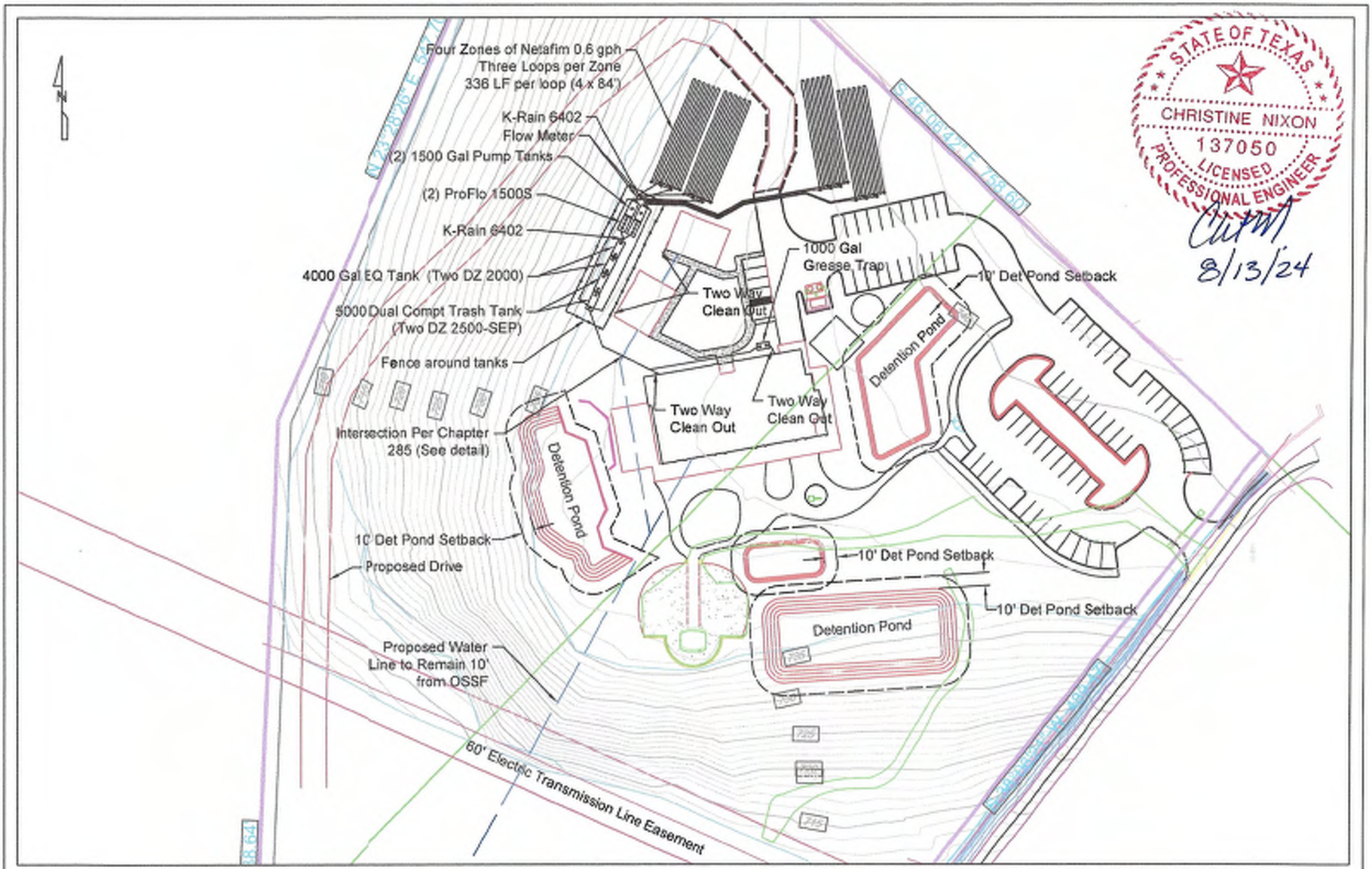
## TESTING AND REPORTING

The maintenance company shall inspect each permitted system as directed by the testing and reporting schedule shown in Sect 285.91 (4) of the TCEQ OSSF Rules, or as may be required by Hays County. The maintenance company shall report any responses to homeowner complaints, and the results of its maintenance findings to Hays County within ten days of the specified reporting frequency.

The frequency of testing and type of tests required are shown in Sect. 285.91 (4) of the TCEQ OSSF Rules.

## LICENSE TO OPERATE

Contact Hays County for information.




| | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

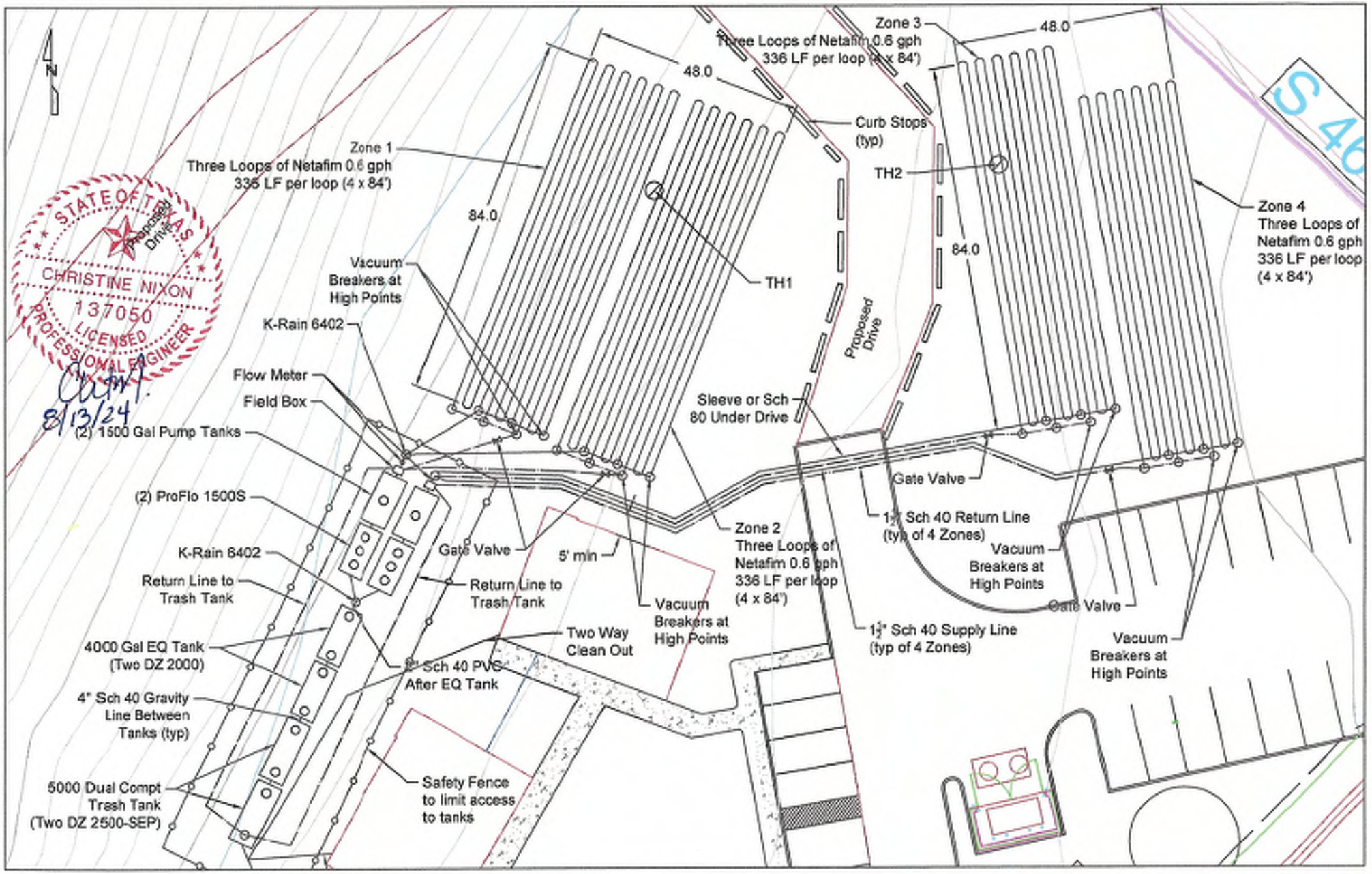
Revisions

| | |
|---|---|
| Date | 8/13/2024 |
| Drawn by | Christine Nixon |
| Client | Promiseland Church |

Burrier
Nixon
Engineers

Promiseland Church
1650 Lime Kiln Rd
San Marcos, TX
Hays County

Scale 1"=100'




| Revisions | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

Date 8/13/2024

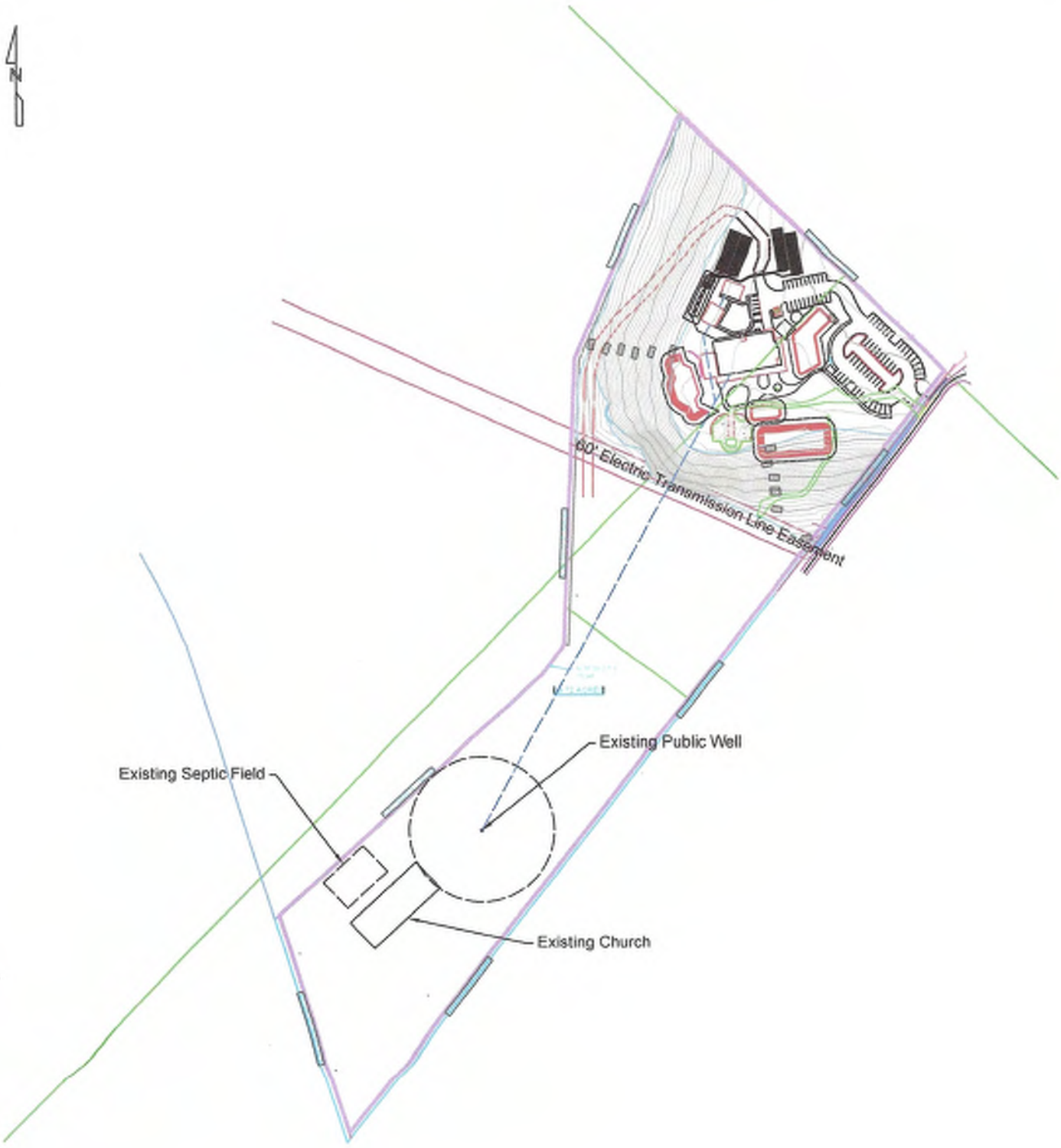
Drawn by Christine Nixon

Client Promiseland Church

Burrier
Nixon
Engineers

Promiseland Church
1650 Lime Kiln Rd
San Marcos, TX
Hays County

Scale 1"=30'




| | | | |
|---|---|---|---|
| Date 8/13/2024 | Burrier Nixon Engineers | Promiseland Church<br>1650 Lime Kiln Rd<br>San Marcos, TX<br>Hays County | |
| Drawn by Christine Nixon | | | |
| Client Promiseland Church | | | 1"=300' |

# HAYS COUNTY ENVIRONMENTAL HEALTH DEPARTMENT
# OSSF SOIL EVALUATION FORM

Owners Name: Promiseland Church
Physical Address: 1650 Lime Kiln Rd, San Marcos, TX
Name of Site Evaluator: Christine Nixon
Date Performed: October 11, 2023 Proposed Excavation Depth: N / A
Aerobic treatment / spray irrigation

Requirements:

At least two soil excavations must be performed on the site, at opposite ends of the proposed disposal area.
Locations of soil evaluation must be shown on the application site drawing or designer's site drawing
For subsurface disposal, soil evaluations must be performed to a depth of at least two feet below the proposed excavation depth.
For surface disposal, the surface horizon must be evaluated.
Please describe each soil horizon and identify any restrictive features in the space provided below. Draw lines at the appropriate depths.

SOIL BORING NUMBER 1

| Depth (Feet) | Texture Class | Gravel Analysis | Structure (For Class III-blocky, platy or massive | Drainage (Mottles/ Water Table) | Restrictive Horizon | Observations |
|---|---|---|---|---|---|---|
| 0<br>1<br>2<br>3<br>4<br>5 | 0-24" Clay<br><br>24" – below | | Ty IV<br><br>rock | | | |

SOIL BORING NUMBER 2

| Depth (Feet) | Texture Class | Soil Texture | Structure (For Class III-blocky, platy or massive | Drainage (Mottles/ Water Table) | Restrictive Horizon | Observations |
|---|---|---|---|---|---|---|
| 0<br>1<br>2<br>3<br>4<br>5 | 0-48" Clay<br><br>48" – below | | Ty IV<br><br>rock | | | |

## FEATURES OF SITE AREA

| | |
|---|---|
| Presence of 100 year flood zone | YES____NO x |
| Presence of adjacent ponds, streams, water impoundments | YES____NO x |
| Existing or proposed water well in nearby area | YES x NO___ |
| Organized sewage available to lot or tract | YES____NO x |
| Recharge features within 150 feet | YES____NO x |

I certify that the above statements are true and are based on my own field observations.

Signature of Site Evaluator

October 11, 2023
Date

# Grease Interceptor Sizing Worksheet

The Uniform Plumbing Code Formula

| | | | | | |
|---|---|---|---|---|---|
| Company | Burrier Nixon Engineers | Calculated By | Christine Nixon | Date | 4/10/24 |
| Project | Promiseland Church | Location | 1650 Lime Kiln | | |

Follow these six simple steps to determine grease interceptor size.

| | No of Meals Per Peak Hours | | Waste Flow Rate | | Retention Time | | Storage Factor | | Calculated Interceptor Size | | Grease Interceptor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Enter Calculations Here > | 34 | X | 6 | X | 2.5 | X | 1.0 | = | 510 | | 1000 Gal |
| | Step 1 | | Step 2 | | Step 3 | | Step 4 | | Step 5 | | Step 6 |

## 1

**Number of Meals Per Peak Hour (Recommended Formula):**

| Seating Capacity | | Meal Factor | | Meals per Peak Hour |
|---|---|---|---|---|
| 50 | X | 0.67 | = | 34 |

| Establishment Type: | Meal Factor |
|---|---|
| Fast Food (45 min) | 1.33 |
| Restaurant (60 min) | 1.00 |
| Leisure Dining (90 min) | 0.67 |
| Dinner Club (120 min) | 0.50 |

Notes: 34

## 2

**Waste Flow Rate:**

| Condition | Flow Rate |
|---|---|
| With a Dishwashing Machine | 6 Gallons |
| Without a Dishwashing Machine | 5 Gallons |
| Single Service Kitchen | 2 Gallons |
| Food Waste Disposer Only | 1 Gallon |

Notes: 6

## 3

**Retention Time**

| | |
|---|---|
| Commercial Kitchen Waste | |
| Dishwasher | 2.5 Hours |
| Single Service Kitchen | |
| Single Serving | 1.5 Hours |

Notes: 2.5

## 4

**Storage Factor**

| Kitchen Type | Storage Factor |
|---|---|
| Fully Equipped Commercial | |
| Hours of Operation | |
| 8 Hours | 1.00 |
| 12 Hours | 1.50 |
| 16 Hours | 2.00 |
| 24 Hours | 3.00 |
| Single Service Kitchen | 1.50 |

Notes: 1.0

## 5

**Calculate Liquid Capacity**

Multiply the values obtained from step 1, 2, 3 and 4. The result is the approximate grease interceptor size for this application

Notes: 510

## 6

**Select Grease Interceptor**

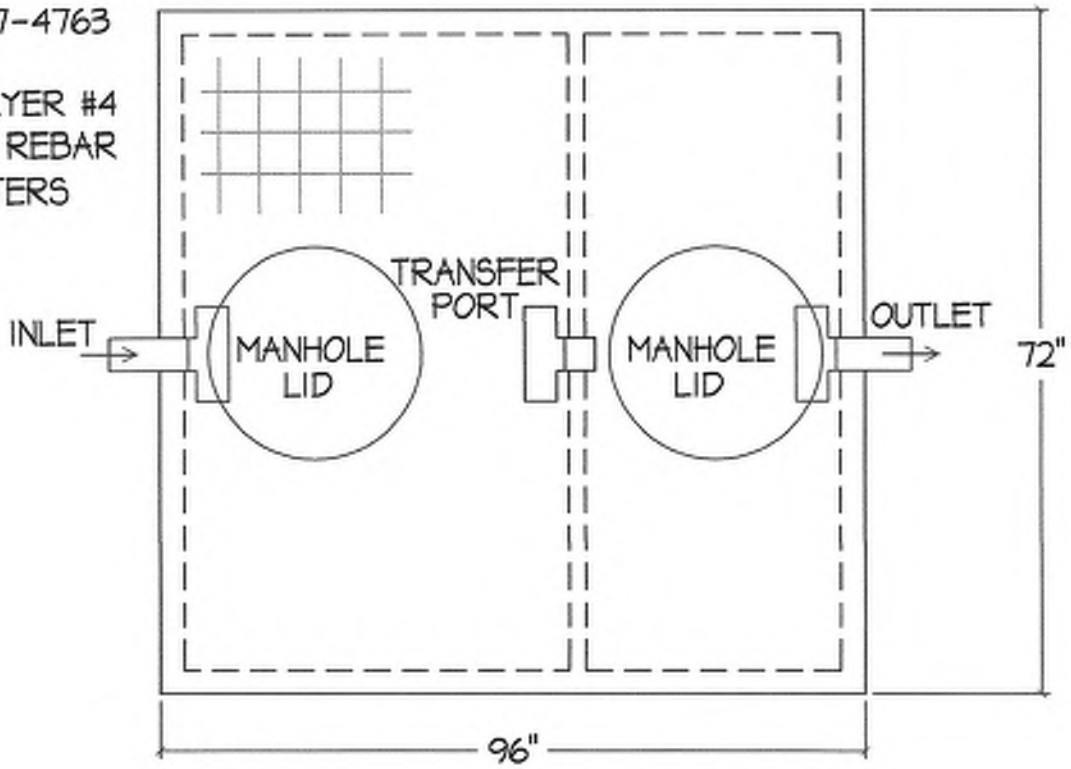
Using the approximate required liquid capacity from step 5, select an appropriate size as recommended by the manufacturer.

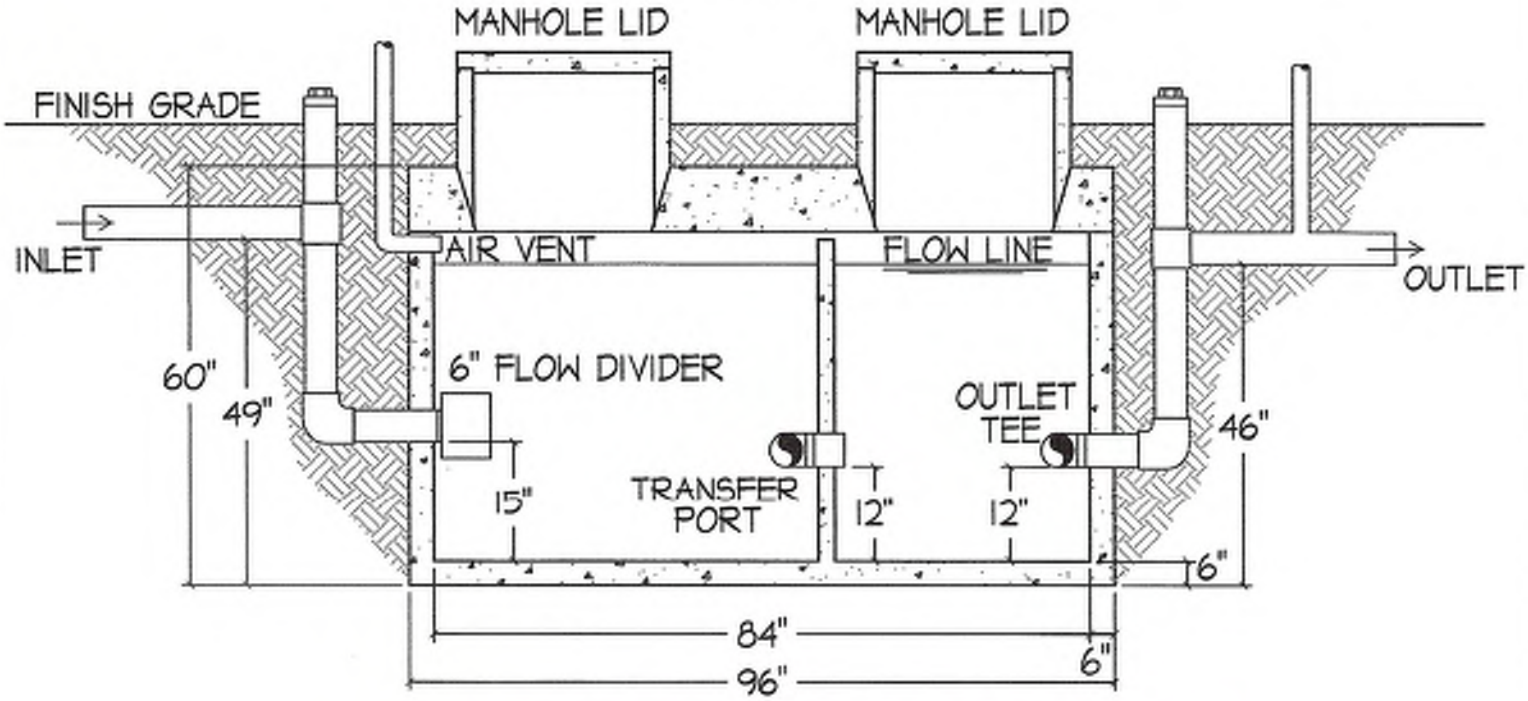
Notes: 1000 Gal

# CAPITAL CONCRETE PRODUCTS, INC.

5264 HIGHWAY 71 EAST
DEL VALLE, TEXAS 78739
OFFICE: (512) 247-4193
FAX: (512) 247-4763

DOUBLE LAYER #4
GRADE 60 REBAR
ON 6" CENTERS




# 1,000 GALLON GREASE TRAP

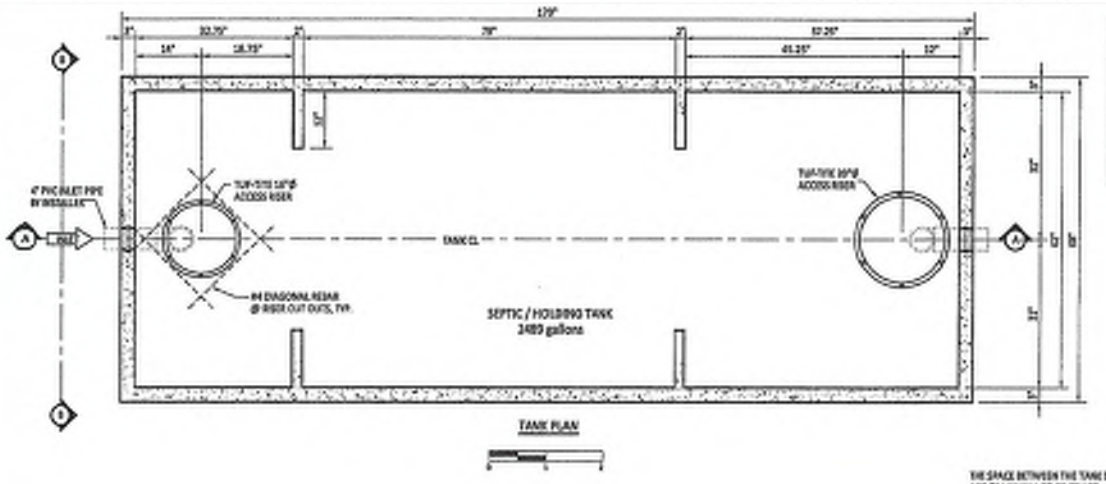
INLET AND OUTLET FITTINGS ARE 4"ø SCHEDULE 40 PVC.

TANK HEIGHT IS 60". PLEASE ALLOW FOR MANHOLE RING AND COVER.

TANK VOLUME IS 60% / 40% SPLIT.

Materials & Features:
Reinforcing: Per ASTM A-615 or A-185
Top Slab Load Rating: H-20
Concrete: 5000 PSI-28 Day
Max Depth: 12" Below Finish Grade

# GTS
## MODEL NO. DZ-2500-SEP
## MANF: XX-XX-XXXX
## TANK CAP.: 2489 GAL.
## 48" MAX. COVER




TANK PLAN

SPRAY PAINT MARKING ON TANK WITHIN 2'-0" OF INLET OF THE TANK

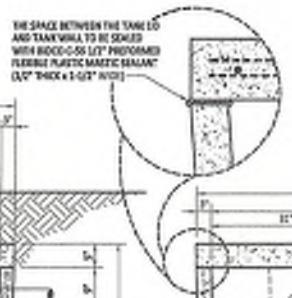
TANK MARKING DETAIL
N.T.S.

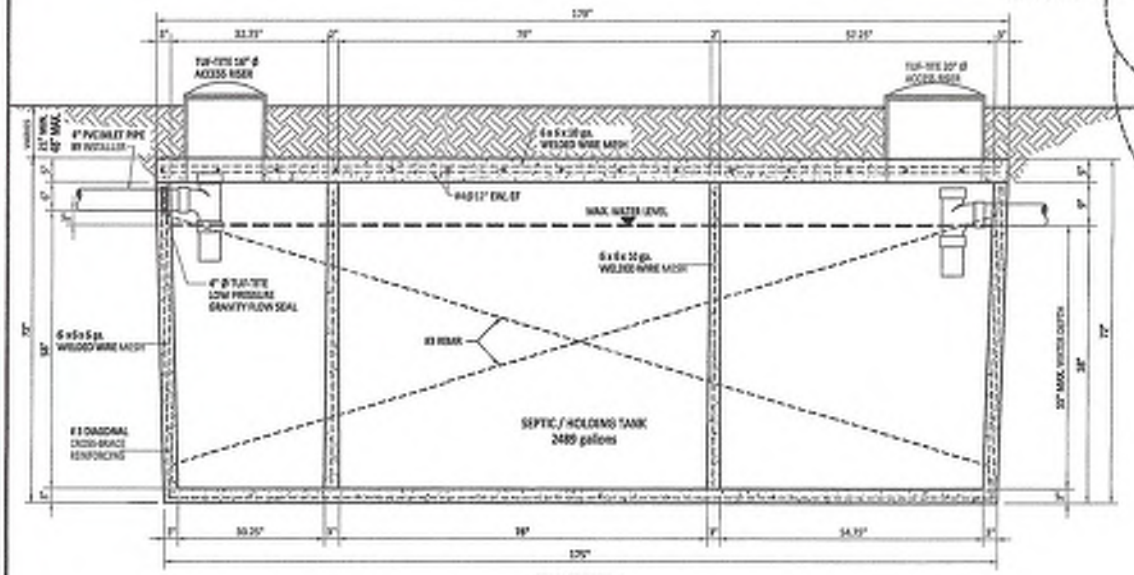
| TANK MEASUREMENTS | |
|---|---|
| OVERALL TANK LENGTH - TOP | 179" |
| OVERALL TANK LENGTH - BOTTOM | 179" |
| OVERALL TANK WIDTH - TOP | 68" |
| OVERALL TANK WIDTH - BOTTOM | 68" |
| OVERALL TANK HEIGHT | 72" |
| EXTERIOR WALL THICKNESS | 5" |
| TANK LID THICKNESS | 5" |
| TANK BOTTOM THICKNESS | 6" |
| INTERIOR WALL THICKNESS - TOP | 3" |
| INTERIOR WALL THICKNESS - BOTTOM | 3" |
| WATER LEVEL | 55" MAX |
| FLOW LINE OF INLET TO BOTTOM OF TANK | 58" |

| TANK VOLUMES | | |
|---|---|---|
| SEPTIC / HOLDING TANK | 2489 | gallons |

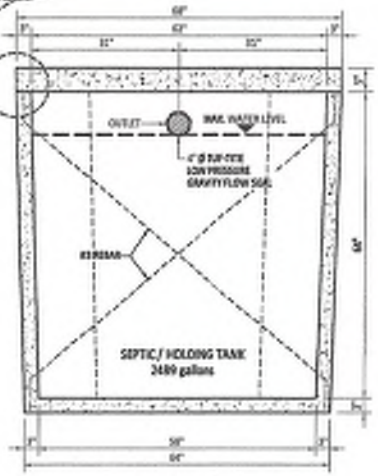
**GENERAL NOTES**

1. ALL CONCRETE TO BE A MINIMUM 4000 PSI, WITH A MAX. AGGREGATE SIZE OF 3/4".
2. CONCRETE COVER FOR REINFORCING BAR/MAT OR FABRIC SHALL BE A MIN. OF 1 INCH.
3. ALL INSPECTION PORTS ARE TO BE SEALED WITH NEOPRENE SEALER.
4. THE SUBGRADE IS TO BE WITHIN 1/2", AND FREE OF ANY FOREIGN OBJECTS.
5. PIPE PENETRATIONS CLASIFIED RISERS MAY BE OF LOW GRADE.
6. TANK LID TO BE SEALED WITH ASPHALTIC SEALANT.
7. ACCESS COVERS MAY BE BURIED BELOW GRADE WITH A MINIMUM 4" COVER, BUT NOT TO EXCEED 12". IF COVER EXCEEDS 12" RISERS WILL BE REQUIRED TO MAKE TOP OF COVER MEET REQUIREMENTS.
8. EXPOSED ACCESS OPENINGS 22" O.D. AND LARGER SHALL BE PROVIDED WITH A LOCK SYSTEM, TO PREVENT UNAUTHORIZED ENTRANCE
9. ANY ACCESS OPENING 8" O.D. AND LARGER SHALL BE CLEARLY MARKED "ENTRANCE TO TANK COULD BE FATAL"
10. ALL INLET/OUTLET FITTINGS TO BE 4" O.D. TUF-TITE LOW PRESSURE GRAVITY SEAL MODEL NO. TS-4PBO CAST INTO TANK WALL.
11. TANKS SHALL BE CLEARLY MARKED WITHIN 2'-0" OF TANK INLET:
    - GTS MANUFACTURED
    - XAMEX OR TRADEMARK OF MANUFACTURER
    - TANK CAPACITY
    - INTERNAL LOAD CAPACITY




TANK SECTION A




TANK SECTION B

WATERENGINEERS, INC.
TBPE FIRM REGISTRATION No. 3066

STATE OF TEXAS
D. RAY YOUNG
37068
REGISTERED
PROFESSIONAL ENGINEER

WaterEngineers, Inc.
Water & Wastewater Treatment Consultants

Geotex Treatment Systems, LP
32300 Bochen Rd
Waller, Texas 77484
Telephone: 936-372-5483

MODEL No. DZ-2500-SEP

DRAWN BY: JGR
APPROVED BY: DRY
SCALE: AS NOTED
DATE: 3/31/2011
JOB No.:

DWG. NO.:
1 of 1

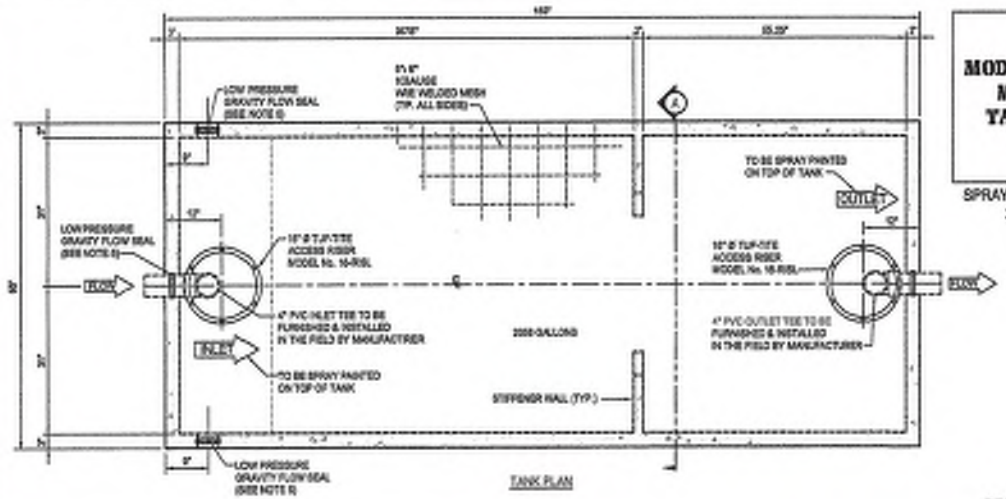
REVISED MARCH 21, 2006

# GTS

**MODEL No. DZ-2000-PUMP**
**MANF: XX-XX-XXXX**
**TANK CAP.: 2176 GAL.**
**48" MAX. COVER**

SPRAY PAINT MARKING ON TANK WITHIN 2'-0" OF INLET OF THE TANK

TANK MARKING DETAIL
N.T.S.




TANK PLAN

TANK VOLUME:

-MAXIMUM TANK VOLUME: 2000 GALLONS

CONCRETE SPECIFICATIONS:

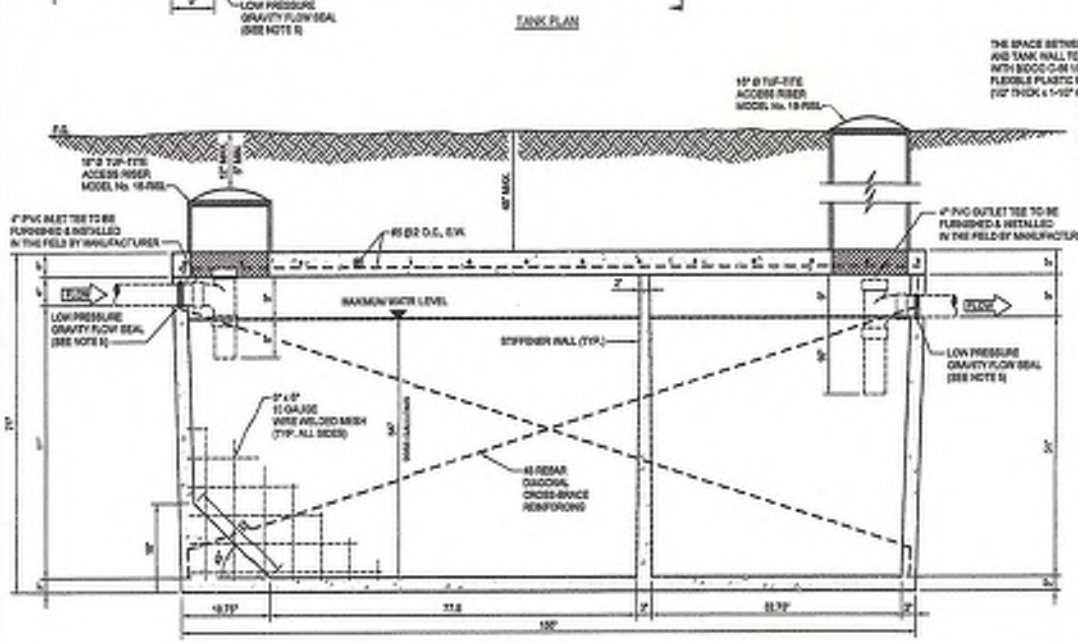
-THE MINIMUM COMPRESSIVE STRENGTH SHALL BE 4000 psi @ 28 DAYS OF AGE.

-THE CONCRETE COVER FOR REINFORCING BARS, MATS, OR FABRIC SHALL NOT BE LESS THAN 1 IN.

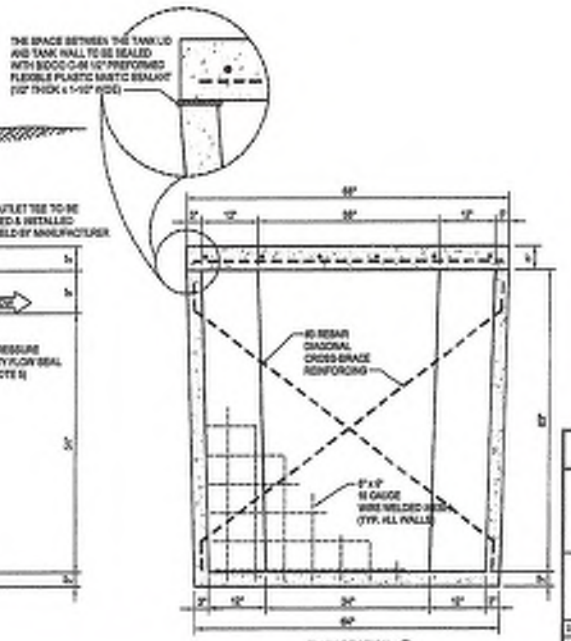
GENERAL NOTES:

1. ACCESS COVERS MAY BE BURIED BELOW GRADE W/ A MINIMUM 6" COVER, BUT NOT TO EXCEED 12". IF COVER EXCEEDS 12", RISERS WILL BE REQUIRED TO MAKE TOP OF COVER MEET REQUIREMENTS.
2. TANKS SHALL BE CLEARLY MARKED WITHIN 3-0" OF TANK INLET, PROVIDING THE FOLLOWING INFORMATION:
   - DATE MANUFACTURED
   - NAME OR TRADEMARK OF MANUFACTURER
   - TANK CAPACITY
   - EXTERNAL LOAD CAPACITY
   (SEE DETAIL THIS SHEET)
3. EXPOSED ACCESS OPENINGS 12" O.D. OR LARGER SHALL BE PROVIDED WITH A LOCK SYSTEM, TO PREVENT UNAUTHORIZED ENTRANCE.
4. ANY ACCESS OPENING 8" O.D. AND LARGER SHALL BE CLEARLY MARKED "ENTRANCE TO TANK COULD BE FATAL"
5. ALL INLET/OUTLET FITTINGS TO BE 4" Ø TUF-TITE LOW PRESSURE GRAVITY SEAL (MODEL No. 10-4PRG) CAST INTO TANK WALL.

SCALE 1/2"=1'-0"




TANK SIDE ELEVATION




TANK SECTION (A)

STATE OF TEXAS
D. RAY YOUNG
37068
REGISTERED
PROFESSIONAL ENGINEER
03-21-2006

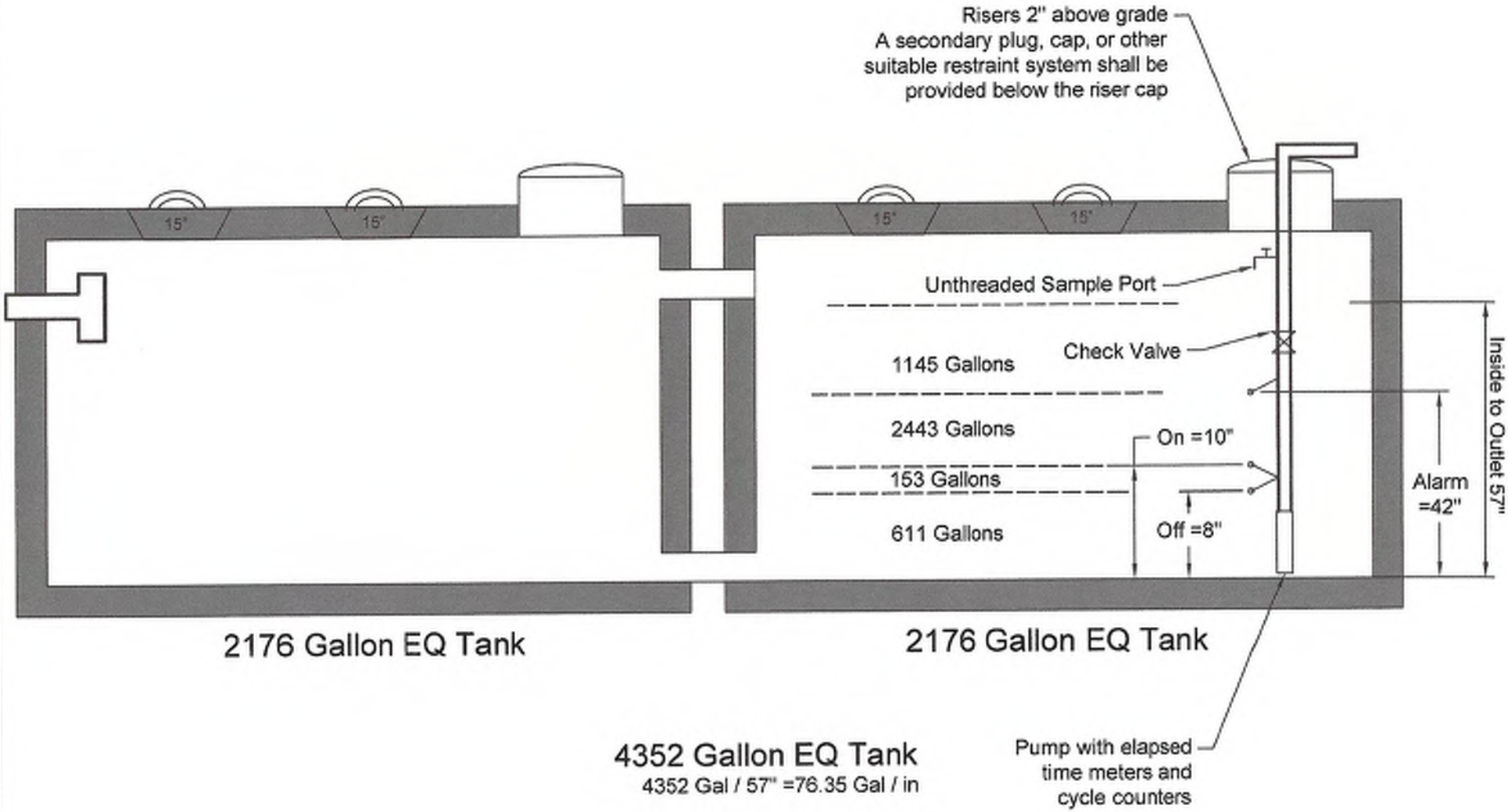
D. RAY YOUNG PE, No. 37068 CERTIFIES THAT THIS WORK CONFORMS WITH ASTM C-1227 & TCEQ, TITLE 30 TEXAS ADMINISTRATIVE CODE CHAPTER 285.

WASTEWATER TREATMENT STRUCTURE
MODEL No. DZ-2000-SEP

GATOR TREATMENT SYSTEMS
20107 KUYKEN ROAD
WALLER, TX 77484


WATER ENGINEERS, INC.
Water & Wastewater Treatment Consultants
17535 RAYMOND ROAD TEL: 281-370-8900
CYPRESS, TEXAS 77429 FAX: 281-370-1010


| | | | |
|---|---|---|---|
| DRAWN BY: JLM | SCALE: AS NOTED | DATE: 03-21-06 | |
| DESIGNED BY: DRY | CHECKED: RH DRY | REV. No.: 00 | |
| APPROVED BY: DRY | JOB No.: 480A3 | SHEET: 01 | |




| | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| Revisions | | | |

Date 8/13/2024

Drawn by Christine Nixon

Burrier Engineering

EQ Tank
Two Gatco
DZ-2000 Tanks

N.T.S.

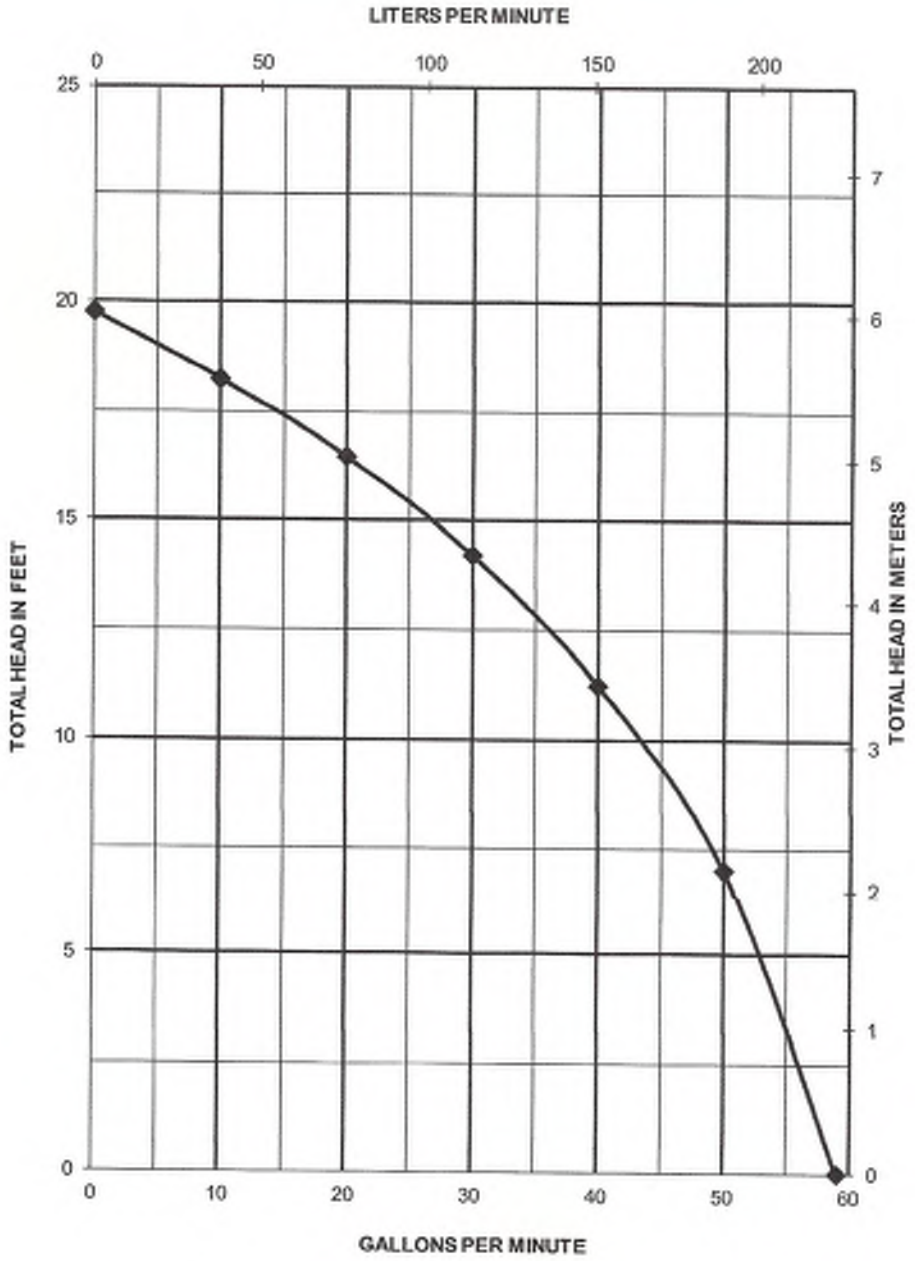
Liberty Pumps®

A Family and Employee Owned Company

# Pump **Specification**

## FL30-Series

### 1/3 HP Submersible Effluent Pumps

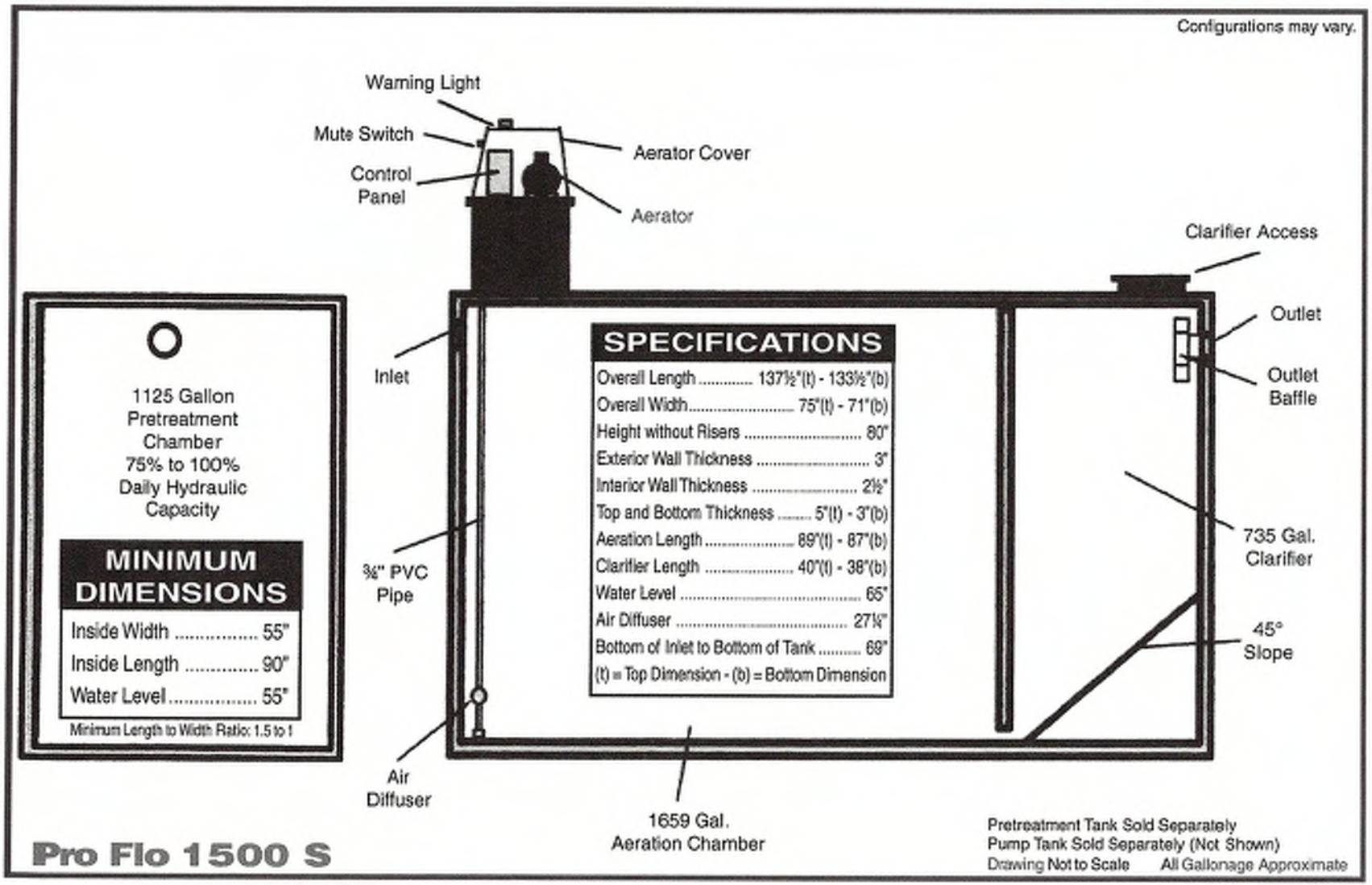





*7000 Apple Tree Avenue Bergen NY 14416* ■ **Phone** *800-543-2550* ■ **Fax** *585-494-1839* ■ **Email** *Liberty@LibertyPumps.com* ■ **Web** *www.LibertyPumps.com*

# Pro Flo 1500 S System Diagram

Configurations may vary.




**Pro Flo 1500 S**

Pretreatment Tank Sold Separately
Pump Tank Sold Separately (Not Shown)
Drawing Not to Scale  All Gallonage Approximate

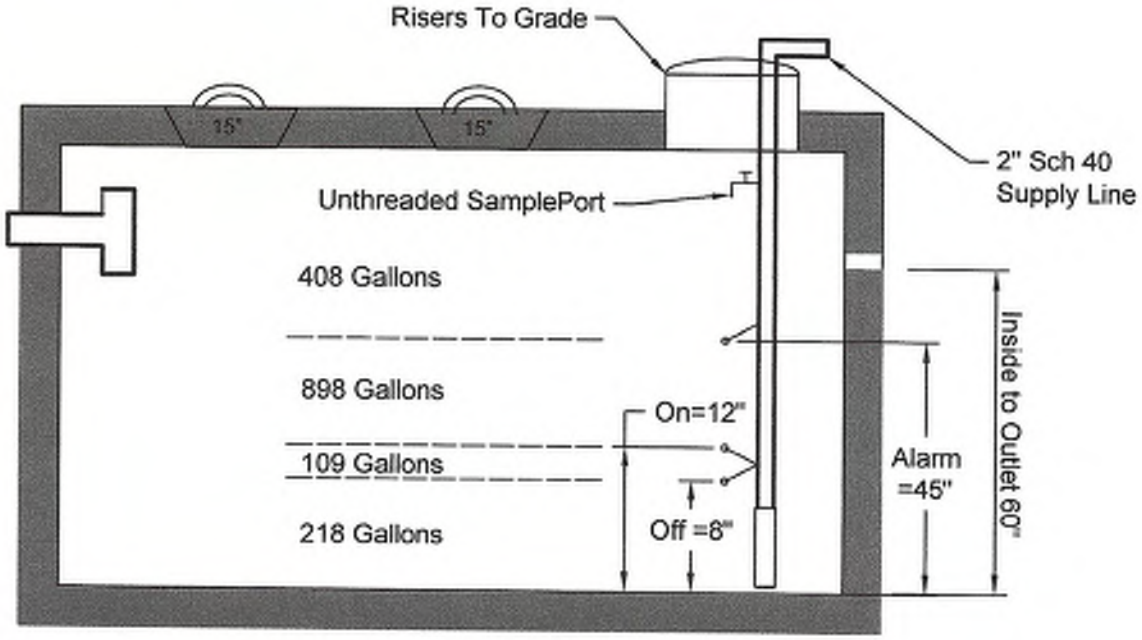
PRO FLO AEROBIC SYSTEMS

P.O. Box 1425
Waller, Texas 77484-1425

Phone: 936-372-5222
Fax: 936-372-5235

# BOD Loading

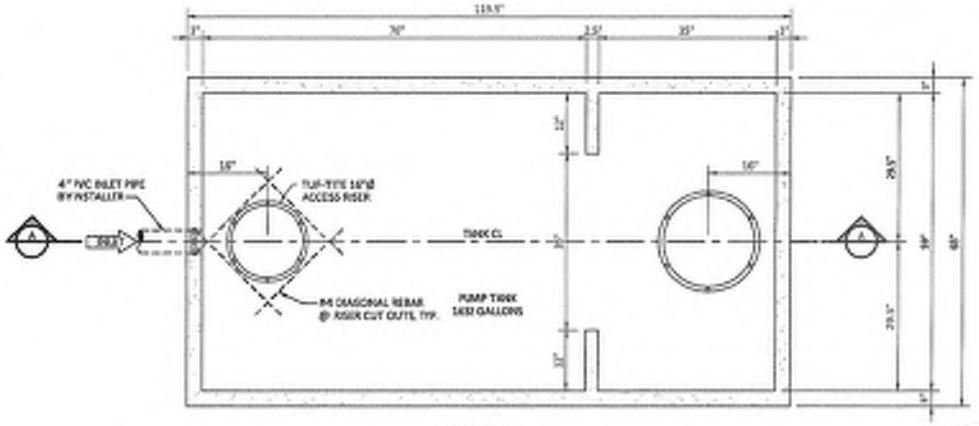
500 GPD---------- 1 to 1.5 lbs per day
600 GPD---------- 1.25 to 1.75 lbs per day
800 GPD---------- 1.5 to 2 lbs per day
1000 GPD---------- 2 to 2.5 lbs per day
1500 GPD---------- 3 to 3.75 lbs per day




## 1600 Gallon Pump Tank

1632 gal / 60 in = 27.2 gal/in

| | | |
|---|---|---|
| Date 8/13/2024 | Burrier Engineering | Tank Cross Section |
| Drawn by Christine Nixon | | Scale NTS |




TANK PLAN

INLET

**GTS**

MODEL NO.
DZ-1600-PUMP
MANF date: XX-XX-XXXX
TANK CAP.: 1632 GAL.
48" MAX. COVER

**TANK MARKING DETAIL**
N.T.S.

SPRAY PAINT MARKING ON TANK LID WITHIN 2'-0" OF INLET OF THE TANK

| TANK DIMENSIONS | | |
|---|---|---|
| TANK LENGTH (TOP) | 119.50 | in. |
| TANK LENGTH (BOTTOM) | 115.50 | in. |
| TANK WIDTH (TOP) | 65.00 | in. |
| TANK WIDTH (BOTTOM) | 61.00 | in. |
| TANK HEIGHT | 74.00 | in. |
| WALL THICKNESS | 3.00 | in. |
| FLOOR THICKNESS | 3.00 | in. |
| LID THICKNESS | 3.00 | in. |
| FLOW LINE OF INLET TO BOTTOM OF TANK | 65.00 | in. |

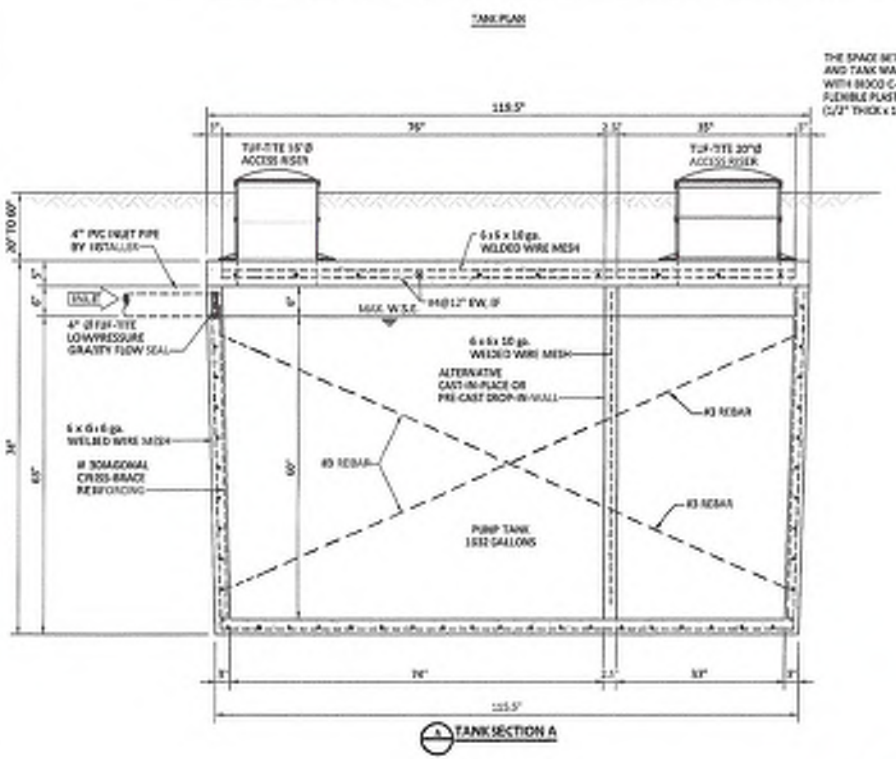
| TANK VOLUMES | | | | |
|---|---|---|---|---|
| COMPARTMENT No. 1 | 1632 | gal. | | |
| WATER DEPTH | 60 | in. | | |
| TANK CONCRETE VOLUME | 14.38 | FT³ | 2.66 | YD³ |
| TANK LID CONCRETE VOLUME | 20.73 | FT³ | 0.77 | YD³ |
| TANK WEIGHT (EMPTY) | 8337 | lbs. | | |
| LID WEIGHT | 3120 | lbs. | | |
| TOTAL TANK WEIGHT (EMPTY) | 11457 | lbs. | | |

CONCRETE SPECIFICATIONS:

1. THE MINIMUM COMPRESSIVE STRENGTH SHALL BE 4500 psi @ 28 DAYS OF AGE.
2. THE CONCRETE COVER FOR REINFORCING BARS, MATS, OR FABRIC SHALL NOT BE LESS THAN 1 IN.

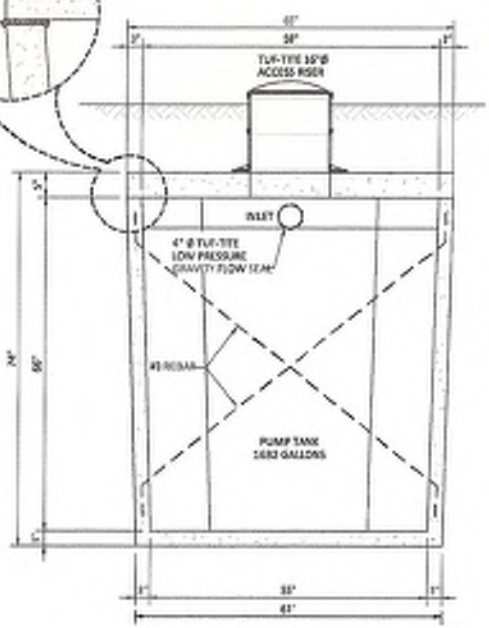
GENERAL NOTES:

1. THIS TANK MEETS THE REQUIREMENTS OF ASTM C1227-13 STANDARD SPECIFICATION FOR PRECAST CONCRETE SEPTIC TANKS.
2. ACCESS COVERS MAY BE BURIED BELOW GRADE W/ A MINIMUM 6" COVER, BUT NOT TO EXCEED 12". IF COVER EXCEEDS 12", RISERS WILL BE REQUIRED TO MAKE TOP OF COVER MEET REQUIREMENTS.
3. TANKS SHALL BE CLEARLY MARKED WITHIN 2'-0" OF TANK INLET, PROVIDING THE FOLLOWING INFORMATION:
   - MANUFACTURED NAME OR TRADEMARK OF MANUFACTURER
   - MANUFACTURED DATE
   - TANK CAPACITY
   - EXTERNAL LOAD CAPACITY (SEE DETAIL THIS SHEET)
4. EXPOSED ACCESS OPENINGS 12" O.D. OR LARGER SHALL BE PROVIDED WITH A LOCK SYSTEM, TO PREVENT UNAUTHORIZED ENTRANCE.
5. ANY ACCESS OPENING 8" O.D. AND LARGER SHALL BE CLEARLY MARKED "ENTRANCE TO TANK COULD BE FATAL"
6. ALL INLET/OUTLET FITTINGS TO BE 4" Ø TUF-TITE LOW PRESSURE GRAVITY SEAL (MODEL No. TS-4PROC-CAST-INTO TANK WALL.
7. BAFFLES OR TEES SHALL BE PLACED AT THE INFLUENT PIPE, SHALL EXTEND AT LEAST 8 IN. BELOW THE LIQUID LEVEL AND AT LEAST 5 IN. ABOVE THE LIQUID LEVEL. (BY INSTALLER)
8. WHEN USED AS A CONVENTIONAL SEPTIC TANK, PER ASTM 1227-13 THE MIN. DISTANCE BETWEEN THE INLET & OUTLET TO BE A MIN. OF 6' FEET. THE SEPTIC TANK SYSTEM SHALL INCLUDE TWO COMPARTMENTS.




TANK SECTION A

THE SPACE BETWEEN THE TANK LID AND TANK WALL TO BE SEALED WITH RIGID C-56 1/2" PREFORMED FLEXIBLE PLASTIC MASTIC SEALANT (1/2" THICK x 1-1/2" WIDE)




INLET END ELEVATION


| REVISION | DATE |
|---|---|
| DESCRIPTION | MM/YY |
| | |
| | |
| | |
| | |


WATER ENGINEERS, INC.
Water & Wastewater Treatment Consultants
TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM No. 2066
11310 RANCH ROAD 620 NORTH, SUITE 210
AUSTIN, TEXAS 78726
TEL: 512-379-0500
FAX: 512-379-1113




**WASTEWATER TREATMENT STRUCTURE**

GATCO TREATMENT SYSTEMS, LP
32307 ROCHEM RD
WALLER, TEXAS 77484
TELEPHONE: 936-372-5433

SHEET NAME:

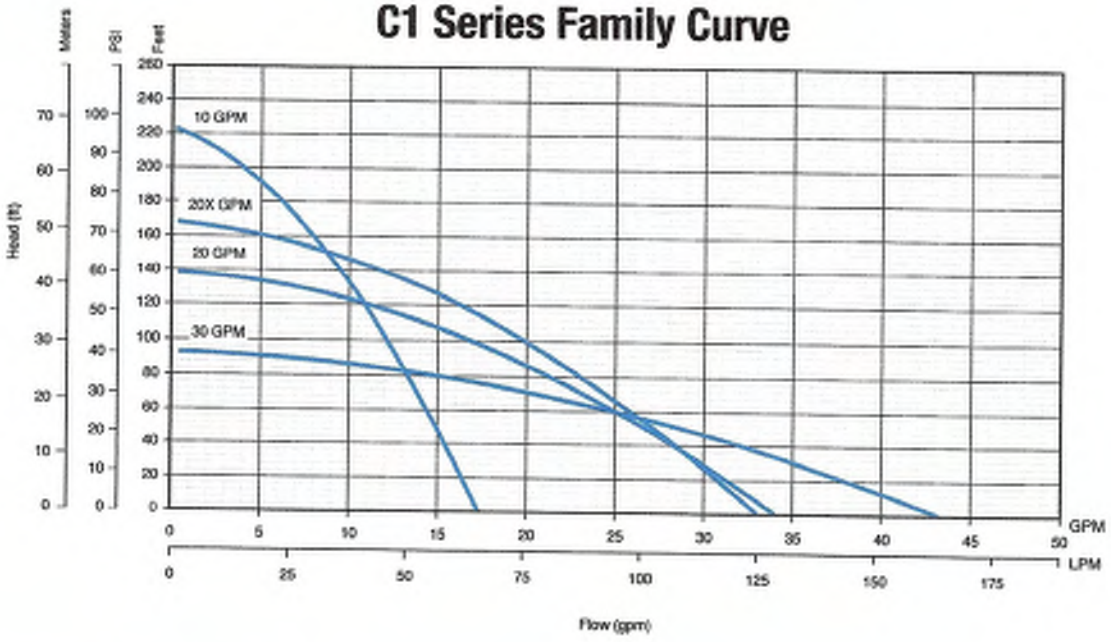
MODEL No. DZ-1600-PUMP

| | |
|---|---|
| DRAWN BY: | JLW |
| CHECKED BY: | DRY |
| PROJECT No.: | 4604.18 |
| DATE: | 2/28/2018 |
| SHEET No.: | 01 OF 01 |

# C1 SERIES CISTERN PUMPS

C1 SERIES

## C1 Series Family Curve




## ORDERING INFORMATION:

| C1 Series Pumps | | | | | | | |
|---|---|---|---|---|---|---|---|
| GPM | HP | Volts | Stage | Model No. | Order No. | Length (in.) | Weight (lbs.) |
| 10 | 1/2 | 115 | 7 | 10C1-05P4-2W115 | 90301005 | 26 | 17 |
| | | 230 | 7 | 10C1-05P4-2W230 | 90301010 | 26 | 17 |
| 20 | | 115 | 5 | 20C1-05P4-2W115 | 90302005 | 25 | 16 |
| | | 230 | 5 | 20C1-05P4-2W230 | 90302010 | 25 | 16 |
| 20X | | 115 | 6 | 20XC1-05P4-2W115 | 90302015 | 26 | 17 |
| | | 230 | 6 | 20XC1-05P4-2W230 | 90302020 | 26 | 17 |
| 30 | | 115 | 4 | 30C1-05P4-2W115 | 90303005 | 25 | 16 |
| | | 230 | 4 | 30C1-05P4-2W230 | 90303010 | 25 | 16 |

**Note:** All units have 10 foot long SJOOW leads.

Franklin Electric
9255 Coverdale Road, Fort Wayne, Indiana 46809
Tel: 260.824.2900 • Fax: 260.824.2909
www.franklinwater.com

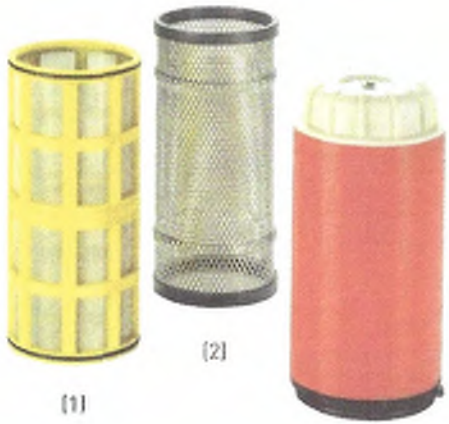
ments, Amiad's all purpose plastic filters are ideally suited for a wide range of filter
to install and maintain. They are constructed from high quality engineered-plastic
lent mechanical strength, durability and chemical resistance.
dismantling or removing the filter element from the filter housing for rinsing.
be upgraded to semi-automatic operation by adding one of Amiad's exclusive Brushaway
These allow the user to manually clean the filter element without dismantling the filter.

er elements and filtration degrees that are suitable for a wide range of flow rates and applications.

**ents:** (1)
tructed of molded plastic ribs that support a stainless steel weavewire or weaved polyester
es of 800 to 50 micron.

**eel Screen Elements:** (2)
ion (straining) between 3,500 and 500 micron.

gned for effective removal of organic
s are constructed using engineered
ed onto a telescopic core. The discs are
intersect to form the filtration element
ective filtration area is comprised of both
e channels formed by the intersecting
ic particles adhere to the grooved surface
on process.
is made simple by the unique design
h allows the discs to separate during
maintaining perfect sealing when the
sing.



(1) (2) (3)

**Filtration Degrees Available**
The following table lists the various filter elements and filtration degrees available for Ami
For ease of operation and maintenance, the filter elements are color coded. Please consult
assistance in selecting the proper filter element and filtration degree for your application.

| Disc color | - | - | Black | Red | Yellow | - | - | - |
|---|---|---|---|---|---|---|---|---|
| Screen color | Orange | Black | Yellow | Red | White | Blue | Green | Gray |
| Micron | 50 | 80 | 100 | 130 | 200 | 300 | 500 | 800 |
| Mesh | 300 | 200 | 155 | 120 | 80 | 50 | 30 | 20 |
| ¾", 1"G | ▲ | ▲ | ■▲ | ■▲ | ▲ | ■▲ | ▲ | |
| 1"S - 1½"S | ▲ | ▲ | ■▲● | ■▲● | ▲● | ■▲ | ▲ | |
| 2" - 3"<br>2"T - 3"T | ▲ | ▲ | ▲● | ▲● | ▲● | ▲ | ▲★ | ★ |
| 3" TDS | | | ▲● | ▲● | ▲● | | | |

■ Polyester screen ▲ St.St. weavewire screen ● Disc element ★ Perforated screen

## K-RAIN MODEL 6000:
## DISTRIBUTING VALVE

The 6000 line of distributing valves offers exceptional reliability and durability even under the dirtiest water conditions.

