

WATER POLLUTION ABATEMENT PLAN

TPC COMMERCIAL



9/17/25

Legal Description: TOTAL OF 6.639 ACRES, ESTABLISHING LOT 1 AND LOT 2, BLOCK 13, N.C.B. 18218 OUT OF LOT 1, BLOCK 13, N.C.B 18218, NORTH POINTE COMMERCIAL AS RECORDED IN VOL. 9594, PG. 60 - 61 OF THE DEED AND PLAT RECORDS OF BEXAR COUNTY, IN THE CITY OF SAN ANTONIO, BEXAR COUNTY, TEXAS

Location: Approximately 3,388 feet southwest of TPC Parkway & U.S. Hwy 281 N, San Antonio, TX 78259.

Sept 04, 2025

Prepared for:

Gordon Hartman Family Foundation
5210 Thousand Oaks, Ste. 1318
San Antonio, Texas 78233

Prepared by:


BURT P. WELLMANN, P.E.
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Project No. 205-12-02

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: TPC COMMERCIAL				2. Regulated Entity No.:			
3. Customer Name: Gordon Hartman Family Foundation				4. Customer No.:			
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
7. Land Use: (Please circle/check one)	☐ Residential	☒ Non-residential		8. Site (acres):		SITE BOUNDARY 6.639 AC WPAP BOUNDARY 2.974 AC	
9. Application Fee:	\$5,000		10. Permanent BMP(s):		CONTECH JELLYFISH FILTER		
11. SCS (Linear Ft.):	N/A		12. AST/UST (No. Tanks):		Not Applicable		
13. County:	Bexar		14. Watershed:		SALADO CREEK		

Application Distribution

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

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

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

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

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

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

BURT P. WELLMANN, P.E.

Print Name of Customer/Authorized Agent



Signature of Customer/Authorized Agent

9/17/25

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 SECTION

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: BURT P. WELLMANN, P.E.

Date: 9/17/25

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: TPC COMMERCIAL
2. County: Bexar
3. Stream Basin: East Elm Creek
4. Groundwater Conservation District (If applicable): Edwards Aquifer Authority & Trinity Glen Rose
5. Edwards Aquifer Zone:
 - ☒ Recharge Zone
 - ☐ Transition Zone
6. Plan Type:

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

7. Customer (Applicant):

Contact Person: Gordon V. Hartman
Entity: Gordon Hartman Family Foundation
Mailing Address: 5210 Thousand Oaks, Ste. 1318
City, State: San Antonio, TX Zip: 78233
Telephone: 210-490-1798 FAX: _____
Email Address: Jaime@GordonHartman.com

8. Agent/Representative (If any):

Contact Person: BURT P. WELLMANN, P.E.
Entity: Colliers Engineering and Design
Mailing Address: 3421 Paesanos Pkwy, #200
City, State: San Antonio, TX Zip: 78231
Telephone: 726 223 4821 FAX: _____
Email Address: burt.wellmann@collierseng.com

9. Project Location:

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

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

The project site is located at 2837 TPC Parkway, San Antonio, TX 78259. To reach the site from the TCEQ San Antonio Regional Office at 14250 Judson Road, take Judson Road to Loop 1604 East, then exit at Bulverde Road and head north. After approximately 2.5 miles, turn left onto TPC Parkway. The site is located less than half a mile from the Bulverde Road and TPC Parkway intersection, on the north side of TPC Parkway, directly across from Johnson High School

11. ☒ **Attachment A – Road Map.** A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.
12. ☒ **Attachment B - USGS / Edwards Recharge Zone Map.** A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:
- ☒ Project site boundaries.
 - ☒ USGS Quadrangle Name(s).
 - ☒ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
 - ☒ Drainage path from the project site to the boundary of the Recharge Zone.
13. ☒ **The TCEQ must be able to inspect the project site or the application will be returned.** Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.
- ☒ Survey staking will be completed by this date: Completed

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

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

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

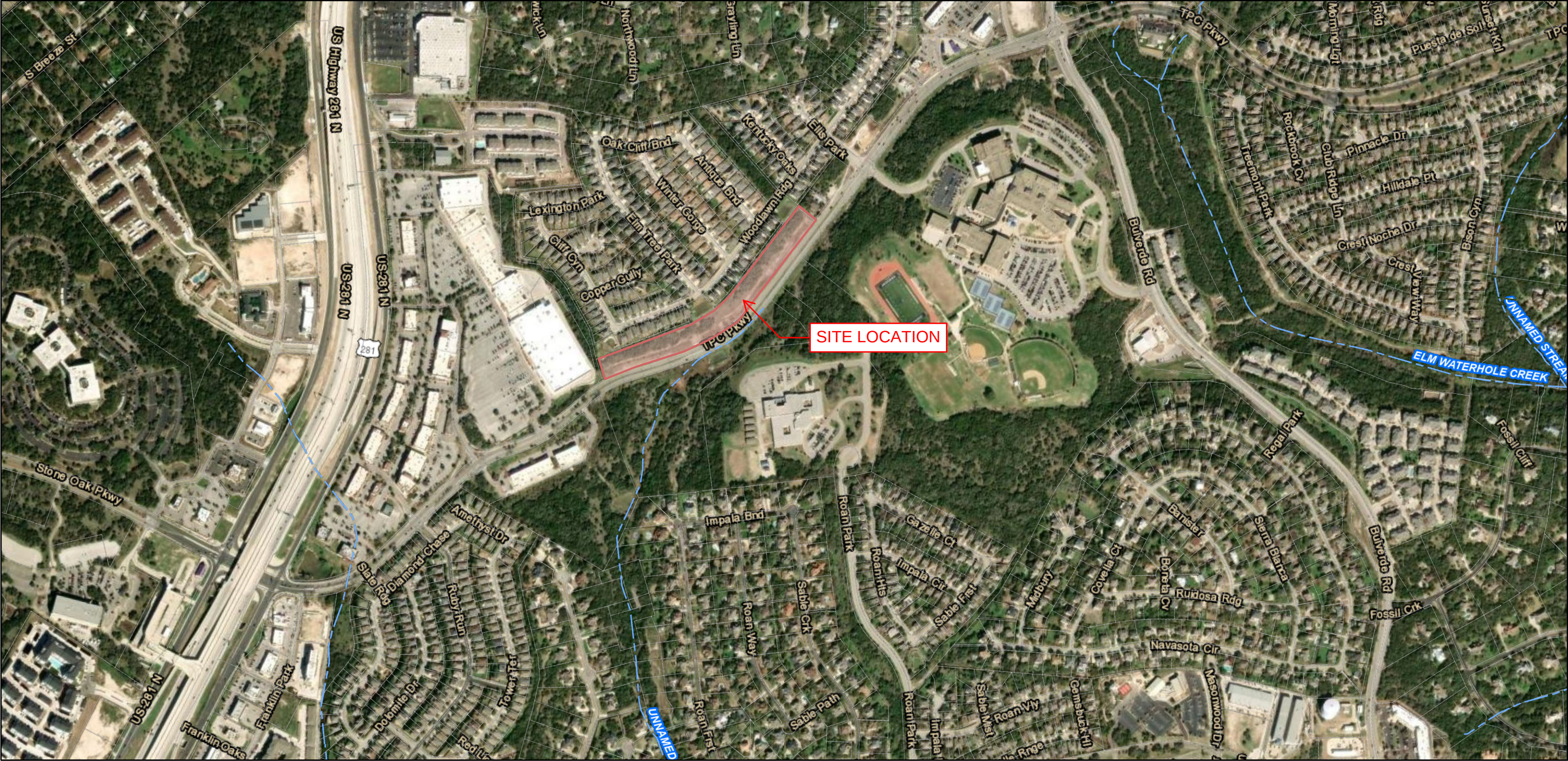
- (3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

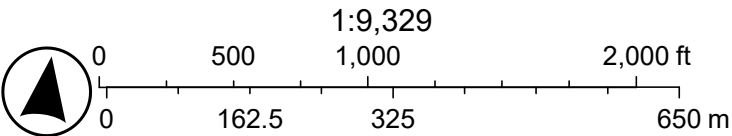
18. The fee for the plan(s) is based on:

- ☒ 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.

TPC COMMERCIAL



6/12/2025, 8:21:34 AM



Esri, HERE, Garmin, (c) OpenStreetMap contributors, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, KFW GIS

PROJECT DESCRIPTION

The TPC COMMERCIAL project is an undeveloped 6.639 Acre tract is located Approximately 3,388 feet southwest of TPC Parkway & U.S. Hwy 281 N, within the jurisdiction of the city of San Antonio, Texas. This project falls within the Salado Creek watershed, as well as the Bulverde USGS quadrangle. Notably, the property is entirely encompassed by the Edwards Aquifer Recharge Zone and does not fall within the 100-year floodplain, as verified by the Flood Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 48029C0140G, effective September 29, 2010

The overall project site will development consists of the construction of four (4) commercial retail buildings, each with a building footprint of approximately 5,000 square feet., but this WPAP boundary will be only 2.974 AC in LOT 1 BLOCK 13 / NCB 18218 NORTH POINTE COMMERCIAL VOL. 9564, PG. 60-61, P.R. , there currently exists 0.192 acres of impervious cover. Approximately 1.84 acres of impervious cover will be added as part of the TPC COMMERCIAL development. This expansion will result in a total impervious cover area of 2.032 acres within the WPAP boundary. The development plan encompasses the construction of four (4) commercial retail buildings, accompanied by associated parking facilities, drives, and utility infrastructure.

The construction process is expected to disturb approximately 2.974 acres of land. To prevent the pollution of storm water runoff originating on-site or up gradient of the site and potentially flowing across and off the site after construction, One Jellyfish Filter system, designed using TCEQ technical guidance document, complying with Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2015), will be constructed to treat storm water runoff. The required total suspended solids (TSS) treatment for this project is 1501 pounds of TSS generated from the 1.84 acres of proposed impervious cover. The removal efficiency of the proposed runoff will meet the required overall removal of 80% of increase in TSS. See Exhibit 3-A & B for Existing/Proposed drainage areas.

The subject site will be disturbed during construction activities within the limits of construction. These activities will be subject to TPDES requirements. A Storm Water Pollution Prevention Plan will be maintained for the site and temporary BMP's will be implemented to prevent erosion and sedimentation until completion of the permanent BMP. All areas not covered by the building footprint, sidewalks, or pavement will be stabilized with either sod, landscaping, or gravel when construction is complete and before the removal of temporary BMPs.

There will not be any storage of regulated quantities of hazardous materials. San Antonio Water System (SAWS) will supply potable water and wastewater treatment.

GEOLOGIC ASSESSMENT SECTION



Engineering
& Design

Geologic Assessment

Pursuant to The Texas Commission on Environmental Quality Standard Practice
For "Geologic Assessments" (Title 30 Texas Administrative Code (TAC), Part 1, Chapter 213; Texas
Water Code, §26.401; and Texas Occupations Code, Chapter 1002)

March 7, 2025

TPC Parkway Commercial – Design

Located at 2837 TPC Parkway,
San Antonio, Bexar County, Texas 78259

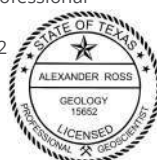
Colliers Engineering & Design Project Number: 24011579A

Prepared for:

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Project No. 24011579A

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Narrative Description of Site Geology | Attachment C

INTRODUCTION

Colliers Engineering & Design was contacted by Hartman Gordon Family Foundation to conduct a Geologic Assessment for the TPC Parkway Commercial - Design project. The project site is located northeast of the intersection of U.S. Route 281 and TPC Parkway, at 2837 TPC Parkway, San Antonio, Bexar County, Texas 78258 (i.e., subject property or project site). Bexar County Appraisal District (BCAD) reflects the subject property by the following: *Bexar Parcel: 1124090; Owner: HARTMAN GORDON FAMILY FOUNDATION.*

METHODOLOGY

Colliers Engineering & Design conducted a geologic assessment for the property on February 24th and 28th, 2025. The pedestrian survey was completed by walking parallel transects spaced approximately 50 foot spacing under the regulatory guidance by the TCEQ in the *Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones (Rev. 10-01-04)*. Closer spacing was used in areas where vegetation inhibited clear observation. Observed potential karst features (i.e., topographic depressions, holes, and animal burrows) were carefully examined for evidence of subsurface extent. The features were also probed and checked for the presence of air flow, which may indicate the presence of a subsurface void space. The locations of identified features were recorded with a handheld GPS unit. The locations of identified features were recorded with a handheld GPS unit with accuracy of +/- 5 feet, and photo-documented.

SITE DESCRIPTION

The subject property is comprised of a single parcel, represented by BCAD property ID: 1124090. The subject property is comprised of approximately 6.639-ac, and is located at 2837 TPC Parkway, San Antonio, Texas 78258. According to BCAD property information, the legal description for the parcel is provided below:

- BCAD ID 1124090: *NCB 18218 BLK 13 LOT 1 (NORTH POINTE COMMERCIAL)*

Background

Based on a review of historical aerial photographs, the project site appears to have existed as undeveloped, rural land prior to the early 2000s. Aerial imagery reviewed between 2000 and 2006 depicts a dirt path traversing across the central region of the property. The dirt path terminated at a retail building located to the northwest. Beginning in 2008, residential development for the Cliffs at Cibolo subdivision occurs immediately north. Subsequently, a property fence was constructed along the northern boundary of the Subject Property. The site vicinity appears disturbed in conjunction with residential and commercial development in the surrounding area. Prior to 2008, TPC Parkway is constructed to the south as a primary roadway. The road becomes the southern boundary of the Subject Property. In conjunction with construction of the roadway, land clearing occurred on the Subject Property. Areas within boundaries of the property that were nearest to the roadway appear to have been cleared and raised with fill material. Additionally, two large concrete drainage culverts were constructed on the Subject Property prior to 2008 to divert waters from Elm Creek. In 2010, minor improvements are made to the drainage floodway on site, including the construction of two concrete spillways. Both spillways appear to be trenched through soils. From 2010 to 2025, the Subject Property remains as undeveloped and vacant land, covered with vegetation and residual soils.

Geologic Setting

The subject property is located within the **Recharge Zone** of the Edwards Aquifer. The overall potential for fluid migration to the Edwards Aquifer in this area has been characterized as low to intermediate. Regarding bedrock lithology, the site lies within the dolomitic member of the Kainer Formation (referred to as Kek/Kkd in **Attachment A and D**). The dolomitic member of the Kainer Formation is dominantly composed of massively bedded, light gray crystalline limestone. Lithology consists of hard, dense mudstone, wackestone, and dolomitic limestone. Chert is common within the upper section of the unit and presents as beds or large nodules. The dolomitic member of the Kainer formation is generally 100 to 130 feet thick near the site. Cavern development within the Kkd is commonly related to the structure of the bedding planes within the formation.

The surrounding area exhibits a dominant fault trend of N35°E, based on the average of the trends of faults within the surrounding area and from published maps (Stein & Ozuna, 1995; Barnes, 1961; Clark, 2023).

Hydrologically, porosity of the unit ranges between 5 and 20 percent, and may be fabric selective or non-fabric selective. The fabric selective porosity consists of interparticle, intergranular, intercrystalline, moldic, burrow, and bedding plane porosity. The non-fabric selective porosity consists of vug, fracture, and cave porosity (Maclay and Small, 1976). Bioturbated beds contribute to higher rates of porosity due to interconnected void space within the unit. The unit is water bearing and has been characterized by deep vertical pits. Field reconnaissance conducted by CED did not readily identify caves, sinkholes, or potential habitat for endemic species at surface level.

Following tectonic activity and subsequent erosion in the Cretaceous period, South Central Texas experienced submersion by marine transgression in the Late Cretaceous. As a result, the Kainer Formation was deposited. Consequently, many marine marker fossils can be found within the formation, including *Toucasia* sp., *Dictyoconus walnutensis*, and other rudists. The contact between the dolomitic member and the overlying Kirschberg Evaporite Member is conformable.

Karst Zone

According to United States Fish and Wildlife Service (USFWS) karst zone maps, the subject property wholly lies within **Karst Zone 1**, which is defined as areas known to contain endangered karst invertebrate species. Karst Zone 1 includes areas known to contain endangered cave fauna. In accordance with USFWS guidelines (published in 2015), a karst feature survey is required within Karst Zones 1, 2, and 3 to identify any karst features which may contain potential karst invertebrate habitat. The subject property lies within the Stone Oak Karst Fauna Region (KFR). The nearest critical habitat unit (CHU) is located approximately 1.3-miles southeast of the subject property. This CHU is identified as Unit 13, for the listed species beetle (*Rhadine exilis*). Notably, another CHU is located approximately 1.3-miles to the southwest. The CHU is identified as Unit 12, for the listed species beetle (*Rhadine exilis*). Limiting conditions identified during the site reconnaissance which may affect the ability to identify karst features included dense vegetation and overgrown areas, which limited observations of the ground surface in certain areas.

Soils Table

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).

Table 1: Soil Description Summary

Soil Name	Group	Thickness (feet)
Eckrant-Rock outcrop association, 8 to 30 percent slopes (TaD)	D	0-3

Soil Group Classifications

- 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.

The Eckrant series consists of well drained, moderately slowly permeable soils that are very shallow to shallow over indurated limestone bedrock. These nearly level to very steep soils formed in residuum derived from limestone and occur on summits, shoulders, and backslopes of ridges on dissected plateaus (USDA). In areas where natural soil was exposed, the soil resembled the descriptions in the soil surveys and whose descriptions are listed above.

FEATURES

The following outlines features identified on the subject property by site reconnaissance and review of published geological literature. Examples of the features are described below, and photographs are provided in the appendices.

S-1: Manmade feature in bedrock (MB). Feature is an existing sanitary sewer line that is not located beneath pavement. The utility has been trenched through bedrock and backfilled with a mix of fine and coarse material that may contribute to higher permeability rates than surrounding undisturbed areas.

Approximately 1,292.49 linear feet of buried sewer line spans the subject property. Notably, seven sanitary manholes were observed within the boundaries of the property during site reconnaissance. The locations of each of the manholes are depicted in **Attachment D**. The sewer utility is buried and the likelihood of storm water migrating through the trenches into the Edwards Aquifer is considered unlikely. Therefore, the probability of rapid infiltration is low.

S-2: Vuggy rock zone. Overall, this zone spanned across an area measuring approximately 50' x 20'. Bedrock outcrops of the Kainer formation were identified within the zone during our site reconnaissance. Notably, large pieces of float rock were also observed in the area. The area also included vuggy rock with vertical pathways visibly extending through bedrock. The vuggs appeared to be a result of the downward migration of water over time. Vuggs are filled with loose leaf litter and soils. Feature is located at the top edge of a drainage, and no indication of daylighting or endemic species were observed. A chemically weathered bedding plane of the dolomitic member of the Kainer Formation was encountered nearby (Location: 29°39'16.32"N, 98°26'30.99"W, shown as **Image A** in appendices). Another relatively well-preserved bedding plane was observed in this area. A strike and dip measurement of N25°E/05° SE was collected on the bedding plane during the site visit (shown as **Image C** in appendices).

S-3: Bedrock outcrop. Vuggy structures were identified atop exposed bedrock and resembled an irregular network of carbonate veins measuring 3-15 mm in width (shown as **Image B** in appendices).

S-4: Solution-enlarged fracture. Feature formed near the top of a drainage and at the base of a tree. Opening is triangular, with each side measuring approximately 6 inches (shown as **Image F** in appendices). The feature extends approximately 2 feet inward before terminating in soil. Roots of large cedar tree

exploited a small fracture and eventually pushed large pieces of float rock apart. Void space may have undergone dissolution, however, the cedar tree appeared to be the primary factor in rock movement. Feature is filled with loose soil and leaf litter, and likely serves as an animal burrow. No airflow was detected, and the feature terminates in soil. Based on a lack of visible and preferential pathways, the likelihood of storm water migrating through the feature into the Edwards Aquifer is considered unlikely. Therefore, the probability for rapid infiltration is low.

S-5: Solution-enlarged fracture. Feature was identified on a weathered bedding plane (shown as **Image D** in appendices). The main axis of the fracture is oriented at N35°E. The fracture is 3 inches wide and travels approximately 32 inches horizontally. No airflow was detected, and the fracture was filled with soil and natural debris. Therefore, the probability for rapid infiltration is low, and potential migration of fluid into the aquifer is considered unlikely.

S-6: Solution cavity (shown as **Image G** in appendices). Feature is completely rimmed on all sides within bedrock, and measures 6 inches around. Void space travels vertically 8 inches and is filled with loose soil and leaf litter. Excavation of loose soil within the feature revealed additional void space. Feature terminates to compact soil at the bottom. No airflow or indication of moisture was observed within the feature. Soil filling in the solution cavity may indicate rapid infiltration. However, considering the size and placement of the feature near a hilltop, fluid migration and infiltration rate has been characterized as low to intermediate.

S-7: Solution-enlarged fracture (shown as **Image H** in appendices). Feature appears to have initially formed as two separate solution cavities that were then joined by further dissolution of bedrock. Feature measures approximately 2 foot across and four inches wide. Surface probing concluded that the feature terminates in compact soil. No airflow indicated, and fluid migration and infiltration rate has been characterized as low.

S-8: Solution-enlarged fracture (shown as **Image E** in appendices). Feature appears to have initially formed as a solution cavity that terminated in compact soil. Opening of the main cavity is approximately five inches round. Feature is not sensitive and does not appear to be capable of holding water. Fluid migration and infiltration rate has been characterized as low.

CONCLUSIONS

According to United States Fish and Wildlife Service (USFWS) karst zone maps, the subject property wholly lies within **Karst Zone 1**, which is defined as areas known to contain endangered karst invertebrate species. CED has conducted a geologic assessment on February 24th and 28th, 2025, pursuant to The Texas Commission on Environmental Quality Standard Practice for "Geologic Assessments" (Title 30 Texas Administrative Code (TAC), Part 1, Chapter 213; Texas Water Code, §26.401; and Texas Occupations Code, Chapter 1002).

A total of eight features were identified during the geologic assessment. A sanitary sewer line, a vuggy zone, a bedrock outcrop, four solution-enlarged fractures, and one solution cavity were identified as notable features encountered during the geologic assessment. Limiting conditions encountered during site reconnaissance which may affect the ability to identify karst features included dense vegetation, which limited observations of the ground surface and subsurface in certain areas. The possibility of additional features hidden beneath existing soil stratum is likely. In the event features are encountered during construction activity, work should cease, and the Texas Commission on Environmental Quality (TCEQ) should be notified to further evaluate features prior to proceeding.



Engineering
& Design

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) FORM 0585 –
TCEQ-0585) Rev. 02-11-15

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: Alexander S. Ross,
P.G.

Telephone: (856) 242-2036

Fax: (210) 979-8441

Date: 3/7/2025

Representing: Colliers Engineering & Design, TBPE Firm #9513 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: TPC Parkway Commercial - Design

Project Information

1. Date(s) Geologic Assessment was performed: February 24th and 28th, 2025

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)
Eckrant-Rock outcrop association, 8 to 30 percent slopes (TaD)	D	0-3

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" = N/A'
Site Geologic Map Scale: 1" = 100'
Site Soils Map Scale (if more than 1 soil type): 1" = N/A'
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 | ATTACHMENT A

GEOLOGIC ASSESSMENT TABLE						PROJECT NAME: TPC Parkway Commercial - Design													
LOCATION			FEATURE CHARACTERISTICS											EVALUATION		PHYSICAL SETTING			
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10	11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY	CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6
S-1	29°39'17.90"N	98°26'26.70"W	MB	30	Kek	1292.49	0.66	-	-	0	-	-	C,O,F,V	5	35	X		X	Drainage
S-2	29°39'16.21"N	98°26'30.90"W	Z	30	Kek	50.00	20.00	-	-	0	-	-	N	5	35	X		X	Hilltop
S-3	29°39'16.18"N	98°26'31.56"W	O	5	Kek	10.00	10.00	-	-	0	-	-	N	0	5	X		X	Hilltop
S-4	29°39'15.81"N	98°26'32.51"W	SF	20	Kek	0.50	2.00	-	-	0	-	-	O,V	5	25	X		X	Hilltop
S-5	29°39'15.35"N	98°26'33.19"W	SF	20	Kek	0.25	2.66	-	N35°E	0	-	-	O,V	5	25	X		X	Hilltop
S-6	29°39'15.16"N	98°26'33.26"W	SC	20	Kek	0.50	0.66	-	-	0	-	-	C,O,F,V	10	30	X		X	Hilltop
S-7	29°39'15.04"N	98°26'33.41"W	SF	20	Kek	0.33	2.00	-	-	0	-	-	O,V	5	25	X		X	Hilltop
S-8	29°39'13.61"N	98°26'36.57"W	SF	20	Kek	0.42	1.00	-	-	0	-	-	O,V	5	25	X		X	Hilltop

* DATUM: NAD 83

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

Sheet 1 of 1

Attachment A

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



STRATIGRAPHIC COLUMN | ATTACHMENT B

TPC Parkway Commercial - Design

Stratigraphic Column

[Hydrogeologic subdivisions modified from Maclay and Small (1976); groups, formations and members modified from Rose (1972); lithology modified from Dunham (1962); and porosity type modified from Choquette and Pray (1970); CU, confining unit; AQ, aquifer]