With a metal die-cast body, the 6000 valves are capable of high pressure applications and are recommended to be used on pump fed systems or high-flow city water systems. The 6000 is also ideal for onsite wastewater and effluent water applications.

The 6000 valve is available in 4 or 6 outlet models that are cammed for 2 to 6 zone operation. With only one moving part (the stem and disc assembly), the valve is easily serviced and maintained.

The valve requires 15 GPM to operate and works at pressures from 25 to 150 PSI.

The distributing valve shall carry a two-year trade warranty against manufacturing defects.

### HOW TO SPECIFY


### MODELS

***4 Outlet Models***

| | |
|---|---|
| **6402** | Cammed for 2 Zone Operation |
| **6403** | Cammed for 3 Zone Operation |
| **6404** | Cammed for 4 Zone Operation |

***6 Outlet Models***

| | |
|---|---|
| **6605** | Cammed for 5 Zone Operation |
| **6606** | Cammed for 6 Zone Operation |

Other Options: Add to Part Number

| | |
|---|---|
| **RCW** | Reclaimed Water Use |

### SPECIFICATIONS

- Construction:
  *Valve Top/Housing:* Die Cast Metal
  *Valve Outlets:* High Strength ABS Polymer
- Flow Range: 15-150 GPM
- Pressure Rating: 25 - 150 PSI
- Pressure Loss:

*4 Outlet Valve*

| Flow (GPM) | 20 | 40 | 60 | 80 | 100 |
|---|---|---|---|---|---|
| PSI Loss | 2.5 | 3.5 | 5.0 | 7.5 | 10.0 |

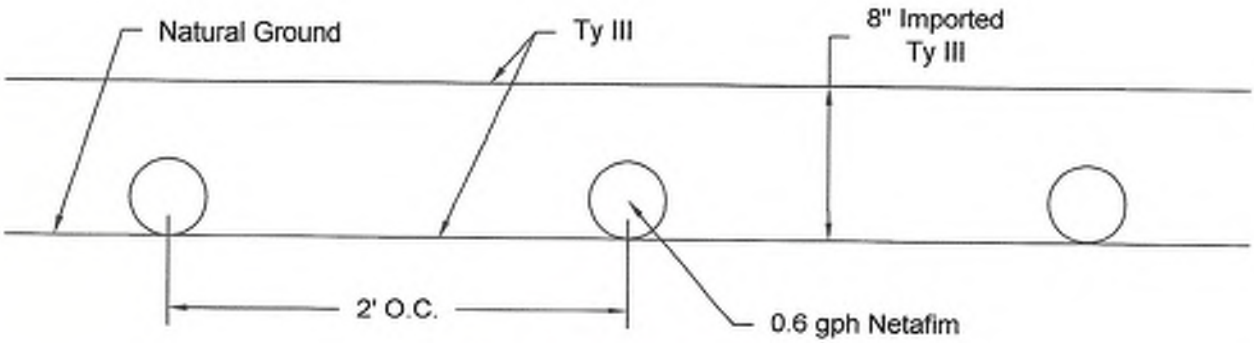
*6 Outlet Valve*

| Flow (GPM) | 20 | 40 | 60 | 80 | 100 |
|---|---|---|---|---|---|
| PSI Loss | 3.0 | 4.0 | 6.0 | 9.0 | 11.0 |

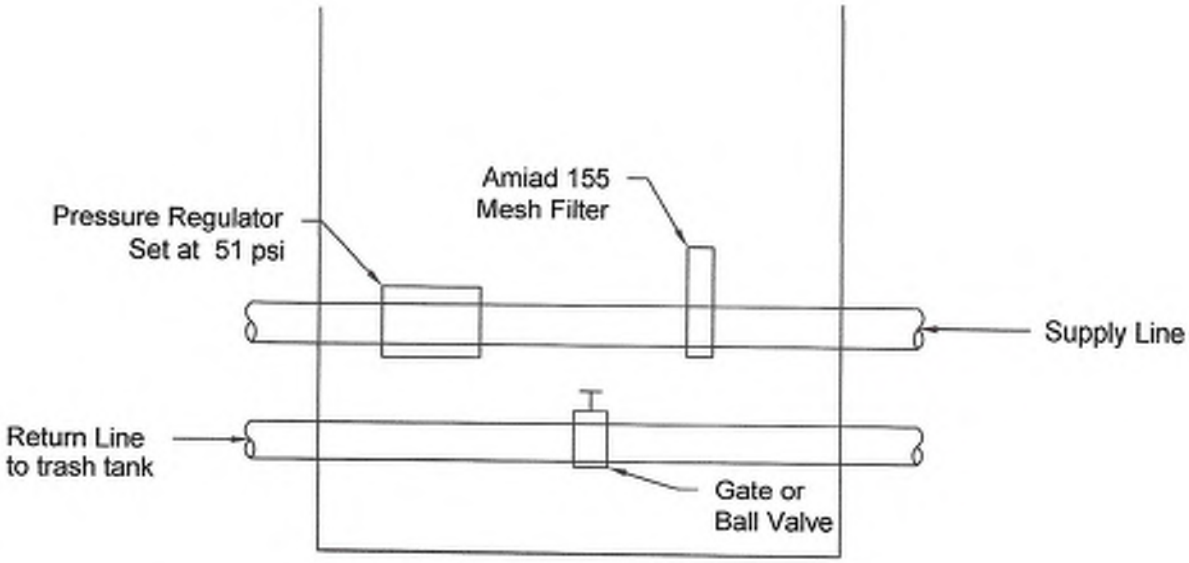
- Inlet: Threaded 1-1/2" NPT Connection
- Outlets: Slip and Glue Connections to 1-1/2" PVC Pipe
- Built-in Atmospheric Vacuum Breaker
- Dimensions: Height: 7"
  Width: 8"

K-RAIN
IRRIGATION SOLUTIONS WORLDWIDE™

**K-Rain Manufacturing Corp.**
1640 Australian Avenue
Riviera Beach, FL 33404 USA
PH: 1-561-844-1002 FAX: 1-561-842-9493
1-800-735-7246
EMAIL: krain@k-rain.com
WEB: http://www.k-rain.com

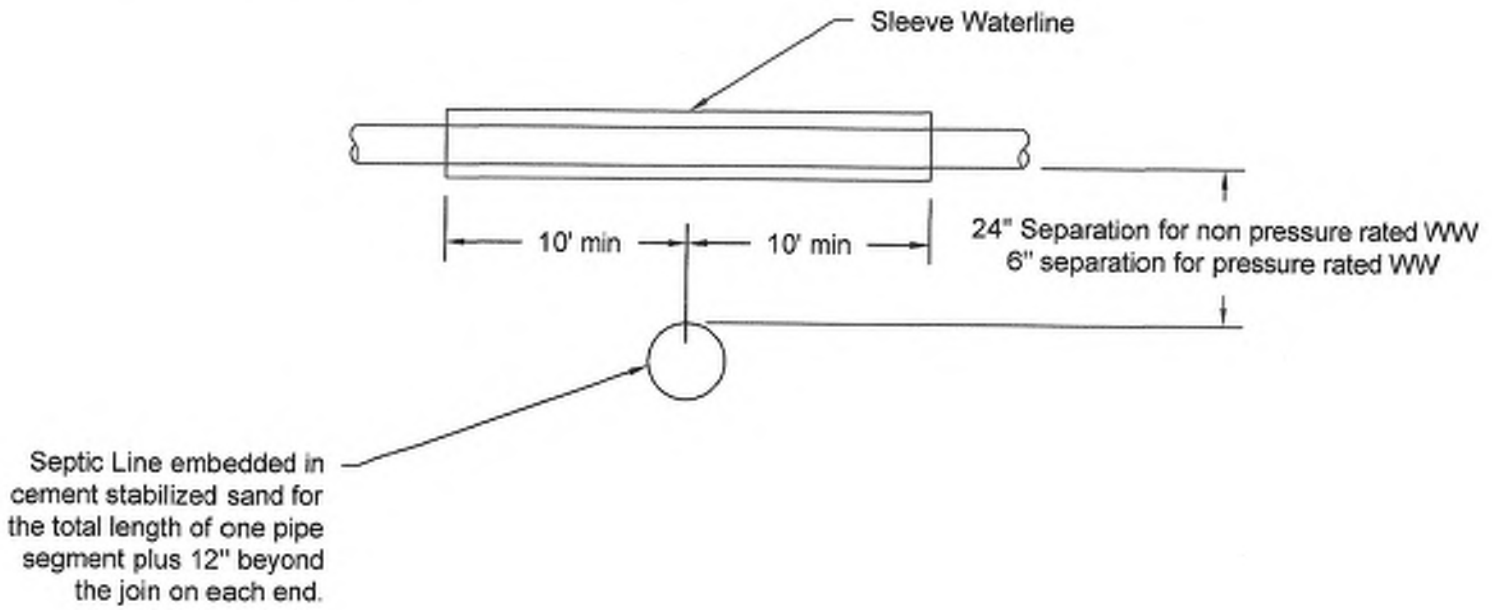



Drip Field Cross Section




Field Box

| | | |
|---|---|---|
| Date 8/13/2024 | Burrier Engineering | Drip Cross Section |
| Drawn by Christine Nixon | | Scale NTS |




| | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| Revisions | | | |

| | |
|---|---|
| Date | 8/13/2024 |
| Drawn by | Christine Nixon |
| Client | |

| | |
|---|---|
| Burrier Nixon Engineers | Water Line Intersection Cross Section |
| | N.T.S. |

## Operation and Management Notes:

- The OSSF should not be treated as a normal city sewer.
- Water conservation practices should be used at all times. Consult your local authorities for more information.
- Run the dishwasher with a full load whenever possible
- Avoid running water continuously when brushing teeth, washing hands, or cleaning food and utensils.
- Repair any water leaks immediately, such as running toilets or leaky faucets.
- The owner is responsible for cleaning and pumping the septic tank, typically every 2 to 3 years depending on system usage.
- Do not use the toilet to dispose of tissue, feminine hygiene products, trash, cigarettes, etc.
- It is recommended that you do not use the garbage disposal and/ or garbage grinders in the facility serviced by this system.
- Household chemicals should be used in moderation.
- Water softener should not be allowed to enter the OSSF.
- Chemical additives or the so-called enzymes should not be used during the operation of this system. Some of these additives may even be harmful to the facilities operation.
- Do not build driveways, storage buildings, decks, or other structures over the tank or disposal area.
- The OSSF must be protected from coming in contact with vehicular traffic.
- A strong vegetative cover is essential for the proper operation of this system. The property owner is solely responsible for maintaining this vegetation. The irrigation area should be groomed by mowing on a regular basis.
- The pump shall be inspected and cleaned along with the septic tank at regular intervals.
- The owner shall receive a copy of the operation and maintenance guide for the pump from the installer. The owner shall become familiar with the operation of the system and be solely responsible for the operation and maintenance of the system, once the system is placed into operation.
- This system is divided into two separate drainfields. The owner will periodically check to make sure that both fields are being dosed. The owner will consult with the installer on the operation of the alternating valve.

**Water Pollution Abatement Plan (TCEQ - 0584)**

**Attachment D**

## Exception to the Required Geologic Assessment (if requested) Site Plan

No exception to the required geologic assessment will be requested for this project.

# Temporary Stormwater Section, **5.0**

# 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: Cliff Kendall

Date: 10/21/2024

Signature of Customer/Agent:

**Regulated Entity Name:** PROMISELAND WATER SUPPLY

## *Project Information*

## *Potential Sources of Contamination*

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

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

   ☐ The following fuels and/or hazardous substances will be stored on the site: _____

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

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

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

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

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

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

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

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

## *Sequence of Construction*

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

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

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

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

## *Temporary Best Management Practices (TBMPs)*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☒ N/A

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

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

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

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

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

## *Soil Stabilization Practices*

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

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

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

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

## *Administrative Information*

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

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

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

**Temporary Stormwater Section (TCEQ - 0602)**

**Attachment A**

## Spill Response Actions

Spills will be reported to the City of San Marcos (via 911 in emergencies). Hydrocarbons or hazardous substance spilled during construction will be cleaned up immediately upon detection. Waterways will be swept and vacuumed as required. Contaminated soil will be excavated and removed to a TCEQ approved disposal site. The TCEQ will be notified immediately upon detection.

The objective of this section is to describe measure to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

The following steps will help reduce the stormwater impacts of leaks and spills:

### ***Education***

1) Be aware that different materials pollute in different amounts. Make sure that each employee knows what a “significant spill” is for each material they use, and what is the appropriate response for “significant” and “insignificant” spills. Employees should also be aware of when spills must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 302.4.
2) Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
3) Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
4) Establish a continuing education program to indoctrinate new employees.
5) Have contractor’s superintendent or representative oversee and enforce proper spill prevention and control measures.

### ***General Measures***

1) To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110, 117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
2) Store hazardous materials and wastes in covered containers and protect from vandalism.
3) Place a stockpile of spill cleanup materials where it will be readily accessible.
4) Train employees in spill prevention and cleanup.

5) Designate responsible individuals to oversee and enforce control measures.
6) Spills should be covered and protected from stormwater runoff during rainfall to the extent that it doesn't compromise cleanup activities.
7) Do not bury or wash spills with water.
8) Store and dispose of used cleanup materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
9) Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.
10) Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
11) Place Material Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
12) Keep waste storage areas clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

***Cleanup***

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

***Minor Spills***

1) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
2) Use absorbent materials on small spills rather than hosing down or burying the spill.
3) Absorbent materials should be promptly removed and disposed of properly.
4) Follow the practice below for a minor spill:
    a. Contain the spread of the spill.
    b. Recover spilled materials.
    c. Clean the contaminated area and properly dispose of contaminated materials. 1-120.

***Semi-Significant Spills***

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

1) Contain the spread of the spill.
2) Notify the project foreman immediately.
3) If the spill occurs on paved or impermeable surfaces, clean up using “dry” methods (absorbent materials, cat litter, and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
4) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
5) If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

***Significant/Hazardous Spills***

For significant or hazardous spills that are in reportable quantities:

1) Notify the TCEQ by telephone as soon as possible and within 24 hours at (512) 339 – 2929 (Austin) or (210) 490 – 3096 (San Antonio) between 8 a.m. and 5 p.m. After hours, contact the Environmental Release Hotline at 1(800) 832 – 8224. It is the contractor’s responsibility to have all emergency phone numbers at the construction site.
2) For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 119, and 302, the contractor should notify the National Response Center at 1(800) 424 – 8802.
3) Notification should first be made by telephone and followed up with a written report.
4) The services of a spills contractor of a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
5) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sherriff Office, Fire Departments, etc. More information on spill rules and appropriate responses is available on the TCEQ website at:

   https://www.tceq.texas.gov/response/serc.html

**Temporary Stormwater Section (TCEQ - 0602)**

**Attachment B**

## Potential Sources of Contamination

Potential sources of contamination at the site include:

1) Construction vehicles tracking mud onto the roadway
2) Fueling of construction vehicles
3) Short-term storage and use of fertilizers for use in establishing vegetation
4) Possible littering around the construction site
5) Oil and grease from runoff pollutants associated with paved driving surfaces.
6) Construction phase pollutants (hydraulic fluid, machine oil, and sediment).

All activities will be conducted in a manner to minimize the potential for impact to the environment.

**Temporary Stormwater Section (TCEQ - 0602)**

**Attachment C**

## Sequence of Major Activities

Sequence of major activities:

1) Install temporary erosion controls and tree protection fencing (perimeter of ± 3.85 acres limits of construction)
2) Clearing and grubbing (± 3.85 acres)
3) Rough grade site (± 3.85 acres)
4) Construct utilities (± 2469 feet)
5) Construct and pave roadway (± 1.04 acres)
6) Complete final grading (± 3.85 acres)
7) Construct buildings (± 0.34 acres)
8) Complete permanent erosion control and restoration of site vegetation (± 3.85 acres)
9) Remove temporary erosion controls (perimeter of ± 3.85 acres limits of construction)

**Temporary Stormwater Section (TCEQ - 0602)**

**Attachment D**

## Temporary Best Management Practices and Measures

Temporary Erosion and Sedimentation Control Best Management Practices (BMPs) shall be designated and placed in accordance with the City of San Marcos and TCEQ requirements. The temporary BMPs shall be installed prior to any site preparation work (clearing, grubbing, or excavation).

### ***Silt Fence***

Silt fence shall be installed immediately down gradient of areas of soil disturbance. See the City of San Marcos Standard Detail on the Construction Plans for details on construction and installation.

### ***Tree Protection***

If applicable, tree protection shall be installed around trees to prevent tree damage and potential damage or disturbance of the tree's root zone. See the City of San Marcos Standard Detail on the Construction Plans for details on construction and installation.

### ***Dust Control***

Dust control can prevent blowing and movement of dust from exposed soil surfaces, reduce on-site and off-site damage, and improve traffic safety. Dust control will be implemented at the site during all phases of construction.

Dust control during construction shall be done with mulch, irrigation, or an alternative method described in CIP9.012 of the City of San Marcos Construction Specifications and Standards, as stated as a note on the Erosion & Sedimentation Control Plan sheets in the Construction Plans.

### ***Disturbed Area Minimization***

An effective way of minimizing potential impact from storm water runoff from construction sites is to minimize the area of soil disturbance. The site will be developed in such a manner as to limit the necessary construction to as small an area as practical, thereby reducing the amount of runoff generated by a storm event.

***Stabilized Construction Entrance***

A stabilized construction entrance consisting of stone will be installed at the construction entrance to prevent the off-site transport of sediment by construction vehicles.

***Concrete Washout***

A concrete washout area will be designated in order to prevent the off-site transport of excess concrete.

***Rock Berm***

A rock berm is placed in areas of concentrated flow as a check dam to intercept sediment-laden runoff, detain the sediment, and release the water in sheet flow.

***Inlet Protection***

Inlets that receive storm runoff from disturbed areas should be protected by temporary inlet protection that provides protection against silt transport or accumulation in storm sewer systems.

## Temporary Stormwater Section (TCEQ - 0602)

## Attachment E

### Request to Temporarily Seal a Feature

We are not requesting to seal any sensitive features on site.

**Temporary Stormwater Section (TCEQ - 0602)**

**Attachment F**

## Structural Practices

The site will be graded to direct the required amount of runoff to one of the proposed bioretention ponds. All runoff that enters a proposed bioretention pond will be treated, then the treated runoff will either be released off site or directed to one of the proposed detention ponds. All runoff that enters one of the proposed detention ponds will be released off site at an equivalent rate as per the existing conditions.

**Temporary Stormwater Section (TCEQ - 0602)**

**Attachment G**

## Drainage Area Map

A drainage area map has been included in the Construction Plans that accompany this submittal.

**Temporary Stormwater Section (TCEQ - 0602)**

**Attachment H**

## Temporary Sediment Pond(s) Plans and Calculations

There are no temporary sediment ponds associated with this application.

**Temporary Stormwater Section (TCEQ - 0602)**

**Attachment I**

## Inspection and Maintenance for BMPs

The following is a schedule for inspection and maintenance for Temporary BMPs:

***Silt Fence***

Inspect daily, and after every rain event, any repairs must be done with 24 hours of failure.

***Temporary Inlet Protection***

Inspect weekly, and after every rain event, any repairs must be done within 24 hours of failure.

***Tree Protection***

Inspect weekly.

***Stabilized Construction Entrance***

Inspect weekly, and after every rain event, any repairs must be done within 24 hours of failure.

**Temporary Stormwater Section (TCEQ - 0602)**

**Attachment J**

## Schedule of Interim and Permanent Soil Stabilization Practices

The following is a schedule of interim and permanent soil stabilization practices:

***Prior to Site Disturbance***

Install all temporary vegetation features.

***During Construction***

Maintain all temporary vegetation features and install soil stabilization matting on slopes greater than 3:1 as described in the Edwards Aquifer Technical Guidance Manual Section 1.3. Inspect all temporary features on a weekly basis and after rain events.

***After Completion of Construction***

Install all permanent vegetation and geotextile features.

***After Completion of Permanent Erosion and Sedimentation***

Remove all temporary vegetation and soil stabilization matting features.

***If Construction is Temporarily Stopped Unexpectedly***

If disturbed area is not to be worked on for more than 14 days, disturbed area needs to be stabilized by re-vegetation, mulch, tarp, or re-vegetation matting. If construction is permanently stopped, install all permanent vegetation and geotextile features, and remove all temporary vegetation and soil stabilization matting features.

# Permanent Stormwater Section, **6.0**

# Permanent Stormwater Section

**Texas Commission on Environmental Quality**

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

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

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

## *Signature*

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

Print Name of Customer/Agent: Cliff Kendall

Date: 10/21/2024

Signature of Customer/Agent

3 BIORETENTION BASINS

**Regulated Entity Name**: PROMISELAND WATER SUPPLY

## *Permanent Best Management Practices (BMPs)*

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

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

   ☐ N/A

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

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

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

☐ N/A

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

   ☐ N/A

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

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

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

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

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

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

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

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

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

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

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

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

☒ N/A

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

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

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

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

☒ Design calculations (TSS removal calculations)

☐ TCEQ construction notes

☐ All geologic features

☐ All proposed structural BMP(s) plans and specifications

☐ N/A

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

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

    ☐ N/A

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

    ☒ N/A

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

    ☐ N/A

## *Responsibility for Maintenance of Permanent BMP(s)*

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

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

    ☐ N/A

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

    ☒ N/A

## Permanent Stormwater Section (TCEQ - 0600)

## Attachment A

### 20% or Less Impervious Cover Waiver

This waiver is not applicable for this site.

**Permanent Stormwater Section (TCEQ - 0600)**

**Attachment B**

## BMPs for Upgradient Stormwater

Stormwater runoff from the upgradient areas is all treated separately on their individual sites. Only on-site stormwater will be accounted for on the Promise Land San Marcos site.

**Permanent Stormwater Section (TCEQ - 0600)**

**Attachment C**

## BMPs for On-site Stormwater

Three bioretention ponds are proposed on-site for the development. These bioretention ponds will treat 0.66, 0.19, 0.56 acres of impervious cover respectively. These bioretention ponds were designed per the Texas Commission on Environmental Qualities Technical Guidance Manual and will provide water quality for the proposed development. The calculations demonstrate that each pond will sufficiently remove 89% of the increased TSS load when the site is fully developed.

**Permanent Stormwater Section (TCEQ - 0600)**

**Attachment D**

## BMPs for Surface Streams

There are no surface streams on or near the regulated entity.

**Permanent Stormwater Section (TCEQ - 0600)**

**Attachment E**

## Request to Seal a Features

We are not requesting to seal any sensitive features on site.

**Permanent Stormwater Section (TCEQ - 0600)**

**Attachment F**

## Construction Plans

Construction plans for this project have been prepared and submitted along with this application.

**Permanent Stormwater Section (TCEQ - 0600)**

**Attachment G**

## Inspection, Maintenance, Repair and Retrofit Plan

The owner will be responsible for inspection, maintenance, and repair for the proposed detention/bioretention ponds with the Promise Land San Marcos project.

Per the TCEQ, the owner is responsible for installing and maintaining BMPs in a manner that complies with all applicable Federal, State, and Local regulations.

***Bioretention (See Section 9)***

1) Accumulated paper, trash, and debris should be removed every six (6) months or more often as necessary to maintain proper operations.
2) The basin shall be inspected annually, and repairs shall be made if necessary.
3) Corrective maintenance is required any time a bioretention basin does not drain the equivalent of the Water Quality Volume within 96 hours (i.e., no standing water is allowed).
4) Structural integrity of basins shall always be maintained.
5) Silt fence will be installed upstream of all CEF buffers along with a six (6) foot chain link fence along the perimeter of the buffer.

***Detention Basins***

1) Accumulated paper, trash, and debris should be removed every six (6) months or as often as necessary to maintain proper operations.
2) Vegetation within the basin shall not exceed 18 inches in height at any time, except as called for in the design.
3) Corrective maintenance is required any time draw-down does not occur within 24 hours.
4) The basin should be inspected annually, and repairs shall be made if necessary.
5) In detention basins, silt shall be removed, and the basin restored to original lines and grades when standing water conditions occur or the basin storage volume is reduced by more than ten percent (10%).
6) To limit erosion, no unvegetated area shall exceed ten (10) square feet.
7) Structural integrity of the basins shall always be maintained.

Signature of Customer

9/25/24

Date

Signature of Agent

Date

## INSPECTION AND MAINTENANCE PLAN FOR BIORETENTION PONDS

PROJECT NAME: Promise Land San Marcos

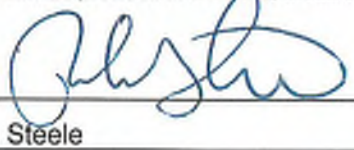
ADDRESS: 1650 Lime Kiln Rd

CITY, STATE, ZIP: San Marcos, Hays County, TX 78666

The following are guidelines that should be met for pond maintenance:

- *Inspections*. BMP facilities should be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. During each inspection, erosion areas inside and downstream of the BMP must be identified and repaired or revegetated immediately.
- *Sediment Removal*. Remove sediment from the facility when sediment depth reaches 3 inches or when the sediment interferes with the health of vegetation or ability of the facility to meet required drawdown times. Sediment removal should be performed at least every 2 years.
- *Drain Time*. When the drain time exceeds 72 hours as observed in the observation well, the filter media should be removed and replaced with more permeable material.
- *Vegetation*. All dead and diseased vegetation considered beyond treatment shall be removed and replaced during semi-annual inspections. Diseased trees and shrubs should be treated during inspections. Remulch any bare areas by hand whenever needed. Replace mulch annually in the spring, or more frequently if needed, in landscaped areas of the basin where grass or groundcover is not planted. Grass areas in and around bioretention facilities must be mowed at least twice annually to limit vegetation height to 18 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas.
- *Debris and Litter Removal*. Debris and litter will accumulate in the facility and should be removed during regular mowing operations and inspections.
- *Filter Underdrain*. Clean underdrain piping network to remove any sediment buildup every 5 years, or as needed to maintain design drawdown time.

An amended copy of this document will be provided to the TCEQ within thirty (30) days of any changes in the following information.

Signature of Responsible Party: 

Printed Name: Robin Steele

Mailing Address: 1650 Lime Kiln Rd

City, State, Zip: San Marcos, Texas 78666

Telephone: 512-392-4357 Fax: _____

**Permanent Stormwater Section (TCEQ - 0600)**

**Attachment H**

## Pilot-Scale Field Testing Plan

The TCEQ Technical Guidance Manual was used to design the ponds for the regulated entity. Therefore, a Pilot Scale Field Testing Plan has not been provided.

**Permanent Stormwater Section (TCEQ - 0600)**

**Attachment I**

## Measures for Minimizing Surface Stream Contamination

Drainage facilities have been designed to capture stormwater runoff from the proposed development and direct to a proposed bioretention pond, then to either a proposed detention pond or released back off site. The detention ponds have been designed to reduce peak flow rates discharging downstream. Reduced peak flow rates will result in lower velocities for stormwater entering surface streams, thereby reducing the potential for erosion. The bioretention ponds have been designed for TSS removal and increased water quality for stormwater discharge downstream.

# Modification of a Previously Approved Plan, **7.0**

# Modification of a Previously Approved Plan

**Texas Commission on Environmental Quality**

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

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

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

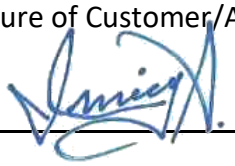
## *Signature*

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

Print Name of Customer/Agent: Irving Aguilar

Date: 6/30/2025

Signature of Customer/Agent:



## *Project Information*

1. Current Regulated Entity Name: PROMISELAND WATER SUPPLY
   Original Regulated Entity Name: Promiseland San Marcos Church
   Regulated Entity Number(s) (RN): RN104793641, RN106194194
   Edwards Aquifer Protection Program ID Number(s): _____
   ☒ The applicant has not changed and the Customer Number (CN) is: CN602942906
   ☐ The applicant or Regulated Entity has changed. A new Core Data Form has been provided.

2. ☒ **Attachment A: Original Approval Letter and Approved Modification Letters**. A copy of the original approval letter and copies of any modification approval letters are attached.

3. A modification of a previously approved plan is requested for (check all that apply):
   - ☐ Physical or operational modification of any water pollution abatement structure(s) including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
   - ☐ Change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
   - ☒ Development of land previously identified as undeveloped in the original water pollution abatement plan;
   - ☐ Physical modification of the approved organized sewage collection system;
   - ☐ Physical modification of the approved underground storage tank system;
   - ☐ Physical modification of the approved aboveground storage tank system.

4. ☒ Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

| ***WPAP Modification Summary*** | ***Approved Project*** | ***Proposed Modification*** |
|---|---|---|
| Acres | 20.23 | 19.72 |
| Type of Development | Commercial | Commercial |
| Number of Residential Lots | N/A | N/A |
| Impervious Cover (acres) | 3.12 | 4.45 |
| Impervious Cover (% | 15.4 | 22.57 |
| Permanent BMPs | Swales, VFS | Swales, VFS, Bioretention (3x) |
| Other | N/A | N/A |

| ***SCS Modification Summary*** | ***Approved Project*** | ***Proposed Modification*** |
|---|---|---|
| Linear Feet | N/A | N/A |
| Pipe Diameter | N/A | N/A |
| Other | N/A | N/A |

| ***AST Modification Summary*** | ***Approved Project*** | ***Proposed Modification*** |
|---|---|---|
| Number of ASTs | 1 | N/A |
| Volume of ASTs | 8,000 gal | N/A |
| Other | N/A | N/A |

| ***UST Modification Summary*** | ***Approved Project*** | ***Proposed Modification*** |
|---|---|---|
| Number of USTs | N/A | N/A |
| Volume of USTs | N/A | N/A |
| Other | N/A | N/A |

5. ☒ **Attachment B: Narrative of Proposed Modification**. A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved, including any previous modifications, and how this proposed modification will change the approved plan.

6. ☒ **Attachment C: Current Site Plan of the Approved Project**. A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
   - ☒ The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.

7. ☒ The acreage of the approved plan has increased. A Geologic Assessment has been provided for the new acreage.
   ☐ Acreage has not been added to or removed from the approved plan.

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

## Modification of a Previously Approved Plan (TCEQ - 0590)

## Attachment A

## Original Approval Letter and Approved Modification Letters

October 23, 2024 009624.00

Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, Texas 78753

RE: Narrative of Proposed Modification for Modification of a Previously Approved Plan Form (TCEQ-0590)
PROMISELAND SAN MARCOS
1650 Lime Kiln Road, San Marcos, Hays County, Texas 78666

To whom it may concern:

Please accept this Engineer's Summary Letter as our project narrative for the above referenced proposed modification. The project is located at 1650 Lime Kiln Road, Hays County, Texas 78666, within the San Marcos ETJ.

The proposed modification includes three new buildings with a total gross floor area of 10,768.81 square feet. In total, approximately 1.38 acres (60,151 square feet) of impervious cover will be added to the existing site. There will be proposed drainage and septic infrastructure proposed to serve the proposed modification. Bioretention ponds are proposed on site to accommodate TCEQ water quality guidelines. One aboveground storage tank (35,000-gallon volume) will be proposed with this modification. Please refer to the previously approved plan (7.4 – Attachment D) and the proposed site construction plans (11.0) included within the WPAP submittal for Promise Land San Marcos.

To our knowledge, the enclosed application materials are complete, correct, and in full compliance with the TCEQ requirements. Should you have any questions regarding this project or application, please do not hesitate to contact our office.

Sincerely,
**WGI**
Texas Engineering Firm No. F-15085

Cliff Kendall

## Modification of a Previously Approved Plan (TCEQ - 0590)

## Attachment C

### Current Site Plan of the Approved Project

Please see Site Plan sheet included with Civil Plan set at end of WPAP submittal.

## Modification of a Previously Approved Plan (TCEQ - 0590)

## Attachment D

## Previously Approved Plan

Austin Region Copy

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ)

# WATER POLLUTION ABATEMENT PLAN (WPAP)

## Promiseland San Marcos Church

**20.235-acres**

Located at:

**1650 Lime Kiln Road**
**San Marcos, Texas 78666**

For:
Promiseland San Marcos
P.O. Box 7
Manchaca, Texas 78652

RECEIVED

MAY 12 2011

TCEQ FIELD OPERATIONS
AUSTIN REGION 11


By:
Austin Civil Engineering, Inc. (Registration # F-001018)
2708 S. Lamar BLVD, Suite 200-A
Austin, Texas 78704

**March 2011**

## Water Pollution Abatement Plan Checklist

√ General Information Form (*TCEQ-0587*)
- ATTACHMENT A - Road Map
- ATTACHMENT B - USGS / Edwards Recharge Zone Map
- ATTACHMENT C - Project Description

√ Geologic Assessment Form (*TCEQ-0585*)
- ATTACHMENT A - Geologic Assessment Table (*TCEQ-0585-Table*)
- Comments to the Geologic Assessment Table
- ATTACHMENT B - Soil Profile and Narrative of Soil Units
- ATTACHMENT C - Stratigraphic Column
- ATTACHMENT D - Narrative of Site Specific Geology
- Site Geologic Map(s)
- Table or list for the position of features' latitude/longitude (if mapped using GPS)

√ Water Pollution Abatement Plan Application Form (*TCEQ-0584*)
- ATTACHMENT A - Factors Affecting Water Quality
- ATTACHMENT B - Volume and Character of Stormwater
- ATTACHMENT C - Suitability Letter from Authorized Agent (if OSSF is proposed)
- ATTACHMENT D - Exception to the Required Geologic Assessment (if requesting an exception)

√ Temporary Stormwater Section (*TCEQ-0602*)
- ATTACHMENT A - Spill Response Actions
- ATTACHMENT B - Potential Sources of Contamination
- ATTACHMENT C - Sequence of Major Activities
- ATTACHMENT D - Temporary Best Management Practices and Measures
- ATTACHMENT E - Request to Temporarily Seal a Feature, if sealing a feature
- ATTACHMENT F - Structural Practices
- ATTACHMENT G - Drainage Area Map
- ATTACHMENT H - Temporary Sediment Pond(s) Plans and Calculations
- ATTACHMENT I - Inspection and Maintenance for BMPs
- ATTACHMENT J - Schedule of Interim and Permanent Soil Stabilization Practices

√ Permanent Stormwater Section (*TCEQ-0600*)
- ATTACHMENT A - 20% or Less Impervious Cover Waiver, if project is multi-family residential, a school, or a small business and 20% or less impervious cover is proposed for the site
- ATTACHMENT B - BMPs for Upgradient Stormwater
- ATTACHMENT C - BMPs for On-site Stormwater
- ATTACHMENT D - BMPs for Surface Streams
- ATTACHMENT E - Request to Seal Features (if sealing a feature)
- ATTACHMENT F - Construction Plans
- ATTACHMENT G - Inspection, Maintenance, Repair and Retrofit Plan
- ATTACHMENT H - Pilot-Scale Field Testing Plan, if BMPs not based on *Complying with the Edwards Aquifer Rules: Technical Guidance for BMPs*
- ATTACHMENT I - Measures for Minimizing Surface Stream Contamination

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

√ Application Fee Form (*TCEQ-0574*)

√ Check Payable to the "Texas Commission on Environmental Quality"

√ Core Data Form (*TCEQ-10400*)

___ TCEQ approval letter

*GENERAL INFORMATION FORM*

**General Information Form**
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

REGULATED ENTITY NAME: Promiseland San Marcos Church
COUNTY: Hays STREAM BASIN: Sink Creek

EDWARDS AQUIFER: X RECHARGE ZONE
__ TRANSITION ZONE

PLAN TYPE: X WPAP __ AST __ EXCEPTION
__ SCS __ UST __ MODIFICATION

**CUSTOMER INFORMATION**

1. Customer (Applicant):

Contact Person: Rob A. Steele
Entity: Promiseland San Marcos
Mailing Address: P.O. Box 7
City, State: Manchaca, Texas Zip: 78652
Telephone: 512-845-4244 FAX: 512-392-4367

Agent/Representative (If any):

Contact Person: Hunter Shadburne, P.E.
Entity: Austin Civil Engineering, Inc.
Mailing Address: 2708 South Lamar Boulevard, Suite 200-A
City, State: Austin, Texas Zip: 78704
Telephone: 512-306-0018 FAX: 512-306-0048

2. __ This project is inside the city limits of _____.
X This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of San Marcos.
__ This project is not located within any city's limits or ETJ.

3. 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.

Approximately 1.7 miles northwest of the intersection of Lime Kiln Road and Post Road (County Road 140) near San Marcos; the church is on the left side of Lime Kiln Road, immediately north of Pitt Road (and the rock quarry)

4. X **ATTACHMENT A - ROAD MAP.** A road map showing directions to and the location of the project site is attached at the end of this form.

5. X **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 behind this sheet. The map(s) should clearly show:

X Project site.
X USGS Quadrangle Name(s).
X Boundaries of the Recharge Zone (and Transition Zone, if applicable).
X Drainage path from the project to the boundary of the Recharge Zone.

6. X 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. **The TCEQ must be able to inspect the project site or the application will be returned.**

7. X **ATTACHMENT C - PROJECT DESCRIPTION**. Attached at the end of this form is a detailed narrative description of the proposed project.

8. Existing project site conditions are noted below:
X Existing commercial site
__ Existing commercial site
__ Existing industrial site
__ Existing residential site
__ Existing paved and/or unpaved roads
__ Undeveloped (Cleared)
__ Undeveloped (Undisturbed/Uncleared)
__ Other: _____

**PROHIBITED ACTIVITIES**

9. X 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).

10. X 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**

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

X For a Water Pollution Abatement Plan and Modifications, the total acreage of the site where regulated activities will occur.

___ For an Organized Sewage Collection System Plans and Modifications, the total linear footage of all collection system lines.

___ For a UST Facility Plan or an AST Facility Plan, 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.

12. 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

X Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)

___ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

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

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

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:

Rob A. Steele
Print Name of Customer/Agent

Signature of Customer/Agent

3/24/11
Date

**If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.**

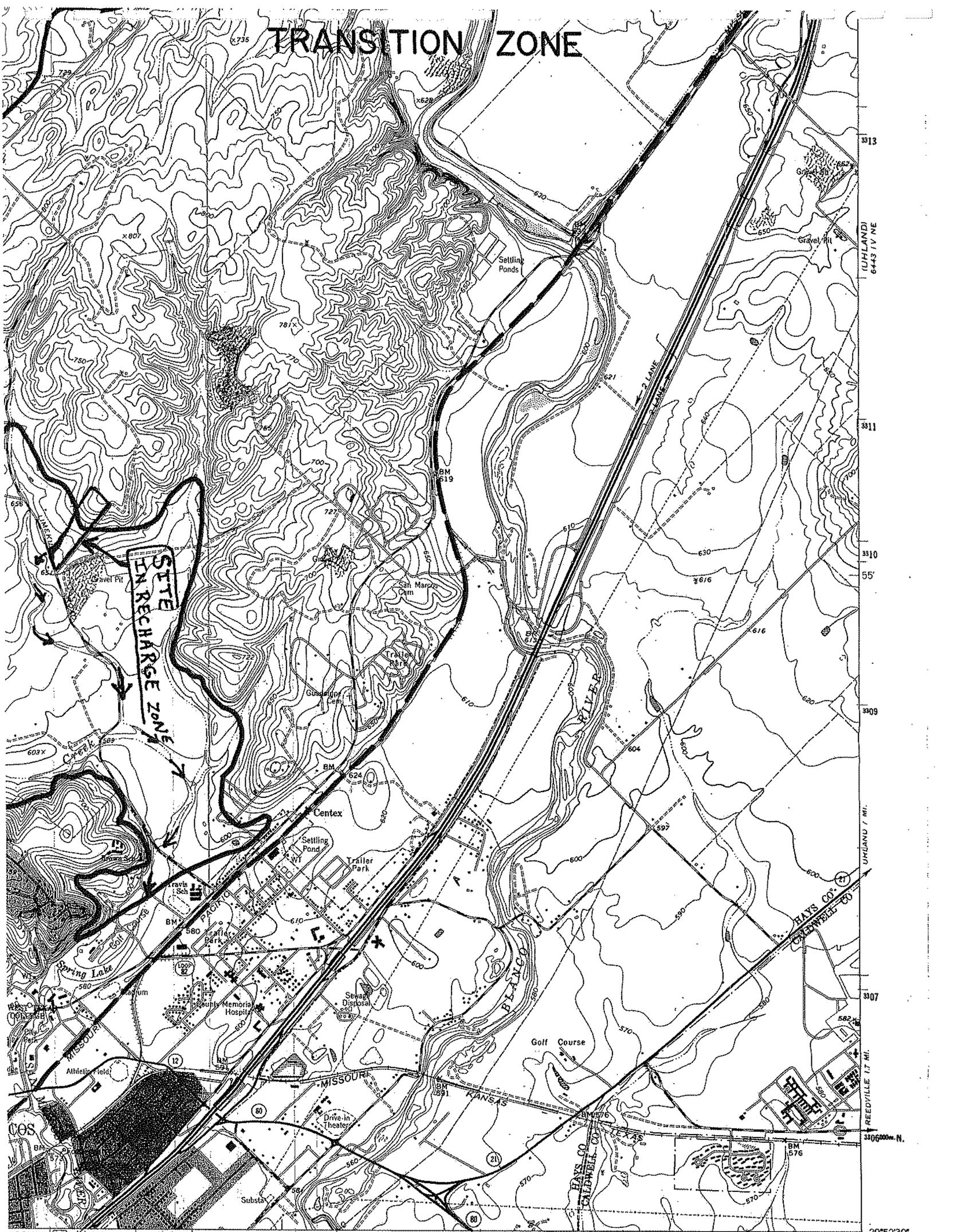
Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Attachment A

Road Map

Google maps

1650 Lime Kiln Road
San Marcos, Texas 78666




INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1974

4000

1 MILE

4000 5000 6000 7000 FEET

1 KILOMETER

AL 10' FEET
SEA LEVEL

ROAD CLASSIFICATION

Primary highway, hard surface — Light-duty road, hard or improved surface

Secondary highway, hard surface — Unimproved road

Interstate Route — U. S. Route — State Route

TEXAS

QUADRANGLE LOCATION

SAN MARCOS NORTH, TEX.
N2952.5—W9752.5/7.5

1964
PHOTOREVISED 1973
AMS 6443 IV NW—SERIES V882

L MAP ACCURACY STANDARDS
OLORADO 80225, OR RESTON, VIRGINIA 22092
4D SYMBOLS IS AVAILABLE ON REQUEST

2997-333

ATTACHMENT B USGS Map

PROJECT: Promiseland San Marcos Church
Address: 1650 Lime Kiln Road
San Marcos, Texas 78666

Owner: Promiseland San Marcos

# General Information Form

## Attachment C

**Project Description:**

This project is currently located on 20.23-acres out of the Edward Burleson Jr. Survey, Abstract 75, in Hays County, Texas. This tract is situated within the Extraterritorial Jurisdiction (ETJ) of San Marcos, Texas and will be submitting a one lot subdivision to the City for Final Plat approval, in addition to the City's Watershed Protection Plan and Site Plan applications.

This lot is currently used for a religious organization, which includes an existing 12,066-square foot building and the associated 29,000-square feet of paving for parking, driveways and sidewalks.

This project is now proposing an additional 11,625-square foot building, a 600-square foot storage building and 71,340-square feet of impervious cover (IC) for the associated parking, drives and sidewalks. The back parking lot is proposed to be constructed of gravel with no base materials, while the front parking will be constructed of asphalt. (The City of San Marcos allows gravel parking to be considered as 40% impervious; however, for this TCEQ submittal, this area is considered 100% impervious.)

The overall IC of this site after construction is proposed to be 15.4% of the 20.23-acres. The majority of the parking has been designed to surface drain onto the proposed water quality treatment (vegetative filter strips). The new building will utilize a rainwater harvesting system to direct to rooftop runoff to collections tanks. The tanks will be periodically emptied to ensure that they will provide the required storage for subsequent storm events.

In addition, the building is proposed to be constructed in two phases. Therefore, the project will initially only have one 8,000-gallon storage tank, but will ultimately have two 8,000-gallon tanks.

*GEOLOGIC ASSESSMENT FORM*

# TCEQ GEOLOGIC ASSESSMENT

## 20-ACRE TRACT
## (PROMISELAND CHURCH TRACT)
## 1650 LIME KILN ROAD
## SAN MARCOS, HAYS COUNTY, TEXAS 78666

Prepared For

Austin Civil Engineering, Inc.
2708 S. Lamar Blvd., Suite 200-A
Austin, Texas 78704

Prepared By

M. Trojan & Associates
Environmental Consultants
8244 Lime Creek Road
Leander, Texas 78641

MTA Project No. ACEI-11-011

April 26, 2011

## TABLE OF CONTENTS



## APPENDICES

# 1.0 TCEQ FORM 0585

This section provides the required TCEQ Form (Form 0585, Rev. 10-01-2010) that summarizes the information of this *Geologic Assessment* for regulated activities on the Edwards Aquifer Recharge/Transition Zones and relating to 30 TAC 213.5(b)(3), effective June 1, 1999. The required "Narrative Description" is included in Sections 2.0 through 6.0. Sections 7.0 and 8.0 include Additional Remarks and References, respectively.

REGULATED ENTITY NAME: 20-Acre Tract – Promiseland Church Tract
1650 Lime Kiln Road, San Marcos, Hays County, Texas 78666

TYPE OF PROJECT: _X_ WPAP ___ AST ___ SCS ___ UST

LOCATION OF PROJECT: _X_ Recharge Zone ___ Transition Zone
_X_ Contributing Zone within the Transition Zone

PROJECT INFORMATION

1. _X_ Geologic or manmade features are described and evaluated using the attached **GEOLOGIC ASSESSMENT TABLE**.

2. 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.

| Soil Units, Infiltration Characteristics & Thickness | | |
|---|---|---|
| Soil Name | Group* | Thickness (feet) |
| Comfort-Rock outcrop complex, undulating (CrD) | C | up to 1.2 |
| Krum clay, 1 – 3% slopes (KrB) | B/C | up to 6.7 |
| Medlin-Eckrant association, hilly (MED) | B/C-D | 1.3-6.7 |
| | | |
| | | |

* 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.

3. _X_ A **STRATIGRAPHIC COLUMN** is attached at the end of this form that shows formations, members, and thicknesses. The outcropping unit should be at the top of the stratigraphic column.

4. _X_ A **NARRATIVE DESCRIPTION OF SITE SPECIFIC GEOLOGY** is attached at the end of this form. The description must include a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure, and karst characteristics of the site.

5. _X_ Appropriate **SITE GEOLOGIC MAP(S)** are attached:

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" = ____' (unknown at this time) |
| Site Geologic Map Scale | 1" = 300' |
| Site Soils Map Scale (if more than 1 soil type) | 1" = 300' |

6. Method of collecting positional data:
   _X_ Global Positioning System (GPS) technology.
   ___ Other method(s).

7. _X_ The project site is shown and labeled on the Site Geologic Map.

8. _X_ Surface geologic units are shown and labeled on the Site Geologic Map.

9. _X_ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.
   ___ Geologic or manmade features were not discovered on the project site during the field investigation.

10. _X_ The Recharge Zone boundary is shown and labeled, if appropriate.

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

   ___ There are _1_ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
   ___ The wells are not in use and have been properly abandoned.
   ___ The wells are not in use and will be properly abandoned.
   _X_ 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

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

Date(s) Geologic Assessment was performed: April 14, 2011
Date(s)

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.

Michael Trojan, CPG
Print Name of Geologist

(512) 258-6606
Telephone

Fax

Signature of Geologist

April 26, 2011
Date

Representing: M. Trojan & Associates
(Name of Company)

**8244 Lime Creek Road**
**Leander, Texas 78641**
**Office: (512) 258-6606**
**Cell: (512) 917-3695**
**Email: mtrojan@austin.rr.com**

## 2.0 OVERVIEW

M. Trojan & Associates was retained to conduct a *Geologic Assessment* for proposed improvements on a 20-acre tract located at 1650 Lime Kiln Road in San Marcos, Hays County, Texas (refer to Figure 1 of Appendix A). All aspects of the *Geologic Assessment* were conducted by Mr. Michael Trojan, CPG (Certified Professional Geoscientist #1109 in Texas), and the assessment was performed in accordance with Texas Commission on Environmental Quality (TCEQ) *Water Pollution Abatement Plan* (WPAP) requirements and instructions for completing TCEQ Form 0585.

The assessment included reconnaissance of the entire property as well as bordering portions of all neighboring properties. In addition, a previously published *Geologic Assessment* conducted for a 10-acre portion of the subject property was reviewed as part of this *Geologic Assessment*. The previous *Geologic Assessment* was conducted for the portion of the property partially occupied with existing development. Information regarding the assessment is as follows:

| | |
|---|---|
| Report: | Geologic Assessment |
| Report Date: | November 3, 2005 |
| Prepared by: | Andy G. Grubbs, PG of Hays Environmental Consulting |

All site information and conclusions from the above assessment have been incorporated into this *Geologic Assessment*.

Based on information obtained from the TCEQ, the southwest half of the subject property is located on the Edwards Aquifer Recharge Zone and the northeast half on the Edwards Aquifer Contributing Zone within the Transition Zone. Accordingly, the objective of the *Geologic Assessment* was to identify any naturally occurring geologic (karst) or manmade features that may significantly contribute to recharge of the subsurface. The Edwards Aquifer rules define sensitive features as:

> *"... those that have potential for interconnectedness between the surface and the Edwards Aquifer and where rapid infiltration to the subsurface may occur."*

The scope of the *Geologic Assessment* included the following general components:

- Review of published soils and geologic/hydrogeologic information;
- Field evaluation of topographic features;
- Field evaluation of soil types and horizons, relative thickness, and hydrologic characteristics (visual only);

- General description of the subsurface geologic units beneath the property as well as a description of the geologic units exposed at the surface (if visible);

- Field evaluation of geologic conditions to determine the presence or absence of caves, solution cavities, solution-enlarged fractures, faults, other natural bedrock features, sinkholes, swallets or swallow holes in drainage features, non-karst closed depressions, manmade features in bedrock, and any other natural or manmade features, and evaluation of such features with respect to their potential ability to convey infiltrating surface water to the underlying subsurface;

- Preparation of TCEQ Form 0585 for presentation of the findings of this assessment;

- Preparation of a site map that depicts the locations of any field-identified surface features and other features relevant to this *Geologic Assessment*; and

- Preparation of the Geologic Assessment Table for description of field-identified surface features and other features relevant to this *Geologic Assessment* (if applicable).

## 3.0 GENERAL PROPERTY DESCRIPTION AND SITE DEVELOPMENT

This *Geologic Assessment* was conducted for improvements on a 20-acre tract located at 1650 Lime Kiln Road in San Marcos, Hays County, Texas. Based on discussions with representatives of Austin Civil Engineering, Inc., the *Geologic Assessment* is required as a part of the *Water Pollution Abatement Plan* (WPAP) for the proposed development on the subject property.

The subject property is located on the northeast side of Lime Kiln Road, just north of the Lime Kiln Road and Cowan Road intersection (refer to Figures 1, 2 and 3 of Appendix A). The property consists of two 10-acre tracts – designated as the "lower 10 acres" (southwestern half of the property) and the "upper 10 acres" (northeastern half of the property) (refer to Figure 2 of Appendix A). The property is partially developed on the southwest-most portion with a church building and associated driveways and parking areas. The property lies in an area of undeveloped woodlands/pastureland and sparse rural residences. A large rock quarry lies directly southeast of the property – along Cowan Road.

Based on review of a draft Site Plan provided by Austin Civil Engineering, Inc., as of the writing of this TCEQ *Geologic Assessment* proposed improvements on the property will entail construction of two additional buildings and a second parking area on the southwestern portion of the property (refer to Figure 2 of Appendix A).

# 4.0 ENVIRONMENTAL ELEMENTS

## 4.1 Topography and Surface Water Hydrology

According to a USGS topographic map and topographic land survey provided by Austin Civil Engineering, Inc., the lower 10 acres of the subject property slopes very gently toward the southwest while the upper 10 acres slopes gently to medium toward the northwest, southwest and south (refer to Figure 2 of Appendix A). Topographic elevations on the property range between approximately 741 and 651 feet above mean sea level (msl), with the highest elevations located along the northeast boundary of the upper 10 acres and the lowest elevations at the south-southwest corner of the lower 10 acres. As is depicted in Figure 3 of Appendix A, most stormwater runoff generated on the property flows toward the southwest and offsite to a drainage ditch along Lime Kiln Road. With the exception of the northeastern portion of the property (steeper slopes of the upper 10 acres), topography on the subject property provides for a relatively slow to medium runoff rate.

The property lies in the upper extent of a tributary to Sink Creek. Sink Creek flows generally east and south and drains into Spring Lake in the San Marcos city limits. According to review of a FEMA Flood Insurance Rate Map, no portion of the property lies within the 100-year floodplain.

## 4.2 Soils

According to the *Soil Survey of Comal and Hays Counties, Texas*, the soils that are reported to be on the subject property are as follows (also refer to Figures 4-A and 4-B of Appendix A for soil type locations):

<u>Lower 10 Acres</u>

| | |
|---|---|
| Soil Component Name: | Comfort-Rock outcrop complex, undulating (CrD) |
| Soil Surface Texture: | Dark brown extremely stony clay to approximately 6 inches, underlain by dark reddish brown extremely stony clay to about 13 inches, underlain by indurated fractured limestone |
| Hydrologic Group: | Permeability is slow; available water capacity is very low; surface runoff is slow; well drained |
| Depth to Bedrock: | Observed in the field to be 4 to approximately 14 |

inches

| | |
|---|---|
| Soil Component Name: | Krum clay, 1 – 3% slopes (KrB) |
| Soil Surface Texture: | Dark gray clay to approximately 16 inches, underlain by grayish brown clay to about 66 inches, underlain by pale brown clay to about 80 inches |
| Hydrologic Group: | Permeability is moderately slow; available water capacity is very low; surface runoff is medium |
| Depth to Bedrock: | Unknown at site – reported to be up to 80 inches |
| Soil Component Name: | Medlin-Eckrant association, hilly (MED)<br>Medlin soils comprise approximately 50% and occupy lower side slopes; Eckrant soils comprise about 45% and occupy the upper side slopes and crests of narrow ridges |
| Soil Surface Texture: | Medlin soils – grayish brown stony clay to approximately 11 inches, underlain by dark yellowish brown clay to about 50 inches, underlain by light gray shaly clay to about 80 inches<br>Eckrant soils – very dark gray extremely stony clay to approximately 16 inches, underlain by fractured limestone |
| Hydrologic Group: | Permeability is moderately slow (Eckrant) to very slow Medlin); available water capacity is high (Medlin) to very low (Eckrant); surface runoff is rapid; well drained |
| Depth to Bedrock: | Unknown at site – some soils were observed to be up to 24 inches thick |

<u>Upper 10 Acres</u>

| | |
|---|---|
| Soil Component Name: | Comfort-Rock outcrop complex, undulating (CrD) |
| Soil Surface Texture: | Dark brown extremely stony clay to approximately 6 inches, underlain by dark reddish brown extremely stony clay to about 13 inches, underlain by indurated fractured limestone |
| Hydrologic Group: | Permeability is slow; available water capacity is very low; surface runoff is slow; well drained |
| Depth to Bedrock: | Observed in the field to be 4 to approximately 14 inches |
| Soil Component Name: | Medlin-Eckrant association, hilly (MED)<br>Medlin soils comprise approximately 50% and |

| | |
|---|---|
| | occupy lower side slopes; Eckrant soils comprise about 45% and occupy the upper side slopes and crests of narrow ridges |
| Soil Surface Texture: | Medlin soils – grayish brown stony clay to approximately 11 inches, underlain by dark yellowish brown clay to about 50 inches, underlain by light gray shaly clay to about 80 inches<br>Eckrant soils – very dark gray extremely stony clay to approximately 16 inches, underlain by fractured limestone |
| Hydrologic Group: | Permeability is moderately slow (Eckrant) to very slow Medlin); available water capacity is high (Medlin) to very low (Eckrant); surface runoff is rapid; well drained |
| Depth to Bedrock: | Unknown at site – some soils were observed to be up to 24 inches thick |

Based on the *Soil Survey* and as is depicted on Figures 4-A and 4-B of Appendix A, the Comfort-Rock outcrop complex soils and Krum clay soils cover the project area on the lower 10 acres of the subject property and the Comfort-Rock outcrop complex soils and Medlin-Eckrant association soils cover primarily the upper 10-acre portion of the property.

Shallow excavations were made at various locations across the property and observations of the soil characteristics confirmed the presence of soils similar to those described in the *Soil Survey*. Within the project area, the soils were observed to be generally thick and very fine grained. Most soils across the entire property were observed to have a limestone fragment fraction of approximately 10 to 50 percent. Soils on the southwestern-most portion of the lower 10 acres and soils along the high-line on the upper 10 acres were observed to be somewhat altered as a result of historical development on those components of the property.

## 4.3 Geology

According to on-line information sources provided by the TCEQ, the subject property lies over the Edwards Aquifer Recharge Zone and the Contributing Zone within the Transition Zone (Note: the proposed project area lies in the Edwards Aquifer Recharge Zone). Based on review of available geologic/hydrologic publications and field reconnaissance, the outcropping (near surface) geologic material is the Edwards Limestone (Ked) and the Georgetown Formation (Kgt) (refer to Appendix A, Figure 5 for a regional geologic map, Figure 6 for a stratigraphic column, and Figures 7-A and 7-B for the site geologic maps). The *Geologic Atlas of Texas – Seguin Sheet* (1974; Rev. 1995) describes the Edwards Limestone as follows:

> *"Limestone aphanitic to fine grained, massive to thin bedded, hard, brittle, in part rudistid biostromes, much miliolid biosparite; dolomite fine to very fine grained, porous, medium gray to grayish brown; chert, nodules and plates common, varies in amount from bed to bed, some intervals free of chert, mostly white to light gray; in zone of weathering considerably recrystallized, "honeycombed," and cavernous forming an aquifer; forms flat areas and plateaus bordered by scarps; thickness 60-350 feet, thins northward."*

The Georgetown Formation is described as follows:

> *"Limestone and marl; mostly limestone, fine grained, argillaceous, nodular, moderately indurated, light gray; some limestone, hard, brittle, thick bedded, white; some shale, marl, soft light gray to yellowish gray; marine fossils include Kingena wacoensis and Gryphaea washitaensis; thickness 30-80 feet, thins southward."*

Given the relatively thick soil cover on the lower 10 acres and the southwestern portion of the upper 10 acres, very few geologic outcrops were encountered at ground surface. Moreover, the exact location of the Edwards Limestone/Georgetown Formation contact could not be determined. However, inspection of the rock quarry wall just southeast of the property revealed that the contact lies beneath the central portion of the subject property, and may roughly correspond to the TCEQ-established Edwards Recharge Zone boundary depicted in Figures 7-A and 7-B of Appendix A.

Both loose and intact outcrops of the Georgetown Formation were observed on the northeastern-most portion of the property (upper 10 acres), and a few (previously excavated) Edwards Limestone fragments were found on the lower 10 acres. The Edwards Limestone rock fragments were observed to consist of light gray to gray, fine-grained, very hard limestone (refer to the photographs in Appendix B). Less than approximately five percent of all Edwards fragments inspected exhibited vuggy (honeycomb) characteristics, with voids ranging approximately 0.25 to 2.0 inches in size. Void/void zones were found to be both randomly oriented and oriented along bedding planes, and to have limited interconnectedness. No significant fracturing was observed in any intact outcrops that were visible on the property; however, this report does not discount the potential presence of underground fractures. No significant fractures or voids were observed in the rock quarry wall just southeast of the subject property.

## 4.4 Sensitive Karst and Manmade Features

### 4.4.1 Onsite Features

The field reconnaissance of the subject property included search for and identification of sensitive karst and manmade features, as defined by TCEQ, and to note potential ground recharge points that may be associated with such features. The field reconnaissance entailed walking 25-foot spaced transects across the entire property. The results of the reconnaissance are provided below.

Caves

Based on TCEQ criteria, a cave is a natural underground open (or filled) space formed by dissolution of limestone that is large enough for an average-sized person to enter. When a surface cave opening is encountered, then the subsurface extent of the cave is relevant in terms of subsurface recharge.

Based on observations made across the entire subject property, no cave openings/caves were identified.

Solution Cavities

Based on TCEQ criteria, a solution cavity is a natural cavity or depression formed as a result of dissolution of limestone. This category is designed to capture features that are not large enough for a normal-sized person to enter but appear to be part of a system of interconnected voids that connect the surface with the subsurface. The size and geometry of the feature is defined by in-place bedrock. Solution cavities also include areas where dissolution has increased the opening size and permeability along bedding planes as well as fractures.

Based on observations made across the entire subject property, no solution cavities were identified.

Solution-Enlarged Fractures

Based on TCEQ criteria, a solution-enlarged fracture is one that shows evidence of being locally enlarged by dissolution of limestone, recognized by measurable (larger than hairline) openings and miss-matched fracture surface shapes.

Based on observations made across the entire subject property, no solution-enlarged fractures were identified.

Faults

Based on TCEQ criteria, a fault is defined as a fracture along which there has been displacement of one side of the fracture relative to the other side. Displaced geologic materials and/or an abrupt change in surface topography can both be indicative of the presence of a fault.

Based on observations made across the entire subject property, no faults were identified.

Manmade Features in Bedrock

Based on TCEQ criteria, manmade features in bedrock may include water wells, sanitary sewer lines, storm sewer lines, trenches, quarries, and other cultural features that intersect bedrock and can potentially increase the rate of recharge to the subsurface.

Based on observations made across the entire subject property, a single domestic water well was the only manmade feature in bedrock identified on the property. This manmade feature is described below.

Manmade Feature MB-1 (Water Well)

| | |
|---|---|
| Latitude: | 29.918152 |
| Longitude: | -97.932422 |
| Depth: | 240' |

Feature MB-1 represents a domestic water well near the church building located on the lower 10 acres of the subject property (refer to Figure 7-A in Appendix A and the Geologic Assessment Table and well report in Appendix C). The well is 240 feet deep and screened in the Edwards Aquifer. The well is in use for onsite water supply to the church building.

Based on reconnaissance of the water well, it is determined that development on the subject property will have no effect on this feature.

Swallet or Swallow Holes

Based on TCEQ criteria, a swallet or swallow hole may include a focused recharge feature in an intermittent drainage or stream in karst terrain. Some swallow holes have a surface expression, for example, a cave opening or formation of a whirlpool in the stream at high flow. The general

case is that fine soil and sediment as well as gravel are deposited over the bedrock feature during falling stages of flow, thereby intermittently or frequently obscuring the feature.

Based on observations made across the entire subject property, no swallets or swallow holes were identified.

Sinkholes

Based on TCEQ criteria, a sinkhole represents a shallow, broad topographic depression formed in response to karst processes. Sinkholes are pragmatically defined as features greater than six (6) feet in diameter with more than six (6) inches of topographic relief. Sinkholes are usually circular in map view. In cross section they may be subtle swales or funnel-shaped pits and some have exposed rimrock at the perimeter. The presence of a sinkhole implies that processes including collapse, subsidence, and soil sapping over geologic time have caused the land surface to sink below the surrounding area.

Based on observations made across the entire subject property, no sinkholes were identified.

Other Natural Bedrock Features

Based on TCEQ criteria, other natural bedrock features include vuggy rock and reef deposits that may contain large holes or vugs.

Based on observations made across the entire subject property, less than approximately five percent of all Edwards Limestone fragments inspected exhibited vuggy (honeycomb) characteristics, with voids ranging approximately 0.25 to 2.0 inches in size. Void/void zones were found to be both randomly oriented and oriented along bedding planes, and to have limited interconnectedness. In terms of potential subsurface recharge, it is believed that subsurface recharge via vuggy rock is minimal/insignificant at the subject property.

Non-karst Closed Depressions

Based on TCEQ criteria, a non-karst closed depression is a natural or non-natural topographic depression that is not formed by karst processes and is not bedrock floored. A feature larger than six (6) feet in at least one direction and with six (6) inches or more of topographic relief should be considered as a feature.

Based on observations made across the entire subject property, no non-karst closed depressions were identified.

Zones

Based on TCEQ criteria, a zone is an area in which any type of karst feature occurs along a trend or in a cluster. Clustered or aligned features are more likely to be an indicator of an integrated flow system at depth than isolated features. Alignment is expected in areas where conduit flow is strongly influenced by structurally controlled fractures.

Based on observations made across the entire subject property, no zones were identified.

Surface Streams

Based on observations made across the entire subject property, no surface streams were identified.

### 4.4.2 Offsite Features

The field reconnaissance also included inspection of neighboring properties a distance of approximately 200 feet from all boundaries of the subject property for identification

of offsite sensitive karst and manmade features that could be deemed as significant in terms of development on the property. The inspection identified one potential recharge feature. While this feature was found to have no significance in light of future development on the subject property, description of this feature is included below for completeness.

Offsite Manmade Feature MB-1

| | |
|---|---|
| Latitude: | 29.917093 (center of feature) |
| Longitude: | -97.930993 (center of feature) |
| Surface Size: | 1,650' X 700' (approx.) |
| Depth: | 30'+ (approx.) |
| Orientation: | N40E |
| Catchment Area: | Unknown |

Offsite Manmade Feature MB-1 represents a large rock quarry located directly southeast of the subject property (refer to Figures 7-A and 7-B of Appendix A and photograph in Appendix B). Partial inspection of the quarry

did not identify any significant voids in the bedrock. Moreover, no evidence of shallow groundwater was observed in the sidewalls.

Based on reconnaissance of the feature, it is determined that development on the subject property will have no effect on the feature (Note: This feature is not included on the Geologic Assessment Table of Appendix C).

## 5.0 POTENTIAL FOR FLUID MOVEMENT TO THE SUBSURFACE

The subject property is located within the designated Edwards Aquifer Recharge Zone and Contributing Zone within the Transition Zone of Hays County. This *Geologic Assessment* reviewed available published information regarding soils and local geology, and included a field reconnaissance to identify any significant surface features that could provide for significant vertical fluid movement to the subsurface. Based on review of available information and visual observations made during the field reconnaissance, this *Geologic Assessment* concludes that the overall potential for recharge to the subsurface on the subject property is low. This conclusion is based on the following:

- The presence of relatively thick to medium-thick, fine-grained soils with reported moderately slow to very slow permeability on the proposed development area of the subject property suggests that overall recharge potential to the subsurface should be generally low.

- No "defined" recharge points were found to be located on the subject property that would require protection in light of future development.

- Less than approximately five percent of all Edwards Limestone fragments inspected on the subject property exhibited vuggy characteristics, with voids ranging approximately 0.25 to 2.0 inches in size. Void/void zones were found to be both randomly oriented and oriented along bedding planes, and to have limited interconnectedness. In terms of potential subsurface recharge, it is believed that recharge via vuggy rock is minimal/insignificant at the subject property.

## 6.0 CONCLUSIONS

M. Trojan & Associates has conducted a *Geologic Assessment* for proposed improvements on a 20-acre tract located at 1650 Lime Kiln Road in San Marcos, Hays County, Texas. Based on research and field reconnaissance conducted as part of this *Geologic Assessment*, this report provides the following conclusions and recommendations:

- Based on review of available information and visual observations made during the field reconnaissance, this *Geologic Assessment* concludes that the overall potential for recharge to the subsurface on the subject property is low.

- No defined recharge "points" were found to be located on the subject property that would require protection in light of future development.

- Onsite feature MB-1 identified on the southwestern portion of the lower 10 acres of the subject property represents an operational domestic water well. It was observed that development on the subject property will have no effect on the feature.

- Less than approximately five percent of all Edwards Limestone fragments inspected on the subject property exhibited vuggy characteristics, with voids ranging approximately 0.25 to 2.0 inches in size. Void/void zones were found to be both randomly oriented and oriented along bedding planes, and to have limited interconnectedness. In terms of potential subsurface recharge, it is believed that recharge via vuggy rock is minimal/insignificant at the subject property.

- Offsite Manmade Feature MB-1 identified on a neighboring property to the southeast of the subject property represents a large rock quarry. It was observed that development on the subject property will have no effect on the feature.

## 7.0 ADDITIONAL REMARKS

This (limited scope) assessment attempted to identify the geologic conditions/features on the subject property. Given the site conditions, potential environmentally sensitive features may have escaped detection as a result of the limitations of this study, soil cover on the subject property, and/or the presence of undetected and unreported environmental and geologic conditions. Should additional information regarding any actual or potential geologic conditions/features at the subject property be discovered that differs from that presented in this report, M. Trojan & Associates should be notified so that proper review of the information can be conducted.

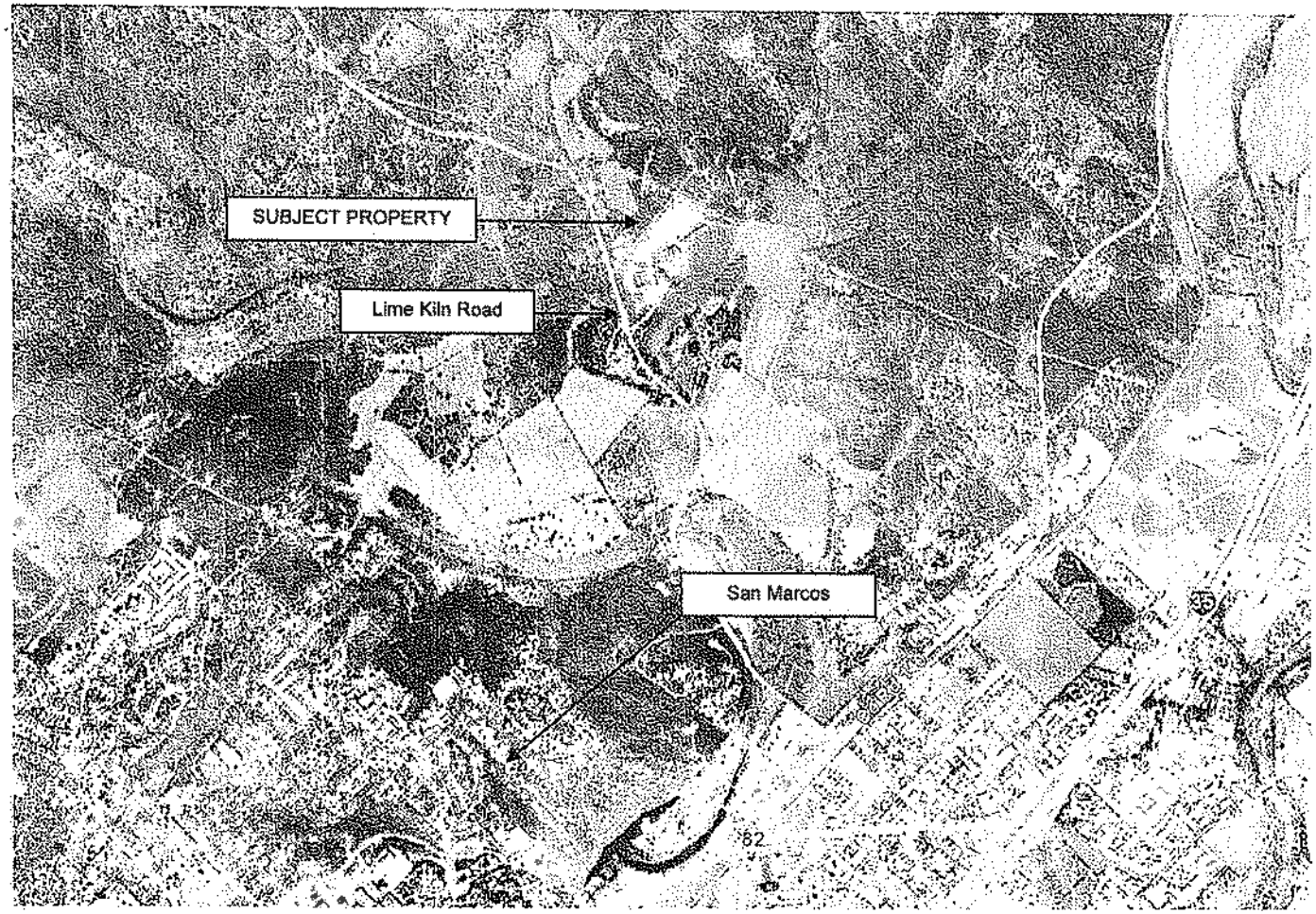
## 8.0 REFERENCES

The following primary references/resources were utilized during the course of conducting this *Geologic Assessment*.