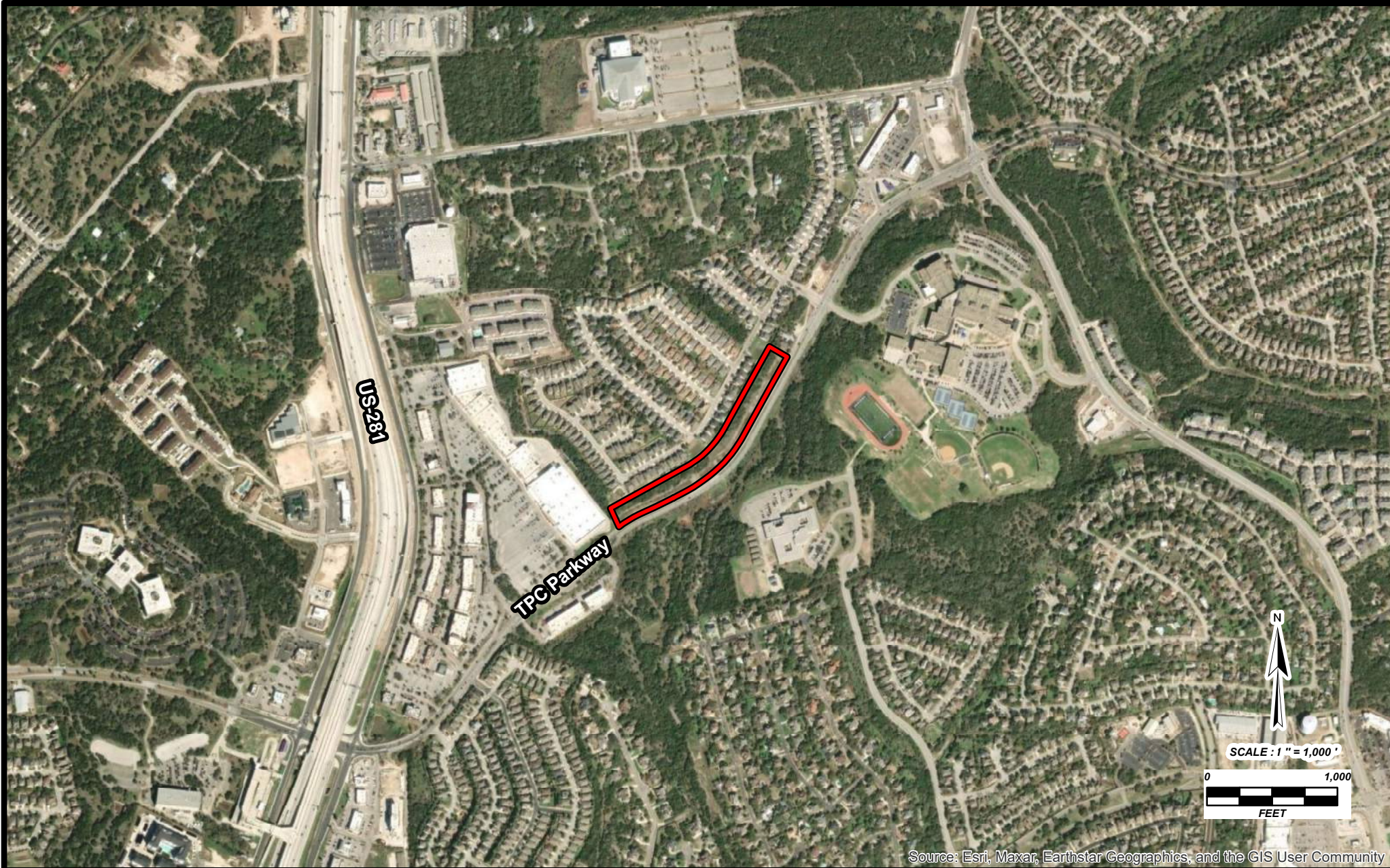
Hydrogeologic subdivision		Group, formation, or member	Hydrologic function	Thickness (feet)	Lithology	Field Identification	Cavern development	Porosity/permeability type			
Quaternary	Pleistocene	Fluviatile terrace deposits	N/A	5 - 70	Sand, silt, clay, rounded to angular limestone in various proportions; siliceous, coarse; chert and dolomite	Alluvium; lithic sand and silt to sandy gravel	None	Generally porous, moderate to high permeability			
	Upper Confining Units	Austin Chalk	CU; rarely AQ	130-150	White to light-tan to gray limestone; chalk and marl; sparsely glauconitic	White, chalky limestone; <i>Pycnodonte aucella</i> <i>Inoceramus subquadratus</i>	Rare	Low porosity; rare water production from fractures/ low permeability			
Upper Cretaceous		Eagle Ford Group	CU	30-50	Brown, flaggy shale and argillaceous limestone	Thin flagstones; petroliferous	None	Primary porosity lost/low permeability			
		Buda Limestone	CU	40-50	Buff, light gray, dense mudstone	Limestone with calcite-filled veins	Minor surface karst	Low porosity/low permeability			
		Del Rio Clay	CU	40-50	Blue-green to yellow-brown clay	Fossiliferous; <i>Ilymatogyra arietina</i>	None	None/primary upper confining unit			
Lower Cretaceous	I	Edwards Aquifer	Edwards Group	Person Formation (Kep)	Georgetown Formation (Kgt)	Karst AQ; non-karst CU	2-20	Reddish-brown, gray to light tan marly limestone	Marker fossil; <i>Waconella wacoensis</i>	None	Low porosity/low permeability
	II					AQ	80-90	Mudstone to packstone; <i>miliolid</i> grainstone; chert	Thin graded cycles; massive beds to relatively thin beds; crossbeds	Many subsurface; might be associated with earlier karst development	Laterally extensive; both fabric and not fabric/water-yielding
	III					AQ	70-90	Crystalline limestone; mudstone to grainstone; chert; collapsed breccia	Bioturbated iron-stained beds separated by massive limestone beds; stromatolitic limestone	Extensive lateral development; large rooms	Majority not fabric/one of the most permeable
	IV					CU	20-24	Dense, argillaceous mudstone	Wispy iron-oxide stains	Very few; only vertical fracture enlargement	Not fabric/low permeability; vertical barrier
	V					AQ	50-60	<i>Miliolid</i> grainstone; mudstone to wackestone; chert	White crossbedded grainstone	Few	Not fabric/recrystallization reduces permeability
	VI					AQ	50-60	Highly altered crystalline limestone; chalky mudstone; chert	Boxwork voids, with neospar and travertine frame	Probably extensive cave development	Majority fabric selective/one of the most permeable
	VII					AQ	110-130	Mudstone to grainstone; crystalline limestone; chert	Massively bedded light gray, <i>Toucasia</i> abundant	Caves related to structure or bedding planes	Mostly not fabric; some bedding plane fabric/water-yielding
	VIII					Karst AQ; not karst CU	50-60	Shaly, nodular limestone mudstone and miliolid grainstone	Massive, nodular and mottled, <i>Exogyra texana</i>	Large lateral caves at surface; a few caves near Cibolo Creek	Fabric; stratigraphically controlled/large conduit now at surface; no permeability in subsurface
		Lower confining unit	Upper member of the Glen Rose Limestone	CU; evaporite beds AQ	350 – 500	Yellowish-tan, thinly bedded limestone and marl	Stair-step topography; alternating limestone and marl	Some surface cave development	Some water production at evaporite beds/ relatively impermeable		

(Modified from Small and Hanson, 1994)

ATTACHMENT A

Geologic Framework and Hydrogeologic Characteristics for the Subject Property based on published data highlighted above.

SITE GEOLOGIC MAP | ATTACHMENT D



Prepared for:
Hartman Gordon Family Foundation
1202 W Bitters Road Ste. 1200,
San Antonio, TX 78216-8088

Prepared By:

San Antonio Office
3421 Paesanos Pkwy #200
San Antonio, TX 78231
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**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
GEOLOGIC ASSESSMENT**



Subject Property/Site

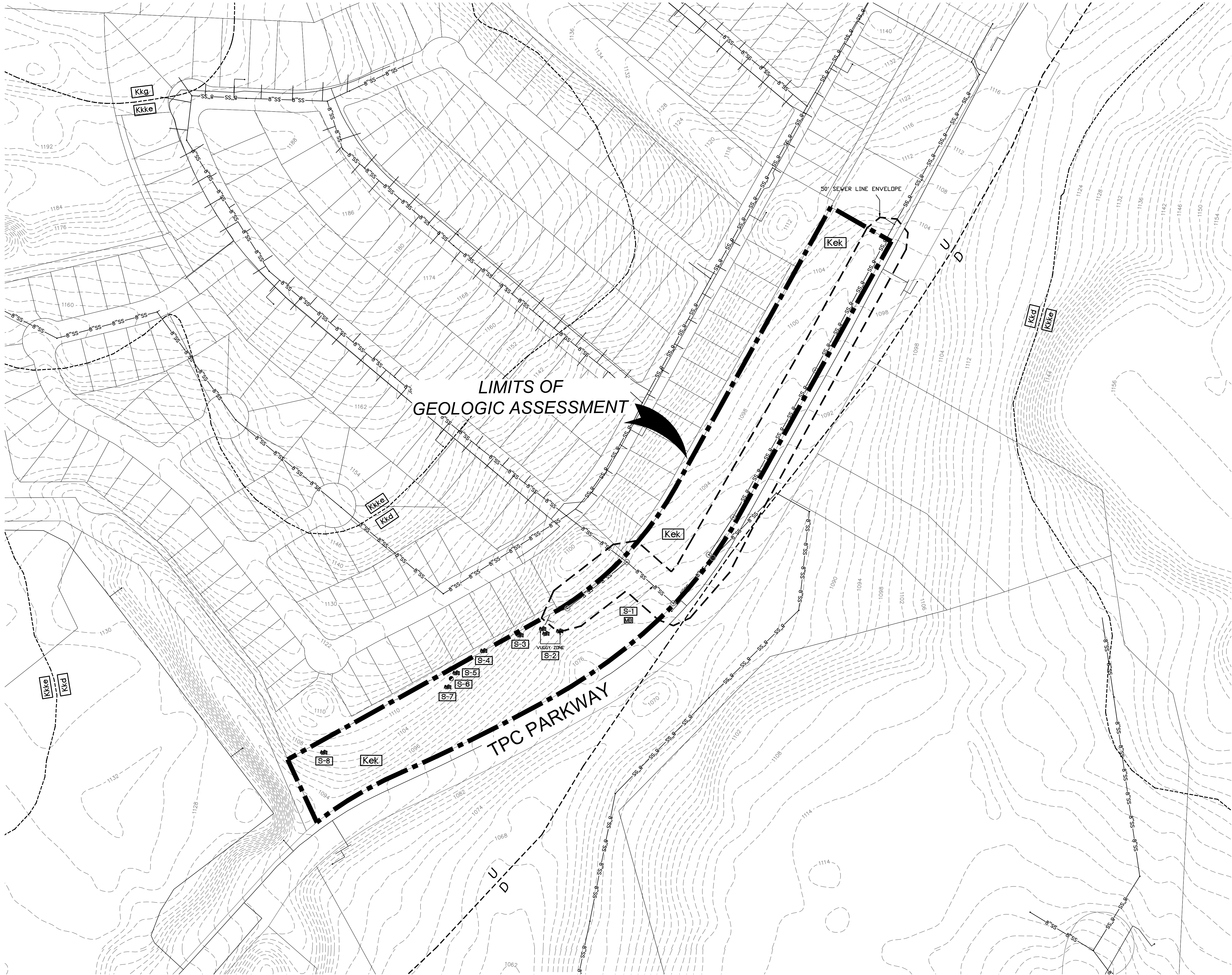


SITE MAP

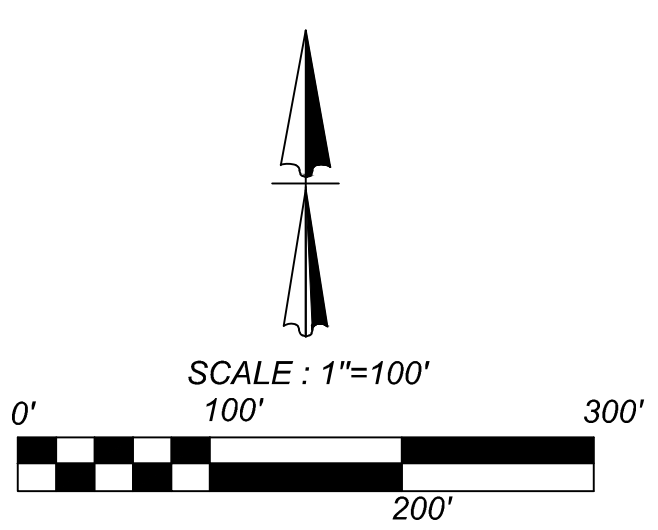
TPC PARKWAY RETAIL DEVELOPMENT

BEXAR COUNTY, TEXAS

DATE	PROJ NUMBER	DRAWN BY
March 2025	24011579A	E.U.



LOCATION MAP
N.T.S.



SCALE : 1"=100'

LEGEND

- | | |
|-------------|--|
| Qt | FLUVIAL TERRACE DEPOSITS |
| Kef | EAGLE FORD GROUP |
| Kbu | BUDA LIMESTONE |
| Kdr | DEL RIO CLAY |
| Kgt | GEORGETOWN LIMESTONE |
| Kek | KAINER FORMATION |
| Kep | PERSON FORMATION |
| Kgru | GLEN ROSE FORMATION |
| S-1 | POTENTIAL RECHARGE FEATURE |
| | DRAINAGE PATHWAY |
| | CONTACT, LOCATED APPROXIMATELY |
| | FAULT, LOCATED APPROXIMATELY (D,DOWNTHROWN SIDE;U,UPTHROWN SIDE) |
| | FAULT EXISTANCE UNCERTAIN |
| | POSSIBLE FAULT (AS LOCATED BY AERIAL PHOTOGRAPHS) |
| | STRIKE AND DIP OF BEDDING |
| | STRIKE AND DIP OF JOINTS |
| | STRIKE OF VERTICAL JOINTS |
| | CAVE |
| | NON-KARST CLOSED DEPRESSION |
| | SWALLOW HOLE/SINKHOLE |
| | SOLUTION CAVITY |
| | OTHER NATURAL BEDROCK FEATURES: VUGGY ROCK, REEF DEPOSITS |
| | ZONE |
| | MAN-MADE FEATURE IN BEDROCK |
| | WATER WELL |
| | PROPOSED SANITARY SEWER LINE |
| | EXISTING SANITARY SEWER LINE |
| | 50' SEWER ENVELOPE |
| | PROPOSED MANHOLE |
| | EXISTING MANHOLE |
| | SITE |

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

TPC PARKWAY RETAIL DEVELOPMENT
SAN ANTONIO, TEXAS
SITE GEOLOGIC MAP

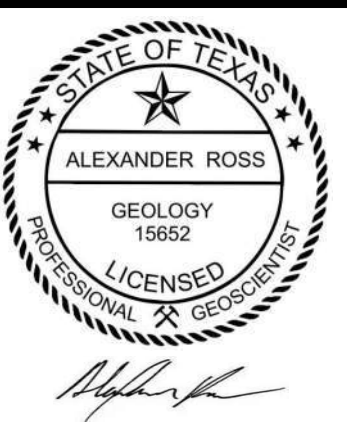
JOB NO. 24011579A
DATE: FEBRUARY 2025
DRAWN: EU CHECKED: AR

ATTACHMENT

D

ISSUE DATE

REVISIONS



SAN ANTONIO
3421 Paesanos
Parkway
San Antonio, TX 78231
210.779.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBP# FIRM F-1499 TBP# FIRM F-101450
www.colliersengineering.com

SITE PHOTOGRAPHS

PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 1

Description:

Concrete drainage
spillway identified on
the northernmost side
of the Subject
Property.



Photo No. 2

Description:

Fire hydrant identified
near the northeastern
property corner.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 3

Description:

TPC Parkway as
observed during site
reconnaissance.



Photo No. 4

Description:

A representative image
of grassland observed
center property.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 5

Description:

Concrete drainage
floodway observed
center property.



Photo No. 6

Description:

A continuation of the
previous extent.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 7

Description:

A western view of the property extent. Adjoining residential development is visible in the background.



Photo No. 8

Description:

One of seven sanitary sewer manholes identified within property boundaries.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 9

Description:

Image A: A chemically weathered bedding plane of the dolomitic member of the Kainer Formation observed on site.



Photo No. 10

Description:

Image B: A bedrock outcrop identified on the central region of the site. An irregular network of carbonate veins is visible on the rock face.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 11

Description:

An animal burrow identified underneath a tree.



Photo No. 12

Description:

An area of float rock.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 13

Description:

Image D: A solution-enlarged fracture identified near the top of a drainage on property.



Photo No. 14

Description:

An animal burrow identified underneath two large pieces of float rock.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 15

Description:

Image E: Solution-enlarged fracture identified on the western region of the site.



Photo No. 16

Description:

Directed stormwater channel observed west of the property boundary.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 17

Description:

A representative image of the brush and under canopy observed on site.



Photo No. 18

Description:

Aftermath of surficial land clearing associated with the construction of the stormwater drainage channel.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 19

Description:

Image C: Moderately well-preserved bedding plane observed on site. Brunton for scale.



Photo No. 20

Description:

A zone of vuggy, porous limestone identified central property. Karren, linear grooves of dissolution, are evident on the rock face.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 21

Description:

A wide-angle view of an area with a solution-enlarged fracture. The roots of the cedar tree appear to have separated the rock body.



Photo No. 22

Description:

A closer view of Feature S-4.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 23

Description:

Image F: Apparent animal burrow identified within void space between two large pieces of float rock.



Photo No. 24

Description:

Image G: A solution cavity identified within boundaries of the Subject Property. The vertical shaft was approximately six inches round and travelled 8 inches before terminating in soil.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 25

Description:

Image H: A solution-enlarged fracture that travels horizontally across bedrock.



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WATER POLLUTION ABATEMENT PLAN APPLICATION SECTION

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: BURT P. WELLMANN, P.E.

Date: 9/17/25

Signature of Customer/Agent:



Regulated Entity Name: TPC COMMERCIAL

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): 6.639

3. Estimated projected population: N/A

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

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	20,045	÷ 43,560 =	0.460
Parking	48,167	÷ 43,560 =	1.106
Other paved surfaces	12,052	÷ 43,560 =	0.277
Total Impervious Cover	80,264	÷ 43,560 =	1.84

Total Impervious Cover 1.84 ÷ **Total Acreage** 6.639 X 100 = 27.72 % Impervious Cover

5. ☒ **Attachment A - Factors Affecting Surface Water Quality.** A detailed description of all factors that could affect surface water and groundwater quality that addresses ultimate land use is attached.
6. ☒ Only inert materials as defined by 30 TAC §330.2 will be used as fill material.

For Road Projects Only

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

7. Type of project:

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

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

- ☐ Concrete
- ☐ Asphaltic concrete pavement
- ☐ Other: _____

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

Width of R.O.W.: _____ feet.

L x W = _____ Ft² ÷ 43,560 Ft²/Acre = _____ acres.

10. Length of pavement area: _____ feet.

Width of pavement area: _____ feet.

L x W = _____ Ft² ÷ 43,560 Ft²/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:

<u>100</u> % Domestic	<u>1,400</u> Gallons/day
<u> </u> % Industrial	<u> </u> Gallons/day
<u> </u> % Commingled	<u> </u> Gallons/day
TOTAL gallons/day <u>1,400</u>	

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 Steven M. Clouse Treatment 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" = 50 '.

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): _____

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

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

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

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

☐ The wells are not in use and have been properly abandoned.

☐ The wells are not in use and will be properly abandoned.

☐ The wells are in use and comply with 16 TAC §76.

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

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

☒ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.

☐ No sensitive geologic or manmade features were identified in the Geologic Assessment.

☐ **Attachment D - Exception to the Required Geologic Assessment.** A request and justification for an exception to a portion of the Geologic Assessment is attached.

- 22. ☒ The drainage patterns and approximate slopes anticipated after major grading activities.
- 23. ☒ Areas of soil disturbance and areas which will not be disturbed.
- 24. ☒ Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.
- 25. ☒ Locations where soil stabilization practices are expected to occur.
- 26. ☐ Surface waters (including wetlands).
☒ N/A
- 27. ☐ Locations where stormwater discharges to surface water or sensitive features are to occur.
☒ There will be no discharges to surface water or sensitive features.
- 28. ☒ Legal boundaries of the site are shown.

Administrative Information

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

FACTORS AFFECTING WATER QUALITY

Materials that are anticipated to be used on site that could be a potential source of contamination include the following:

During Construction:

1. Concrete and Masonry Materials.
2. Wood, plastic, and metal Materials.
3. Tar and hydrocarbons from paving operations.
4. Oil, Grease, fuel, and hydraulic fluid from construction equipment and vehicle drippings.
5. Fertilizers, Herbicides, and Pesticides.
6. Cleaning solutions and detergents.
7. Miscellaneous construction trash and debris.
8. Soil erosion and sedimentation due to construction activity.

Ultimate Use:

1. Pollutants generated from vehicles utilizing the site.
2. Fertilizers, Herbicides, and pesticides used to maintain landscaping.
3. Miscellaneous trash and debris generated from the public.

(This is not intended to be an all-inclusive list)

All practical management practices will be used to reduce the risk of spills and other exposure of any contaminant to surface or groundwater.

VOLUME AND CHARACTER OF STORMWATER

The existing condition of the 6.639-acre tract is undeveloped and consists of 3 drainage area. The drainage areas slopes vary from 2-40% with a runoff coefficient of average of 0.52. Please refer to **Exhibit 3A** for all existing runoff calculations.

After construction, the site will consist of 4 onsite drainage areas, One of which will contain an increase in impervious cover. The remaining drainage areas will continue as in existing conditions. Please refer to **Exhibit 3B** for all proposed runoff calculations and weighted C-Values. For all calculations on proposed impervious cover, please refer to **Exhibit 3C**. All exhibits can be found at the end of this report.

SUITABILITY LETTER FROM AUTHORIZED AGENT

Not applicable. All wastewater lines will connect to an existing San Antonio Water System (SAWS) sewer line.

EXCEPTION TO THE REQUIRED GEOLOGIC ASSESSMENT

Not applicable, Geologic Assessment is attached.

TEMPORARY STORMWATER SECTION

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: BURT P. WELLMANN, P.E.

Date: 9/17/25

Signature of Customer/Agent:



Regulated Entity Name: TPC COMMERCIAL

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: East Elm Creek

Temporary Best Management Practices (TBMPs)

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

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

- ☒ A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.
 - ☒ A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.
 - ☒ A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
 - ☒ A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.
8. ☒ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.
- ☐ **Attachment E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.
- ☒ There will be no temporary sealing of naturally-occurring sensitive features on the site.
9. ☒ **Attachment F - Structural Practices.** A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.
10. ☒ **Attachment G - Drainage Area Map.** A drainage area map supporting the following requirements is attached:
- ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.
 - ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.
 - ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.
 - ☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

- ☒ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.
11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations.** Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.
- ☒ N/A
12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.
13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.
14. ☒ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).
15. ☒ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.
16. ☒ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

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

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

- 18. ☒ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
- 19. ☒ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

- 20. ☒ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.
- 21. ☒ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.
- 22. ☒ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

SPILL RESPONSE ACTIONS

If there is an accidental spill on site, the contractor shall respond with appropriate action. The contractor will be required to contact the owner and in turn the owner will contact the TCEQ in the event of a spill on site. In addition to the following guidance, reference the latest version of TCEQ's Technical Guidance Manual (TGM) RG-348 Section 1.4.16.

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:
 - Contain the spread of the spill.
 - Recover spilled materials.
 - 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 not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

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 runoff 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 runoff of stormwater and the runoff of spills.
2. Discourage "topping off" of fuel tanks.
3. Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

POTENTIAL SOURCES OF CONTAMINATION

During Construction:

1. Oil, grease, fuel, and hydraulic fluid contamination from construction equipment and vehicle dripping.
2. Hydrocarbons from paving operations.
3. Miscellaneous trash and litter from construction workers and material wrappings.
4. Construction debris.
5. Silt leaving the site.

Ultimate Use:

1. Vehicle drippings within parking lot.
2. Stormwater runoff contamination from fertilizers, herbicides, and pesticides.
3. Groundwater contamination from leakage in wastewater system.

SEQUENCE OF MAJOR ACTIVITIES

Intended Schedule or Sequence of Major Activities:

1. Installation of BMPs
2. Rough Subgrade Preparation (earthwork, grading, street and drainage excavation and embankment) (Approximately 2.974Acres)
3. Wet and Dry Utility Construction
4. Final Subgrade Preparation (Approximately 2.974Acre)
5. Installation of Base Materials (Approximately 2.974 Acre)
6. Concrete (foundations, curbs, flatwork) (Approximately 2.974 Acre)
7. Paving Activities (Approximately 2.974 Acre)
8. Site cleanup and Removal of BMPs

TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

A: Temporary BMPs will be installed prior to soil disturbing construction activity. Silt fencing will be placed along the down-gradient sides of the property to prevent silt from escaping the construction area. Inlet protection will be placed on all inlets. A temporary construction entrance will be placed on site to reduce vehicle “tracking” onto adjoining streets. A concrete washout pit will be used to collect all excess concrete during construction. A construction staging area will be used for equipment storage and vehicle maintenance.

BMPs for this project will protect surface water or groundwater from turbid water, phosphorus, sediment, oil, and other contaminants, which may mobilize in storm water flows by slowing the flow of runoff to allow sediment and suspended solid to settle out of the runoff.

Practices may also be implemented on site for interim and permanent stabilization. Stabilization practices may include but are not limited to: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, and other similar measures.

B: The BMPs for this project are designed to allow water to pass through after sedimentation has occurred. Existing flow patterns will be maintained to any naturally-occurring sensitive features that are discovered during construction.

REQUEST TO TEMPORARILY SEAL A FEATURE

There will be no temporary sealing of any naturally occurring features on site.

STRUCTURAL PRACTICES

Structural BMPs will be used to limit runoff discharge of pollutants from exposed areas of the site. BMPs will be installed prior to soil disturbing construction activity. Silt fencing will be placed along the down-gradient sides of the property to prevent silt from escaping the construction area. Inlet protection will be placed on all storm water inlets to prevent pollutants from entering into the stormwater drainage system. A temporary construction entrance will be placed at the site entry/exit point to reduce tracking onto adjoining streets. A construction staging area will be used onsite to perform all vehicle maintenance and for equipment and material storage. A concrete truck washout pit will be placed on site to provide containment and easier clean up of waste from concrete operations. The location of all structural temporary BMP's is shown on the site plan (**Exhibit 1**) and details and specifications are provided in **Exhibit 2** which can be found at the end of this report under the appropriate tab.

DRAINAGE AREA MAP

An existing drainage area map and proposed/ultimate drainage area map are included with this report as **EXHIBIT 3A** and **EXHIBIT 3B**. The exhibits can be found at the end of this report under the appropriate **EXHIBIT 3** tab.

TEMPORARY SEDIMENT POND(S) PLANS AND CALCULATIONS

For this project, there are no disturbed areas over 10 acres within a common drainage watershed. Therefore, no temporary sediment ponds are proposed.

INSPECTION AND MAINTENANCE FOR BMPs

MAINTENANCE

All temporary and permanent erosion and sediment control BMPs will be maintained and repaired as needed to assure continued performance of their intended function. All maintenance and repair of BMPs will be conducted in accordance with manufacturers' specifications.

All temporary erosion and sediment control BMPs will be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment will be removed or stabilized on site. Disturbed soil areas resulting from removal of BMPs or vegetation will be permanently stabilized as soon as possible.

Erosion and sediment controls are designed to prevent soil erosion and sediment migration offsite, to the extent practicable, which may result from construction activity. This design considers local topography, soil type, and rainfall.

Control measures must be installed and maintained according to the manufacturer's specifications. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the permittee must replace or modify the control for site situations.

If sediment ponds are utilized the Sediment must be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%.

If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts, and whenever feasible, prior to the next rain event.

The controls must be installed, maintained, and operated in a manner that will limit, to the extent practicable, offsite transport of litter, construction debris, and construction materials.

INSPECTIONS

An inspection will be performed by the qualified personnel, as designated by the permittee, on a weekly basis and after any rainfall event. An inspection and maintenance report shall be made per inspection. An inspection form has been included in this report and in the SWPPP. Based on the inspection results, the controls shall be corrected before the next scheduled inspection.

A log of inspection results will be maintained on-site and will include the name of the inspector, date, major observations, and necessary corrective measures. Reports of maintenance and inspection activities will be maintained on-site, in conformance with the TPDES permit conditions. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWPPP. This report must be signed by the responsible party.

Major observations shall, at a minimum, include the following:

- The locations of discharges of sediment or other pollutants from the site;

- Locations of BMPs that need to be maintained;

- Locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and

- Location where additional BMPs are needed.

All needed repairs or modifications will be reported to the contractors to permit the timely implementation of required actions. Necessary repairs or modifications will be implemented within seven days of inspection. The SWPPP will be modified within seven days to reflect any modifications to measures as a result of inspection.

The SWPPP must be amended whenever there is a change in design, construction, operation or maintenance that has a significant effect on the discharge of pollutants to the waters of the United States that was not addressed in the SWPPP.

The SWPPP must be amended when inspections or investigations by site operations, local, state or federal officials indicate that the SWPPP is proving ineffective in eliminating or significantly minimizing pollutants from the construction site or otherwise is not achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity.

INSPECTION FORM

NAME OF INSPECTOR _____
(Inspector must attach a brief summary of qualifications to this report.)

DATE _____

BEST MANAGEMENT PRACTICES (BMPs)

☐ **Vegetative Buffers**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Soil Covering (Including mulch and temporary vegetation)**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Outlet Protection**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Sediment Control Basins**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Silt Fence**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Stabilized Entrances/Exits**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Construction Staging Areas**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Inlet Protection**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Gravel Filter Bags**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Vegetated Filter Strip**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Concrete Truck Washout Pit**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Trash Receptacles**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **General Site Cleanliness**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Other** _____

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Other** _____

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Other** _____

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

MAJOR OBSERVATIONS

At a minimum, inspector shall note any evidence of erosion, sediment discharges from the site, BMPs requiring maintenance, BMPs requiring modification, and any additional BMPs required.

CERTIFICATION

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

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

INSPECTOR NAME/SIGNATURE

DATE

OWNER NAME/SIGNATURE

DATE

SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION

Construction practices shall disturb the minimal amount of existing ground cover as required for land clearing, grading, and construction activity for the shortest amount of time possible to minimize the potential of erosion and sedimentation from the site. Existing vegetation shall be maintained and left in place until it is necessary to disturb for construction activity. For this project the following stabilization practices will be implemented:

1. Hydraulic Mulch and Seeding: Disturbed areas subject to erosion shall be stabilized with hydraulic mulch and/or seeded and watered to provide interim stabilization. For areas that are not to be sodded as per the project landscaping plan, a minimum of 85% vegetative cover will be established to provide permanent stabilization.
2. Sodding and Wood Mulch: As per the project landscaping plan, Sodding and wood mulch will be applied to landscaped areas to provide permanent stabilization prior to project completion.

Records of the following shall be maintained by the permittee in the attached Project Timeline:

- a) The dates when major grading activities occur;
- b) The dates when construction activities temporarily or permanently cease on a portion of the site; and
- c) The dates when stabilization measures are initiated.

Stabilization measures must be initiated as soon as practical in portions of the site where construction activities have temporarily or permanently ceased, and except as provided in the following, must be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased:

Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practical.

Where construction activity on a portion of the site is temporarily ceased and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of the site.

In arid areas (areas with an average rainfall of 0-10 inches), semiarid areas (areas with an average annual rainfall of 10 to 20 inches), and areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practical. For interim stabilization during drought conditions best management practices will be implemented. These may include but are not limited to geotextile blankets and matting, hydromulch, diversion structures and/or structural controls such as silt fence and rock berms. These BMPs are to be maintained in accordance with the inspection/maintenance schedule provided in Attachment I.

PROJECT TIMELINE

DATES WHEN MAJOR GRADING ACTIVITIES OCCUR	
Date	Construction Activity

DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE	
Date	Construction Activity

DATES WHEN STABILIZATION MEASURES ARE INITIATED	
Date	Stabilization Activity

PERMANENT STORMWATER SECTION

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: BURT P. WELLMANN, P.E.

Date: 9/17/25

Signature of Customer/Agent



Regulated Entity Name: TPC COMMERCIAL

Permanent Best Management Practices (BMPs)

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

1. ☒ Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.
☐ N/A
2. ☒ These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.
☒ The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

- ☐ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: _____
- ☐ N/A
3. ☒ Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.
- ☐ N/A
4. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.
- ☐ The site will be used for low density single-family residential development and has 20% or less impervious cover.
- ☐ The site will be used for low density single-family residential development but has more than 20% impervious cover.
- ☒ The site will not be used for low density single-family residential development.
5. The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.
- ☐ **Attachment A - 20% or Less Impervious Cover Waiver.** The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
- ☐ The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
- ☒ The site will not be used for multi-family residential developments, schools, or small business sites.
6. ☒ **Attachment B - BMPs for Upgradient Stormwater.**

- ☐ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.
- ☐ No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.
- ☒ Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.
7. ☒ **Attachment C - BMPs for On-site Stormwater.**
- ☒ A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.
- ☐ Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.
8. ☐ **Attachment D - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.
- ☒ N/A
9. ☒ The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.
- ☒ The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.
- ☐ **Attachment E - Request to Seal Features.** A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.
10. ☒ **Attachment F - Construction Plans.** All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:
- ☒ Design calculations (TSS removal calculations)
- ☒ TCEQ construction notes
- ☒ All geologic features
- ☒ All proposed structural BMP(s) plans and specifications
- ☐ N/A

11. ☒ **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:
- ☒ Prepared and certified by the engineer designing the permanent BMPs and measures
 - ☒ Signed by the owner or responsible party
 - ☒ Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
 - ☒ A discussion of record keeping procedures
- ☐ N/A
12. ☐ **Attachment H - Pilot-Scale Field Testing Plan.** Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.
- ☒ N/A
13. ☒ **Attachment I - Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that results in water quality degradation.
- ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

14. ☒ The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.
- ☐ N/A
15. ☒ A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.
- ☐ N/A

20% OR LESS IMPERVIOUS COVER WAIVER

Not applicable.

BMPs FOR UP-GRADIENT STORMWATER

Runoff from the impervious cover increase of drainage area DA-1 will flow across the site, be captured, and treated by an on-site permanent BMP and is included in the calculations for JellyFish Filters (DA1) (See **Exhibit 4 – WPAP Details** for calculations).

Please reference the exhibits section at the end of this report for construction plans and specifications.

BMPs FOR ON-SITE STORMWATER

One (1) permanent BMP devices will be used to treat storm water runoff from the site. The required amount of pollutant load to be treated by the JellyFish Filter is 1,501 lbs of TSS, based on the 1.84 acres of impervious cover to be constructed.

Please reference the Exhibits Section at the end of this report for construction plans and specifications.

Table 1		
Drainage Area	Impervious Cover Increase (Acres)	Proposed TSS Generated
DA-1	1.704	1,390
DA-2	0.004	3
DA-3	0.132	108
DA-4	0	0
Total	1.840	1,501

Actual TSS Removal	
BayFilter	Actual TSS Removal
JellyFish Filters	1,501
Total	1,501



9/17/25
[Signature]

BMPs FOR SURFACE STREAMS

Not applicable. There are no existing surface streams onsite, therefore additional BMP's are not required.

REQUEST TO SEAL A FEATURE

There will be no sealing of any naturally occurring features on site.

CONSTRUCTION PLANS

Calculations for the load removal requirements for the project and the load removal provided by the permanent BMP's are provided in the attached spreadsheet, which have been signed and sealed by a professional engineer licensed in the State of Texas. The load removal requirements are derived from the equations from the TCEQ Technical Guidance Manual based upon project area and increase in impervious cover. All stormwater runoff with the exception of the driveways, will be treated by the permanent BMP and meet the overall required removal of 80% of the increase in Total Suspended Solids. Provided within the calculations is a summary of the amount of pollutant load required to be removed from the drainage areas and the amount of removal provided by the permanent BMP's.

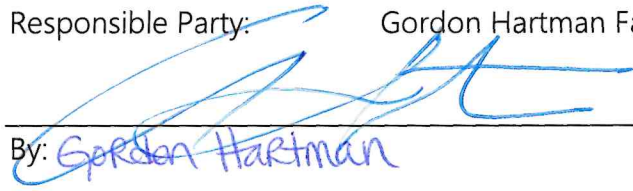
Construction plans, details, specifications, and constructions notes are provided in **Exhibit 4** which is attached at the end of this report under the appropriate tab.

PERMANENT BEST MANAGEMENT PRACTICES INSPECTION AND MAINTENANCE PLAN

The attached inspection and maintenance plan outline the procedures necessary to maintain the performance of the Permanent Best Management Practices for this project. It should be noted that the plan provides guidelines that may have to be adjusted dependent on site specific and weather-related conditions.

It is the responsibility of the responsible party to contract with a representative to provide the inspections and maintenance as outlined in the plan for the duration of the project. The responsible party will maintain this responsibility until it is assumed or transferred to another entity in writing. If the property is leased or sold, the responsibility for the maintenance will be required to be transferred through the lease agreement, binding covenants, closing documents, or other binding legal instrument.

I, the responsible party, have read and understand the requirements of the attached Inspection and Maintenance Plan for the proposed Permanent Best Management Practices for my project. I acknowledge that I will maintain responsibility for the implementation and execution of the plan until the responsibility is transferred to or assumed by another party in writing through a binding legal instrument.

Responsible Party:  Gordon Hartman Family Foundation

By: 

Date: 7/1/25

MAINTENANCE GUIDELINES FOR A JELLYFISH FILTER

Jellyfish cartridges are passively backwashed automatically after each storm event, which removes accumulated sediment from the membranes and significantly extends the service life of the cartridges and the maintenance interval. If required, the cartridges can be easily manually backwashed without removing the cartridges. Additionally, the lightweight cartridges can be removed by hand and externally rinsed, and rinsed cartridges then re-installed. These simple maintenance options allow for cartridge regeneration, thereby minimizing cartridge replacement costs and life-cycle treatment costs while ensuring long-term treatment performance.

Regular inspection and maintenance are proven, cost-effective ways to maximize water resource protection for all stormwater pollution control practices, and are required to insure proper functioning of the Jellyfish® Filter. Inspection of the Jellyfish® Filter is performed from the surface, while proper maintenance requires a combination of procedures conducted from the surface and with worker entry into the structure.

Please refer to the following information and guidelines before conducting inspection and maintenance activities:

- **When is inspection needed?**

Post-construction inspection is required prior to putting the Jellyfish Filter into service.

Routine inspections are recommended quarterly during the first year of operation to accurately assess the sediment and floatable pollutant accumulation, and to ensure that the automatic backwash feature is functioning properly.

Inspection frequency in subsequent years is based on the maintenance plan developed in the first year, but must occur annually at a minimum.

Inspections should also be performed immediately after oil, fuel or other chemical spill.

- **When is maintenance service needed?**

The unit must be cleaned annually. This cleaning includes removal and appropriate disposal of all water, sediment, oil and grease, and debris that has accumulated within the unit. The Jellyfish Filter is inspected and maintained by professional vacuum cleaning service providers with experience in the maintenance of underground tanks, sewers and catch basins. Since some of the maintenance procedures require manned entry into the Jellyfish structure, only professional maintenance service providers trained in confined space entry procedures should enter the vessel. Service provider companies typically have personnel who are trained and certified in confined space entry procedures according to local, state, and federal standards.

Filter cartridges should be tested for adequate flow rate, every 12 months and cleaned and re-commissioned, or replaced if necessary. A manual backflush must be performed on a single draindown cartridge using a Jellyfish Cartridge Backflush Pipe (described in the Jellyfish® Filter Owner's Manual). If the time required to drain 14 gallons of backflush water from the Backflush Pipe (from top of pipe to the top of the open flapper valve) exceeds 15 seconds, it is recommended to perform a manual backflush on each of the cartridges. After the manual backflush, the draindown test should be repeated on a single cartridge to determine if the cartridge can drain 14 gallons of water in 15 seconds. If the cartridge still does not achieve the design flow rate, it must be replaced.

The unit should be cleaned out immediately after an oil, fuel or chemical spill.

- **External Rinsing**

This cartridge cleaning procedure is performed by removing the cartridge from the cartridge deck and externally rinsing the filtration tentacles using a low-pressure water sprayer, as described in the Jellyfish® Filter Owner's Manual. If this procedure is performed within the structure, the cartridge or individual filtration tentacles should be rinsed while safely suspended over the maintenance access wall opening in the cartridge deck, such that rinsate flows into the lower chamber of the Jellyfish® Filter. If the rinsing procedure is performed outside the structure, the cartridge or individual filtration tentacles should be rinsed in a suitable basin such as a plastic barrel or tub, and rinsate subsequently poured into the maintenance access wall opening in the cartridge deck. Sediment is subsequently removed from the lower chamber by standard vacuum service.

**TPC COMMERCIAL
Water Pollution Abatement Plan
Permanent Stormwater Section**

Attachment G

Manufacturer Contact Information:

CONTECH Engineered Solutions LLC Email:
info@conteches.com
1-800-338-1122
Website: <https://www.conteches.com/>

Mail or other: 9100 Centre Pointe Drive West
Chester, OH 45069

PILOT-SCALE FIELD TESTING PLAN

Not applicable. The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMP's and measures for this site, therefore pilot-scale field testing is not required.

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

No surface streams exist onsite. During the construction phase, temporary BMP's, both structural and non structural, will be used to prevent pollution from leaving the site. All disturbed areas will be re-vegetated as a soon as practical.

AGENT AUTHORIZATION FORM

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

I Gordon Hartman,
Print Name
Owner
Title - Owner/President/Other
of Gordon Hartman Family Foundation,
Corporation/Partnership/Entity Name
have authorized Colliers Engineering & Design Representatives
Print Name of Agent/Engineer
of Colliers Engineering & Design
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:

[Signature]
Applicant's Signature

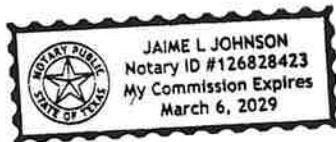
10/6/25
Date

THE STATE OF Texas §

County of Bexar §

BEFORE ME, the undersigned authority, on this day personally appeared Gordon Hartman 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 6 day of October, 2025.



[Signature]
NOTARY PUBLIC
Jaime L. Johnson
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 3/6/29

APPLICATION FEE FORM

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: TPC COMMERCIAL

Regulated Entity Location: 2837 TPC Parkway, San Antonio, TX 78259

Name of Customer: Gordon Hartman Family Foundation

Contact Person: Gordon V. Hartman

Phone: 210-490-1798

Customer Reference Number (if issued): CN _____

Regulated Entity Reference Number (if issued): RN _____

Austin Regional Office (3373)

☐ Hays

☐ Travis

☐ Williamson

San Antonio Regional Office (3362)

☒ Bexar

☐ Medina

☐ Uvalde

☐ Comal

☐ Kinney

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

☐ Austin Regional Office

☒ San Antonio Regional Office

☐ Mailed to: TCEQ - Cashier

☐ Overnight Delivery to: TCEQ - Cashier

Revenues Section

Mail Code 214

P.O. Box 13088

Austin, TX 78711-3088

12100 Park 35 Circle

Building A, 3rd Floor

Austin, TX 78753

(512)239-0357

Site Location (Check All That Apply):

☒ Recharge Zone

☐ Contributing Zone

☐ Transition Zone

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	6.639 Acres	\$ 5,000
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: 9/17/25

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

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

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

Extension of Time Requests

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

CORE DATA FORM



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		RN

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)					
☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership							
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)							
<i>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).</i>							
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)				<i>If new Customer, enter previous Customer below:</i>			
Gordon Hartman Family Fondation							
7. TX SOS/CPA Filing Number		8. TX State Tax ID (11 digits)		9. Federal Tax ID (9 digits) 20-3537281	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				13. Independently Owned and Operated?			
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher				☐ Yes ☒ No			
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following							
☒ Owner ☐ Operator ☒ Owner & Operator ☐ Other:							
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant							
15. Mailing Address:	5210 Thousand Oaks, Ste 1318						
	City	San Antonio, TX	State	TX	ZIP	78233	ZIP + 4
16. Country Mailing Information (if outside USA)				17. E-Mail Address (if applicable)			
				Jaime@GordonHartman.com			

18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)
(210) 490-1798		() -

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							
<i>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).</i>							
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)							
TPC COMMERCIAL							
23. Street Address of the Regulated Entity: (No PO Boxes)	2837 TPC Parkway						
	City	San Antonio	State	TX	ZIP	78259	ZIP + 4
24. County	Bexar						

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:							
26. Nearest City					State	Nearest ZIP Code	
<i>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).</i>							
27. Latitude (N) In Decimal:		29.654264° N			28. Longitude (W) In Decimal:		-98.442197° W
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
29	39	15.35	-98	26	31.91		
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)		
6512	5399		531120		452319		
33. What is the Primary Business of this entity? (Do not repeat the SIC or NAICS description.)							
Development and leasing of nonresidential commercial buildings, including office suites and retail tenant spaces.							
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
		WPAP		
☐ 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:	BURT P. WELLMANN, P.E.	41. Title:	Regional Discipline Leader
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(726) 223-4821		() -	burt.wellmann@collierseng.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.