- Edwards Aquifer Recharge Zone information – Texas Commission on Environmental Quality online information sources
- *Geologic Assessment* (for the lower 10-acre tract) – dated November 3, 2005. Hays Environmental Consulting.
- *Geologic Atlas of Texas, Seguin Sheet*, Bureau of Economic Geology, the University of Texas at Austin, Bureau of Economic Geology, dated 1974, Reprinted 1995
- Groundwater hydrogeologic information – Texas Water Development Board online information resources
- FEMA Flood Insurance Rate Map
- Personal communications with representatives of Austin Civil Engineering, Inc.
- Site development plan – provided by Austin Civil Engineering, Inc.
- Soil Conservation Service STATSGO soils information
- *Soil Survey of Comal and Hays Counties*, U.S. Department of Agriculture – Natural Resources Conservation Service, dated 1984
- Topographic land survey – provided by Austin Civil Engineering, Inc.
- U.S. Geological Survey topographic map

# APPENDIX A

## FIGURES



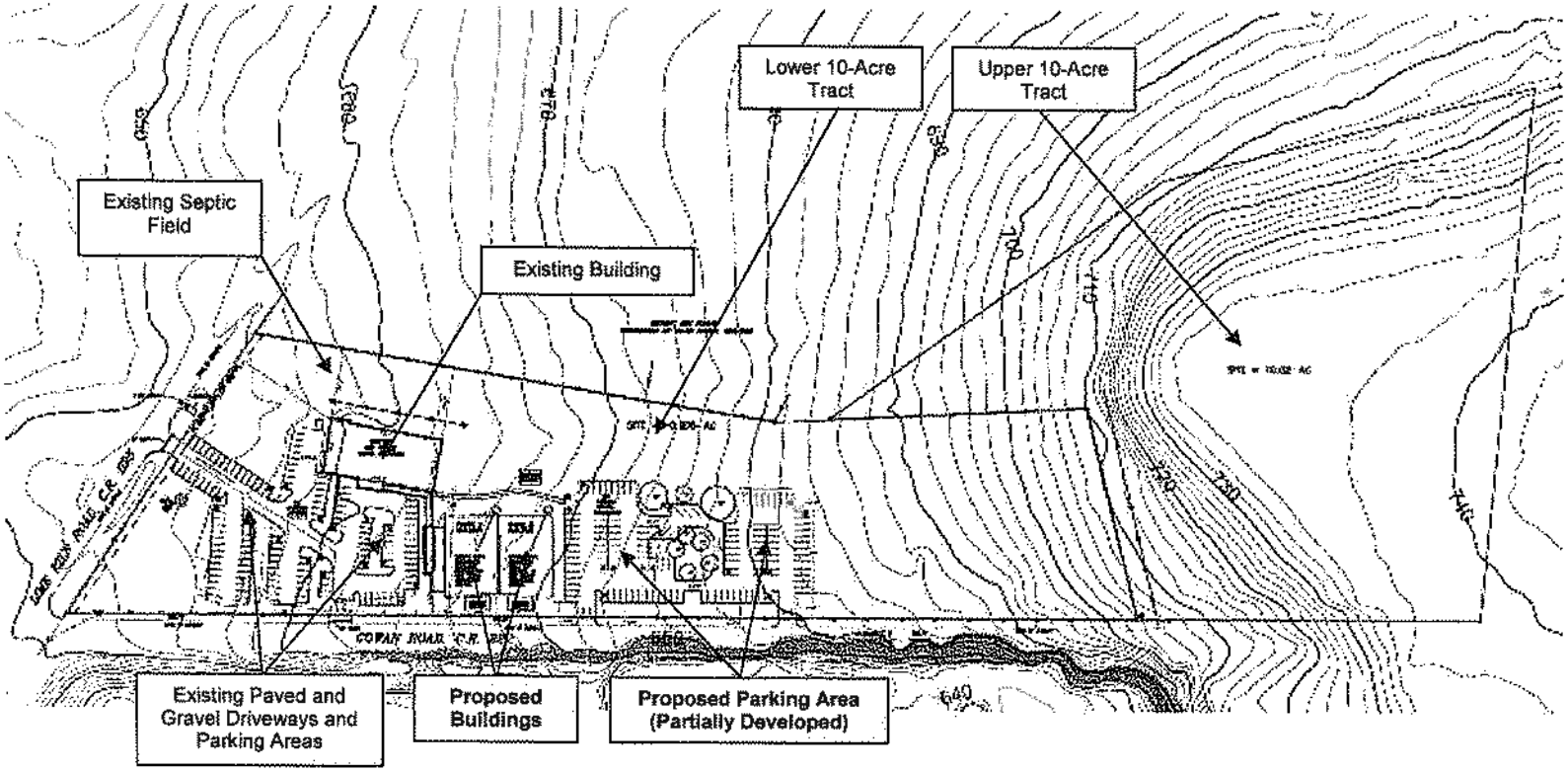

M. TROJAN & ASSOCIATES
Environmental Consultants
8244 Lime Creek Road
Leander, Texas 78641
(512) 258-6606

| | |
|---|---|
| Scale: | No Scale |
| Date: | April 26, 2011 |
| Project: | TCEQ Geologic Assessment |
| MTA Project: | ACEI-11-011 |
| Client: | Austin Civil Engineering, Inc. |

**FIGURE 1**

## SITE LOCATION MAP

20-ACRE TRACT (PROMISELAND CHURCH TRACT)
1650 LIME KILN ROAD
SAN MARCOS, HAYS COUNTY, TEXAS




SOURCE: Austin Civil Engineering, Inc.

NORTH

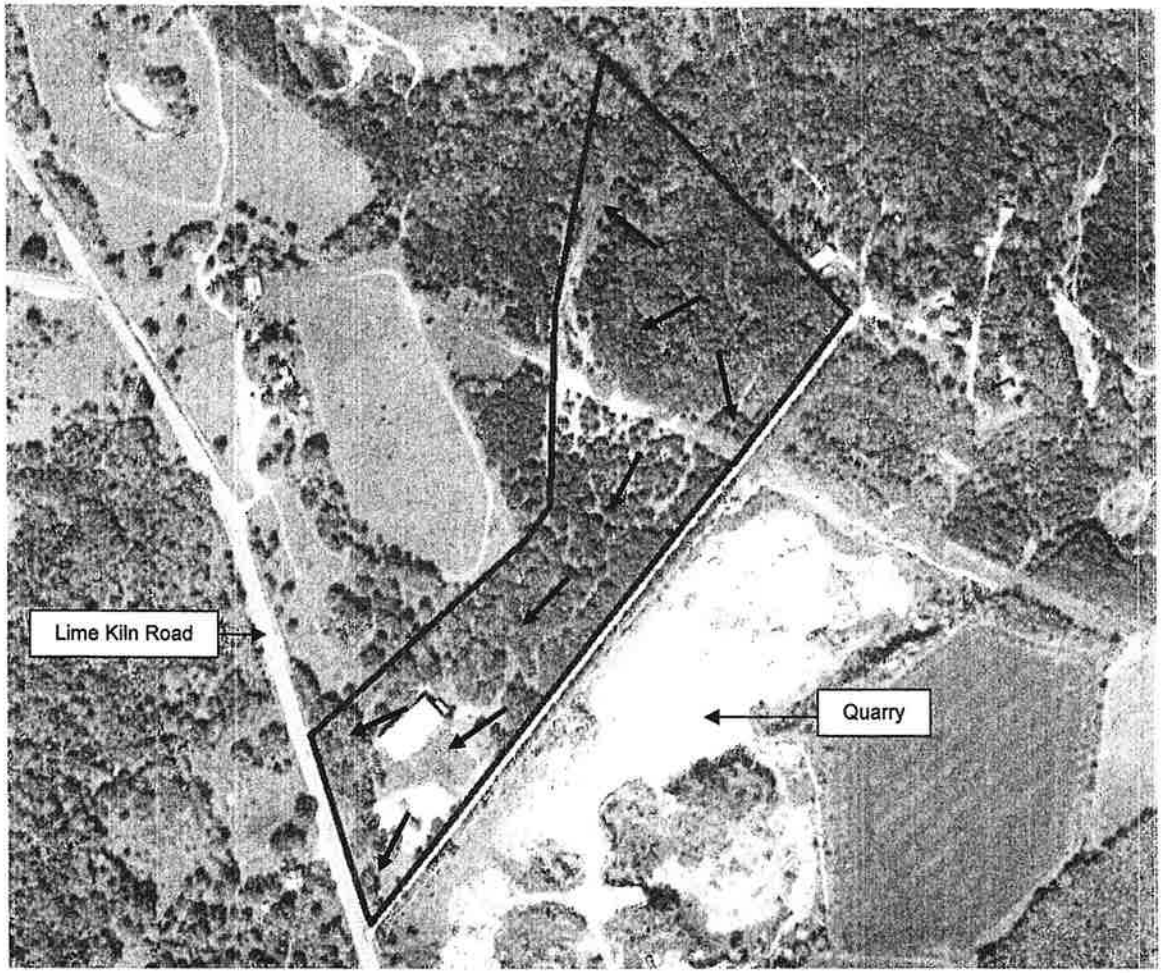
M. TROJAN & ASSOCIATES
Environmental Consultants
8244 Lime Creek Road
Leander, Texas 78641
(512) 258-6606

| | |
|---|---|
| Scale: | No Scale |
| Date: | April 26, 2011 |
| Project: | TCEQ Geologic Assessment |
| MTA Project: | ACEI-11-011 |
| Client: | Austin Civil Engineering, Inc. |

**FIGURE 2**

**SITE DEVELOPMENT PLAN**

20-ACRE TRACT (PROMISELAND CHURCH TRACT)
1650 LIME KILN ROAD
SAN MARCOS, HAYS COUNTY, TEXAS




NOTE: November 24, 2009 Aerial photograph

Stormwater Runoff Direction

NORTH

M. TROJAN & ASSOCIATES
Environmental Consultants
8244 Lime Creek Road
Leander, Texas 78641
(512) 258-6606

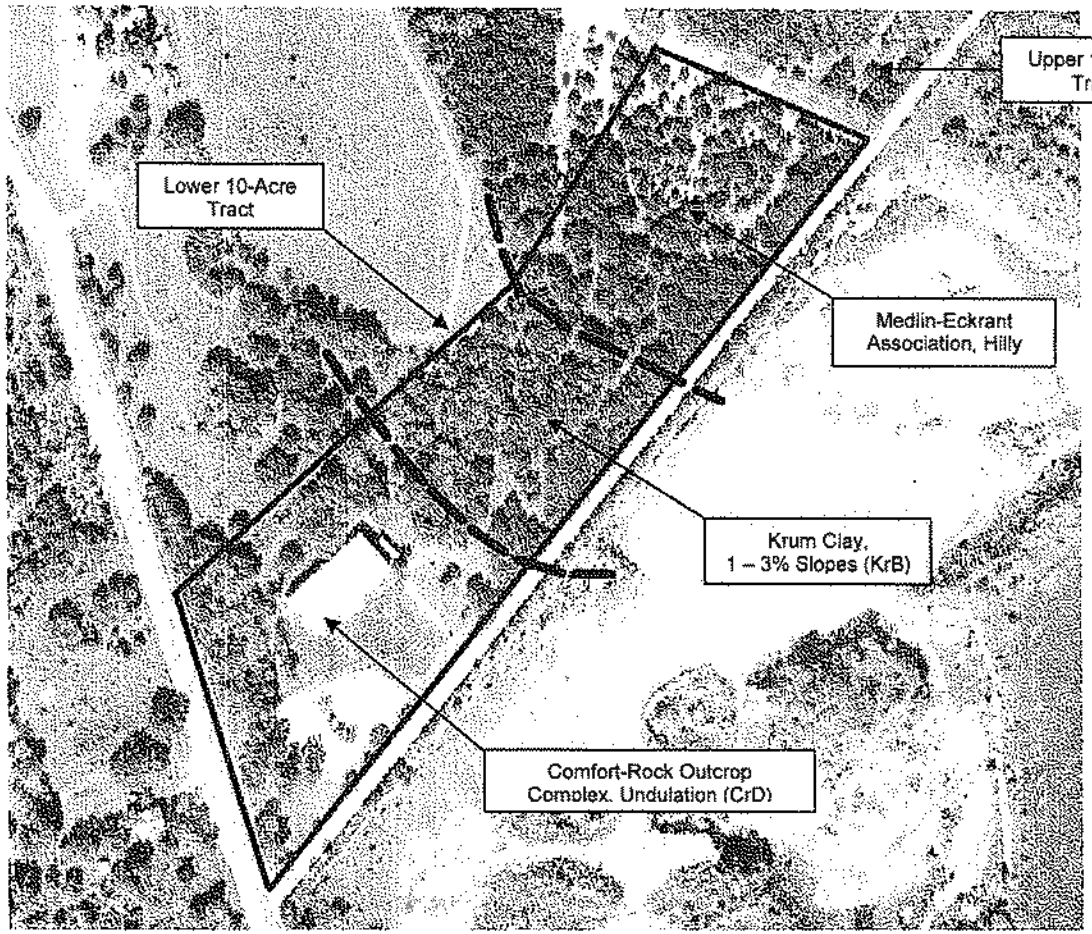
STATE OF TEXAS
MICHAEL TROJAN
GEOLOGY
No. 1109
LICENSED
PROFESSIONAL GEOSCIENTIST

| | |
|---|---|
| Scale: | 1" = 480' (approx.) |
| Date: | April 26, 2011 |
| Project: | TCEQ Geologic Assessment |
| MTA Project: | ACEI-11-011 |
| Client: | Austin Civil Engineering, Inc. |

**FIGURE 3**

## SITE AERIAL PHOTOGRAPH

20-ACRE TRACT (PROMISELAND CHURCH TRACT)
1650 LIME KILN ROAD
SAN MARCOS, HAYS COUNTY, TEXAS




NORTH

Source: *Soil Survey of Comal and Hays Counties*
Note: Some onsite soils have been altered as part of historical grading

M. TROJAN & ASSOCIATES
Environmental Consultants
8244 Lime Creek Road
Leander, Texas 78641
(512) 258-6606

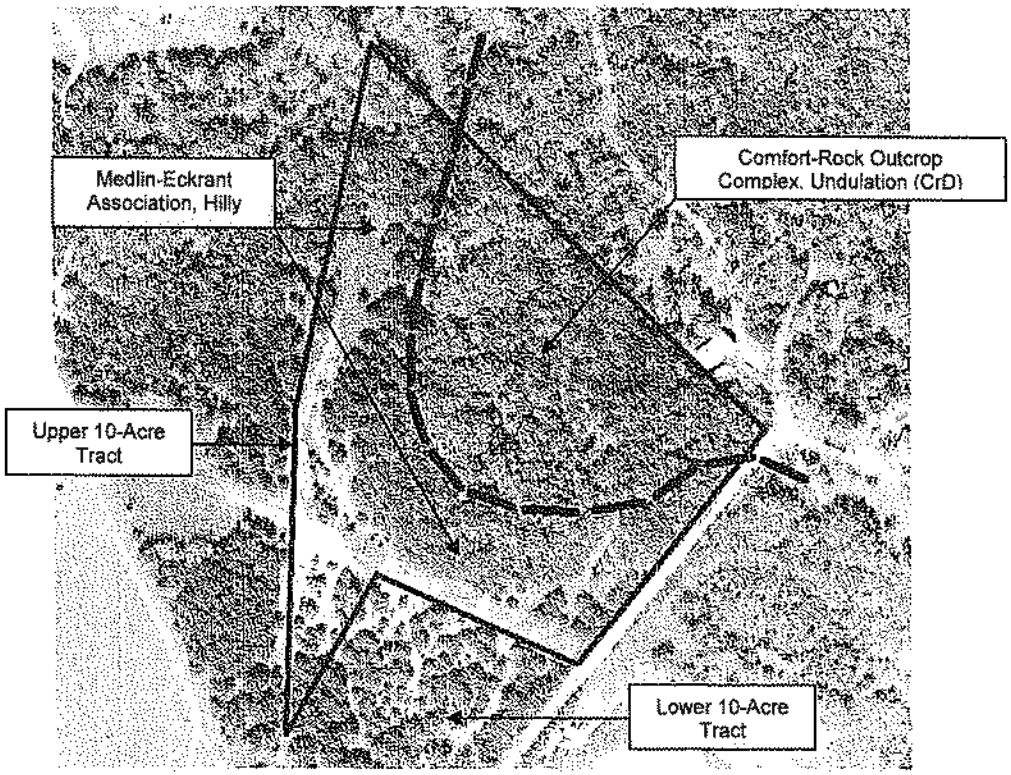
STATE OF TEXAS
MICHAEL TROJAN
GEOLOGY
No. 1109
LICENSED
PROFESSIONAL GEOSCIENTIST

| | |
|---|---|
| Scale: | 1" = 300' (approx.) |
| Date: | April 26, 2011 |
| Project: | TCEQ Geologic Assessment |
| MTA Project: | ACEI-11-011 |
| Client: | Austin Civil Engineering, Inc. |

**FIGURE 4-A**

## SITE SOILS MAP – LOWER 10 ACRES

20-ACRE TRACT (PROMISELAND CHURCH TRACT)
1650 LIME KILN ROAD
SAN MARCOS, HAYS COUNTY, TEXAS




NORTH

Source: *Soil Survey of Comal and Hays Counties*
Note: Some onsite soils have been altered as part of historical grading

M. TROJAN & ASSOCIATES
Environmental Consultants
8244 Lime Creek Road
Leander, Texas 78641
(512) 258-6606

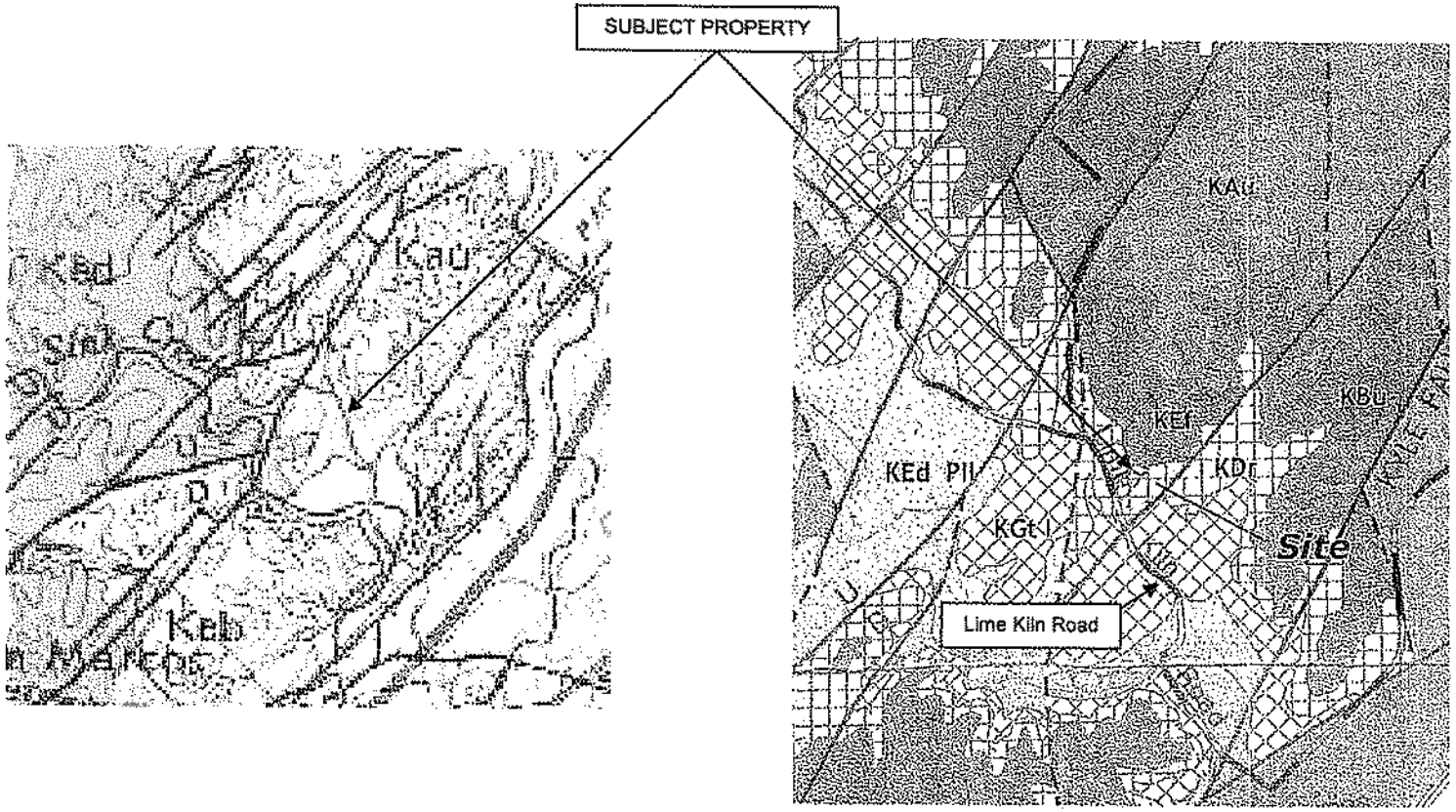
STATE OF TEXAS
MICHAEL TROJAN
GEOLOGY
No. 1109
LICENSED
PROFESSIONAL GEOSCIENTIST

| | |
|---|---|
| Scale: | 1" = 300' (approx.) |
| Date: | April 26, 2011 |
| Project: | TCEQ Geologic Assessment |
| MTA Project: | ACEI-11-011 |
| Client: | Austin Civil Engineering, Inc. |

**FIGURE 4-B**

## SITE SOILS MAP – UPPER 10 ACRES

20-ACRE TRACT (PROMISELAND CHURCH TRACT)
1650 LIME KILN ROAD
SAN MARCOS, HAYS COUNTY, TEXAS




NOTE: Subject property location is approximate
Sources: (1) *Geologic Atlas of Texas Seguin Sheet,* The University of Texas at Austin, Bureau of Economic Geology, dated 1974, Reprinted 1995, (2) TCEQ

NORTH

M. TROJAN & ASSOCIATES
Environmental Consultants
8244 Lime Creek Road
Leander, Texas 78641
(512) 258-6606

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

| | |
|---|---|
| Scale: | No Scale |
| Date: | April 26, 2011 |
| Project: | TCEQ Geologic Assessment |
| MTA Project: | ACEI-11-011 |
| Client: | Austin Civil Engineering, Inc. |

**FIGURE 5**

## GENERAL GEOLOGIC MAP

20-ACRE TRACT (PROMISELAND CHURCH TRACT)
1650 LIME KILN ROAD
SAN MARCOS, HAYS COUNTY, TEXAS

| SYSTEM | SERIES | GROUP | FORMATION | LITHOLOGY/ THICKNESS |
|---|---|---|---|---|
| QUATERNARY | | | | TERRACE AND ALLUVIUM SAND, SILT, CLAY, AND GRAVEL THICKNESS NOT REPORTED |
| CRETACEOUS | UPPER CRETACEOUS (GULFIAN) | AUSTIN | | CHALK, MARL, AND LIMESTONE 325–420 FEET THICK |
| | | EAGLE FORD | EAGLE FORD | SHALE AND SILTY LIMESTONE TO CALCAREOUS SILTSTONE 25–65 FEET THICK |
| | | | BUDA | LIMESTONE UP TO 45 FEET THICK |
| | LOWER CRETACEOUS (COMANCHEAN) | FREDERICKSBURG | DEL RIO | CLAY 40–70 FEET THICK |
| | | | GEORGETOWN | LIMESTONE AND MARL 30–80 FEET THICK |
| | | | EDWARDS | LIMESTONE AND DOLOSTONE 60–350 FEET THICK |
| | | | COMANCHE PEAK | LIMESTONE AND MARL UP TO 80 FEET THICK |
| | | | WALNUT FORMATION | LIMESTONE AND MARL UP TO 130 FEET THICK |
| | | | PALUXY SAND | SAND UP TO 10 FEET THICK |
| | | | GLEN ROSE FORMATION | LIMESTONE, DOLOSTONE, AND MARL MORE THAN 380 FEET |

☐ Geologic unit that directly underlies the subject property

Sources: Hydrogeology of the Northern Segment of the Edwards Aquifer, Austin Region, Bureau of Economic Geology, Dated 1990 and the *Geologic Atlas of Texas Seguin Sheet,* The University of Texas at Austin, Bureau of Economic Geology, dated 1974, Reprinted 1995.

M. TROJAN & ASSOCIATES
Environmental Consultants
8244 Lime Creek Road
Leander, Texas 78641
(512) 258-6606

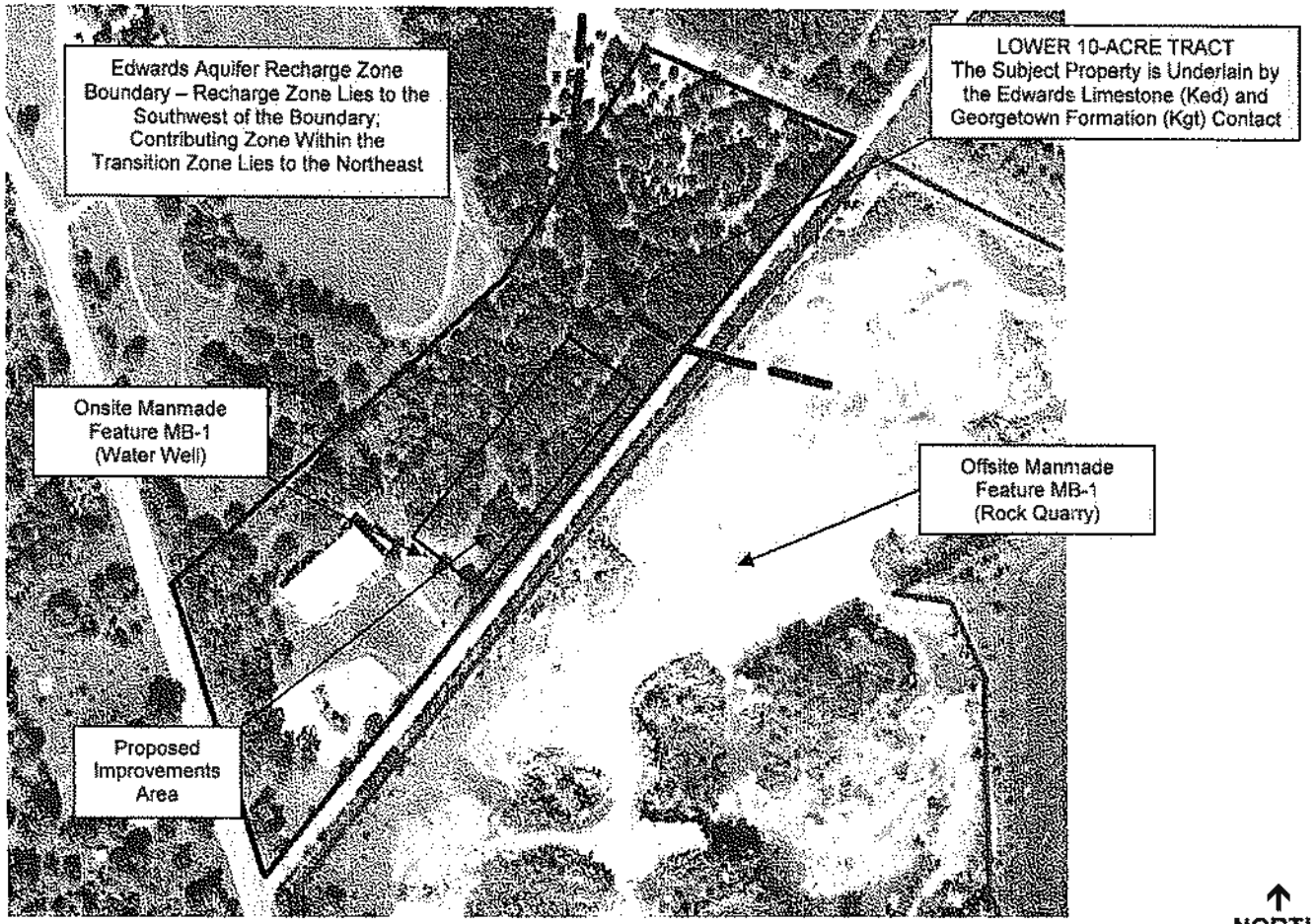
STATE OF TEXAS
MICHAEL TROJAN
GEOLOGY
No. 1109
LICENSED
PROFESSIONAL GEOSCIENTIST

Scale: No Scale
Date: April 26, 2011
Project: TCEQ Geol. Asses.
MTA Proj.: ACEI-11-011
Client: Austin Civil Engineering, Inc.

**FIGURE 6**

**STRATIGRAPHIC COLUMN**

20-ACRE TRACT (PROMISELAND CHURCH TRACT)
1650 LIME KILN ROAD
SAN MARCOS, HAYS COUNTY, TEXAS




M. TROJAN & ASSOCIATES
Environmental Consultants
8244 Lime Creek Road
Leander, Texas 78641
(512) 258-6606

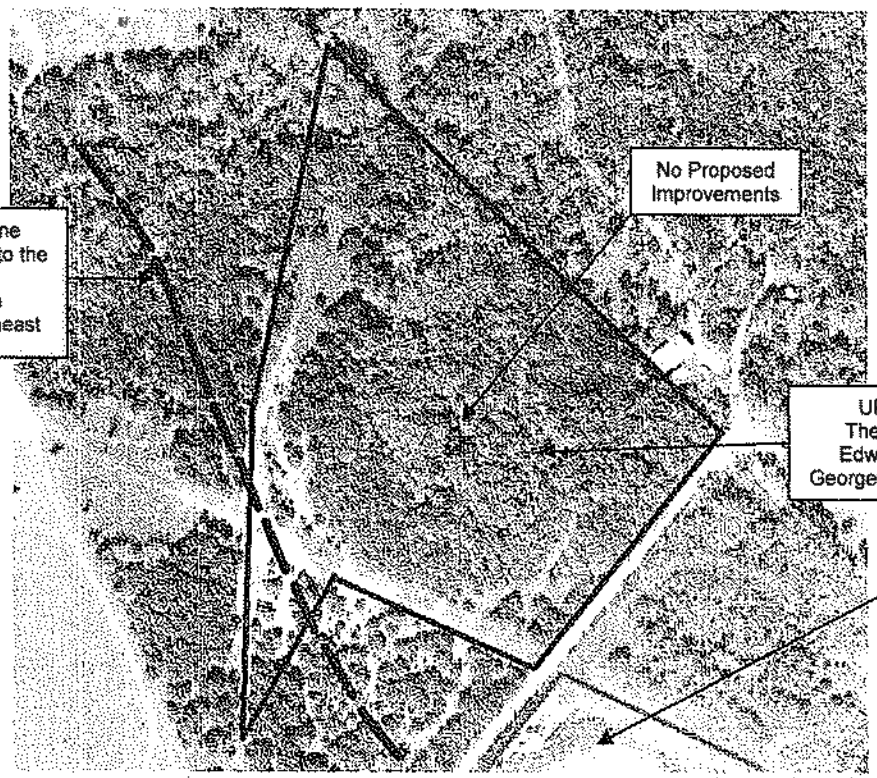
STATE OF TEXAS
MICHAEL TROJAN
GEOLOGY
No. 1109
LICENSED PROFESSIONAL GEOSCIENTIST

| | |
|---|---|
| Scale: | 1" = 300' (approx.) |
| Date: | April 26, 2011 |
| Project: | TCEQ Geologic Assessment |
| MTA Project: | ACEI-11-011 |
| Client: | Austin Civil Engineering, Inc. |

**FIGURE 7-A**

**SITE GEOLOGIC MAP – LOWER 10 ACRES**

20-ACRE TRACT (PROMISELAND CHURCH TRACT)
1650 LIME KILN ROAD
SAN MARCOS, HAYS COUNTY, TEXAS




M. TROJAN & ASSOCIATES
Environmental Consultants
8244 Lime Creek Road
Leander, Texas 78641
(512) 258-6606

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

| | |
|---|---|
| Scale: | 1" = 300' (approx.) |
| Date: | April 26, 2011 |
| Project: | TCEQ Geologic Assessment |
| MTA Project: | ACEI-11-011 |
| Client: | Austin Civil Engineering, Inc. |

**FIGURE 7-B**

**SITE GEOLOGIC MAP -- UPPER 10 ACRES**

20-ACRE TRACT (PROMISELAND CHURCH TRACT)
1650 LIME KILN ROAD
SAN MARCOS, HAYS COUNTY, TEXAS

# APPENDIX B

## SITE PHOTOGRAPHS

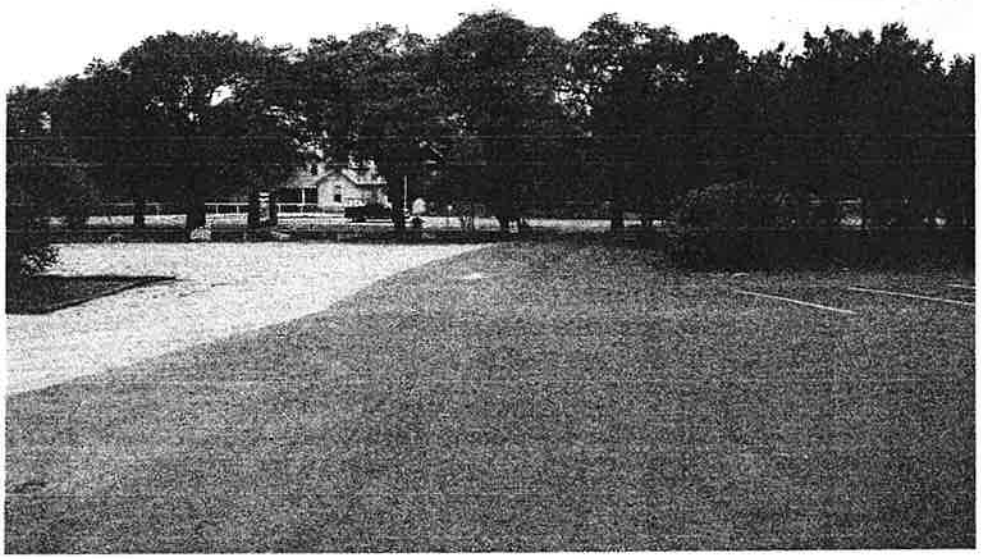
## PHOTOGRAPHIC REPORTING DATA SHEET

## [ PHOTOGRAPH 1 ]

| | |
|---|---|
| **Project:** | TCEQ Geologic Assessment |
| **Site:** | 20-Acre Tract (Promiseland Church Tract) |
| **Location:** | 1650 Lime Kiln Road, San Marcos, Hays County, Texas 78666 |
| **Date Taken:** | April 14, 2011 |
| **Photographer:** | Michael Trojan, CPG |
| **Description:** | View of the existing church building on the southwestern-most portion of the lower 10 acres of the subject property. Photograph taken facing northwest. |

## PHOTOGRAPHIC REPORTING DATA SHEET

## [ PHOTOGRAPH 2 ]

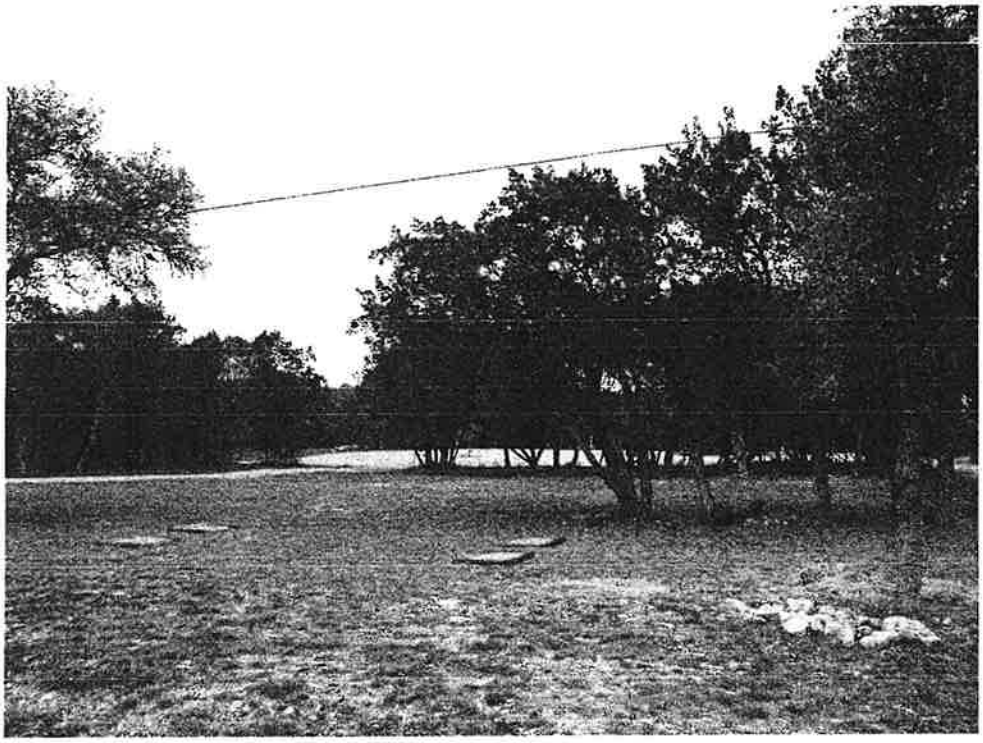


**Project:** TCEQ Geologic Assessment
**Site:** 20-Acre Tract (Promiseland Church Tract)
**Location:** 1650 Lime Kiln Road, San Marcos, Hays County, Texas 78666
**Date Taken:** April 14, 2011
**Photographer:** Michael Trojan, CPG

**Description:** View of typical landscape and large vegetation on the southwestern-most portion of the lower 10 acres of the subject property with Lime Kiln Road in the background. Photograph taken facing southwest.

## PHOTOGRAPHIC REPORTING DATA SHEET

## [ PHOTOGRAPH 3 ]



| | |
|---|---|
| **Project:** | TCEQ Geologic Assessment |
| **Site:** | 20-Acre Tract (Promiseland Church Tract) |
| **Location:** | 1650 Lime Kiln Road, San Marcos, Hays County, Texas 78666 |
| **Date Taken:** | April 14, 2011 |
| **Photographer:** | Michael Trojan, CPG |

**Description:** View of typical landscape and large vegetation just northeast of the existing church building on the lower 10 acres of the subject property. Photograph taken facing northeast.

## PHOTOGRAPHIC REPORTING DATA SHEET

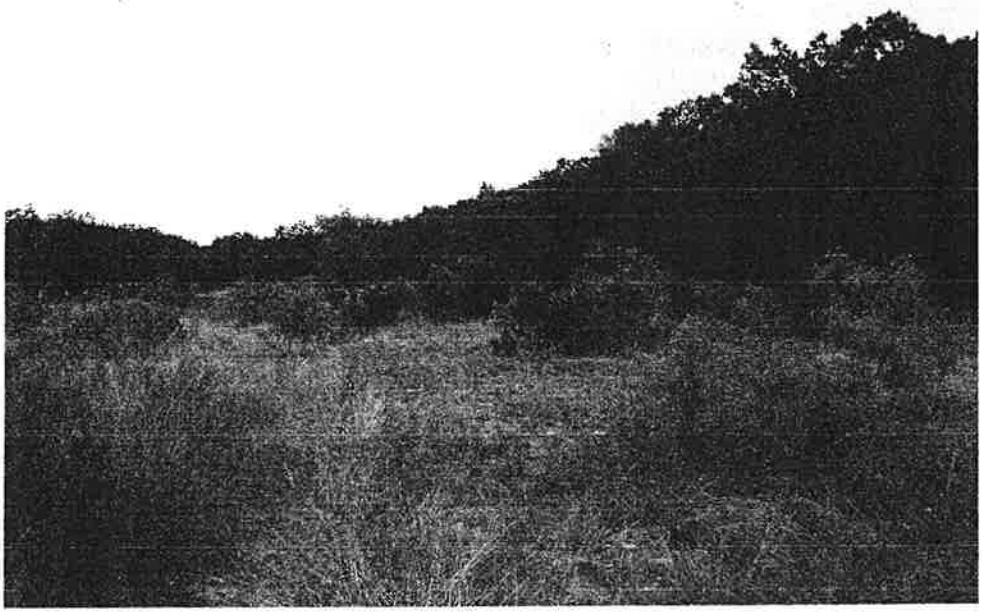
## [ PHOTOGRAPH 4 ]

| | |
|---|---|
| **Project:** | TCEQ Geologic Assessment |
| **Site:** | 20-Acre Tract (Promiseland Church Tract) |
| **Location:** | 1650 Lime Kiln Road, San Marcos, Hays County, Texas 78666 |
| **Date Taken:** | April 14, 2011 |
| **Photographer:** | Michael Trojan, CPG |

**Description:** View of typical landscape, large vegetation, and the partially-built parking area on the central part of the lower 10 acres of the subject property. Photograph taken facing northeast.

## PHOTOGRAPHIC REPORTING DATA SHEET

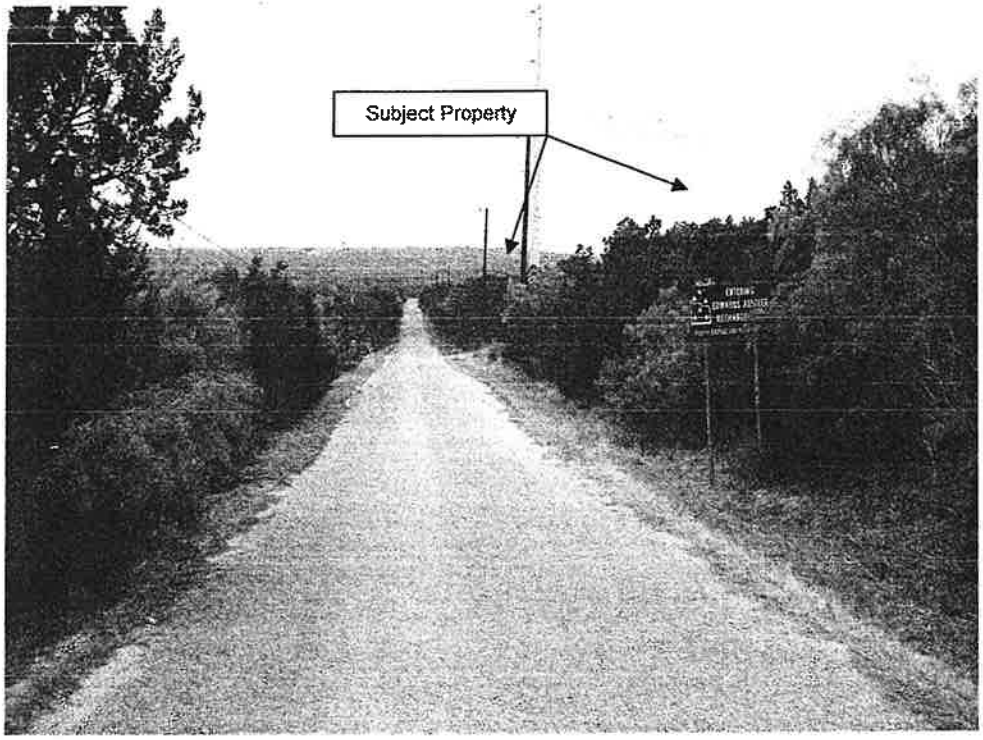
## [ PHOTOGRAPH 5 ]



| | |
|---|---|
| **Project:** | TCEQ Geologic Assessment |
| **Site:** | 20-Acre Tract (Promiseland Church Tract) |
| **Location:** | 1650 Lime Kiln Road, San Marcos, Hays County, Texas 78666 |
| **Date Taken:** | April 14, 2011 |
| **Photographer:** | Michael Trojan, CPG |
| **Description:** | View of typical landscape and large vegetation on the upper 10 acres of the subject property. |

## PHOTOGRAPHIC REPORTING DATA SHEET

## [ PHOTOGRAPH 6 ]




| | |
|---|---|
| **Project:** | TCEQ Geologic Assessment |
| **Site:** | 20-Acre Tract (Promiseland Church Tract) |
| **Location:** | 1650 Lime Kiln Road, San Marcos, Hays County, Texas 78666 |
| **Date Taken:** | April 14, 2011 |
| **Photographer:** | Michael Trojan, CPG |

**Description:** View of the southeast side of the subject property with Cowan Road in the center. Photograph taken from Cowan Road facing southwest.

## PHOTOGRAPHIC REPORTING DATA SHEET

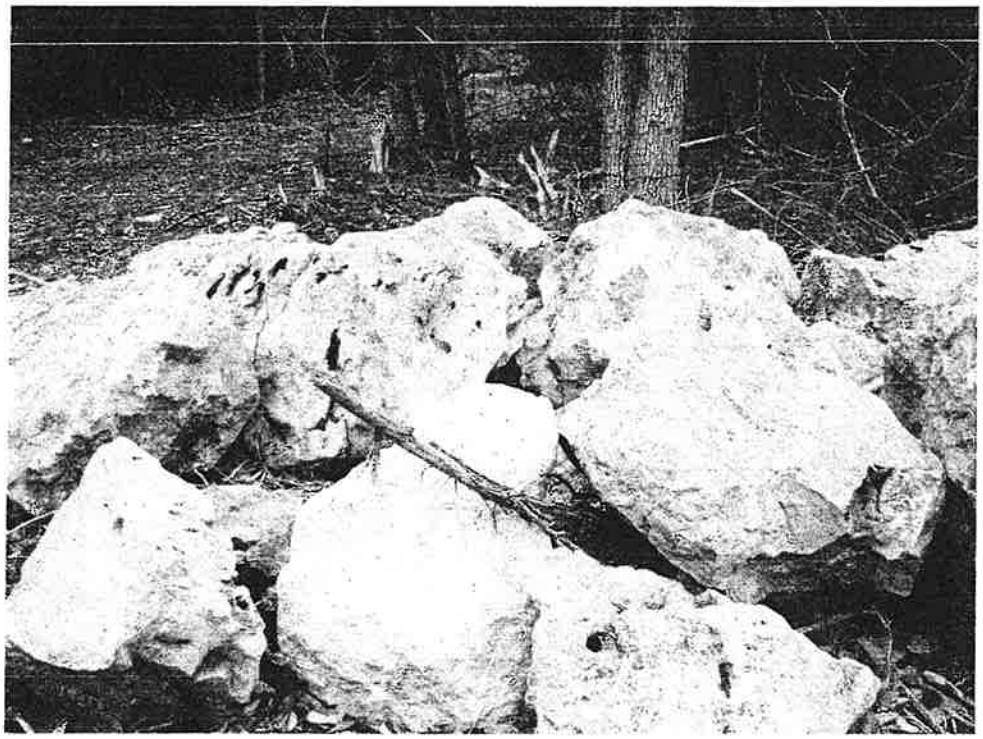
## [ PHOTOGRAPH 7 ]

**Project:** TCEQ Geologic Assessment
**Site:** 20-Acre Tract (Promiseland Church Tract)
**Location:** 1650 Lime Kiln Road, San Marcos, Hays County, Texas 78666
**Date Taken:** April 14, 2011
**Photographer:** Michael Trojan, CPG

**Description:** View of typical bedrock exposed at ground surface on the northeastern portion of the upper 10 acres of the subject property.

## PHOTOGRAPHIC REPORTING DATA SHEET

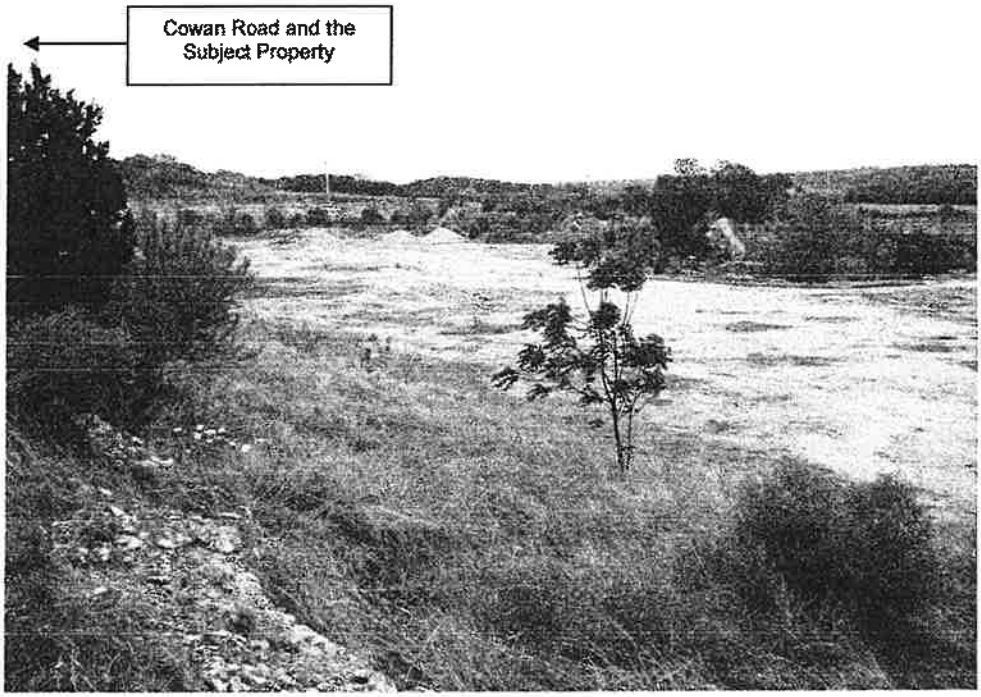
## [ PHOTOGRAPH 8 ]



| | |
|---|---|
| **Project:** | TCEQ Geologic Assessment |
| **Site:** | 20-Acre Tract (Promiseland Church Tract) |
| **Location:** | 1650 Lime Kiln Road, San Marcos, Hays County, Texas 78666 |
| **Date Taken:** | April 14, 2011 |
| **Photographer:** | Michael Trojan, CPG |
| **Description:** | View of typical bedrock fragments (from grading/excavation) on the lower 10 acres of the subject property. |

## PHOTOGRAPHIC REPORTING DATA SHEET

## [ PHOTOGRAPH 9 ]




| | |
|---|---|
| **Project:** | TCEQ Geologic Assessment |
| **Site:** | 20-Acre Tract (Promiseland Church Tract) |
| **Location:** | 1650 Lime Kiln Road, San Marcos, Hays County, Texas 78666 |
| **Date Taken:** | April 14, 2011 |
| **Photographer:** | Michael Trojan, CPG |

**Description:** View of offsite manmade feature MB-1 (rock quarry) just southeast of Cowan Road and the subject property. Photograph taken from near Cowan Road facing east-northeast.

# APPENDIX C

## GEOLOGIC ASSESSMENT TABLE

**GEOLOGIC ASSESSMENT TABLE** — **PROJECT NAME:** 20-Acre Tract (Promiseland Church Tract)

| LOCATION | | | FEATURE CHARACTERISTICS | | | | | | | | | | | | EVALUATION | | | PHYSICAL SETTING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | 1B* | 1C* | 2A | 2B | 3 | 4 | | | 5 | 5A | 6 | 7 | 8A | 8B | 9 | 10 | | 11 | | 12 |
| FEATURE ID | LATITUDE | LONGITUDE | FEATURE TYPE | POINTS | FORMATION | DIMENSIONS (FEET) | | | TREND (DEGREES) | CD MC | DENSITY (NO/FT) | APERTURE (FEET) | INFIL | RELATIVE INFILTRATION RATE | TOTAL | SENSITIVITY | | CATCHMENT AREA (ACRES) | | TOPOGRAPHY |
| | | | | | | X | Y | Z | | 10 | | | | | | <40 | ≥40 | <1.8 | ≥1.8 | |
| MB-1 | 29.918152 | -97.932422 | Well | 30 | Ked | N/A | N/A | 240 | N/A | | N/A | N/A | N/A | N/A | 30 | 30 | | N/A | N/A | Hillside |

* DATUM:

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

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

**12 TOPOGRAPHY**

Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

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

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

Date: April 26, 2011

Sheet 1 of 1

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

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

Send original copy by certified return receipt requested mail to: TNRCC, MC 177, P.O. Box 13087, Austin, TX 78711-3087

ATTENTION OWNER: *Confidentiality/Privilege Notice on on reverse side of Well Owner's copy (pink)*

# State of Texas
# WELL REPORT

Texas Water Well Drillers Advisory Council
MC 177
P.O. Box 13087
Austin, TX 78711-3087
512-239-0530

1) OWNER Homer Kobrock (Name) ADDRESS 4577 Twinstar Dr. (Street or RFD) Austin (City) Tx (State) 78744 (Zip)

2) ADDRESS OF WELL: County Hays 1590 Lime Kiln Rd (Street, RFD or other) San Marcos (City) TX (State) 78666 (Zip) GRID # 67-04-5

3) TYPE OF WORK (Check): ☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☐ Monitor ☐ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5)

6) WELL LOG:
Date Drilling: Started 11-22 19 99 Completed 11-23 19 99

| DIAMETER OF HOLE | | |
|---|---|---|
| Dia. (in.) | From (ft.) | To (ft.) |
| 7 7/8 | Surface | 240 |
| 6 3/4 | 240 | 240 |

7) DRILLING METHOD (Check): ☐ Driven ☒ Air Rotary ☐ Mud Rotary ☐ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other

N

| From (ft.) | To (ft.) | Description and color of formation material |
|---|---|---|
| 0 | 1 | Topsoil |
| 1 | 5 | Tan Lime Rock |
| 5 | 100 | Brown Tan Lime |
| 100 | 105 | Tan Lime Rock |
| 105 | 115 | Tan Lime |
| 115 | 150 | Broken Lime |
| 150 | 160 | Gray Lime |
| 160 | 240 | Broken Lime |

*(Use reverse side of Well Owner's copy, if necessary)*

8) Borehole Completion (Check): ☐ Open Hole ☒ Straight Wall ☐ Underreamed ☐ Gravel Packed ☐ Other
If Gravel Packed give interval ... from ____ ft. to ____ ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

| Dia. (in.) | New or Used | Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial | Setting (ft.) From | Setting (ft.) To | Gage Casting Screen |
|---|---|---|---|---|---|
| 5 | N | Sch 40 PVC | -2 | 170 | |
| 5 | N | S.S. Hood | 170 | 235 | 40 |
| | | | | | |
| | | | | | |

9) CEMENTING DATA [Rule 338.44(1)]
Cemented from 0 ft. to 11 ft. No. of sacks used 3
____ ft. to ____ ft. No. of sacks used ____
Method used Hand Poured
Cemented by Self
Distance to septic system field lines or other concentrated contamination ____ ft.
Method of verification of above distance ____

10) SURFACE COMPLETION
☒ Specified Surface Slab Installed [Rule 338.44(2)(A)]
☒ Specified Steel Sleeve Installed [Rule 338.44(3)(A)]
☐ Pitless Adapter Used [Rule 338.44(3)(b)]
☐ Approved Alternative Procedure Used [Rule 338.71]

11) WATER LEVEL:
Static level ____ ft. below land surface Date ____
Artesian flow ____ gpm. Date ____

12) PACKERS:

| Type | Depth |
|---|---|
| Neoprene | 11 |
| Neoprene | 150 |

13) TYPE PUMP:
☐ Turbine ☐ Jet ☒ Submersible ☐ Cylinder
☐ Other ____
Depth to pump bowls, cylinder, jet, etc., 200 ft.

14) WELL TESTS:
Type test: ☐ Pump ☐ Bailer ☐ Jetted ☒ Estimated
Yield: 30-50 gpm with ____ ft. drawdown after ____ hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Sulfate Depth of strata 150 - 240
Was a chemical analysis made? ☐ Yes ☒ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Hill Country Water Wells (Type or print) WELL DRILLER'S LICENSE NO. 52416 (WD)

ADDRESS 612 Shadowridge (Street or RFD) Boerne (City) Tx (State) 78006 (Zip)

(Signed) ____ (Licensed Well Driller) (Signed) ____ (Registered Driller Trainee)

*WATER POLLUTION ABATEMENT PLAN*

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

REGULATED ENTITY NAME: Promiseland San Marcos Church

**REGULATED ENTITY INFORMATION**

1. The type of project is:
   - ___ Residential: # of Lots: ___
   - ___ Residential: # of Living Unit Equivalents: ___
   - X Commercial
   - ___ Industrial
   - ___ Other: ___

2. Total site acreage (size of property): 20.23-acres

3. Projected population: N/A

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

| Impervious Cover of Proposed Project | Sq. Ft. | Sq. Ft./Acre | Acres |
|---|---|---|---|
| Structures/Rooftops | 32,262 | ÷ 43,560 = | 0.74 |
| Parking | 100,340 | ÷ 43,560 = | 2.30 |
| Other paved surfaces | 3,315 | ÷ 43,560 = | 0.08 |
| Total Impervious Cover | 135,917 | ÷ 43,560 = | 3.12 |
| Total Impervious Cover ÷ Total Acreage x 100 = | | | 15.4% |

5. X **ATTACHMENT A - Factors Affecting Water Quality.** A description of any factors that could affect surface water and groundwater quality is provided at the end of this form.

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

**FOR ROAD PROJECTS ONLY** **(This section is Not Applicable to this project)**
**Complete questions 7-12 if this application is exclusively for a road project.**

7. Type of project:
   - ___ TXDOT road project.
   - ___ County road or roads built to county specifications.
   - ___ City thoroughfare or roads to be dedicated to a municipality.
   - ___ Street or road providing access to private driveways.

8. Type of pavement or road surface to be used:
   - ___ Concrete
   - ___ Asphaltic concrete pavement

__ Other: _____

9. Length of Right of Way (R.O.W.): ____ feet.
Width of R.O.W.: ____ feet.
L x W = _____ $Ft^2$ ÷ 43,560 $Ft^2$/Acre = ____ acres.

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

11. __ A rest stop will be included in this project.
__ A rest stop will **not** be included in this project.

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

## STORMWATER TO BE GENERATED BY THE PROPOSED PROJECT

13. X **ATTACHMENT B - Volume and Character of Stormwater.** A description of the volume and character (quality) of the stormwater runoff which is expected to occur from the proposed project is provided at the end of this form. The estimates of stormwater runoff quality and quantity should be based on area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

## WASTEWATER TO BE GENERATED BY THE PROPOSED PROJECT

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

| | |
|---|---|
| 100 % Domestic | 335 gallons/day |
| ___ % Industrial | ____ gallons/day |
| ___ % Commingled | ____ gallons/day |

Total = 335 gallons/day

15. Wastewater will be disposed of by:

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

X **ATTACHMENT C - Suitability Letter from Authorized Agent.** An on-site sewage facility will be used to treat and dispose of the wastewater. The appropriate licensing authority's (authorized agent) written approval is provided at the end of this form. It states that the land is suitable for the use of an on-site sewage facility or identifies areas that are not suitable.

X Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

__ Sewage Collection System (Sewer Lines):

__ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.

__ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.

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

The sewage collection system will convey the wastewater to the _____Treatment Plant. The treatment facility is:
__ existing.
__ proposed.

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

**SITE PLAN REQUIREMENTS**

**Items 17 through 27 must be included on the Site Plan.**

17. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = 100'.

18. 100-year floodplain boundaries
__ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
X 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):

FEMA flood plain map 48209C0391-F, Revised Date: September 2, 2005

19. X 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.

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):
X There are 1 wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)
__ The wells are not in use and have been properly abandoned.
__ The wells are not in use and will be properly abandoned.
__ The wells are in use and comply with 16 TAC §76.
__ There are no wells or test holes of any kind known to exist on the project site.

21. Geologic or manmade features which are on the site:
__ All **sensitive** geologic or manmade features identified in the Geologic Assessment are shown and labeled.
X No **sensitive** geologic or manmade features were identified in the Geologic Assessment.
__ **ATTACHMENT D - Exception to the Required Geologic Assessment**. An exception to the Geologic Assessment requirement is requested and explained at the end of this form.

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

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

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

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

26. X Surface waters (including wetlands).

27. X Locations where stormwater discharges to surface water or sensitive features.
__ There will be no discharges to surface water or sensitive features.

**ADMINISTRATIVE INFORMATION**

28. X One (1) original and three (3) copies of the completed application have been provided.

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

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **WATER POLLUTION ABATEMENT PLAN APPLICATION FORM** is hereby submitted for TCEQ review and Executive Director approval. The form was prepared by:

Rob A. Steele
Print Name of Customer/Agent

Signature of Customer/Agent

3/24/11
Date

PROJECT: Promiseland San Marcos Church
Address: 1650 Lime Kiln Road
San Marcos, Texas 78666

Owner: Promiseland San Marcos

# Water Pollution Abatement Plan Application

## Attachment A

Factors Affecting Water Quality

Potential sources of pollution include:

- Runoff and erosion of sediment and pollutants from exposed soil due to clearing and grubbing, grading, landscaping and other earthwork activities.
- Runoff from the construction equipment storage and maintenance. This may include typical automotive fluids, lubricants and fuels.
- Runoff from construction product staging, storage, and waste. This may include materials that can degrade the quality of receiving waters and make them unsafe for consumption and aquatic life.
- Runoff from paving operations may contain hydrocarbons and polyaromatic hydrocarbons.
- Runoff from lawn and landscape chemicals such as pesticides and herbicides

## Attachment B

Volume and Character of Stormwater

- Stormwater runoff from the site will be captured and routed through permanent vegetated filter strips (See attached plans)
- The 15-foot wide filter strips have been designed to filter the storm water runoff from paving areas that are a maximum of 72-feet in width
- Through the proposed water quality BMP, the character and volume of the stormwater runoff leaving the site are within the required design parameters of the TCEQ, as well as the City of San Marcos.
- See attached plans and stormwater runoff calculations in the Permanent Storm Water Section.

## Attachment C

Suitability Letter from Authorized Agent – **See the next four pages**

## Attachment D

Exception to the required geologic Assessment - **This section is not applicable**

# HAYS COUNTY ENVIRONMENTAL HEALTH DEPARTMENT

## PERMIT TO CONSTRUCT

## AN ON-SITE SEWERAGE FACILITY

PROPERTY OWNER'S NAME: LAWRENCE (Last) TERRY (First) (MI)

911 SITE ADDRESS: 1950 Lime Kiln Road (Number) (Street/Co. Road) San Marcos (City) 78666 (Zip)

LEGAL DESCRIPTION:

Lot:_____ Block_____ Subdivision_____ Sec_____

LAND AREA/ACREAGE: 6.00 (Acreage) Edward Burleson Abst.#75 (Survey) (Vol/Pg)

TYPE OF STRUCTURE: Institutional X Residential_____

Office/Warehouse 12,000 sq.ft.

SITE EVALUATOR: Leslie Cain OS#_____

AUTHORIZATION IS HEREBY GIVEN TO CONSTRUCT AN ON-SITE SEWAGE FACILITY ON THE ABOVE DESCRIBED PROPERTY WITH THE FOLLOWING SPECIFICATIONS:

CONVENTIONAL SYSTEM REQUIREMENTS:

Tank capacity _____ gallons. Pump tank capacity _____.

Design Flow: 120 gpd

Drainfield : Must be one of the following and only checked squares can be used.

☐ Soil absorption excavation _____ sq. ft.

☐ Evapotranspiration beds: _____ # of beds x _____ sq. ft. = _____ sq. ft.

ALTERNATIVE SYSTEM REQUIREMENTS

Designer's Name: Grubbs (Last) Andy (First) Reg No.: R.S.#1363

Date plans approved 4-3-00 by Bob Pratt.

Refer to the designer's plans for system specifications.

Plans Dated: 2-12-00 Revision Date: _____

**Contact Health Department and designer for required inspections.**

A maintenance contract is required for the : treatment system _____,

disposal system _____.

SPECIAL REQUIREMENTS

NOTE: The on-site sewage facility construction must meet all TNRCC Regulations and Hays County's Rules for On Site Sewage Facilities. If unforeseen and/or adverse conditions are encountered (including, but not limited to excessive rock, seepage, or high water table) stop construction and contact the Licensing Authority. A revised construction permit may be issued.

SIGNED: _____ Date: 4-7-00 Permit: 9885

Expires: 7-15-00

***THIS PERMIT EXPIRES ONE (1) YEAR FROM APPLICATION DATE.**

***THIS PERMIT IS NON-TRANSFERABLE.**

**BURRIER ENGINEERING P.L.L.C.**
**Reg. No. F-5694**
**STAN BURRIER, P.E.**
**P.O. BOX 1406, KYLE, TX 78640**
**(512) 268-1573**
**FAX (512) 268-1572**

STATE OF TEXAS
STANLEY WAYNE BURRIER
70375
REGISTERED
PROFESSIONAL ENGINEER

04-25-11

April 25, 2011

***SITE DESCRIPTION / EVALUATION***

The site is located in Hays County, at 1950 Lime Kiln Road, San Marcos. The site is for The Promiseland Church. A permit for an office/warehoue was issued in April of 2000 for an LPD with a design Q = 120 gpd. Current studies by your office show the church facility to be using 80-100 gallons per day, with spikes on Sunday. We wish to incorporate this existing system (drainfield only, the existing tanks shall be abandoned according to chapter 285 rules) in to our new design to continue to serve the daily use of 80-100 gallons per day plus the new facility that will seat up to 700 people.

It is realistic to believe that the church will not be totally full every Sunday and further, that ever person attending will not use the restroom facilities. Assuming a generous percentage (say 66%) will use the restroom facilities, then this will equate to a design Q = 4 gallons per person x 700 persons x 66% = 1848 gallons on Sunday.

According to the previous soil evaluation (see attached), an LPD is acceptable for an OSSF. The drainage on the lot will be such that it will not adversely affect the performance of the on-site sewage facility. The sizing was determined as specified in the Texas Commission on Environmental Quality On-Site Sewage Facility-§285.33 (d) (1) (1), and in accordance with design criteria in the North Carolina State University Sea Grant College Publication UNC-S82-03 (1982). Vegetation at the proposed site consists of natural grasses and no recharge features are located within the area. Water saving devices are being utilized. Public water is supplied.

***SYSTEM DESCRIPTION***

To avoid the construction of such a large drain field, the system is designed to dose the effluent periodically over a weeks period.

| Day of the Week | In flow | Out flow | Remaining in storage tank |
|---|---|---|---|
| Sunday | 1848 | 360 gal | 1488 gal |
| Monday | 100 gal | 360 gal | 1228 gal |
| Tuesday | 100 gal | 360 gal | 968 gal |
| Wednesday | 100 gal | 360 gal | 708 gal |
| Thursday | 100 gal | 360 gal | 448 gal |
| Friday | 100 gal | 360 gal | 188 gal |
| Saturday | 0 | 188 gal | 0 gal |

The on-site sewage facility will utilize a non-standard treatment system. The plumbing will be such that all facilities will be plumbed into a 2000 gallon two compartment septic tank. Based upon a weekly flow of 2348 gallons, we will have one 3500 gallon pump tank.

To accommodate dosing 360 gallons per day, a pump in the pump tank must be on a timer. Since this pump will be delivering 40 gpm @ 24 ft of head, we must pump for a total of 9 minutes a day (40 gpm x 9 min per day = 360 gallons, the drainfields will handle 360 gallons per day. There is an existing field that will accommodate 120 gallons per day. We will be adding two fields, each being identical to the existing field. Because we have split the field into three sections, the pump needs to come on three times a day to deliver the effluent equally to the three drainfields. This will be done using a Omron Timer Model # H3CR-F8-120. It shall be set to come on for (3 min / 3 times per day = 180 seconds) 180 seconds three times a day. (NOTE: THE INSTALLER MUST VERIFY THAT THE PUMP IS DELIVERING 40 GALLONS A MINUTE)

Requirements for the pump tanks are:

1. Electrical service must be hard wired inside the tank with plug in fixtures outside. Separate electrical circuits must be provided for the pump and alarm.
2. The high water alarm must be audible and visible.
3. A check valve must be used when the drain field is at a higher elevation than the pump, and anti-siphon hole provided when the field is lower.
4. The reserve capacity, after alarm activation, must not be less than one 1/3 day's anticipated flow.
5. Quick disconnect couplings must be provided to facilitate pump replacement.
6. The supply line and manifold must be designed in such a way as to provide uniform distribution to the absorption area.

For the pump tank, the Pump-off switch will be activated at 8 inches above the bottom of the tank and the pump-on switch will be activated at 10 inches above the bottom of the tank to allow for a 121 gallon dose–we will be dosing three times per day. (However, because this is a pump dosing tank, the pump will be on a timer to pump three time a day for 180 seconds at 40 gallon a minute to dose the three equal drainfields. See above). The pump alarm will activate at 38 inches above the bottom of the tank. This allows for a weekly storage below the alarm and a reserve capacity of more than 840 gallons above the alarm. See details on the drawing of the tank. Distribution is through a 2 inch sch 40 manifold. This is followed by three equal fields. Each field has eight lines and each line is 50 feet long. The field is divided by splitting the flow from the manifold using a K-Rain Hydrotec valve model 6403. After splitting, each manifold will have a gate or ball valve to control the pressure in each field. The original field has ten holes and each line is delivering 4.1 gallons. The new fields will also have ten holes and delivering 4.1 gallons. The first hole in each new line will be 2.5 feet from the header. The holes shall be 5/32 inch. A geotextile fabric is required between the gravel and the sandy loam cap. A six inch sandy loam cap is required over the entire field (see x-section). This cap over the entire field area is to aid in movement of effluent between trenches.

The field should be seeded with Bermuda or Bermuda and Rye grass prior to system start up. The proposed system has been designed generally following the Texas Commission on Environmental Quality regulations. The site evaluation and subsequent design are based upon technical information currently available. The proper performance of the OSSF cannot be guaranteed even though all provisions of the Standards have been generally complied with.

***CALCULATIONS AND SPECIFICATIONS***

1. Required Drain field Area (A) = Q / Ra where Q = daily usage rate (gal /day)
   Ra =effluent loading (gals / per sq ft / day)

   Therefore: A = 360 / 0.10
   A = 3600 sq. ft

2. Length of Distribution Lines
   L = A / 3
   L = 3600 / 3
   L = 1200 This design has 1200 LF (three fields with eight lines @ 50 feet each

3. Size of Septic and Pumping Tank
   Septic Tank from TCEQ Rules Sect 285.91 Table II
   Tank Size = 1750 + 0.75Q = 3136 gallons
   Because this is a volume of effluent we will see only one day a week, we are requesting to use a 2000 gallon two compartment septic tank.

   Pump Tank
   Vpumping = Q x 2 = 3696 gal
   Because this is a volume of effluent we will see only one day a week, we are requesting to use a 3500 gallon single compartment pump tank total liquid height = 50"

4. Dosing Rate:

A. Number of Holes = length of line / hole spacing = 400 / 5 = 80 holes
Drill first hole 2.5 ft. From beginning of lateral and space them every five feet thereafter

B. Flow Rate per Hole
Using 5/32 inch holes and 2 ft. Pressure head
Flow rate = 0.41 gpm

C. Total dosing = Flow rate / hole x no. of holes)
= (0.41 x 80)
= 39.2 gpm

5. Pump Selection:

Total head = elevation head + pressure head + friction head
Elevation head = 5 feet
K-Rain Alt Valve = 3.5 psi x 2.3 = 8 ft
Pressure head = 2 feet
Friction head = 1.2(pipe friction & fittings) x (400 ft /100 ft) x (3.11)
= 9 ft

Total head = 5 ft + 8 ft + 2 ft + 9 ft = 24 ft

Pump Requirements 40 gpm at 24 ft
Goulds PE51 0.5 Horse Power

7. Dosing Volume

V dosing = V supply + 5 ( V laterals)
= (240/100)(16) + 5 (400/100) (4.1)
= 38.4 + 82
= 121 gal
Dose 3 times per day

Dosing Depth = V dose / V tank x liquid depth of tank
= 120 / 3500 x 4.167 ft
= 0.14 in use 2 inches

8. Check Valve Calculation

V storage= V supply + V laterals
= 38.4 + 16.4
= 55
55 < 90 (1/4 daily usage therefore a check valve is not required)

***GENERAL REMARKS***

The Installer shall construct the proposed system in accordance with local and state regulations and all required minimum clearances.