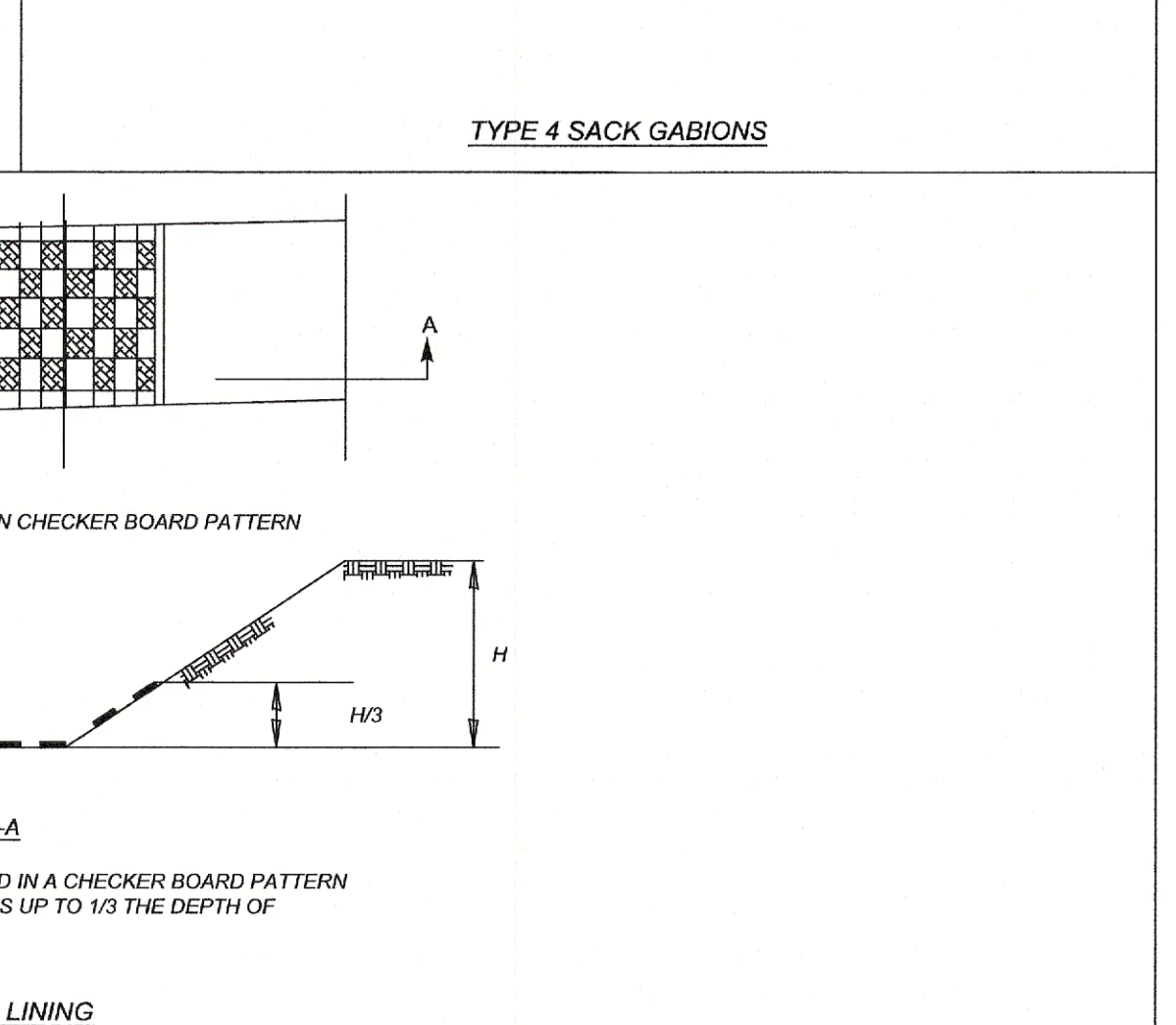
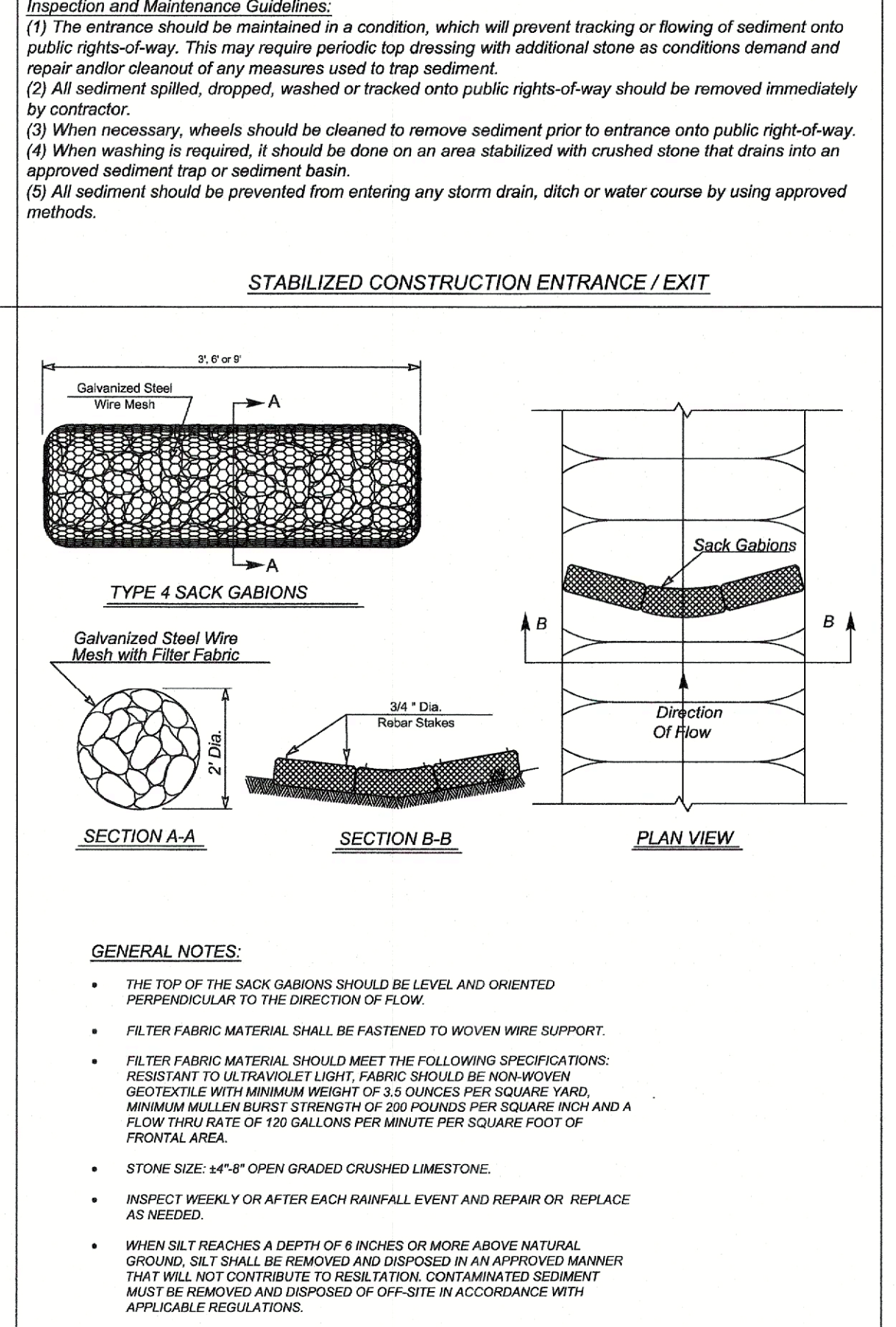
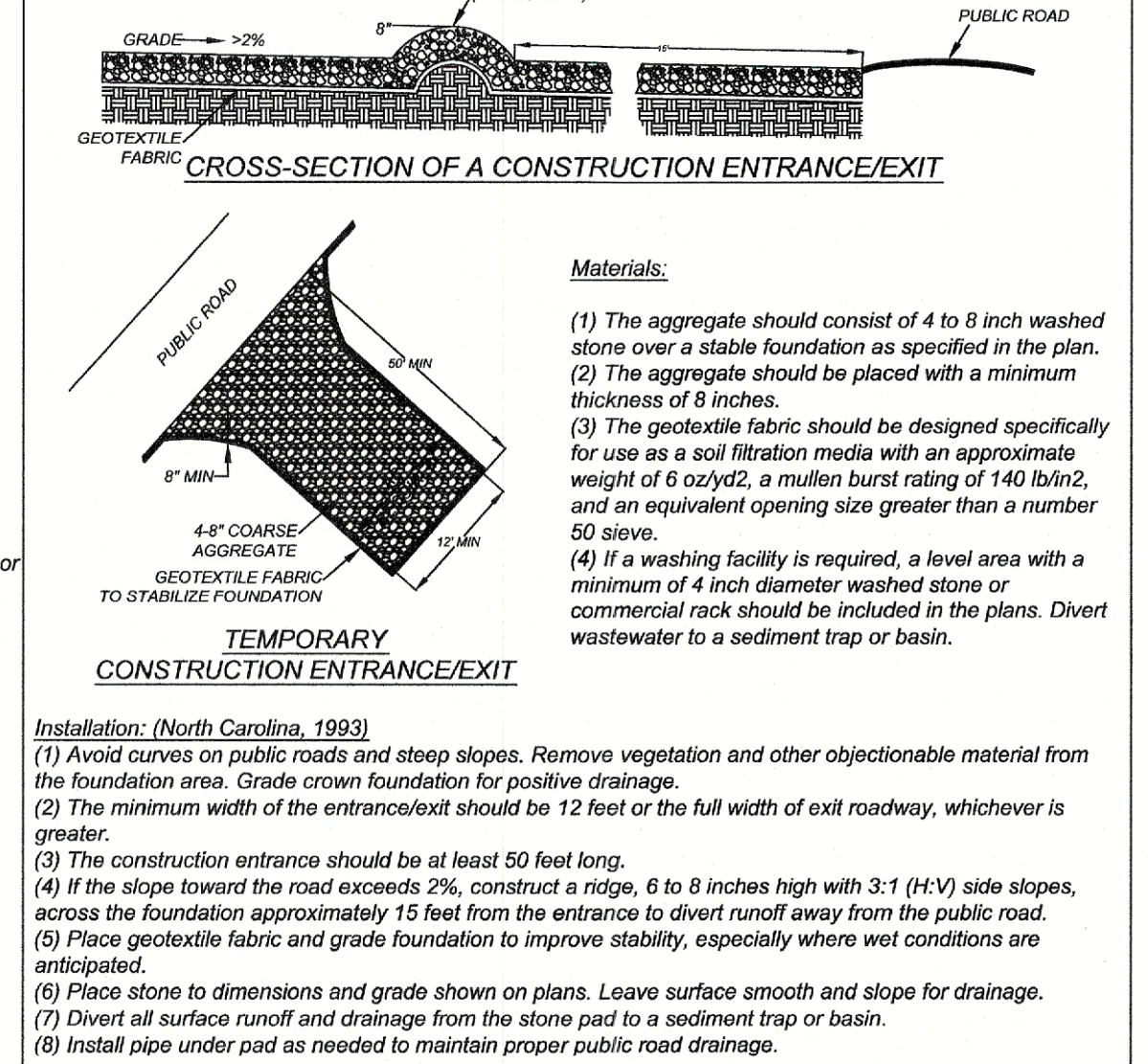
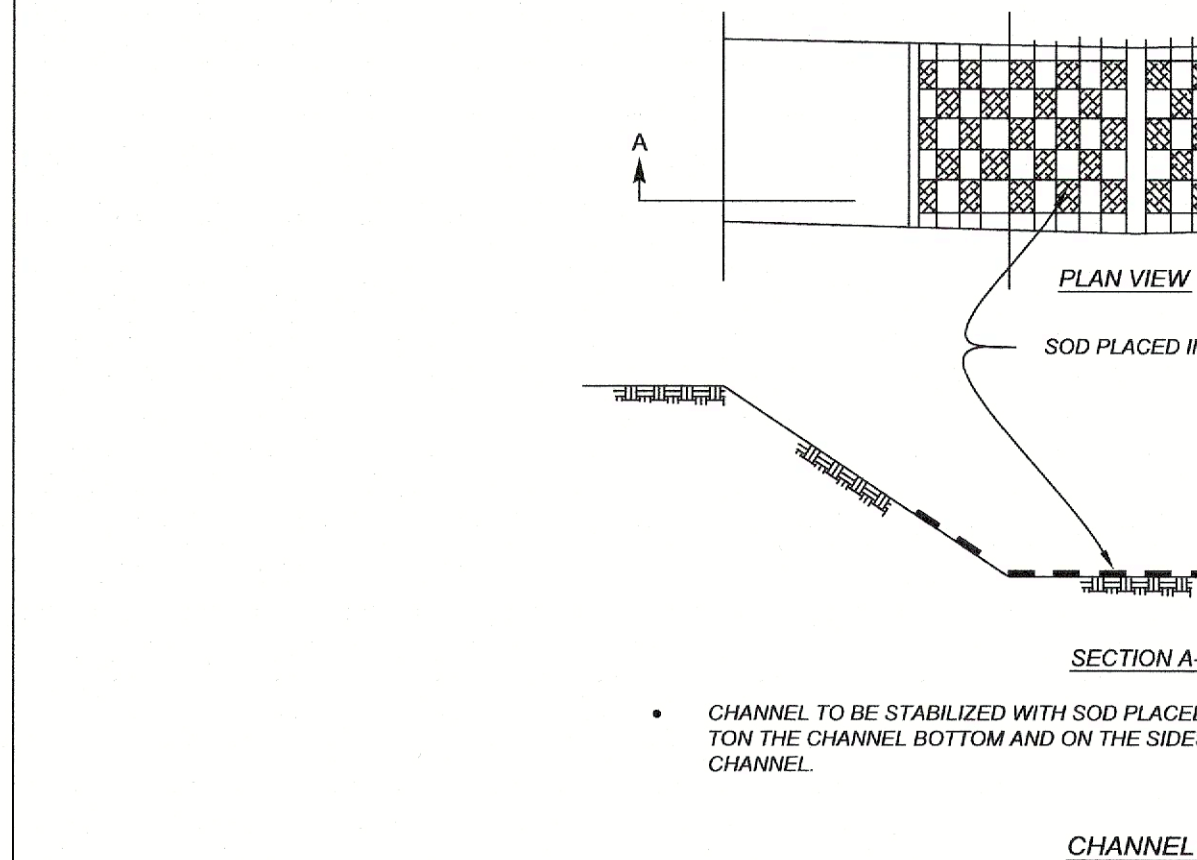
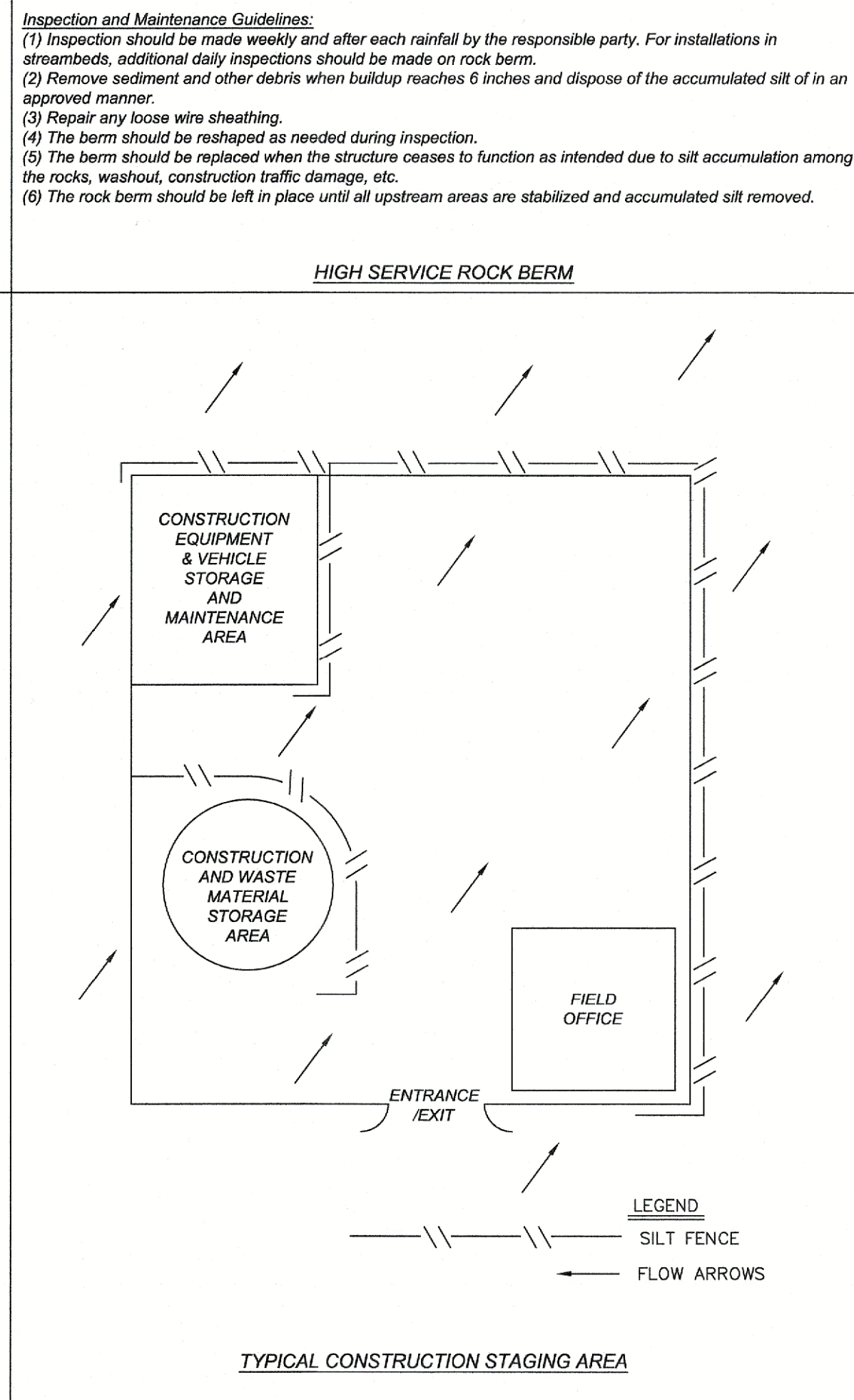
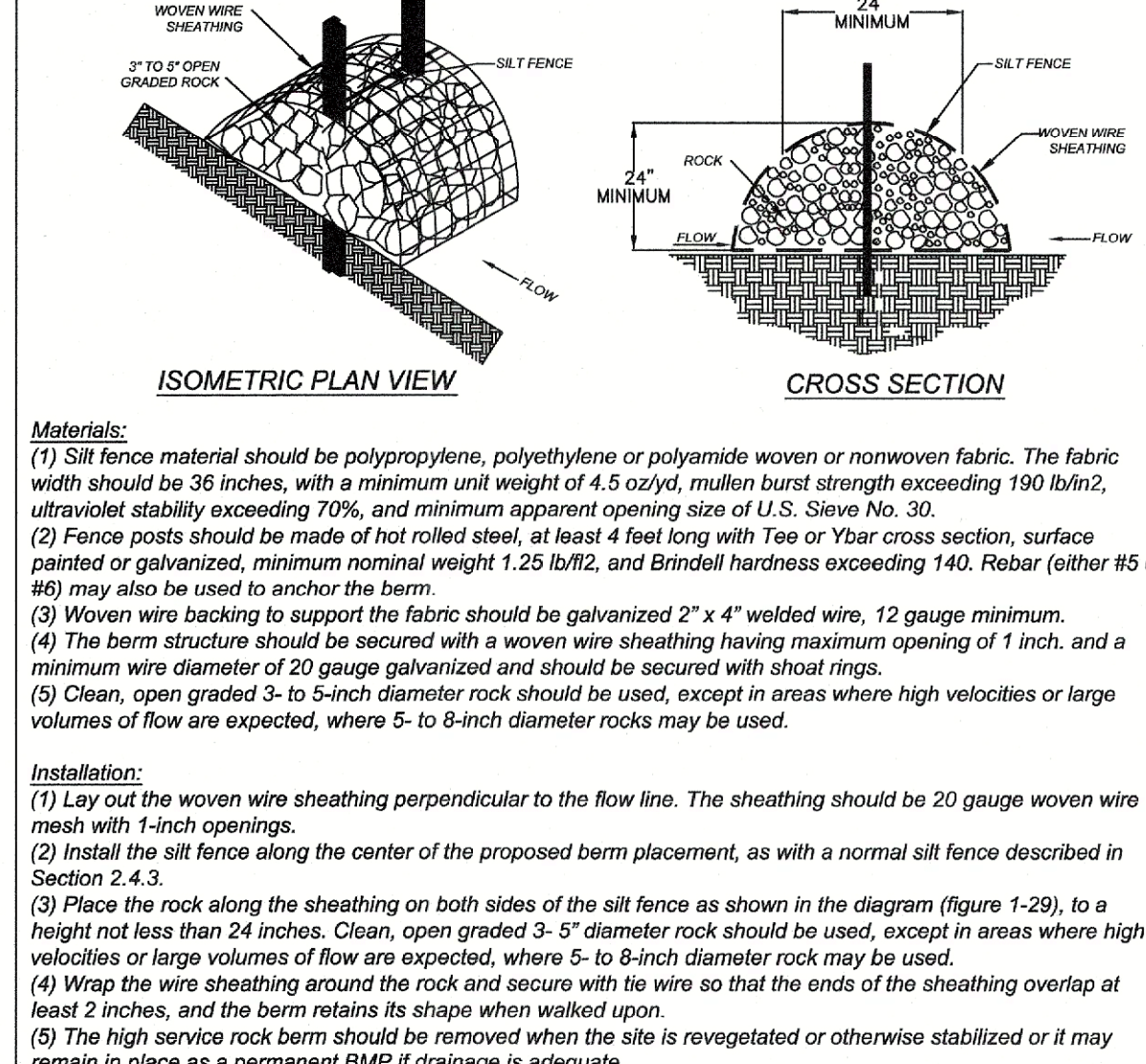
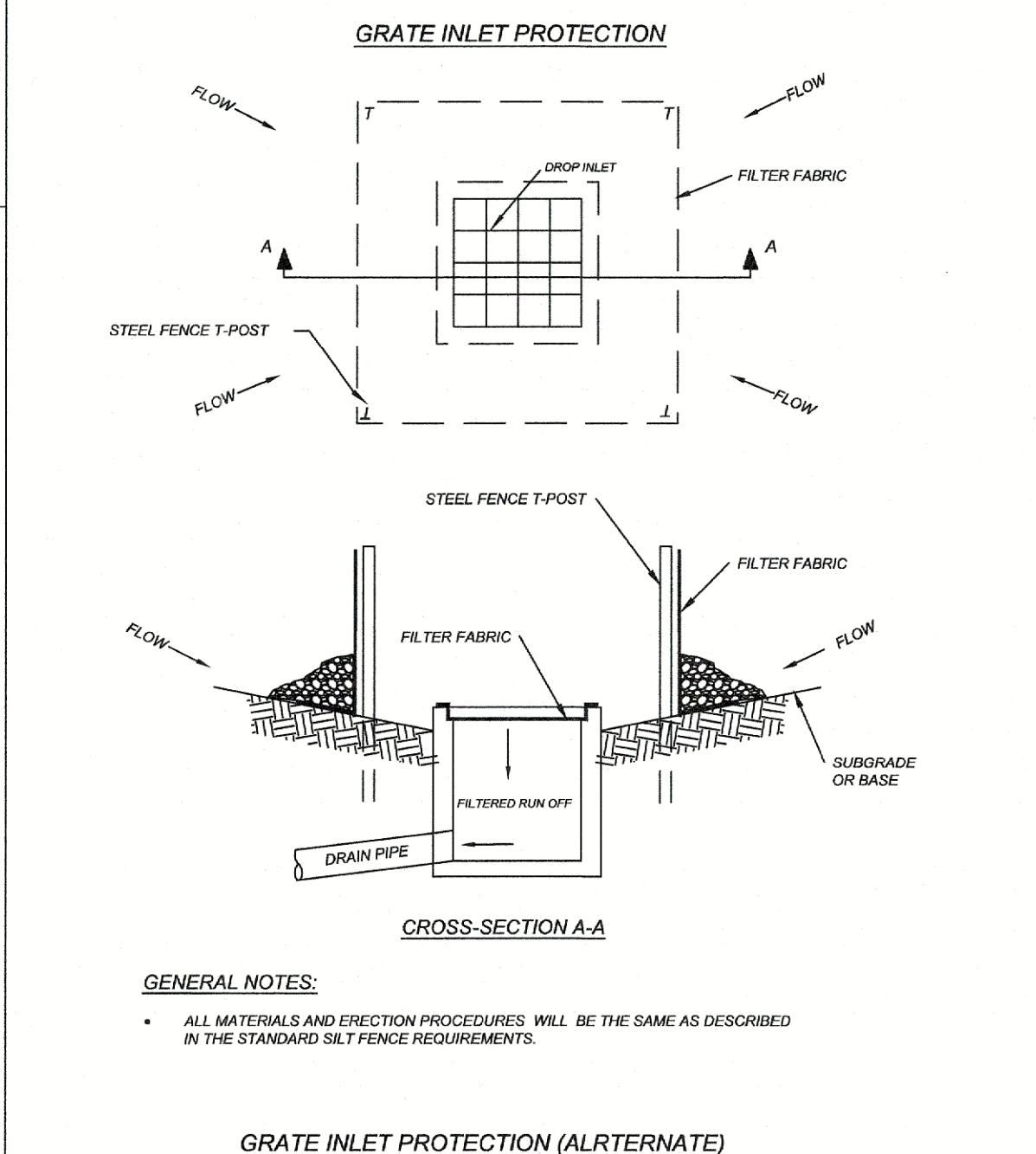
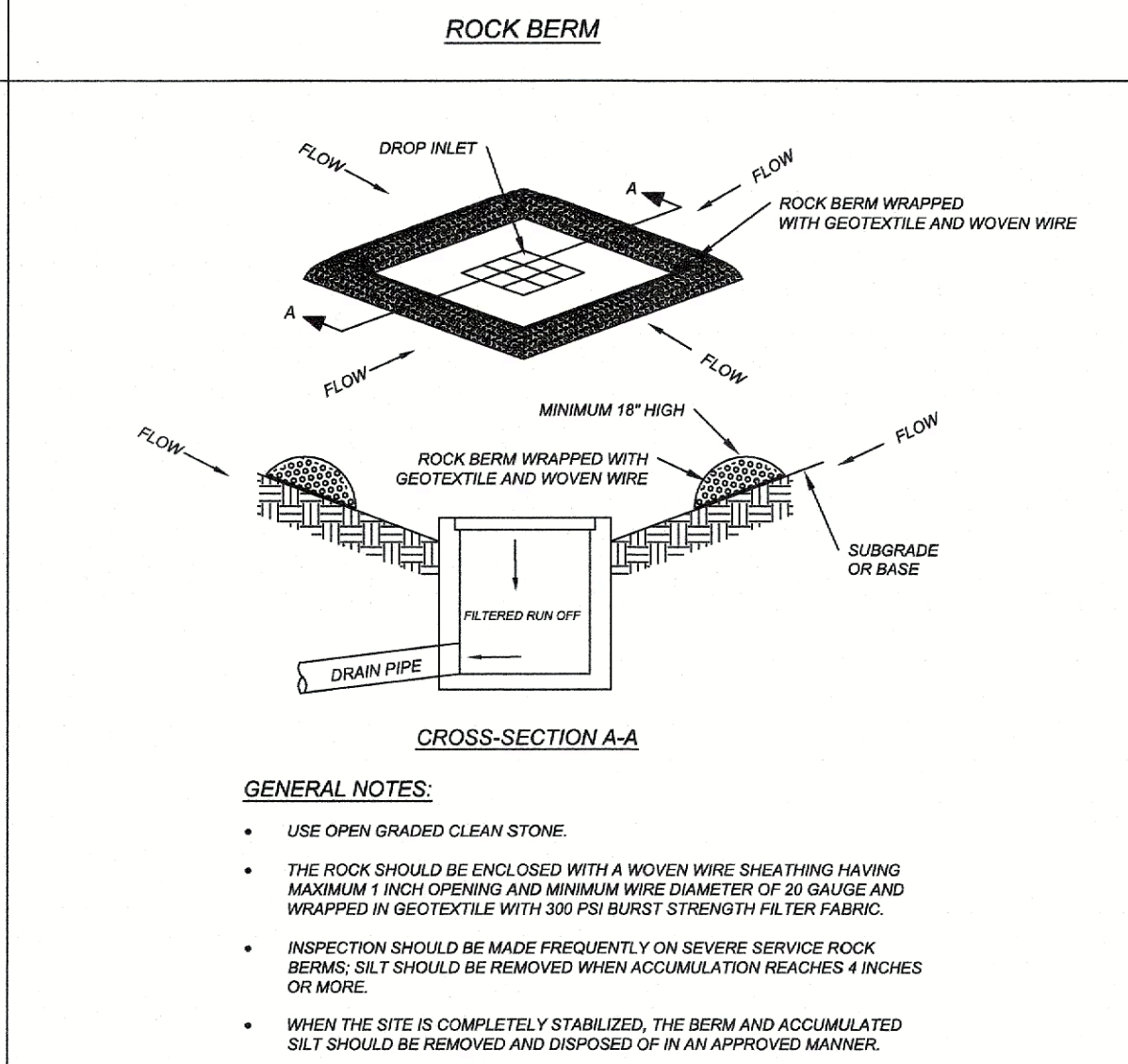
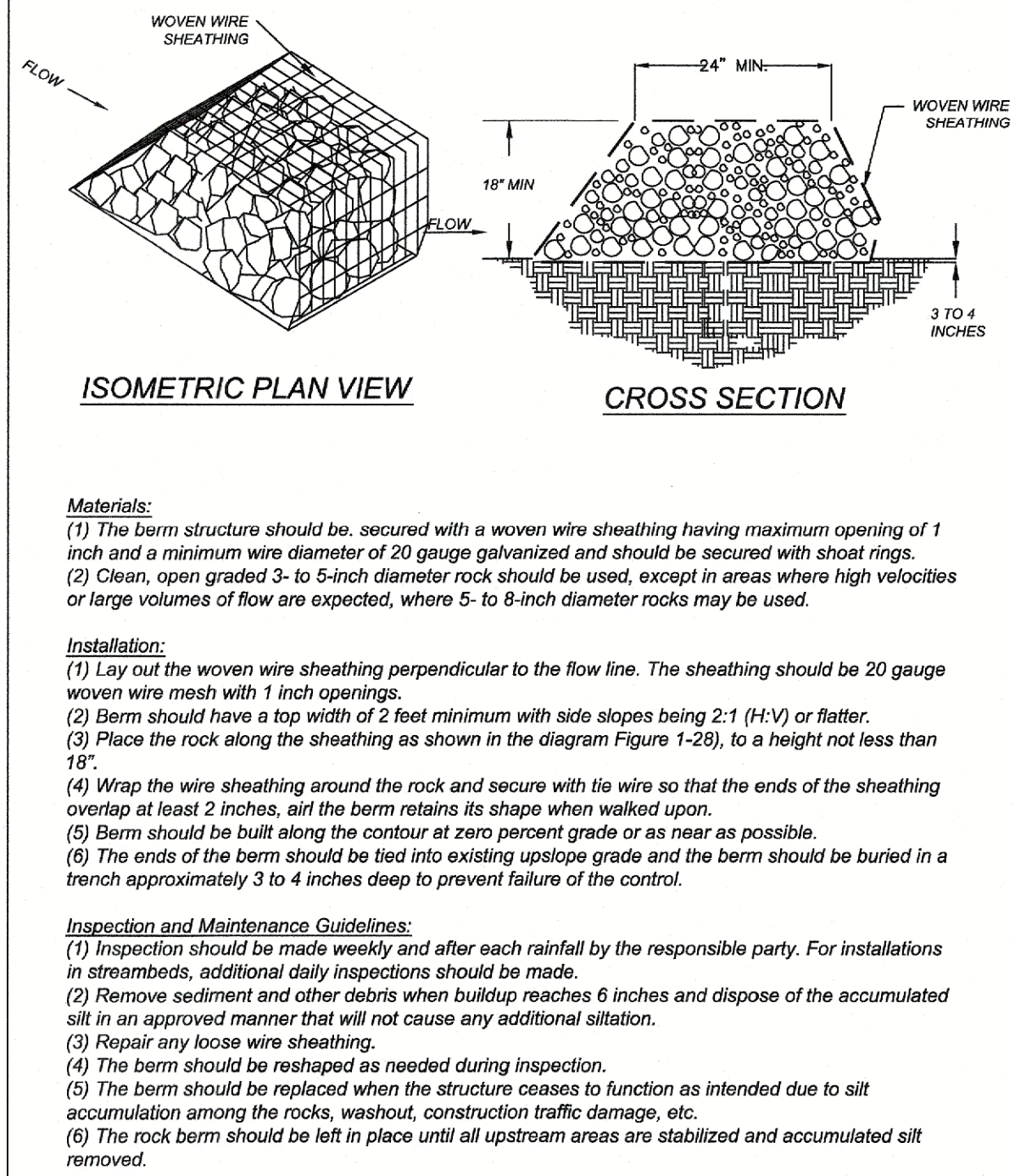
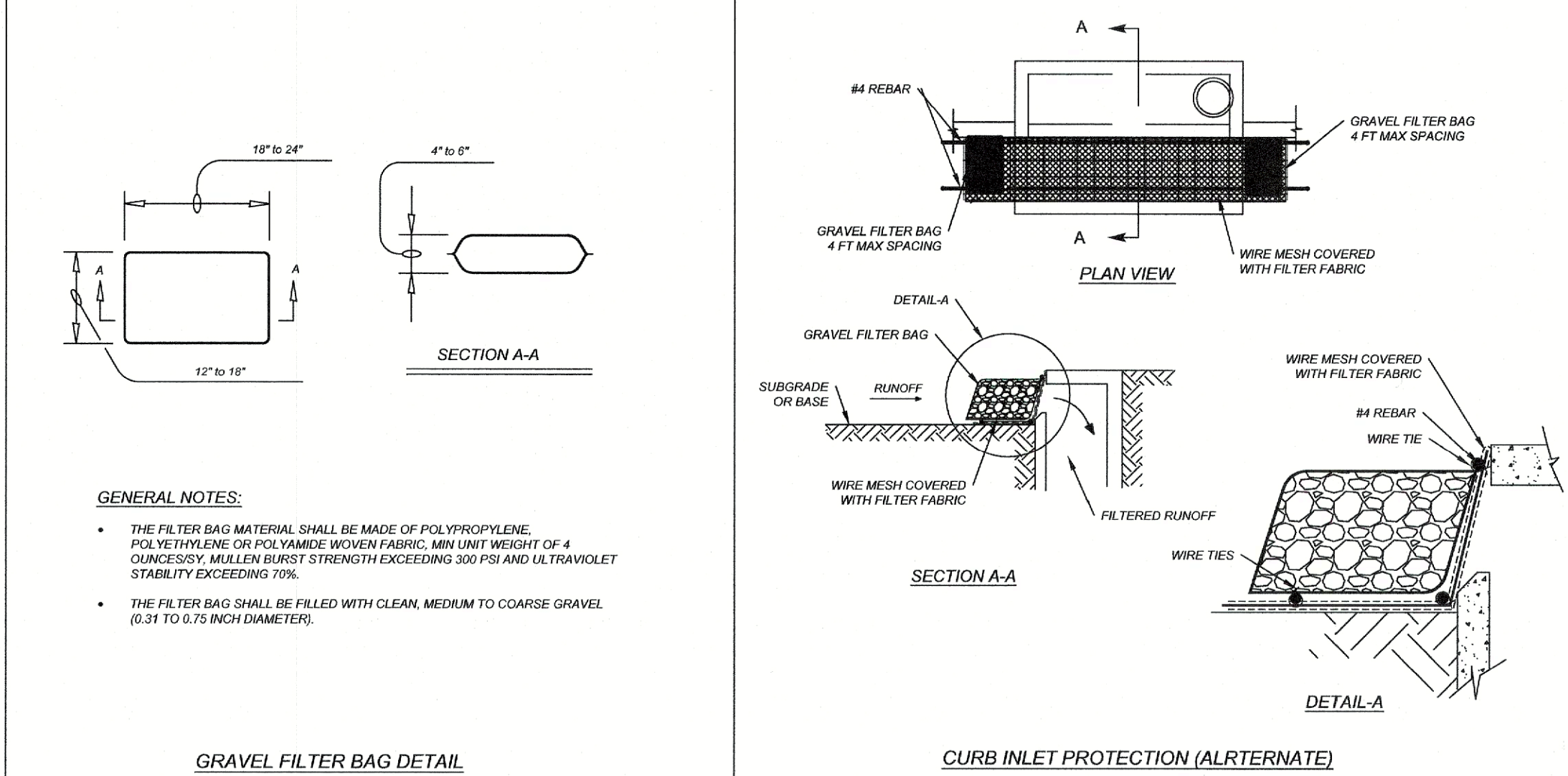
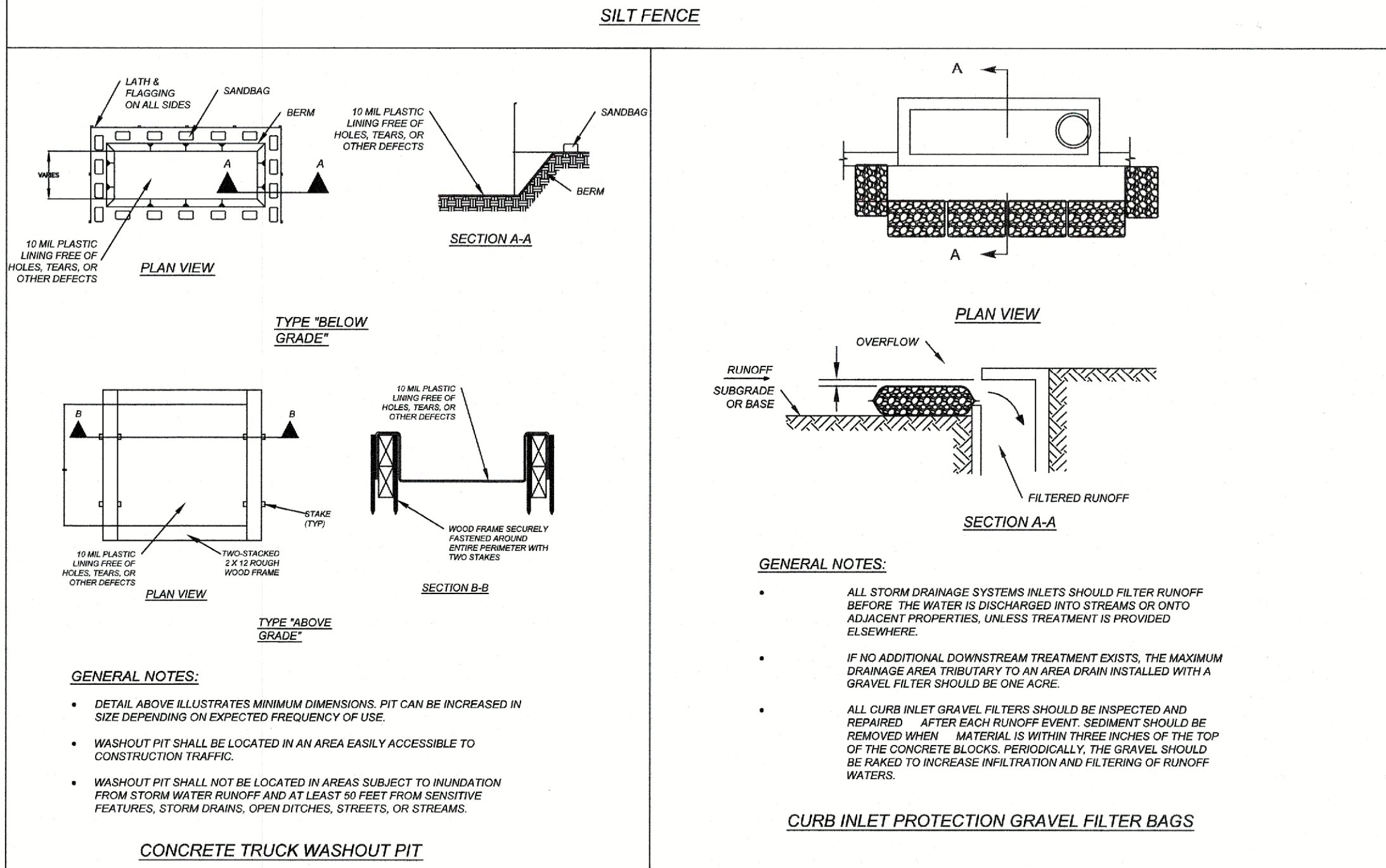
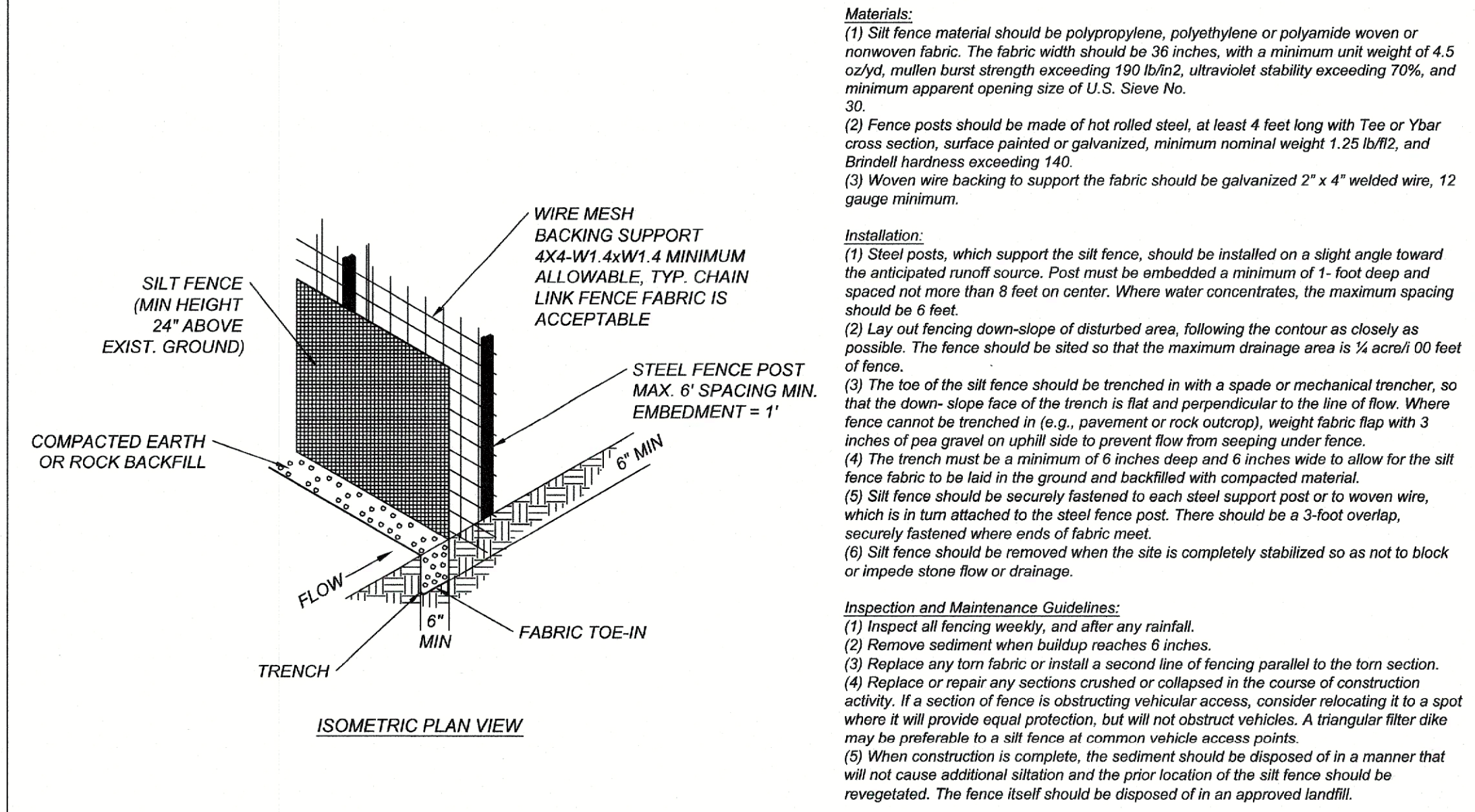
Company:	Colliers Engineering & Design	Job Title:	Regional Discipline Leader
Name (In Print):	BURT P. WELLMANN, P.E.	Phone:	(726) 223- 4821
Signature:		Date:	9/17/25