***INSPECTION***

If required by Hays County Environmental Health Department, one open pit inspection will be performed by the designer when the system components are in place and operational. Other inspections will be performed as required by the Hays County Environmental Health Department. The Installer will give appropriate notice to Hays County for the required inspections.

***LICENSE TO OPERATE***

Contact Hays County for details.

*TEMPORARY STORMWATER SECTION*

**Temporary Stormwater Section**
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

REGULATED ENTITY NAME: Promiseland San Marcos Church

**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:

   ___ Aboveground storage tanks with a cumulative storage capacity of less that 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.
   _X_ Fuels and hazardous substances will not be stored on-site.

2. _X_ **ATTACHMENT A - Spill Response Actions.** A description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is provided at the end of this form.

3. _N/A_ 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. _X_ **ATTACHMENT B - Potential Sources of Contamination.** Describe in an attachment at the end of this form any other activities or processes which may be a potential source of contamination.
   ___ There are no other potential sources of contamination.

**SEQUENCE OF CONSTRUCTION**

5. _X_ **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 provided at the end of this form. For each activity described, an estimate of the total area of the site to be disturbed by each activity is given.

6. _X_ 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: Sink 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. _X_ **ATTACHMENT D - Temporary Best Management Practices and Measures.** A description of the TBMPs and measures that will be used during and after construction are provided at the end of this form. For each activity listed in the sequence of construction, include appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

_X_ 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 has been provided in the attachment at the end of this form

a. 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.

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.

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

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.

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

_N/A_ **ATTACHMENT E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is provided at the end of this form. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

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

9. _X_ **ATTACHMENT F - Structural Practices.** Describe 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. Placement of structural practices in floodplains has been avoided.

10. _X_ **ATTACHMENT G - Drainage Area Map**. A drainage area map is provided at the end of this form to support the following requirements.

___ 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.

_X_ 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.

11. _N/A_ **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 has 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 provided as at the end of this form.

12. _X_ **ATTACHMENT I - Inspection and Maintenance for BMPs.** A plan for the inspection of temporary BMPs and measures and for their timely maintenance, repairs, and, if necessary, retrofit is provided at the end of this form. A description of documentation procedures and recordkeeping practices is included in the plan.

13. _X_ 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. _X_ 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. _X_ 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. _X_ 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. _X_ **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 at the end of this form.

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

**ADMINISTRATIVE INFORMATION**

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

21. X 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. X 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.

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:

Rob A. Steele
Print Name of Customer/Agent

Signature of Customer/Agent

3/24/11
Date

PROJECT: Promiseland San Marcos Church
Address: 1650 Lime Kiln Road
San Marcos, Texas 78666

Owner: Promiseland San Marcos

# TEMPORARY STORMWATER SECTION

## Attachment A
Spill Response Actions

The following is a description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances. The proceeding excerpts are from the City of Austin Watershed Department Clean Water Fact Sheets:

**Petroleum Spills Response**
Do not flush spills away with water. Instead, contain them immediately, before they reach a storm drain and spread to a creek or lake. Also, do not put yourself or others in danger. Before containment, evaluate what materials have spilled, make a thorough assessment of risk, and determine how to contain the spill safely. If safe containment is possible, immediately stop the spread of liquids using absorbent materials. Keep spill containment and clean up materials appropriate for the type and quantities of hazardous chemicals used or stored at your facility. The Watershed Protection Department provides a list of absorbent material suppliers. Immediately block off nearby drain (sanitary or storm sewer). It is much more costly to decontaminate inside of a storm sewer pipe and /or restore a contaminated creek than it is to purchase spill containment materials.

Always wear appropriate safety equipment such as gloves, coveralls, goggles, and respirators. Access Materials Safety Data Sheets (MSDS) for information about spilled materials. Keep MSDSs readily available for each chemical used or stored at the facility. A MSDS contains information that enables persons responsible for handling, using or encountering chemicals to estimate the likely harm, potential hazards and risks that might arise in emergency situations involving those chemicals. Obtain a MSDS free of charge by calling the manufacturer's phone number from the label on the chemical container.

Never leave spills unattended. Designate someone to make spill notification phone calls. **Immediately notify** the following agencies;

**Local**: City of San Marcos Fire Department by dialing 911;

**State**: The TCEQ requires spills/emergency release situations to be reported per 30 TAC Sections 327.1-327.5 effective May 23, 1996. Report spills to Environmental Release Hotline or the Texas Commission on Environmental Quality (TCEQ) 1-800-832-8224; TCEQ Local office at 339-2929; or TCEQ (24-Hours) at 512/239-2507 or 512/463-7727.

**Federal**: National Response Center (NRC) 1-800-424-8802 (Notification of the National Response Center does not constitute notice to the state).

Clean up surfaces contaminated by hazardous chemicals only if you are trained, experienced, and qualified. Excavate spills on pervious (e.g. soil) surfaces as quickly as possible to prevent spread of the contamination. Contact the Watershed Protection Department for soil cleanup instructions. Sweep up and containerize dry material spills on impervious surfaces (e.g. pavement) for proper disposal. Absorb liquid spills on impervious surfaces with sorbent materials (e.g. clay sorbent, pads, booms, etc.) and containerize for proper disposal. Do not use wet/dry shop vacuum for gasoline, solvents or other volatile fluids because of explosion hazards.
Post a site-specific spill contingency plan at your facility. This should provide step-by-step instructions in the event of a spill. Practice these steps in a "spill drill." The Watershed Protection Department provides information regarding spill contingency plans and a fact sheet detailing proper spill handling. A phone number is provided at the end of this fact sheet.

Construction Products/Wastes Spills Response

Immediately clean up spills to prevent environmental impacts, especially spreading of the spill to a storm drain and waterway. Never leave spills unattended or flush a spill with water.

Prevent spills, as much as possible, through prevention planning. Inspect vehicles and heavy equipment for leaks and repair promptly. Inspect portable toilets routinely for leaks and keep them in a secured area away from traffic and possible vandalism.

Clean up non-hazardous spills on impervious (paved) surfaces by using a sorbent material (e.g. kitty litter, sand, peat, etc.), and disposed of the waste properly. Contain hazardous or large non-hazardous or large non-hazardous spills, if it is safe, and immediately contact the City of San Marcos Fire Department by dialing 911.

Excavate or remediate spills on pervious (soil) surfaces as quickly as possible to prevent the spread of the contamination. Any surfaces contaminated by hazardous or toxic materials should be remediated by experienced, qualified individuals to protect the health and safety of yourself and the general public.

Report all spills to the Watershed Protection Department to receive proper clean up instructions, especially for hazardous materials and large volume spills.

A material safety data sheet (MSDS) should be readily available for each hazardous chemical used and stored at the site. A MSDS contains information that enables persons responsible for handling, using or encountering chemicals to estimate the likely harm, potential hazards and risks that might arise in emergency situations involving those chemicals. Obtain a MSDS by calling the manufacturer's phone number from the label on the chemical container.

Collect and dispose of cleaning activity waste properly.

Clean without creating any discharge of soaps, detergents, oil or other pollutants to a storm sewer or waterway. Ideally, wash equipment and vehicles at an approved wash facility over a drain to the sanitary sewer. If any washing must be done on site, use plain water only and make sure the wash water does not create silty runoff.

When cleaning paint equipment outside, contain wastewater in a bucket or other container and dispose of it properly. Dispose of water based or latex paint wastewater in the sanitary sewer (e.g. sink, toilet). Collect and dispose oil based paint wastes, including solvents through a hazardous waste disposal company.

When cleaning paved areas, sweep up debris, pre-treat oil stains and slick spots with dry solvent (make a paste with water, kitty litter and powdered soap), and clean large areas with approved equipment such as vacuum scrubbers that collect the wastewater for proper disposal to a sanitary drain.

The following are excerpts from the TCEQ TPDES SWPPP Worksheet instructions draft 12/02/03:

Reportable Quantities for Regulated Substances

30 Texas Administrative Code §327.4

(a) Hazardous substances. The reportable quantities for hazardous substances shall be:

(1) For spills or discharges onto land--the quantity designated as the Final Reportable Quantity (RQ) in Table 302.4 in 40 CFR §§302.4; or

(2) For spills or discharges into waters in the state--the quantity designated as the Final RQ in Table 302.4 in 40 CFR §§302.4, except where the Final RQ is greater than 100 pounds in which case the RQ shall be 100 pounds.

(b) Oil, petroleum product, and used oil.

(1) The RQ for crude oil and oil other than that defined as petroleum product or used oil shall be:

(A) For spills or discharges onto land--210 gallons (five barrels); or

(B) For spills or discharges directly into water in the state--quantity sufficient to create a sheen.

(2) The RQ for petroleum product and used oil shall be:

(A) Except as noted in subparagraph (B) of this paragraph, for spills or discharges onto land--25 gallons;

(B) For spills or discharges to land from PST exempted facilities--210 gallons (five barrels); or

(C) For spills or discharges directly into water in the state--quantity sufficient to create a sheen.

(c) Industrial solid waste or other substances. The RQ for spills or discharges into water in the state shall be 100 pounds.

Source Note: The provisions of this §§327.4 adopted to be effective May 23, 1996, 21 TexReg 4228.

PROJECT: Promiseland San Marcos Church
Address: 1650 Lime Kiln Road
San Marcos, Texas 78666

Owner: Promiseland San Marcos

# TEMPORARY STORMWATER SECTION

## Attachment B

Potential Sources of Contamination

- Runoff and erosion of sediment and pollutants from exposed soil due to clearing and grubbing, grading, landscaping and other earthwork activities.
- Runoff from the construction equipment storage and maintenance. This may include typical automotive fluids, lubricants and fuels.
- Runoff from construction product staging, storage, and waste. This may include materials that can degrade the quality of receiving waters and make them unsafe for consumption and aquatic life.
- Runoff from paving operations may contain hydrocarbons and polyaromatic hydrocarbons.
- Runoff from lawn and landscape chemicals such as pesticides and herbicides

## Attachment C

Sequence of Major Activities
(Construction may be concurrent with other elements, but must be completed in the order shown below) - See attached plans

A. Install erosion controls and tree protection as indicated on approved site plan.
B. Provide 72-hr notification of City Environmental Inspector and 48-hr notification to TCEQ
C. Contact "the city". Schedule on-site pre-construction coordination meeting.
D. Evaluation of temporary erosion control installation. Review construction schedule with the erosion control plan.
E. Inspect and maintain all controls as per general notes.
F. Construct site utilities and fire protection elements.
G. Construct paving, parking and buildings.
H. Complete construction and install landscaping.
I. Re-vegetate disturbed areas or complete a developer's contract for the re-vegetation along with the engineer's concurrence letter.
J. Project engineer inspects job and writes concurrence letter to the city. Final inspection is scheduled upon receipt of letter.
K. Receive operating permit and city clearance for occupancy.
L. Remove temporary erosion/sedimentation controls upon inspector's approval of adequate re-vegetation.

## Attachment D

Temporary Best Management Practices and Measures

- A stabilized construction entrance to trap sediment and prevent it from being tracked offsite.
- The primary temporary erosion and sedimentation controls are silt fence placed on all downstream sides of construction. Silt fence is used to prevent sediment from low volume storm events from entering the drainage ways and receiving waters.

## Attachment E

Request to Temporarily Seal a Feature – **This section is not applicable**

## Attachment F

Structural Practices

- The primary structural practice to divert flows away from exposed soil is the silt fence placed on all down streamsides of construction. Silt fence is used to prevent sediment from low volume storm events from entering the drainage ways and receiving waters.

## Attachment G

Drainage Area Map – See attached drainage area map

## Attachment H

Temporary Sediment Pond(s) Plans and Calculations - **This section is not applicable**

## Attachment I

Inspection and Maintenance for BMPs

The inspection and maintenance guidelines provided from the TCEQ Technical Guidance Manual are located on the following pages, as well as in the Storm Water Pollution Prevention Plan (SWPPP).

## Attachment J

Schedule of Interim and Permanent Soil Stabilization Practices

As many trees and natural area as possible have been preserved, please refer to the erosion and sedimentation control plan located in the civil construction set of the "General Information" section.

All disturbed areas will be re-vegetated. Interim and Permanent Soil Stabilization Practices will be executed in accordance with the SWPPP.

## *1.4 Temporary Sediment Control BMPs*

### 1.4.1 General Guidelines

Construction activities normally result in disturbance on the site due to grading operations, clearing and other activities. Erosion will occur in the disturbed areas and BMPs should be used to contain the sediment transported by stormwater runoff. Although the names of many controls suggest that filtration is an important component of sediment removal, almost all reduction in sediment load is the result of particle settling under relatively quiescent conditions. Consequently, sediment barriers, such as silt fences and rock berms, should be designed and installed as temporary (although leaky) dams.

When viewed as temporary dams, it is easier to see the importance of installing these devices along the contour or with a constant top elevation to prevent concentrating the runoff at the lowest spot in the barrier. Concentrating the runoff in this fashion can result in more erosion than if no barrier was installed at all. Therefore, great care should be taken in the placement and installation of these types of controls.

For larger areas or where effective installation of sediment barriers is not an option, sediment traps and sediment basins should be used to control sediment in runoff. These devices are essentially larger, more permanent dams that temporarily detain stormwater runoff.

All of the sediment control BMPs are potentially very effective for removing sediment from stormwater runoff when properly maintained and installed. However, this potential is often squandered. Casual observation of many active construction sites reveals silt fences that are torn or damaged by equipment, evidence of stormwater bypass, or controls installed in inappropriate locations (i.e., silt fences used in channels). In these cases, significant funds are expended for little in the way of water quality protection. Consequently, proper installation and maintenance should form a key component of any temporary sediment control plan.

A list of the temporary sediment controls and their appropriate siting criteria are contained in Table 1-5. More detailed guidance on siting and maintenance are contained in the subsequent sections. Note that hay bales are no longer considered an effective sediment control measure. Compost amended soils can be used to promote vegetation growth, but they are not considered a sediment control technology. Compost berms for sediment control are considered to be an experimental technology and should not be used in the areas covered by the Edwards Rules.

**Table 1-5 Guidelines for Selection of Sediment Control BMPs**

| Control Type | Applications | Drainage Area | Slope |
|---|---|---|---|
| Construction Exit | Should be used at all designated access points. | NA | NA |
| Silt Fence (interior) | Areas of minor sheet flow. | < ¼ acre/100 ft of fence | < 20% |
| Silt Fence (exterior) | Down slope borders of site; up slope border is necessary to divert offsite drainage. For larger areas use diversion swale or berm. | < ¼ acre/100 ft of fence | < 20% |
| Triangular Filter Dike | Areas within site requiring frequent access. | < 1 acre | < 10% |
| Rock Berm | Drainage swales and ditches with and below site. | < 5 acres | < 30% |
| High Service Rock Berm | Around sensitive features, high flow areas within and below site. | < 5 acres | < 30% |
| Brush Berm | Small areas of sheet flow | < 2 acres | < 20% |
| Sand Bag Berm | For construction activities in streambeds. | 5-10 acres | <15% |
| Vegetative Buffer Strips | On floodplains, next to wetlands, along stream banks, and on steep slopes. | NA | NA |
| Inlet Protection | Prevent sediment from entering storm drain system. | < 1 acre | NA |
| Sediment Trap | Used where flows concentrated in a swale or channel | 1-5 acres | NA |
| Sediment Basin | Appropriate for large disturbed areas | 5 – 100 acres | NA |
| Filter Rolls | On slopes to interrupt slope | < 1 acre | <30% |
| Dewatering Operations | Used to remove groundwater or accumulated stormwater from excavations | NA | NA |
| Spill Prevention | Used on all sites to reduce spills | NA | NA |
| Utility Line Crossings | Crossings of drainage ways and creeks | >40 acres | NA |
| Concrete Washout | Use on all concrete pouring operations | NA | NA |

### 1.4.2 Temporary Construction Entrance/Exit

The purpose of a temporary gravel construction entrance is to provide a stable entrance/exit condition from the construction site and keep mud and sediment off public roads. A stabilized construction entrance is a stabilized pad of crushed stone located at any point traffic will be entering or leaving the construction site from a public right-of-way, street, alley, sidewalk or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking or flowing of sediment onto public rights-of-way. This practice should be used at all points of construction ingress and egress. Schematic diagrams of a construction entrance/exit are shown in Figure 1-24 and Figure 1-25.

Excessive amounts of mud can also present a safety hazard to roadway users. To minimize the amount of sediment loss to nearby roads, access to the construction site should be limited to as few points as possible and vegetation around the perimeter should be protected were access is not necessary. A rock stabilized construction entrance should be used at all designated access points.

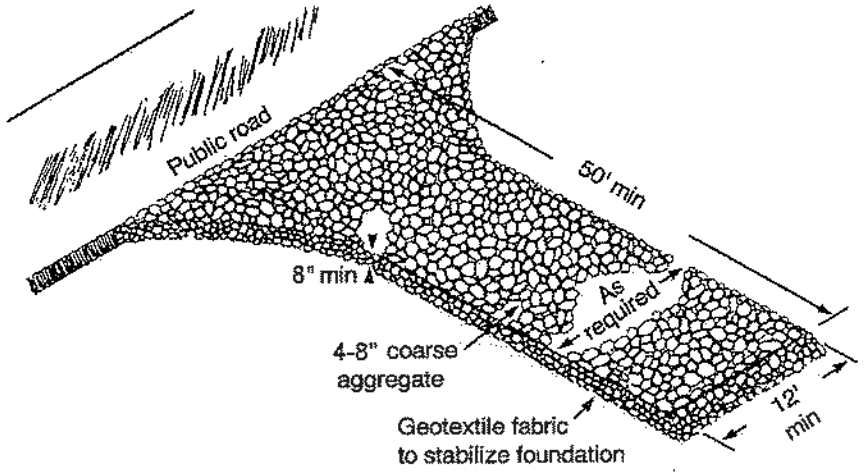



**Figure 1-24 Schematic of Temporary Construction Entrance/Exit (after NC, 1993)**

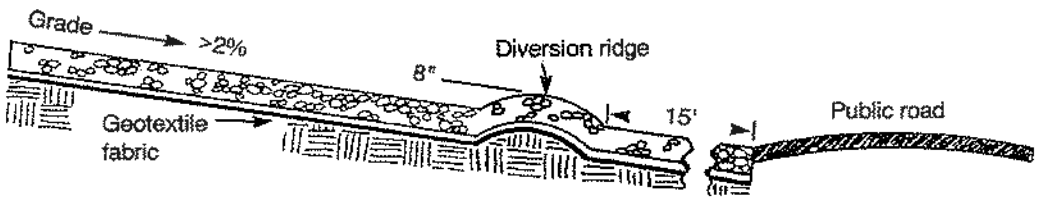



**Figure 1-25 Cross-section of a Construction Entrance/Exit (NC, 1993)**

**Materials:**

(1) The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.

(2) The aggregate should be placed with a minimum thickness of 8 inches.

(3) The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd$^2$, a mullen burst rating of 140 lb/in$^2$, and an equivalent opening size greater than a number 50 sieve.

(4) If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the plans. Divert wastewater to a sediment trap or basin.

**Installation:** (North Carolina, 1993)

(1) Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.

(2) The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.

(3) The construction entrance should be at least 50 feet long.

(4) If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the foundation approximately 15 feet from the entrance to divert runoff away from the public road.

(5) Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.

(6) Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.

(7) Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.

(8) Install pipe under pad as needed to maintain proper public road drainage.

**Common trouble points**

(1) Inadequate runoff control – sediment washes onto public road.

(2) Stone too small or geotextile fabric absent, results in muddy condition as stone is pressed into soil.

(3) Pad too short for heavy construction traffic – extend pad beyond the minimum 50 foot length as necessary.

(4) Pad not flared sufficiently at road surface, results in mud being tracked on to road and possible damage to road edge.

(5) Unstable foundation – use geotextile fabric under pad and/or improve foundation drainage.

**Inspection and Maintenance Guidelines:**

(1) The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.

(2) All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.

(3) When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.

(4) When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.

(5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

### 1.4.3 Silt Fence

A silt fence is a barrier consisting of geotextile fabric supported by metal posts to prevent soil and sediment loss from a site. When properly used, silt fences can be highly effective at controlling sediment from disturbed areas. They cause runoff to pond, allowing heavier solids to settle out. If not properly installed, silt fences are not likely to be effective. A schematic illustration of a silt fence is shown in Figure 1-26.

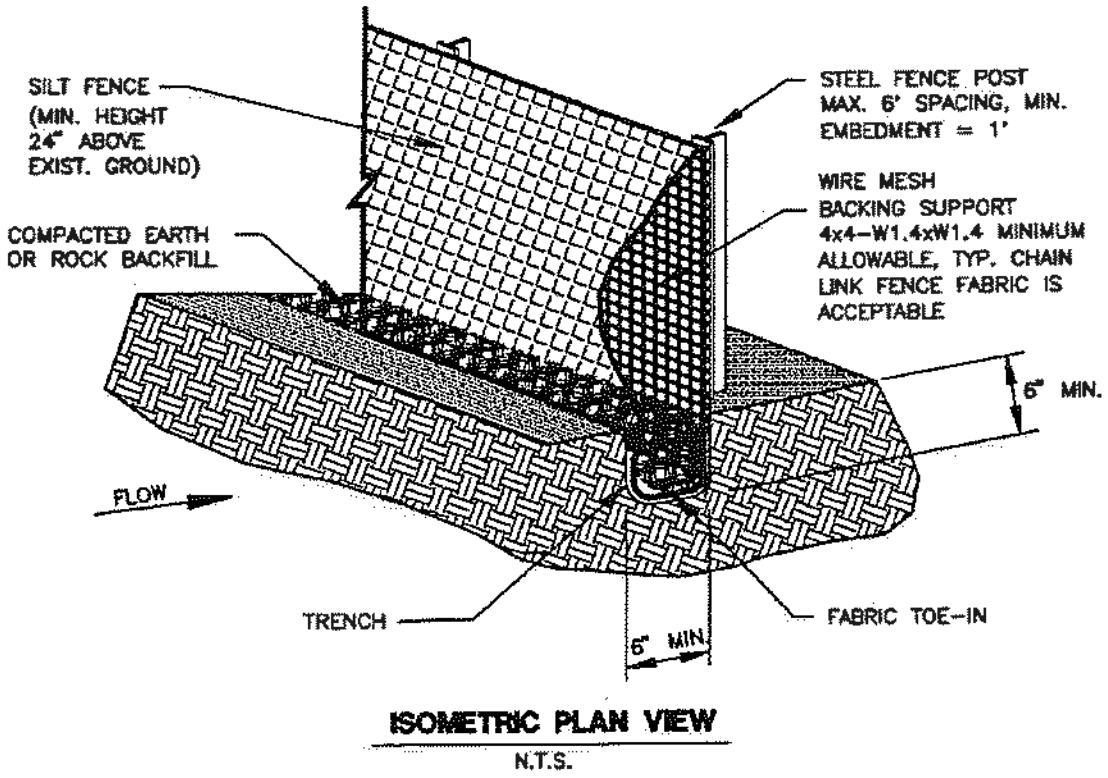



**Figure 1-26 Schematic of a Silt Fence Installation (NCTCOG, 1993b)**

The purpose of a silt fence is to intercept and detain water-borne sediment from unprotected areas of a limited extent. Silt fence is used during the period of construction near the perimeter of a disturbed area to intercept sediment while allowing water to percolate through. This fence should remain in place until the disturbed area is permanently stabilized. Silt fence should not be used where there is a concentration of water in a channel or drainage way. If concentrated flow occurs after installation, corrective action must be taken such as placing a rock berm in the areas of concentrated flow.

Silt fencing within the site may be temporarily moved during the day to allow construction activity provided it is replaced and properly anchored to the ground at the end of the day. Silt fences on the perimeter of the site or around drainage ways should not be moved at any time.

**Materials:**

(1) Silt fence material should be polypropylene, polyethylene or polyamide woven or nonwoven fabric. The fabric width should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 $lb/in^2$, ultraviolet stability exceeding 70%, and minimum apparent opening size of U.S. Sieve No. 30.

(2) Fence posts should be made of hot rolled steel, at least 4 feet long with Tee or Y-bar cross section, surface painted or galvanized, minimum nominal weight 1.25 $lb/ft^2$, and Brindell hardness exceeding 140.

(3) Woven wire backing to support the fabric should be galvanized 2" x 4" welded wire, 12 gauge minimum.

**Installation:**

(1) Steel posts, which support the silt fence, should be installed on a slight angle toward the anticipated runoff source. Post must be embedded a minimum of 1-foot deep and spaced not more than 8 feet on center. Where water concentrates, the maximum spacing should be 6 feet.

(2) Lay out fencing down-slope of disturbed area, following the contour as closely as possible. The fence should be sited so that the maximum drainage area is ¼ acre/100 feet of fence.

(3) The toe of the silt fence should be trenched in with a spade or mechanical trencher, so that the down-slope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g., pavement or rock outcrop), weight fabric flap with 3 inches of pea gravel on uphill side to prevent flow from seeping under fence.

(4) The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.

(5) 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. There should be a 3-foot overlap, securely fastened where ends of fabric meet.

(6) Silt fence should be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.

**Common Trouble Points:**

(1) Fence not installed along the contour causing water to concentrate and flow over the fence.

(2) Fabric not seated securely to ground (runoff passing under fence)

(3) Fence not installed perpendicular to flow line (runoff escaping around sides)

(4) Fence treating too large an area, or excessive channel flow (runoff overtops or collapses fence)

**Inspection and Maintenance Guidelines:**

(1) Inspect all fencing weekly, and after any rainfall.

(2) Remove sediment when buildup reaches 6 inches.

(3) Replace any torn fabric or install a second line of fencing parallel to the torn section.

(4) Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.

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

## 1.4.16 Spill Prevention and Control

The objective of this section is to describe measures to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

The following steps will help reduce the stormwater impacts of leaks and spills:

***Education***

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

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

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

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

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

***General Measures***

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

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

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

(4) Train employees in spill prevention and cleanup.

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

(6) Spills should be covered and protected from stormwater runon during rainfall to the extent that it doesn't compromise clean up activities.

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

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

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

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

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

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

***Cleanup***

(1) Clean up leaks and spills immediately.

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

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

***Minor Spills***

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

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

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

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

(5) Contain the spread of the spill.

(6) Recover spilled materials.

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

***Semi-Significant Spills***

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

Spills should be cleaned up immediately:

(1) Contain spread of the spill.

(2) Notify the project foreman immediately.

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

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

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

***Significant/Hazardous Spills***

For significant or hazardous spills that are in reportable quantities:

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

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

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

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

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

More information on spill rules and appropriate responses is available on the TCEQ website at: http://www.tnrcc.state.tx.us/enforcement/emergency_response.html

*Vehicle and Equipment Maintenance*

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

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

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

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

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

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

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

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

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

*Vehicle and Equipment Fueling*

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

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

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

### 1.4.18 Concrete Washout Areas

The purpose of concrete washout areas is to prevent or reduce the discharge of pollutants to stormwater from concrete waste by conducting washout offsite, performing onsite washout in a designated area, and training employees and subcontractors.

The following steps will help reduce stormwater pollution from concrete wastes:

- Incorporate requirements for concrete waste management into material supplier and subcontractor agreements.
- Avoid mixing excess amounts of fresh concrete.
- Perform washout of concrete trucks in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped onsite, except in designated areas.

For onsite washout:

- Locate washout area at least 50 feet from sensitive features, storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
- Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly.

Below grade concrete washout facilities are typical. These consist of a lined excavation sufficiently large to hold expected volume of washout material. Above grade facilities are used if excavation is not practical. Temporary concrete washout facility (type above grade) should be constructed as shown on the details at the end of this section, with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations. 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.

When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and disposed of. Materials used to construct temporary concrete washout facilities should be removed from the site of the work and disposed of. Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

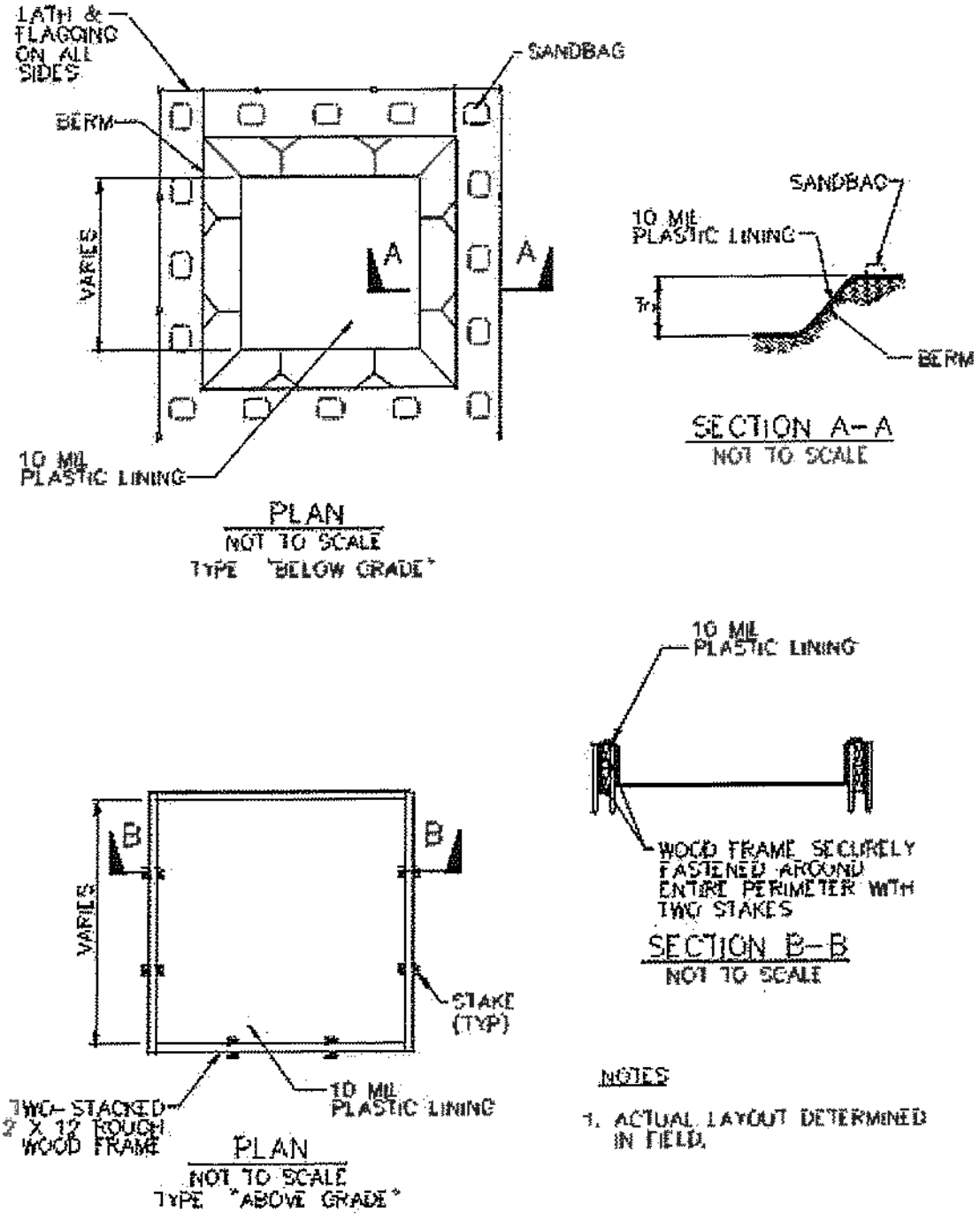



**Figure 1-43 Schematics of Concrete Washout Areas**

*PERMANENT STORMWATER SECTION*

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

REGULATED ENTITY NAME: Promiseland San Marcos Church

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

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

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

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

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

   _____

   _____

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

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

   ___ This site will be used for low density single-family residential development and has 20% or less impervious cover.

   ___ This site will be used for low density single-family residential development but has more than 20% impervious cover.

   X This site will not be used for low density single-family residential development.

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

__ **ATTACHMENT A - 20% or Less Impervious Cover Waiver.** This site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is found at the end of this form.

__ This site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.

_X_ This site will not be used for multi-family residential developments, schools, or small business sites.

6. **ATTACHMENT B - BMPs for Upgradient Stormwater.**

__ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is identified as **ATTACHMENT B** at the end of this form.

__ If no surface water, groundwater or stormwater originates upgradient from the site and flows across the site, an explanation is provided as **ATTACHMENT B** at the end of this form.

_X_ If permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, an explanation is provided as **ATTACHMENT B** at the end of this form.

7. **ATTACHMENT C - BMPs for On-site Stormwater.**

_X_ A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is identified as **ATTACHMENT C** at the end of this form.

__ If permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, an explanation is provided as **ATTACHMENT C** at the end of this form.

8. _X_ **ATTACHMENT D - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is provided at the end of this form. Each feature identified in the Geologic Assessment as "sensitive" has been addressed.

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

_X_ The permanent sealing of or diversion of flow from a naturally-occurring "sensitive" or "possibly sensitive" feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed for any naturally-occurring "sensitive" or "possibly sensitive" features on this site.

__ **ATTACHMENT E - Request to Seal Features.** A request to seal a naturally-occurring "sensitive" or "possibly sensitive" feature, that includes a justification as to why no reasonable and practicable alternative exists, is found at the end of this form. A request and justification has been provided for each feature.

10. _X_ **ATTACHMENT F - Construction Plans.** Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information have been signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed permanent BMPs and measures are provided at the end of this form. Design Calculations, TCEQ

Construction Notes, all man-made or naturally occurring geologic features, all proposed structural measures, and appropriate details must be shown on the construction plans.

11. X **ATTACHMENT G - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is provided at the end of this form. The plan has been prepared and certified by the engineer designing the permanent BMPs and measures. The plan has been signed by the owner or responsible party. The plan includes procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofits as well as a discussion of record keeping procedures.

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

N/A Pilot-scale field testing (including water quality monitoring) may be required for BMPs that are not contained in technical guidance recognized by or prepared by the executive director.

— **ATTACHMENT H - Pilot-Scale Field Testing Plan.** A plan for pilot-scale field testing is provided at the end of this form.

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

**Responsibility for maintenance of permanent BMPs and measures after construction is complete.**

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

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

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

Rob A. Steele
Print Name of Customer/Agent

Signature of Customer/Agent

3/24/11
Date

PROJECT: Promiseland San Marcos Church
Address: 1650 Lime Kiln Road
San Marcos, Texas 78666

Owner: Promiseland San Marcos

## Permanent Storm Water Section

### Attachment A
20% or Less Impervious Cover Waiver – This item is not applicable to this project

### Attachment B
BMPs for Upgradient Stormwater

There is some upgradient stormwater that is currently conveyed onto this property from the northeast. This project is proposing to create graded swales that will route this flow around the proposed development. This measure will prevent the pollution of upgradient drainage coming onto the site.

### Attachment C
BMP's for On-site Stormwater

Onsite drainage from the proposed parking lots will be directed via overland flow towards fifteen foot (minimum) vegetative filter strips. The engineered strips are designed to have slopes less than 20% and will not be receiving any concentrated flows. In addition, the proposed building will utilize a rainwater harvesting system to capture the rooftop runoff. The storage tank(s) will be sized to hold the appropriate amount of water.

### Attachment D
BMPs for Surface Streams – This item is not applicable to this project

### Attachment E
Request to Seal Features – This item is not applicable to this project

### Attachment F
Construction Plans – See attached plans

### Attachment G
Inspection, Maintenance, Repair and Retrofit Plan

The signed maintenance plan is attached after the following page

## Attachment H

Pilot-Scale Field Testing Program – This item is not applicable to this project

## Attachment I

Measures for Minimizing Surface Stream Contamination

All flows during construction will be directed via overland flow towards the proposed vegetative filter strips. These strips will minimize surface stream contamination by slowing down the flows and collecting any trash or debris before continuing on downstream.

# ATTACHMENT G

## MAINTENANCE PLAN AND SCHEDULE FOR VEGETATIVE FILTER STRIPS & RAINWATER HARVESTING SYSTEM

**PROJECT NAME:** Promiseland San Marcos Church
**ADDRESS:** 1650 Lime Kiln Road
**CITY, STATE, ZIP:** San Marcos, Texas 78666

### VEGETATIVE FILTER STRIPS

**Bi-Annually:** The basin shall be inspected twice annually to check for:
**(1)** Erosion or damage to the vegetation and uniformity of the grass. Areas of erosion shall be filled and compacted in such a manner that final grade matches bottom swale elevation. Some sediment may be considered hazardous waste or toxic material, and are therefore subject to restrictions for disposal. Damaged bare areas should be replaced using the same seed mix used during filter strip establishment.
**(2)** Sedimentation at or near the upstream boundary of the filter strip. Sediment accumulating near culverts and in channel should not exceed 3 inches. Excess sediment shall be removed and disposed of "properly".

Further maintenance activities should occur more regularly:
**(1)** The basins shall be checked for accumulation of debris and trash. The debris and trash shall be removed. This should occur no less than 4 times a year.
**(2)** Regular mowing should occur as often as necessary. Fertilizers should be used at a minimum.

**After Rainfall:** Filter strip inspections should occur after heavy rainfall events to insure that flow is not obstructed and to determine if any problems are developing. If proper flow does not occur, corrective measures should be taken.

Once a vegetated area is well established, little additional maintenance is generally necessary. The key to establishing a viable vegetated feature is the care and maintenance it receives in the first few months after it is planted. Once established, all vegetated BMPs require some basic maintenance to insure the health of the plants including:

- ***Pest Management.*** An Integrated Pest Management (IPM) Plan should be developed for vegetated areas. This plan should specify how problem insects and weeds will be controlled with minimal or no use of insecticides and herbicides.

- ***Seasonal Mowing and Lawn Care.*** If the filter strip is made up of turf grass, it should be mowed as needed to limit vegetation height to 18 inches, using a mulching mower (or removal of clippings). If native grasses are used, the filter may require less frequent mowing, but a minimum of twice annually. Grass clippings and brush debris should not be deposited on vegetated filter strip areas. Regular mowing should also include weed control practices, however herbicide use should be kept to a minimum (Urbonas et al., 1992). Healthy grass can be maintained without using fertilizers because runoff usually contains sufficient nutrients. Irrigation of the site can help assure a dense and healthy vegetative cover.

• ***Inspection.*** Inspect filter strips at least twice annually for erosion or damage to vegetation; however, additional inspection after periods of heavy runoff is most desirable. The strip should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. More frequent inspections of the grass cover during the first few years after establishment will help to determine if any problems are developing, and to plan for long-term restorative maintenance needs. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Construction of a level spreader device may be necessary to reestablish shallow overland flow.

• ***Debris and Litter Removal.*** Trash tends to accumulate in vegetated areas, particularly along highways. Any filter strip structures (i.e. level spreaders) should be kept free of obstructions to reduce floatables being flushed downstream, and for aesthetic reasons. The need for this practice is determined through periodic inspection, but should be performed no less than 4 times per year.

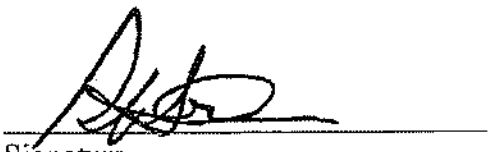
• ***Sediment Removal.*** Sediment removal is not normally required in filter strips, since the vegetation normally grows through it and binds it to the soil. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand or with flat-bottomed shovels.

• ***Grass Reseeding and Mulching.*** A healthy dense grass should be maintained on the filter strip. If areas are eroded, they should be filled, compacted, and reseeded so that the final grade is level. Grass damaged during the sediment removal process should be promptly replaced using the same seed mix used during filter strip establishment. If possible, flow should be diverted from the damaged areas until the grass is firmly established. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Corrective maintenance, such as weeding or replanting should be done more frequently in the first two to three years after installation to ensure stabilization. Dense vegetation may require irrigation immediately after planting, and during particularly dry periods, particularly as the vegetation is initially established.

**RAINWATER HARVESTING SYSTEM**

**Weekly:** Storage tank to be emptied to allow sufficient storage for next storm event

Responsible Party: Rob A. Steele, Trustee for Promiseland San Marcos Church
Name



Signature

3/29/11
Date

Mailing Address: 1650 Lime Kiln Road
City, State: San Marcos, Texas 78666
Telephone: (512) 845 - 4244

*TCEQ – AGENT AUTHORIZATION, FEE & CORE DATA FORMS*

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

I Rob A. Steele,
Print Name

Trustee
Title - Owner/President/Other

of Promiseland San Marcos Church
Corporation/Partnership/Entity Name

have authorized Hunter Shadburne, PE
Print Name of Agent/Engineer

Of Austin Civil Engineering, Inc.
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Applicant's Signature

3/24/11
Date

THE STATE OF TEXAS §

County of TRAVIS §

BEFORE ME, the undersigned authority, on this day personally appeared Rob A. Steele known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 24 day of MARCH, 2011.

TRESKA ANNE GIEBITZ
Notary Public, State of Texas
My Commission Expires
May 13, 2014

NOTARY PUBLIC

TRESKA ANNE GIEBITZ
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 5/13/14

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
**Application Fee Form**

NAME OF PROPOSED REGULATED ENTITY: Promiseland San Marcos Church
REGULATED ENTITY LOCATION: 1650 Lime Kiln Road, San Marcos, Texas 78666
NAME OF CUSTOMER: Promiseland San Marcos
CONTACT PERSON: Rob A. Steele PHONE: 512-845-4244
(Please Print)

Customer Reference Number (if issued): CN 602942906 (nine digits)

Regulated Entity Reference Number (if issued): RN 104793641 (nine digits)

**Austin Regional Office (3373)** ☒ Hays ☐ Travis ☐ Williamson

**San Antonio Regional Office (3362)** ☐ Bexar ☐ Comal ☐ Medina ☐ Kinney ☐ Uvalde

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 (Check One):

☒ **Austin Regional Office**

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

☐ **San Antonio Regional Office**

☐ **Overnight Delivery to TCEQ**:
TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
512/239-0347

**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** | 10.025 + 10.205 Acres = 20.23 Acres | **$ 6,500** |
| Sewage Collection System | L.F. | $ |
| Lift Stations without sewer lines | Acres | $ |
| Underground or Aboveground Storage Tank Facility | Tanks | $ |
| Piping System(s)(only) | Each | $ |
| Exception | Each | $ |
| Extension of Time | Each | $ |

Signature

3/24/11
Date

**If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.**

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
**Application Fee Schedule**
**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<br>5 < 10<br>10 < 40<br>40 < 100<br>100 < 500<br>≥ 500 | $1,500<br>$3,000<br>$4,000<br>$6,500<br>$8,000<br>$10,000 |
| Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur) | < 1<br>1 < 5<br>5 < 10<br>**10 < 40**<br>40 < 100<br>≥ 100 | $3,000<br>$4,000<br>$5,000<br>**$6,500**<br>$8,000<br>$10,000 |

**Organized Sewage Collection Systems and Modifications**

| PROJECT | COST PER LINEAR FOOT | MINIMUM FEE<br>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<br>MAXIMUM FEE |
|---|---|---|
| Underground and Aboveground Storage Tank Facility | $650 | $650 - $6,500 |

**Exception Requests**

| PROJECT | FEE |
|---|---|
| Exception Request | $500 |

**Extension of Time Requests**

| PROJECT | FEE |
|---|---|
| Extension of Time Request | $150 |

TCEQ Use Only

# TCEQ Core Data Form

For detailed instructions 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. Attachments** **Describe Any Attachments:** *(ex. Title V Application, Waste Transporter Application, etc.)*

☒ Yes ☐ No — WPAP application

| 3. Customer Reference Number *(if issued)* | Follow this link to search for CN or RN numbers in Central Registry** | 4. Regulated Entity Reference Number *(if issued)* |
|---|---|---|
| CN 602942906 | | RN 104793641 |

## SECTION II: Customer Information

**5. Effective Date for Customer Information Updates (mm/dd/yyyy)** 3/21/2011

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

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

**7. General Customer Information**

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State) ☒ No Change**

***If "No Change" and Section I is complete, skip to Section III – Regulated Entity Information.***

| 8. Type of Customer: | ☐ Corporation | ☐ Individual | ☐ Sole Proprietorship- D.B.A |
|---|---|---|---|
| ☐ City Government | ☐ County Government | ☐ Federal Government | ☐ State Government |
| ☐ Other Government | ☐ General Partnership | ☐ Limited Partnership | ☐ Other: |

**9. Customer Legal Name** *(If an individual, print last name first: ex: Doe, John)* — *If new Customer, enter previous Customer below* — *End Date:*

Promiseland San Marcos

**10. Mailing Address:** 1650 Lime Kiln Road

| City | San Marcos | State | TX | ZIP | 78666 | ZIP + 4 | |
|---|---|---|---|---|---|---|---|

**11. Country Mailing Information** *(if outside USA)*

**12. E-Mail Address** *(if applicable)*

**13. Telephone Number** ( ) -

**14. Extension or Code**

**15. Fax Number** *(if applicable)* ( ) -

| 16. Federal Tax ID *(9 digits)* | 17. TX State Franchise Tax ID *(11 digits)* | 18. DUNS Number *(if applicable)* | 19. TX SOS Filing Number *(if applicable)* |
|---|---|---|---|
| | | | |

**20. Number of Employees**

☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

**21. Independently Owned and Operated?**

☐ Yes ☐ No

## SECTION III: Regulated Entity Information

**22. 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 ☒ No Change** *(See below)*

**If "NO CHANGE" is checked and Section I is complete, skip to Section IV, Preparer Information.**

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

Promiseland San Marcos

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24. Street Address of the Regulated Entity: *(No P.O. Boxes)* | 1650 Lime Kiln Road | | | | | | | |
| | City | San Marcos | State | TX | ZIP | 78666 | ZIP + 4 | |
| 25. Mailing Address: | (same as above) | | | | | | | |
| | City | | State | | ZIP | | ZIP + 4 | |

| | | |
|---|---|---|
| 26. E-Mail Address: | | |
| 27. Telephone Number | 28. Extension or Code | 29. Fax Number *(if applicable)* |
| ( ) - | | ( ) - |

| 30. Primary SIC Code (4 digits) | 31. Secondary SIC Code (4 digits) | 32. Primary NAICS Code (5 or 6 digits) | 33. Secondary NAICS Code (5 or 6 digits) |
|---|---|---|---|
| 8661 | | 236220 | |

34. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*

religious organization

**Questions 34 – 37 address geographic location. Please refer to the instructions for applicability.**

| | |
|---|---|
| 35. Description to Physical Location: | Site is located on northeast corner of the intersection at Lime Kiln Road and Pitt Road; just north of an existing rock quarry |

| 36. Nearest City | County | State | Nearest ZIP Code |
|---|---|---|---|
| San Marcos | Hays | TX | 78666 |

| 37. Latitude (N) In Decimal: | 30.9180556 | | 38. Longitude (W) In Decimal: | 97.932778 | |
|---|---|---|---|---|---|
| Degrees | Minutes | Seconds | Degrees | Minutes | Seconds |
| 29 | 55 | 5 | 97 | 55 | 58 |

**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 or the updates may not be made. If your Program is not listed, check other and write it in. See the Core Data Form instructions for additional guidance.

| | | | | |
|---|---|---|---|---|
| ☐ Dam Safety | ☐ Districts | ☒ Edwards Aquifer | ☐ Industrial Hazardous Waste | ☐ Municipal Solid Waste |
| | | WPAP | | |
| ☐ New Source Review – Air | ☐ OSSF | ☐ Petroleum Storage Tank | ☐ PWS | ☐ Sludge |
| | | | | |
| ☐ Stormwater | ☐ Title V – Air | ☐ Tires | ☐ Used Oil | ☐ Utilities |
| | | | | |
| ☐ Voluntary Cleanup | ☐ Waste Water | ☐ Wastewater Agriculture | ☐ Water Rights | ☐ Other: |
| | | | | |

## SECTION IV: Preparer Information

| 40. Name: | Hunter Shadburne, P.E. | 41. Title: | Civil Engineer |
|---|---|---|---|

| 42. Telephone Number | 43. Ext./Code | 44. Fax Number | 45. E-Mail Address |
|---|---|---|---|
| (512) 306-0018 | | (512) 306-0048 | HS@AUSTINCIVIL.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 9 and/or as required for the updates to the ID numbers identified in field 39.

***(See the Core Data Form instructions for more information on who should sign this form.)***

| | | | |
|---|---|---|---|
| Company: | Promiseland San Marcos | Job Title: | Trustee |
| Name *(In Print)*: | Robert A. Steele | Phone: | (512) 845-4244 |
| Signature: | | Date: | 3/24/11 |

# Agent Authorization Form, **8.0**

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

I C. Robin Steele,
Print Name

Pastor,
Title - Owner/President/Other

of Promise land San Marcos,
Corporation/Partnership/Entity Name

have authorized Cliff Kendall
Print Name of Agent/Engineer

of WGI
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

9/12/24
Date

THE STATE OF Texas §

County of Travis §

JULIE WILLIAMS
Notary Public, State of Texas
Comm. Expires 12-17-2024
Notary ID 129236370

BEFORE ME, the undersigned authority, on this day personally appeared C. Robin Steele 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 12 day of September, 2024

NOTARY PUBLIC

Julie Williams
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 12-17-2024

# Application Fee Form, **9.0**

# Application Fee Form

**Texas Commission on Environmental Quality**
Name of Proposed Regulated Entity: PROMISELAND WATER SUPPLY
Regulated Entity Location: 1650 LIME KILN ROAD
Name of Customer: PROMISELAND SAN MARCOS
Contact Person: _____ Phone: _____
Customer Reference Number (if issued):CN 602942906
Regulated Entity Reference Number (if issued):RN 106194194
**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 | 19.72 Acres | $ 6,500 |
| Sewage Collection System | L.F. | $ |
| Lift Stations without sewer lines | Acres | $ |
| Underground or Aboveground Storage Tank Facility | Tanks | $ |
| Piping System(s)(only) | Each | $ |
| Exception | Each | $ |
| Extension of Time | Each | $ |

Signature: _____ Date: 10/21/2024

# 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<br>5 < 10<br>10 < 40<br>40 < 100<br>100 < 500<br>≥ 500 | $1,500<br>$3,000<br>$4,000<br>$6,500<br>$8,000<br>$10,000 |
| Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur) | < 1<br>1 < 5<br>5 < 10<br>10 < 40<br>40 < 100<br>≥ 100 | $3,000<br>$4,000<br>$5,000<br>$6,500<br>$8,000<br>$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, **10.0**

TCEQ Use Only

# TCEQ Core Data Form

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

## SECTION I: General Information

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

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

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

| **2. Customer Reference Number** *(if issued)* | Follow this link to search for CN or RN numbers in Central Registry** | **3. Regulated Entity Reference Number** *(if issued)* |
|---|---|---|
| **CN 602942906** | | **RN 106194194** |

## 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:*

PROMISELAND SAN MARCOS

| **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 ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

**12. Number of Employees**

☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

**13. Independently Owned and Operated?**

☐ **Yes** ☐ **No**

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

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA 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, a new permit application is also required.)*

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

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

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

PROMISELAND WATERE SUPPLY

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **23. Street Address of the Regulated Entity:** ***(No PO Boxes)*** | 1650 LIME KILN ROAD | | | | | | | |
| | | | | | | | | |
| | **City** | SAN MARCOS | **State** | TX | **ZIP** | 78666 | **ZIP + 4** | 8301 |
| **24. County** | HAYS | | | | | | | |

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

| | | | | | |
|---|---|---|---|---|---|
| **25. Description to Physical Location:** | | | | | |
| **26. Nearest City** | | | **State** | | **Nearest ZIP Code** |
| | | | | | |

***Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).***

| | | | | | |
|---|---|---|---|---|---|
| **27. Latitude (N) In Decimal:** | | | **28. Longitude (W) In Decimal:** | | |
| Degrees | Minutes | Seconds | Degrees | Minutes | Seconds |
| | | | | | |

| | | | |
|---|---|---|---|
| **29. Primary SIC Code** (4 digits) | **30. Secondary SIC Code** (4 digits) | **31. Primary NAICS Code** (5 or 6 digits) | **32. Secondary NAICS Code** (5 or 6 digits) |
| | | | |

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **34. Mailing Address:** | | | | | | | | |
| | | | | | | | | |
| | **City** | | **State** | | **ZIP** | | **ZIP + 4** | |
| **35. E-Mail Address:** | | | | | | | | |

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

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

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

## SECTION IV: Preparer Information

| **40. Name:** | Justin Celentano | | **41. Title:** | |
|---|---|---|---|---|
| **42. Telephone Number** | **43. Ext./Code** | **44. Fax Number** | **45. E-Mail Address** | |
| **(** 512 **)** 669-5560 | | **(** 210 **)** 510-0899 | Justin.Celentano@WGInc.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:** | WGI | **Job Title:** | Market Leader | |
|---|---|---|---|---|
| **Name** *(In Print):* | Cliff Kendall | | **Phone:** | **(** 512 **)** 669- **5560** |
| **Signature:** |  | | **Date:** | 10/21/2024 |

# Site Construction Plans, **11.0**

ARCHITECT
HADDON+COWAN ARCHITECTS
2207 E CESAR CHAVEZ
AUSTIN, TEXAS 78702
CONTACT: JOE D'ELIA

CIVIL ENGINEER:
WGI
4700 MUELLER BLVD, SUITE 300
AUSTIN, TEXAS, 78723
(512) 669-5560
CONTACT: JUSTIN CELENTANO, P.E.

SURVEYOR:
SUMMIT GEOMATICS, INC.
4603 N STAHL PARK, SUITE 103
SAN ANTONIO, TEXAS, 78217
CONTACT: ROBERT A. HARPER, RPLS

LANDSCAPE ARCHITECT:
WGI
4700 MUELLER BLVD, SUITE 300
AUSTIN, TEXAS, 78723
CONTACT: DARCY NUFFER, RLA

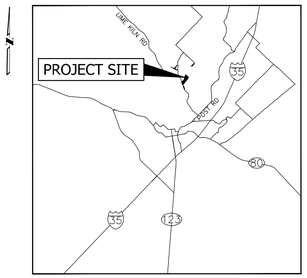

# --CIVIL CONSTRUCTION PLANS--

FOR

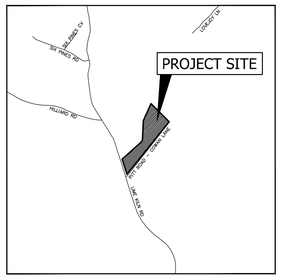
# PROMISE LAND SAN MARCOS

## 1650 LIME KILN ROAD

## CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666




VICINITY MAP
N.T.S.




LOCATION MAP
N.T.S.

SUBMITTAL DATE:
October 23, 2025

| SHEET LIST TABLE | | |
|---|---|---|
| PAGE NO. | SHEET NO. | SHEET NAME |
| 01 | C001 | COVER SHEET |
| 02 | C002 | GENERAL NOTES |
| 03 | C100 | EXISTING CONDITIONS |
| 04 | C101 | EXISTING TREE LIST |
| 05 | C200 | EROSION & SEDIMENTATION CONTROL PLAN |
| 06 | CD100 | DEMOLITION PLAN |
| 07 | CS100 | OVERALL SITE PLAN |
| 08 | CS101 | SITE PLAN |
| 09 | CP100 | PAVING PLAN |
| 10 | CG100 | GRADING PLAN |
| 11 | CG200 | STORM DRAINAGE PLAN |
| 12 | CG300 | EXISTING DRAINAGE AREA MAP |
| 13 | CG400 | PROPOSED DRAINAGE AREA MAP |
| 14 | CG500 | WATER QUALITY POND 1 PLAN & CALCULATIONS |
| 15 | CG501 | WATER QUALITY POND 2 PLAN & CALCULATIONS |
| 16 | CG502 | WATER QUALITY POND 3 PLAN & CALCULATIONS |
| 17 | CG503 | DETENTION POND 1 PLAN & CALCULATIONS |
| 18 | CG504 | DETENTION POND 2 PLAN & CALCULATIONS |
| 19 | CU100 | OVERALL UTILITY PLAN |
| 20 | CU101 | DETAILED UTILITY PLAN |
| 21 | C500 | EROSION & SEDIMENTATION CONTROL DETAILS |
| 22 | C600 | CONSTRUCTION DETAILS 1 OF 2 |
| 23 | C601 | CONSTRUCTION DETAILS 2 OF 2 |
| 24 | C700 | STORM DRAINAGE DETAILS |

SUBMITTED BY :

10/23/2025

AMANDA SALDIVAR, P.E.
LICENSED PROFESSIONAL ENGINEER NO. 146190
WGI, INC.
755 E. MULBERRY AVE, SUITE 501
SAN ANTONIO, TEXAS 78212
210.860.9224

STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED
PROFESSIONAL ENGINEER

I CERTIFY THAT THESE ENGINEERING DOCUMENTS ARE COMPLETE, ACCURATE AND ADEQUATE FOR THE INTENDED PURPOSES, INCLUDING CONSTRUCTION, BUT ARE NOT AUTHORIZED FOR CONSTRUCTION PRIOR TO FORMAL CITY APPROVAL.

FLOODPLAIN INFORMATION:
PROPERTY LIES IN UNSHADED ZONE "X", AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR HAYS COUNTY, TEXAS AND UNINCORPORATED AREAS, MAP NO. 48209C0391F, MAP DATED SEPTEMBER 02, 2005.

WATERSHED:
THIS PROPERTY IS LOCATED WITHIN THE SINK CREEK WATERSHED. THE PROPERTY IS LOCATED WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE WITHIN THE TRANSITION ZONE.

BENCHMARK:
C.P. #1: SET $\frac{5}{8}$" I.ROD W/CAP "S.G. CTRL.", NORTH SIDE OF COWAN LANE, ± 19' NORTHEAST OF EDGE OF COWAN LANE, ± 8.5' NORTHWEST OF EXISTING GRAVEL ROAD. ELEVATION = 739.05'.

C.P. #2: SMAG IN ROCK, NORTH SIDE OF COWAN LANE, ± 415' NORTHEAST OF EDGE OF COWAN LANE, ± 127' NORTHEAST OF EXISTING WOODEN DECK, ELEVATION = 737.04'.

SURVEY BASIS:
BEARING ORIENTATION IS BASED UPON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE 4204, NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT, EPOCH 2010.00. DISTANCES SHOWN HEREON ARE IN SURFACE. TO CONVERT DISTANCES TO GRID MULTIPLY BY THE COMBINED SCALE FACTOR OF 0.9998840838.

VERTICAL DATUM IS BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND ELEVATIONS WERE ESTABLISHED USING THE ALLTERRA RTK NETWORK, GEOID 18.

UTILITY PROVIDERS:
ELECTRIC - PEDERNALES ELECTRIC COOPERATIVE
1810 FM 150 WEST
KYLE, TEXAS 78640
(512) 262-2161

LAND USE SUMMARY:
HAYS COUNTY
PROPOSED SITE USE: EVENT CENTER
DEVELOPMENT AREA: 3.85 ACRES (167,706 S.F.)

NOTES:
1. RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY, AND ADEQUACY OF THEIR SUBMITTAL, WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY THE CITY ENGINEERS.
2. BY THE ACT OF SUBMITTING A BID FOR THE PROPOSED CONTRACT, THE BIDDER WARRANTS THAT THE BIDDER, AND ALL SUBCONTRACTORS AND MATERIAL SUPPLIER THEY INTEND TO USE, HAVE CAREFULLY AND THOROUGHLY REVIEWED THE DRAWINGS AND SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS AND HAVE FOUND THEM COMPLETE AND FREE FROM ANY AMBIGUITIES AND SUFFICIENT FOR THE PURPOSE INTENDED, THE BIDDER FURTHER WARRANTS THAT TO THE BEST OF THEIR SUBCONTRACTORS AND MATERIAL SUPPLIERS KNOWLEDGE, ALL MATERIALS AND PRODUCTS SPECIFIED OR INDICATED HEREIN ARE ACCEPTABLE FOR ALL APPLICABLE CODES AND AUTHORITIES.
3. ONLY VISIBLE IMPROVEMENTS & UTILITIES WERE PROVIDED FROM THE SURVEY (THE SURVEYOR/ENGINEER HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES). LOCATIONS OF EXISTING UTILITIES, SOME OF WHICH MAY NOT BE SHOWN, COULD IMPACT CONSTRUCTION MEANS AND METHODS. CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO BID & CONSTRUCTION, AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES. THE CONTRACTOR SHALL CONTACT THE AUSTIN AREA "ONE CALL" SYSTEM @ 811, OR THE OWNER OF EACH INDIVIDUAL UTILITY, FOR ASSISTANCE IN DETERMINING EXISTING UTILITY LOCATIONS PRIOR TO BEGINNING CONSTRUCTION.
4. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION. (OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 611 EAST 6TH STREET, AUSTIN, TEXAS).
5. CONTRACTOR SHALL RESTORE ALL SIGNS AND PAVEMENT MARKINGS TO EXISTING CONDITIONS FOLLOWING THE COMPLETION OF EACH PHASE OF CONSTRUCTION. CONTRACTOR SHALL REFER TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) FOR SIGN AND MARKING DIMENSIONS AND COLORS.
6. THE SIZE AND LOCATION OF UTILITY STRUCTURES (IF SHOWN) MAY BE EXAGGERATED FOR GRAPHICAL CLARITY.
7. THE OWNER/CONTRACTOR MUST COORDINATE WITH UTILITY COMPANIES PRIOR TO CONSTRUCTION.

| REVISION / CORRECTIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | DESCRIPTION | SHEET NO. | SHEETS IN PLAN SET | NET CHANGE IMP. COVER (SQ.FT) | TOTAL SITE IMP. COVER (SQ.FT)/% | APPROVAL DATE | DATE IMAGED |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |


SAVED: 10/21/2025 10:11 AM
PLOTTED: 10/21/2025 10:11 AM
PLOTTED BY: DAVID QUIÑONES
PATHNAME & FILENAME: N:\Projects\Promise land san marcos\CIVIL\10-CAD\30-Sheets\24.09-CSD-Cover_Sheet.dwg



WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
FIRM NO. F-15985
512.669.5560


| No. | DATE | REVISION | BY |
|---|---|---|---|

INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

COVER SHEET

SHEET
C001
01 OF 23
---

## GENERAL CONSTRUCTION NOTES

1. STANDARDS AND SPECIFICATIONS: ALL MATERIALS, CONSTRUCTION METHODS, WORKMANSHIP, EQUIPMENT, SERVICES AND TESTING FOR ALL PUBLIC IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE GOVERNING AUTHORITIES' ORDINANCES, REGULATIONS, REQUIREMENTS, STATUTES, SPECIFICATIONS AND DETAILS, LATEST PRINTING AND AMENDMENTS THERETO THE GOVERNING AUTHORITIES' PUBLIC WORKS AND WATER DEPARTMENT REQUIREMENTS, PLUMBING CODES, AND FIRE DEPARTMENT REGULATIONS SHALL TAKE PRECEDENT FOR ALL PRIVATE IMPROVEMENTS WHERE APPLICABLE, ALL OTHER PRIVATE CONSTRUCTION NOT REGULATED BY THE GOVERNING AUTHORITY SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CAPITAL AREA COUNCIL OF GOVERNMENTS LATEST PRINTING AND AMENDMENTS THERETO, EXCEPT AS MODIFIED BY THE PROJECT CONTRACT DOCUMENTS.
2. EXAMINATION OF PLANS: PRIOR TO COMMENCING ANY CONSTRUCTION, THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS. FAILURE ON THE PART OF THE CONTRACTOR TO FAMILIARIZE THEMSELVES WITH ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE WORK SHALL IN NO WAY RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PERFORMING THE WORK IN ACCORDANCE WITH ALL SUCH APPLICABLE STANDARDS AND SPECIFICATIONS.
3. EXAMINATION OF SITE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR INVESTIGATING AND SATISFYING THEMSELVES AS TO THE CONDITIONS AFFECTING THE WORK, INCLUDING BUT NOT RESTRICTED TO THOSE BEARING UPON TRANSPORTATION, DISPOSAL, HANDLING AND STORAGE OF MATERIALS, AVAILABILITY OF LABOR, WATER, ELECTRICAL POWER, ROADS AND UNCERTAINTIES OF WEATHER, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE. CONDITIONS OF THE GROUND, THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING THE PERFORMANCE OF THE WORK. FAILURE BY THE CONTRACTOR TO ACQUAINT THEMSELVES WITH THE AVAILABLE INFORMATION WILL NOT RELIEVE THEM FROM RESPONSIBILITY FOR ESTIMATING THE DIFFICULTY OR COST OF SUCCESSFULLY PERFORMING THE WORK.
4. SUBSURFACE INVESTIGATION: SUBSURFACE EXPLORATION TO ASCERTAIN THE NATURE OF SOILS HAS BEEN PERFORMED BY THE GEOTECHNICAL ENGINEER OF RECORD ON THE PROJECT. THE SUBSURFACE INFORMATION WILL BE MADE AVAILABLE FOR THE CONTRACTOR'S USE. THE ENGINEER DISCLAIMS ANY RESPONSIBILITY FOR THE ACCURACY, TRUE LOCATION AND EXTENT OF THE SOILS INFORMATION PREPARED BY OTHERS.
5. TOPOGRAPHIC SURVEY: TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THE PLANS IS PROVIDED FOR INFORMATIONAL PURPOSES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE INFORMATION SHOWN IS CORRECT, AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY ERRORS, DISCREPANCIES OR OMISSIONS TO THE SURVEY INFORMATION PROVIDED.
6. COMPLIANCE WITH LAWS: THE CONTRACTOR SHALL FULLY COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS, INCLUDING ALL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS CONTRACT AND THE WORK TO BE DONE THEREUNDER, WHICH MUST OR MAY BE ENACTED LATER BY GOVERNMENTAL BODIES HAVING JURISDICTION OR AUTHORITY FOR SUCH ENACTMENT. ALL WORK REQUIRED UNDER THIS CONTRACT SHALL COMPLY WITH ALL REQUIREMENTS OF LAW, REGULATION, PERMIT OR LICENSE. IF THE CONTRACTOR FINDS THAT THERE IS A VARIANCE, THEY SHALL IMMEDIATELY REPORT THIS TO THE OWNER FOR RESOLUTION.
7. PUBLIC CONVENIENCE AND SAFETY: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO THE NORMAL WORKING HOURS. MATERIALS STORED ON THE WORK SITE SHALL BE PLACED AND THE WORK SHALL AT ALL TIMES BE SO CONDUCTED, AS TO CAUSE NO GREATER OBSTRUCTION TO THE TRAVELING PUBLIC THAN IS CONSIDERED ACCEPTABLE BY THE GOVERNING AUTHORITIES AND THE OWNER AND NOT TO PREVENT FREE UNINTERRUPTED ACCESS TO ALL FIRE HYDRANTS, WATER VALVES, GAS VALVES, MANHOLES AND FIRE ALARM OR POLICE CALL BOXES IN THE VICINITY.
8. STORM WATER POLLUTION PREVENTION PLAN (SWPPP): THE CONTRACTOR SHALL COMPLY WITH THE CONDITIONS OF THE SWPPP WHILE CONDUCTING THEIR ACTIVITIES ON THE PROJECT.
9. PERMITS AND LICENSES: THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND LICENSES NECESSARY FOR THE EXECUTION OF THE WORK AND SHALL FULLY COMPLY WITH ALL THEIR TERMS AND CONDITIONS. WHENEVER THE WORK UNDER THIS CONTRACT REQUIRES THE OBTAINING OF PERMITS FROM THE GOVERNING AUTHORITIES, THE CONTRACTOR SHALL FURNISH DUPLICATE COPIES OF SUCH PERMITS TO THE OWNER BEFORE THE WORK COVERED THEREBY IS STARTED. NO WORK WILL BE ALLOWED TO PROCEED BEFORE SUCH PERMITS HAVE BEEN OBTAINED.
10. APPROVED PLANS: THE CONTRACTOR SHALL HAVE AT LEAST ONE SET OF APPROVED PLANS ON-SITE AT ALL TIMES.
11. BONDS: PERFORMANCE, PAYMENT AND MAINTENANCE BONDS MAY BE REQUIRED FROM THE CONTRACTOR FOR "PUBLIC" IMPROVEMENTS. IF REQUIRED, THE CONTRACTOR SHALL PROVIDE THE BONDS IN THE FORM AND IN THE AMOUNTS AS REQUIRED BY THE GOVERNING AUTHORITIES. COSTS ASSOCIATED WITH PROVIDING THE BONDS SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
12. TESTING: THE TESTING AND CONTROL OF ALL MATERIALS USED IN THE WORK SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY EMPLOYED AND PAID DIRECTLY BY THE OWNER, IN THE EVENT THE RESULTS OF INITIAL TESTING DO NOT COMPLY WITH THE PLANS AND SPECIFICATIONS, SUBSEQUENT TESTS NECESSARY TO DETERMINE THE ACCEPTABILITY OF MATERIALS OR CONSTRUCTION SHALL BE AT THE CONTRACTOR'S EXPENSE.
13. INSPECTION: THE GOVERNING AUTHORITIES AND/OR THE OWNER WILL PROVIDE INSPECTION OF THE PROPOSED CONSTRUCTION. THE OWNER WILL PAY THE COSTS FOR INSPECTION SERVICES. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE WELL IN ADVANCE OF PENDING CONSTRUCTION ACTIVITIES TO THE GOVERNING AUTHORITIES AND/OR OWNER FOR SCHEDULING OF INSPECTION SERVICES.
14. SHOP DRAWINGS: THE CONTRACTOR SHALL HAVE PREPARED, REVIEW, AND SUBMIT ALL SHOP DRAWINGS, PRODUCT DATA AND SAMPLES REQUIRED BY THE GOVERNING AUTHORITIES AND THE PROJECT CONTRACT DOCUMENTS.
15. SURVEYING: ALL SURVEYING REQUIRED FOR CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE OWNER SHALL PROVIDE THE PROPERTY CORNERS AND TWO BENCHMARKS FOR USE AS HORIZONTAL AND VERTICAL DATUM. THE CONTRACTOR SHALL EMPLOY A REGISTERED PROFESSIONAL LAND SURVEYOR TO PERFORM ALL ADDITIONAL SURVEY, LAYOUT AND MEASUREMENT WORK NECESSARY FOR THE COMPLETION OF THE PROJECT. THE COSTS ASSOCIATED WITH THE CONSTRUCTION STAKING SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
16. PROTECTION OF PROPERTY CORNERS AND BENCHMARKS: THE CONTRACTOR SHALL PROTECT ALL PROPERTY CORNER MARKERS AND BENCHMARKS. WHEN ANY SUCH MARKERS OR MONUMENTS ARE IN DANGER OF BEING DISTURBED, THEY SHALL BE PROPERLY REFERENCED AND IF DISTURBED SHALL BE RESET BY A REGISTERED PUBLIC SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
17. EXISTING STRUCTURES: THE PLANS SHOW THE LOCATION OF ALL KNOWN SURFACE AND SUBSURFACE STRUCTURES, HOWEVER, THE DEVELOPER AND ENGINEER ASSUME NO RESPONSIBILITY FOR FAILURE TO SHOW ANY OR ALL OF THESE STRUCTURES ON THE PLANS, OR TO SHOW THEM IN THEIR EXACT LOCATION. SUCH FAILURE SHALL NOT BE CONSIDERED SUFFICIENT BASIS FOR CLAIMS FOR ADDITIONAL COMPENSATION FOR EXTRA WORK OR FOR INCREASING THE FLOW QUANTITIES IN ANY MANNER WHATSOEVER, UNLESS THE OBSTRUCTION ENCOUNTERED IS SUCH AS TO REQUIRE CHANGES IN THE LINES OR GRADES, OR REQUIRE THE CONSTRUCTION OF SPECIAL WORK, FOR WHICH PROVISIONS ARE NOT MADE IN THE PLANS.
18. PROTECTION OF EXISTING UTILITIES: AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT", TEXAS ONE CALL SYSTEM MUST BE CONTACTED (800-245-4545) AT LEAST 48 HOURS PRIOR TO EXCAVATION OPERATIONS BEING PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS ONE CALL SYSTEM. THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS ARE BASED ON THE BEST RECORDS AND/OR FIELD INFORMATION AVAILABLE AND ARE NOT GUARANTEED BY THE OWNER OR ENGINEER TO BE ACCURATE AS TO THE LOCATION AND DEPTH. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF ADJACENT AND/OR CONFLICTING UTILITIES SUFFICIENTLY IN ADVANCE OF THEIR ACTIVITIES IN ORDER THAT THEY MAY NEGOTIATE SUCH LOCAL ADJUSTMENTS AS NECESSARY IN THE CONSTRUCTION PROCESS TO PROVIDE ADEQUATE CLEARANCES. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL EXISTING UTILITIES, SERVICES, AND STRUCTURES ENCOUNTERED, WHETHER OR NOT THEY ARE ON THE PLANS. ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED AT HIS EXPENSE. TO AVOID UNNECESSARY INTERFERENCES OR DELAYS, THE CONTRACTOR SHALL COORDINATE ALL UTILITY REMOVALS, REPLACEMENTS AND CONSTRUCTION WITH THE APPROPRIATE GOVERNING AUTHORITIES. THE OWNER WILL NOT BE LIABLE FOR DAMAGES DUE TO DELAY BECAUSE OF THE ABOVE.
19. DAMAGE TO EXISTING FACILITIES: ALL EXISTING UTILITIES, PAVEMENT, SIDEWALKS, WALLS, FENCES, ETC. DAMAGED DURING CONSTRUCTION ACTIVITIES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE TO A CONDITION AS GOOD OR BETTER THAN THE CONDITIONS PRIOR TO STARTING THE WORK.
20. FIRE AND SAFETY SYSTEMS: THE CONTRACTOR SHALL NOT REMOVE, DISABLE, OR DISRUPT EXISTING FIRE OR LIFE SAFETY SYSTEMS WITHOUT RECEIVING PRIOR WRITTEN PERMISSION FROM THE GOVERNING AUTHORITY.
21. TRENCH SAFETY: THE CONTRACTOR IS RESPONSIBLE FOR HAVING A TRENCH SAFETY PLAN PREPARED IN ACCORDANCE WITH OSHA REQUIREMENTS BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS FOR THE IMPLEMENTATION OF TRENCH SAFETY CONTROL MEASURES THAT WILL BE IN EFFECT DURING THE CONSTRUCTION OF THE PROJECT. THE COSTS FOR PREPARATION OF THE TRENCH SAFETY PLAN SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
22. TRAFFIC CONTROL: IF REQUIRED, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DEVELOP AND SUBMIT FOR APPROVAL BY THE GOVERNING AUTHORITIES A TRAFFIC CONTROL PLAN, PREPARED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS, OUTLINING TRAFFIC MANAGEMENT PROCEDURES TO BE PROVIDED DURING CONSTRUCTION. THE COSTS ASSOCIATED WITH THE PREPARATION AND IMPLEMENTATION OF THE TRAFFIC CONTROL PLAN SHALL BE INCLUDED IN THE CONTRACT AMOUNT. TRAFFIC CONTROL MEASURES SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING ADDITIONAL REQUIREMENTS:
    a. CONSTRUCTION OF SIGNING AND BARRICADES SHALL CONFORM WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
    b. THE CONTRACTOR SHALL BE REQUIRED TO FURNISH BARRICADES, FLARES, FLAGMEN, ETC., FOR THE PROTECTION OF THE PUBLIC, EMPLOYEES AND THE WORK.
    c. THE CONTRACTOR SHALL PERFORM THEIR WORK IN SUCH A MANNER AS TO CREATE A MINIMUM OF INTERRUPTION TO TRAFFIC ALONG ADJACENT ROADWAYS. THE CONTRACTOR SHALL MAINTAIN TWO WAY TRAFFIC ON ALL ROADWAYS AT ALL TIMES THROUGHOUT CONSTRUCTION UNLESS THE GOVERNING AUTHORITIES GRANT WRITTEN PERMISSION.
    d. ALL SIGNAGE, MARKINGS, LIGHTING, BARRICADES, FLAGMEN AND OTHER DEVICES AND PERSONNEL REQUIRED FOR TRAFFIC CONTROL DURING CONSTRUCTION OF THE PROJECT WILL BE INCLUDED IN THE CONTRACT AMOUNT.
    e. ALL TRAFFIC CONTROL DEVICES USED DURING NIGHTTIME SHALL BE REFLECTORIZED, ILLUMINATED FROM WITHIN OR EXTERNALLY ILLUMINATED.
    f. THE CONTRACTOR SHALL NOT REMOVE ANY REGULATORY SIGN, INSTRUCTIONAL SIGN, WARNING SIGN, STREET NAME SIGN OR ANY SIGNAL, WHICH CURRENTLY EXISTS WITHOUT THE CONSENT OF THE GOVERNING AUTHORITIES.
    g. THE CONTRACTOR SHALL MAINTAIN AND REPLACE WHERE NECESSARY AT THE END OF CONSTRUCTION AND RESTORE UNIMPROVED PAVEMENT AND OTHER DISTURBED AREAS TO THEIR ORIGINAL PLACE.
    h. THE CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL MEASURES AT THE END OF CONSTRUCTION AND RESTORE UNIMPROVED PAVEMENT AND OTHER DISTURBED AREAS TO THEIR ORIGINAL LOCATION.
23. ACCESS TO ADJACENT PROPERTIES: ACCESS TO ADJACENT PROPERTIES SHALL BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE DIRECTED BY THE GOVERNING AUTHORITIES AND/OR OWNER.
24. ACCESS ROUTES, STAGING AREAS AND STORAGE AREAS: ALL PRIVATE HAUL ROADS AND ACCESS ROUTES AND THE LOCATION OF ALL STAGING AREAS AND STORAGE AREAS SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND REPAIRING ALL ROADS AND OTHER FACILITIES USED DURING CONSTRUCTION, UPON COMPLETION OF THE PROJECT, ALL HAUL ROADS, ACCESS ROADS, STAGING AREAS AND STORAGE AREAS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT AT THE TIME THE CONTRACTOR COMMENCES WORK ON THE PROJECT.
25. PARKING OF CONSTRUCTION EQUIPMENT: AT NIGHT AND DURING ALL OTHER PERIODS OF TIME WHEN EQUIPMENT IS NOT BEING ACTIVELY USED FOR THE CONSTRUCTION WORK, THE CONTRACTOR SHALL PARK THE EQUIPMENT AT LOCATIONS WHICH ARE APPROVED BY THE OWNER. DURING THE CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL COMPLY WITH THE PRESENT ZONING REQUIREMENTS OF THE GOVERNING AUTHORITIES IN THE USE OF VACANT PROPERTY FOR STORAGE PURPOSES. THE CONTRACTOR SHALL ALSO PROVIDE ADEQUATE BARRICADES, MARKERS AND LIGHTS TO PROTECT THE OWNER, THE GOVERNING AUTHORITIES, THE PUBLIC AND THE OTHER WORK. ALL BARRICADES, LIGHTS AND MARKERS MUST MEET THE REQUIREMENTS OF THE GOVERNING AUTHORITIES' REGULATIONS.
26. WATER FOR CONSTRUCTION: THE CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR PURCHASING WATER FROM THE GOVERNING AUTHORITY FOR THEIR USE ON THE PROJECT SITE. COSTS ASSOCIATED WITH THIS SERVICE SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
27. TEMPORARY ELECTRIC AND COMMUNICATIONS FOR CONSTRUCTION: THE CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR INSTALLATION AND PURCHASING OF TEMPORARY ELECTRIC AND COMMUNICATIONS SERVICES FROM THE GOVERNING AUTHORITY FOR THEIR USE ON THE PROJECT SITE. COSTS ASSOCIATED WITH PURCHASING THESE SERVICES SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
28. FENCES: ALL FENCES ENCOUNTERED AND REMOVED DURING CONSTRUCTION, EXCEPT THOSE DESIGNATED TO BE REMOVED OR RELOCATED, SHALL BE RESTORED TO THE ORIGINAL OR BETTER THAN CONDITION UPON COMPLETION OF THE PROJECT. WHERE WIRE FENCING, EITHER WIRE MESH OR BARBED WIRE, IS NOT TO BE CROSSED, THE CONTRACTOR SHALL SET CROSS-BRACED POSTS ON EITHER SIDE OF THE CROSSING. TEMPORARY FENCING SHALL BE ERECTED IN PLACE OF THE FENCING REMOVED WHENEVER THE WORK IS NOT IN PROGRESS AND WHEN THE SITE IS VACATED OVERNIGHT AND/OR AT ALL TIMES TO PREVENT PERSONS AND/OR LIVESTOCK FROM ENTERING THE CONSTRUCTION AREA. THE COST OF FENCE REMOVAL, TEMPORARY CLOSURES AND REPLACEMENT SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
29. COORDINATION WITH OTHERS: IN THE EVENT THAT OTHER CONTRACTORS ARE DOING WORK IN THE SAME AREA SIMULTANEOUSLY WITH THE PROJECT, THE CONTRACTOR SHALL COORDINATE THEIR PROPOSED CONSTRUCTION WITH THAT OF THE OTHER CONTRACTORS.
30. CONDITION OF SITE DURING CONSTRUCTION: THE CONTRACTOR SHALL KEEP THE SITE OF THE WORK AND ADJACENT PREMISES AS FREE FROM MATERIAL, DEBRIS AND RUBBISH AS IS PRACTICABLE. THE CONTRACTOR SHALL REMOVE MATERIAL, DEBRIS AND RUBBISH FROM ANY PORTION OF THE SITE IF, IN THE OPINION OF THE OWNER, SUCH MATERIAL, DEBRIS OR RUBBISH CONSTITUTES A NUISANCE OR IS OBJECTIONABLE.
31. EXISTING ROADWAYS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE CLEANLINESS OF EXISTING PAVED ROADS. COSTS ASSOCIATED WITH MAINTAINING THE CLEANLINESS OF EXISTING ROADS SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
32. DUST CONTROL: THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO CONTROL DUST ON THE PROJECT SITE BY SPRINKLING OF WATER, OR ANY OTHER METHODS APPROVED BY THE GOVERNING AUTHORITIES. COSTS ASSOCIATED WITH DUST CONTROL SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
33. CLEAN UP FOR FINAL ACCEPTANCE: THE CONTRACTOR SHALL MAKE A FINAL CLEAN UP OF ALL PARTS OF THE WORK PRIOR TO ACCEPTANCE BY THE OWNER. THIS CLEAN UP SHALL INCLUDE REMOVAL OF ALL OBJECTIONABLE MATERIALS AND, IN GENERAL, PREPARING THE SITE OF THE WORK IN AN ORDERLY MANNER OF APPEARANCE.
34. REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK: ALL WORK, WHICH HAS BEEN REJECTED OR CONDEMNED, SHALL BE REPAIRED, OR IF IT CANNOT BE REPAIRED SATISFACTORILY, IT SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. DEFECTIVE MATERIALS SHALL BE IMMEDIATELY REMOVED FROM THE WORK SITE. WORK DONE BEYOND THE LINE OR NOT IN CONFORMITY WITH THE GRADES SHOWN ON THE DRAWINGS OR AS PROVIDED, WORK DONE WITHOUT REQUIRED INSPECTION, OR ANY EXTRA OR UNCLASSIFIED WORK DONE WITHOUT WRITTEN AUTHORITY AND PRIOR AGREEMENT IN WRITING AS TO PRICES, SHALL BE AT THE CONTRACTOR'S RISK, AND WILL BE CONSIDERED UNAUTHORIZED, AND AT THE OPTION OF THE OWNER MAY NOT BE MEASURED AND PAID FOR AND MAY BE ORDERED REMOVED AT THE CONTRACTOR'S EXPENSE. UPON FAILURE OF THE CONTRACTOR TO REPAIR SATISFACTORY OR TO REMOVE AND REPLACE, IF SO DIRECTED, REJECTED, UNAUTHORIZED OR CONDEMNED WORK OR MATERIALS IMMEDIATELY AFTER RECEIVING NOTICE FROM THE OWNER, THE OWNER WILL, AFTER GIVING WRITTEN NOTICE TO THE CONTRACTOR, HAVE THE AUTHORITY TO CAUSE DEFECTIVE WORK TO BE REMEDIED OR REMOVED AND REPLACED, OR TO CAUSE UNAUTHORIZED WORK TO BE REMOVED AND TO DEDUCT THE COST THEREOF ANY MONIES DUE OR TO BECOME DUE THE CONTRACTOR.
35. DISPOSITION AND DISPOSAL OF EXCESS AND UNSUITABLE MATERIALS: ALL MATERIALS TO BE REMOVED FROM THE SITE INCLUDING BUT NOT LIMITED TO EXCESS MATERIAL AND UNSUITABLE MATERIALS SUCH AS CONCRETE, ASPHALT, LARGE ROCKS, REFUSE, AND OTHER DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE PROJECT. CONTRACTOR SHALL ALSO COMPLY WITH ALL APPLICABLE LAWS GOVERNING SPILLAGE OF DEBRIS WHILE TRANSPORTING TO A DISPOSAL SITE. COSTS ASSOCIATED WITH THE DISPOSAL OF EXCESS AND UNSUITABLE MATERIALS SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
36. RECORD DRAWINGS: THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF THE INSTALLATION OF ALL MATERIALS AND SYSTEMS COVERED BY THE PROJECT CONTRACT DOCUMENTS. THE COMPLETED SET OF "RECORD" DRAWINGS MUST BE DELIVERED TO THE OWNER AND/OR ENGINEER BEFORE REQUESTING FINAL PAYMENT.

## DIMENSION CONTROL NOTES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND VERIFY THE BOUNDARY MONUMENTATION AND THE PROJECT BENCHMARKS PRIOR TO COMMENCING CONSTRUCTION. THE BOUNDARY MONUMENTATION SHALL BE USED AS HORIZONTAL PROJECT CONTROL AND SHALL BE PROTECTED BY THE CONTRACTOR DURING ALL PHASES OF CONSTRUCTION.
2. ALL DIMENSIONS AND COORDINATES ARE TO FACE OF CURB, EDGE OF PAVEMENT, FACE OF BUILDING, OR PROPERTY LINE UNLESS NOTED OTHERWISE. ALL CURB RADII SHALL BE 3.0' MINIMUM UNLESS NOTED OTHERWISE.
3. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR ACTUAL BUILDING DIMENSIONS AND FOR DETAILED DIMENSIONING OF ENTRANCE FEATURES.
3. CONTRACTOR SHALL REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR EXACT LOCATION AND DIMENSIONS OF EXIT PORCHES, TRUCK DOCKS, ENTRANCE LOCATIONS, DOWNSPOUTS AND FOUNDATION DIMENSIONS.

## DEMOLITION NOTES

1. ALL WORK SHALL CONFORM TO THE CITY STANDARDS AND SPECIFICATIONS.
2. PRIOR TO COMMENCING DEMOLITION, THE CONTRACTOR SHALL HAVE IN HIS POSSESSION ALL NECESSARY PERMITS AND LICENSES TO PERFORM THE WORK.
3. THE CONTRACTOR SHALL HAVE ONE (1) SET OF APPROVED CONSTRUCTION DOCUMENTS ON THE SITE AT ALL TIMES.
4. ALL DEMOLITION AND EXCAVATED MATERIALS SHALL BE PROPERLY DISPOSED OFF SITE IN ACCORDANCE WITH LOCAL STATE AND FEDERAL REGULATIONS.
5. TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH CITY REGULATIONS FOR ACCESS TO AND FROM THE SITE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATING ALL EXISTING UTILITIES PRIOR TO COMMENCING DEMOLITION WORK.
7. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO COMMENCING DEMOLITION OPERATIONS. REFER TO THE EROSION CONTROL PLAN FOR THE SEQUENCE OF EROSION CONTROL DEVICES TO BE INSTALLED.

## PAVING NOTES

1. STANDARDS AND SPECIFICATIONS: ALL MATERIALS, CONSTRUCTION METHODS, WORKMANSHIP, EQUIPMENT, SERVICES AND TESTING FOR ALL IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE PROJECT DOCUMENTS AND THE GOVERNING AUTHORITIES' REQUIREMENTS. IN THE EVENT OF A CONFLICT BETWEEN THE PROJECT DOCUMENTS AND THE GOVERNING AUTHORITIES' REQUIREMENTS, THE MORE STRINGENT SHALL APPLY.
2. GEOTECHNICAL REPORT: SUBGRADE PREPARATION AND PAVEMENT STRENGTH AND THICKNESS SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT BY ECS SOUTHWEST, LLP. AND SUPPLEMENTS AND/OR AMENDMENTS THERETO.
3. PAVEMENT WARRANTY: THE CONTRACTOR SHALL PROVIDE A TWO (2) YEAR UNCONDITIONAL MAINTENANCE FREE WARRANTY ON ALL PAVEMENT SURFACES.
4. PROOF-ROLL SUBGRADE: PRIOR TO PREPARATION OF THE SUBGRADE, THE SUBGRADE SHALL BE PROOF-ROLLED WITH HEAVY PNEUMATIC EQUIPMENT. ANY SOFT OR PUMPING AREAS SHALL BE EXCAVATED TO FIRM SUBGRADE AND BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
5. PAVEMENT SUBGRADE PREPARATION: PAVEMENT SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
6. SAND CUSHION PROHIBITED: THE USE OF 'LEVEL UP' SAND UNDER PAVEMENT WILL NOT BE ACCEPTED.
7. CONCRETE PAVEMENT DESIGN: ALL ON SITE CONCRETE PAVEMENTS SHALL BE THE THICKNESS, COMPRESSIVE STRENGTH (28 DAYS) AND REINFORCED AS SHOWN ON THE PAVING PLANS AND DETAILS, HAND PLACED CONCRETE SHALL HAVE A WATER-CEMENT RATIO TO PRODUCE A MINIMUM OF 3 TO MAXIMUM OF 6 INCH SLUMP AND CONTAIN PERCENT-ENTRAINED AIR RANGING FROM 3 TO 6.
8. REINFORCING BARS: ALL REINFORCING BARS SHALL BE GRADE 60 KSI DEFORMED BILLET STEEL BARS, UNCOATED FINISH, SIZE AND SPACING SHALL BE IN ACCORDANCE WITH THE PAVING PLAN AND DETAILS.
9. BAR CHAIRS: ALL REINFORCING STEEL AND DOWEL BARS IN PAVEMENT SHALL BE SUPPORTED AND MAINTAINED AT THE CORRECT CLEARANCES BY THE USE OF BAR CHAIRS.
10. WEATHER CONDITIONS FOR CONCRETE PLACEMENT: CONCRETE SHALL NOT BE PLACED WHEN THE TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT AND FALLING, BUT MAY BE PLACED WHEN THE TEMPERATURE IS ABOVE 36 DEGREES AND RISING. THE TEMPERATURE READING SHALL BE TAKEN IN THE SHADE AWAY FROM ARTIFICIAL HEAT. DO NOT PLACE CONCRETE WHILE IT IS RAINING OR RAIN IS IMMINENT.
11. CONCRETE PAVEMENT CURING: CONCRETE SHALL BE BROOM FINISHED AND CURED FOR A MINIMUM OF 72 HOURS.
12. PAVEMENT JOINTING:
    a. JOINT LAYOUT: CONTRACTOR SHALL PREPARE A JOINT LAYOUT AND PROVIDE IT TO THE ENGINEER FOR REVIEW. THE JOINT LAYOUT SHALL BE PROVIDED A MINIMUM OF ONE (1) WEEK PRIOR TO PLACING THE PAVEMENT. JOINTS SHALL BE SPACED AS FOLLOWS:

    CONTRACTION JOINT SPACING: 12' ON CENTER SPACED, 14" LONG, 3/4" DIAMETER DOWELS SHALL HAVE A MAXIMUM JOINT SPACING OF LESS THAN 30 TIMES THE THICKNESS OF THE CONCRETE PAVEMENT OR 15 FEET, WHICHEVER IS SMALLER (PER THE GEOTECH REPORT).

    b. SAW CUTTING: SAW CUTTING SHALL BE DONE WITHIN 8 HOURS OF POUR OR AS SOON AS CONCRETE CAN SUPPORT WEIGHT. ALL SAWED JOINTS ARE TO BE TRUE IN ALIGNMENT AND SHALL CONTINUE THROUGH THE CURB. RADIAL JOINTS SHALL BE NO SHORTER THAN 18 INCHES.
    c. JOINT SEALING: ALL CONSTRUCTION JOINTS SHALL BE SAWN, CLEANED OF DEBRIS, DIRT, DUST, SCALE, CURING COMPOUND AND CONCRETE, BLOWN BY AND IMMEDIATELY SEALED. SEALANT MATERIAL SHALL BE SONNEBORN SONOLASTIC SL2 MULTI-CIMPONENT, SELF-LEVELING, ELASTOMERIC POLYURETHANE OR EQUIVALENT. SEALANT COLOR SHALL MATCH PAVEMENT. THE CONTRACTOR SHALL SUBMIT SEALANT SPECIFICATIONS/COLOR TO THE ENGINEER FOR REVIEW PRIOR TO PLACEMENT.
13. PAVEMENT REMOVAL: BREAKOUTS FOR REMOVAL OF EXISTING PAVEMENT AND CURBS SHALL BE MADE BY FULL DEPTH SAW CUT WHEN ADJACENT TO PROPOSED PAVEMENT AND/OR CURBS.
14. CONNECTION TO EXISTING PAVEMENT: PROPOSED PAVEMENT AND/OR CURBS SHALL MATCH THE ELEVATION OF EXISTING PAVEMENT AND/OR CURBS.
15. PAVEMENT MARKINGS:
    a. PAVEMENT MARKINGS SHALL BE PROVIDED IN ACCORDANCE WITH THE TEXAS "UNIFORM TRAFFIC MANUAL FOR PAVEMENT MARKINGS."
    b. FIRE LANES SHALL BE STRIPED IN ACCORDANCE WITH THE GOVERNING AUTHORITIES' LOCAL CODES.
    c. ALL ACCESSIBLE PAVEMENT MARKINGS SHALL COMPLY WITH ADAAG STANDARDS AND STATE AND LOCAL CODES.
    d. PARKING SPACE STRIPES, ACCESSIBLE SPACES, PEDESTRIAN STRIPING, DIRECTIONAL ARROWS AND LETTERING SHALL BE SOLID WHITE, UNLESS A SPECIFIC COLOR IS REQUIRED BY LOCAL CODE. TWO (2) COATS OF VOC COMPLIANT, LOCAL DOT APPROVED, UNDILUTED, SOLVENT BASED OR LATEX TRAFFIC PAINT SHALL BE APPLIED EARLIER THAN 7 DAYS PRIOR TO THE STORE OPENING. PAINT SHALL BE CRISP, STRAIGHT AND APPLIED UNIFORMLY ACROSS THE WIDTH OF THE LINE FOR A MINIMUM TOTAL DRY FILM THICKNESS OF 15 MILS.
16. CONDUIT: CONTRACTOR SHALL REFER TO THE SITE MEP PLAN AND LANDSCAPE IRRIGATION


## FLOODPLAIN INFORMATION:

PROPERTY LIES IN UNSHADED ZONE "X", AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR HAYS COUNTY, TEXAS AND UNINCORPORATED AREAS, MAP NO. 48209C0391F, MAP DATED SEPTEMBER 02, 2005.

## WATERSHED:

THIS PROPERTY IS LOCATED WITHIN THE SINK CREEK WATERSHED. THE PROPERTY IS LOCATED WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE WITHIN THE TRANSITION ZONE.

## BENCHMARK:

C.P. #1: SET 5" L ROD W/CAP "S.G. CTRL.", NORTH SIDE OF COWAN LANE, ± 19' NORTHEAST OF EDGE OF COWAN LANE, ± 8.5' NORTHWEST OF EXISTING GRAVEL ROAD. ELEVATION = 739.05'.

C.P. #2: SMAG IN ROCK, NORTH SIDE OF COWAN LANE, ± 415' NORTHEAST OF EDGE OF COWAN LANE, ± 127' NORTHEAST OF EXISTING WOODEN DECK, ELEVATION = 737.04'.

## LEGAL DESCRIPTION:

PROMISELAND SAN MARCOS, BLOCK A, LOT 1, ACRES 19.7197 (EXEMPT 01/01/12)

## NOTES:

1. EXISTING CONDITIONS SURVEY PREPARED BY SUMMIT GEOMATICS, INC. SURVEYS OF BLOCK A AND LOT 1 WERE MADE IN APRIL OF 2023.
2. ONLY VISIBLE IMPROVEMENTS & UTILITIES WERE PROVIDED FROM SURVEY (THE SURVEYOR/ENGINEER HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES). LOCATIONS OF EXISTING UTILITIES, SOME OF WHICH MAY NOT BE SHOWN, COULD IMPACT CONSTRUCTION MEANS AND METHODS. CONTRACTOR TO VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO BID & CONSTRUCTION, AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES. THE CONTRACTOR TO CONTACT THE OWNER OF EACH INDIVIDUAL UTILITY FOR ASSISTANCE IN DETERMINING EXISTING UTILITY LOCATIONS.
3. THE SIZE AND LOCATION OF UTILITY STRUCTURES, (IF SHOWN), MAY BE EXAGGERATED FOR GRAPHICAL CLARITY. THE SURVEY SHOWS FIELD MEASURED SIZES AND DEPTHS AS OBSERVED FROM GROUND LEVEL OPENINGS.
4. REFERENCE COVER SHEET AND TREE LIST FOR ADDITIONAL INFORMATION.
5. LIMITS OF CONSTRUCTION ARE SHOWN ON THE "EROSION & SEDIMENTATION CONTROL PLAN" SHEET.
6. GEOLOGICAL FEATURES SHOWN ARE APPROXIMATE. PLEASE REFERENCE GEOLOGICAL ASSESSMENT PREPARED BY ECS DATED 10/11/2024.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.668.5560
FIRM NO. F-15085


10/23/2025

STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED
PROFESSIONAL ENGINEER

INITIAL SUBMITTAL
October 23, 2025

# PROMISE LAND SAN MARCOS

1650 LIME KILN ROAD

CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

EXISTING CONDITIONS

SHEET
C100
03 OF 23
---


DATE: 10/23/2025 9:55 AM
USER: asaldivar@wginc.com
PLOTTED BY: SAIDI QUIÑONES
DRAWING: C:\Projects\Active Projects\promise land san marcos\CIVIL\10-CAD\2Dfiles\Sht24.09-C100-Existing_Conditions.dwg

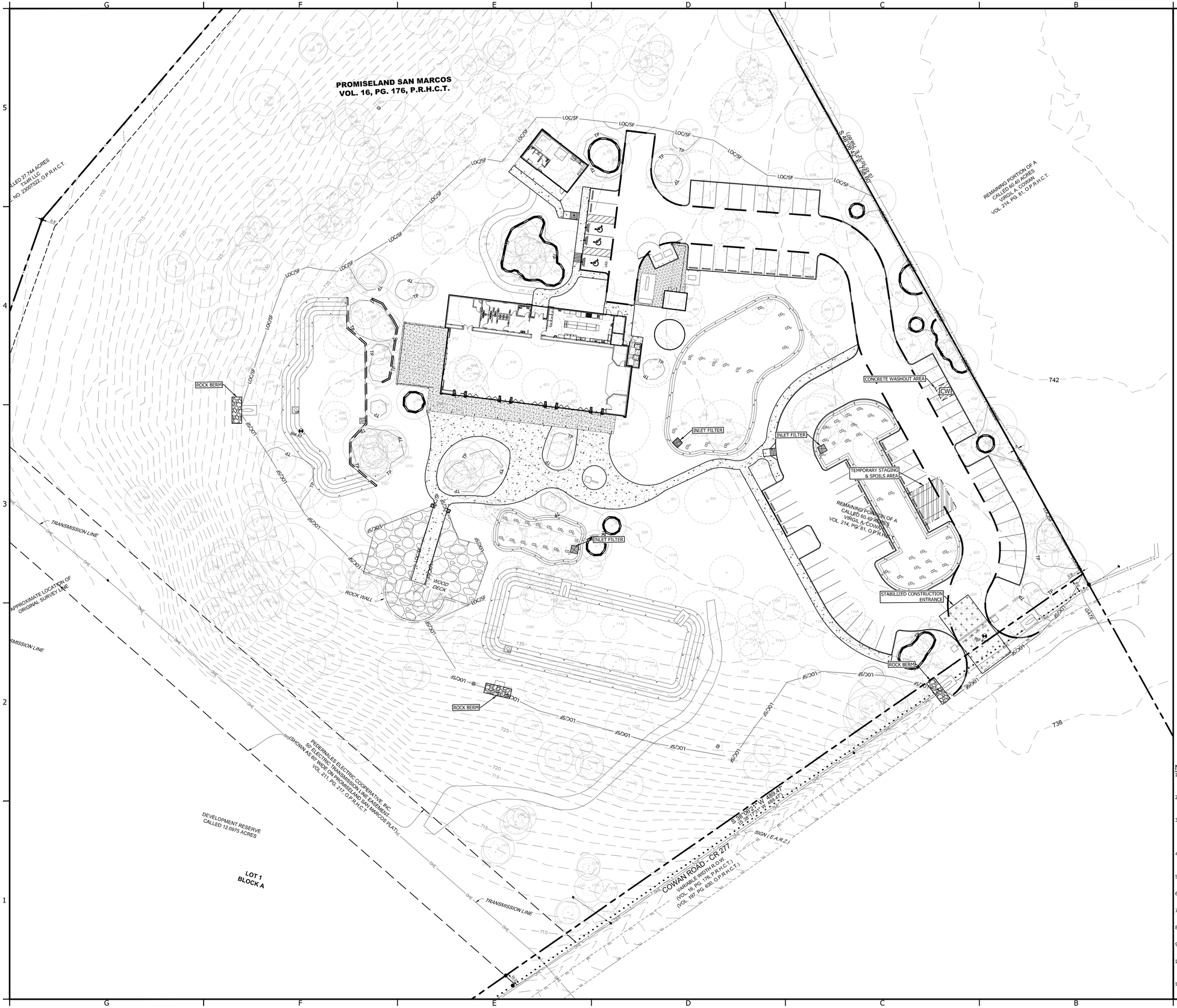
| TAG # | SIZE (DIAMETER IN.) | DESCRIPTION | ELEVATION | PROTECTED | REMOVED |
|---|---|---|---|---|---|
| 601 | 16" | 16" CEDAR (13-6") | 740.657 | | |
| 602 | 9" | 9" CEDAR ELM | 739.672 | | |
| 603 | 13" | 13" LIVE OAK | 739.726 | | |
| 604 | 15" | 15" CEDAR ELM | 739.426 | | X |
| 605 | 8" | 8" CEDAR | 739.261 | | X |
| 606 | 9" | 9" LIVE OAK | 739.475 | | X |
| 607 | 10" | 10" LIVE OAK | 739.528 | | X |
| 608 | 11" | 11" LIVE OAK | 739.512 | | |
| 609 | 12" | 12" LIVE OAK (8-8") | 739.776 | | |
| 610 | 15" | 15" CEDAR | 739.897 | | X |
| 611 | 12" | 12" CEDAR | 739.946 | | |
| 612 | 9" | 9" LIVE OAK | 740.091 | | X |
| 613 | 10" | 10" CEDAR | 740.178 | | X |
| 614 | 10" | 10" LIVE OAK | 740.916 | | |
| 615 | 12" | 12" CEDAR (8-7") | 740.383 | | |
| 616 | 8" | 8" LIVE OAK | 740.374 | | |
| 617 | 9" | 9" CEDAR ELM | 740.109 | | X |
| 618 | 8" | 8" CEDAR | 740.387 | | X |
| 619 | 8" | 8" LIVE OAK | 739.982 | | X |
| 620 | 11" | 11" LIVE OAK | 739.996 | | X |
| 621 | 8" | 8" CEDAR | 739.828 | | X |
| 622 | 8" | 8" CEDAR | 739.88 | | X |
| 623 | 11" | 11" CEDAR ELM | 740.668 | | X |
| 624 | 8" | 8" CEDAR | 740.527 | | X |
| 625 | 10" | 10" CEDAR | 740.485 | | X |
| 626 | 14" | 14" CEDAR (8-7.4") | 741.55 | | |
| 627 | 12" | 12" CEDAR (9-6") | 741.106 | | |
| 628 | 10" | 10" CEDAR | 740.904 | | |
| 629 | 12" | 12" CEDAR (9-6") | 741.008 | | X |
| 630 | 12" | 12" CEDAR ELM | 739.945 | | X |
| 631 | 11" | 11" CEDAR (8-5") | 740.202 | | X |
| 632 | 9" | 9" LIVE OAK | 741.13 | | X |
| 633 | 14" | 14" CEDAR | 741.337 | | |
| 634 | 10" | 10" LIVE OAK | 741.463 | | X |
| 635 | 9" | 9" CEDAR ELM | 741.118 | | X |
| 636 | 8" | 8" CEDAR | 741.545 | | X |
| 637 | 12" | 12" CEDAR (9-6") | 741.475 | | |
| 638 | 8" | 8" CEDAR | 741.432 | | X |
| 639 | 9" | 9" CEDAR | 741.757 | | |
| 640 | 8" | 8" ELM | 741.175 | | X |
| 641 | 8" | 8" ELM | 741.299 | | X |
| 642 | 9" | 9" CEDAR | 741.458 | | |
| 643 | 11" | 11" CEDAR | 742.003 | | |
| 644 | 10" | 10" CEDAR ELM | 741.175 | | X |
| 645 | 11" | 11" CEDAR ELM | 741.216 | | X |
| 646 | 8" | 8" CEDAR | 741.658 | | |
| 647 | 12" | 12" CEDAR (9-5") | 740.047 | | X |
| 648 | 10" | 10" CEDAR ELM | 740.419 | | X |
| 649 | 8" | 8" CEDAR ELM | 740.383 | | X |
| 650 | 8" | 8" CEDAR | 741.22 | | X |
| 651 | 19" | 19" CEDAR (10-8-6-5") | 742.029 | | |
| 652 | 10" | 10" CEDAR | 741.191 | | X |
| 653 | 8" | 8" CEDAR ELM | 741.736 | | X |
| 654 | 8" | 8" CEDAR ELM | 740.625 | | X |
| 655 | 8" | 8" CEDAR ELM | 740.602 | | X |
| 656 | 8" | 8" CEDAR ELM | 740.051 | | X |
| 657 | 8" | 8" CEDAR ELM | 740.805 | | X |
| 658 | 11" | 11" CEDAR ELM | 740.641 | | X |
| 659 | 10" | 10" CEDAR ELM | 740.359 | | X |
| 660 | 14" | 14" CEDAR ELM (10-7") | 740.649 | | X |
| 661 | 10" | 10" LIVE OAK | 741.698 | | X |
| 662 | 9" | 9" LIVE OAK | 741.377 | | X |
| 663 | 13" | 13" CEDAR | 741.782 | | |
| 664 | 8" | 8" CEDAR ELM | 741.226 | | |
| 665 | 12" | 12" LIVE OAK | 741.132 | | X |
| 666 | 16" | 16" CEDAR ELM (8-8-7") | 739.643 | | X |
| 667 | 14" | 14" CEDAR | 739.845 | | X |
| 668 | 13" | 13" CEDAR ELM (10-6") | 739.536 | | X |
| 669 | 8" | 8" CEDAR ELM | 739.727 | | X |
| 670 | 10" | 10" CEDAR ELM | 740.195 | | X |
| 671 | 10" | 10" LIVE OAK | 740.344 | | X |
| 672 | 9" | 9" LIVE OAK | 740.325 | | X |
| 673 | 9" | 9" LIVE OAK | 740.758 | | X |
| 674 | 11" | 11" LIVE OAK | 741.439 | | X |
| 675 | 12" | 12" CEDAR ELM (9-6") | 740.902 | | |
| 676 | 8" | 8" CEDAR | 741.115 | | |
| 677 | 17" | 17" CEDAR (10-7.6") | 741.332 | | |
| 678 | 10" | 10" CEDAR | 740.942 | | |
| 679 | 9" | 9" CEDAR | 741.142 | | |
| 680 | 12" | 12" CEDAR ELM (8-7") | 740.481 | | |
| 681 | 9" | 9" CEDAR ELM | 739.355 | | X |
| 682 | 22" | 22" LIVE OAK (16-12") | 739.308 | | X |
| 683 | 17" | 17" LIVE OAK | 739.379 | | X |
| 684 | 9" | 9" CEDAR ELM | 738.675 | | |
| 685 | 15" | 15" LIVE OAK | 738.998 | | X |
| 686 | 14" | 14" LIVE OAK | 739.085 | | |
| 687 | 9" | 9" LIVE OAK | 738.679 | | |
| 688 | 9" | 9" LIVE OAK | 738.701 | | |
| 689 | 8" | 8" LIVE OAK | 739.232 | | X |
| 690 | 8" | 8" LIVE OAK | 739.217 | | X |
| 691 | 20" | 20" LIVE OAK (10-10-10") | 740.024 | | X |
| 692 | 9" | 9" LIVE OAK | 739.937 | | X |
| 693 | 9" | 9" LIVE OAK | 739.976 | | X |
| 694 | 11" | 11" LIVE OAK | 740.038 | | X |
| 695 | 10" | 10" LIVE OAK | 739.923 | | X |
| 696 | 12" | 12" LIVE OAK | 740.076 | | X |
| 697 | 9" | 9" CEDAR | 740.567 | | |
| 698 | 12" | 12" LIVE OAK | 739.528 | | X |
| 699 | 8" | 8" CEDAR ELM | 739.206 | | X |
| 700 | 8" | 8" LIVE OAK | 739.59 | | X |
| 701 | 10" | 10" CEDAR | 739.981 | | |
| 702 | 12" | 12" LIVE OAK | 737.96 | | |
| 703 | 16" | 16" CEDAR ELM (10-8-8") | 737.379 | | |
| 704 | 12" | 12" CEDAR ELM | 737.125 | | X |
| 705 | 11" | 11" LIVE OAK | 737.818 | | |
| 706 | 12" | 12" LIVE OAK | 738.022 | | |
| 707 | 8" | 8" LIVE OAK | 737.341 | | |
| 708 | 12" | 12" LIVE OAK | 737.34 | | X |
| 709 | 14" | 14" LIVE OAK | 736.854 | | X |
| 710 | 14" | 14" LIVE OAK | 737.025 | | X |

| TAG # | SIZE (DIAMETER IN.) | DESCRIPTION | ELEVATION | PROTECTED | REMOVED |
|---|---|---|---|---|---|
| 711 | 15" | 15" LIVE OAK | 737.447 | | X |
| 712 | 8" | 8" LIVE OAK | 737.809 | | |
| 713 | 28" | 3" LIVE OAK (12-12-8-11) | 737.664 | | |
| 714 | 19" | 19" LIVE OAK (11-9-7") | 739.392 | | |
| 715 | 10" | 10" CEDAR | 739.678 | | |
| 716 | 10" | 10" CEDAR | 738.419 | | |
| 717 | 8" | 8" CEDAR ELM | 737.106 | | X |
| 718 | 10" | 10" CEDAR ELM | 735.386 | | X |
| 719 | 17" | 17" CEDAR ELM (9-8-8") | 735.378 | | X |
| 720 | 8" | 8" CEDAR ELM | 736.292 | | X |
| 721 | 17" | 17" LIVE OAK (12-5-5") | 735.908 | | X |
| 722 | 11" | 11" LIVE OAK | 735.273 | | X |
| 723 | 10" | 10" LIVE OAK | 735.345 | | X |
| 724 | 10" | 10" LIVE OAK | 736.783 | | |
| 725 | 10" | 10" LIVE OAK | 736.566 | | |
| 726 | 9" | 9" LIVE OAK | 736.765 | | |
| 727 | 9" | 9" LIVE OAK | 737.074 | | |
| 728 | 12" | 12" LIVE OAK | 737.53 | | |
| 729 | 16" | 16" LIVE OAK | 737.683 | | |
| 730 | 13" | 13" LIVE OAK | 737.516 | | |
| 731 | 14" | 14" LIVE OAK | 737.448 | | |
| 732 | 10" | 10" LIVE OAK | 736.844 | | |
| 733 | 11" | 11" LIVE OAK | 737.036 | | |
| 734 | 8" | 8" CEDAR ELM | 736.104 | | |
| 735 | 13" | 13" LIVE OAK | 736.332 | | |
| 736 | 9" | 9" CEDAR ELM | 735.573 | | |
| 737 | 8" | 8" CEDAR ELM | 733.678 | | |
| 738 | 13" | 13" CEDAR ELM | 733.851 | | |
| 739 | 29" | 29" LIVE OAK | 733.181 | | |
| 740 | 11" | 11" CEDAR ELM | 732.91 | | |
| 741 | 8" | 8" CEDAR ELM | 731.596 | | |
| 742 | 19" | 19" LIVE OAK | 734.601 | | |
| 743 | 20" | 20" LIVE OAK | 734.018 | | |
| 744 | 16" | 16" LIVE OAK | 736.153 | | |
| 745 | 20" | 20" LIVE OAK | 736.533 | | |
| 746 | 12" | 12" CEDAR ELM (8-7") | 735.75 | | |
| 747 | 9" | 9" CEDAR | 736.119 | | |
| 748 | 10" | 10" CEDAR ELM | 734.573 | | |
| 749 | 8" | 8" CEDAR | 733.593 | | |
| 750 | 11" | 11" CEDAR ELM | 732.296 | | |
| 751 | 11" | 11" CEDAR ELM | 734.175 | | |
| 752 | 10" | 10" CEDAR ELM | 732.814 | | |
| 753 | 10" | 10" CEDAR | 729.856 | | |
| 754 | 9" | 9" CEDAR ELM | 728.724 | | |
| 755 | 12" | 12" CEDAR | 729.476 | | |
| 756 | 22" | 22" LIVE OAK (15-13") | 727.857 | | |
| 757 | 12" | 12" LIVE OAK | 727.749 | | |
| 758 | 13" | 13" LIVE OAK | 727.786 | | |
| 759 | 17" | 17" LIVE OAK (13-7") | 727.463 | | |
| 760 | 8" | 8" CEDAR ELM | 726.789 | | |
| 761 | 12" | 12" CEDAR | 729.927 | | |
| 762 | 14" | 14" CEDAR ELM (10-8") | 727.641 | | |
| 763 | 8" | 8" CEDAR | 726.46 | | |
| 764 | 9" | 9" CEDAR ELM | 726.121 | | |
| 765 | 11" | 11" CEDAR | 723.865 | | |
| 766 | 12" | 12" CEDAR (8-4-3") | 725.455 | | |
| 767 | 10" | 10" CEDAR | 725.972 | | |
| 768 | 10" | 10" CEDAR | 728.426 | | |
| 769 | 12" | 12" CEDAR (8-7") | 726.061 | | |
| 770 | 15" | 15" CEDAR (6-3") | 724.666 | | |
| 771 | 8" | 8" CEDAR | 723.601 | | |
| 772 | 8" | 8" CEDAR | 721.484 | | |
| 773 | 8" | 8" CEDAR | 721.182 | | |
| 774 | 9" | 9" CEDAR | 719.534 | | |
| 775 | 8" | 8" CEDAR | 720.877 | | |
| 776 | 16" | 16" CEDAR (12-8") | 720.389 | | |
| 777 | 8" | 8" CEDAR | 722.079 | | |
| 778 | 9" | 9" CEDAR | 720.458 | | |
| 779 | 11" | 11" CEDAR (8-5") | 719.699 | | |
| 780 | 13" | 13" CEDAR (8-7-3") | 719.508 | | |
| 781 | 8" | 8" CEDAR ELM | 718.828 | | |
| 782 | 8" | 8" CEDAR | 718.557 | | |
| 783 | 10" | 10" CEDAR ELM | 717.049 | | |
| 784 | 8" | 8" CEDAR | 715.806 | | |
| 785 | 8" | 8" CEDAR | 717.347 | | |
| 786 | 8" | 8" CEDAR | 717.2 | | |
| 787 | 24" | 3" CEDAR (9-8-5-5-4-4-4 | 715.257 | | |
| 788 | 10" | 10" CEDAR | 717.176 | | |
| 789 | 16" | 16" CEDAR | 715.322 | | |
| 790 | 10" | 10" CEDAR | 715.505 | | |
| 791 | 13" | 13" CEDAR (10-6") | 715.074 | | |
| 792 | 9" | 9" CEDAR | 715.965 | | |
| 793 | 16" | 16" CEDAR (11-10") | 716.012 | | |
| 794 | 11" | 11" CEDAR | 716.05 | | |
| 795 | 9" | 9" CEDAR | 715.984 | | |
| 796 | 10" | 10" CEDAR | 716.717 | | |
| 797 | 11" | 11" CEDAR | 729.113 | | |
| 798 | 8" | 8" CEDAR | 725.119 | | |
| 799 | 11" | 11" CEDAR | 721.53 | | |
| 800 | 16" | 16" CEDAR (9-8-6") | 721.168 | | |
| 801 | 17" | 17" CEDAR (9-6-5-4") | 719.35 | | |
| 802 | 10" | 10" CEDAR | 719.843 | | |
| 803 | 8" | 8" CEDAR | 720.235 | | |
| 804 | 10" | 10" CEDAR (8-4") | 720.837 | | |
| 805 | 13" | 13" CEDAR (9-8") | 725.248 | | |
| 806 | 18" | 18" CEDAR (9-6-7-5") | 720.296 | | |
| 807 | 11" | 11" CEDAR | 730.142 | | |
| 808 | 9" | 9" CEDAR ELM | 732.794 | | |
| 809 | 9" | 9" CEDAR ELM | 731.961 | | |
| 810 | 9" | 9" CEDAR ELM | 732.48 | | |
| 811 | 9" | 9" CEDAR ELM | 733.086 | | |
| 812 | 9" | 9" CEDAR ELM | 732.506 | | |
| 813 | 8" | 8" ELM | 733.996 | | |
| 814 | 10" | 10" CEDAR ELM | 734.793 | | X |
| 815 | 8" | 8" CEDAR ELM | 734.072 | | |
| 816 | 8" | 8" LIVE OAK | 735.18 | | X |
| 817 | 8" | 8" LIVE OAK | 735.358 | | X |
| 818 | 11" | 11" CEDAR ELM | 735.421 | | X |
| 819 | 11" | 11" CEDAR | 735.52 | | X |

| TAG # | SIZE (DIAMETER IN.) | DESCRIPTION | ELEVATION | PROTECTED | REMOVED |
|---|---|---|---|---|---|
| 820 | 11" | 11" LIVE OAK | 735.7 | | X |
| 821 | 14" | 14" LIVE OAK (10-8") | 738.7 | | X |
| 822 | 10" | 10" LIVE OAK | 736.169 | | X |
| 823 | 9" | 9" LIVE OAK | 736.31 | | X |
| 824 | 10" | 10" LIVE OAK | 736.386 | | X |
| 825 | 13" | 13" LIVE OAK | 736.652 | | X |
| 826 | 11" | 11" LIVE OAK | 736.477 | | X |
| 827 | 14" | 14" LIVE OAK | 736.622 | | X |
| 828 | 15" | 15" LIVE OAK | 737.339 | | X |
| 829 | 8" | 8" CEDAR | 737.152 | | X |
| 830 | 8" | 8" CEDAR | 737.287 | | X |
| 831 | 19" | 19" LIVE OAK | 738.291 | | |
| 832 | 12" | 12" LIVE OAK | 738.006 | | |
| 833 | 15" | 15" LIVE OAK | 737.938 | | X |
| 834 | 10" | 10" LIVE OAK | 737.993 | | X |
| 835 | 12" | 12" CEDAR ELM (9-6") | 737.875 | | X |
| 836 | 14" | 14" CEDAR | 737.995 | | X |
| 837 | 14" | 14" CEDAR ELM (10-8") | 738.904 | | X |
| 838 | 16" | 16" CEDAR ELM (13-6") | 739.295 | | X |
| 839 | 11" | 11" CEDAR ELM | 739.287 | | X |
| 840 | 13" | 13" CEDAR ELM (9-8") | 739.397 | | X |
| 841 | 10" | 10" CEDAR ELM | 739.416 | | X |
| 842 | 12" | 12" CEDAR ELM | 739.293 | | X |
| 843 | 10" | 10" CEDAR ELM | 739.694 | | X |
| 844 | 9" | 9" CEDAR ELM | 739.448 | | X |
| 845 | 20" | 20" LIVE OAK (14-12") | 740.128 | | X |
| 846 | 14" | 14" LIVE OAK | 740.18 | | X |
| 847 | 16" | 16" LIVE OAK | 740.677 | | X |
| 848 | 20" | 20" LIVE OAK | 740.459 | | X |
| 849 | 10" | 10" LIVE OAK | 740.358 | | X |
| 850 | 15" | 15" LIVE OAK | 740.067 | | X |
| 851 | 12" | 12" CEDAR ELM | 739.204 | | X |
| 852 | 9" | 9" CEDAR ELM | 739.248 | | X |
| 853 | 14" | 14" CEDAR ELM | 739.189 | | X |
| 854 | 16" | 16" CEDAR ELM (9-8-5") | 739.047 | | X |
| 855 | 14" | 14" CEDAR ELM (9-9") | 739.392 | | X |
| 856 | 12" | 12" CEDAR ELM (9-6") | 739.414 | | X |
| 857 | 10" | 10" CEDAR ELM | 739.25 | | X |
| 858 | 16" | 16" CEDAR (9-5-5-3") | 739.224 | | X |
| 859 | 13" | 13" CEDAR (9-8") | 739.226 | | X |
| 860 | 11" | 11" CEDAR | 738.838 | | X |
| 861 | 8" | 8" LIVE OAK | 738.732 | | X |
| 862 | 11" | 11" CEDAR ELM (8-6") | 738.735 | | X |
| 863 | 21" | 21" CEDAR (14-7-3-3") | 738.676 | | X |
| 864 | 12" | 12" CEDAR | 739.014 | | X |
| 865 | 10" | 10" CEDAR ELM | 738.596 | | X |
| 866 | 11" | 11" CEDAR | 739.019 | | |
| 867 | 18" | 18" CEDAR (8-7-7-6") | 739.035 | | X |
| 868 | 11" | 11" ELM CEDAR | 739.184 | | X |
| 869 | 11" | 11" CEDAR | 738.891 | | X |
| 870 | 10" | 10" CEDAR ELM | 738.936 | | X |
| 871 | 12" | 12" CEDAR ELM | 738.835 | | X |
| 872 | 16" | 16" ELM (8-7-5-4") | 738.021 | | X |
| 873 | 8" | 8" LIVE OAK | 737.855 | | |
| 874 | 15" | 15" CEDAR | 738.12 | | |
| 875 | 12" | 12" LIVE OAK | 738.297 | | |
| 876 | 8" | 8" LIVE OAK | 738.127 | | |
| 877 | 9" | 9" LIVE OAK | 738.15 | | |
| 878 | 15" | 15" LIVE OAK | 738.451 | | |
| 879 | 9" | 9" LIVE OAK | 738.287 | | |
| 880 | 13" | 13" LIVE OAK | 738.204 | | |
| 881 | 8" | 8" LIVE OAK | 737.754 | | |
| 882 | 13" | 13" CEDAR ELM | 737.739 | | |
| 883 | 10" | 10" LIVE OAK | 737.952 | | |
| 884 | 8" | 8" LIVE OAK | 737.963 | | |
| 885 | 9" | 9" LIVE OAK | 737.933 | | |
| 886 | 10" | 10" CEDAR ELM | 736.989 | | X |
| 887 | 10" | 10" CEDAR ELM | 737.278 | | X |
| 888 | 11" | 11" CEDAR ELM | 737.314 | | X |
| 889 | 14" | 14" CEDAR ELM | 736.23 | | X |
| 890 | 13" | 13" CEDAR ELM | 735.921 | | X |
| 891 | 19" | 9" CEDAR ELM (9-7-7-6" | 734.782 | | X |
| 892 | 8" | 8" LIVE OAK | 733.782 | | |
| 893 | 21" | 21" CEDAR (12-6-6-5") | 731.815 | | |
| 894 | 11" | 11" CEDAR ELM | 734.488 | | X |
| 895 | 12" | 12" CEDAR ELM | 735.412 | | X |
| 896 | 10" | 10" CEDAR ELM | 734.321 | | |
| 897 | 11" | 11" CEDAR ELM (8-5") | 733.177 | | |
| 898 | 11" | 11" CEDAR ELM | 733.689 | | |
| 899 | 8" | 8" LIVE OAK | 735.788 | | X |
| 900 | 8" | 8" LIVE OAK | 735.236 | | X |
| 901 | 13" | 13" LIVE OAK (9-7") | 736.369 | | X |
| 902 | 14" | 14" LIVE OAK (10-8") | 736.067 | | X |
| 903 | 9" | 9" CEDAR ELM | 735.972 | | X |
| 904 | 8" | 8" CEDAR ELM | 735.905 | | X |
| 905 | 13" | 13" CEDAR ELM (10-5") | 736.616 | | X |
| 906 | 17" | 17" LIVE OAK | 736.865 | | X |
| 907 | 8" | 8" LIVE OAK | 737.103 | | X |
| 908 | 8" | 8" LIVE OAK | 737.432 | | |
| 909 | 8" | 8" LIVE OAK | 737.299 | | |
| 910 | 13" | 13" CEDAR ELM | 736.932 | | |
| 911 | 20" | 20" CEDAR (8-7-6-5-5") | 737.722 | | X |
| 912 | 15" | 15" CEDAR (12-5") | 737.799 | | X |
| 913 | 11" | 11" CEDAR ELM | 737.972 | | X |
| 914 | 9" | 9" CEDAR ELM | 738.229 | | X |
| 915 | 9" | 9" CEDAR ELM | 738.229 | | X |
| 916 | 12" | 12" CEDAR ELM (8-8") | 737.956 | | X |
| 917 | 11" | 11" CEDAR (8-5") | 738.035 | | X |
| 918 | 10" | 10" CEDAR ELM | 738.177 | | X |
| 919 | 13" | 13" CEDAR | 738.306 | | X |
| 920 | 11" | 11" CEDAR ELM | 738.832 | | X |
| 921 | 13" | 13" CEDAR ELM | 738.432 | | X |
| 922 | 9" | 9" LIVE OAK | 738.6 | | X |
| 923 | 9" | 9" LIVE OAK | 738.657 | | X |
| 924 | 11" | 11" LIVE OAK | 738.667 | | X |
| 925 | 15" | 15" LIVE OAK | 738.55 | | X |
| 926 | 10" | 10" LIVE OAK | 738.406 | | |
| 927 | 11" | 11" LIVE OAK | 738.492 | | |
| 928 | 9" | 9" LIVE OAK | 738.238 | | X |
| 929 | 10" | 10" LIVE OAK | 738.409 | | |

| TAG # | SIZE (DIAMETER IN.) | DESCRIPTION | ELEVATION | PROTECTED | REMOVED |
|---|---|---|---|---|---|
| 930 | 11" | 11" LIVE OAK | 738.257 | | X |
| 931 | 9" | 9" LIVE OAK | 738.325 | | |
| 932 | 9" | 9" LIVE OAK | 738.166 | | |
| 933 | 9" | 9" CEDAR ELM | 738.129 | | X |
| 934 | 9" | 9" LIVE OAK | 738.097 | | |
| 935 | 21" | 21" LIVE OAK (14-13") | 738.264 | | X |
| 936 | 13" | 13" LIVE OAK | 738.059 | | |
| 937 | 12" | 12" LIVE OAK | 738.057 | | |
| 938 | 14" | 14" LIVE OAK (10-7") | 738.416 | | |
| 939 | 10" | 10" LIVE OAK | 738.061 | | |
| 940 | 10" | 10" LIVE OAK | 738.039 | | |
| 941 | 12" | 12" LIVE OAK | 738.084 | | |
| 942 | 8" | 8" LIVE OAK | 737.88 | | |
| 943 | 9" | 9" CEDAR ELM | 737.766 | | X |
| 944 | 14" | 14" CEDAR ELM (9-9") | 737.906 | | X |
| 945 | 8" | 8" CEDAR ELM | 737.805 | | X |
| 946 | 12" | 12" CEDAR ELM | 737.715 | | |
| 947 | 9" | 9" CEDAR ELM | 737.647 | | X |
| 948 | 12" | 12" CEDAR ELM (9-5") | 737.835 | | X |
| 949 | 8" | 8" CEDAR ELM | 737.396 | | X |
| 950 | 12" | 12" CEDAR ELM (9-6") | 737.314 | | |
| 951 | 10" | 10" LIVE OAK | 737.517 | | |
| 952 | 14" | 14" CEDAR ELM (10-8") | 737.379 | | X |
| 953 | 9" | 9" CEDAR ELM | 737.241 | | |
| 954 | 11" | 11" LIVE OAK | 737.599 | | |
| 955 | 10" | 10" LIVE OAK | 737.292 | | |
| 956 | 25" | 25" LIVE OAK | 737.321 | | |
| 957 | 10" | 10" CEDAR | 737.261 | | |
| 958 | 13" | 13" CEDAR ELM | 737.221 | | X |
| 959 | 9" | 9" CEDAR ELM | 737.092 | | X |
| 960 | 9" | 9" LIVE OAK | 737.056 | | X |
| 961 | 8" | 8" LIVE OAK | 736.98 | | X |
| 962 | 9" | 9" LIVE OAK | 736.744 | | |
| 963 | 15" | 15" LIVE OAK | 736.726 | | |
| 964 | 10" | 10" LIVE OAK | 736.508 | | |
| 965 | 11" | 11" CEDAR ELM | 736.246 | | X |
| 966 | 10" | 10" CEDAR | 735.38 | | X |
| 967 | 9" | 9" CEDAR ELM | 734.744 | | X |
| 968 | 9" | 9" CEDAR ELM | 735.929 | | X |
| 969 | 8" | 8" CEDAR ELM | 735.88 | | X |
| 970 | 8" | 8" CEDAR ELM | 735.633 | | X |
| 971 | 10" | 10" CEDAR | 733.913 | | X |
| 972 | 8" | 8" CEDAR ELM | 731.642 | | X |
| 973 | 11" | 11" CEDAR (8-5") | 732.086 | | |
| 974 | 8" | 8" CEDAR ELM | 732.958 | | X |
| 975 | 11" | 11" CEDAR ELM | 733.657 | | X |
| 976 | 11" | 11" CEDAR ELM | 731.453 | | X |
| 977 | 16" | 16" LIVE OAK | 732.111 | | X |
| 978 | 11" | 11" CEDAR ELM (8-6") | 732.97 | | |
| 979 | 8" | 8" CEDAR ELM | 731.327 | | X |
| 980 | 9" | 9" CEDAR ELM | 732.273 | | X |
| 981 | 8" | 8" CEDAR ELM | 733.156 | | X |
| 982 | 9" | 9" CEDAR | 731.246 | | X |
| 983 | 14" | 14" CEDAR ELM | 730.901 | | |
| 984 | 21" | 21" LIVE OAK (15-12") | 728.754 | | |
| 985 | 15" | 15" CEDAR | 728.199 | | |
| 986 | 8" | 8" CEDAR | 727.255 | | |
| 987 | 12" | 12" CEDAR | 723.573 | | |
| 988 | 12" | 12" CEDAR | 723.792 | | |
| 989 | 23" | 23" CEDAR (9-8-5-6-5-3" | 719.066 | | X |
| 990 | 11" | 11" CEDAR (8-5") | 718.349 | | X |
| 991 | 17" | 17" CEDAR (8-6-3-7") | 720.333 | | |
| 992 | 10" | 10" CEDAR | 718.823 | | X |
| 993 | 10" | 10" CEDAR | 718.98 | | |
| 994 | 8" | 8" CEDAR | 723.223 | | |
| 995 | 17" | 17" CEDAR (9-6-5-4") | 726.388 | | |
| 996 | 8" | 8" CEDAR ELM | 726.96 | | |
| 997 | 9" | 9" CEDAR ELM | 727.591 | | |
| 998 | 9" | 9" CEDAR | 726.448 | | |
| 999 | 8" | 8" CEDAR | 726.385 | | |
| 1000 | 12" | 12" CEDAR (8-7") | 724.143 | | |
| 1001 | 15" | 5" CEDAR ELM (8-6-4-4" | 728.379 | | |
| 1002 | 18" | 18" LIVE OAK (13-10") | 729.288 | | |
| 1003 | 8" | 8" CEDAR ELM | 735.843 | | X |
| 1004 | 8" | 8" CEDAR | 735.37 | | X |
| 1005 | 10" | 10" CEDAR ELM | 735.122 | | X |
| 1006 | 9" | 9" LIVE OAK | 737.295 | | X |
| 1007 | 10" | 10" CEDAR ELM | 737.648 | | X |
| 1008 | 8" | 8" CEDAR ELM | 737.6 | | X |
| 1009 | 9" | 9" CEDAR ELM | 737.593 | | |
| 1010 | 8" | 8" LIVE OAK | 737.753 | | |
| 1011 | 8" | 8" LIVE OAK | 737.655 | | |
| 1012 | 14" | 14" LIVE OAK (10-8") | 738.019 | | |
| 1013 | 12" | 12" LIVE OAK | 737.842 | | |
| 1014 | 10" | 10" LIVE OAK | 737.85 | | |
| 1015 | 15" | 15" LIVE OAK (10-9") | 738.087 | | |
| 1016 | 8" | 8" LIVE OAK | 737.777 | | |
| 1017 | 10" | 10" LIVE OAK | 737.75 | | |
| 1018 | 8" | 8" LIVE OAK | 737.688 | | |
| 1019 | 9" | 9" LIVE OAK | 737.777 | | |
| 1020 | 10" | 10" LIVE OAK | 737.573 | | |
| 1021 | 13" | 13" LIVE OAK | 737.986 | | |
| 1022 | 8" | 8" LIVE OAK | 737.576 | | |
| 1023 | 10" | 10" CEDAR ELM | 734.475 | | X |
| 1024 | 15" | 15" CEDAR | 734.339 | | X |
| 1025 | 10" | 10" CEDAR ELM | 731.662 | | |
| 1026 | 11" | 11" CEDAR | 728.997 | | |
| 1027 | 11" | 11" CEDAR | 729.001 | | |
| 1028 | 10" | 10" HACKBERRY | 726.109 | | |
| 1029 | 9" | 9" CEDAR | 722.386 | | |
| 1030 | 12" | 12" CEDAR (8-8") | 724.229 | | |
| 1031 | 12" | 12" CEDAR (8-7") | 721.632 | | |
| 1032 | 8" | 8" CEDAR | 721.571 | | |
| 1033 | 8" | 8" CEDAR | 716.537 | | |
| 1034 | 11" | 11" CEDAR | 724.166 | | |
| 1035 | 14" | 14" CEDAR | 734.421 | | X |
| 1036 | 13" | 13" CEDAR (9-7") | 736.098 | | |
| 1037 | 8" | 8" CEDAR ELM | 734.091 | | |
| 1038 | 11" | 11" CEDAR ELM | 734.211 | | |
| 1039 | 8" | 8" CEDAR | 734.583 | | |

| TAG # | SIZE (DIAMETER IN.) | DESCRIPTION | ELEVATION | PROTECTED | REMOVED |
|---|---|---|---|---|---|
| 1040 | 13" | 13" CEDAR | 736.924 | | |
| 1041 | 24" | 24" CEDAR (19-9") | 736.854 | | |
| 1042 | 10" | 10" CEDAR ELM | 737.677 | | X |
| 1043 | 13" | 13" CEDAR | 737.506 | | X |
| 1044 | 12" | 12" CEDAR | 737.649 | | |
| 1045 | 10" | 10" CEDAR ELM | 737.985 | | |
| 1046 | 10" | 10" CEDAR ELM | 737.97 | | |
| 1047 | 10" | 10" LIVE OAK | 737.512 | | |
| 1048 | 16" | 16" LIVE OAK | 737.699 | | |
| 1049 | 13" | 13" LIVE OAK | 737.771 | | |
| 1050 | 11" | 11" LIVE OAK | 737.937 | | |
| 1051 | 26" | 16" LIVE OAK (15-11-11" | 737.904 | | |
| 1052 | 14" | 14" CEDAR | 737.153 | | |
| 1053 | 9" | 9" CEDAR ELM | 737.036 | | |
| 1054 | 12" | 12" CEDAR ELM | 736.862 | | |
| 1055 | 9" | 9" CEDAR ELM | 736.607 | | |
| 1056 | 14" | 14" CEDAR ELM | 736.513 | | |
| 1057 | 18" | 18" CEDAR (11-6-7") | 736.201 | | |
| 1058 | 16" | 16" CEDAR (12-8") | 734.691 | | |
| 1059 | 18" | 18" CEDAR | 733.277 | | |
| 1060 | 13" | 13" CEDAR | 734.62 | | |
| 1061 | 9" | 9" CEDAR | 731.036 | | |
| 1062 | 13" | 13" CEDAR | 729.868 | | |
| 1064 | 12" | 12" CEDAR (8-7") | 728.959 | | |
| 1065 | 17" | 17" CEDAR (8-7-6-5") | 728.215 | | |
| 1066 | 15" | 15" CEDAR (11-7") | 729.115 | | |
| 1067 | 10" | 10" CEDAR | 725.085 | | |
| 1068 | 10" | 10" CEDAR | 713.817 | | |
| 1069 | 12" | 12" CEDAR (8-7") | 723.426 | | |
| 1070 | 8" | 8" CEDAR | 721.454 | | |
| 1071 | 13" | 13" CEDAR (10-6") | 724.943 | | |
| 1072 | 15" | 15" CEDAR (11-9") | 726.745 | | |
| 1073 | 12" | 12" CEDAR | 728.597 | | X |
| 1074 | 18" | 18" CEDAR (11-7-3-4") | 732.889 | | |
| 1075 | 16" | 16" CEDAR | 730.081 | | |
| 1076 | 10" | 10" CEDAR ELM | 730.335 | | |
| 1077 | 10" | 10" CEDAR ELM | 734.355 | | |
| 1078 | 8" | 8" CEDAR | 735.381 | | X |
| 1079 | 10" | 10" CEDAR ELM | 733.974 | | X |
| 1080 | 14" | 14" CEDAR | 733.805 | | X |
| 1081 | 12" | 12" CEDAR | 734.304 | | X |
| 1082 | 14" | 14" CEDAR | 735.249 | | X |
| 1083 | 8" | 8" LIVE OAK | 737.906 | | X |
| 1084 | 8" | 8" CEDAR ELM | 738.008 | | X |
| 1085 | 8" | 8" LIVE OAK | 738.008 | | X |
| 1086 | 11" | 11" LIVE OAK | 737.809 | | X |
| 1087 | 8" | 8" LIVE OAK | 737.753 | | X |
| 1088 | 8" | 8" CEDAR | 737.592 | | X |
| 1089 | 9" | 9" CEDAR ELM | 737.585 | | X |
| 1090 | 9" | 9" CEDAR ELM | 737.628 | | X |
| 1091 | 13" | 13" CEDAR ELM | 737.592 | | X |
| 1092 | 12" | 12" LIVE OAK | 737.267 | | X |
| 1093 | 12" | 12" LIVE OAK (9-6") | 737.668 | | X |
| 1094 | 9" | 9" CEDAR ELM | 737.685 | | X |
| 1095 | 10" | 10" CEDAR ELM | 737.94 | | X |
| 1096 | 8" | 8" LIVE OAK | 737.611 | | X |
| 1097 | 8" | 8" LIVE OAK | 737.69 | | X |
| 1098 | 12" | 12" LIVE OAK | 737.392 | | X |
| 1099 | 11" | 11" LIVE OAK | 737.382 | | X |
| 1100 | 11" | 11" LIVE OAK | 737.66 | | X |
| 1101 | 12" | 12" LIVE OAK | 737.776 | | X |
| 1102 | 11" | 11" LIVE OAK | 737.801 | | X |
| 1103 | 10" | 10" LIVE OAK | 737.735 | | X |
| 1104 | 13" | 13" CEDAR ELM (10-6") | 737.98 | | X |
| 1105 | 11" | 11" CEDAR ELM | 738.047 | | |
| 1106 | 8" | 8" LIVE OAK | 737.853 | | X |
| 1107 | 12" | 12" CEDAR (9-6") | 737.224 | | X |
| 1108 | 9" | 9" CEDAR ELM | 733.032 | | X |
| 1109 | 9" | 9" CEDAR ELM | 735.871 | | X |
| 1110 | 10" | 10" CEDAR ELM | 733.539 | | X |
| 1111 | 8" | 8" CEDAR ELM | 731.25 | | X |
| 1112 | 9" | 9" CEDAR ELM | 734.504 | | X |
| 1113 | 9" | 9" CEDAR | 735.112 | | X |
| 1114 | 9" | 9" CEDAR ELM | 736.




0 15' 30' 60'

## LEGEND

- BOUNDARY / R.O.W.
- EXISTING CONTOUR
- PROPOSED CONTOUR
- TP — TREE PROTECTION
- MS — MULCH SOCK
- SF — SILT FENCE
- LOC — LIMITS OF CONTRUCTION
- RB — ROCK BERM
- IF — INLET FILTER
- PARKING, STORAGE, SPOILS AND STAGING AREA
- STABILIZED CONSTRUCTION ENTRANCE
- CW — CONCRETE WASHOUT
- TREE (TO REMAIN)
- TREE (TO REMOVE)

| | |
|---|---|
| LIMITS OF CONSTRUCTION: | +/- 3.85 Ac. |
| TOTAL LENGTH OF SILT FENCE: | 1,862 LF |
| TOTAL LENGTH OF ROCK BERM: | 18 LF |
| NUMBER OF INLET PROTECTION: | 3 EACH |
| TOTAL LENGTH OF TREE PROTECTION: | 1,794 LF |
| STABILIZED CONSTRUCTION ENTRANCE: | 1 EACH |

NOTES:

1. FOR THE PROTECTION OF NATURAL AREAS, NO EXCEPTIONS TO INSTALLING FENCES AT THE LIMIT OF CONSTRUCTION LINE WILL BE PERMITTED. (SEE NOTE #7)
2. ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH HAYS COUNTY RULES AND REGULATIONS.
3. THE CONTRACTOR MAY NOT BLOCK, DIRECT, IMPEDE, OR REROUTE PEDESTRIAN AND VEHICULAR TRAFFIC, NOR PLACE A BARRICADE OR OTHER TRAFFIC CONTROL DEVICE IN A RIGHT-OF-WAY, WITHOUT FIRST OBTAINING A TEMPORARY USE OF RIGHT-OF-WAY PERMIT IN COMPLIANCE WITH HAYS COUNTY RULES AND REGULATIONS.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS THAT ARE REQUIRED BY HAYS COUNTY CODE REGARDING EXCAVATION & DEVELOPMENT IN PUBLIC RIGHT-OF-WAY.
5. DUST CONTROL TO BE PROVIDED BY CONTRACTOR IN ACCORDANCE WITH THE HAYS COUNTY RULES AND REGULATIONS.
6. CONTRACTOR SHALL CLEAN UP SPOILS THAT MIGRATE INTO EXISTING RIGHT-OF-WAY A MINIMUM OF ONCE PER DAY.
7. CONTRACTOR SHALL INSTALL TEMPORARY CHAIN LINK FENCE FOR PEDESTRIAN SAFETY WHERE LIMITS OF CONSTRUCTION ARE SHOWN.
8. ALL STORM WATER LEAVING THE SITE DURING CONSTRUCTION ACTIVITIES MUST PASS THROUGH THE SILT FENCE OR ROCK BERMS.
9. SILT FENCE TYPE AND INSTALLATION SHALL COMPLY WITH CITY OF SAN MARCOS DETAIL 642S-1-SM.
10. REFERENCE "GENERAL NOTES" SHEETS FOR EROSION CONTROL NOTES, SEQUENCE OF CONSTRUCTION & TREE CARE NOTES, AND "TREE LIST" SHEET FOR TREE INFORMATION.
11. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING.

| NO. | DATE | REVISION | BY |
|---|---|---|---|


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.660.5560
FIRM NO. F-15885


STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED
PROFESSIONAL ENGINEER
10/23/2025

INITIAL SUBMITTAL
October 23, 2025

# PROMISE LAND SAN MARCOS

1650 LIME KILN ROAD

CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

## EROSION & SEDIMENTATION CONTROL PLAN

SHEET
C200
05 OF 23
---


SAVED: 10/20/2025 2:27 PM
PLOT DATE: 10/23/2025 2:23 AM
PLOTTED BY: DAVID GUERRERO
PLOTTED: C:\Users\david.guerrero\Desktop\promise land san marcos\CIVIL\10-CAD\20-Plans\96-04-C00_Erosion_Control_Plan.dwg

PROMISELAND SAN MARCOS
VOL. 16, PG. 176, P.R.H.C.T.

CALLED 27.744 ACRES
T24R LLC
NO. 22001622, O.P.R.H.C.T.

REMAINING PORTION OF A
CALLED 60.40 ACRES
VIRGIL A. COWAN
VOL. 214, PG. 81, O.P.R.H.C.T.

CLEARING AND GRUBBING
3.85 ACRES

5663.87 SF OF EXISTING GRAVEL TO BE REMOVED

EXISTING GATE TO BE REMOVED

EXISTING PIPE TO BE REMOVED

SAWCUT 111 SF OF EXISTING PAVEMENT

WOOD DECK

ROCK WALL

GATE

APPROXIMATE LOCATION OF ORIGINAL SURVEY LINE

TRANSMISSION LINE

PEDERNALES ELECTRIC COOPERATIVE, INC.
50' ELECTRIC TRANSMISSION EASEMENT
(AS SHOWN AS 60' WIDE ON PROMISELAND SAN MARCOS PLAT)
VOL. 211, PG. 417, O.P.R.H.C.T.

DEVELOPMENT RESERVE
CALLED 12.0975 ACRES

LOT 1
BLOCK A

COWAN ROAD - CR 277
VARIABLE WIDTH R.O.W.
(VOL. 16, PG. 176, P.R.H.C.T.)
(VOL. 197, PG. 650, O.P.R.H.C.T.)

SIGN ( E.A.R.Z.)

S 35°08'21" W 469.47'
(S 35°08'21" W 469.47')
(S 90°00'00" W 469.47')

12" GMP ± 737.71

SAVED: 10/20/2025 2:56 PM
PLOTTED: 10/23/2025 10:22 AM
PLOTTED BY: DAVID QUIÑONES
P:\Projects_p\000500s\500-01\Promise land san marcos\CIVIL\10-CAD\20-Site\Mod\10-01(00)Demolition_Plan.dwg

0 15' 30' 60'

LEGEND

- BOUNDARY / R.O.W.
- EASEMENT / SETBACK
- CONTOUR
- WL — WATER LINE
- WW — WASTEWATER LINE
- SD — STORM DRAIN LINE
- OHE — OVERHEAD UTILITY
- TP — TREE PROTECTION: REFERENCE EROSION & SEDIMENTATION CONTROL PLAN
- DEMOLITION AREA: ALL ITEMS WITHIN THIS AREA TO BE REMOVED OR RELOCATED AS NOTED
- TREE (TO REMAIN)
- TREE TO BE REMOVED

NOTES:

1. EROSION/SEDIMENTATION CONTROL AND TREE PROTECTION MUST BE INSTALLED PRIOR TO ANY DEMOLITION. REFERENCE EROSION & SEDIMENTATION CONTROL PLAN SHEET.
2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIG TEST" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLAN PER THE APPROPRIATE REMEDIAL ACTION AGREED UPON BY THE ENGINEER.
3. WHERE A STATE OR LOCAL MUNICIPAL STANDARD DETAIL DUPLICATES A DETAIL SHOWN IN THE PLANS, THE MORE STRINGENT DETAIL, AS DETERMINED BY THE REVIEWING AGENCY, SHALL APPLY.
4. NO SITE DISTURBANCE SHALL OCCUR UNTIL THE PRECONSTRUCTION MEETING WITH THE ENVIRONMENTAL INSPECTOR IS HELD.
5. ALL DEMOLITION OF EXISTING CURBING AND SIDEWALKS MUST BE DONE BY HAND WHEN WORKING WITHIN THE 1/2 CRITICAL ROOT ZONE OF EXISTING TREES.
6. TREE PROTECTION FENCE MOVED DURING CONSTRUCTION MUST BE RE-INSTATED AS SOON AS DEMOLITION WORK IS COMPLETED. ANY WORK BEING DONE WITHIN THE TREE PROTECTION FENCE AREA MUST NOT IMPACT TREE(S); NO ROOT DAMAGE AND NO BRANCH OR TRUNK DAMAGE. ADD A 12" LAYER OF MULCH WITHIN THE TREE PROTECTION FENCE AREA PRIOR TO CONDUCTING ANY WORK INSIDE FENCE AREA.
7. LIMITS OF CONSTRUCTION ARE SHOWN ON THE EROSION & SEDIMENTATION CONTROL PLAN(S).
8. REFERENCE "TREE LIST" SHEET AND EROSION & SEDIMENTATION CONTROL PLAN(S) FOR TREE INFORMATION.
9. SEE EXISTING TREE LIST FOR TREES TO REMAIN AND TREES TO BE REMOVED.

| NO. | DATE | REVISION | BY |
|---|---|---|---|


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.668.5560
FIRM NO. F-15085

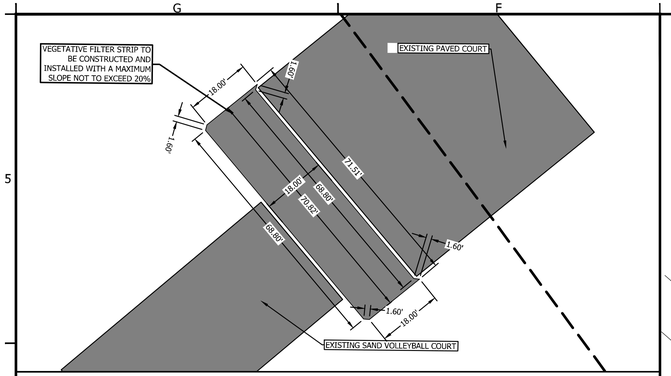

STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED
PROFESSIONAL ENGINEER
10/23/2025

INITIAL SUBMITTAL
October 23, 2025

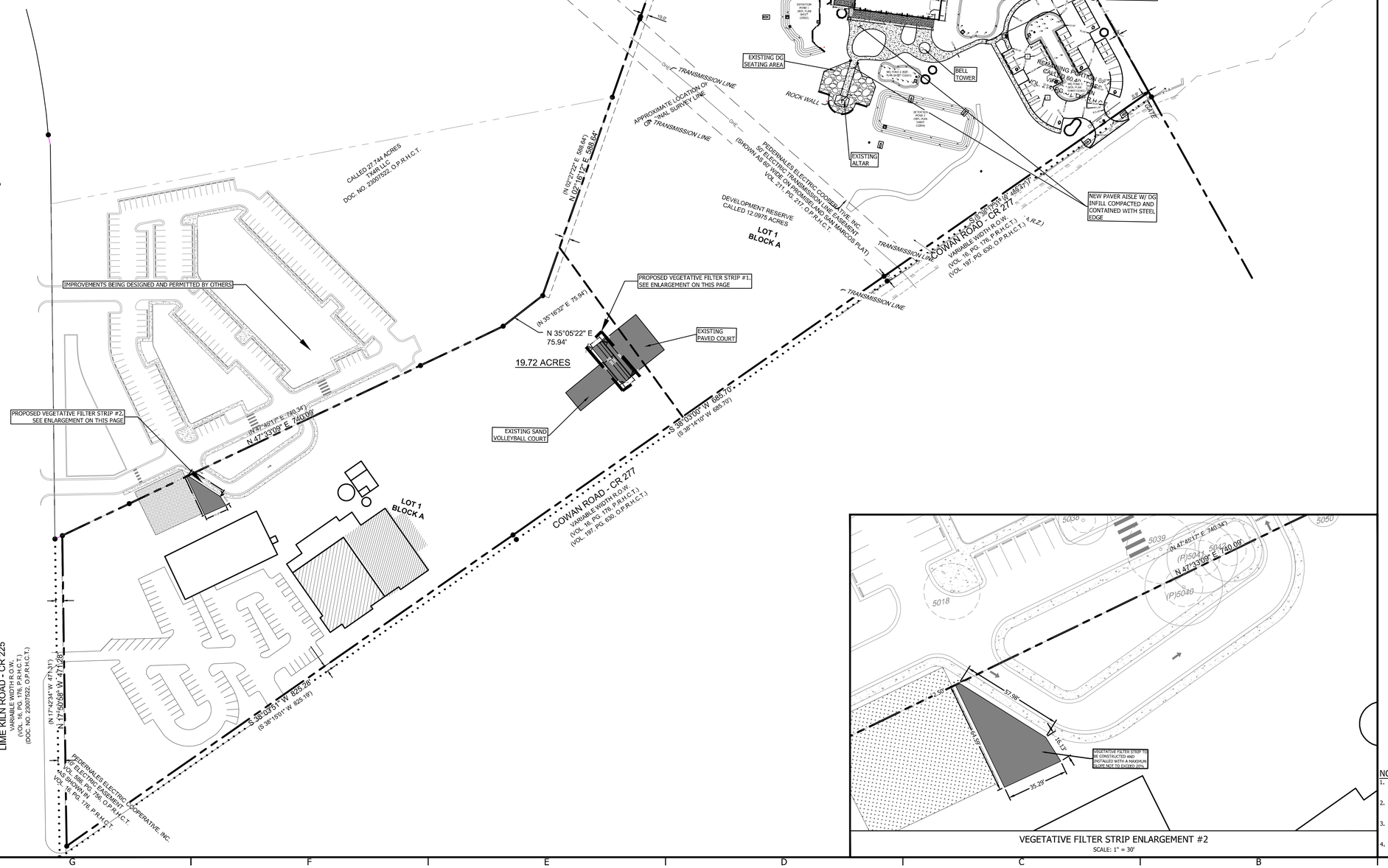
PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

DEMOLITION PLAN

SHEET
CD100
06 OF 23
---




VEGETATIVE FILTER STRIP ENLARGEMENT #1
SCALE: 1" = 20'




VEGETATIVE FILTER STRIP ENLARGEMENT #2
SCALE: 1" = 30'

0 40' 80' 160'

## LEGEND

- BOUNDARY / R.O.W.
- EASEMENT / SETBACK
- CURB / EDGE OF PVMT
- BUILDING FACE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- ACCESSIBLE ROUTE (ADA)
- FIRE LANE STRIPING
- TOP/BOTTOM OF SLOPE
- OHE — OVERHEAD UTILITY
- FEMA 100YR — LIMITS OF 100 YEAR FLOOD PLAIN
- RETAINING/SCREEN WALL
- CHAIN LINK FENCE
- WOOD FENCE
- IRON FENCE
- BENCHMARK
- BIKE RACK
- SIGN
- WATER METER VAULT
- WATER VALVE
- WASTEWATER MANHOLE
- UTILITY POLE
- CLEAN-OUT
- GUY WIRE
- ELEC TRANSFORMER PAD
- STORM DRAIN INLET
- STORM DRAIN MANHOLE
- TREE W/ TAG (TO REMAIN)

NOTES:
1. REFERENCE "SITE PLAN NOTES & CALCULATIONS" SHEET FOR BUILDING, SITE, PARKING DATA AND SITE PLAN NOTES.
2. ALL ITEMS ARE TO BE FURNISHED & INSTALLED BY CONTRACTOR. REFERENCE CONSTRUCTION DETAILS SHEETS FOR ADDITIONAL INFORMATION.
3. ALL SITE DIMENSIONS ARE TO FACE OF CURB, CENTER OF STRIPING, AND PROPERTY LINE UNLESS OTHERWISE NOTED.
4. LIMITS OF CONSTRUCTION ARE SHOWN ON THE EROSION & SEDIMENTATION CONTROL PLAN(S).

| NO. | DATE | REVISION | BY |
|---|---|---|---|


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.660.5560
FIRM NO. F-15085


STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED PROFESSIONAL ENGINEER
10/23/2025

INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

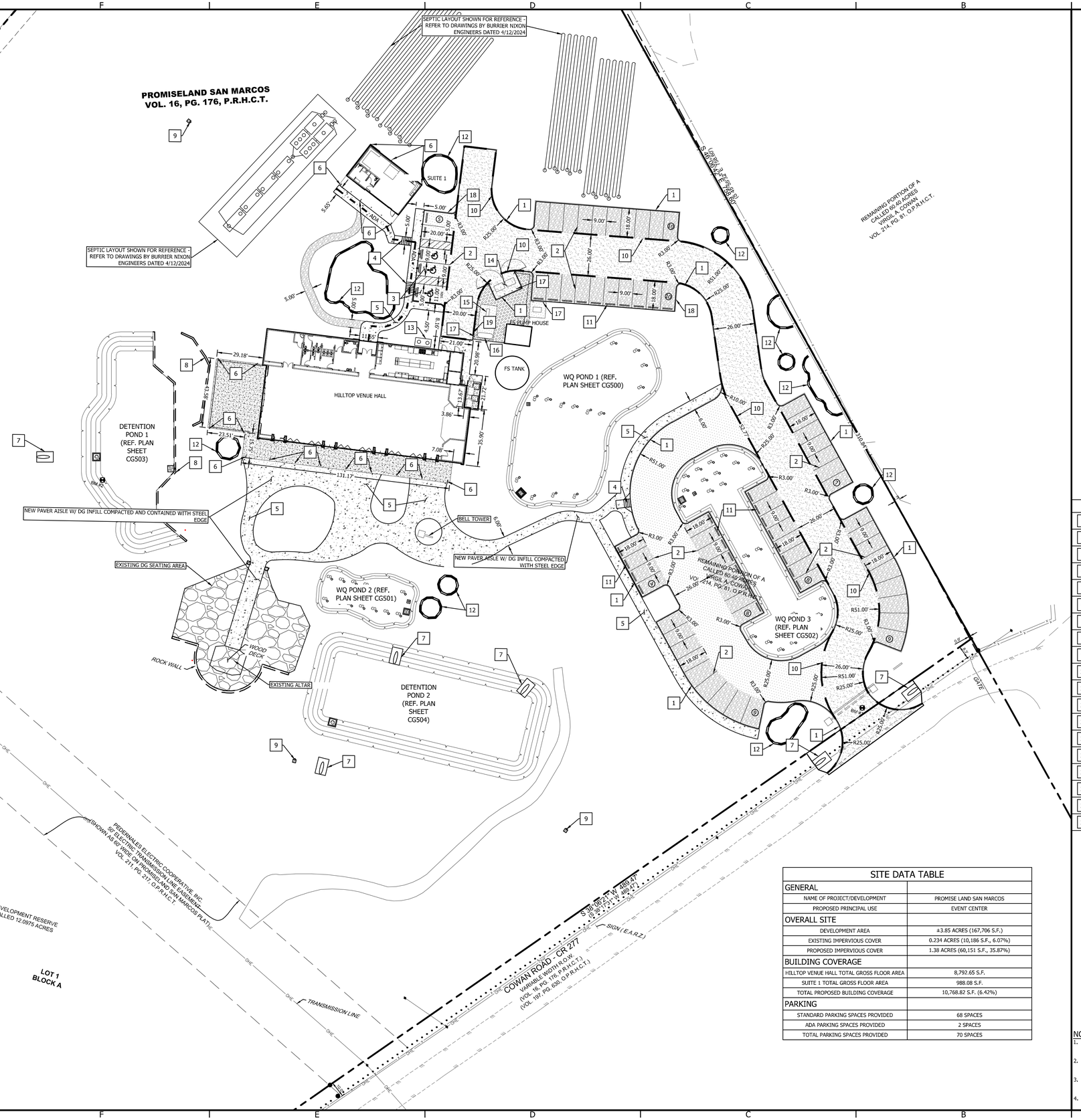
OVERALL SITE PLAN

SHEET
CS100
07 OF 23
---


DATE: 10/22/2025 4:27 PM
PLOTTED BY: DAVID QUIÑONES
FILENAME: C:\Users\david.quinones\Desktop\Local land san marcos\CIVIL\110-CAD\3D\Plan\9624.09-CS100-Site_Plan.dwg

## HAYS COUNTY ROAD DEPARTMENT NOTES:

1. SEVENTY TWO (72) HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION, THE DEVELOPER SHALL ARRANGE A PRE-CONSTRUCTION CONFERENCE WITH ALL PERTINENT PERMITS.
2. ALL ROADWAY AND DRAINAGE IMPROVEMENTS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH HAYS COUNTY SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS FROM HAYS COUNTY ROAD AND BRIDGE DEPARTMENT PRIOR TO BEGINNING ANY ON-SITE CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING THE NECESSARY INSPECTIONS FROM THE HAYS COUNTY ROAD AND BRIDGE DEPARTMENT. ALL REPAIRS TO IMPROVEMENTS CAUSED BY CONTRACTOR'S FAILURE TO INSTALL IMPROVEMENTS IN ACCORDANCE WITH HAYS COUNTY SPECIFICATIONS AND THESE CONSTRUCTION PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. HAYS COUNTY TRANSPORTATION DEPARTMENT'S ACCEPTANCE OF THE IMPROVEMENTS ARE CONTINGENT ON REPAIRS BEING MADE TO HAYS COUNTY'S SATISFACTION. DELAYS CAUSED BY REPAIRS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
3. A MINIMUM OF TWO (2) BENCHMARKS SHALL BE SHOWN ON THE CONSTRUCTION PLANS.
4. ALL BEDDING MATERIALS USED WITHIN THE ROW SHALL COMPLY WITH COA ITEM 510.
5. ALL CONCRETE PLACED WITHIN THE ROW SHALL BE A MINIMUM OF CLASS A, THE USE OF REBAR CHAIRS AND TEST CYLINDERS WILL BE REQUIRED ON PCC VALLEY GUTTER PLACEMENTS.
6. THE PROPOSED FULLY DEVELOPED STORMWATER RUNOFF RATE CANNOT EXCEED EXISTING CONDITIONS RUNOFF RATE.
7. DEWATERING OPERATIONS MUST USE SWPPP-SPECIFIED METHODS ONLY. IF SUCH METHODS ARE ONLY GENERAL OR NOT APPLICABLE, PUMP FROM THE TOP OF THE POOL (RATHER THAN THE BOTTOM) AND DISCHARGE TO A VEGETATED, UPLAND AREA (AWAY FROM WATERBODIES OR DRAINAGES) OR USED ANOTHER TYPE OF FILTRATION PRIOR TO DISCHARGE. REFER TO EPA 2017 GENERAL CONSTRUCTION PERMIT, SECTION 2.4, AS APPLICABLE.
8. THE CONTRACTOR SHALL SUPPLY QUALIFIED PERSONNEL TO PERFORM SWPPP INSPECTIONS ON PROJECT ≥ 1 ACRE. QUALIFIED PERSONNEL SHALL HAVE CISEC, CESSWI, OR EQUIVALENT CERTIFICATION APPROVED BY THE MS4.
9. CONTRACTOR SHALL ENSURE THAT MUD AND DEBRIS TRACKED ONTO PUBLICLY MAINTAINED ROADWAYS FROM VEHICLES LEAVING THE CONSTRUCTION SITE WILL BE CLEANED UP DAILY.
10. NO EXPLOSIVES SHALL BE USED FOR THIS PROJECT WITHOUT TCEQ APPROVAL.
11. ALL HOLES, TRENCHES AND OTHER HAZARDOUS AREAS SHALL BE ADEQUATELY PROTECTED BY BARRICADES, FENCING, LIGHTS, AND/OR OTHER PROTECTIVE DEVICES IN COMPLIANCE WITH COA 509S AND OSHA REGULATIONS AT ALL TIMES.
12. THE CONTRACTOR SHALL SUBMIT A TRENCH SAFETY PLAN PREPARED AND SEALED BY AN ENGINEER LICENSED BY THE STATE OF TEXAS PRIOR TO THE START OF THE PROJECT. THE CONTRACTOR SHALL ASSIGN A COMPETENT PERSON THAT HAS BEEN PROPERLY TRAINED AND IS QUALIFIED TO MAKE INSPECTIONS AND SUPERVISE THE INSTALLATION, MAINTENANCE, AND REMOVAL OF THE TRENCH SAFETY OR EXCAVATION SAFETY SYSTEM.
13. HAYS COUNTY IS NOT RESPONSIBLE FOR SIDEWALK MAINTENANCE. A FULLY EXECUTED LICENSED AGREEMENT MUST BE IN-PLACE PRIOR TO CONSTRUCTION OF SIDEWALKS WITHIN HAYS COUNTY ROW.
14. CONTRACTOR SHALL COMPLY WITH CONSTRUCTION SEQUENCING WHICH MAY BE SPECIFIED SOMEWHERE IN THE CONSTRUCTION PLANS.
15. PERMIT IS REQUIRED FOR CONSTRUCTION IN 'RIGHT OF WAY': ORDINANCE 7.10. NO DRIVEWAY, UTILITY CONSTRUCTION, MAILBOXES, LANDSCAPING OR ANY OTHER ENCROACHMENT INTO RIGHT-OF-WAY OR EASEMENT SHALL BE ALLOWED WITHOUT FIRST OBTAINING A PERMIT FROM THE HAYS COUNTY ROAD AND BRIDGE DEPARTMENT.
16. PRIOR TO THE INSTALLATION OF ANY ROAD BUILDING MATERIAL THE SUBGRADE SHALL BE INSPECTED BY HAYS COUNTY. PRIOR TO PAVING, BASE MATERIAL SHALL BE INSPECTED BY HAYS COUNTY. THE OWNER OR HIS AGENT SHALL NOTIFY HAYS COUNTY FORTY-EIGHT (48) HOURS PRIOR TO THE TIME WHEN THE INSPECTION IS NEEDED: ORDINANCE 1.05; 2.06.
17. ALL OUTFALLS CONSTRUCTED WITHIN HAYS COUNTY MUST BE SUBMITTED TO HAYS COUNTY WITH GPS COORDINATES AT THE END OF EACH PROJECT. COORDINATES WILL BE SUBMITTED ON THE NAD 1983 STATE PLANE SOUTH CENTRAL FIPS 4204 FEET COORDINATE SYSTEM. ALL COORDINATES WILL BE SUBMITTED IN GRID UNITS. THE REQUIRED FILE TYPE FOR COORDINATE DATA SUBMISSIONS IS *TXT FORMAT.
18. AT THE TIME A FINAL INSPECTION AND RELEASE OF PERFORMANCE SECURITY IS REQUESTED; THE DESIGN ENGINEER SHALL PROVIDE A COMPLETE SET OF "AS-BUILT" RECORD DRAWINGS IN PDF FORMAT (300DPI) ON A VIRUS FREE DISK AND SHALL CERTIFY THAT ALL ROAD AND DRAINAGE CONSTRUCTION HAS BEEN COMPLETED IN SUBSTANTIAL ACCORDANCE WITH PREVIOUSLY APPROVED PLANS AND SPECIFICATIONS, EXCEPT AS NOTED. NO PERFORMANCE SECURITY WILL BE RELEASED WITHOUT THESE EXHIBITS.




## SITE DATA TABLE

| | |
|---|---|
| **GENERAL** | |
| NAME OF PROJECT/DEVELOPMENT | PROMISE LAND SAN MARCOS |
| PROPOSED PRINCIPAL USE | EVENT CENTER |
| **OVERALL SITE** | |
| DEVELOPMENT AREA | ±3.85 ACRES (167,706 S.F.) |
| EXISTING IMPERVIOUS COVER | 0.234 ACRES (10,186 S.F., 6.07%) |
| PROPOSED IMPERVIOUS COVER | 1.38 ACRES (60,151 S.F., 35.87%) |
| **BUILDING COVERAGE** | |
| HILLTOP VENUE HALL TOTAL GROSS FLOOR AREA | 8,792.65 S.F. |
| SUITE 1 TOTAL GROSS FLOOR AREA | 988.08 S.F. |
| TOTAL PROPOSED BUILDING COVERAGE | 10,768.82 S.F. (6.42%) |
| **PARKING** | |
| STANDARD PARKING SPACES PROVIDED | 68 SPACES |
| ADA PARKING SPACES PROVIDED | 2 SPACES |
| TOTAL PARKING SPACES PROVIDED | 70 SPACES |

0 15' 30' 60'

### LEGEND

- BOUNDARY / R.O.W.
- EASEMENT / SETBACK
- CURB / EDGE OF PVMT
- BUILDING FACE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- ADA ACCESSIBLE ROUTE (ADA)
- FIRE LANE STRIPING
- TOP/BOTTOM OF SLOPE
- OHE OVERHEAD UTILITY
- FEMA 100YR LIMITS OF 100 YEAR FLOOD PLAIN
- RETAINING/SCREEN WALL
- CHAIN LINK FENCE
- WOOD FENCE
- IRON FENCE
- BENCHMARK
- BIKE RACK
- SIGN
- WATER METER VAULT
- WATER VALVE
- WW WASTEWATER MANHOLE
- UTILITY POLE
- CLEAN-OUT
- GUY WIRE
- ELEC TRANSFORMER PAD
- SD STORM DRAIN INLET
- SD STORM DRAIN MANHOLE
- TREE W/ TAG (TO REMAIN)

### SITE PLAN KEY NOTES

| | |
|---|---|
| 1 | 6" CONCRETE CURB (REF. DETAIL SHEET C600) |
| 2 | PARKING STALL STRIPING (REF. DETAIL SHEET C600) |
| 3 | ACCESSIBLE PARKING SPACE (REF. DETAIL SHEET C600) |
| 4 | BARRIER FREE ADA RAMP (REF. DETAIL SHEET C600) |
| 5 | PRIVATE SIDEWALK (REF. DETAIL SHEET C600) |
| 6 | DOWNSPOUT (REF. ARCH PLANS) |
| 7 | SLOPED END TREATMENT (REF. DETAIL SHEET C700) |
| 8 | RETAINING WALL (REF. DETAIL SHEET C601) |
| 9 | WQ DAYLIGHT (REF. WQ POND PLAN SHEETS CG500-502) |
| 10 | FIRE LANE STRIPING (REF. DETAIL SHEET C600) |
| 11 | WHEEL STOP (REF. DETAIL SHEET C600) |
| 12 | TREE WELL (REF. LANDSCAPE PLANS) |
| 13 | GREASE INTERCEPTOR (REF. MEP PLANS) |
| 14 | TRASH ENCLOSURE |
| 15 | GENERATOR (REF. ARCHITECTURAL PLANS) |
| 16 | PROPANE TANK (REF. ARCHITECTURAL PLANS) |
| 17 | BOLLARDS |
| 18 | CURB TRANSITION (REF. DETAIL SHEET C601) |
| 19 | 3 CONCRETE CURB CUTS (REF. DETAIL SHEET C600) |

NOTES:
1. REFERENCE "SITE PLAN NOTES & CALCULATIONS" SHEET FOR BUILDING, SITE, PARKING DATA AND SITE PLAN NOTES.
2. ALL ITEMS ARE TO BE FURNISHED & INSTALLED BY CONTRACTOR. REFERENCE CONSTRUCTION DETAILS SHEETS FOR ADDITIONAL INFORMATION.
3. ALL SITE DIMENSIONS ARE TO FACE OF CURB, CENTER OF STRIPING, AND PROPERTY LINE UNLESS OTHERWISE NOTED.
4. LIMITS OF CONSTRUCTION ARE SHOWN ON THE EROSION & SEDIMENTATION CONTROL PLAN(S).

| NO. | DATE | REVISION | BY |
|---|---|---|---|


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.668.5560
FIRM NO. F-15085


STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED PROFESSIONAL ENGINEER
10/23/2025

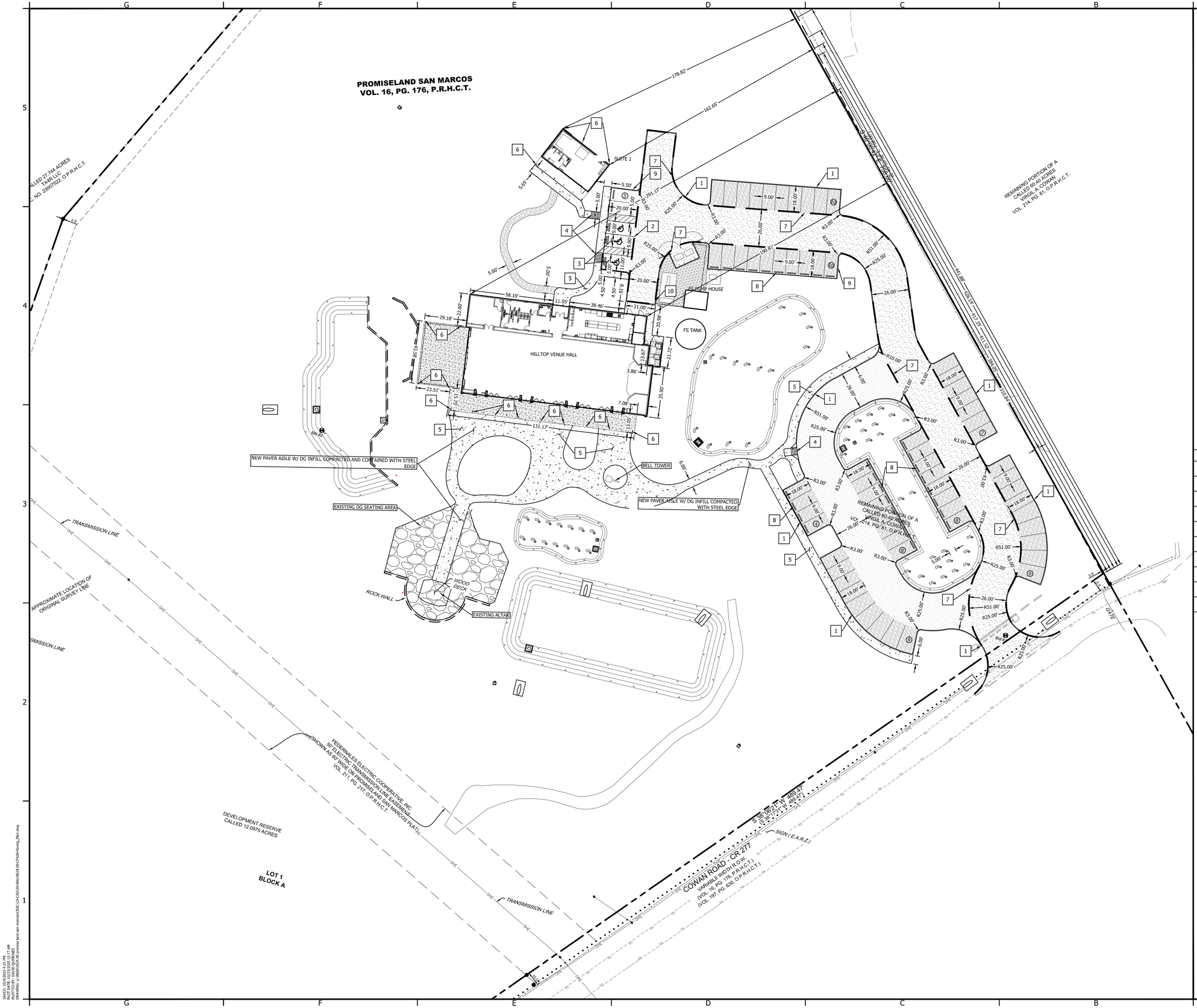
INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

SITE PLAN

SHEET
CS101
08 OF 23
---


SAVED: 10/22/2025 4:37 PM
PLOTTED: 10/23/2025 10:22 AM
PLOTTED BY: DAVID QUIÑONES
PATH: N:\projects\promise land san marcos\CIVIL\10-CAD\SHEETS\CS100-Site_Plan.dwg




0 15' 30' 60'

## LEGEND

- BOUNDARY / R.O.W.
- EASEMENT / SETBACK
- CURB / EDGE OF PVMT
- BUILDING FACE
- ACCESSIBLE ROUTE (ADA)
- FIRE LANE STRIPING
- OHE — OVERHEAD UTILITY
- RETAINING/SCREEN WALL
- LIGHT DUTY CONCRETE PVMT
- CONCRETE SIDEWALK/PVMT
- HEAVY DUTY CONCRETE PVMT
- BENCHMARK
- TREE W/ TAG (TO REMAIN)
- DECOMPOSED GRANITE
- GRAVEL

## PAVING PLAN KEY NOTES

| | |
|---|---|
| 1 | 6" CONCRETE CURB (REF. DETAIL SHEET C600) |
| 2 | PARKING STALL STRIPING (REF. DETAIL SHEET C600) |
| 3 | ACCESSIBLE PARKING SPACE (REF. DETAIL SHEET C600) |
| 4 | BARRIER FREE ADA RAMP (REF. DETAIL SHEET C600) |
| 5 | PRIVATE SIDEWALK (REF. DETAIL SHEET C600) |
| 6 | DOWNSPOUT (REF. ARCH PLANS) |
| 7 | FIRE LANE STRIPING (REF. DETAIL SHEET C600) |
| 8 | WHEEL STOP (REF. DETAIL SHEET C600) |
| 9 | CURB TRANSITION (REF. DETAIL SHEET C601) |
| 10 | 3 CONCRETE CURB CUTS (REF. DETAIL SHEET C600) |

| NO. | DATE | REVISION | BY |
|---|---|---|---|


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.668.5560
FIRM NO. F-15085


STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED
PROFESSIONAL ENGINEER
10/23/2025

INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

PAVING PLAN

SHEET
CP100
09 OF 23
---


PLOTTED BY: DAVID QUIÑONES
PLOTTED ON: 10/23/2025 9:17 AM
FILENAME: J:\Projects\WGI\promise land san marcos\CIVIL\10-CAD\Sheets\WGI-CP100-Paving_Plan.dwg

PROMISELAND SAN MARCOS
VOL. 16, PG. 176, P.R.H.C.T.

S 45°06'42"E 758.60'

REMAINING PORTION OF A CALLED 60.40 ACRES TRACT A, CONVEY VOL. 214, PG. 81, O.P.R.H.C.T.

REMAINING PORTION OF A CALLED 60.40 ACRES VIRGIL A. COWAN VOL. 214, PG. 81, O.P.R.H.C.T.

ROCK WALL

BM #1

BM #2

0 10' 20' 40'

## LEGEND

| | |
|---|---|
| | BOUNDARY / R.O.W. |
| | EASEMENT / SETBACK |
| | CURB / EDGE OF PVMT |
| | BUILDING FACE |
| ### | PROPOSED CONTOUR |
| ### | EXISTING CONTOUR |
| | ACCESSIBLE ROUTE (ADA) |
| WL | WATER LINE |
| WW | WASTEWATER LINE |
| SD | STORM DRAIN LINE |
| OHE | OVERHEAD UTILITY |
| UGE | UNDERGROUND UTILITY |
| GAS | GAS LINE |
| x x | FENCE |
| > > | DRAINAGE FLOW LINE |
| | RETAINING WALL |
| | BENCHMARK |
| XXX.XX | SPOT ELEVATION CALLOUT |
| FF | FINISHED FLOOR |
| FG | FINISHED GRADE (SOFTSCAPE) |
| FS | FINISHED SURFACE (HARDSCAPE) |
| FL | FLOWLINE |
| HP | HIGH POINT |
| ME | MATCH EXISTING |
| RIM | RIM |
| TC | TOP OF CURB |
| TP | TOP OF PAVEMENT |
| TW | TOP OF WALL |

NOTES:

1. REFERENCE LANDSCAPE PLAN FOR SODDING & SEEDING NOTES.
2. ALL ITEMS ARE TO BE FURNISHED & INSTALLED BY CONTRACTOR. REFERENCE CONSTRUCTION DETAIL SHEETS FOR ADDITIONAL INFORMATION.
3. ALL GRAVITY LINES ARE TO BE INSTALLED FROM DOWNSTREAM TO UPSTREAM.
4. CONTRACTOR SHALL FORM SIDEWALKS AND VERIFY SLOPES PRIOR TO POURING CONCRETE. CONTRACTOR SHALL ENSURE THAT CROSS SLOPES ARE NO GREATER THAN 2% ALONG THE ACCESSIBLE ROUTE AND RUNNING SLOPE IS NO GREATER THAN 5%, UNLESS THE RUNNING SLOPE MATCHES THE EXISTING STREET SLOPE. IF ANY DISCREPANCY ARISES, CONTRACTOR SHALL CONTACT ENGINEER FOR SOLUTION.

| NO. | DATE | REVISION | BY |
|---|---|---|---|


WGI.
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.660.5560
FIRM NO. F-15085


10/23/2025
STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED
PROFESSIONAL ENGINEER

INITIAL SUBMITTAL
October 23, 2025

# PROMISE LAND SAN MARCOS

1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

GRADING PLAN

SHEET
CG100
10 OF 23
---


PLOTTED BY: DAVID CHERKES
PLOTTED ON: 10/23/2025 9:43 PM
DRAWN BY: DC
FILE NAME: P:\PROMISELAND\Promise land san marcos\CIVIL\10-CAD\20-Plan\90-Plt\10-CG100-Grading_Plan.dwg

**PROMISELAND SAN MARCOS**
**VOL. 16, PG. 176, P.R.H.C.T.**

STA: 1+00.00 "SDL-WQ1-OUT"
WQ1 DAYLIGHT
FL 6" IN (E): 729.00'

2'x2' - 6" D50 ROCK SPLASHPAD

6"SD

277LF 6" HDPE @ 0.60%

STA: 1+37.45 "SDL-D1-OUT"
POND 1 OUTLET STRUCTURE
RIM: 733.21'
FL 12" OUT (W): 732.26'

STA: 1+00.00 "SDL-WQ1-D1"
WATER QUALITY OVERFLOW
FL 12" IN (E): 733.00'

4'x4' - 6" D50 ROCK SPLASHPAD

STA: 1+00.00 "SDL-D1-OUT"
HEADWALL W/DISSIPATORS
FL 12" IN (E): 732.00'

35LF 12" HDPE @ 0.74%

91LF 12" HDPE @ 1.00%

12"SD

STA: 1+90.63 "SDL-WQ1-D1"
INSTALL 11.25° H. BEND
FL 12" IN (E): 733.91'
FL 12" OUT (W): 733.91'

128LF 12" HDPE @ 1.28%

STA: 3+77.13 "SDL-WQ1-OUT"
CLEANOUT
FL 6" IN (NE): 730.66'
FL 6" IN (S): 730.66'
FL 6" IN (E): 730.66'
FL 6" OUT (W): 730.66'

STA: 3+18.17 "SDL-WQ1-D1"
OVERFLOW INLET
RIM: 737.04'
FL 12" OUT (W): 735.54'

STA: 2+58.11 "SDL-WQ3-D2"
OVERFLOW INLET
RIM: 737.77'
FL 12" OUT (SW): 735.17'

15"SD

158LF 12" HDPE @ 1.39%

STA: 2+02.08 "SDL-WQ2-OUT"
CLEANOUT
FL 6" IN (N): 730.86'
FL 6" OUT (S): 730.86'
FL 6" OUT (E): 730.86'

21LF 6" HDPE @ 0.84%

STA: 1+81.50 "SDL-WQ2-OUT"
11.25° H. BEND
FL 6" IN (N): 730.69'
FL 6" OUT (S): 730.69'

21LF 6" HDPE @ 0.84%

STA: 1+60.39 "SDL-WQ2-OUT"
11.25° H. BEND
FL 6" IN (N): 730.51'
FL 6" OUT (S): 730.51'

36LF 6" HDPE @ 0.84%

STA: 1+24.47 "SDL-WQ2-OUT"
11.25° H. BEND
FL 6" IN (N): 730.21'
FL 6" OUT (S): 730.21'

21LF 6" HDPE @ 0.84%

STA: 1+03.36 "SDL-WQ2-OUT"
11.25° H. BEND
FL 6" IN (N): 730.03'
FL 6" OUT (S): 730.03'

3LF 6" HDPE @ 0.84%

STA: 1+00.00 "SDL-WQ2-OUT"
WQ2 DAYLIGHT
FL 6" IN (N): 730.00'

2'x2' - 6" D50 ROCK SPLASHPAD

STA: 1+33.71 "SDL-WQ2-D2"
OVERFLOW INLET
RIM: 736.89'
FL 12" OUT (S): 733.39'

34LF 12" HDPE @ 1.16%

STA: 1+00.00 "SDL-WQ2-D2"
HEADWALL W/DISSIPATORS
FL 12" IN (N): 733.00'

STA: 1+33.50 "SDL-D2-OUT"
POND 2 OUTLET STRUCTURE
FL 12" OUT (S): 732.11'

INTERNAL DROP STRUCTURE
FL 12" IN (N): 731.20'
FL 12" OUT (S): 731.20'

31LF 12" HDPE @ 3.87%

STA: 1+00.00 "SDL-D2-OUT"
HEADWALL W/DISSIPATORS
FL 12" IN (N): 730.00'

STA: 1+00.00 "SDL-WQ3-D2"
HEADWALL W/DISSIPATORS
FL 12" IN (NE): 733.00'

266LF 6" HDPE @ 1.00%

STA: 1+80.85 "SDL-ROW"
S.E.T.
FL 12" OUT (SW): 739.78'

STA: 1+00.00 "SDL-ROW"
S.E.T.
FL 12" IN (NE): 737.59'

81LF 12" HDPE @ 2.71%

STA: 1+00.00 "SDL-WQ3-OUT"
WQ3 DAYLIGHT
FL 6" IN (N): 729.49'

2'x2' - 6" D50 ROCK SPLASHPAD

ROCK WALL

TRANSMISSION LINE

APPROXIMATE LOCATION OF ORIGINAL SURVEY LINE

PEDERNALES ELECTRIC COOPERATIVE, INC.
50' ELECTRIC TRANSMISSION LINE EASEMENT
SHOWN AS 60' WIDE ON PROMISELAND SAN MARCOS PLAT
VOL. 211, PG. 217, O.P.R.H.C.T.

DEVELOPMENT RESERVE
CALLED 12.0975 ACRES

LOT 1
BLOCK A

COWAN ROAD - CR 277
VARIABLE WIDTH R.O.W.
(VOL. 16, PG. 176, P.R.H.C.T.)
(VOL. 197, PG. 600, O.P.R.H.C.T.)

S 58° 06' 21" W 489.47'
S 58° 06' 21" W 489.47'

SIGN ( E.A.R.Z.)

REMAINING PORTION OF A
CALLED 60.40 ACRES
VIRGIL A. COWAN
VOL. 214, PG. 81, O.P.R.H.C.T.

REMAINING PORTION OF A
CALLED 27.744 ACRES
NO. 2300/922, O.P.R.H.C.T.

S 58° 06' 24" W 1,253.80'

0 15' 30' 60'

## LEGEND

- BOUNDARY / R.O.W.
- EASEMENT / SETBACK
- CURB / EDGE OF PVMT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- OHE — OVERHEAD UTILITY
- UGE — UNDERGROUND UTILITY
- WL — WATER LINE
- WW — WASTEWATER LINE
- SD — STORM DRAINAGE LINE
- GAS — GAS LINE
- DIRECTION OF FLOW
- RETAINING/SCREEN WALL
- WATER METER VAULT
- WATER VALVE
- WW — WASTEWATER MANHOLE
- UTILITY POLE
- CLEAN-OUT
- GUY WIRE
- ELEC TRANSFORMER PAD
- SD — STORM DRAIN INLET
- SD — STORM DRAIN MANHOLE
- TREE W/ TAG (TO REMAIN)

NOTES:
1. REFERENCE LANDSCAPE PLANS FOR SODDING & SEEDING NOTES.
2. ALL ITEMS ARE TO BE FURNISHED & INSTALLED BY CONTRACTOR. REFERENCE CONSTRUCTION DETAILS SHEETS FOR ADDITIONAL INFORMATION.
3. ON ALL GRAVITY LINES, CONTRACTOR MUST START AT DOWNSTREAM END AND PROCEED UPSTREAM TAKING CARE TO EXPOSE ALL EXISTING UTILITIES AND STRUCTURES WHICH MAY CONFLICT WITH THE PROPOSED LINE. ANY OTHER SEQUENCE OF CONSTRUCTION WILL BE AT THE CONTRACTOR'S RISK.
4. CONTRACTOR SHALL EXPOSE ALL EXISTING UTILITIES CROSSINGS PROPOSED GRAVITY LINES AND INSURE THERE WILL BE NO CONFLICTS PRIOR TO BEGINNING CONSTRUCTION. ADDITIONALLY, CONTRACTOR TO PLAN UTILITY LINE INSTALLATIONS IN A MANNER TO AVOID CONFLICTS WITH PROPOSED GRAVITY LINES.
5. CONTRACTOR SHALL FORM SIDEWALKS AND VERIFY SLOPES PRIOR TO POURING CONCRETE. CONTRACTOR SHALL ENSURE THAT CROSS SLOPES ARE NO GREATER THAN 2% ALONG THE ACCESSIBLE ROUTE AND RUNNING SLOPE IS NO GREATER THAN 5%, UNLESS THE RUNNING SLOPE MATCHES THE EXISTING STREET SLOPE. IF ANY DISCREPANCY ARISES, CONTRACTOR SHALL CONTACT ENGINEER FOR SOLUTION.
6. LIMITS OF CONSTRUCTION ARE SHOWN ON THE EROSION & SEDIMENTATION CONTROL PLAN(S).

| No. | DATE | REVISION | BY |
|---|---|---|---|


FIRM NO. F-15085
512.660.5560
WGI.
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723


10/23/2025
STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED
PROFESSIONAL ENGINEER

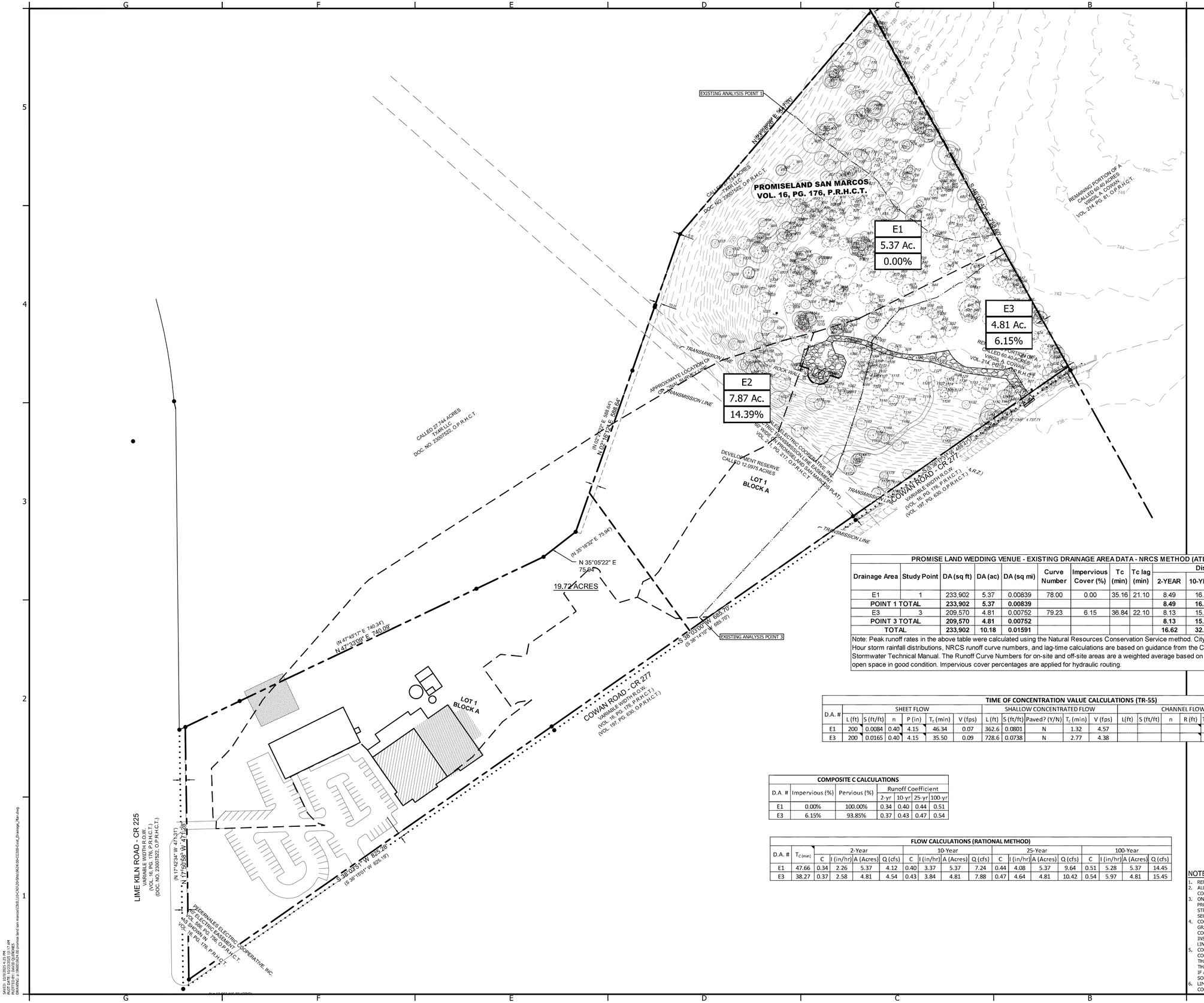
INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

STORM DRAINAGE PLAN

SHEET
CG200
11 OF 23
---


DATE: 10/7/2025 4:25 PM
PLOT BY: AMANDA SALDIVAR
PLOTTED BY: DAVID QUIÑONES
FILENAME: C:\Projects\Active Projects\promise land san marcos\CIVIL\10-CAD\20-Plans\06-04-CG200-Storm_Drainage_Plan.dwg




## LEGEND

- BOUNDARY / R.O.W.
- EASEMENT / SETBACK
- CURB / EDGE OF PVMT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- OHE — OVERHEAD UTILITY
- UGE — UNDERGROUND UTILITY
- WL — WATER LINE
- WW — WASTEWATER LINE
- SD — STORM DRAINAGE LINE
- GAS — GAS LINE
- DIRECTION OF FLOW
- RETAINING/SCREEN WALL
- WATER METER VAULT
- WATER VALVE
- WW — WASTEWATER MANHOLE
- UTILITY POLE
- CLEAN-OUT
- GUY WIRE
- ELEC TRANSFORMER PAD
- SD — STORM DRAIN INLET
- SD — STORM DRAIN MANHOLE
- TREE W/ TAG (TO REMAIN)

## DRAINAGE AREA LEGEND

- DRAINAGE AREA BOUNDARY
- E1 / XX Ac. / XX.XX% — DRAINAGE AREA NAME / DRAINAGE AREA SIZE / IMPERVIOUS COVER
- DRAINAGE ARROW

**PROMISE LAND WEDDING VENUE - EXISTING DRAINAGE AREA DATA - NRCS METHOD (ATLAS 14)**

| Drainage Area | Study Point | DA (sq ft) | DA (ac) | DA (sq mi) | Curve Number | Impervious Cover (%) | Tc (min) | Tc lag (min) | Discharge (cfs) 2-YEAR | 10-YEAR | 25-YEAR | 100-YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E1 | 1 | 233,902 | 5.37 | 0.00839 | 78.00 | 0.00 | 35.16 | 21.10 | 8.49 | 16.78 | 22.48 | 31.94 |
| **POINT 1 TOTAL** | | **233,902** | **5.37** | **0.00839** | | | | | **8.49** | **16.78** | **22.48** | **31.94** |
| E3 | 3 | 209,570 | 4.81 | 0.00752 | 79.23 | 6.15 | 36.84 | 22.10 | 8.13 | 15.37 | 20.31 | 28.49 |
| **POINT 3 TOTAL** | | **209,570** | **4.81** | **0.00752** | | | | | **8.13** | **15.37** | **20.31** | **28.49** |
| **TOTAL** | | **233,902** | **10.18** | **0.01591** | | | | | **16.62** | **32.15** | **42.79** | **60.43** |

Note: Peak runoff rates in the above table were calculated using the Natural Resources Conservation Service method. City of San Marcos Atlas 14 24-Hour storm rainfall distributions, NRCS runoff curve numbers, and lag-time calculations are based on guidance from the City of San Marcos Stormwater Technical Manual. The Runoff Curve Numbers for on-site and off-site areas are a weighted average based on Hydrologic Soil Types and open space in good condition. Impervious cover percentages are applied for hydraulic routing.

**TIME OF CONCENTRATION VALUE CALCULATIONS (TR-55)**

| D.A. # | SHEET FLOW L (ft) | S (ft/ft) | n | P (in) | $T_t$ (min) | V (fps) | SHALLOW CONCENTRATED FLOW L (ft) | S (ft/ft) | Paved? (Y/N) | $T_t$ (min) | V (fps) | CHANNEL FLOW L(ft) | S (ft/ft) | n | R (ft) | $T_t$ (min) | V (fps) | Total $T_c$ (min) | Total Lag Time (min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E1 | 200 | 0.0084 | 0.40 | 4.15 | 46.34 | 0.07 | 362.6 | 0.0801 | N | 1.32 | 4.57 | | | | | 0 | | 47.66 | 28.60 |
| E3 | 200 | 0.0165 | 0.40 | 4.15 | 35.50 | 0.09 | 728.6 | 0.0738 | N | 2.77 | 4.38 | | | | | 0 | | 38.27 | 22.96 |

**COMPOSITE C CALCULATIONS**

| D.A. # | Impervious (%) | Pervious (%) | Runoff Coefficient 2-yr | 10-yr | 25-yr | 100-yr |
|---|---|---|---|---|---|---|
| E1 | 0.00% | 100.00% | 0.34 | 0.40 | 0.44 | 0.51 |
| E3 | 6.15% | 93.85% | 0.37 | 0.43 | 0.47 | 0.54 |

**FLOW CALCULATIONS (RATIONAL METHOD)**

| D.A. # | $T_{C(min)}$ | 2-Year C | I (in/hr) | A (Acres) | Q (cfs) | 10-Year C | I (in/hr) | A (Acres) | Q (cfs) | 25-Year C | I (in/hr) | A (Acres) | Q (cfs) | 100-Year C | I (in/hr) | A (Acres) | Q (cfs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E1 | 47.66 | 0.34 | 2.26 | 5.37 | 4.12 | 0.40 | 3.37 | 5.37 | 7.24 | 0.44 | 4.08 | 5.37 | 9.64 | 0.51 | 5.28 | 5.37 | 14.45 |
| E3 | 38.27 | 0.37 | 2.58 | 4.81 | 4.54 | 0.43 | 3.84 | 4.81 | 7.88 | 0.47 | 4.64 | 4.81 | 10.42 | 0.54 | 5.97 | 4.81 | 15.45 |

DRAINAGE AREAS TAKEN FROM SITE PREPARATION PLAN FOR PROMISELAND CHURCH, DATED 9/28/11 BY AUSTIN CIVIL ENGINEERING, INC.

NOTES:
1. REFERENCE LANDSCAPE PLANS FOR SODDING & SEEDING NOTES.
2. ALL ITEMS ARE TO BE FURNISHED & INSTALLED BY CONTRACTOR. REFERENCE CONSTRUCTION DETAILS SHEETS FOR ADDITIONAL INFORMATION.
3. ON ALL GRAVITY LINES, CONTRACTOR MUST START AT DOWNSTREAM END AND PROCEED UPSTREAM TAKING CARE TO EXPOSE ALL EXISTING UTILITIES AND STRUCTURES WHICH MAY CONFLICT WITH THE PROPOSED LINE. ANY OTHER SEQUENCE OF CONSTRUCTION WILL BE AT THE CONTRACTOR'S RISK.
4. CONTRACTOR SHALL EXPOSE ALL EXISTING UTILITIES CROSSINGS PROPOSED GRAVITY LINES AND INSURE THERE WILL BE NO CONFLICTS PRIOR TO BEGINNING CONSTRUCTION. ADDITIONALLY, CONTRACTOR TO PLAN UTILITY LINE INSTALLATIONS IN A MANNER TO AVOID CONFLICTS WITH PROPOSED GRAVITY LINES.
5. CONTRACTOR SHALL FORM SIDEWALKS AND VERIFY SLOPES PRIOR TO POURING CONCRETE. CONTRACTOR SHALL ENSURE THAT CROSS SLOPES ARE NO GREATER THAN 2% ALONG THE ACCESSIBLE ROUTE AND RUNNING SLOPE IS NO GREATER THAN 5%, UNLESS THE RUNNING SLOPE MATCHES THE EXISTING STREET SLOPE. IF ANY DISCREPANCY ARISES, CONTRACTOR SHALL CONTACT ENGINEER FOR SOLUTION.
6. LIMITS OF CONSTRUCTION ARE SHOWN ON THE EROSION & SEDIMENTATION CONTROL PLAN(S).

| NO. | DATE | REVISION | BY |
|---|---|---|---|


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
FIRM NO. F-15985
512.668.5560


STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED
PROFESSIONAL ENGINEER
10/23/2025

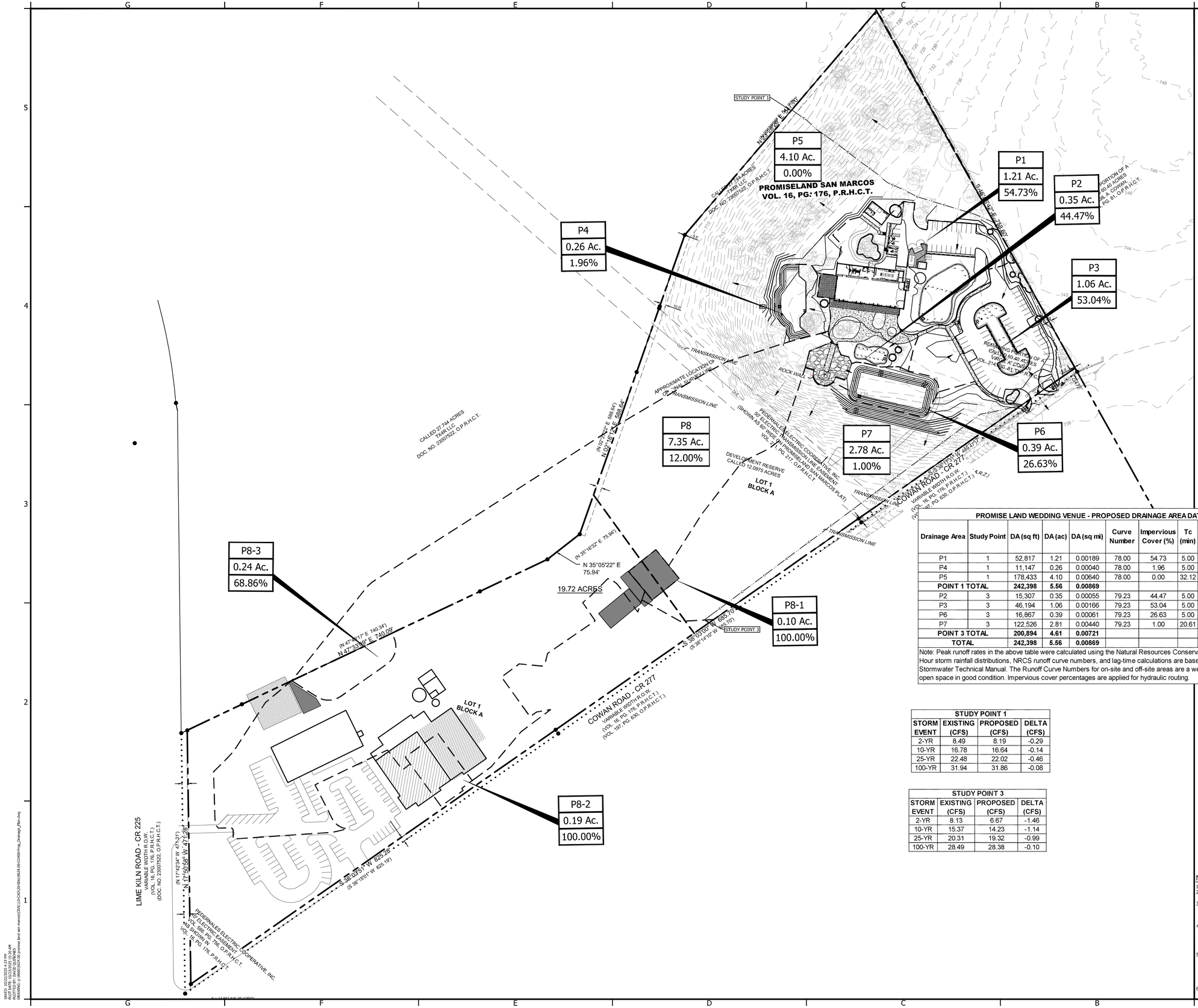
INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

EXISTING DRAINAGE AREA MAP

SHEET
CG300
12 OF 23
---


SAVED: 10/7/2025 4:23 PM
PLOTTED: 10/7/2025 4:25 PM
PLOTTED BY: DAVID QUIÑONES
XREFS: C:\Projects\Active Projects\promise land san marcos\CIVIL\10-CAD\20Sheets\CG\10-CG300-Exist_Drainage_Map.dwg




**PROMISE LAND WEDDING VENUE - PROPOSED DRAINAGE AREA DATA - NRCS METHOD (ATLAS 14)**

| Drainage Area | Study Point | DA (sq ft) | DA (ac) | DA (sq mi) | Curve Number | Impervious Cover (%) | Tc (min) | Tc lag (min) | Discharge (cfs) 2-YEAR | 10-YEAR | 25-YEAR | 100-YEAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P1 | 1 | 52,817 | 1.21 | 0.00189 | 78.00 | 54.73 | 5.00 | 3.00 | 5.65 | 9.29 | 11.72 | 15.71 |
| P4 | 1 | 11,147 | 0.26 | 0.00040 | 78.00 | 1.96 | 5.00 | 3.00 | 0.86 | 1.68 | 2.23 | 3.13 |
| P5 | 1 | 178,433 | 4.10 | 0.00640 | 78.00 | 0.00 | 32.12 | 19.27 | 6.81 | 13.43 | 17.98 | 25.52 |
| **POINT 1 TOTAL** | | **242,398** | **5.56** | **0.00869** | | | | | **8.19** | **16.64** | **22.02** | **31.86** |
| P2 | 3 | 15,307 | 0.35 | 0.00055 | 79.23 | 44.47 | 5.00 | 3.00 | 1.58 | 2.65 | 3.36 | 4.53 |
| P3 | 3 | 46,194 | 1.06 | 0.00166 | 79.23 | 53.04 | 5.00 | 3.00 | 4.98 | 8.18 | 10.30 | 13.78 |
| P6 | 3 | 16,867 | 0.39 | 0.00061 | 79.23 | 26.63 | 5.00 | 3.00 | 1.58 | 2.79 | 3.59 | 4.91 |
| P7 | 3 | 122,526 | 2.81 | 0.00440 | 79.23 | 1.00 | 20.61 | 12.37 | 6.18 | 11.82 | 15.62 | 21.89 |
| **POINT 3 TOTAL** | | **200,894** | **4.61** | **0.00721** | | | | | **6.67** | **14.23** | **19.32** | **28.38** |
| **TOTAL** | | **242,398** | **5.56** | **0.00869** | | | | | **14.87** | **30.87** | **41.34** | **60.25** |

Note: Peak runoff rates in the above table were calculated using the Natural Resources Conservation Service method. City of San Marcos Atlas 14 24-Hour storm rainfall distributions, NRCS runoff curve numbers, and lag-time calculations are based on guidance from the City of San Marcos Stormwater Technical Manual. The Runoff Curve Numbers for on-site and off-site areas are a weighted average based on Hydrologic Soil Types and open space in good condition. Impervious cover percentages are applied for hydraulic routing.

| STUDY POINT 1 | | | |
|---|---|---|---|
| STORM EVENT | EXISTING (CFS) | PROPOSED (CFS) | DELTA (CFS) |
| 2-YR | 8.49 | 8.19 | -0.29 |
| 10-YR | 16.78 | 16.64 | -0.14 |
| 25-YR | 22.48 | 22.02 | -0.46 |
| 100-YR | 31.94 | 31.86 | -0.08 |

| STUDY POINT 3 | | | |
|---|---|---|---|
| STORM EVENT | EXISTING (CFS) | PROPOSED (CFS) | DELTA (CFS) |
| 2-YR | 8.13 | 6.67 | -1.46 |
| 10-YR | 15.37 | 14.23 | -1.14 |
| 25-YR | 20.31 | 19.32 | -0.99 |
| 100-YR | 28.49 | 28.38 | -0.10 |

NOTES:
1. REFERENCE LANDSCAPE PLANS FOR SODDING & SEEDING NOTES.
2. ALL ITEMS ARE TO BE FURNISHED & INSTALLED BY CONTRACTOR. REFERENCE CONSTRUCTION DETAILS SHEETS FOR ADDITIONAL INFORMATION.
3. ON ALL GRAVITY LINES, CONTRACTOR MUST START AT DOWNSTREAM END AND PROCEED UPSTREAM TAKING CARE TO EXPOSE ALL EXISTING UTILITIES AND STRUCTURES WHICH MAY CONFLICT WITH THE PROPOSED LINE. ANY OTHER SEQUENCE OF CONSTRUCTION WILL BE AT THE CONTRACTOR'S RISK.
4. CONTRACTOR SHALL EXPOSE ALL EXISTING UTILITIES CROSSINGS PROPOSED GRAVITY LINES AND INSURE THERE WILL BE NO CONFLICTS PRIOR TO BEGINNING CONSTRUCTION. ADDITIONALLY, CONTRACTOR TO PLAN UTILITY LINE INSTALLATIONS IN A MANNER TO AVOID CONFLICTS WITH PROPOSED GRAVITY LINES.
5. CONTRACTOR SHALL FORM SIDEWALKS AND VERIFY SLOPES PRIOR TO POURING CONCRETE. CONTRACTOR SHALL ENSURE THAT CROSS SLOPES ARE NO GREATER THAN 2% ALONG THE ACCESSIBLE ROUTE AND RUNNING SLOPE IS NO GREATER THAN 5%, UNLESS THE RUNNING SLOPE MATCHES THE EXISTING STREET SLOPE. IF ANY DISCREPANCY ARISES, CONTRACTOR SHALL CONTACT ENGINEER FOR SOLUTION.
6. LIMITS OF CONSTRUCTION ARE SHOWN ON THE EROSION & SEDIMENTATION CONTROL PLAN(S).


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.668.5560
FIRM NO. F-15985


STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED PROFESSIONAL ENGINEER
10/23/2025

INITIAL SUBMITTAL
October 23, 2025

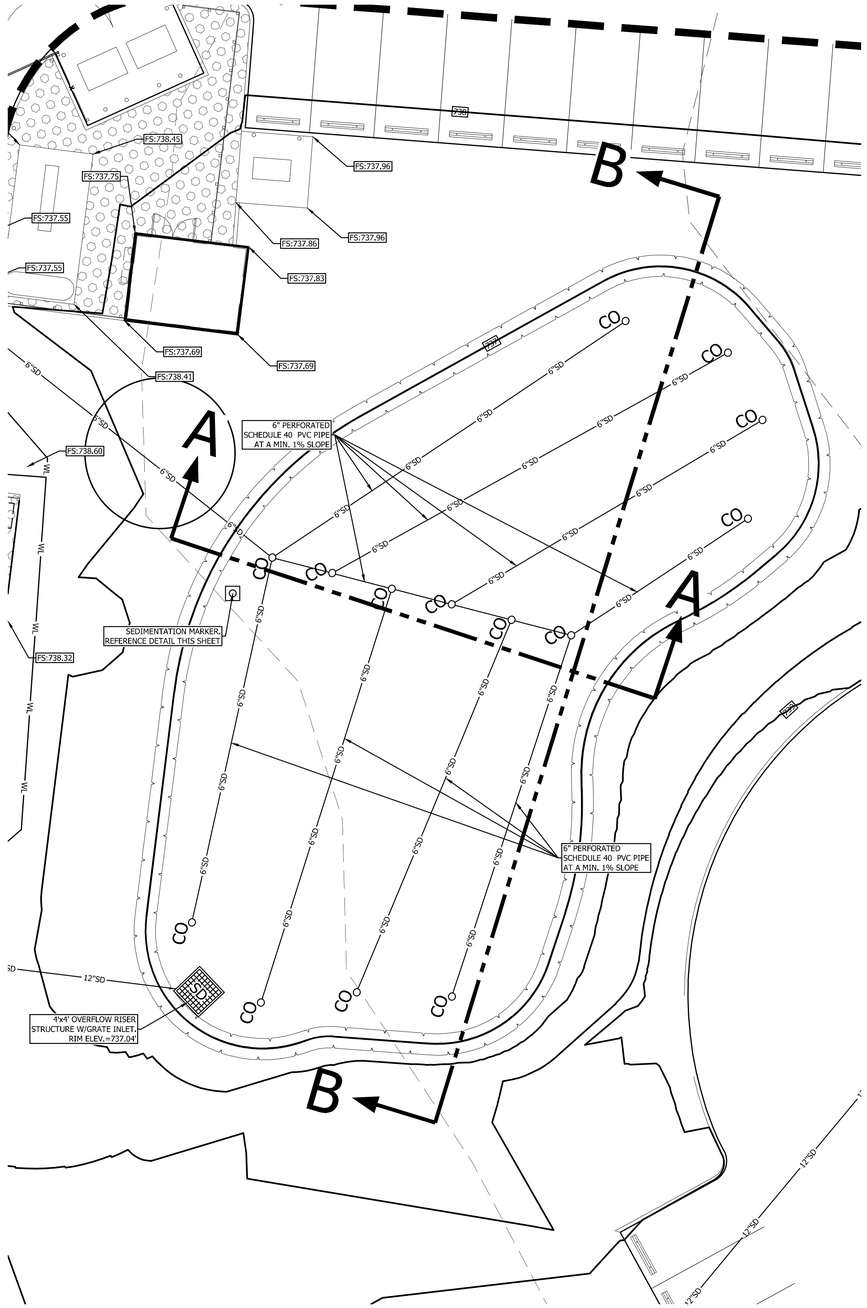
PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

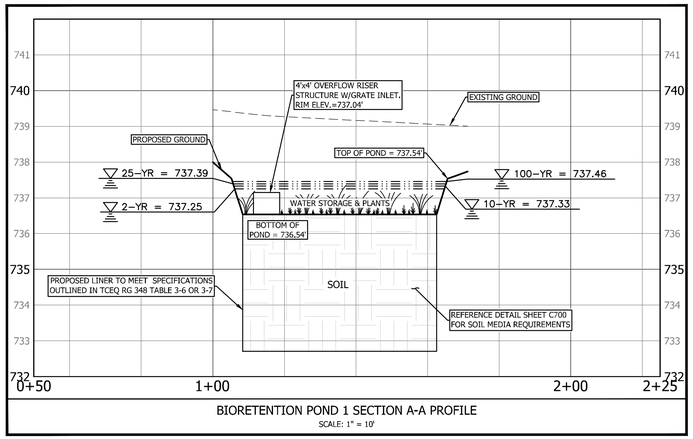
PROPOSED DRAINAGE AREA MAP

SHEET
CG400
13 OF 23

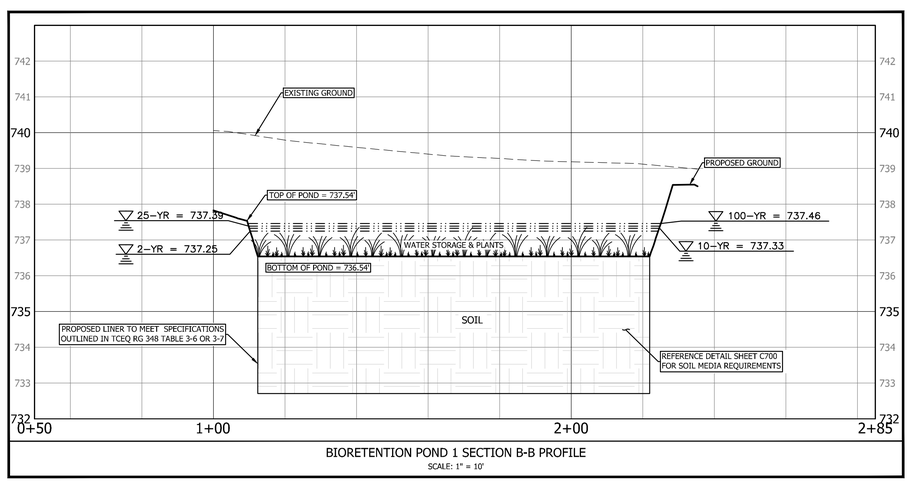
| NO. | DATE | REVISION | BY |
|---|---|---|---|


PLOT DATE: 10/22/2025 4:37 PM
PLOTTED BY: DAVID GUERRERO
PLOTTING: J:\PROJECTS\PROMISE land san marcos\CIVIL\10-CAD\20-Sheets\CG400-Proposed Drainage Area Map.dwg

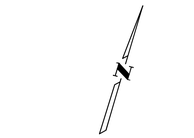



BIORETENTION POND 1 SECTION A-A PROFILE
SCALE: 1" = 10'




BIORETENTION POND 1 SECTION B-B PROFILE
SCALE: 1" = 10'



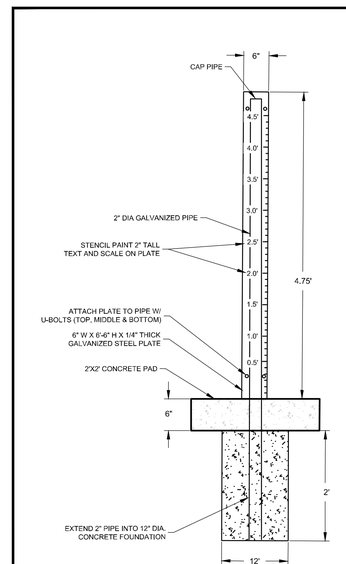

LEGEND

| | |
|---|---|
| | BOUNDARY / R.O.W. |
| | EASEMENT / SETBACK |
| | CURB / EDGE OF PVMT |
| | EXISTING CONTOUR |
| ### | PROPOSED CONTOUR |
| OHE | OVERHEAD UTILITY |
| UGE | UNDERGROUND UTILITY |
| WL | WATER LINE |
| WW | WASTEWATER LINE |
| SD | STORM DRAINAGE LINE |
| GAS | GAS LINE |
| | DIRECTION OF FLOW |
| | RETAINING/SCREEN WALL |
| | WATER METER VAULT |
| | WATER VALVE |
| WW | WASTEWATER MANHOLE |
| | UTILITY POLE |
| | CLEAN-OUT |
| | GUY WIRE |
| T | ELEC TRANSFORMER PAD |
| SD | STORM DRAIN INLET |
| SD | STORM DRAIN MANHOLE |
| ## | TREE W/ TAG (TO REMAIN) |

**BIORETENTION POND 1**

**ELEVATION-STORAGE TABLE**

| STAGE (FT) | ELEVATION (FT) | AREA (SQ.FT.) | INCREMENTAL STORAGE (CF) | TOTAL STORAGE (CF) | NOTES |
|---|---|---|---|---|---|
| 0 | 736.54 | 5854 | 0 | 0 | |
| 0.5 | 737.04 | 6333 | 3046 | 3046 | WQ DEPTH |
| 1 | 737.54 | 6826 | 3289 | 6334 | |




SEDIMENT DEPTH MARKER
NOT TO SCALE

| No. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.660.5560
FIRM NO. F-15885


10/23/2025

STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED
PROFESSIONAL ENGINEER

INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

WATER QUALITY POND 1 PLAN & CALCULATIONS

SHEET
CG500
14 OF 23
---


SAVED: 10/22/2025 7:58 PM
PLOTTED: 10/23/2025 10:23 AM
PLOTTED BY: DAVID QUIÑONES
DRAWING: p:\promise land san marcos\CIVIL\15-CAD\29-Site\WQ4.09-CG500-Pond_Plan.dwg

## Texas Commission on Environmental Quality
## Water Pollution Abatement Plan
## General Construction Notes

**Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer**

*The following/listed "construction notes" are intended to be advisory in nature only and do not constitute an approval or conditional approval by the Executive Director (ED), nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further actions may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code (TAC), Chapters 213 and 217, as well as local ordinances and regulations providing for the protection of water quality. Additionally, nothing contained in the following/listed "construction notes" restricts the powers of the ED, the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected surface waters. The holder of any Edwards Aquifer Protection Plan containing "construction notes" is still responsible for compliance with Title 30, TAC, Chapters 213 or any other applicable TCEQ regulation, as well as all conditions of an Edwards Aquifer Protection Plan through all phases of plan implementation. Failure to comply with any condition of the ED's approval, whether or not in contradiction of any "construction notes," is a violation of TCEQ regulations and any violation is subject to administrative rules, orders, and penalties as provided under Title 30, TAC § 213.10 (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. The following/listed "construction notes" in no way represent an approved exception by the ED to any part of Title 30 TAC, Chapters 213 and 217, or any other TCEQ applicable regulation*

1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any regulated activities. This notice must include:
   - the name of the approved project;
   - the activity start date; and
   - the contact information of the prime contractor.