EXHIBIT 1
TCEQ SITE PLAN

EXHIBIT 2

EROSION CONTROL DETAILS

ANISCA/COMPACTED SITE PLAN DETAILS/NO. 2 EROSION CONTROL DETAILS By: RANKIN



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TPC COMMERCIAL

FOR

GORDON HARTMAN FAMILY FOUNDATION

LOT 4
BLOCK 13
NCB 18218

SAN ANTONIO
BEXAR COUNTY
TEXAS

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AUSTIN
5901 Vega Avenue
Suite 100
Austin, TX 78735
Phone: 512.287.8370
COLLIERS ENGINEERING & DESIGN, INC.
1801 RIVER FORT 1-1800
10013 River Fort, 10114000

SCALE: AS SHOWN

DATE: JUNE 2025

DRAWN BY: RS

CHECKED BY: BW

PROJECT NUMBER: 205-12-02

DRAWING NAME: TCEQ SITE PLAN DETAILS

SHEET TITLE: TCEQ DETAILS

SHEET NUMBER: EX 2.0

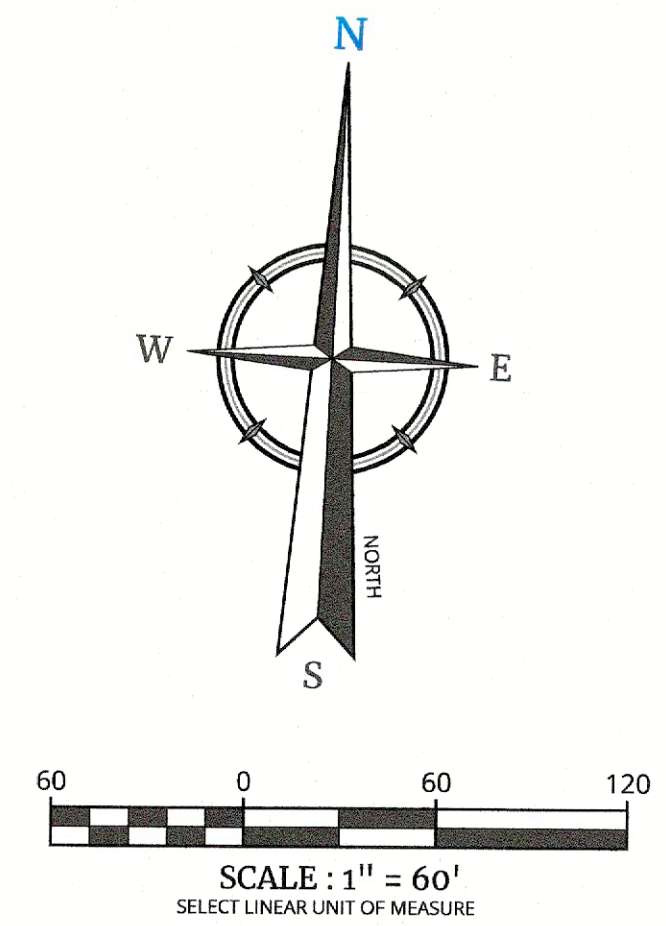
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

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EXHIBIT 3 ***DRAINAGE AREA MAPS***

LEGEND

PROPERTY LINE	
EXISTING CONTOURS	
DRAINAGE AREA BOUNDARY	
SHEET FLOW	
SHALLOW CONCENTRATED, OVERLAND	
CHANNEL FLOW	



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REV | DATE | DESCRIPTION

GORDON HARTMAN
FAMILY FOUNDATIONEXISTING DRAINAGE AREA
MAP

TPC COMMERCIAL

SAN ANTONIO, TEXAS

Drainage Area	SHEET FLOW					SHALLOW CONCENTRATED FLOW					CHANNEL FLOW			TOTAL/AREA
	n	L (ft)	P2 (in)	s %	Tt(min)	Paved/Unpaved	V (ft/s)	L (ft)	s (%)	Tt(min)	L (ft)	V (ft/s)	Tt(min)	
Existing														
1	0.40	100	4.44	10.45	9	unpaved	4.00	499	6.15	2	215	3.69	0.971	13
2	0.40	100	4.44	9.57	10	unpaved	3.60	219	4.98	1				11
3	0.40	100	4.44	11.10	9						1007	5.31	3.161	12

EXISTING RUNOFF CONDITIONS									
DRAINAGE AREA	ACRES	RUNOFF COEFFICIENT	TIME OF CONCENTRATION (MIN)	5 YEAR INTENSITY (IN/HR)	5 YEAR RUNOFF (CFS)	25 YEAR INTENSITY (IN/HR)	25 YEAR RUNOFF (CFS)	100 YEAR INTENSITY (IN/HR)	100 YEAR RUNOFF (CFS)
1	2.476	0.54	13	5.71	7.63	7.96	10.64	10.02	13.40
2	0.625	0.52	11	6.13	1.99	8.56	2.78	10.81	3.51
3	3.538	0.48	12	5.92	10.05	8.25	14.01	10.41	17.68

AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE	AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE	AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE
2.372	0.52	UNDEVELOPED	0.625	0.52	UNDEVELOPED	3.538	0.47	UNDEVELOPED
0.104	0.96	CONCRETE	0.00	0.96	CONCRETE	0.09	0.96	CONCRETE
COMPOSITE	0.54	DA 1	COMPOSITE	0.52	DA 2	COMPOSITE	0.48	DA 3

SAN ANTONIO (KFW)
3421 Paesanos Parkway,
Suite 103
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.

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DESIGNED BY: AS
DATE ISSUED: 07/03/2025
SHEET NAME:

DRAWN BY: AS
REVIEWED BY: AC
PROJECT NUMBER: 205-12-02

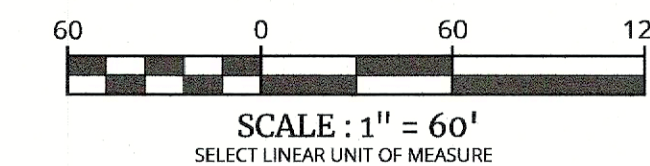
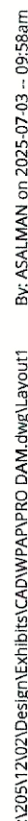
EXISTING DRAINAGE AREA

DRAWING NUMBER:

EX 3A

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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GORDON HARTMAN
FAMILY FOUNDATION

PROPOSED DRAINAGE AREA MAP

TPC COMMERCIAL

SAN ANTONIO, TEXAS

Drainage Area	SHEET FLOW					SHALLOW CONCENTRATED FLOW					CHANNEL FLOW			TOTAL/AREA
	n	L (ft)	P2 (in)	s %	Tt(min)	Paved/Unpaved	V (ft/s)	L (ft)	s (%)	Tt(min)	L (ft)	V (ft/s)	Tt(min)	
Proposed														
1	0.15	100	4.44	2.90	7	unpaved	1.66	118	1.06	1	699	7.25	2	10
2	0.24	80	4.44	14.35	5	unpaved	1.61	60	1.00	1				6
3	0.24	91	4.44	14.63	5	unpaved	5.59	61	12.00	0	181	10.21	0	6
4	0.40	100	4.44	11.10	9						1007	5.31	3.161	12

PROPOSED/ULTIMATE RUNOFF CONDITIONS									
DRAINAGE AREA	ACRES	RUNOFF COEFFICIENT	TIME OF CONCENTRATION (MIN)	5 YEAR INTENSITY (IN/HR)	5 YEAR RUNOFF (CFS)	25 YEAR INTENSITY (IN/HR)	25 YEAR RUNOFF (CFS)	100 YEAR INTENSITY (IN/HR)	100 YEAR RUNOFF (CFS)
1	2.163	0.87	10	6.36	11.97	8.88	16.71	11.23	21.13
2	0.193	0.55	6	7.52	0.80	10.53	1.12	13.30	1.41
3	0.745	0.63	6	7.52	3.53	10.53	4.94	13.30	6.24
4	3.538	0.53	12	5.92	11.10	8.25	15.47	10.41	19.52

AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE	AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE	AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE	AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE
0.460	0.52	UNDEVELOPED	0.180	0.52	UNDEVELOPED	0.509	0.47	UNDEVELOPED	3.450	0.52	UNDEVELOPED
1.704	0.96	COMMERCIAL	0.013	0.96	CONCRETE	0.24	0.96	CONCRETE	0.088	0.96	CONCRETE
COMPOSITE	0.87	DA 1	COMPOSITE	0.55	DA 2	COMPOSITE	0.63	DA 3	COMPOSITE	0.53	DA 4

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San Antonio, TX 78231
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AS

DATE ISSUED:
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Suite 103
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Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.

Phone: 210.97
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AS

REVIEWED BY: _____
AC _____

PROJECT NUMBER
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PROPOSED DRAINAGE
AREA

DRAWING NUMBER

EX 3B

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FOR

TPC COMMERCIAL

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2710 North Loop West, Suite 1000

Phone: 210.979.8444
COLLINS ENGINEERING & DESIGN, INC.
2205 E. 1st St., Suite 100
San Antonio, TX 78205

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	09/17/2025	AS	AS

PROJECT NUMBER:	DRAWING NAME:
205-12-02	EX PRO IC

SHEET TITLE: FIELD BOOK: XX PAGE: XX

EXISTING/PROPOSED
IMPERVIOUS COVER

SHEET NUMBER:

EX 3C

EXHIBIT 4

WPAP DETAILS

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

Project Name: **TPC Commercial - Gordon Hartman Foundation**
Date Prepared: **7/3/2025**

1. The Required Load Reduction for the total project:

Calculations from RG-348
Pages 3-27 to 3-30

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

$L_{M \text{ TOTAL PROJECT}}$ = 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 = **Bexar**
Total project area included in plan * = **6.639** acres
Predevelopment impervious area within the limits of the plan * = **0.192** acres
Total post-development impervious area within the limits of the plan * = **2.032** acres
Total post-development impervious cover fraction * = **0.31**
 P = **30** inches
 $L_{M \text{ TOTAL PROJECT}}$ = **1501** lbs.

Number of drainage basins / outfalls areas leaving the plan area = **4**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = **1**

Total drainage basin/outfall area = **2.163** acres
Predevelopment impervious area within drainage basin/outfall area = **0.00** acres
Post-development impervious area within drainage basin/outfall area = **1.704** acres
Post-development impervious fraction within drainage basin/outfall area = **0.79**
 $L_{M \text{ THIS BASIN}}$ = **1390** lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **JF** abbreviation
Removal efficiency = **86** percent

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7:
 $LR = (\text{BMP efficiency}) \times P \times (A_i \times 34.6 + A_p \times 0.54)$

A_C = Total On-Site drainage area in the BMP catchment area
 A_i = Impervious area proposed in the BMP catchment area
 A_p = Pervious area remaining in the BMP catchment area
 L_R = TSS Load removed from this catchment area by the proposed BMP

A_C = **2.163** acres
 A_i = **1.704** acres
 A_p = **0.46** acres
 L_R = **1528** lbs.

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

Desired $L_{M \text{ THIS BASIN}}$ = **1501** lbs.
 F = **0.98**

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

Offsite area draining to BMP = **0.00** acres
Offsite impervious cover draining to BMP = **0.00** acres

Calculations from RG-348
Pages Section 3.2.22

Rainfall Intensity = **2.50** inches per hour
Effective Area = **1.55** acres
Cartridge Length = **54** inches

Peak Treatment Flow Required = **3.90** cubic feet per second

7. Jellyfish

Designed as Required in RG-348
Section 3.2.22

Flow Through Jellyfish Size	Vault
Jellyfish Size for Flow-Based Configuration =	JFPD0811-20-4
Jellyfish Treatment Flow Rate =	3.92 cfs



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

Project Name: **TPC Commercial - Gordon Hartman Foundation**
Date Prepared: **7/3/2025**

1. The Required Load Reduction for the total project:

Calculations from RG-348
Pages 3-27 to 3-30

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

$L_{M \text{ TOTAL PROJECT}}$ = 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 =	Bexar	
Total project area included in plan * =	6.639	acres
Predevelopment impervious area within the limits of the plan * =	0.192	acres
Total post-development impervious area within the limits of the plan * =	2.032	acres
Total post-development impervious cover fraction * =	0.31	
P =	30	inches
$L_{M \text{ TOTAL PROJECT}}$ =	1501	lbs.

Number of drainage basins / outfalls areas leaving the plan area = **4**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. =	2	
Total drainage basin/outfall area =	0.193	acres
Predevelopment impervious area within drainage basin/outfall area =	0.000	acres
Post-development impervious area within drainage basin/outfall area =	0.004	acres
Post-development impervious fraction within drainage basin/outfall area =	0.02	
$L_{M \text{ THIS BASIN}}$ =	3	lbs.



9/17/25
[Signature]

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

Project Name: TPC Commercial - Gordon Hartman Foundation
Date Prepared: 7/3/2025

1. The Required Load Reduction for the total project:

Calculations from RG-348
Pages 3-27 to 3-30

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

$L_{M \text{ TOTAL PROJECT}}$ = 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 =	Bexar	
Total project area included in plan * =	6.639	acres
Predevelopment impervious area within the limits of the plan * =	0.192	acres
Total post-development impervious area within the limits of the plan* =	2.032	acres
Total post-development impervious cover fraction * =	0.31	
P =	30	inches
$L_{M \text{ TOTAL PROJECT}}$ =	1501	lbs.

Number of drainage basins / outfalls areas leaving the plan area = 4

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = 3

Total drainage basin/outfall area =	0.745	acres
Predevelopment impervious area within drainage basin/outfall area =	0.104	acres
Post-development impervious area within drainage basin/outfall area =	0.236	acres
Post-development impervious fraction within drainage basin/outfall area =	0.32	
$L_{M \text{ THIS BASIN}}$ =	108	lbs.



9/17/25

Blirt P. Wellmann

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

Project Name: **TPC Commercial - Gordon Hartman Foundation**
Date Prepared: 7/3/2025

1. The Required Load Reduction for the total project:

Calculations from RG-348
Pages 3-27 to 3-30

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

$L_{M \text{ TOTAL PROJECT}}$ = 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 =	Bexar	
Total project area included in plan * =	6.639	acres
Predevelopment impervious area within the limits of the plan * =	0.192	acres
Total post-development impervious area within the limits of the plan * =	2.032	acres
Total post-development impervious cover fraction * =	0.31	
P =	30	inches
$L_{M \text{ TOTAL PROJECT}}$ =	1501	lbs.

Number of drainage basins / outfalls areas leaving the plan area = **4**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = **4**

Total drainage basin/outfall area =	3.538	acres
Predevelopment impervious area within drainage basin/outfall area =	0.088	acres
Post-development impervious area within drainage basin/outfall area =	0.088	acres
Post-development impervious fraction within drainage basin/outfall area =	0.02	
$L_{M \text{ THIS BASIN}}$ =	0	lbs.

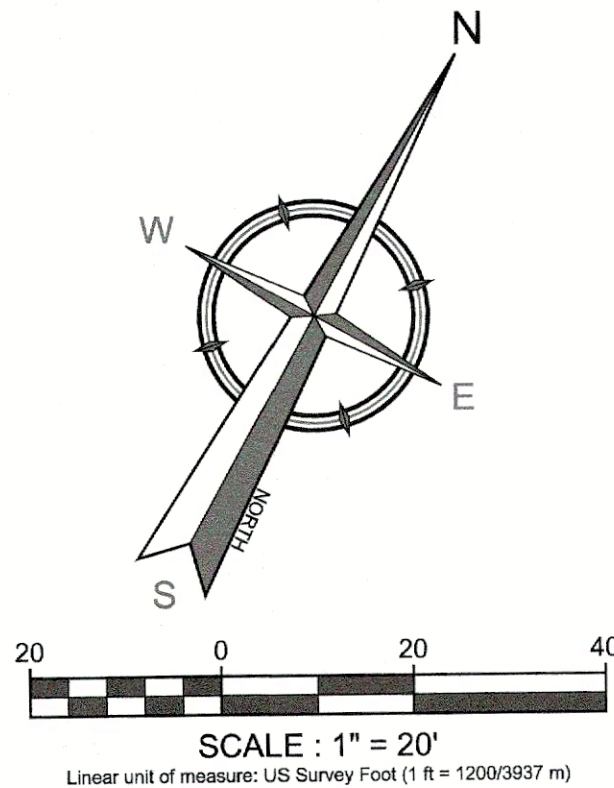


[Handwritten signature]

9/17/25

Proposed Storm Pipe Table					
Pipe I.D.	Description	Length	Invert Up	Invert Dn	Slope
SP 1	24"HDPE	10'	1079.69	1079.50	2.00%
SP 2	18"HDPE	115'	1087.40	1086.25	1.00%
SP 3	18"HDPE	61'	1088.00	1087.40	1.00%
SP 4	12"HDPE	62'	1089.49	1088.00	2.38%
SP 5	12"HDPE	33'	1089.82	1089.49	1.00%
SP 6	12"HDPE	68'	1087.50	1085.18	3.43%
SP 7	12"HDPE	9'	1086.34	1086.25	1.00%
SP 8	24"HDPE	5'	1079.95	1079.85	2.00%
SP 9	18"HDPE	48'	1082.96	1081.88	2.23%
SP 10	18"HDPE	15'	1083.12	1082.96	1.04%
SP 11	12"HDPE	24'	1079.98	1080.46	2.00%
SP 12	12"HDPE	5'	1079.95	1079.98	0.50%
SP 13	18"HDPE	114'	1081.88	1079.95	1.89%
SP 14	18"HDPE	110'	1085.18	1083.12	1.87%
SP 15	18"HDPE	107'	1086.25	1085.18	1.00%
SP 16	18"HDPE	16'	1089.47	1089.31	1.00%
SP 17	18"HDPE	131'	1089.31	1088.00	1.00%
SP 18	12"HDPE	8'	1087.40	1087.48	1.00%

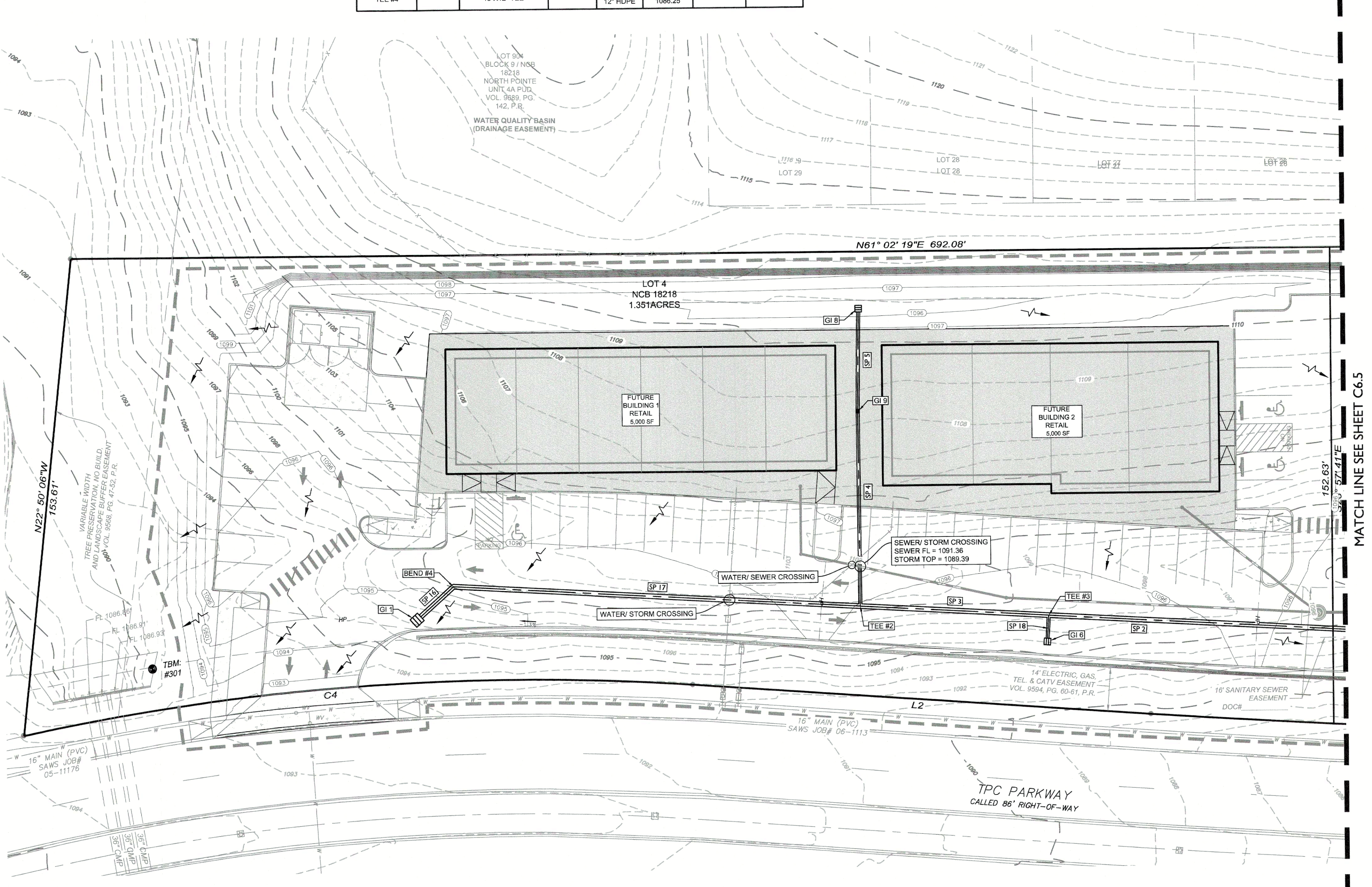
Proposed Storm Structure Table							
Structure I.D.	Size	Description	Rim/Grate	Pipes (In)	Inverts (In)	Pipes (Out)	Inverts (Out)
BEND #1	12"	45° BEND	1081.10	12" HDPE	1079.98	12" HDPE	1079.98
BEND #2	18"	45° BEND	1083.52	18" HDPE	1081.88	18" HDPE	1081.88
BEND #3	18"	45° BEND	1084.60	18" HDPE	1082.96	18" HDPE	1082.96
BEND #4	18"	45° BEND	1091.09	18" HDPE	1089.31	18" HDPE	1089.31
GI 1	3' x 3'	GRATE INLET	1094.47			18" HDPE	1089.47
GI 2	2' x 2'	GRATE INLET	1094.31			12" HDPE	1086.34
GI 3	2' x 2'	GRATE INLET	1093.86	18" HDPE	1083.12	18" HDPE	1083.12
GI 4	2' x 2'	GRATE INLET	1088.44	18" HDPE	1079.95	24" HDPE	1079.95
GI 5	1.5' x 1.5'	GRATE INLET	1087.84			12" HDPE	1080.46
GI 6	2' x 2'	GRATE INLET	1095.02			12" HDPE	1087.48
GI 7	1' x 1'	GRATE INLET	1096.10			12" HDPE	1087.50
GI 8	2' x 2'	GRATE INLET	1095.32			12" HDPE	1089.82
GI 9	1' x 1'	GRATE INLET	1097.11	12" HDPE	1089.49	12" HDPE	1089.49
HW #1		CONCRETE HEADWALL	1080.86	24" HDPE	1079.50		
JF #1		JFPD0808 (8'X11')					
JF IN		JELLY FISH FL IN		24" HDPE	1079.85		
JF OUT		JELLY FISH FL OUT				24" HDPE	1079.69
TEE #1		18"X12" TEE		12" HDPE 18" HDPE	1085.18 1085.18	18" HDPE	1085.18
TEE #2		18"X12" TEE		12" HDPE 18" HDPE	1088.00 1088.00	18" HDPE	1088.00
TEE #3		18"X12" TEE		18" HDPE 12" HDPE	1087.40 1087.40	18" HDPE	1087.40
TEE #4		18"X12" TEE		18" HDPE 12" HDPE	1086.25 1086.25	18" HDPE	1086.25



EXISTING		LEGEND		PROPOSED	
LIMITS OF CONSTRUCTION		RIGHT OF WAY LINE		PROPERTY LINE	
EDGE OF PAVEMENT		CURB		RIBBON CURB	
SIDEWALK		FENCES		CATCH BASIN	
DRAIN INLET		STORM MANHOLE		SANITARY MANHOLE	
FLARED END SECTION		HEADWALL		HYDRANT	
POLE MOUNTED LIGHT		CONTOURS		SPOT ELEVATION	
DIRECTION OF OVERLAND FLOW		TOP OF CURB ELEVATION		BOTTOM OF CURB ELEVATION	
TOP OF DEPRESSED CURB ELEVATION		FINISHED FLOOR ELEVATION		HIGH POINT	
SANITARY PIPE		STORM PIPE			

LINE DATA		
SEGMENT	DIRECTION	LENGTH
L1	S 61° 02' 19" W	130.46'
L2	S 65° 14' 10" W	147.37'

CURVE DATA				
SEGMENT	RADIUS	LENGTH	DELTA	CHORD
C1	757.00'	422.90'	31° 58' 42"	N 45° 02' 58" E 417.04'
C2	914.00'	510.13'	31° 58' 41"	S 45° 02' 58" W 503.53'
C3	2957.00'	216.63'	4° 11' 51"	S 63° 08' 14" W 216.58'
C4	768.00'	215.81'	16° 06' 01"	S 57° 11' 10" W 215.10'



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Engineering & Design

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Formerly Known as

811

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ALL STATES REQUIRE NOTIFICATION OF EXISTING UTILITIES BEFORE ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE.

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

STATE OF TEXAS

BURT P. WELLMANN

100253

PROFESSIONAL ENGINEER

9/12/25

Burt P. Wellmann

TPC COMMERCIAL

FOR

GORDON HARTMAN FAMILY FOUNDATION

LOT 4
LOT 5
BLOCK 13
NCB 18218

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers

Engineering & Design

AUSTIN
5901 Vega Avenue
Suite 100
Austin, TX 78735
Phone: 512.287.8370
COLLIERS ENGINEERING & DESIGN, INC.
1805 Fossil Pkwy. Suite 100
Austin, TX 78735

SCALE: AS SHOWN

DATE: JUNE 2025

DRAWN BY: RS

CHECKED BY: BW

PROJECT NUMBER: 205-12-02

DRAWING NAME: C-STRM2051202

SHEET TITLE: STORM DRAIN PLAN (1 OF 2)

SHEET NUMBER: C6.4

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

3' x 3' x var Junction Box

Top View: Shows a square top with a central circular opening. Dimension: 6" relative height.

Side View: Shows the vertical profile of the box. Dimension: 36" height.

Bottom Section: Shows the base of the box with four circular knockouts. Dimensions: 36" dia. thinwall knockouts all four sides, 36" walls and floor.

Overall Dimensions: 3' x 3' x var.

Specifications:

- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

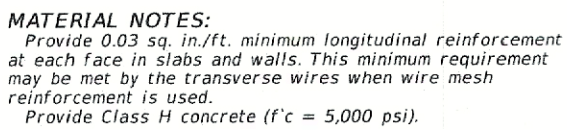
Notes:

- Consult manufacturer before handling

Approximate weight of base: 4,100 lbs

FOR 3' x 3' x var Junction Box			
JOB			
DRAWN	RW	DATE	Rev. No.
		12/1/2015	
FILE		SHEET	
catalog/junction boxes/3x3JB		1 of 1	

- ① For box length = 8'-0"
- ② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



GENERAL NOTES:
 Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.
 See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
 In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".



Texas Department of Transportation

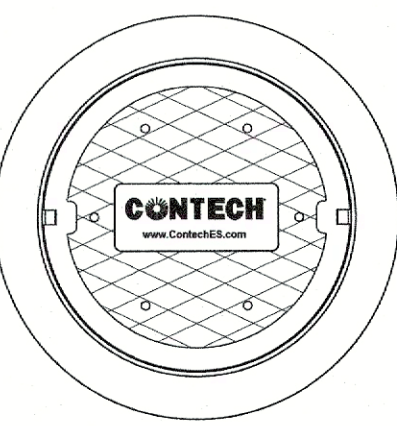
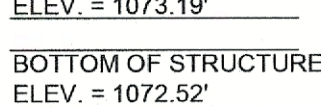
HL93 LOADING

**Bridge
Division
Standard**

SINGLE BOX CULVERTS PRECAST 8'-0" SPAN

SCP-8

FILE: CD-SC8PB-20a.ph  February 2005 REVISED	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">DN TxDOT</td> <td style="width: 25%;">CK TxDOT</td> <td style="width: 25%;">DN TxDOT</td> <td style="width: 25%;">CK TxDOT</td> </tr> <tr> <td>CMAT</td> <td>SECT</td> <td>JOB</td> <td>HIGHWAY</td> </tr> <tr> <td colspan="2">DIST</td> <td colspan="2">COUNTY</td> </tr> <tr> <td colspan="2">SHEET NO.</td> <td colspan="2">SHEET NO.</td> </tr> </table>	DN TxDOT	CK TxDOT	DN TxDOT	CK TxDOT	CMAT	SECT	JOB	HIGHWAY	DIST		COUNTY		SHEET NO.		SHEET NO.	
DN TxDOT	CK TxDOT	DN TxDOT	CK TxDOT														
CMAT	SECT	JOB	HIGHWAY														
DIST		COUNTY															
SHEET NO.		SHEET NO.															



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

JELLYFISH DESIGN NOTES		
JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VAULT AND/OR SHALLOW ORIENTATIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY WILL BE DETERMINED BY ENGINEER OF RECORD		
CARTRIDGE SELECTION		
CARTRIDGE LENGTH	54"	
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"	
FLOW RATE HIGH-LO/ DRAINDOWN (CF5) (PER CART)	0.178 / 0.089	
MAX. TREATMENT (CF5)	4.50	
DECK TO INSIDE TOP (MIN) (B)	5.00	

SITE SPECIFIC DATA REQUIREMENTS						
STRUCTURE ID						JF
WATER QUALITY FLOW RATE (cfs)						3.90
PEAK FLOW RATE (cfs)						16.45
RETURN PERIOD OF PEAK FLOW (yrs)						25
# OF CARTRIDGES REQUIRED (HF / DD)						20.4
CARTRIDGE LENGTH						54"
PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL	
INLET #1	1079.85	HDPE	24"	"	"	
INLET #2	1079.85	HDPE	24"	"	"	
OUTLET	1079.85	HDPE	24"	"	"	
SEE GENERAL NOTES 6.7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.						
RIM ELEVATION						1068.20'
ANTI-FLOTATION BALLAST			WIDTH	HEIGHT		
NOTES/SPECIAL REQUIREMENTS:						
* PER ENGINEER OF RECORD						

GENERAL NOTES:

1. CONTACT TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.contechcs.com
3. ALL QUALITY CONTROL MEASURES SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO H-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH-TO-STRUCTURE AND GROUND-TO-STRUCTURE LOADS. THE OUTLET PIPE INVERT ELEVATION, ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M308 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO AASHTO C-87M, ASTM C-818, AND AASHTO LOAD FACTOR DESIGN METHOD.
6. THE INLET PIPE SHALL BE EQUAL TO OR GREATER THAN THE OUTLET PIPE.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.

B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.

C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).

D. DAMAGE TO EXISTING OR ADJACENT STRUCTURES SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTRACTOR TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

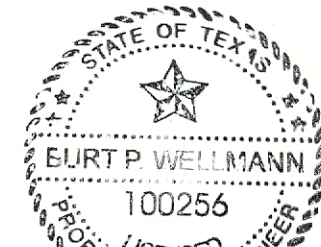
8' x 11' JELLYFISH - 858792 - 01
 COMMERCIAL - GORDON HARTMAN FOUNDATION
 SAN ANTONIO, TX
 SITE DESIGNATION: JELLYFISH



EJJI EAST JORDAN IRON WORKS EST.1263 800-626-4653 www.ejji.com MADE IN USA	
PRODUCT NUMBER 45736003	
CATALOG NUMBER V5736	
CATCH BASIN ASSEMBLY	
LOAD RATING HEAVY DUTY	
COATING UNDIPPED	
MATERIAL SPECIFICATION COVER - GRAY IRON ASTM A48 CL35B FRAME - GRAY IRON ASTM A48 CL35B	
OPEN AREA 652 SQ IN 4206 SQ cm	
✓ DESIGNATES MACHINED SURFACE	
DRAWN TCL	DATE 11/05/02
LAST REVISED GA0	DATE 02/14/07
REFERENCE INFORMATION 45736010 45736030	



REV	DATE	DRAWN BY	DESCRIPTION
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Colliers
Engineering
& Design

AUSTIN
5901 Vega Avenue
Suite 100
Austin, TX 78735
Phone: 512.287.8370
COLLIERS ENGINEERING & DESIGN, INC.
TYPE Firm: F-14502

SHEET NUMBER: C6.6

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

SEWAGE COLLECTION SYSTEM PLAN

TPC COMMERCIAL



Legal Description: TOTAL OF 6.639 ACRES, ESTABLISHING LOT 1 AND LOT 2, BLOCK13, N.C.B. 18218 OUT OF LOT 1, BLOCK 13, N.C.B 18218, NORTH POINTE COMMERCIAL AS RECORDED IN VOL. 9594, PG. 60 - 61 OF THE DEED AND PLAT RECORDS OF BEXAR COUNTY, IN THE CITY OF SAN ANTONIO, BEXAR COUNTY, TEXAS

Location: Approximately 3,388 feet southwest of TPC Parkway & U.S. Hwy 281 N, San Antonio, TX 78259.

September 17, 2025

Prepared for:

Gordon Hartman Family Foundation
5210 Thousand Oaks, Ste. 1318
San Antonio, Texas 78233

Prepared by:


BURT P. WELLMANN, P.E.
License No. 100256

3421 Paesanos Parkway San Antonio TX 78231 US
Main: 210-979-8444
Colliersengineering.com

Project No. 205-12-02

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: TPC COMMERCIAL				2. Regulated Entity No.:			
3. Customer Name: Gordon Hartman Family Foundation				4. Customer No.:			
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
7. Land Use: (Please circle/check one)	Residential		☒ Non-residential		8. Site (acres):		SITE BOUNDARY 6.639 AC
9. Application Fee:	\$650		10. Permanent BMP(s):				
11. SCS (Linear Ft.):	387		12. AST/UST (No. Tanks):		Not Applicable		
13. County:	Bexar		14. Watershed:		SALADO CREEK		

Application Distribution

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

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

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

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

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

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

Burt P. Wellmann, P.E.

Print Name of Customer/Authorized Agent


Signature of Customer/Authorized Agent

9/17/25
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 SECTION

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: Burt P. Wellmann, P.E.

Date: 9/17/25

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: TPC COMMERCIAL
2. County: Bexar
3. Stream Basin: East Elm Creek
4. Groundwater Conservation District (If applicable): Edwards Aquifer Authority & Trinity Glen Rose
5. Edwards Aquifer Zone:
 - ☒ Recharge Zone
 - ☐ Transition Zone
6. Plan Type:
 - ☐ WPAP
 - ☒ SCS
 - ☐ Modification
 - ☐ AST
 - ☐ UST
 - ☐ Exception Request

7. Customer (Applicant):

Contact Person: Gordon V. Hartman
Entity: Gordon Hartman Family Foundation
Mailing Address: 5210 Thousand Oaks, Ste. 1318
City, State: San Antonio, TX Zip: 78233
Telephone: 210-490-1798 FAX: _____
Email Address: Jaime@GordonHartman.com

8. Agent/Representative (If any):

Contact Person: Burt P. Wellmann, P.E.
Entity: Colliers Engineering and Design
Mailing Address: 3421 Paesanos Pkwy, #200
City, State: San Antonio, TX Zip: 78231
Telephone: 726 223 4767 FAX: _____
Email Address: burt.wellmann@collierseng.com

9. Project Location:

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

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

The project site is located at 2837 TPC Parkway, San Antonio, TX 78259. To reach the site from the TCEQ San Antonio Regional Office at 14250 Judson Road, take Judson Road to Loop 1604 East, then exit at Bulverde Road and head north. After approximately 2.5 miles, turn left onto TPC Parkway. The site is located less than half a mile from the Bulverde Road and TPC Parkway intersection, on the north side of TPC Parkway, directly across from Johnson High School

11. ☒ **Attachment A – Road Map.** A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.
12. ☒ **Attachment B - USGS / Edwards Recharge Zone Map.** A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:
- ☒ Project site boundaries.
 - ☒ USGS Quadrangle Name(s).
 - ☒ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
 - ☒ Drainage path from the project site to the boundary of the Recharge Zone.
13. ☒ **The TCEQ must be able to inspect the project site or the application will be returned.** Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.
- ☒ Survey staking will be completed by this date: Completed

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

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

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

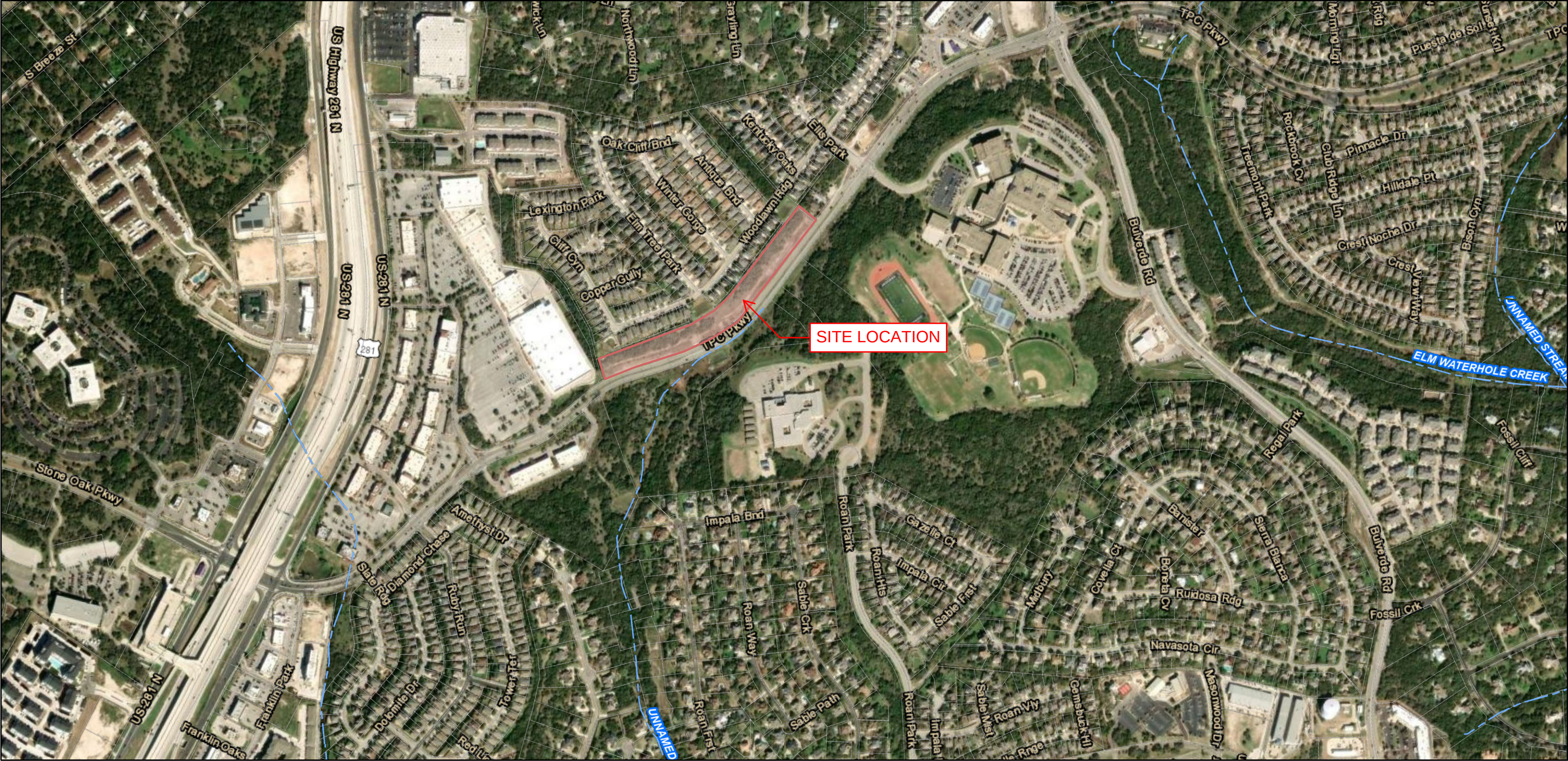
- (3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

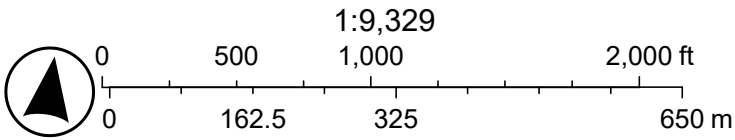
18. The fee for the plan(s) is based on:

- ☐ 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.

TPC COMMERCIAL



6/12/2025, 8:21:34 AM



Esri, HERE, Garmin, (c) OpenStreetMap contributors, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, KFW GIS

PROJECT DESCRIPTION

The TPC Commercial project is located on an undeveloped 6.639-acre tract, approximately 3,388 feet southwest of the intersection of TPC Parkway and U.S. Highway 281 North, within the jurisdiction of the City of San Antonio, Texas. The site lies within the Salado Creek watershed and the Bulverde USGS quadrangle and is entirely situated within the Edwards Aquifer Recharge Zone. The project site is exempt from mandatory detention requirements and does not intersect the 100-year floodplain, as verified by FEMA Flood Insurance Rate Map (FIRM) Panel #48029C0140G, effective September 29, 2010.

The development will consist of four (4) commercial retail buildings, along with associated improvements including parking areas, drive aisles, sidewalks, retaining walls, paving, and utility infrastructure.

As part of this development, a new 8-inch sanitary sewer collection line will be installed to serve the proposed buildings. The new line will connect to existing sanitary sewer manhole #461183. The proposed sewer main will consist of approximately 387 linear feet of 8-inch SDR-26 PVC pipe, designed to meet applicable standards and convey sanitary flow generated by the development to the existing public sewer system. All construction will comply with City of San Antonio and San Antonio Water System (SAWS) design criteria.

GEOLOGIC ASSESSMENT SECTION



Engineering
& Design

Geologic Assessment

Pursuant to The Texas Commission on Environmental Quality Standard Practice
For "Geologic Assessments" (Title 30 Texas Administrative Code (TAC), Part 1, Chapter 213; Texas
Water Code, §26.401; and Texas Occupations Code, Chapter 1002)

March 7, 2025

TPC Parkway Commercial – Design

Located at 2837 TPC Parkway,
San Antonio, Bexar County, Texas 78259

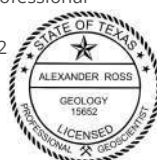
Colliers Engineering & Design Project Number: 24011579A

Prepared for:

Hartman Gordon Family
Foundation
1202 W Bitters Road Ste. 1200,
San Antonio, TX 78216-8088

Prepared by:

Alexander S. Ross
State of Texas, Professional
Geoscientist
License No. 15652



Ezra C. Urigwe
State of Texas, Associate
Geoscientist

Colliers Engineering & Design

3421 Paesanos Parkway,
San Antonio, Texas 78231
Main: 210 979 8444
Colliersengineering.com

Project No. 24011579A

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Narrative Description of Site Geology | Attachment C

INTRODUCTION

Colliers Engineering & Design was contacted by Hartman Gordon Family Foundation to conduct a Geologic Assessment for the TPC Parkway Commercial - Design project. The project site is located northeast of the intersection of U.S. Route 281 and TPC Parkway, at 2837 TPC Parkway, San Antonio, Bexar County, Texas 78258 (i.e., subject property or project site). Bexar County Appraisal District (BCAD) reflects the subject property by the following: *Bexar Parcel: 1124090; Owner: HARTMAN GORDON FAMILY FOUNDATION.*

METHODOLOGY

Colliers Engineering & Design conducted a geologic assessment for the property on February 24th and 28th, 2025. The pedestrian survey was completed by walking parallel transects spaced approximately 50 foot spacing under the regulatory guidance by the TCEQ in the *Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones (Rev. 10-01-04)*. Closer spacing was used in areas where vegetation inhibited clear observation. Observed potential karst features (i.e., topographic depressions, holes, and animal burrows) were carefully examined for evidence of subsurface extent. The features were also probed and checked for the presence of air flow, which may indicate the presence of a subsurface void space. The locations of identified features were recorded with a handheld GPS unit. The locations of identified features were recorded with a handheld GPS unit with accuracy of +/- 5 feet, and photo-documented.

SITE DESCRIPTION

The subject property is comprised of a single parcel, represented by BCAD property ID: 1124090. The subject property is comprised of approximately 6.639-ac, and is located at 2837 TPC Parkway, San Antonio, Texas 78258. According to BCAD property information, the legal description for the parcel is provided below:

- BCAD ID 1124090: *NCB 18218 BLK 13 LOT 1 (NORTH POINTE COMMERCIAL)*

Background

Based on a review of historical aerial photographs, the project site appears to have existed as undeveloped, rural land prior to the early 2000s. Aerial imagery reviewed between 2000 and 2006 depicts a dirt path traversing across the central region of the property. The dirt path terminated at a retail building located to the northwest. Beginning in 2008, residential development for the Cliffs at Cibolo subdivision occurs immediately north. Subsequently, a property fence was constructed along the northern boundary of the Subject Property. The site vicinity appears disturbed in conjunction with residential and commercial development in the surrounding area. Prior to 2008, TPC Parkway is constructed to the south as a primary roadway. The road becomes the southern boundary of the Subject Property. In conjunction with construction of the roadway, land clearing occurred on the Subject Property. Areas within boundaries of the property that were nearest to the roadway appear to have been cleared and raised with fill material. Additionally, two large concrete drainage culverts were constructed on the Subject Property prior to 2008 to divert waters from Elm Creek. In 2010, minor improvements are made to the drainage floodway on site, including the construction of two concrete spillways. Both spillways appear to be trenched through soils. From 2010 to 2025, the Subject Property remains as undeveloped and vacant land, covered with vegetation and residual soils.