2. All contractors conducting regulated activities associated with this project must be provided with complete copies of the approved Water Pollution Abatement Plan (WPAP) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.

3. If any sensitive feature(s) (caves, solution cavity, sink hole, etc.) is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. Construction activities may not be resumed until the TCEQ has reviewed and approved the appropriate protective measures in order to protect any sensitive feature and the Edwards Aquifer from potentially adverse impacts to water quality.

4. No temporary or permanent hazardous substance storage tank shall be installed within 150 feet of a water supply source, distribution system, well, or sensitive feature.

5. Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the approved plans and manufacturers specifications. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. These controls must remain in place until the disturbed areas have been permanently stabilized.

6. Any sediment that escapes the construction site must be collected and properly disposed of before the next rain event to ensure it is not washed into surface streams, sensitive features, etc.

7. Sediment must be removed from the sediment traps or sedimentation basins not later than



when it occupies 50% of the basin's design capacity.

8. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from being discharged offsite.

9. All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.

10. If portions of the site will have a temporary or permanent cease in construction activity lasting longer than 14 days, soil stabilization in those areas shall be initiated as soon as possible prior to the 14th day of inactivity. If activity will resume prior to the 21st day, stabilization measures are not required. If drought conditions or inclement weather prevent action by the 14th day, stabilization measures shall be initiated as soon as possible.

11. The following records shall be maintained and made available to the TCEQ upon request:
   - the dates when major grading activities occur;
   - the dates when construction activities temporarily or permanently cease on a portion of the site; and
   - the dates when stabilization measures are initiated.

12. The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:

   A. any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;

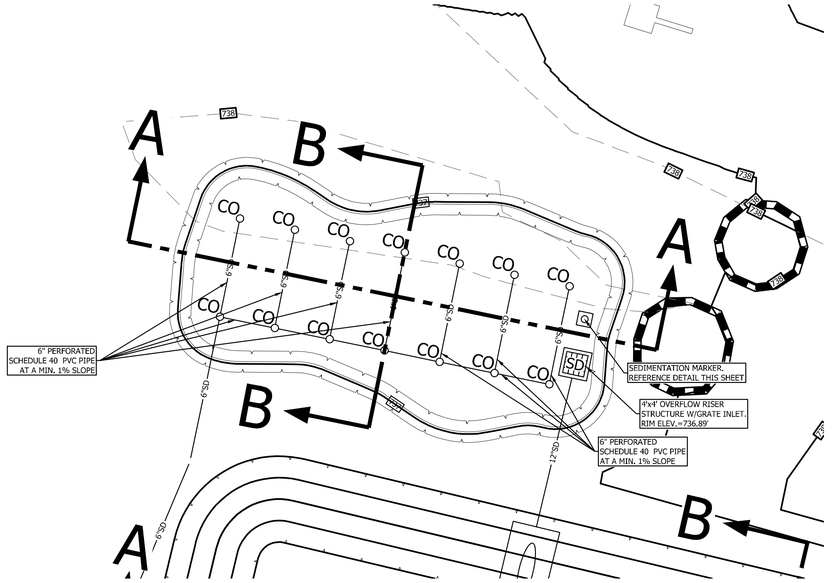
   B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;

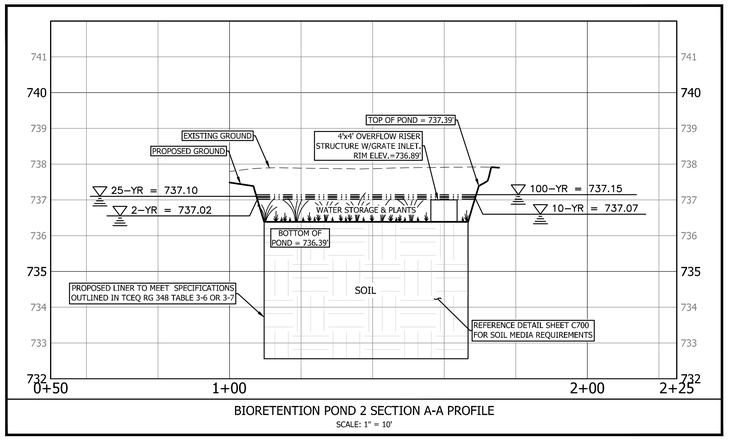
   C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

| | |
|---|---|
| Austin Regional Office<br>12100 Park 35 Circle, Building A<br>Austin, Texas 78753-1808<br>Phone (512) 339-2929<br>Fax (512) 339-3795 | San Antonio Regional Office<br>14250 Judson Road<br>San Antonio, Texas 78233-4480<br>Phone (210) 490-3096<br>Fax (210) 545-4329 |

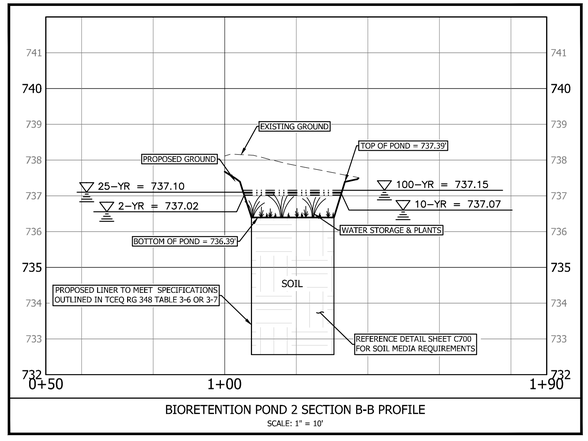
**THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.**



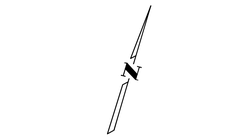



BIORETENTION POND 2 SECTION A-A PROFILE
SCALE: 1" = 10'




BIORETENTION POND 2 SECTION B-B PROFILE
SCALE: 1" = 10'




LEGEND

- BOUNDARY / R.O.W.
- EASEMENT / SETBACK
- CURB / EDGE OF PVMT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- OHE — OVERHEAD UTILITY
- UGE — UNDERGROUND UTILITY
- WL — WATER LINE
- WW — WASTEWATER LINE
- SD — STORM DRAINAGE LINE
- GAS — GAS LINE
- DIRECTION OF FLOW
- RETAINING/SCREEN WALL
- WATER METER VAULT
- WATER VALVE
- WW — WASTEWATER MANHOLE
- UTILITY POLE
- CLEAN-OUT
- GUY WIRE
- ELEC TRANSFORMER PAD
- SD — STORM DRAIN INLET
- SD — STORM DRAIN MANHOLE
- TREE W/ TAG (TO REMAIN)

**BIORETENTION POND 2**
**ELEVATION-STORAGE TABLE**

| STAGE (FT) | ELEVATION (FT) | AREA (SQ.FT.) | INCREMENTAL STORAGE (CF) | TOTAL STORAGE (CF) | NOTES |
|---|---|---|---|---|---|
| 0.00 | 736.39 | 1335 | 0 | 0 | |
| 0.50 | 736.89 | 1424 | 712 | 712 | |
| 0.52 | 736.91 | 1427 | 23 | 735 | WQ DEPTH |
| 1.00 | 737.39 | 1830 | 850 | 1585 | |

| NO. | DATE | REVISION | BY |
|---|---|---|---|

WGI.
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.660.5560
FIRM NO. F-15085

10/23/2025
STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED PROFESSIONAL ENGINEER

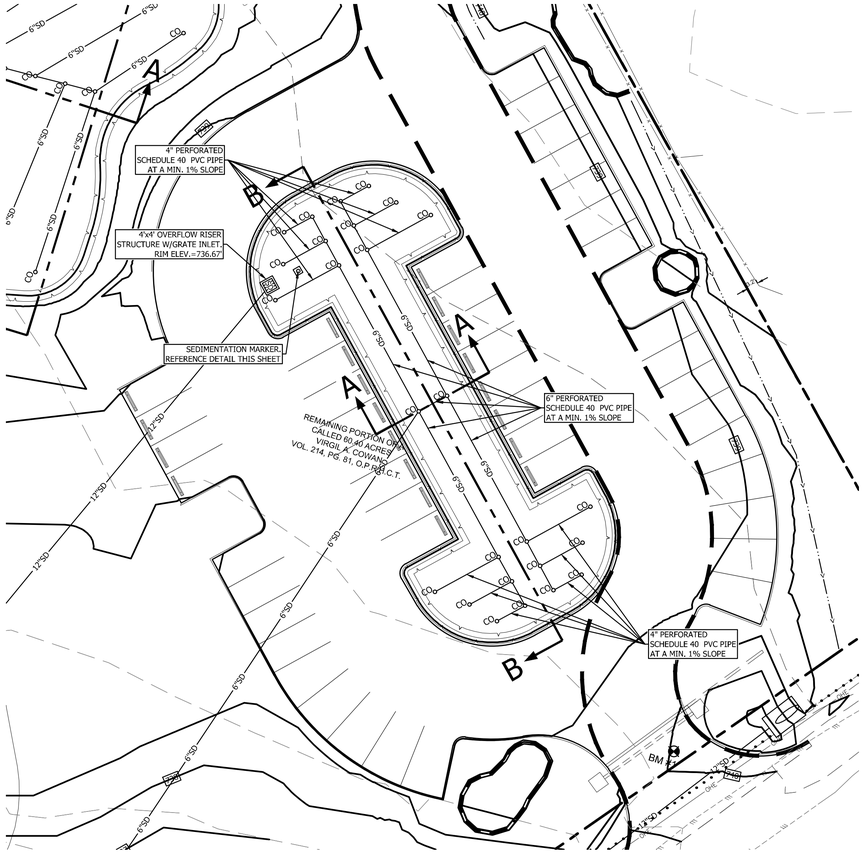
INITIAL SUBMITTAL
October 23, 2025

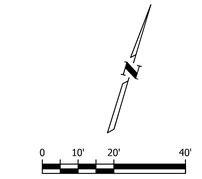
PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

WATER QUALITY POND 2 PLAN & CALCULATIONS

SHEET
CG501
15 OF 23
---

SAVED: 10/22/2025 2:35 PM
PLOT DATE: 10/23/2025 8:19 AM
PLOTTED BY: DAVID DORRIES
PLOTTED: P:\Projects_Civil\2025\Promise land san marcos\CIVIL\10-CAD\25-Plot\PSHT-09-CG500-Pond_2_Plan.dwg



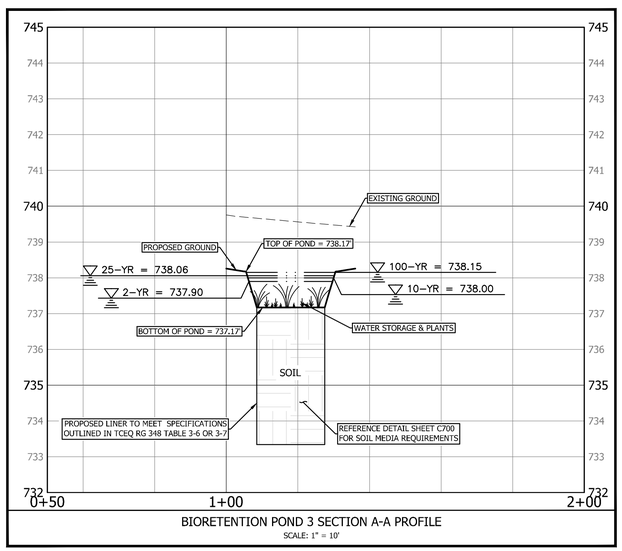




LEGEND

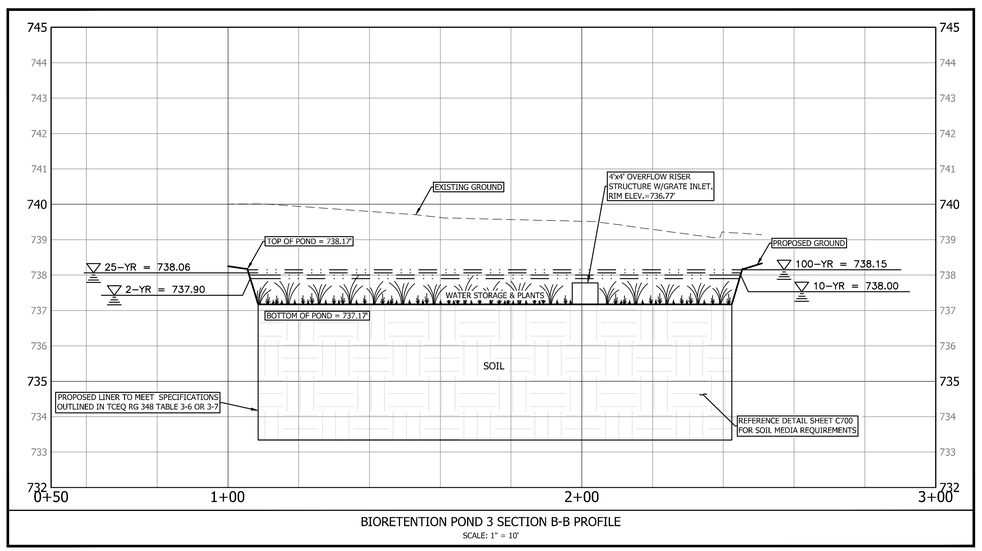
- BOUNDARY / R.O.W.
- EASEMENT / SETBACK
- CURB / EDGE OF PVMT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- OHE — OVERHEAD UTILITY
- UGE — UNDERGROUND UTILITY
- WL — WATER LINE
- WW — WASTEWATER LINE
- SD — STORM DRAINAGE LINE
- GAS — GAS LINE
- DIRECTION OF FLOW
- RETAINING/SCREEN WALL
- WATER METER VAULT
- WATER VALVE
- WW — WASTEWATER MANHOLE
- UTILITY POLE
- CLEAN-OUT
- GUY WIRE
- ELEC TRANSFORMER PAD
- SD — STORM DRAIN INLET
- SD — STORM DRAIN MANHOLE
- TREE W/ TAG (TO REMAIN)

**BIORETENTION POND 3**
**ELEVATION-STORAGE TABLE**

| STAGE (FT) | ELEVATION (FT) | AREA (SQ.FT.) | INCREMENTAL STORAGE (CF) | TOTAL STORAGE (CF) | NOTES |
|---|---|---|---|---|---|
| 0 | 737.17 | 4118 | 0 | 0 | |
| 0.1 | 737.27 | 4242 | 418 | 418 | |
| 0.2 | 737.37 | 4367 | 430.45 | 848.45 | |
| 0.3 | 737.47 | 4492 | 442.95 | 1291.4 | |
| 0.4 | 737.57 | 4617 | 455.45 | 1746.85 | |
| 0.5 | 737.67 | 4743 | 468 | 2214.85 | |
| 0.6 | 737.77 | 4869 | 480.6 | 2695.45 | WQ DEPTH |
| 0.7 | 737.87 | 4996 | 493.25 | 3188.7 | |
| 0.8 | 737.97 | 5153 | 507.45 | 3696.15 | |
| 0.9 | 738.07 | 5251 | 520.2 | 4216.35 | |
| 1 | 738.17 | 5379 | 531.5 | 4747.85 | |




BIORETENTION POND 3 SECTION A-A PROFILE
SCALE: 1" = 10'




BIORETENTION POND 3 SECTION B-B PROFILE
SCALE: 1" = 10'


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.660.5560
FIRM NO. F-15985


| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED PROFESSIONAL ENGINEER
10/23/2025

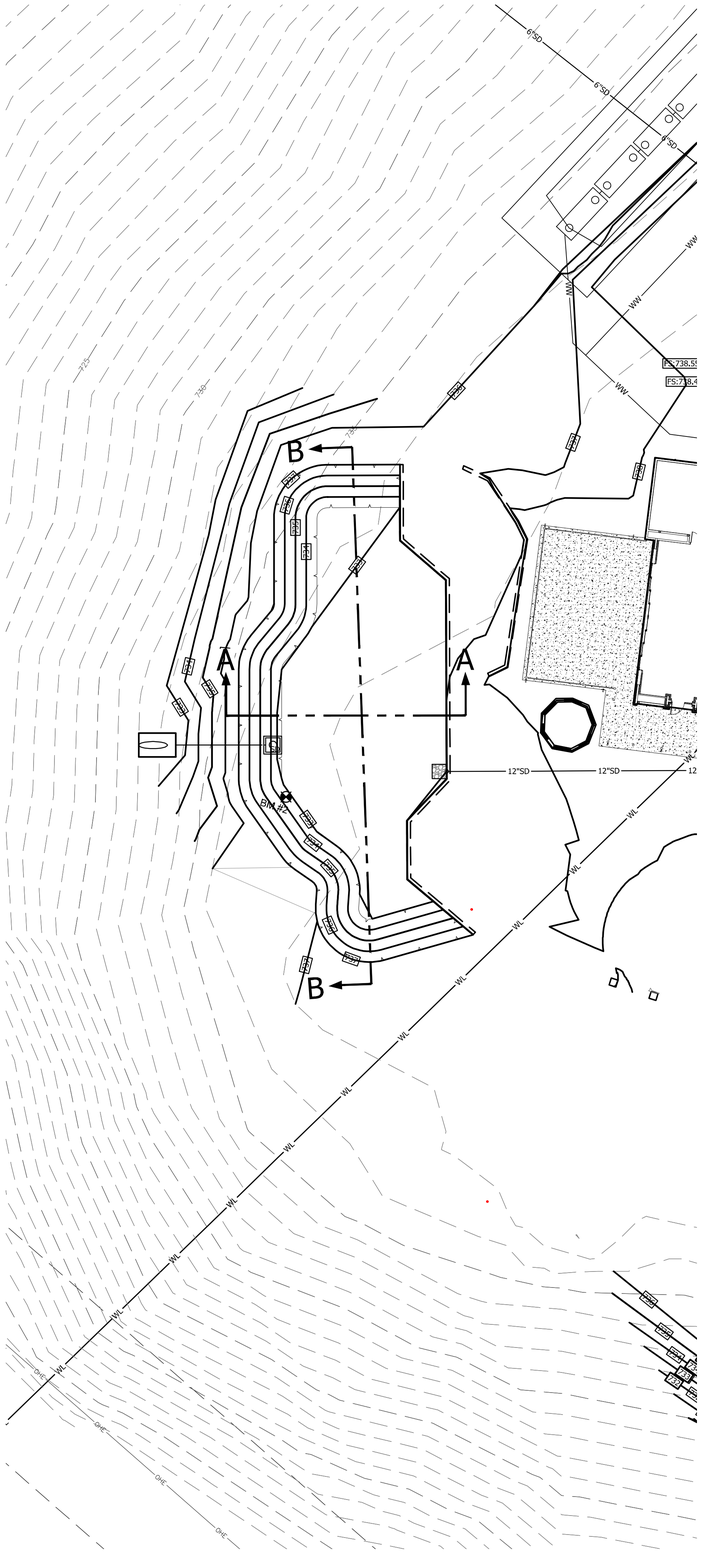
INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

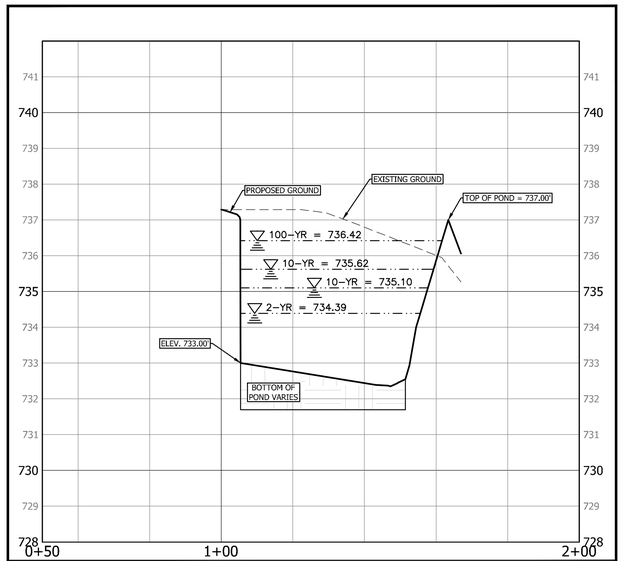
WATER QUALITY POND 3 PLAN & CALCULATIONS

SHEET
CG502
16 OF 23
---

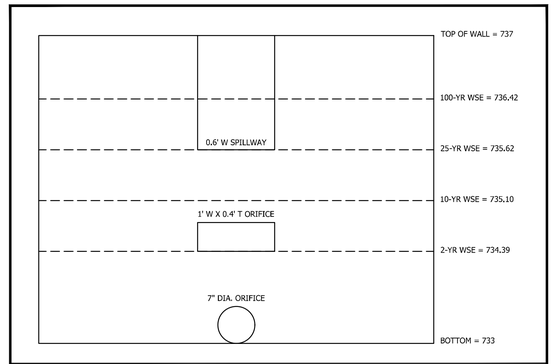

SAVED: 10/22/2025 2:18 PM
PRINTED: 10/23/2025 10:08:24 AM
PLOTTED BY: DAVID QUIÑONES
PATH: https://gbiworks.sharepoint.com/sites/promise land san marcos/CIVIL/10-CAD/20-Plots/Plot-06-CG500-Pond_Plan.dwg



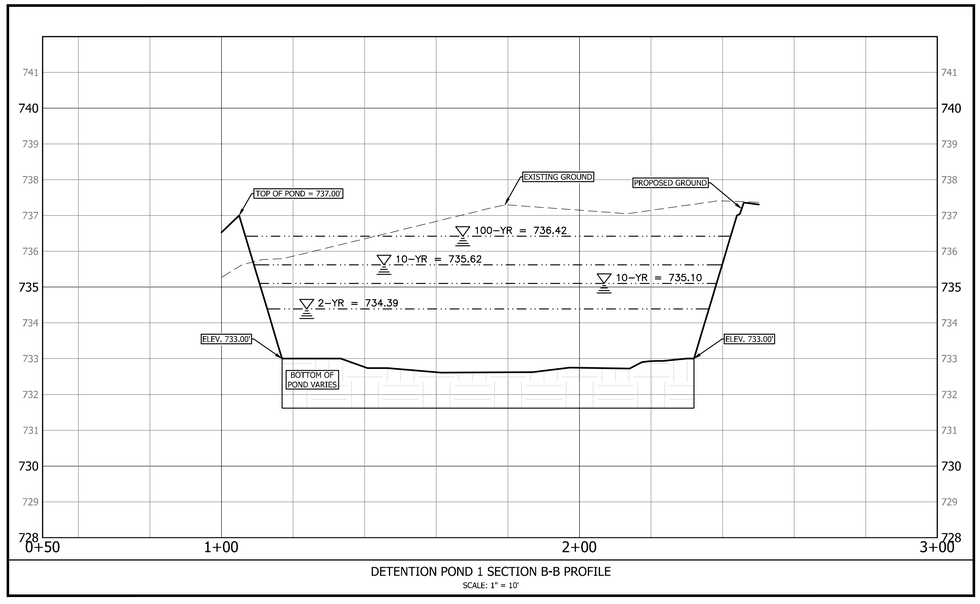

| DETENTION POND 1 | | | | | | |
|---|---|---|---|---|---|---|
| ELEVATION-STORAGE TABLE | | | | | | |
| ELEVATION (FT) | DEPTH (FT) | INCREMENTAL DEPTH (FT) | AREA ($FT^2$) | INCREMENTAL VOLUME ($FT^3$) | STORAGE ($FT^3$) | NOTES |
| 733.00 | 0.00 | 0.00 | 3,828.91 | 0 | 0 | |
| 734.00 | 1.00 | 1.00 | 4,352.02 | 4,090 | 4,090 | |
| 734.65 | 1.65 | 0.65 | 4,711.78 | 2,946 | 7,036 | 2-YR WSE |
| 735.00 | 1.00 | 0.35 | 4,911.94 | 1,684 | 8,720 | |
| 735.37 | 0.72 | 0.37 | 5,128.44 | 1,857 | 10,578 | 10-YR WSE |
| 735.96 | 0.96 | 0.59 | 5,484.09 | 3,131 | 13,709 | 25-YR WSE |
| 736.00 | 0.63 | 0.04 | 5,508.51 | 220 | 13,928 | |
| 736.75 | 0.79 | 0.75 | 5,980.37 | 4,308 | 18,237 | 100-YR WSE |
| 737.00 | 1.00 | 0.25 | 6,142.20 | 1,515 | 19,752 | |



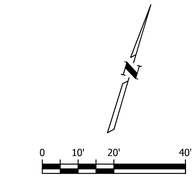

DETENTION POND 1 SECTION A-A PROFILE
SCALE: 1" = 10'




OUTLET STRUCTURE PLATE
SCALE: N.T.S.




DETENTION POND 1 SECTION B-B PROFILE
SCALE: 1" = 10'




LEGEND

- BOUNDARY / R.O.W.
- EASEMENT / SETBACK
- CURB / EDGE OF PVMT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- OHE — OVERHEAD UTILITY
- UGE — UNDERGROUND UTILITY
- WL — WATER LINE
- WW — WASTEWATER LINE
- SD — STORM DRAINAGE LINE
- GAS — GAS LINE
- DIRECTION OF FLOW
- RETAINING/SCREEN WALL
- WATER METER VAULT
- WATER VALVE
- WW — WASTEWATER MANHOLE
- UTILITY POLE
- CLEAN-OUT
- GUY WIRE
- T — ELEC TRANSFORMER PAD
- SD — STORM DRAIN INLET
- SD — STORM DRAIN MANHOLE
- TREE W/ TAG (TO REMAIN)

DRAINAGE AREA LEGEND

- DRAINAGE AREA BOUNDARY
- P1 — DRAINAGE AREA NAME
- XX Ac. — DRAINAGE AREA SIZE
- XX.XX% — IMPERVIOUS COVER
- DRAINAGE ARROW

NOTES:

1. REFERENCE LANDSCAPE PLANS FOR SODDING & SEEDING NOTES.
2. ALL ITEMS ARE TO BE FURNISHED & INSTALLED BY CONTRACTOR. REFERENCE CONSTRUCTION DETAILS SHEETS FOR ADDITIONAL INFORMATION.
3. ON ALL GRAVITY LINES, CONTRACTOR MUST START AT DOWNSTREAM END AND PROCEED UPSTREAM TAKING CARE TO EXPOSE ALL EXISTING UTILITIES AND STRUCTURES WHICH MAY CONFLICT WITH THE PROPOSED LINE. ANY OTHER SEQUENCE OF CONSTRUCTION WILL BE AT THE CONTRACTOR'S RISK.
4. CONTRACTOR SHALL EXPOSE ALL EXISTING UTILITIES CROSSINGS PROPOSED GRAVITY LINES AND INSURE THERE WILL BE NO CONFLICTS PRIOR TO BEGINNING CONSTRUCTION. ADDITIONALLY, CONTRACTOR TO PLAN UTILITY LINE INSTALLATIONS IN A MANNER TO AVOID CONFLICTS WITH PROPOSED GRAVITY LINES.
5. CONTRACTOR SHALL FORM SIDEWALKS AND VERIFY SLOPES PRIOR TO POURING CONCRETE. CONTRACTOR SHALL ENSURE THAT CROSS SLOPES ARE NO GREATER THAN 2% ALONG THE ACCESSIBLE ROUTE AND RUNNING SLOPE IS NO GREATER THAN 5%, UNLESS THE RUNNING SLOPE MATCHES THE EXISTING STREET SLOPE. IF ANY DISCREPANCY ARISES, CONTRACTOR SHALL CONTACT ENGINEER FOR SOLUTION.
6. LIMITS OF CONSTRUCTION ARE SHOWN ON THE EROSION & SEDIMENTATION CONTROL PLAN(S).

WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.660.5560
FIRM NO: F-15085

STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED PROFESSIONAL ENGINEER
10/23/2025

INITIAL SUBMITTAL
October 23, 2025

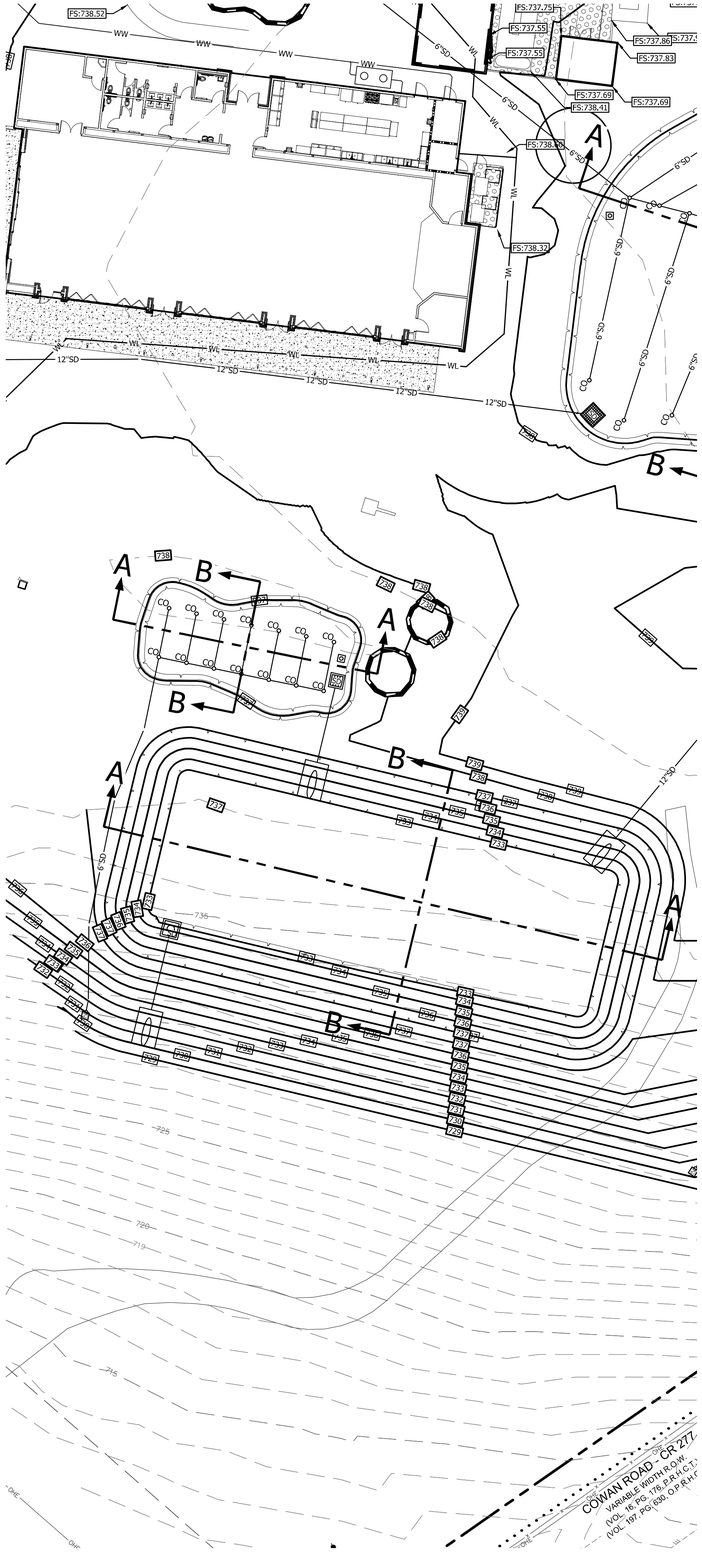
| No. | DATE | REVISION | BY |
|---|---|---|---|

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

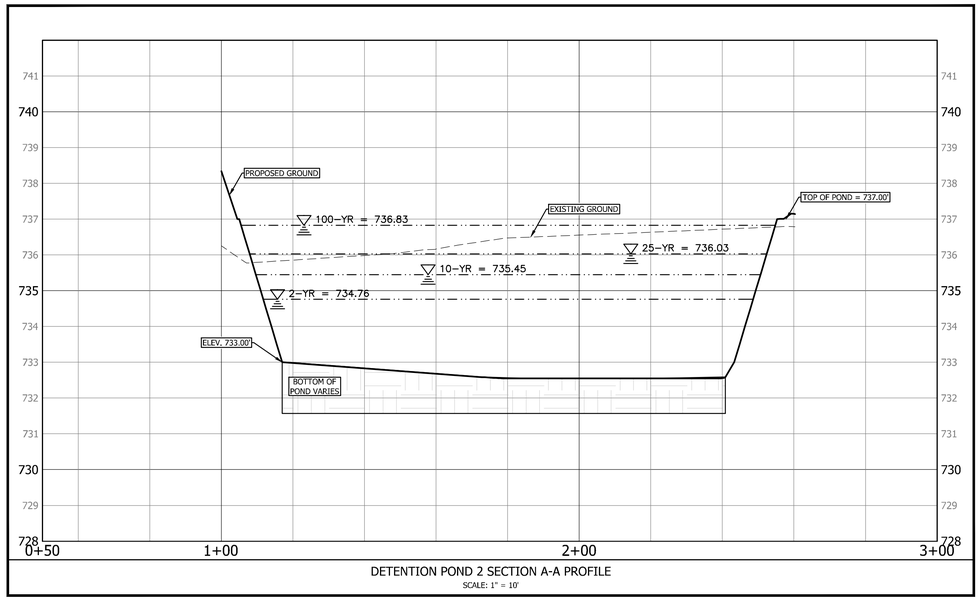
DETENTION POND 1 PLAN & CALCULATIONS

SHEET
CG503
17 OF 23
---

SAVED: 10/22/2025 2:35 pm
PLOTTED: 10/23/2025 2:39 PM
PLOTTED BY: DAVID DORONES
X:\Projects_P\Promise\Civil\CAD\Sheets\Promise land san marcos\CIVIL110-CAD-SHSheet(R04.00)-CG500Pond_Plan.dwg

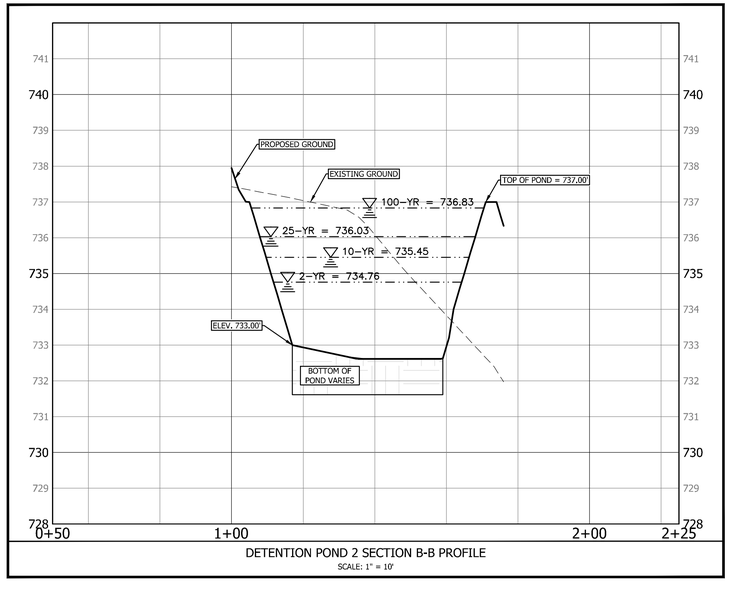



| DETENTION POND 2 | | | | | | |
|---|---|---|---|---|---|---|
| ELEVATION-STORAGE TABLE | | | | | | |
| ELEVATION (FT) | DEPTH (FT) | INCREMENTAL DEPTH (FT) | AREA ($FT^2$) | INCREMENTAL VOLUME ($FT^3$) | STORAGE ($FT^3$) | NOTES |
| 733.00 | 0.00 | 0.00 | 5,298.31 | 0 | 0 | |
| 734.00 | 1.00 | 1.00 | 6,321.13 | 5,810 | 5,810 | |
| 734.66 | 1.66 | 0.66 | 7,027.18 | 4,405 | 10,215 | 2-YR WSE |
| 735.00 | 1.00 | 0.34 | 7,400.59 | 2,453 | 12,667 | |
| 735.35 | 0.69 | 0.35 | 7,791.65 | 2,659 | 15,326 | 10-YR WSE |
| 735.93 | 0.93 | 0.58 | 8,455.08 | 4,712 | 20,038 | 25-YR WSE |
| 736.00 | 0.65 | 0.07 | 8,536.43 | 595 | 20,632 | |
| 736.72 | 0.79 | 0.72 | 9,389.32 | 6,453 | 27,086 | 100-YR WSE |
| 737.00 | 1.00 | 0.28 | 9,728.91 | 2,677 | 29,762 | |



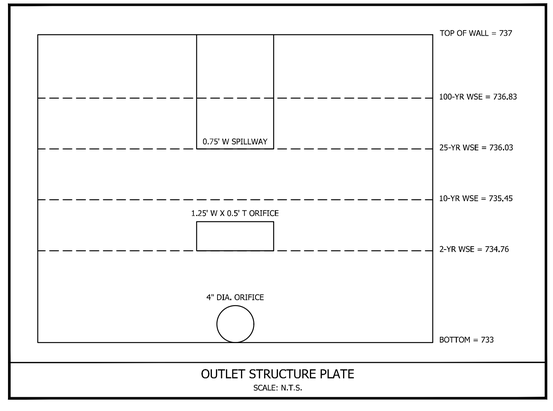

DETENTION POND 2 SECTION A-A PROFILE

SCALE: 1" = 10'



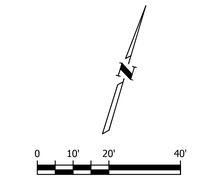

DETENTION POND 2 SECTION B-B PROFILE

SCALE: 1" = 10'




OUTLET STRUCTURE PLATE

SCALE: N.T.S.




LEGEND

- BOUNDARY / R.O.W.
- EASEMENT / SETBACK
- CURB / EDGE OF PVMT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- OHE — OVERHEAD UTILITY
- UGE — UNDERGROUND UTILITY
- WL — WATER LINE
- WW — WASTEWATER LINE
- SD — STORM DRAINAGE LINE
- GAS — GAS LINE
- DIRECTION OF FLOW
- RETAINING/SCREEN WALL
- WATER METER VAULT
- WATER VALVE
- WW — WASTEWATER MANHOLE
- UTILITY POLE
- CLEAN-OUT
- GUY WIRE
- T — ELEC TRANSFORMER PAD
- SD — STORM DRAIN INLET
- SD — STORM DRAIN MANHOLE
- TREE W/ TAG (TO REMAIN)

DRAINAGE AREA LEGEND

- DRAINAGE AREA BOUNDARY
- P1 — DRAINAGE AREA NAME
- XX Ac. — DRAINAGE AREA SIZE
- XX.XX% — IMPERVIOUS COVER
- DRAINAGE ARROW

NOTES:

1. REFERENCE LANDSCAPE PLANS FOR SODDING & SEEDING NOTES.
2. ALL ITEMS ARE TO BE FURNISHED & INSTALLED BY CONTRACTOR. REFERENCE CONSTRUCTION DETAILS SHEETS FOR ADDITIONAL INFORMATION.
3. ON ALL GRAVITY LINES, CONTRACTOR MUST START AT DOWNSTREAM END AND PROCEED UPSTREAM TAKING CARE TO EXPOSE ALL EXISTING UTILITIES AND STRUCTURES WHICH MAY CONFLICT WITH THE PROPOSED LINE. ANY OTHER SEQUENCE OF CONSTRUCTION WILL BE AT THE CONTRACTOR'S RISK.
4. CONTRACTOR SHALL EXPOSE ALL EXISTING UTILITIES CROSSINGS PROPOSED GRAVITY LINES AND INSURE THERE WILL BE NO CONFLICTS PRIOR TO BEGINNING CONSTRUCTION. ADDITIONALLY, CONTRACTOR TO PLAN UTILITY LINE INSTALLATIONS IN A MANNER TO AVOID CONFLICTS WITH PROPOSED GRAVITY LINES.
5. CONTRACTOR SHALL FORM SIDEWALKS AND VERIFY SLOPES PRIOR TO POURING CONCRETE. CONTRACTOR SHALL ENSURE THAT CROSS SLOPES ARE NO GREATER THAN 2% ALONG THE ACCESSIBLE ROUTE AND RUNNING SLOPE IS NO GREATER THAN 5%, UNLESS THE RUNNING SLOPE MATCHES THE EXISTING STREET SLOPE. IF ANY DISCREPANCY ARISES, CONTRACTOR SHALL CONTACT ENGINEER FOR SOLUTION.
6. LIMITS OF CONSTRUCTION ARE SHOWN ON THE EROSION & SEDIMENTATION CONTROL PLAN(S).

WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
FIRM NO. F-15085
512.660.5560

| NO. | DATE | REVISION | BY |
|---|---|---|---|

10/23/2025

STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED
PROFESSIONAL ENGINEER

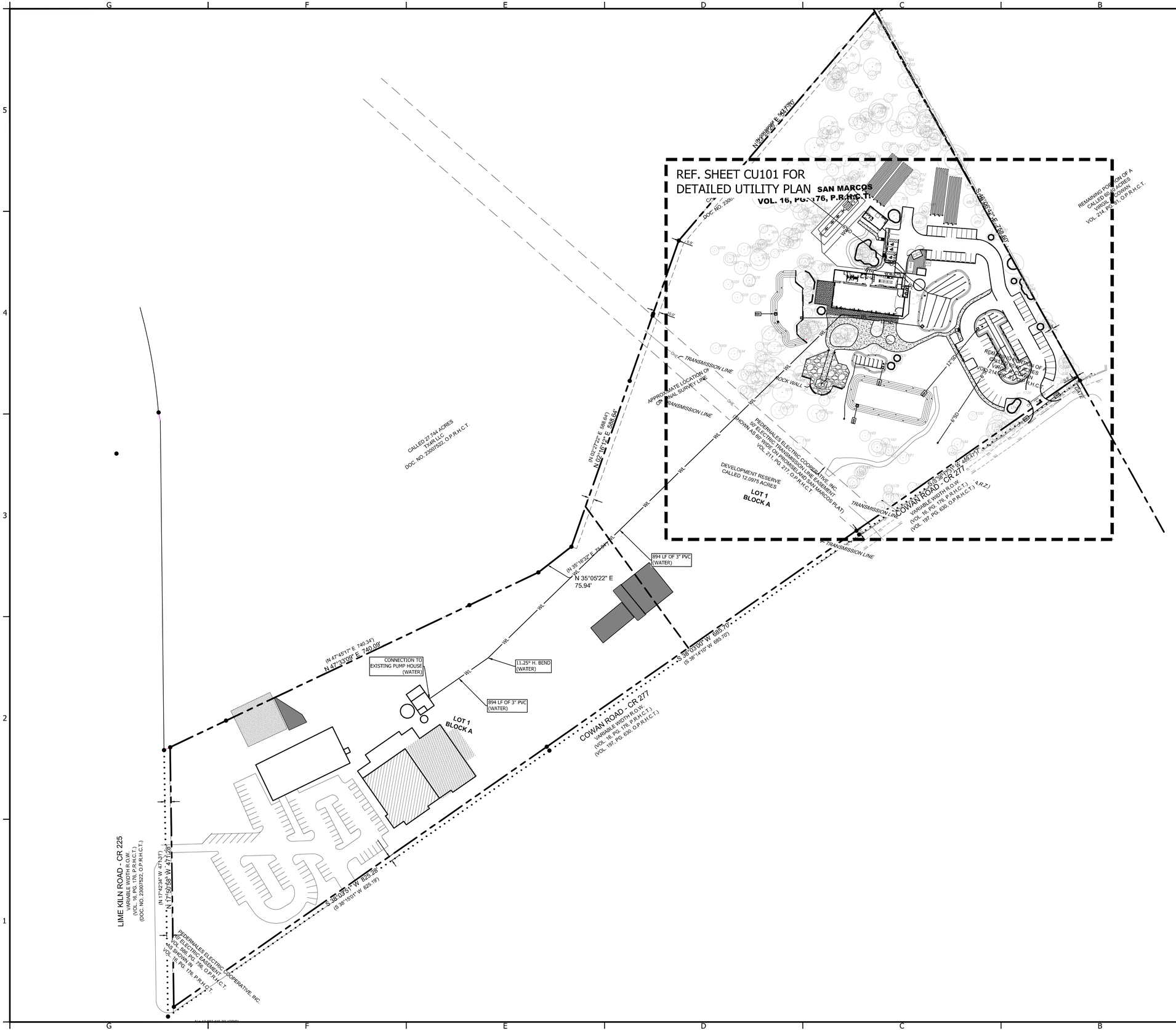
INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

DETENTION POND 2 PLAN & CALCULATIONS

SHEET
CG504
18 OF 23
---

SAVED: 10/22/2025 3:18 PM
PLOT DATE: 10/23/2025 10:23 AM
PLOTTED BY: DAVID QUIÑONES
PATH+NAME: P:\Projects\Active\promise land san marcos\CIVIL\10-CAD\SHEETS\CG504 Pond_Plan.dwg




0 40' 80' 160'

LEGEND

- BOUNDARY / R.O.W.
- EASEMENT / SETBACK
- CURB / EDGE OF PVMT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- OHE — OVERHEAD UTILITY
- UGE — UNDERGROUND UTILITY
- WL — WATER LINE
- WW — WASTEWATER LINE
- SD — STORM DRAINAGE LINE
- GAS — GAS LINE
- RETAINING/SCREEN WALL
- WATER METER VAULT
- WATER VALVE
- WW — WASTEWATER MANHOLE
- UTILITY POLE
- CLEAN-OUT
- GUY WIRE
- ELEC TRANSFORMER PAD
- STORM DRAIN INLET
- SD — STORM DRAIN MANHOLE
- TREE W/ TAG (TO REMAIN)

NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS AND APPURTENANCES AS CALLED OUT ON PLANS.
2. ALL PUBLIC POTABLE WATER PIPE (WITHIN R.O.W. AND UTILITY EASEMENTS) TO BE DUCTILE IRON CLASS 350 FOR PIPE 12-INCH IN DIAMETER AND SMALLER, AND CLASS 250 MIN. FOR PIPES GREATER THAN 12-INCH DIAMETER. FIRE HYDRANT LEADS TO BE DUCTILE IRON CLASS 350 PER DETAIL. SERVICE LEADS TO BE TYPE K COPPER PER DETAIL.
3. ALL PRIVATE WATER PIPE TO BE PVC C900 DR14 (BLUE) EXCEPT FOR FIRE HYDRANT LEADS, WHICH ARE TO BE DUCTILE IRON CL350 PER DETAIL, AND SERVICE LEADS, WHICH ARE TYPE K COPPER, PER DETAIL.
4. ALL VERTICAL AND HORIZONTAL WATER LINE BENDS SHALL BE RESTRAINED TO THE MAIN USING MECHANICAL JOINT RESTRAINT DEVICES SUCH AS MEGA-LUG OR APPROVED EQUAL.
5. FILL, COMPACT & TEST GROUND AT PROPOSED FINISHED GRADE ELEVATION TO 95% DENSITY PRIOR TO UTILITY CONSTRUCTION.
6. REPAIR ASPHALT AS REQUIRED FOR INSTALLATION OF WATER & WASTEWATER LINES. REFERENCE CONSTRUCTION DETAILS.
7. NO COMBUSTIBLE CONSTRUCTION SHALL BEGIN ON THIS PROJECT SITE UNTIL ADEQUATE FIRE FLOW IS AVAILABLE.
8. EXISTING SERVICE LINE LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
9. LIMITS OF CONSTRUCTION ARE SHOWN ON EROSION & SEDIMENTATION CONTROL PLAN(S).
10. ALL GRAVITY LINES ARE TO BE INSTALLED FROM DOWNSTREAM TO UPSTREAM.
11. ALL GRAVITY WASTEWATER PIPE TO BE PVC SDR-26 (GREEN).
12. LOTS WITH 65 PSI OR GREATER REQUIRE A PRV, SET AT 65 PSI, TO BE INSTALLED ON THE OWNERS SIDE OF THE WATER METER.
13. UNDERGROUND MAINS FEEDING PRIVATE FIRE HYDRANTS MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 24, AND THE FIRE CODE, BY A LICENSED CONTRACTOR WITH A PLUMBING PERMIT. THE ENTIRE MAIN MUST BY HYDROSTATICALLY TESTED AT ONE TIME, UNLESS ISOLATION VALVES ARE PROVIDED BETWEEN TESTED SECTIONS.
    (THERE ARE NO PRIVATE HYDRANTS ON THIS PROJECT SITE).
14. ALL DOMESTIC WATER METERS SERVING CONDOMINIUM UNITS TO BE 5/8" SIZE UNLESS OTHERWISE NOTED.
15. REFERENCE GENERAL NOTES SHEET(S) FOR ADDITIONAL UTILITY NOTES.

| NO. | DATE | REVISION | BY |
|---|---|---|---|


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.668.5560
FIRM NO. F-15085


STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED
PROFESSIONAL ENGINEER
10/23/2025

INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

OVERALL UTILITY PLAN

SHEET
CU100
19 OF 23
---

SAVED: 10/23/2025 4:26 PM
PLOTTED: 10/23/2025 4:29:19 PM
PLOTTED BY: DAVID QUIÑONES
PLOTTING: J:\Projects\Active\Promise land san marcos\CIVIL\15-CAD\24-Site\Work\24-09-CU100-Utility_Plan.dwg

PROMISELAND SAN MARCOS
VOL. 16, PG. 176, P.R.H.C.T.

SEPTIC LAYOUT SHOWN FOR REFERENCE - REFER TO DRAWINGS BY BURRIER NIXON ENGINEERS DATED 4/12/2024

WWTR CONNECTION TO SUITE 1 BLDG

WATER CONNECTION TO SUITE 1 (REF. MEP FOR CONT.)

9 LF OF 3" PVC (WATER)

45° H. BEND (WATER)

4 LF OF 3" PVC (WATER)

11.25° H. BEND (WATER)

110 LF 4" PVC (WWTR)

SEPTIC LAYOUT SHOWN FOR REFERENCE - REFER TO DRAWINGS BY BURRIER NIXON ENGINEERS DATED 4/12/2024

30 LF 4" PVC (WWTR)

SUITE 1 WWTR TIE-IN

37 LF 4" PVC (WWTR)

50 LF OF 3" PVC (WATER)

45° H. BEND (WATER)

3 LF OF 3" PVC (WATER)

45° H. BEND (WATER)

123 LF 4" PVC (WWTR)

GREASE INTERCEPTOR TIE-IN

GREASE INTERCEPTOR

GREASE INTERCEPTOR CONNECTION TO VENUE HALL BLDG

22 LF OF 3" PVC (WATER)

45° H. BEND (WATER)

19 LF OF 3" PVC (WATER)

45° H. BEND (WATER)

12 LF OF 3" PVC (WATER)

45° H. BEND (WATER)

19 LF OF 3" PVC (WATER)

45° H. BEND (WATER)

3" X 2" TEE

17 LF OF 2" PVC (WATER)

52 LF OF 3" PVC (WATER)

45° H. BEND (WATER)

14 LF OF 3" PVC (WATER)

45° H. BEND (WATER)

WWTR CONNECTION TO VENUE HALL BLDG

WATER CONNECTION TO VENUE HALL BLDG (REF. MEP FOR CONT.)

112 LF OF 3" PVC (WATER)

12"SD

45° H. BEND (WATER)

894 LF OF 3" PVC (WATER)

WOOD DECK

ROCK WALL

6"SD

12"SD

15"SD

BM #1

BM #2

TRANSMISSION LINE

APPROXIMATE LOCATION OF ORIGINAL SURVEY LINE

PEDERNALES ELECTRIC COOPERATIVE, INC. 50' ELECTRIC TRANSMISSION LINE EASEMENT SHOWN AS 66' WIDE ON PROMISELAND SAN MARCOS PLAT VOL. 211, PG. 217, O.P.R.H.C.T.

DEVELOPMENT RESERVE CALLED 12.0975 ACRES

LOT 1 BLOCK A

REMAINING PORTION OF A CALLED 60.40 ACRES VIRGIL A COWAN VOL. 214, PG. 81, O.P.R.H.C.T.

CALLED 27.744 ACRES TAMR LLC NO. 23001922, O.P.R.H.C.T.

S 36°06'21" W 489.47'

COWAN ROAD - CR 277

VARIABLE WIDTH R.O.W. (VOL. 16, PG. 176, P.R.H.C.T.) (VOL. 197, PG. 650, O.P.R.H.C.T.)

SIGN ( E.A.R.Z)

GATE

8W

0 15' 30' 60'

## LEGEND

- BOUNDARY / R.O.W.
- EASEMENT / SETBACK
- CURB / EDGE OF PVMT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- OHE — OVERHEAD UTILITY
- UGE — UNDERGROUND UTILITY
- WL — WATER LINE
- WW — WASTEWATER LINE
- SD — STORM DRAINAGE LINE
- GAS — GAS LINE
- RETAINING/SCREEN WALL
- WATER METER VAULT
- WATER VALVE
- WW — WASTEWATER MANHOLE
- UTILITY POLE
- CLEAN-OUT
- GUY WIRE
- ELEC TRANSFORMER PAD
- SD — STORM DRAIN INLET
- SD — STORM DRAIN MANHOLE
- ## — TREE W/ TAG (TO REMAIN)

NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS AND APPURTENANCES AS CALLED OUT ON PLANS.
2. ALL PUBLIC POTABLE WATER PIPE (WITHIN R.O.W. AND UTILITY EASEMENTS) TO BE DUCTILE IRON CLASS 350 FOR PIPE 12-INCH IN DIAMETER AND SMALLER, AND CLASS 250 MIN. FOR PIPES GREATER THAN 12-INCH DIAMETER. FIRE HYDRANT LEADS TO BE DUCTILE IRON CLASS 350 PER DETAIL. SERVICE LEADS TO BE TYPE K COPPER PER DETAIL.
3. ALL PRIVATE WATER PIPE TO BE PVC C900 DR14 (BLUE) EXCEPT FOR FIRE HYDRANT LEADS, WHICH ARE TO BE DUCTILE IRON CL350 PER DETAIL, AND SERVICE LEADS, WHICH ARE TYPE K COPPER, PER DETAIL.
4. ALL VERTICAL AND HORIZONTAL WATER LINE BENDS SHALL BE RESTRAINED TO THE MAIN USING MECHANICAL JOINT RESTRAINT DEVICES SUCH AS MEGA-LUG OR APPROVED EQUAL.
5. FILL, COMPACT & TEST GROUND AT PROPOSED FINISHED GRADE ELEVATION TO 95% DENSITY PRIOR TO UTILITY CONSTRUCTION.
6. REPAIR ASPHALT AS REQUIRED FOR INSTALLATION OF WATER & WASTEWATER LINES. REFERENCE CONSTRUCTION DETAILS.
7. NO COMBUSTIBLE CONSTRUCTION SHALL BEGIN ON THIS PROJECT SITE UNTIL ADEQUATE FIRE FLOW IS AVAILABLE.
8. EXISTING SERVICE LINE LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
9. LIMITS OF CONSTRUCTION ARE SHOWN ON EROSION & SEDIMENTATION CONTROL PLAN(S).
10. ALL GRAVITY LINES ARE TO BE INSTALLED FROM DOWNSTREAM TO UPSTREAM.
11. ALL GRAVITY WASTEWATER PIPE TO BE PVC SDR-26 (GREEN).
12. LOTS WITH 65 PSI OR GREATER REQUIRE A PRV, SET AT 65 PSI, TO BE INSTALLED ON THE OWNERS SIDE OF THE WATER METER.
13. UNDERGROUND MAINS FEEDING PRIVATE FIRE HYDRANTS MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 24, AND THE FIRE CODE, BY A LICENSED CONTRACTOR WITH A PLUMBING PERMIT. THE ENTIRE MAIN MUST BY HYDROSTATICALLY TESTED AT ONE TIME, UNLESS ISOLATION VALVES ARE PROVIDED BETWEEN TESTED SECTIONS.
    (THERE ARE NO PRIVATE HYDRANTS ON THIS PROJECT SITE).
14. ALL DOMESTIC WATER METERS SERVING CONDOMINIUM UNITS TO BE 5/8" SIZE UNLESS OTHERWISE NOTED.
15. REFERENCE GENERAL NOTES SHEET(S) FOR ADDITIONAL UTILITY NOTES.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |


WGI.
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.668.5560
FIRM NO. F-15085


STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED PROFESSIONAL ENGINEER
10/23/2025

INITIAL SUBMITTAL
October 23, 2025

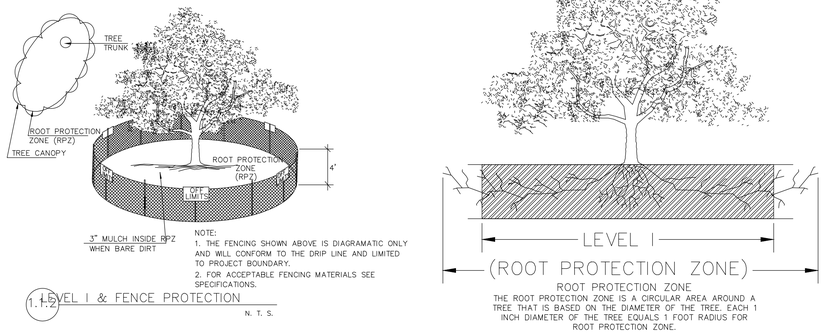
# PROMISE LAND SAN MARCOS

1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

DETAILED UTILITY PLAN

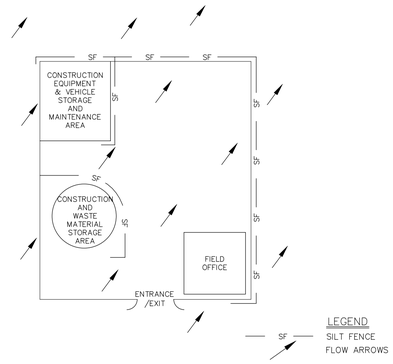
SHEET
CU101
20 OF 23
---


SAVED: 10/23/2025 4:33 PM
PLOTTED: 10/23/2025 4:33:17 AM
PLOTTED BY: DAVID QUIÑONES
FILENAME: P:\PROMISELAND\Promise land san marcos\CIVIL\10-CAD\SHEETS\CU101-Utility_Plan.dwg



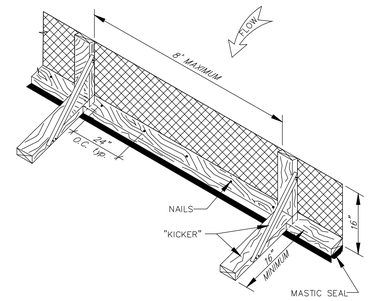

## TREE PROTECTION

NOT TO SCALE



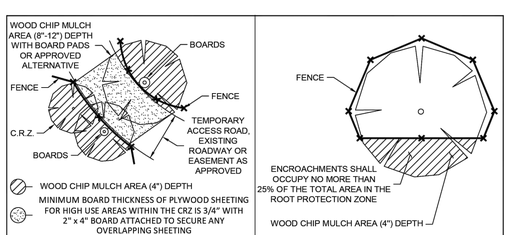

## CONSTRUCTION STAGING AREA DETAIL

NOT TO SCALE




## SILT FENCE ON PAVEMENT

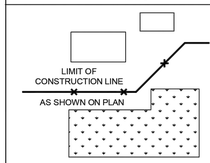
NOT TO SCALE



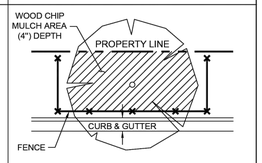

LINEAR CONSTRUCTION THROUGH TREES



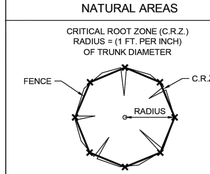

TREES BEING DISTURBED



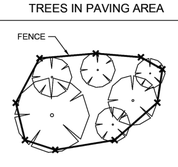

NATURAL AREAS




TREES IN PAVING AREA

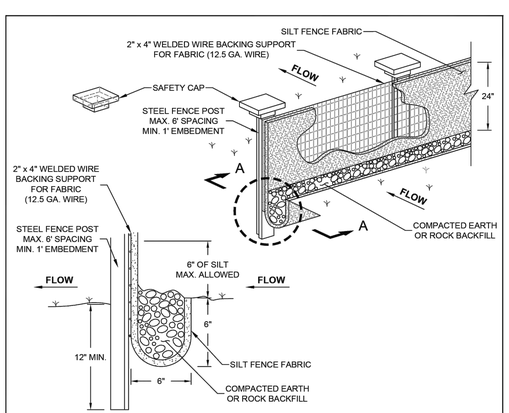



INDIVIDUAL TREE




GROUP OF TREES

| The City of San Marcos Engineering and Capital Improvements | CURRENT AS OF 1/1/2023 | 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 |

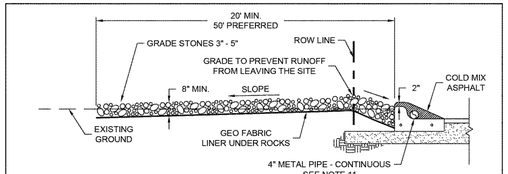



SECTION A-A

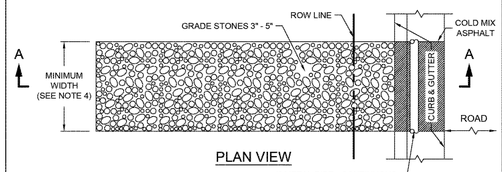
NOTES:

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 1/1/2023 | 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 |




PROFILE SECTION A-A

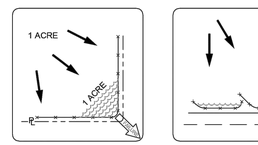



PLAN VIEW

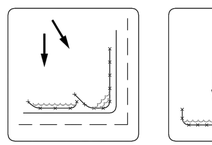
NOTES:

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 1/1/2023 | 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 |

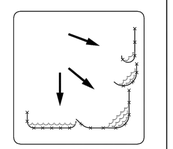



INCORRECT - DO NOT LAYOUT "PERIMETER CONTROL" SILT FENCE ALONG PROPERTY LINES. ALL SEDIMENT LADEN RUNOFF WILL CONCENTRATE AND OVERWHELM THE SYSTEM.



CORRECT - INSTALL J-HOOKS

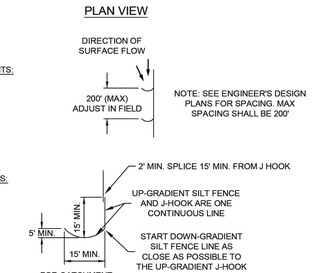
SILT FENCE TURNBACK DETAIL



CORRECT - DISCREET SEGMENTS OF SILT FENCE INSTALLED WITH J-HOOKS OR 'SMILES' WILL BE MUCH MORE EFFECTIVE.

SILT FENCE PLACEMENT FOR PERIMETER CONTROL

PLAN VIEW




| The City of San Marcos Engineering and Capital Improvements | CURRENT AS OF 1/1/2023 | 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 |

DATE: 10/1/2025 4:28 PM
PLOTTED BY: DAVID QUIÑONES
PLOTTED BY: DAVID QUIÑONES
PATH/FILE: J:\Projects\Active land san marcos\CIVIL\10-CAD\2025\Sht\C4.00-C500-C600-Details.dwg

| NO. | DATE | REVISION | BY |
|---|---|---|---|

WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
FIRM NO. F-15985
512.668.5560

10/23/2025

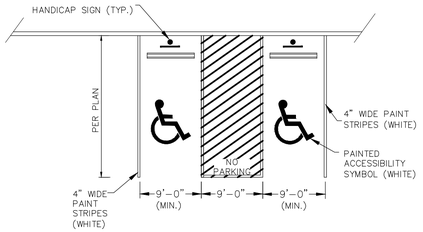
STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED PROFESSIONAL ENGINEER

INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

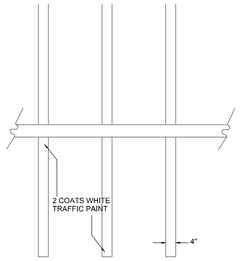
EROSION & SEDIMENTATION CONTROL DETAILS

SHEET
C500
21 OF 23
---



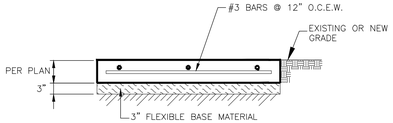

NOTES:
1. ALL WALKWAYS, RAMPS AND HANDICAP PARKING SIGNAGE, ETC. SHALL MEET CURRENT ADA & TAS RULES.
2. 2% MAXIMUM SLOPE IN ALL DIRECTIONS IN AREAS OF HANDICAP PARKING SPACES.
3. UPON COMPLETION OF CONSTRUCTION OF THE SITE AND BUILDING, OWNER MUST SCHEDULE AN INSPECTION FOR TAS COMPLIANCE.

## HANDICAP PARKING STALL DETAIL
NOT TO SCALE

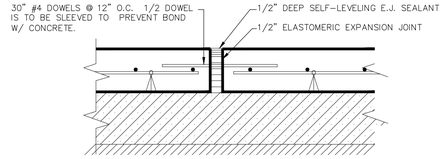



NOTE: SEE SITE PLAN FOR PARKING DIMENSIONS & LAYOUT

## PAVEMENT STRIPING DETAIL
NOT TO SCALE

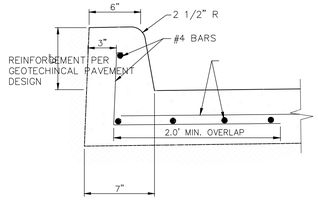



## SIDEWALK DETAIL
NOT TO SCALE




## TYPICAL EXPANSION JOINT
NOT TO SCALE

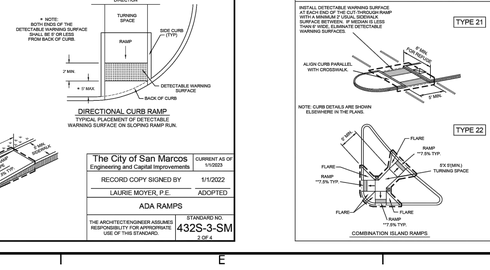
NOTE:
1. REFER GEOTECH REPORT NUMBER 22106100.140 BY MLA GEOTECHNICAL, DATED JANUARY 26, 2023 FOR FURTHER INFORMATION.




NOTES:
1. INSTALL 1/2" PREMOLDED EXPANSION JOINT MATERIAL AT 40.0' INTERVALS & AT BEGINNING & END OF ALL CURB RETURNS & DRIVE APPROACHES.
2. INSTALL 5/8"ø x 2.0' LONG, SMOOTH DOWEL BARS AT ALL EXPANSION JOINTS & AT BEGINNING & END OF ALL CURB RETURNS. EXTEND BARS 1.0' INTO EACH SIDE OF JOINT & WRAP ONE END W/ 147.3 LBS FELT, 1.25' LONG.
3. ALL CURB TO BE 3000 PSI CONCRETE.