Geologic Setting

The subject property is located within the **Recharge Zone** of the Edwards Aquifer. The overall potential for fluid migration to the Edwards Aquifer in this area has been characterized as low to intermediate. Regarding bedrock lithology, the site lies within the dolomitic member of the Kainer Formation (referred to as Kek/Kkd in **Attachment A and D**). The dolomitic member of the Kainer Formation is dominantly composed of massively bedded, light gray crystalline limestone. Lithology consists of hard, dense mudstone, wackestone, and dolomitic limestone. Chert is common within the upper section of the unit and presents as beds or large nodules. The dolomitic member of the Kainer formation is generally 100 to 130 feet thick near the site. Cavern development within the Kkd is commonly related to the structure of the bedding planes within the formation.

The surrounding area exhibits a dominant fault trend of N35°E, based on the average of the trends of faults within the surrounding area and from published maps (Stein & Ozuna, 1995; Barnes, 1961; Clark, 2023).

Hydrologically, porosity of the unit ranges between 5 and 20 percent, and may be fabric selective or non-fabric selective. The fabric selective porosity consists of interparticle, intergranular, intercrystalline, moldic, burrow, and bedding plane porosity. The non-fabric selective porosity consists of vug, fracture, and cave porosity (Maclay and Small, 1976). Bioturbated beds contribute to higher rates of porosity due to interconnected void space within the unit. The unit is water bearing and has been characterized by deep vertical pits. Field reconnaissance conducted by CED did not readily identify caves, sinkholes, or potential habitat for endemic species at surface level.

Following tectonic activity and subsequent erosion in the Cretaceous period, South Central Texas experienced submersion by marine transgression in the Late Cretaceous. As a result, the Kainer Formation was deposited. Consequently, many marine marker fossils can be found within the formation, including *Toucasia* sp., *Dictyoconus walnutensis*, and other rudists. The contact between the dolomitic member and the overlying Kirschberg Evaporite Member is conformable.

Karst Zone

According to United States Fish and Wildlife Service (USFWS) karst zone maps, the subject property wholly lies within **Karst Zone 1**, which is defined as areas known to contain endangered karst invertebrate species. Karst Zone 1 includes areas known to contain endangered cave fauna. In accordance with USFWS guidelines (published in 2015), a karst feature survey is required within Karst Zones 1, 2, and 3 to identify any karst features which may contain potential karst invertebrate habitat. The subject property lies within the Stone Oak Karst Fauna Region (KFR). The nearest critical habitat unit (CHU) is located approximately 1.3-miles southeast of the subject property. This CHU is identified as Unit 13, for the listed species beetle (*Rhadine exilis*). Notably, another CHU is located approximately 1.3-miles to the southwest. The CHU is identified as Unit 12, for the listed species beetle (*Rhadine exilis*). Limiting conditions identified during the site reconnaissance which may affect the ability to identify karst features included dense vegetation and overgrown areas, which limited observations of the ground surface in certain areas.

Soils Table

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).

Table 1: Soil Description Summary

Soil Name	Group	Thickness (feet)
Eckrant-Rock outcrop association, 8 to 30 percent slopes (TaD)	D	0-3

Soil Group Classifications

- 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.

The Eckrant series consists of well drained, moderately slowly permeable soils that are very shallow to shallow over indurated limestone bedrock. These nearly level to very steep soils formed in residuum derived from limestone and occur on summits, shoulders, and backslopes of ridges on dissected plateaus (USDA). In areas where natural soil was exposed, the soil resembled the descriptions in the soil surveys and whose descriptions are listed above.

FEATURES

The following outlines features identified on the subject property by site reconnaissance and review of published geological literature. Examples of the features are described below, and photographs are provided in the appendices.

S-1: Manmade feature in bedrock (MB). Feature is an existing sanitary sewer line that is not located beneath pavement. The utility has been trenched through bedrock and backfilled with a mix of fine and coarse material that may contribute to higher permeability rates than surrounding undisturbed areas.

Approximately 1,292.49 linear feet of buried sewer line spans the subject property. Notably, seven sanitary manholes were observed within the boundaries of the property during site reconnaissance. The locations of each of the manholes are depicted in **Attachment D**. The sewer utility is buried and the likelihood of storm water migrating through the trenches into the Edwards Aquifer is considered unlikely. Therefore, the probability of rapid infiltration is low.

S-2: Vuggy rock zone. Overall, this zone spanned across an area measuring approximately 50' x 20'. Bedrock outcrops of the Kainer formation were identified within the zone during our site reconnaissance. Notably, large pieces of float rock were also observed in the area. The area also included vuggy rock with vertical pathways visibly extending through bedrock. The vuggs appeared to be a result of the downward migration of water over time. Vuggs are filled with loose leaf litter and soils. Feature is located at the top edge of a drainage, and no indication of daylighting or endemic species were observed. A chemically weathered bedding plane of the dolomitic member of the Kainer Formation was encountered nearby (Location: 29°39'16.32"N, 98°26'30.99"W, shown as **Image A** in appendices). Another relatively well-preserved bedding plane was observed in this area. A strike and dip measurement of N25°E/05° SE was collected on the bedding plane during the site visit (shown as **Image C** in appendices).

S-3: Bedrock outcrop. Vuggy structures were identified atop exposed bedrock and resembled an irregular network of carbonate veins measuring 3-15 mm in width (shown as **Image B** in appendices).

S-4: Solution-enlarged fracture. Feature formed near the top of a drainage and at the base of a tree. Opening is triangular, with each side measuring approximately 6 inches (shown as **Image F** in appendices). The feature extends approximately 2 feet inward before terminating in soil. Roots of large cedar tree

exploited a small fracture and eventually pushed large pieces of float rock apart. Void space may have undergone dissolution, however, the cedar tree appeared to be the primary factor in rock movement. Feature is filled with loose soil and leaf litter, and likely serves as an animal burrow. No airflow was detected, and the feature terminates in soil. Based on a lack of visible and preferential pathways, the likelihood of storm water migrating through the feature into the Edwards Aquifer is considered unlikely. Therefore, the probability for rapid infiltration is low.

S-5: Solution-enlarged fracture. Feature was identified on a weathered bedding plane (shown as **Image D** in appendices). The main axis of the fracture is oriented at N35°E. The fracture is 3 inches wide and travels approximately 32 inches horizontally. No airflow was detected, and the fracture was filled with soil and natural debris. Therefore, the probability for rapid infiltration is low, and potential migration of fluid into the aquifer is considered unlikely.

S-6: Solution cavity (shown as **Image G** in appendices). Feature is completely rimmed on all sides within bedrock, and measures 6 inches around. Void space travels vertically 8 inches and is filled with loose soil and leaf litter. Excavation of loose soil within the feature revealed additional void space. Feature terminates to compact soil at the bottom. No airflow or indication of moisture was observed within the feature. Soil filling in the solution cavity may indicate rapid infiltration. However, considering the size and placement of the feature near a hilltop, fluid migration and infiltration rate has been characterized as low to intermediate.

S-7: Solution-enlarged fracture (shown as **Image H** in appendices). Feature appears to have initially formed as two separate solution cavities that were then joined by further dissolution of bedrock. Feature measures approximately 2 foot across and four inches wide. Surface probing concluded that the feature terminates in compact soil. No airflow indicated, and fluid migration and infiltration rate has been characterized as low.

S-8: Solution-enlarged fracture (shown as **Image E** in appendices). Feature appears to have initially formed as a solution cavity that terminated in compact soil. Opening of the main cavity is approximately five inches round. Feature is not sensitive and does not appear to be capable of holding water. Fluid migration and infiltration rate has been characterized as low.

CONCLUSIONS

According to United States Fish and Wildlife Service (USFWS) karst zone maps, the subject property wholly lies within **Karst Zone 1**, which is defined as areas known to contain endangered karst invertebrate species. CED has conducted a geologic assessment on February 24th and 28th, 2025, pursuant to The Texas Commission on Environmental Quality Standard Practice for "Geologic Assessments" (Title 30 Texas Administrative Code (TAC), Part 1, Chapter 213; Texas Water Code, §26.401; and Texas Occupations Code, Chapter 1002).

A total of eight features were identified during the geologic assessment. A sanitary sewer line, a vuggy zone, a bedrock outcrop, four solution-enlarged fractures, and one solution cavity were identified as notable features encountered during the geologic assessment. Limiting conditions encountered during site reconnaissance which may affect the ability to identify karst features included dense vegetation, which limited observations of the ground surface and subsurface in certain areas. The possibility of additional features hidden beneath existing soil stratum is likely. In the event features are encountered during construction activity, work should cease, and the Texas Commission on Environmental Quality (TCEQ) should be notified to further evaluate features prior to proceeding.



Engineering
& Design

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) FORM 0585 –
TCEQ-0585) Rev. 02-11-15

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: Alexander S. Ross,
P.G.

Telephone: (856) 242-2036

Fax: (210) 979-8441

Date: 3/7/2025

Representing: Colliers Engineering & Design, TBPE Firm #9513 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: TPC Parkway Commercial - Design

Project Information

1. Date(s) Geologic Assessment was performed: February 24th and 28th, 2025

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)
Eckrant-Rock outcrop association, 8 to 30 percent slopes (TaD)	D	0-3

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" = N/A'
 Site Geologic Map Scale: 1" = 100'
 Site Soils Map Scale (if more than 1 soil type): 1" = N/A'
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 | ATTACHMENT A

GEOLOGIC ASSESSMENT TABLE						PROJECT NAME: TPC Parkway Commercial - Design													
LOCATION			FEATURE CHARACTERISTICS											EVALUATION		PHYSICAL SETTING			
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10	11	12	
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY	CATCHMENT AREA (ACRES)	TOPOGRAPHY	
						X	Y	Z		10						<40	>40	<1.6	>1.6
S-1	29°39'17.90"N	98°26'26.70"W	MB	30	Kek	1292.49	0.66	-	-	0	-	-	C,O,F,V	5	35	X		X	Drainage
S-2	29°39'16.21"N	98°26'30.90"W	Z	30	Kek	50.00	20.00	-	-	0	-	-	N	5	35	X		X	Hilltop
S-3	29°39'16.18"N	98°26'31.56"W	O	5	Kek	10.00	10.00	-	-	0	-	-	N	0	5	X		X	Hilltop
S-4	29°39'15.81"N	98°26'32.51"W	SF	20	Kek	0.50	2.00	-	-	0	-	-	O,V	5	25	X		X	Hilltop
S-5	29°39'15.35"N	98°26'33.19"W	SF	20	Kek	0.25	2.66	-	N35°E	0	-	-	O,V	5	25	X		X	Hilltop
S-6	29°39'15.16"N	98°26'33.26"W	SC	20	Kek	0.50	0.66	-	-	0	-	-	C,O,F,V	10	30	X		X	Hilltop
S-7	29°39'15.04"N	98°26'33.41"W	SF	20	Kek	0.33	2.00	-	-	0	-	-	O,V	5	25	X		X	Hilltop
S-8	29°39'13.61"N	98°26'36.57"W	SF	20	Kek	0.42	1.00	-	-	0	-	-	O,V	5	25	X		X	Hilltop

* DATUM: NAD 83

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

Sheet 1 of 1

Attachment A

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



STRATIGRAPHIC COLUMN | ATTACHMENT B

TPC Parkway Commercial - Design

Stratigraphic Column

[Hydrogeologic subdivisions modified from Maclay and Small (1976); groups, formations and members modified from Rose (1972); lithology modified from Dunham (1962); and porosity type modified from Choquette and Pray (1970); CU, confining unit; AQ, aquifer]

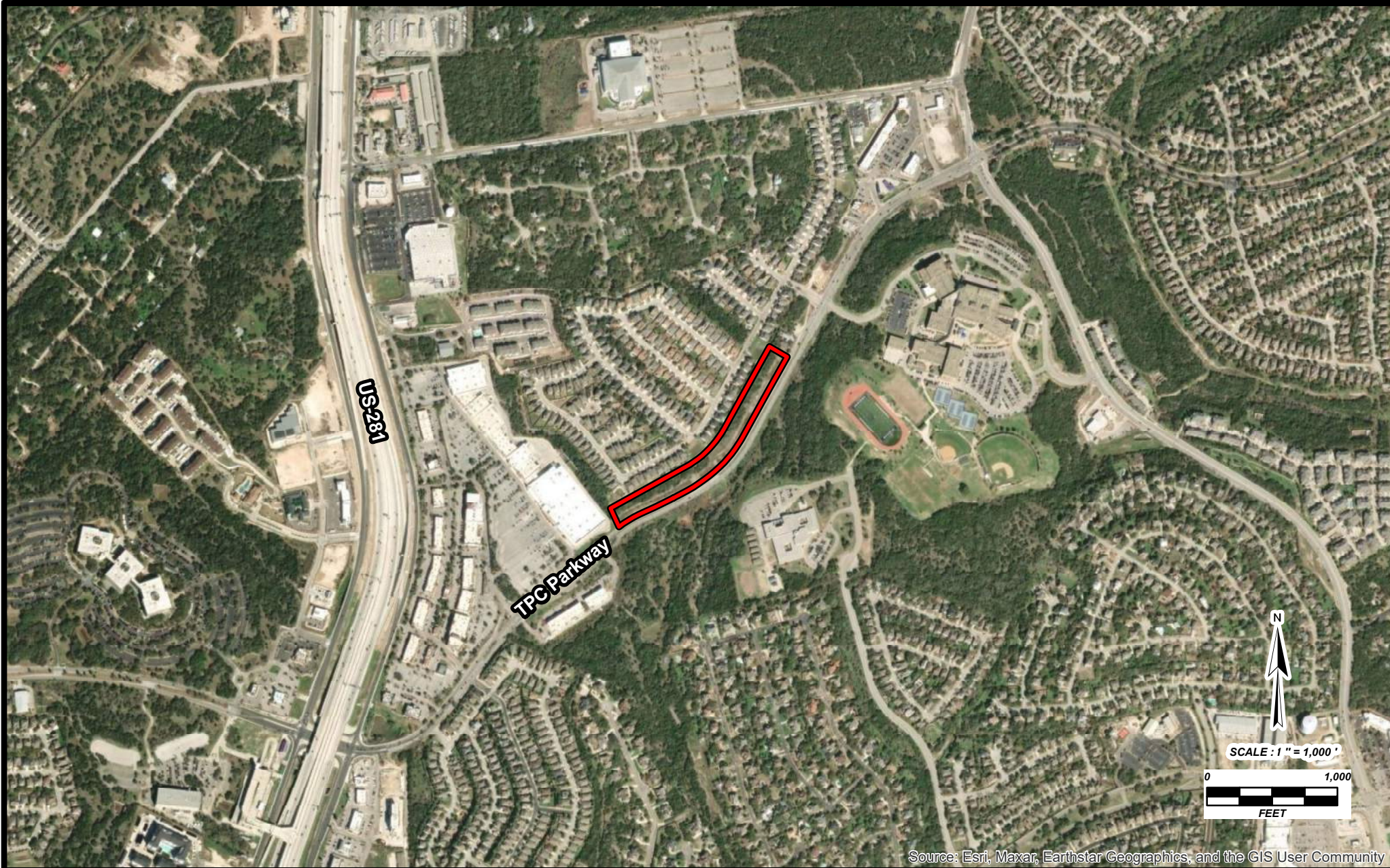
Hydrogeologic subdivision		Group, formation, or member	Hydrologic function	Thickness (feet)	Lithology	Field Identification	Cavern development	Porosity/permeability type			
Quaternary	Pleistocene	Fluviatile terrace deposits	N/A	5 - 70	Sand, silt, clay, rounded to angular limestone in various proportions; siliceous, coarse; chert and dolomite	Alluvium; lithic sand and silt to sandy gravel	None	Generally porous, moderate to high permeability			
	Upper Confining Units	Austin Chalk	CU; rarely AQ	130-150	White to light-tan to gray limestone; chalk and marl; sparsely glauconitic	White, chalky limestone; <i>Pycnodonte aucella</i> <i>Inoceramus subquadratus</i>	Rare	Low porosity; rare water production from fractures/ low permeability			
Upper Cretaceous		Eagle Ford Group	CU	30-50	Brown, flaggy shale and argillaceous limestone	Thin flagstones; petroliferous	None	Primary porosity lost/low permeability			
		Buda Limestone	CU	40-50	Buff, light gray, dense mudstone	Limestone with calcite-filled veins	Minor surface karst	Low porosity/low permeability			
		Del Rio Clay	CU	40-50	Blue-green to yellow-brown clay	Fossiliferous; <i>Ilymatogyra arietina</i>	None	None/primary upper confining unit			
Lower Cretaceous	I	Edwards Aquifer	Edwards Group	Georgetown Formation (Kgt)	Karst AQ; non-karst CU	2-20	Reddish-brown, gray to light tan marly limestone	Marker fossil; <i>Waconella wacoensis</i>	None	Low porosity/low permeability	
	II					AQ	80-90	Mudstone to packstone; <i>miliolid</i> grainstone; chert	Thin graded cycles; massive beds to relatively thin beds; crossbeds	Many subsurface; might be associated with earlier karst development	Laterally extensive; both fabric and not fabric/water-yielding
	III					AQ	70-90	Crystalline limestone; mudstone to grainstone; chert; collapsed breccia	Bioturbated iron-stained beds separated by massive limestone beds; stromatolitic limestone	Extensive lateral development; large rooms	Majority not fabric/one of the most permeable
	IV					CU	20-24	Dense, argillaceous mudstone	Wispy iron-oxide stains	Very few; only vertical fracture enlargement	Not fabric/low permeability; vertical barrier
	V					AQ	50-60	<i>Miliolid</i> grainstone; mudstone to wackestone; chert	White crossbedded grainstone	Few	Not fabric/recrystallization reduces permeability
	VI					AQ	50-60	Highly altered crystalline limestone; chalky mudstone; chert	Boxwork voids, with neospar and travertine frame	Probably extensive cave development	Majority fabric selective/one of the most permeable
	VII					AQ	110-130	Mudstone to grainstone; crystalline limestone; chert	Massively bedded light gray, <i>Toucasia</i> abundant	Caves related to structure or bedding planes	Mostly not fabric; some bedding plane fabric/water-yielding
	VIII					Karst AQ; not karst CU	50-60	Shaly, nodular limestone mudstone and miliolid grainstone	Massive, nodular and mottled, <i>Exogyra texana</i>	Large lateral caves at surface; a few caves near Cibolo Creek	Fabric; stratigraphically controlled/large conduit now at surface; no permeability in subsurface
		Lower confining unit	Upper member of the Glen Rose Limestone	CU; evaporite beds AQ	350 – 500	Yellowish-tan, thinly bedded limestone and marl	Stair-step topography; alternating limestone and marl	Some surface cave development	Some water production at evaporite beds/ relatively impermeable		

(Modified from Small and Hanson, 1994)

ATTACHMENT A

Geologic Framework and Hydrogeologic Characteristics for the Subject Property based on published data highlighted above.

SITE GEOLOGIC MAP | ATTACHMENT D



Prepared for:
Hartman Gordon Family Foundation
1202 W Bitters Road Ste. 1200,
San Antonio, TX 78216-8088

Prepared By:

San Antonio Office
3421 Paesanos Pkwy #200
San Antonio, TX 78231
T: 210.979.8444
www.colliersengineering.com



**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
GEOLOGIC ASSESSMENT**

 **Subject Property/Site**

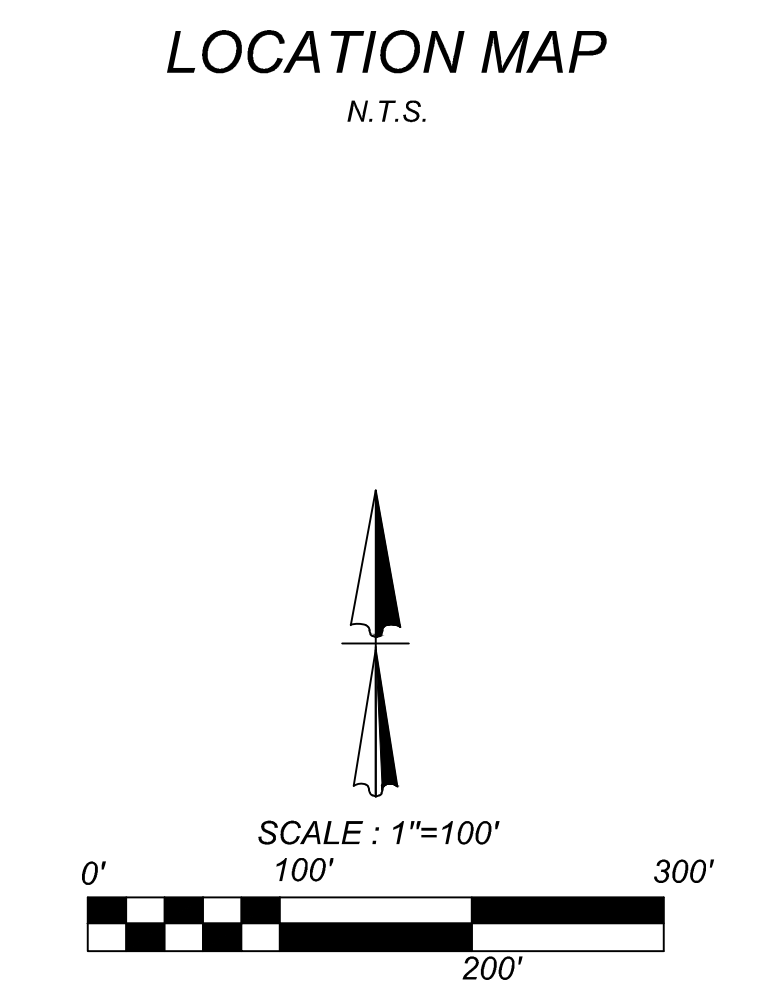
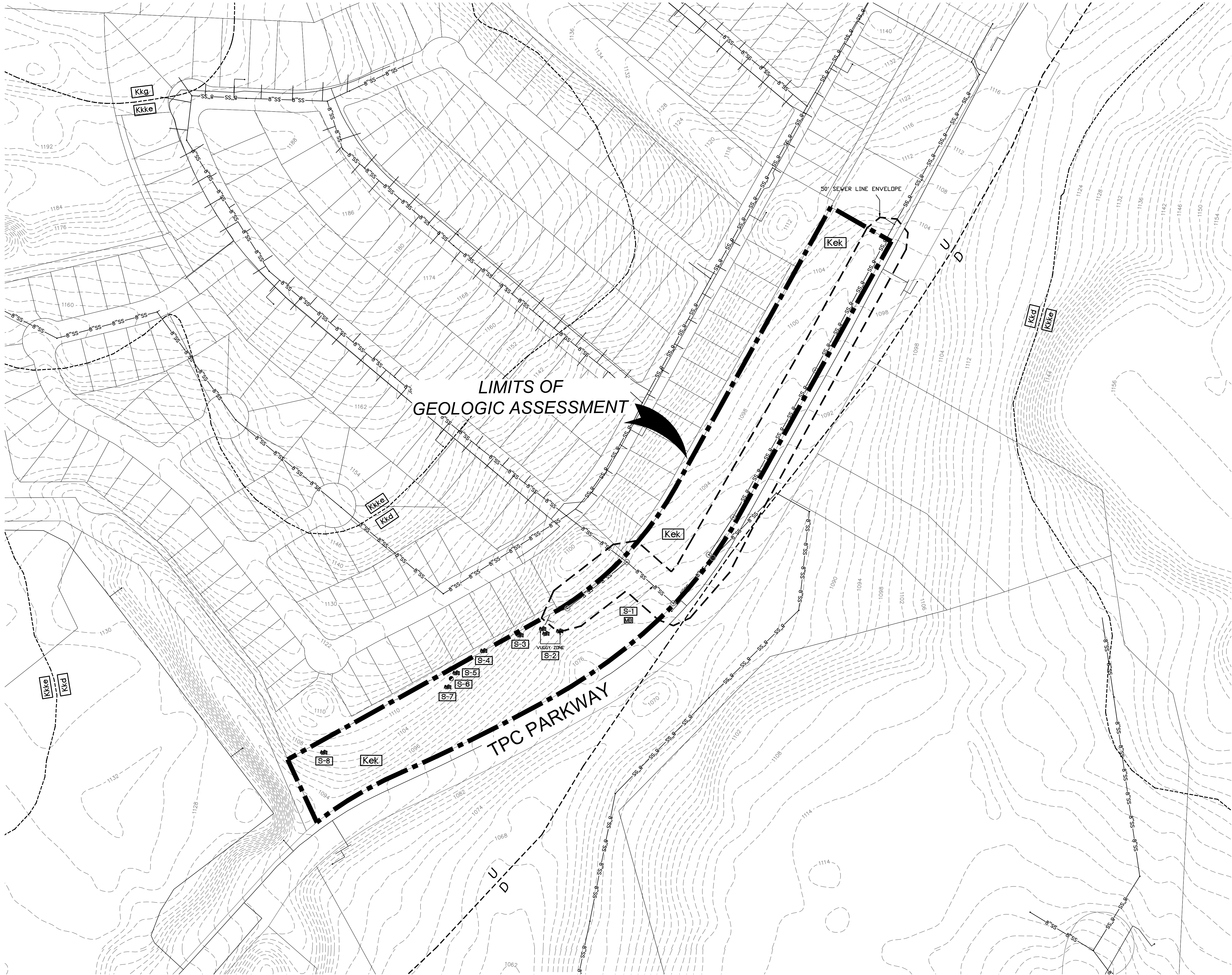


SITE MAP

TPC PARKWAY RETAIL DEVELOPMENT

BEXAR COUNTY, TEXAS

DATE	PROJ NUMBER	DRAWN BY
March 2025	24011579A	E.U.



LEGEND	
	FLUVIAL TERRACE DEPOSITS
	EAGLE FORD GROUP
	BUDA LIMESTONE
	DEL RIO CLAY
	GEORGETOWN LIMESTONE
	KAINER FORMATION
	PERSON FORMATION
	GLEN ROSE FORMATION
	POTENTIAL RECHARGE FEATURE
	DRAINAGE PATHWAY
	CONTACT, LOCATED APPROXIMATELY
	FAULT, LOCATED APPROXIMATELY (D,DOWNTHROWN SIDE;U,UPTHROWN SIDE)
	FAULT EXISTENCE UNCERTAIN
	POSSIBLE FAULT (AS LOCATED BY AERIAL PHOTOGRAPHS)
	STRIKE AND DIP OF BEDDING
	STRIKE AND DIP OF JOINTS
	STRIKE OF VERTICAL JOINTS
	CAVE
	NON-KARST CLOSED DEPRESSION
	SWALLOW HOLE/SINKHOLE
	SOLUTION CAVITY
	OTHER NATURAL BEDROCK FEATURES: VUGGY ROCK, REEF DEPOSITS
	ZONE
	MAN-MADE FEATURE IN BEDROCK
	WATER WELL
	PROPOSED SANITARY SEWER LINE
	EXISTING SANITARY SEWER LINE
	50' SEWER ENVELOPE
	PROPOSED MANHOLE
	EXISTING MANHOLE
	SITE

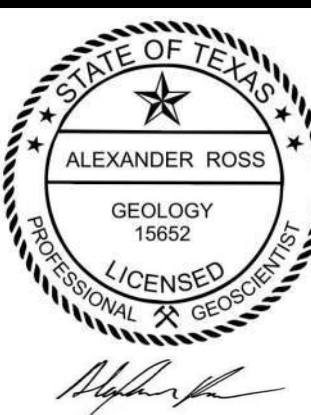
NOTE: THE GEOSCIENTIST SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR PURPOSES OF GEOLOGIC INFORMATION. ALL OTHER INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SIGNED AND SEALED CIVIL ENGINEERING DRAWINGS.