## 6" INTEGRAL CONCRETE CURB
NOT TO SCALE


## CONCRETE CURB CUT
NOT TO SCALE




## CONCRETE PAVEMENT SECTION
NOT TO SCALE




## PLAN




## SECTION

## WHEELSTOP DETAIL
NOT TO SCALE




## TYPICAL CONTRACTION JOINT
NOT TO SCALE

NOTE:
1. REFER GEOTECH REPORT NUMBER 22106100.140 BY MLA GEOTECHNICAL, DATED JANUARY 26, 2023 FOR FURTHER INFORMATION.

### GENERAL NOTES:

**CURB RAMPS**

1. INSTALL A CURB RAMP OR BLENDED TRANSITION AT EACH PEDESTRIAN STREET CROSSING.
2. ALL SLOPES SHOWN ARE TYPICAL ALLOWABLE. CROSS SLOPES OF 1.5% AND LESSER RUNNING SHOULD BE USED. ADJUST CURB RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED. THE RUNNING SLOPE OF THE CURB RAMP SHALL BE 8.3% MAX, BUT THE RAMP LENGTH SHALL NOT EXCEED 15' MIN. IF 8.3% CANNOT BE ACHIEVED.
3. MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2%.
4. THE MINIMUM SIDEWALK WIDTH IS 5'. WHERE THE SIDEWALK IS ADJACENT TO THE BACK OF CURB, A 6' SIDEWALK WIDTH IS DESIRABLE. WHERE A 5' SIDEWALK CANNOT BE PROVIDED DUE TO SITE CONSTRAINTS, SIDEWALK WIDTH MAY BE REDUCED TO 4' FOR SHORT DISTANCES. 5'X 5' PASSING AREAS AT INTERVALS NOT TO EXCEED 200' ARE REQUIRED.
5. TURNING SPACES SHALL BE 5'X 5' MINIMUM. CROSS SLOPE SHALL BE MAXIMUM 2%.
6. CLEAR SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4'X 4' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
7. PROVIDE FLARED SIDES WHERE THE PEDESTRIAN CIRCULATION PATH CROSSES THE CURB RAMP AND WHERE LANDINGS OCCUR. THE FLARED SIDE SHALL BE SLOPED AT 10% MAX. RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP, EITHER BECAUSE THE ADJACENT SURFACE IS PLANTED, SUBSTANTIALLY OBSTRUCTED, OR OTHERWISE PROTECTED.
8. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, LIGHT REFLECTIVE VALUE AND TEXTURE MAY BE FOUND IN THE LATEST DRAFT OF THE PROPOSED GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT OF WAY (PROWAG) AS PUBLISHED BY THE U.S. ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD (ACCESS BOARD).
9. TO SERVE AS A PEDESTRIAN REFUGE AREA, THE MEDIAN SHOULD BE A MINIMUM OF 6' WIDE, MEASURED FROM BACK OF CURBS. MEDIANS SHOULD BE DESIGNED TO PROVIDE ACCESSIBLE PASSAGE OVER OR THROUGH THEM.
10. SMALL CHANNELIZATION ISLANDS, WHICH DO NOT PROVIDE A MINIMUM 5'X 5' LANDING AT THE TOP OF CURB RAMPS, SHALL BE CUT THROUGH LEVEL WITH THE SURFACE OF THE STREET.
11. CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, CURB RAMPS SHALL ALIGN WITH THEORETICAL CROSSWALKS UNLESS OTHERWISE DIRECTED.
12. PROVIDE CURB RAMPS TO CONNECT THE PEDESTRIAN ACCESS ROUTE AT EACH PEDESTRIAN STREET CROSSING. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS.
13. CURB RAMPS AND LANDINGS SHALL BE CONSTRUCTED AND PAID FOR IN ACCORDANCE WITH ITEM 432S PORTLAND CEMENT CONCRETE SIDEWALK.
14. PLACE CONCRETE AT A MINIMUM DEPTH OF 5" FOR RAMPS, FLARES AND LANDINGS, UNLESS OTHERWISE DIRECTED.
15. FURNISH AND INSTALL NO. 3 REINFORCING STEEL BARS AT 18" O.C. BOTH WAYS, UNLESS OTHERWISE DIRECTED.
16. PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET.
17. CURBS SHOWN ON SHEET 1 WITHIN THE LIMITS OF PAVEMENT ARE CONSIDERED PART OF THE CURB RAMP FOR PAYMENT, WHETHER IT IS CONCRETE CURB, GUTTER, OR COMBINED CURB AND GUTTER.
18. EXISTING FEATURES THAT COMPLY WITH APPLICABLE STANDARDS MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.

**DETECTABLE WARNING MATERIAL**

19. CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH PROWAG. THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES, INCLUDING SIDE FLARES. FURNISH AND INSTALL AN APPROVED CAST-IN-PLACE DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE MATERIAL ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
20. DETECTABLE WARNING MATERIALS MUST MEET CGSM SPL P/N-1. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
21. DETECTABLE WARNING SURFACES MUST BE FIRM, STABLE AND SLIP RESISTANT.
22. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24 INCHES IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
23. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS AT THE BACK OF CURB AND NEITHER END OF THAT EDGE IS GREATER THAN 3 FEET FROM THE BACK OF CURB. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.

**DETECTABLE WARNING MATERIAL**

24. SHADED AREAS ON SHEET 1 OF 4 INDICATE THE APPROXIMATE LOCATION FOR THE DETECTABLE WARNING SURFACE FOR EACH CURB RAMP TYPE.

**DETECTABLE WARNING MATERIAL (IF USED)**

25. FURNISH DETECTABLE WARNING PAVER UNITS MEETING ALL REQUIREMENTS OF ASTM C-936, C-33. LAY IN A TWO BY TWO UNIT BASKET WEAVE PATTERN OR AS DIRECTED.
26. LAY FULL-SIZE UNITS FIRST FOLLOWED BY CLOSURE UNITS CONSISTING OF AT LEAST 25 PERCENT (25%) OF A FULL UNIT. CUT DETECTABLE WARNING PAVER UNITS USING A POWER SAW.

**SIDEWALKS**

27. PROVIDE CLEAR GROUND SPACE AT OPERABLE PARTS, INCLUDING PEDESTRIAN PUSH BUTTONS. OPERABLE PARTS SHALL BE PLACED WITHIN UNOBSTRUCTED REACH RANGE SPECIFIED IN PROWAG SECTION R406.
28. PLACE TRAFFIC SIGNAL OR ILLUMINATION POLES, GROUND BOXES, CONTROLLER BOXES, SIGNS, DRAINAGE FACILITIES AND OTHER ITEMS SO AS NOT TO OBSTRUCT THE PEDESTRIAN ACCESS ROUTE OR CLEAR GROUND SPACE.
29. STREET GRADES AND CROSS SLOPES SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
30. CHANGES IN LEVEL GREATER THAN 1/4 INCH ARE NOT PERMITTED.
31. THE LEAST POSSIBLE GRADE SHOULD BE USED TO MAXIMIZE ACCESSIBILITY. THE RUNNING SLOPE OF SIDEWALKS AND CROSSWALKS WITHIN THE PUBLIC RIGHT OF WAY MAY FOLLOW THE GRADE OF THE PARALLEL ROADWAY. WHERE A CONTINUOUS GRADE GREATER THAN FIVE PERCENT (5%) MUST BE PROVIDED, HANDRAILS MAY BE DESIRABLE TO IMPROVE ACCESSIBILITY. HANDRAILS MAY ALSO BE NEEDED TO PROTECT PEDESTRIANS FROM POTENTIALLY HAZARDOUS CONDITIONS. IF PROVIDED, HANDRAILS SHALL COMPLY WITH PROWAG R409.
32. HANDRAIL EXTENSIONS SHALL NOT PROTRUDE INTO THE USABLE LANDING AREA OR INTO INTERSECTING PEDESTRIAN ROUTES.
33. DRIVEWAYS AND TURNOUTS SHALL BE CONSTRUCTED AND PAID FOR IN ACCORDANCE WITH ITEM "INTERSECTIONS, DRIVEWAYS AND TURNOUTS". SIDEWALKS SHALL BE CONSTRUCTED AND PAID FOR IN ACCORDANCE WITH ITEM, "SIDEWALKS".
34. SIDEWALK DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

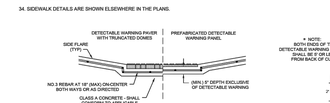
**DETECTABLE WARNING SURFACE DETAILS**



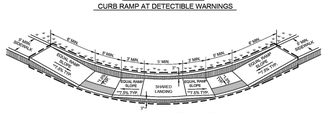

PARALLEL CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.


PERPENDICULAR CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.


DIRECTIONAL CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.

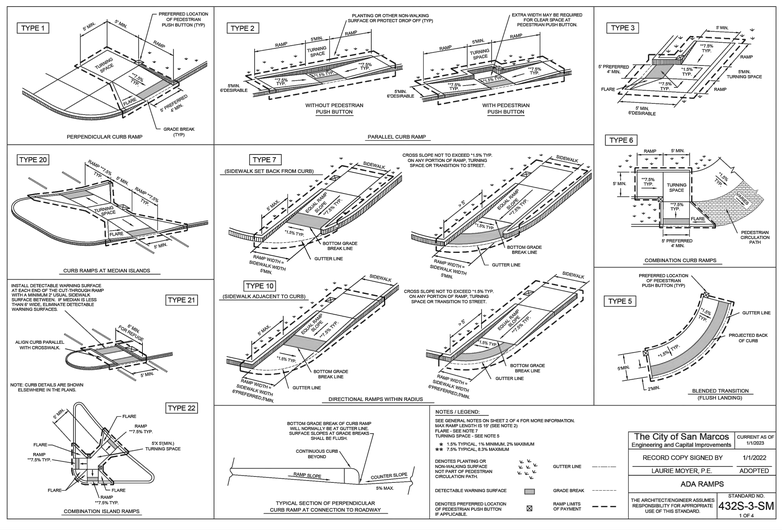



SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

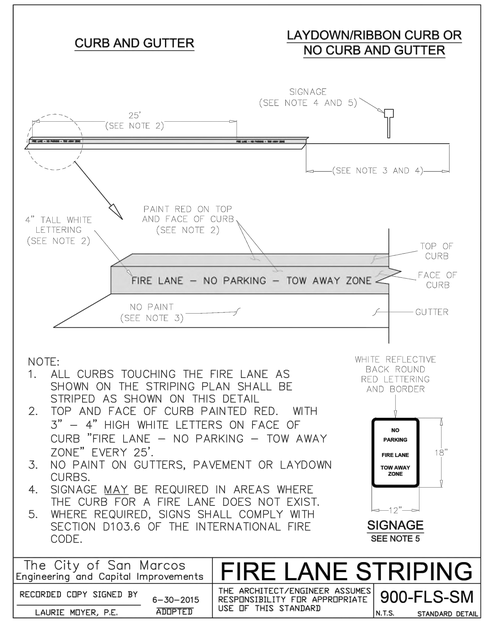



DUAL PARALLEL CURB RAMPS AT CURB RADIUS
(USE ONLY WHERE WATER WILL NOT POND IN THE LANDING)

| The City of San Marcos Engineering and Capital Improvements | CURRENT AS OF 1/1/2023 |
|---|---|
| RECORD COPY SIGNED BY | 1/1/2022 |
| LAURIE MOYER, P.E. | ADOPTED |
| ADA RAMPS | |
| THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | STANDARD NO. 432S-3-SM |
| | 3 OF 4 |




| The City of San Marcos Engineering and Capital Improvements | CURRENT AS OF 1/1/2023 |
|---|---|
| RECORD COPY SIGNED BY | 1/1/2022 |
| LAURIE MOYER, P.E. | ADOPTED |
| ADA RAMPS | |
| THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | STANDARD NO. 432S-3-SM |
| | 1 OF 4 |




NOTE:
1. ALL CURBS TOUCHING THE FIRE LANE AS SHOWN ON THE STRIPING PLAN SHALL BE STRIPED AS SHOWN ON THIS DETAIL.
2. TOP AND FACE OF CURB PAINTED RED. WITH 3" – 4" HIGH WHITE LETTERS ON FACE OF CURB "FIRE LANE – NO PARKING – TOW AWAY ZONE" EVERY 25'.
3. NO PAINT ON GUTTERS, PAVEMENT OR LAYDOWN CURBS.
4. SIGNAGE MAY BE REQUIRED IN AREAS WHERE THE CURB FOR A FIRE LANE DOES NOT EXIST.
5. WHERE REQUIRED, SIGNS SHALL COMPLY WITH SECTION D103.6 OF THE INTERNATIONAL FIRE CODE.




SIGNAGE
SEE NOTE 5

| The City of San Marcos Engineering and Capital Improvements | FIRE LANE STRIPING | |
|---|---|---|
| RECORDED COPY SIGNED BY | 6-30-2015 | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD |
| LAURIE MOYER, P.E. | ADOPTED | 900-FLS-SM |
| | | N.T.S. STANDARD DETAIL |


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.668.5560
FIRM NO. F-15985


STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED PROFESSIONAL ENGINEER
10/23/2025

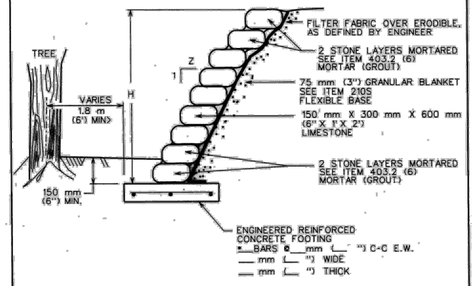
INITIAL SUBMITTAL
October 23, 2025

| No. | DATE | REVISION | BY |
|---|---|---|---|

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

CONSTRUCTION DETAILS 1 OF 2

SHEET
C600
22 OF 23



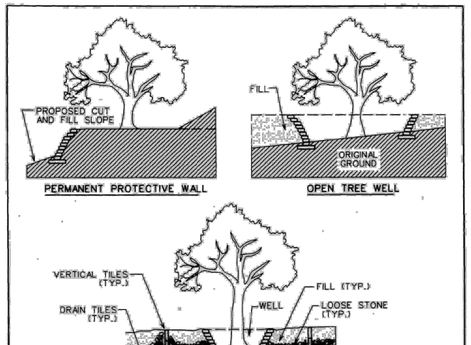

THIS STANDARD APPLIES ONLY UNDER THE FOLLOWING CONDITIONS:

A. H AND Z ARE SPECIFIED ON THE DRAWING.
B. GROUNDWATER IS NO HIGHER THAN THE BOTTOM OF THE FOOTING.
C. THE MATERIAL BELOW THE FOOTING IS FIRM AND STABLE.
D. THE MATERIAL BEHIND THE WALL HAS A LEVEL SURFACE.
E. THE MATERIAL IN FRONT OF THE WALL HAS A SLOPE NO STEEPER THAN 4 HORIZONTAL TO 1 VERTICAL.
F. THE FACE OF THE WALL IS NO STEEPER THAN 1 HORIZONTAL TO 2 VERTICAL.
G. SURCHARGE LOADS BEHIND THE WALL ARE NO CLOSER THAN DISTANCE H FROM THE TOP OF WALL.

NOTES:

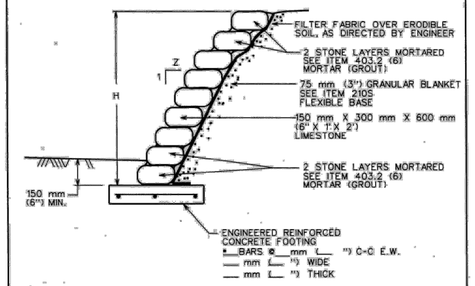
1. DESIGN AND CONSTRUCTION OF ROCK WALL SHALL CONFORM TO THE REQUIREMENTS OF CITY CODE 16-7-2, PLACEMENT OF FENCES IN STREET CORNER AREAS, AND THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL FOR MINIMIM SIGHT DISTANCE.
2. CONCRETE SHALL CONFORM TO ITEM 403S, "CONCRETE FOR STRUCTURES".

| CITY OF AUSTIN<br>DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW | SLOPE PROTECTION AND TREE WELLS | |
|---|---|---|
| 3/12/06<br>ADOPTED | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | STANDARD NO.<br>610S-6<br>1 OF 2 |




TREE WELL WITH RAISED GRADE

| CITY OF AUSTIN<br>DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW | SLOPE PROTECTION AND TREE WELLS | |
|---|---|---|
| 3/12/06<br>ADOPTED | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | STANDARD NO.<br>610S-6<br>2 OF 2 |



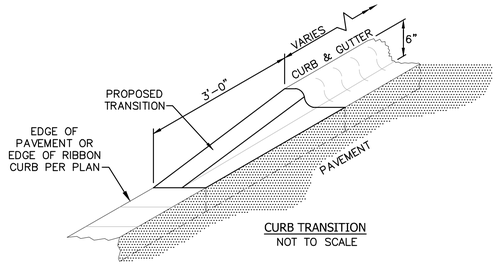

THIS STANDARD APPLIES ONLY UNDER THE FOLLOWING CONDITIONS:

A. H AND Z ARE SPECIFIED ON THE DRAWING.
B. GROUNDWATER IS NO HIGHER THAN THE BOTTOM OF THE FOOTING.
C. THE MATERIAL BELOW THE FOOTING IS FIRM AND STABLE.
D. THE MATERIAL BEHIND THE WALL HAS A LEVEL SURFACE.
E. THE MATERIAL IN FRONT OF THE WALL HAS A SLOPE NO STEEPER THAN 4 HORIZONTAL TO 1 VERTICAL.
F. THE FACE OF THE WALL IS NO STEEPER THAN 1 HORIZONTAL TO 2 VERTICAL.
G. SURCHARGE LOADS BEHIND THE WALL ARE NO CLOSER THAN DISTANCE H FROM THE TOP OF WALL.

NOTES:

1. DESIGN AND CONSTRUCTION OF ROCK WALL SHALL CONFORM TO THE REQUIREMENTS OF CITY CODE 16-7-2, PLACEMENT OF FENCES IN STREET CORNER AREAS, AND THE CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL FOR MINIMIM SIGHT DISTANCE.
2. CONCRETE SHALL CONFORM TO ITEM 403S, "CONCRETE FOR STRUCTURES".

| CITY OF AUSTIN<br>DEPARTMENT OF PUBLIC WORKS | DRY STACK ROCK WALL FOR SLOPE PROTECTION | |
|---|---|---|
| 3/12/06<br>ADOPTED | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | STANDARD NO.<br>623S-1 |




CURB TRANSITION
NOT TO SCALE

| No. | DATE | REVISION | BY |
|---|---|---|---|


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
512.668.5560
FIRM NO. F-15085


10/23/2025

STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED PROFESSIONAL ENGINEER

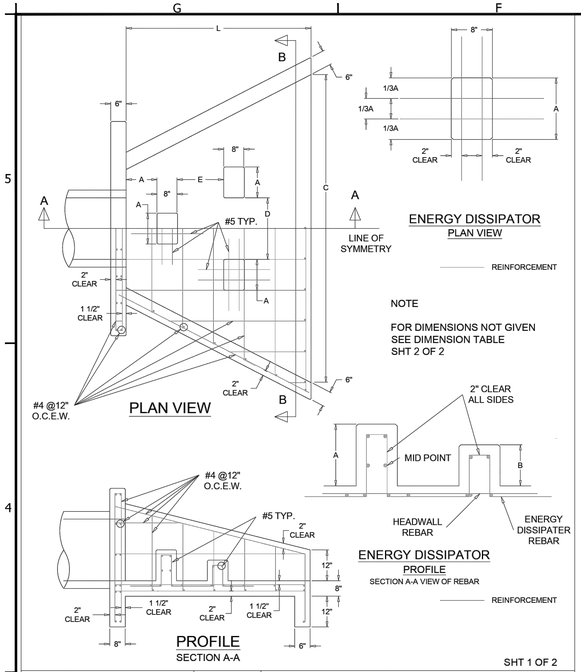
INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

CONSTRUCTION DETAILS 2 OF 2

SHEET
C601
23 OF 23
---


PLOTTED BY: DAVID QUIÑONES
PLOTTED: 10/23/2025 4:28 PM
SAVED: 10/23/2025 4:19 AM




ENERGY DISSIPATOR
PLAN VIEW

REINFORCEMENT

NOTE

FOR DIMENSIONS NOT GIVEN
SEE DIMENSION TABLE
SHT 2 OF 2



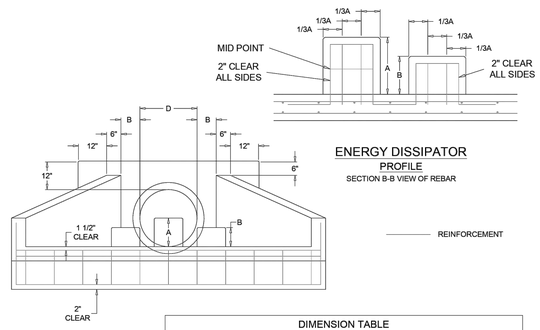

ENERGY DISSIPATOR
PROFILE
SECTION A-A VIEW OF REBAR

REINFORCEMENT

PROFILE
SECTION A-A

SHT 1 OF 2

| The City of San Marcos<br>Engineering and Capital Improvements | CURRENT AS OF<br>1/1/2024 | TYPICAL HEADWALL AND ENERGY DISSIPATOR | |
|---|---|---|---|
| RECORDED COPY SIGNED BY<br>LAURIE MOYER, P.E. | 11/18/2014<br>ADOPTED | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD | 508S-13-SM<br>N.T.S. STANDARD DETAIL |




ENERGY DISSIPATOR
PROFILE
SECTION B-B VIEW OF REBAR

REINFORCEMENT

PROFILE
SECTION B-B

| DIMENSION TABLE | | | | | | | |
|---|---|---|---|---|---|---|---|
| D | 18" | 21" | 24" | 27" | 30" | 33" | 36" |
| A | 9" | 10" | 12" | 14" | 15" | 16 | 18" |
| B | 6" | 7" | 8" | 9 | 10" | 11" | 12" |
| C | 90" | 105" | 120" | 135" | 150" | 165" | 180" |
| L | 54" | 63" | 72" | 81" | 90" | 99" | 108" |
| E | 12" | 14" | 16" | 18" | 20" | 22" | 24" |

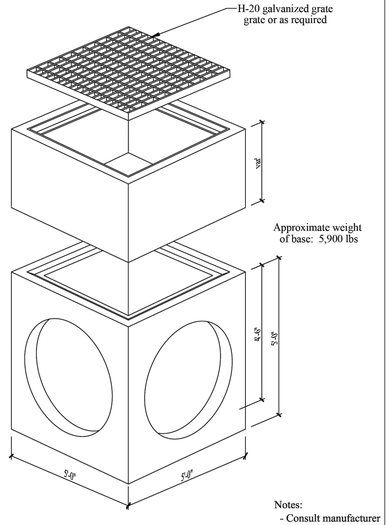
NOTE:

1. ALL CONCRETE SHALL BE TYPE "C" PER SPEC. 403S
2. CHAMFER ALL EXTERNAL VISIBLE CORNERS.
3. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.
4. DISCHARGE VELOCITIES GREATER THAN 6 FEET/SECOND AFTER DISSIPATOR ALSO REQUIRE ROCK OUTLET PROTECTION.
5. DETAIL IS NOT FOR PIPES WITH EXIT VELOCITIES EXCEEDING 15 FEET PER SECOND.
6. ALL SPACING FOR CAST-IN-PLACE HEADWALLS AND DISSIPATORS.
7. ANY WALL THICKER THEN 6" WILL BE DOUBLE MATTED WITH REINFORCEMENT REBAR.

SHT 2 OF 2

| The City of San Marcos<br>Engineering and Capital Improvements | CURRENT AS OF<br>1/1/2024 | TYPICAL HEADWALL AND ENERGY DISSIPATOR | |
|---|---|---|---|
| RECORDED COPY SIGNED BY<br>LAURIE MOYER, P.E. | 11/18/2014<br>ADOPTED | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD | 508S-13-SM<br>N.T.S. STANDARD DETAIL |

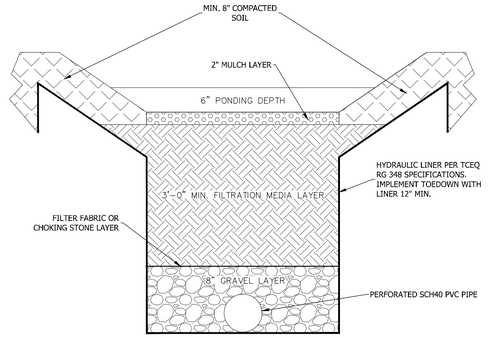
## 4' x 4' x var Grate Inlet




Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

| Capital Precast | CAPITAL PRECAST, INC.<br>6905 SOUTH OLD BASTROP HWY<br>SAN MARCOS, TEXAS 78666<br>PH. (830) 606-6200 | FOR 4' x 4' x var Grate Inlet<br>JOB<br>DRAWN RW DATE 12/1/2015 Rev. No.<br>FILE catalog/grate inlets/4x4 Grate Inlet | SHEET<br>1 OF 1 |
|---|---|---|---|




MEDIA PROPERTIES – THE FILTRATION MEDIA SHOULD HAVE A MINIMUM THICKNESS OF 3 FEET AND SHOULD HAVE A MAXIMUM CLAY CONTENT OF LESS THAN 5%. THE SOIL MIXTURE SHOULD BE 50–60% SAND; 20–30% COMPOST; AND 20–30% TOPSOIL. THE SOIL SHOULD BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHOULD BE MIXED OR DUMPED WITHIN THE BIORETENTION THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. PROVIDE CLEAN SAND, FREE OF DELETERIOUS MATERIALS. SAND SHOULD BE ASTM C-33 WITH GRAIN SIZE OF 0.02–0.04 INCHES (SAME AS SAND FILTER).

BIORETENTION SECTION DETAIL
NOT TO SCALE

| NO. | DATE | REVISION | BY |
|---|---|---|---|


WGI
WGInc.com
4700 MUELLER BLVD, SUITE 300, AUSTIN, TEXAS, 78723
FIRM NO. F-15085
512.668.5560


10/23/2025

STATE OF TEXAS
AMANDA SALDIVAR
146190
LICENSED
PROFESSIONAL ENGINEER

INITIAL SUBMITTAL
October 23, 2025

PROMISE LAND SAN MARCOS
1650 LIME KILN ROAD
CITY OF SAN MARCOS, HAYS COUNTY, TEXAS 78666

STORM DRAINAGE DETAILS

SHEET
C700
24 OF 23
---


SAVED: 10/7/2025 4:28 PM
PLOTTED: 10/23/2025 10:19 AM
PLOTTED BY: DAVID QUIÑONES
DRAWING: C:\Users\dquinones\Box\promise land san marcos\CIVIL\10-CAD\30Revit\R24.0\R-C500-C600-Details.dwg

**Water Pollution Abatement Plan (TCEQ - 0584)**

**Attachment B**

## Volume and Character of Stormwater

The total project site encompasses 19.72 acres. Upon completion, the project will include 4.45 acres of impervious surface, representing 22.57% of the total area.

Stormwater management for the site includes three proposed bioretention ponds, which are designed to improve runoff quality, and two proposed detention ponds, which will regulate runoff to prevent exceeding existing flow conditions.

TSS (Total Suspended Solids) calculations confirm that each bioretention pond is adequately sized to achieve 89% pollutant removal for the proposed development. (See the Overall TSS Removal Calculations for reference.)

All stormwater runoff from the proposed impervious surfaces will be collected in the bioretention ponds for treatment. After treatment, the runoff will be conveyed via on-site storm lines either to a detention pond or discharged without detention, following existing drainage patterns.

Comparative flow calculations for existing and proposed conditions are provided on the following pages. For additional details, including drainage area maps, please refer to the plan set.

Texas Commission on Environmental Quality

***TSS Removal Calculations 04-20-2009***

**Project Name:** Promise Land Wedding Venue
**Date Prepared:** 7/1/2025

**Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.**
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
**Characters shown in red are data entry fields.**
**Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.**

**1. The Required Load Reduction for the total project:** Calculations from RG-348 Pages 3-27 to 3-30

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
$A_N$ = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

| | | |
|---|---|---|
| County = | Hays | |
| Total project area included in plan * = | 19.72 | acres |
| Predevelopment impervious area within the limits of the plan* = | 0.00 | acres |
| Total post-development impervious area within the limits of the plan* = | 4.45 | acres |
| Total post-development impervious cover fraction * = | 0.23 | |
| P = | 33 | inches |
| $L_{M\ TOTAL\ PROJECT}$ = | 3994 | lbs. |

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 6

**2. Drainage Basin Parameters (This information should be provided for each basin)**

**Drainage Basin/Outfall Area No. =** 1

| | | |
|---|---|---|
| Total drainage basin/outfall area = | 1.21 | acres |
| Predevelopment impervious area within drainage basin/outfall area = | 0.00 | acres |
| Post-development impervious area within drainage basin/outfall area = | 0.61 | acres |
| Post-development impervious fraction within drainage basin/outfall area = | 0.50 | |
| $L_{M\ THIS\ BASIN}$ = | 548 | lbs. |

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = Bioretention
Removal efficiency = 89 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

**4. Calculate Maximum TSS Load Removed ($L_R$) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

$A_C$ = Total On-Site drainage area in the BMP catchment area
$A_I$ = Impervious area proposed in the BMP catchment area
$A_P$ = Pervious area remaining in the BMP catchment area
$L_R$ = TSS Load removed from this catchment area by the proposed BMP

| | | |
|---|---|---|
| $A_C$ = | 1.21 | acres |
| $A_I$ = | 0.61 | acres |
| $A_P$ = | 0.60 | acres |
| $L_R$ = | 629 | lbs |

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

| | | |
|---|---|---|
| Desired $L_{M\ THIS\ BASIN}$ = | 548 | lbs. |
| F = | **0.87** | |

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area** Calculations from RG-348 Pages 3-34 to 3-36

| | | |
|---|---|---|
| Rainfall Depth = | **1.44** | inches |
| Post Development Runoff Coefficient = | **0.36** | |
| On-site Water Quality Volume = | **2276** | cubic feet |

Calculations from RG-348 Pages 3-36 to 3-37

| | | |
|---|---|---|
| Off-site area draining to BMP = | 0.00 | acres |
| Off-site Impervious cover draining to BMP = | 0.00 | acres |
| Impervious fraction of off-site area = | **0** | |
| Off-site Runoff Coefficient = | **0.00** | |
| Off-site Water Quality Volume = | **0** | cubic feet |
| Storage for Sediment = | **455** | |
| **Total Capture Volume (required water quality volume(s) x 1.20) =** | **2731** | cubic feet |

**The following sections are used to calculate the required water quality volume(s) for the selected BMP.**
**The values for BMP Types not selected in cell C45 will show NA.**

**10. Bioretention System** Designed as Required in RG-348 Pages 3-63 to 3-65

| | | |
|---|---|---|
| Required Water Quality Volume for Bioretention Basin = | **2731** | cubic feet |

Texas Commission on Environmental Quality

***TSS Removal Calculations 04-20-2009***

**Project Name:** Promise Land Wedding Venue
**Date Prepared:** 7/1/2025

**Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.**
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
**Characters shown in red are data entry fields.**
**Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.**

**1. The Required Load Reduction for the total project:** Calculations from RG-348 Pages 3-27 to 3-30

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
$A_N$ = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

| | | |
|---|---|---|
| County = | Hays | |
| Total project area included in plan * = | 19.72 | acres |
| Predevelopment impervious area within the limits of the plan* = | 0.00 | acres |
| Total post-development impervious area within the limits of the plan* = | 4.45 | acres |
| Total post-development impervious cover fraction * = | 0.23 | |
| P = | 33 | inches |
| $L_{M\ TOTAL\ PROJECT}$ = | 3994 | lbs. |

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 6

**2. Drainage Basin Parameters (This information should be provided for each basin)**

**Drainage Basin/Outfall Area No. =** 2

| | | |
|---|---|---|
| Total drainage basin/outfall area = | 0.35 | acres |
| Predevelopment impervious area within drainage basin/outfall area = | 0.00 | acres |
| Post-development impervious area within drainage basin/outfall area = | 0.16 | acres |
| Post-development impervious fraction within drainage basin/outfall area = | 0.46 | |
| $L_{M\ THIS\ BASIN}$ = | 144 | lbs. |

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = Bioretention
Removal efficiency = 89 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

**4. Calculate Maximum TSS Load Removed ($L_R$) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

$A_C$ = Total On-Site drainage area in the BMP catchment area
$A_I$ = Impervious area proposed in the BMP catchment area
$A_P$ = Pervious area remaining in the BMP catchment area
$L_R$ = TSS Load removed from this catchment area by the proposed BMP

| | | |
|---|---|---|
| $A_C$ = | 0.35 | acres |
| $A_I$ = | 0.16 | acres |
| $A_P$ = | 0.19 | acres |
| $L_R$ = | 166 | lbs |

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

Desired $L_{M\ THIS\ BASIN}$ = **144** lbs.

F = **0.87**

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area** Calculations from RG-348 Pages 3-34 to 3-36

| | | |
|---|---|---|
| Rainfall Depth = | **1.44** | inches |
| Post Development Runoff Coefficient = | **0.33** | |
| On-site Water Quality Volume = | **613** | cubic feet |

Calculations from RG-348 Pages 3-36 to 3-37

| | | |
|---|---|---|
| Off-site area draining to BMP = | **0.00** | acres |
| Off-site Impervious cover draining to BMP = | **0.00** | acres |
| Impervious fraction of off-site area = | **0** | |
| Off-site Runoff Coefficient = | **0.00** | |
| Off-site Water Quality Volume = | **0** | cubic feet |
| Storage for Sediment = | **123** | |
| **Total Capture Volume (required water quality volume(s) x 1.20) =** | **735** | cubic feet |

**The following sections are used to calculate the required water quality volume(s) for the selected BMP.**
**The values for BMP Types not selected in cell C45 will show NA.**

**10. Bioretention System** Designed as Required in RG-348 Pages 3-63 to 3-65

Required Water Quality Volume for Bioretention Basin = **735** cubic feet

Texas Commission on Environmental Quality

***TSS Removal Calculations 04-20-2009***

**Project Name:** Promise Land Wedding Venue
**Date Prepared:** 7/1/2025

**Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.**
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
**Characters shown in red are data entry fields.**
**Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.**

**1. The Required Load Reduction for the total project:** Calculations from RG-348 Pages 3-27 to 3-30

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
$A_N$ = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

| | | |
|---|---|---|
| County = | Hays | |
| Total project area included in plan * = | 19.72 | acres |
| Predevelopment impervious area within the limits of the plan* = | 0.00 | acres |
| Total post-development impervious area within the limits of the plan* = | 4.45 | acres |
| Total post-development impervious cover fraction * = | 0.23 | |
| P = | 33 | inches |
| $L_{M\ TOTAL\ PROJECT}$ = | 3994 | lbs. |

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 6

**2. Drainage Basin Parameters (This information should be provided for each basin)**

**Drainage Basin/Outfall Area No. =** 3

| | | |
|---|---|---|
| Total drainage basin/outfall area = | 1.06 | acres |
| Predevelopment impervious area within drainage basin/outfall area = | 0.00 | acres |
| Post-development impervious area within drainage basin/outfall area = | 0.55 | acres |
| Post-development impervious fraction within drainage basin/outfall area = | 0.52 | |
| $L_{M\ THIS\ BASIN}$ = | 494 | lbs. |

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = Bioretention
Removal efficiency = 89 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

**4. Calculate Maximum TSS Load Removed ($L_R$) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

$A_C$ = Total On-Site drainage area in the BMP catchment area
$A_I$ = Impervious area proposed in the BMP catchment area
$A_P$ = Pervious area remaining in the BMP catchment area
$L_R$ = TSS Load removed from this catchment area by the proposed BMP

| | | |
|---|---|---|
| $A_C$ = | 1.06 | acres |
| $A_I$ = | 0.55 | acres |
| $A_P$ = | 0.51 | acres |
| $L_R$ = | 567 | lbs |

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

Desired $L_{M\ THIS\ BASIN}$ = **494** lbs.

F = **0.87**

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area** Calculations from RG-348 Pages 3-34 to 3-36

| | | |
|---|---|---|
| Rainfall Depth = | **1.44** | inches |
| Post Development Runoff Coefficient = | **0.37** | |
| On-site Water Quality Volume = | **2040** | cubic feet |

Calculations from RG-348 Pages 3-36 to 3-37

| | | |
|---|---|---|
| Off-site area draining to BMP = | **0.00** | acres |
| Off-site Impervious cover draining to BMP = | **0.00** | acres |
| Impervious fraction of off-site area = | **0** | |
| Off-site Runoff Coefficient = | **0.00** | |
| Off-site Water Quality Volume = | **0** | cubic feet |
| Storage for Sediment = | **408** | |
| **Total Capture Volume (required water quality volume(s) x 1.20) =** | **2448** | cubic feet |

**The following sections are used to calculate the required water quality volume(s) for the selected BMP.**
**The values for BMP Types not selected in cell C45 will show NA.**

**10. Bioretention System** Designed as Required in RG-348 Pages 3-63 to 3-65

Required Water Quality Volume for Bioretention Basin = **2448** cubic feet

Texas Commission on Environmental Quality

***TSS Removal Calculations 04-20-2009***

**Project Name:** Promise Land Wedding Venue
**Date Prepared:** 7/1/2025

**Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.**
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
**Characters shown in red are data entry fields.**
**Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.**

**1. The Required Load Reduction for the total project:** Calculations from RG-348 Pages 3-27 to 3-30

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
$A_N$ = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

| | | |
|---|---|---|
| County = | Hays | |
| Total project area included in plan * = | 19.72 | acres |
| Predevelopment impervious area within the limits of the plan* = | 0.00 | acres |
| Total post-development impervious area within the limits of the plan* = | 4.45 | acres |
| Total post-development impervious cover fraction * = | 0.23 | |
| P = | 33 | inches |
| $L_{M\ TOTAL\ PROJECT}$ = | 3994 | lbs. |

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 6

**2. Drainage Basin Parameters (This information should be provided for each basin)**

**Drainage Basin/Outfall Area No. =** 4

| | | |
|---|---|---|
| Total drainage basin/outfall area = | 4.64 | acres |
| Predevelopment impervious area within drainage basin/outfall area = | 0.00 | acres |
| Post-development impervious area within drainage basin/outfall area = | 0.01 | acres |
| Post-development impervious fraction within drainage basin/outfall area = | 0.00 | |
| $L_{M\ THIS\ BASIN}$ = | 9 | lbs. |

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

**4. Calculate Maximum TSS Load Removed ($L_R$) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

$A_C$ = Total On-Site drainage area in the BMP catchment area
$A_I$ = Impervious area proposed in the BMP catchment area
$A_P$ = Pervious area remaining in the BMP catchment area
$L_R$ = TSS Load removed from this catchment area by the proposed BMP

| | | |
|---|---|---|
| $A_C$ = | 4.64 | acres |
| $A_I$ = | 0.01 | acres |
| $A_P$ = | 4.63 | acres |
| $L_R$ = | 80 | lbs |

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

| | | |
|---|---|---|
| Desired $L_{M\ THIS\ BASIN}$ = | **0** | lbs. |
| F = | **0.00** | |

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area** Calculations from RG-348 Pages 3-34 to 3-36

| | | |
|---|---|---|
| Rainfall Depth = | **#N/A** | inches |
| Post Development Runoff Coefficient = | **0.02** | |
| On-site Water Quality Volume = | **#N/A** | cubic feet |

Calculations from RG-348 Pages 3-36 to 3-37

| | | |
|---|---|---|
| Off-site area draining to BMP = | **0.00** | acres |
| Off-site Impervious cover draining to BMP = | **0.00** | acres |
| Impervious fraction of off-site area = | **0** | |
| Off-site Runoff Coefficient = | **0.00** | |
| Off-site Water Quality Volume = | **#N/A** | cubic feet |
| Storage for Sediment = | **#N/A** | |
| **Total Capture Volume (required water quality volume(s) x 1.20) =** | **#N/A** | cubic feet |

**The following sections are used to calculate the required water quality volume(s) for the selected BMP.**
**The values for BMP Types not selected in cell C45 will show NA.**

Texas Commission on Environmental Quality

***TSS Removal Calculations 04-20-2009***

**Project Name:** Promise Land Wedding Venue
**Date Prepared:** 7/1/2025

**Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.**
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
**Characters shown in red are data entry fields.**
**Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.**

**1. The Required Load Reduction for the total project:** Calculations from RG-348 Pages 3-27 to 3-30

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
$A_N$ = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

| | | |
|---|---|---|
| County = | Hays | |
| Total project area included in plan * = | 19.72 | acres |
| Predevelopment impervious area within the limits of the plan* = | 0.00 | acres |
| Total post-development impervious area within the limits of the plan* = | 4.45 | acres |
| Total post-development impervious cover fraction * = | 0.23 | |
| P = | 33 | inches |
| $L_{M\ TOTAL\ PROJECT}$ = | 3994 | lbs. |

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 6

**2. Drainage Basin Parameters (This information should be provided for each basin)**

**Drainage Basin/Outfall Area No. =** 5

| | | |
|---|---|---|
| Total drainage basin/outfall area = | 4.83 | acres |
| Predevelopment impervious area within drainage basin/outfall area = | 0.00 | acres |
| Post-development impervious area within drainage basin/outfall area = | 0.00 | acres |
| Post-development impervious fraction within drainage basin/outfall area = | 0.00 | |
| $L_{M\ THIS\ BASIN}$ = | 0 | lbs. |

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

**4. Calculate Maximum TSS Load Removed ($L_R$) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

$A_C$ = Total On-Site drainage area in the BMP catchment area
$A_I$ = Impervious area proposed in the BMP catchment area
$A_P$ = Pervious area remaining in the BMP catchment area
$L_R$ = TSS Load removed from this catchment area by the proposed BMP

| | | |
|---|---|---|
| $A_C$ = | 4.83 | acres |
| $A_I$ = | 0.00 | acres |
| $A_P$ = | 4.83 | acres |
| $L_R$ = | 73 | lbs |

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

| | | |
|---|---|---|
| Desired $L_{M\ THIS\ BASIN}$ = | **0** | lbs. |
| F = | **0.00** | |

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area** Calculations from RG-348 Pages 3-34 to 3-36

| | | |
|---|---|---|
| Rainfall Depth = | **#N/A** | inches |
| Post Development Runoff Coefficient = | **0.02** | |
| On-site Water Quality Volume = | **#N/A** | cubic feet |

Calculations from RG-348 Pages 3-36 to 3-37

| | | |
|---|---|---|
| Off-site area draining to BMP = | **0.00** | acres |
| Off-site Impervious cover draining to BMP = | **0.00** | acres |
| Impervious fraction of off-site area = | **0** | |
| Off-site Runoff Coefficient = | **0.00** | |
| Off-site Water Quality Volume = | **#N/A** | cubic feet |
| Storage for Sediment = | **#N/A** | |
| **Total Capture Volume (required water quality volume(s) x 1.20) =** | **#N/A** | cubic feet |

**The following sections are used to calculate the required water quality volume(s) for the selected BMP.**
**The values for BMP Types not selected in cell C45 will show NA.**

Texas Commission on Environmental Quality

***TSS Removal Calculations 04-20-2009***

**Project Name:** Promise Land Wedding Venue
**Date Prepared:** 7/1/2025

**Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.**
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
**Characters shown in red are data entry fields.**
**Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.**

**1. The Required Load Reduction for the total project:** Calculations from RG-348 Pages 3-27 to 3-30

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
$A_N$ = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

| | | |
|---|---|---|
| County = | Hays | |
| Total project area included in plan * = | 19.72 | acres |
| Predevelopment impervious area within the limits of the plan* = | 0.00 | acres |
| Total post-development impervious area within the limits of the plan* = | 4.45 | acres |
| Total post-development impervious cover fraction * = | 0.23 | |
| P = | 33 | inches |
| $L_{M\ TOTAL\ PROJECT}$ = | 3994 | lbs. |

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 6

**2. Drainage Basin Parameters (This information should be provided for each basin)**

**Drainage Basin/Outfall Area No. =** 6

| | | |
|---|---|---|
| Total drainage basin/outfall area = | 7.62 | acres |
| Predevelopment impervious area within drainage basin/outfall area = | 0.00 | acres |
| Post-development impervious area within drainage basin/outfall area = | 3.12 | acres |
| Post-development impervious fraction within drainage basin/outfall area = | 0.41 | |
| $L_{M\ THIS\ BASIN}$ = | 2801 | lbs. |

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

**4. Calculate Maximum TSS Load Removed ($L_R$) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

$A_C$ = Total On-Site drainage area in the BMP catchment area
$A_I$ = Impervious area proposed in the BMP catchment area
$A_P$ = Pervious area remaining in the BMP catchment area
$L_R$ = TSS Load removed from this catchment area by the proposed BMP

| | | |
|---|---|---|
| $A_C$ = | 7.62 | acres |
| $A_I$ = | 3.12 | acres |
| $A_P$ = | 4.50 | acres |
| $L_R$ = | 3096 | lbs |

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

| | | |
|---|---|---|
| Desired $L_{M\ THIS\ BASIN}$ = | **2801** | lbs. |
| F = | **0.90** | |

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area** Calculations from RG-348 Pages 3-34 to 3-36

| | | |
|---|---|---|
| Rainfall Depth = | **1.70** | inches |
| Post Development Runoff Coefficient = | **0.31** | |
| On-site Water Quality Volume = | **14644** | cubic feet |

Calculations from RG-348 Pages 3-36 to 3-37

| | | |
|---|---|---|
| Off-site area draining to BMP = | **0.00** | acres |
| Off-site Impervious cover draining to BMP = | **0.00** | acres |
| Impervious fraction of off-site area = | **0** | |
| Off-site Runoff Coefficient = | **0.00** | |
| Off-site Water Quality Volume = | **0** | cubic feet |
| Storage for Sediment = | **2929** | |
| **Total Capture Volume (required water quality volume(s) x 1.20) =** | **17573** | cubic feet |

**The following sections are used to calculate the required water quality volume(s) for the selected BMP.**
**The values for BMP Types not selected in cell C45 will show NA.**

**16. Vegetated Filter Strips** Designed as Required in RG-348 Pages 3-55 to 3-57

**There are no calculations required for determining the load or size of vegetative filter strips.**
**The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and**
**the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% o**
**across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%**

**If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348**

Texas Commission on Environmental Quality

***TSS Removal Calculations 04-20-2009***

**Project Name:** Promise Land Wedding Venue
**Date Prepared:** 7/1/2025

**Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.**
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
**Characters shown in red are data entry fields.**
**Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.**

**1. The Required Load Reduction for the total project:** Calculations from RG-348 Pages 3-27 to 3-30

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
$A_N$ = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

| | | |
|---|---|---|
| County = | Hays | |
| Total project area included in plan * = | 19.72 | acres |
| Predevelopment impervious area within the limits of the plan* = | 0.00 | acres |
| Total post-development impervious area within the limits of the plan* = | 0.19 | acres |
| Total post-development impervious cover fraction * = | 0.01 | |
| P = | 33 | inches |
| $L_{M\ TOTAL\ PROJECT}$ = | 172 | lbs. |

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 6

**2. Drainage Basin Parameters (This information should be provided for each basin)**

**Drainage Basin/Outfall Area No. =** P8-2

| | | |
|---|---|---|
| Total drainage basin/outfall area = | 0.19 | acres |
| Predevelopment impervious area within drainage basin/outfall area = | 0.00 | acres |
| Post-development impervious area within drainage basin/outfall area = | 0.19 | acres |
| Post-development impervious fraction within drainage basin/outfall area = | 1.00 | |
| $L_{M\ THIS\ BASIN}$ = | 172 | lbs. |

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = Retention / Irrigation
Removal efficiency = 100 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

**4. Calculate Maximum TSS Load Removed ($L_R$) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

$A_C$ = Total On-Site drainage area in the BMP catchment area
$A_I$ = Impervious area proposed in the BMP catchment area
$A_P$ = Pervious area remaining in the BMP catchment area
$L_R$ = TSS Load removed from this catchment area by the proposed BMP

| | | |
|---|---|---|
| $A_C$ = | 0.19 | acres |
| $A_I$ = | 0.19 | acres |
| $A_P$ = | 0.00 | acres |
| $L_R$ = | 219 | lbs |

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

Desired $L_{M\ THIS\ BASIN}$ = **172** lbs.

F = **0.79**

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area** Calculations from RG-348 Pages 3-34 to 3-36

| | | |
|---|---|---|
| Rainfall Depth = | **1.04** | inches |
| Post Development Runoff Coefficient = | **0.82** | |
| On-site Water Quality Volume = | **590** | cubic feet |

Calculations from RG-348 Pages 3-36 to 3-37

| | | |
|---|---|---|
| Off-site area draining to BMP = | **0.00** | acres |
| Off-site Impervious cover draining to BMP = | **0.00** | acres |
| Impervious fraction of off-site area = | **0** | |
| Off-site Runoff Coefficient = | **0.00** | |
| Off-site Water Quality Volume = | **0** | cubic feet |
| Storage for Sediment = | **118** | |
| **Total Capture Volume (required water quality volume(s) x 1.20) =** | **708** | cubic feet |

**The following sections are used to calculate the required water quality volume(s) for the selected BMP.**
**The values for BMP Types not selected in cell C45 will show NA.**

**7. Retention/Irrigation System** Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin = **708** cubic feet

Irrigation Area Calculations:

| | | | |
|---|---|---|---|
| **Soil infiltration/permeability rate =** | **0.1** | in/hr | **Enter determined permeability rate or assumed value of 0.1** |
| **Irrigation area =** | **2832** | square feet | |
| | **0.07** | acres | |

Texas Commission on Environmental Quality

***TSS Removal Calculations 04-20-2009***

**Project Name:** Promise Land Wedding Venue
**Date Prepared:** 7/1/2025

**Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.**
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
**Characters shown in red are data entry fields.**
**Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.**

**1. The Required Load Reduction for the total project:** Calculations from RG-348 Pages 3-27 to 3-30

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
$A_N$ = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

| | | |
|---|---|---|
| County = | Hays | |
| Total project area included in plan * = | 19.72 | acres |
| Predevelopment impervious area within the limits of the plan* = | 0.00 | acres |
| Total post-development impervious area within the limits of the plan* = | 0.10 | acres |
| Total post-development impervious cover fraction * = | 0.01 | |
| P = | 33 | inches |
| $L_{M\ TOTAL\ PROJECT}$ = | 91 | lbs. |

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 6

**2. Drainage Basin Parameters (This information should be provided for each basin)**

**Drainage Basin/Outfall Area No. =** P8-1

| | | |
|---|---|---|
| Total drainage basin/outfall area = | 0.10 | acres |
| Predevelopment impervious area within drainage basin/outfall area = | 0.00 | acres |
| Post-development impervious area within drainage basin/outfall area = | 0.10 | acres |
| Post-development impervious fraction within drainage basin/outfall area = | 1.00 | |
| $L_{M\ THIS\ BASIN}$ = | 91 | lbs. |

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

**4. Calculate Maximum TSS Load Removed ($L_R$) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

$A_C$ = Total On-Site drainage area in the BMP catchment area
$A_I$ = Impervious area proposed in the BMP catchment area
$A_P$ = Pervious area remaining in the BMP catchment area
$L_R$ = TSS Load removed from this catchment area by the proposed BMP

| | | |
|---|---|---|
| $A_C$ = | 0.10 | acres |
| $A_I$ = | 0.10 | acres |
| $A_P$ = | 0.00 | acres |
| $L_R$ = | 99 | lbs |

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

| | | |
|---|---|---|
| Desired $L_{M\ THIS\ BASIN}$ = | **91** | lbs. |
| F = | **0.92** | |

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area** Calculations from RG-348 Pages 3-34 to 3-36

| | | |
|---|---|---|
| Rainfall Depth = | **2.00** | inches |
| Post Development Runoff Coefficient = | **0.82** | |
| On-site Water Quality Volume = | **601** | cubic feet |

Calculations from RG-348 Pages 3-36 to 3-37

| | | |
|---|---|---|
| Off-site area draining to BMP = | **0.00** | acres |
| Off-site Impervious cover draining to BMP = | **0.00** | acres |
| Impervious fraction of off-site area = | **0** | |
| Off-site Runoff Coefficient = | **0.00** | |
| Off-site Water Quality Volume = | **0** | cubic feet |
| Storage for Sediment = | **120** | |
| **Total Capture Volume (required water quality volume(s) x 1.20) =** | **722** | cubic feet |

**The following sections are used to calculate the required water quality volume(s) for the selected BMP.**
**The values for BMP Types not selected in cell C45 will show NA.**

**16. Vegetated Filter Strips** Designed as Required in RG-348 Pages 3-55 to 3-57

**There are no calculations required for determining the load or size of vegetative filter strips.**
**The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%**

**If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348**

Texas Commission on Environmental Quality

***TSS Removal Calculations 04-20-2009***

**Project Name:** Promise Land Wedding Venue
**Date Prepared:** 7/1/2025

**Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.**
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
**Characters shown in red are data entry fields.**
**Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.**

**1. The Required Load Reduction for the total project:** Calculations from RG-348 Pages 3-27 to 3-30

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
$A_N$ = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

| | | |
|---|---|---|
| County = | Hays | |
| Total project area included in plan * = | 19.72 | acres |
| Predevelopment impervious area within the limits of the plan* = | 0.00 | acres |
| Total post-development impervious area within the limits of the plan* = | 0.16 | acres |
| Total post-development impervious cover fraction * = | 0.01 | |
| P = | 33 | inches |
| $L_{M\ TOTAL\ PROJECT}$ = | 146 | lbs. |

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 6

**2. Drainage Basin Parameters (This information should be provided for each basin)**

**Drainage Basin/Outfall Area No. =** P8-3

| | | |
|---|---|---|
| Total drainage basin/outfall area = | 0.24 | acres |
| Predevelopment impervious area within drainage basin/outfall area = | 0.00 | acres |
| Post-development impervious area within drainage basin/outfall area = | 0.16 | acres |
| Post-development impervious fraction within drainage basin/outfall area = | 0.69 | |
| $L_{M\ THIS\ BASIN}$ = | 146 | lbs. |

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

**4. Calculate Maximum TSS Load Removed ($L_R$) for this Drainage Basin by the selected BMP Type.**

RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

$A_C$ = Total On-Site drainage area in the BMP catchment area
$A_I$ = Impervious area proposed in the BMP catchment area
$A_P$ = Pervious area remaining in the BMP catchment area
$L_R$ = TSS Load removed from this catchment area by the proposed BMP

| | | |
|---|---|---|
| $A_C$ = | 0.24 | acres |
| $A_I$ = | 0.16 | acres |
| $A_P$ = | 0.07 | acres |
| $L_R$ = | 159 | lbs |

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

Desired $L_{M\ THIS\ BASIN}$ = 146 lbs.

F = 0.92

**6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area** Calculations from RG-348 Pages 3-34 to 3-36

| | | |
|---|---|---|
| Rainfall Depth = | 2.00 | inches |
| Post Development Runoff Coefficient = | 0.49 | |
| On-site Water Quality Volume = | 846 | cubic feet |

Calculations from RG-348 Pages 3-36 to 3-37

| | | |
|---|---|---|
| Off-site area draining to BMP = | 0.00 | acres |
| Off-site Impervious cover draining to BMP = | 0.00 | acres |
| Impervious fraction of off-site area = | 0 | |
| Off-site Runoff Coefficient = | 0.00 | |
| Off-site Water Quality Volume = | 0 | cubic feet |
| Storage for Sediment = | 169 | |
| **Total Capture Volume (required water quality volume(s) x 1.20) =** | 1015 | cubic feet |

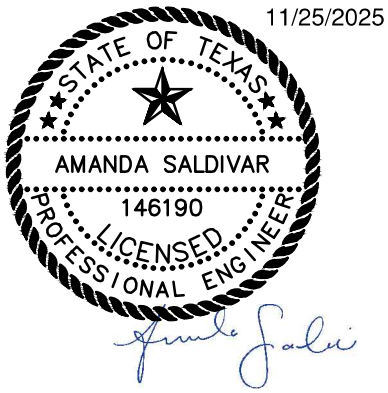
**The following sections are used to calculate the required water quality volume(s) for the selected BMP**
**The values for BMP Types not selected in cell C45 will show NA.**

**16. Vegetated Filter Strips** Designed as Required in RG-348 Pages 3-55 to 3-57

**There are no calculations required for determining the load or size of vegetative filter strips.**
**The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and**
**the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% o**
**across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%**

**If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348**

11/25/2025



| Location | Rainfall |
|---|---|
| Bexar | 30 |
| Comal | 33 |
| Hays | 33 |
| Kinney | 22 |
| Medina | 28 |
| Travis | 32 |
| Uvalde | 25 |
| Williamson | 32 |

| Fraction of Annual Runoff | Rainfall Depth |
|---|---|
| 0.08 | 0.04 |
| 0.09 | 0.05 |
| 0.10 | 0.05 |
| 0.11 | 0.06 |
| 0.12 | 0.06 |
| 0.13 | 0.07 |
| 0.14 | 0.08 |
| 0.15 | 0.08 |
| 0.16 | 0.09 |
| 0.17 | 0.09 |
| 0.18 | 0.10 |
| 0.19 | 0.11 |
| 0.20 | 0.11 |
| 0.21 | 0.12 |
| 0.22 | 0.13 |
| 0.23 | 0.14 |
| 0.24 | 0.14 |
| 0.25 | 0.15 |
| 0.26 | 0.16 |
| 0.27 | 0.17 |
| 0.28 | 0.18 |
| 0.29 | 0.18 |
| 0.30 | 0.19 |
| 0.31 | 0.20 |
| 0.32 | 0.21 |
| 0.33 | 0.22 |
| 0.34 | 0.23 |
| 0.35 | 0.23 |
| 0.36 | 0.24 |
| 0.37 | 0.25 |
| 0.38 | 0.27 |
| 0.39 | 0.28 |
| 0.40 | 0.29 |
| 0.41 | 0.31 |
| 0.42 | 0.32 |
| 0.43 | 0.33 |
| 0.44 | 0.34 |
| 0.45 | 0.36 |
| 0.46 | 0.37 |
| 0.47 | 0.38 |
| 0.48 | 0.40 |
| 0.49 | 0.41 |
| 0.50 | 0.42 |
| 0.51 | 0.44 |
| 0.52 | 0.45 |
| 0.53 | 0.46 |
| 0.54 | 0.47 |
| 0.55 | 0.49 |
| 0.56 | 0.50 |
| 0.57 | 0.52 |
| 0.58 | 0.54 |
| 0.59 | 0.56 |
| 0.60 | 0.58 |
| 0.61 | 0.60 |
| 0.62 | 0.62 |
| 0.63 | 0.64 |
| 0.64 | 0.66 |
| 0.65 | 0.67 |
| 0.66 | 0.69 |
| 0.67 | 0.71 |
| 0.68 | 0.73 |
| 0.69 | 0.75 |
| 0.70 | 0.78 |
| 0.71 | 0.80 |
| 0.72 | 0.83 |
| 0.73 | 0.86 |
| 0.74 | 0.89 |
| 0.75 | 0.92 |
| 0.76 | 0.94 |
| 0.77 | 0.97 |
| 0.78 | 1.00 |
| 0.79 | 1.04 |
| 0.80 | 1.08 |
| 0.81 | 1.12 |
| 0.82 | 1.16 |
| 0.83 | 1.20 |
| 0.84 | 1.26 |
| 0.85 | 1.32 |
| 0.86 | 1.38 |
| 0.87 | 1.44 |
| 0.88 | 1.50 |
| 0.89 | 1.60 |
| 0.90 | 1.70 |
| 0.91 | 1.80 |
| 0.92 | 2.00 |
| 0.93 | 2.20 |
| 0.94 | 2.40 |
| 0.95 | 2.60 |
| 0.96 | 2.80 |
| 0.97 | 3.00 |
| 0.98 | 3.33 |
| 0.99 | 3.66 |
| 1.00 | 4.00 |

| | |
|---|---|
| Aqualogic Car | 95 |
| Bioretention | 89 |
| Contech Storr | 83 |
| Constructed V | 93 |
| Extended Det | 75 |
| Grassy Swale | 70 |
| Retention / Irri | 100 |
| Sand Filter | 89 |
| Stormceptor | 0 |
| Vegetated Filt | 85 |
| Vortechs | 0 |
| Wet Basin | 93 |
| Wet Vault | 0 |

Stormceptor Calculation Tables

**Table 1**

| Effective Ar | Stormceptor Model |
|---|---|
| 0.00 | 450i |
| 0.08 | 900, 1200, 1800 |
| 0.16 | 2400, 3600 |
| 0.29 | 4800, 6000 |
| 0.46 | 7200 |
| 0.66 | 11000, 13000 |
| 0.92 | 16000 |
| 1.32 | Area Too Large |

**Table 1B**

| Stormceptor Model | Surface Area (sq. ft) |
|---|---|
| 0 | 0 |
| 900 | 28.27 |
| 1200 | 28.27 |
| 1800 | 28.27 |
| 2400 | 50.27 |
| 3600 | 50.27 |
| 4800 | 78.54 |
| 6000 | 78.54 |
| 7200 | 113.1 |
| 11000 | 157.08 |
| 13000 | 157.08 |
| 16000 | 226.19 |
| 450i | 12.57 |
| Area Too Large | 0 |

**Table 2: Stormceptor BMP Efficiency and Overflow Rate (V(or))**

| Overflow (f/s) | Eff (%) |
|---|---|
| 0.000121 | 1.00 |
| 0.000240 | 0.99 |
| 0.000358 | 0.98 |
| 0.000477 | 0.97 |
| 0.000595 | 0.96 |
| 0.000713 | 0.95 |
| 0.000963 | 0.94 |
| 0.001210 | 0.93 |
| 0.001460 | 0.92 |
| 0.001710 | 0.91 |
| 0.001960 | 0.90 |
| 0.002280 | 0.89 |
| 0.002602 | 0.88 |
| 0.002920 | 0.87 |
| 0.003240 | 0.86 |
| 0.003560 | 0.85 |
| 0.004010 | 0.84 |
| 0.004460 | 0.83 |
| 0.004910 | 0.82 |
| 0.005360 | 0.81 |
| 0.005810 | 0.80 |
| 0.006480 | 0.79 |
| 0.007160 | 0.78 |
| 0.007830 | 0.77 |
| 0.008510 | 0.76 |
| 0.009180 | 0.75 |
| 0.010100 | 0.74 |
| 0.011000 | 0.73 |
| 0.012000 | 0.72 |
| 0.012900 | 0.71 |
| 0.013800 | 0.70 |
| 0.014900 | 0.69 |
| 0.016000 | 0.68 |
| 0.017200 | 0.67 |
| 0.018300 | 0.66 |
| 0.019400 | 0.65 |
| 0.021400 | 0.64 |
| 0.023300 | 0.63 |
| 0.025300 | 0.62 |
| 0.027300 | 0.61 |
| 0.029200 | 0.60 |
| 0.031700 | 0.59 |
| 0.034100 | 0.58 |
| 0.365000 | 0.57 |
| 0.039000 | 0.56 |
| 0.041400 | 0.55 |
| 0.045400 | 0.54 |
| 0.049400 | 0.53 |
| 0.053400 | 0.52 |
| 0.057400 | 0.51 |
| 0.061400 | 0.50 |
| 0.067100 | 0.49 |
| 0.072800 | 0.48 |
| 0.078600 | 0.47 |
| 0.084300 | 0.46 |
| 0.090000 | 0.45 |
| 0.099800 | 0.44 |
| 0.110000 | 0.43 |
| 0.119000 | 0.42 |
| 0.129000 | 0.41 |
| 0.139000 | 0.40 |

Vortechs Calculation Tables

**Table 1**

| Effective Area (ac) | Vortech Model |
|---|---|
| 0.00 | Vx1000 |
| 0.10 | Vx2000 |
| 0.17 | Vx3000 |
| 0.27 | Vx4000 |
| 0.40 | Vx5000 |
| 0.54 | Vx7000 |
| 0.71 | Vx9000 |
| 0.90 | Vx11000 |
| 1.11 | Vx16000 |
| 1.60 | Vx1319 |
| 1.88 | Vx1421 |
| 2.18 | Area Too Large |

**Table 1B**

| Vortech M | Surface Area (sq. ft) |
|---|---|
| 0 | 0 |
| Area Too Lar | 0 |
| Vx1000 | 7.1 |
| Vx11000 | 78.54 |
| Vx1319 | 132.7 |
| Vx1421 | 153.9 |
| Vx16000 | 113.1 |
| Vx2000 | 12.57 |
| Vx3000 | 19.63 |
| Vx4000 | 28.27 |
| Vx5000 | 38.48 |
| Vx7000 | 50.27 |
| Vx9000 | 63.62 |

**Table 2: Stormceptor BMP Efficiency and Overflow Rate (V(or))**

| Overflow (f/s) | Eff (%) |
|---|---|
| 0.0008 | 0.99 |
| 0.0016 | 0.98 |
| 0.0023 | 0.97 |
| 0.0031 | 0.96 |
| 0.0039 | 0.95 |
| 0.0047 | 0.94 |
| 0.0055 | 0.93 |
| 0.0062 | 0.92 |
| 0.0070 | 0.91 |
| 0.0078 | 0.90 |
| 0.0086 | 0.89 |
| 0.0094 | 0.88 |
| 0.0101 | 0.87 |
| 0.0109 | 0.86 |
| 0.0117 | 0.85 |
| 0.0125 | 0.84 |
| 0.0133 | 0.83 |
| 0.0140 | 0.82 |
| 0.0148 | 0.81 |
| 0.0156 | 0.80 |
| 0.0163 | 0.79 |
| 0.0169 | 0.78 |
| 0.0176 | 0.77 |
| 0.0183 | 0.76 |
| 0.0189 | 0.75 |
| 0.0196 | 0.74 |
| 0.0203 | 0.73 |
| 0.0209 | 0.72 |
| 0.0216 | 0.71 |
| 0.0223 | 0.70 |
| 0.0231 | 0.69 |
| 0.0238 | 0.68 |
| 0.0246 | 0.67 |
| 0.0254 | 0.66 |
| 0.0262 | 0.65 |
| 0.0269 | 0.64 |
| 0.0277 | 0.63 |
| 0.0285 | 0.62 |
| 0.0293 | 0.61 |
| 0.0301 | 0.60 |
| 0.0311 | 0.59 |
| 0.0321 | 0.58 |
| 0.0331 | 0.57 |
| 0.0341 | 0.56 |
| 0.0351 | 0.55 |
| 0.0361 | 0.54 |
| 0.0371 | 0.53 |
| 0.0381 | 0.52 |
| 0.0391 | 0.51 |
| 0.0401 | 0.50 |
| 0.0410 | 0.49 |
| 0.0419 | 0.48 |
| 0.0428 | 0.47 |
| 0.0437 | 0.46 |
| 0.0445 | 0.45 |
| 0.0454 | 0.44 |
| 0.0463 | 0.43 |
| 0.0472 | 0.42 |
| 0.0481 | 0.41 |
| 0.0490 | 0.40 |

WGI | 512.669.5560 | www.WGInc.com

October 24, 2025 09624.00

Mr. Colin Gearing
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality
Taylor, Texas 76574

RE: Comment Response Letter
**Promise Land WPAP Modification Withdraw**
Edwards Aquifer Protection Program ID: **11004397**
Regulated Entity No. **RN106194194**

To Whom It May Concern:

Please accept this letter and the accompanying support material as our update to the comments received on July 28, 2025 for the Promise Land WPAP Modification/Withdraw. If you or your team members should have any questions about the responses contained in this letter, please contact WGI at 512-669-5560 and we will be happy to discuss our response in more detail. Thank you for your effort in reviewing this project.

1. The previous approval indicates that rainwater harvesting (RWH) was utilized to reduce the effective impervious cover (IC) for the site. Please clarify how much IC will be captured by RWH and call out the areas utilizing RWH.
   **The impervious cover from the existing sanctuary (+/-22,731 SF, 0.52 Ac.) is what is being treated by the rainwater harvesting tank. In the TSS calculations for the rainwater harvesting BMP, we show a pre development area of 10,000 SF to account for the immediate area around the existing sanctuary but the rainwater harvesting tank is being used to primarily treat IC from the existing sanctuary.**
2. The Modification of a Previously Approved Application Form (TCEQ-0590) indicates that swales were previously approved for the site and also proposed for this project. Please note, the previous approval did not include swales as permanent BMPs, and they do not appear to be proposed in this application. Please clarify and revise as necessary.
   **Permanent BMP's for the site have been provided via Vegetative Filter Strips and not by swales (as we believe the swales were a temporary measure utilized early on prior to further expansion). If need be, let's set a brief meeting to follow up to ensure that this has been addressed appropriately.**
3. Please update the application to include the number of proposed bioretention basins.
   **The application has been updated to properly reflect the number of bioretention basins being proposed with this WPAP.**
4. Google earth images and the illustration in the Geological Assessment do not match the approved site plan nor the site as demonstrated in the plan sheets submitted with this project. Please revise so that the entire 19.32-acre parcel and all existing improvements are demonstrated. This should include all proposed and previously approved BMPs.
   **An overall site plan sheet has been provided with this update as sheet CS100 to show the entire parcel and some additional viewports have been added.**
5. The TSS Removal Calculations indicate that 3.12 acres of IC from the previous approval will be

treated by VFS, however, the previous approval only included a total of 3.11 acres of IC and only 2.75 acres of IC with the utilization of RWH. Please clarify and revise as necessary. Please note, TSS Removal Credit cannot be given for IC being captured by RWH.

**Noted and understood that Total Suspended Solid (TSS) removal credit can't be captured/given for elements being captured by Rainwater Harvesting (RWH). The remaining acreage not covered/captured by RWH was being captured/treated by VFS's. If need be, let's set a brief meeting to follow up to ensure that this has been addressed appropriately.**

6. The VFS were originally approved without calculations and credited to provide 80% TSS removal. Please provide calculations for 80% TSS Removal of the 2.75 acres of IC after RWH. If you wish to receive 85% TSS removal the VFS will be subject to review.

**The expectation for this permit process isn't to account for the 85% TSS removal for the prior elements, just to capture what the approach and application was. The prior approach for VFS's was captured throughout the facility, adjacent to buildings, downslope of parking areas, prior to entering the on-site detention areas along Lime Kiln Road. If need be, let's set a brief meeting to follow up to ensure that this has been addressed appropriately.**

7. The plan sheets indicate that they are not for construction. Please provide finalized plan sheets for construction.

**The sheets have been updated to reflect a construction set with the intent that approval of plans is upcoming with this submission.**

8. The plan sheets indicate that work within the ROW is proposed. Please verify that the acreage and IC from the ROW is included in the acreage and IC totals listed throughout the application.

**The work within the ROW that is proposed is to add a driveway and necessary drainage improvements for which will allow the site access via Cowan Road – CR 277 (Vol 16, Page 176 P.R.H.C.T.; Vol 197, Page 630, O.P.R.H.C.T.). Impervious Cover from the ROW is not counted toward onsite treatment. The limits of construction for the work in the ROW to construct the driveway and necessary drainage improvements (driveway culvert) is approximately +/-1,434 square feet.**

9. The Storm Drainage Plan does not adequately demonstrate that the contributing areas will be conveyed to the associated bioretention basin for treatment. Please revise.

**The proposed Drainage Area Map has been updated to properly display the flow arrows which indicate the direction of flow as water travels to the associated bio-retention basin for treatment.**

10. Bioretention Pond 2 has a required capacity of 735 cubic feet, however, only 727 cubic feet of volume is available in the pond at the Water Quality Elevation. Please revise accordingly.

**Bioretention Pond 2 has been updated to reflect the required capacity of 735 cubic feet. The elevation-storage table has been updated to include a new stage that denotes the updated water quality level that meets/exceeds the required capacity of 735 cubic feet. Additionally, the water surface elevations of the 2, 10, 25- and 100-year storms have been updated on the profiles on sheet CG501**

We appreciate your efforts in reviewing this site development plan submittal and should you have any questions or require clarification on any items, please don't hesitate to contact our office.

Sincerely,

Cliff Kendall
Market Leader - Civil