TPC PARKWAY RETAIL DEVELOPMENT
SAN ANTONIO, TEXAS
SITE GEOLOGIC MAP

JOB NO. 24011579A
DATE: FEBRUARY 2025
DRAWN: EU CHECKED: AR

ATTACHMENT

D



SAN ANTONIO
3421 Paesanos Parkway
San Antonio, TX 78231
210.779.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBP# FIRM F-1499 TBP# FIRM F-101450
www.colliersengineering.com

SITE PHOTOGRAPHS

PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 1

Description:

Concrete drainage
spillway identified on
the northernmost side
of the Subject
Property.



Photo No. 2

Description:

Fire hydrant identified
near the northeastern
property corner.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 3

Description:

TPC Parkway as
observed during site
reconnaissance.



Photo No. 4

Description:

A representative image
of grassland observed
center property.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 5

Description:

Concrete drainage
floodway observed
center property.



Photo No. 6

Description:

A continuation of the
previous extent.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 7

Description:

A western view of the property extent. Adjoining residential development is visible in the background.



Photo No. 8

Description:

One of seven sanitary sewer manholes identified within property boundaries.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 9

Description:

Image A: A chemically weathered bedding plane of the dolomitic member of the Kainer Formation observed on site.



Photo No. 10

Description:

Image B: A bedrock outcrop identified on the central region of the site. An irregular network of carbonate veins is visible on the rock face.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 11

Description:

An animal burrow
identified underneath
a tree.



Photo No. 12

Description:

An area of float rock.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 13

Description:

Image D: A solution-enlarged fracture identified near the top of a drainage on property.



Photo No. 14

Description:

An animal burrow identified underneath two large pieces of float rock.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 15

Description:

Image E: Solution-enlarged fracture identified on the western region of the site.



Photo No. 16

Description:

Directed stormwater channel observed west of the property boundary.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 17

Description:

A representative image of the brush and under canopy observed on site.



Photo No. 18

Description:

Aftermath of surficial land clearing associated with the construction of the stormwater drainage channel.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 19

Description:

Image C: Moderately well-preserved bedding plane observed on site. Brunton for scale.



Photo No. 20

Description:

A zone of vuggy, porous limestone identified central property. Karren, linear grooves of dissolution, are evident on the rock face.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 21

Description:

A wide-angle view of an area with a solution-enlarged fracture. The roots of the cedar tree appear to have separated the rock body.



Photo No. 22

Description:

A closer view of Feature S-4.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 23

Description:

Image F: Apparent animal burrow identified within void space between two large pieces of float rock.



Photo No. 24

Description:

Image G: A solution cavity identified within boundaries of the Subject Property. The vertical shaft was approximately six inches round and travelled 8 inches before terminating in soil.



PROJECT NAME:
TPC PARKWAY COMMERCIAL - DESIGN

SITE LOCATION:
2837 TPC PARKWAY SAN ANTONIO, TX

PROJECT No.:
24011579A

Photo No. 25

Description:

Image H: A solution-enlarged fracture that travels horizontally across bedrock.



REFERENCES | ATTACHMENT E

- Arnow, Ted, 1959**, Groundwater Geology of Bexar County, Texas: Texas Board of Water Engineers, Bulletin 5911, 62pp., 18 figs.
- Ashworth, J.B., Jan 1983**, Ground-Water Availability of the Lower Cretaceous Formations in the Hill Country of South-Central Texas, Texas Department of Water Resources, rept., 273, 12pp.
- Barnes, V.L., 1974**, Geologic Atlas of Texas, San Antonio Sheet, Bureau of Economic Geology, The University of Texas at Austin, Texas.
- Clark, A.K., Golab, J.A., and Morris, R.R., 2023**, Geologic framework and hydrostratigraphy of the Edwards and Trinity aquifers within northern Bexar and Comal Counties, Texas: U.S. Geological Survey Scientific Investigations Map 3366, 1 sheet, scale 1:24,000.
- Collins, E.W., 2005**, Geologic map of the west half of the Taylor, Texas, 30 X 60 minute quadrangle: central Texas urban corridor, encompassing Round Rock, Georgetown, Salado, Briggs, Liberty Hill, and Leander.
- Federal Emergency Management Agency (FEMA)**, Bexar County, Texas and Incorporated areas, Flood Insurance Rate Map (FIRM), Panel 48029C0095F, FEMA, Washington, D.C.
- Maclay, R.W., and Small, T.A., 1976**, Progress report on the geology of the Edwards Aquifer, San Antonio Area, Texas and Preliminary Interpretation of Borehole Geophysical and Laboratory Data on Carbonate Rocks: U.S. Geol. Survey open file rept., 76-627, 62 pp., 20 figs.
- Rose, P.R., 1972**, Edwards Group, Surface and Subsurface, Central Texas: Bur. Econ. Geol., Rep of Invest. 74, 198 pp.
- Stein, W.G., and Ozuna, G.B., 1995**, Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Recharge Zone, Bexar County, Texas: U.S. Geol. Survey, Water – Resources Investigations 95-4030, 8 pp., 2 figs.
- Texas Natural Resource Conservation Commission**, 1999, Edwards Aquifer Recharge Zone Map, Camp Bullis and Van Raub, TX Quadrangles, TNRCC, San Antonio, Texas.
- United States Department of Agriculture**, 1991, Soil Survey – Bexar County, Texas, USDA.
- United States Geologic Survey**, 2988, (USGS), Camp Bullis and Van Raub, TX Quadrangles, USGS, Denver, Colorado.
- Veni, G., 1988**, The Caves of Bexar County, Second Edition, The Texas Memorial Museum, University of Texas, Austin, Texas.
- Veni, George, and Associates**, 1994, Geologic Controls in Cave Development and the Distribution of Cave Fauna in the San Antonio, Texas, Region: Report for the Texas Parks and Wildlife Department and U.S. Fish and Wildlife Service, 99 pp.



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*Civil/Site • Traffic/Transportation • Governmental • Survey/Geospatial
Infrastructure • Geotechnical/Environmental • Telecommunications • Utilities/Energy*

Sewage Collection System Plan

Organized Sewage Collection System Application

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(c), 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.

Regulated Entity Name: TPC COMMERCIAL

1. ☒ **Attachment A – SCS Engineering Design Report.** This Engineering Design Report is provided to fulfill the requirements of 30 TAC Chapter 217, including 217.10 of Subchapter A, §§217.51 – 217.70 of Subchapter C, and Subchapter D as applicable, and is required to be submitted with this SCS Application Form.

Customer Information

2. The entity and contact person responsible for providing the required engineering certification of testing for this sewage collection system upon completion (including private service connections) and every five years thereafter to the appropriate TCEQ region office pursuant to 30 TAC §213.5(c) is:

Contact Person: Gordon V. Hartman

Entity: Gordon Hartman Family Foundation

Mailing Address: 5210 Thousand Oaks, Ste. 1318

City, State: San Antonio, Texas

Zip: 78233

Telephone: (210) 490-1798

Fax:

Email Address: Jaime@GordonHartman.com

The appropriate regional office must be informed of any changes in this information within 30 days of the change.

3. The engineer responsible for the design of this sewage collection system is:

Contact Person: BURT P. WELLMANN, P.E.

Texas Licensed Professional Engineer's Number: 129161

Entity: Colliers Engineering & Design

Mailing Address: 3421 Paesanos Pkwy. Ste. 200

City, State: San Antonio, TX

Zip: 78231

Telephone: 726 223 4767

Fax:

Email Address: burt.wellmann@collierseng.com

Project Information

4. Anticipated type of development to be served (estimated future population to be served, plus adequate allowance for institutional and commercial flows):

- ☐ Residential: Number of single-family lots: _____
☐ Multi-family: Number of residential units: _____
☒ Commercial
☐ Industrial
☐ Off-site system (not associated with any development)
☐ Other: _____

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

<u>100</u> % Domestic	<u>1,600</u> gallons/day
<u>0</u> % Industrial	<u>0</u> gallons/day
<u>0</u> % Commingled	<u>0</u> gallons/day
Total gallons/day: <u>1,600</u>	

6. Existing and anticipated infiltration/inflow is 3,983 gallons/day. This will be addressed by: a low pressure air test. The procedure for the low pressure air test shall conform to the procedures described in ASTM C-828, ASTM C-924, ASTM F-1417, or other appropriate procedures, except for testing times. The testing times shall conform to the TCEQ design criteria for sewage systems, TAC Chapter 217.58 (2) (H).

7. A Water Pollution Abatement Plan (WPAP) is required for construction of any associated commercial, industrial or residential project located on the Recharge Zone.

- ☐ The WPAP application for this development was approved by letter dated _____. A copy of the approval letter is attached.
☒ The WPAP application for this development was submitted to the TCEQ on Concurrently, but has not been approved.
☐ A WPAP application is required for an associated project, but it has not been submitted.
☐ There is no associated project requiring a WPAP application.

8. Pipe description:

Table 1 - Pipe Description

<i>Pipe Diameter(Inches)</i>	<i>Linear Feet (1)</i>	<i>Pipe Material (2)</i>	<i>Specifications (3)</i>
8	387	PVC SDR 26	ASTM D3034, 3212, 2241, 3139 (115 psi)

Total Linear Feet: 387

- (1) Linear feet - Include stub-outs and double service connections. Do not include private service laterals.
(2) Pipe Material - If PVC, state SDR value.
(3) Specifications - ASTM / ANSI / AWWA specification and class numbers should be included.

9. The sewage collection system will convey the wastewater to the Steven M. Clouse Treatment Plant. The treatment facility is:

- ☒ Existing
☐ Proposed

10. All components of this sewage collection system will comply with:

- ☒ The City of San Antonio standard specifications.
☐ Other. Specifications are attached.

11. ☒ No force main(s) and/or lift station(s) are associated with this sewage collection system.
☐ A force main(s) and/or lift station(s) is associated with this sewage collection system and the **Lift Station/Force Main System Application** form (TCEQ-0624) is included with this application.

Alignment

12. ☒ There are no deviations from uniform grade in this sewage collection system without manholes and with open cut construction.
13. ☒ There are no deviations from straight alignment in this sewage collection system without manholes.
- ☐ **Attachment B - Justification and Calculations for Deviation in Straight Alignment without Manholes.** A justification for deviations from straight alignment in this sewage collection system without manholes with documentation from pipe manufacturer allowing pipe curvature is attached.
- ☐ For curved sewer lines, all curved sewer line notes (TCEQ-0596) are included on the construction plans for the wastewater collection system.

Manholes and Cleanouts

14. ☒ Manholes or clean-outs exist at the end of each sewer line(s). These locations are listed below: (Please attach additional sheet if necessary)

Table 2 - Manholes and Cleanouts

<i>Line</i>	<i>Shown on Sheet</i>	<i>Station</i>	<i>Manhole or Clean-out?</i>
A	CS2.0	2+63.83	Manhole #1
A	CS2.0	4+87.00	Manhole #2

<i>Line</i>	<i>Shown on Sheet</i>	<i>Station</i>	<i>Manhole or Clean-out?</i>
	Of		
	Of		
	Of		

15. ☒ Manholes are installed at all Points of Curvature and Points of Termination of a sewer line.
16. ☒ The maximum spacing between manholes on this project for each pipe diameter is no greater than:

Pipe Diameter (inches)	Max. Manhole Spacing (feet)
6 - 15	500
16 - 30	800
36 - 48	1000
≥54	2000

- ☐ **Attachment C – Justification for Variance from Maximum Manhole Spacing.** The maximum spacing between manholes on this project (for each pipe diameter used) is greater than listed in the table above. A justification for any variance from the maximum spacing is attached, and must include a letter from the entity which will operate and maintain the system stating that it has the capability to maintain lines with manhole spacing greater than the allowed spacing.
17. ☐ All manholes will be monolithic, cast-in-place concrete.
- ☒ The use of pre-cast manholes is requested for this project. The manufacturer's specifications and construction drawings, showing the method of sealing the joints, are attached.

Site Plan Requirements

Items 18 - 25 must be included on the Site Plan.

18. ☒ The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = 50 '.
19. ☒ The Site Plan must include the sewage collection system general layout, including manholes with station numbers, and sewer pipe stub outs (if any). Site plan must be overlain by topographic contour lines, using a contour interval of not greater than ten feet and showing the area within both the five-year floodplain and the 100-year floodplain of any drainage way.
20. Lateral stub-outs:
- ☒ The location of all lateral stub-outs are shown and labeled.
- ☐ No lateral stub-outs will be installed during the construction of this sewer collection system.

21. Location of existing and proposed water lines:

- ☒ The entire water distribution system for this project is shown and labeled.
- ☐ If not shown on the Site Plan, a Utility Plan is provided showing the entire water and sewer systems.
- ☐ There will be no water lines associated with this project.

22. 100-year floodplain:

- ☒ After construction is complete, no part of this project will be in or cross a 100-year floodplain, either naturally occurring or manmade. (Do not include streets or concrete-lined channels constructed above of sewer lines.)
- ☐ After construction is complete, all sections located within the 100-year floodplain will have water-tight manholes. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 3 - 100-Year Floodplain

<i>Line</i>	<i>Sheet</i>	<i>Station</i>
	of	to
	of	to
	of	to
	of	to

23. 5-year floodplain:

- ☒ After construction is complete, no part of this project will be in or cross a 5-year floodplain, either naturally occurring or man-made. (Do not include streets or concrete-lined channels constructed above sewer lines.)
- ☐ After construction is complete, all sections located within the 5-year floodplain will be encased in concrete or capped with concrete. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 4 - 5-Year Floodplain

<i>Line</i>	<i>Sheet</i>	<i>Station</i>
	of	to
	of	to
	of	to
	of	to

24. ☒ Legal boundaries of the site are shown.

25. ☒ The ***final plans and technical specifications*** are submitted for the TCEQ's review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.

Items 26 - 33 must be included on the Plan and Profile sheets.

26. ☐ All existing or proposed water line crossings and any parallel water lines within 9 feet of sewer lines are listed in the table below. These lines must have the type of pressure rated pipe to be installed shown on the plan and profile sheets. Any request for a variance from the required pressure rated piping at crossings must include a variance approval from 30 TAC Chapter 290.
- ☐ There will be no water line crossings.
- ☒ There will be no water lines within 9 feet of proposed sewer lines.

Table 5 - Water Line Crossings

<i>Line</i>	<i>Station or Closest Point</i>	<i>Crossing or Parallel</i>	<i>Horizontal Separation Distance</i>	<i>Vertical Separation Distance</i>
A	STA: 3+51.31	Crossing _(Storm Water)	N/A	2.02'
A	STA: 3+60.78	Crossing _(Domestic Water)	N/A	2.10'

27. Vented Manholes:

- ☒ **No part** of this sewer line is within the 100-year floodplain and vented manholes are not required by 30 TAC Chapter 217.
- ☐ **A portion** of this sewer line is within the 100-year floodplain and vented manholes will be provided at less than 1500 foot intervals. These water-tight manholes are listed in the table below and labeled on the appropriate profile sheets.
- ☐ **A portion** of this sewer line is within the 100-year floodplain and an alternative means of venting shall be provided at less than 1500 feet intervals. A description of the alternative means is described on the following page.
- ☐ **A portion** of this sewer line is within the 100-year floodplain; however, there is no interval longer than 1500 feet located within. No vented manholes will be used.

Table 6 - Vented Manholes

<i>Line</i>	<i>Manhole</i>	<i>Station</i>	<i>Sheet</i>

<i>Line</i>	<i>Manhole</i>	<i>Station</i>	<i>Sheet</i>

28. Drop manholes:

- ☒ There are no drop manholes associated with this project.
- ☐ Sewer lines which enter new or existing manholes or "manhole structures" higher than 24 inches above the manhole invert are listed in the table below and labeled on the appropriate profile sheets. These lines meet the requirements of 30 TAC §217.55(l)(2)(H).

Table 7 - Drop Manholes

<i>Line</i>	<i>Manhole</i>	<i>Station</i>	<i>Sheet</i>

29. Sewer line stub-outs (For proposed extensions):

- ☒ The placement and markings of all sewer line stub-outs are shown and labeled.
- ☐ No sewer line stub-outs are to be installed during the construction of this sewage collection system.

30. Lateral stub-outs (For proposed private service connections):

- ☒ The placement and markings of all lateral stub-outs are shown and labeled.
- ☐ No lateral stub-outs are to be installed during the construction of this sewage collection system.

31. Minimum flow velocity (From Appendix A)

- ☒ Assuming pipes are flowing full; all slopes are designed to produce flows equal to or greater than 2.0 feet per second for this system/line.

32. Maximum flow velocity/slopes (From Appendix A)

- ☒ Assuming pipes are flowing full, all slopes are designed to produce maximum flows of less than or equal to 10 feet per second for this system/line.
- ☐ **Attachment D – Calculations for Slopes for Flows Greater Than 10.0 Feet per Second.** Assuming pipes are flowing full, some slopes produce flows which are greater than 10 feet per second. These locations are listed in the table below. Calculations are attached.

Table 8 - Flows Greater Than 10 Feet per Second

<i>Line</i>	<i>Profile Sheet</i>	<i>Station to Station</i>	<i>FPS</i>	<i>% Slope</i>	<i>Erosion/Shock Protection</i>

33. Assuming pipes are flowing full, where flows are ≥ 10 feet per second, the provisions noted below have been made to protect against pipe displacement by erosion and/or shock under 30 TAC §217.53(l)(2)(B).

- ☐ Concrete encasement shown on appropriate Plan and Profile sheets for the locations listed in the table above.
- ☐ Steel-reinforced, anchored concrete baffles/retards placed every 50 feet shown on appropriate Plan and Profile sheets for the locations listed in the table above.
- ☒ N/A

Administrative Information

34. ☒ The final plans and technical specifications are submitted for TCEQ review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.
35. ☒ Standard details are shown on the detail sheets, which are dated, signed, and sealed by the Texas Licensed Professional Engineer, as listed in the table below:

Table 9 - Standard Details

<i>Standard Details</i>	<i>Shown on Sheet</i>
Lateral stub-out marking [Required]	CS2.2 of CS2.2
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) [Required]	CS2.2 of CS2.2
Alternate method of joining lateral to existing SCS line for potential future connections [Required]	CS2.2 of CS2.2
Typical trench cross-sections [Required]	CS2.2 of CS2.2
Bolted manholes [Required]	CS2.2 of CS2.2
Sewer Service lateral standard details [Required]	CS2.2 of CS2.2
Clean-out at end of line [Required, if used]	N/A
Baffles or concrete encasement for shock/erosion protection [Required, if flow velocity of any section of pipe >10 fps]	N/A
Detail showing Wastewater Line/Water Line Crossing [Required, if crossings are proposed]	N/A
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) [Required, if Flexible Pipe is used]	CS2.2 of CS2.2

Standard Details	Shown on Sheet
Drop manholes [Required, if a pipe entering a manhole is more than 24 inches above manhole invert]	N/A

36. ☒ All organized sewage collection system general construction notes (TCEQ-0596) are included on the construction plans for this sewage collection system.
37. ☒ All proposed sewer lines will be sufficiently surveyed/staked to allow an assessment prior to TCEQ executive director approval. If the alignments of the proposed sewer lines are not walkable on that date, the application will be deemed incomplete and returned.
- ☐ Survey staking was completed on this date: _____
38. ☒ 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.
39. ☒ Any modification of this SCS application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

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 **Organized Sewage Collection System Application** is hereby submitted for TCEQ review and executive director approval. The system was designed in accordance with the requirements of 30 TAC §213.5(c) and 30 TAC §217 and prepared by:

Print Name of Licensed Professional Engineer: BURT P. WELLMANN, P.E.

Date: 9/17/25

Place engineer's seal here:



Signature of Licensed Professional Engineer:

A handwritten signature in blue ink, appearing to read "Burt P. Wellmann", written over a horizontal line.

Appendix A-Flow Velocity Table

Flow Velocity (Flowing Full) All gravity sewer lines on the Edwards Aquifer Recharge Zone shall be designed and constructed with hydraulic slopes sufficient to give a velocity when flowing full of not less than 2.0 feet per second, and not greater than 10 feet per second. The grades shown in the following table are based on Manning's formula and an n factor of 0.013 and shall be the minimum and maximum acceptable slopes unless provisions are made otherwise.

Table 10 - Slope Velocity

<i>Pipe Diameter(Inches)</i>	<i>% Slope required for minimum flow velocity of 2.0 fps</i>	<i>% Slope which produces flow velocity of 10.0 fps</i>
6	0.50	12.35
8	0.33	8.40
10	0.25	6.23
12	0.20	4.88
15	0.15	3.62
18	0.11	2.83
21	0.09	2.30
24	0.08	1.93
27	0.06	1.65
30	0.055	1.43
33	0.05	1.26
36	0.045	1.12
39	0.04	1.01
>39	*	*

**For lines larger than 39 inches in diameter, the slope may be determined by Manning's formula (as shown below) to maintain a minimum velocity greater than 2.0 feet per second when flowing full and a maximum velocity less than 10 feet per second when flowing full.*

$$v = \frac{1.49}{n} \times R_h^{0.67} \times \sqrt{S}$$

Figure 1 - Manning's Formula

Where:

v = velocity (ft/sec)

n = Manning's roughness coefficient
(0.013)

R_h = hydraulic radius (ft)

S = slope (ft/ft)

ATTACHMENT A ***SCS ENGINEERING DESIGN REPORT***

TCEQ Engineering Design Report

(PEPP-SA EDR v4.0)

For

TPC COMMERCIAL Organized Sewage Collection System



9/17/25

[Handwritten signature in blue ink]

SEPT 2025

Prepared By:
Colliers Engineering & Design
3421 PAESANOS PARKWAY, STE 200
SAN ANTONIO, TX 78231

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PVC PIPE STANDARDS

The American Society for Testing and Materials (ASTM) also known as ASTM International (Reference: www.astm.org) governs the manufacturing specifications for Polyvinyl Chloride (PVC) pipes, including the dimension ratio and water pressure allowable for use of each pipe, through its D-2241 standard. ASTM D-2241 lists its pipe dimensions and pipe classes using the “SDR” mark up, such as SDR-13.5, SDR-21, SDR-26 and SDR-41. The SDR refers to the standard dimension ratio (SDR) of the outside pipe diameter and the wall thickness. This project specifies the use of SDR-26 PVC pipe, which are to meet the ASTM pressure rating of greater than 150 psi and fall in the size category listed below. ASTM D-2241 standards must be meticulously adhered to by all PVC pipe manufacturers and is recognized as the standard during PVC pressure pipe testing and quality checks. Other in-depth information can be found published in Thermoplastic Pressure Pipe Design and Selection UNI-TR-7, by the Uni-Bell PVC Pipe Association.

SDR 26 Pipe Size Matrix (Per ASTM D-2241)			
Size (in)	O.D. (in)	Calc I.D. (in)	Thickness (in)
4	4.5	4.154	0.173
6	6.625	6.115	0.255
8	8.625	7.961	0.332
10	10.75	9.924	0.413
12	12.75	11.77	0.49
16	16	14.77	0.615

PROPOSED TYPE OF PIPE

Type I, Grade I, Polyvinyl Chloride (PVC) Specifications:

Size of Pipe: 8.00 in.

SDR 26 Properties

Pipe Compliance:	ASTM D-2241
Joint Compliance:	ASTM D-3139
Cell Classification:	12454
Minimum Tensile Strength (psi):	7,000
Minimum Modulus of Elasticity (psi):	400,000
Calculated Inner Diameter (in) = (Outer Diameter - 2t)	7.961
Outer Diameter (inch):	8.625
Wall Thickness (inch):	0.332
Mean Pipe Diameter (in) = (Outer Diameter - Thickness)	8.293
Approximate Trenching Width (feet):	2.72

Minimum Pipe Depth (Cover) used (feet): **4.28**

Maximum Pipe Depth (Cover) used (feet): **7.03**

FLOW/CAPACITY ANALYSIS

Proposed Waste Water Usage: **7,983.00** GPD

Q_{max} (As determined in Attachment A) = 0.012 CFS

$$Q_{full} = \frac{1.486}{n} \times A \times R^{\frac{2}{3}} \times \sqrt{S}$$

A = Cross-Sectional Area, (ft²) = 0.346

S = Slope, decimal, minimum used = 0.004

R_h = hydraulic radius = 0.166

For the Specified Pipe at the Minimum Design Slope, the full flow is

$$Q_{full} = 0.754 \text{ CFS}$$

$$0.012 < 0.754$$

Design meets TCEQ Guidelines

MINIMUM AND MAXIMUM GRADES FOR PIPES (30 TAC §217.53(l)(2)(A))

Minimum and Maximum Pipe Slopes		
Size of Pipe	Minimum Slope (%)	Maximum Slope (%)
6	0.5	12.35
8	0.33	8.4
10	0.25	6.23
12	0.2	4.88
15	0.15	3.62
18	0.11	2.83
21	0.09	2.3
24	0.08	1.93
27	0.06	1.65
30	0.055	1.43
33	0.05	1.26
36	0.045	1.12
39	0.04	1.01
>39	*	*
* For pipes larger than 39 inches in diameter, the slope is determined by Manning's formula to maintain a velocity greater than 2.0 feet per second and less than 10.0 feet per second when flowing full.		

MINIMUM AND MAXIMUM VELOCITY FOR THE PROPOSED SYSTEM:

So, using 8.00 inch PVC Pipe:

$$V = \frac{1.49}{n} \times R_h^{0.67} \times \sqrt{S}$$

V = velocity (ft/sec)	=	(solve)
n = Manning's coefficient	=	0.013
Calc. Inner Diameter (in)	=	7.961
A = Cross-Sectional Area, ft ²	=	0.346
Wp = Wetted Perimeter, ft	=	2.084
R _h = hydraulic radius, A/Wp	=	0.166
S = slope (ft/ft)	=	0.004

Minimum Slope Used (%): **0.40**

Maximum Slope Used (%): **0.85**

V_{min} = 2.19 ft/sec

V_{max} = 3.19 ft/sec

2.19 > **2.00** ft/sec

3.19 < **10.00** ft/sec

Design meets TCEQ Guidelines

Design meets TCEQ Guidelines

AVERAGE VALUES OF MODULUS OF SOIL REACTION, E'

Soil type-pipe bedding material (Unified Classification System)	Dumped	E' for Degree of Compaction of Bedding, in pounds per square inch		
		Slight <85% Proctor, <40% relative density	Moderate 85%-95% Proctor, 40%-70% relative density	High, >95% Proctor, >70% relative density
(1)	(2)	(3)	(4)	(5)
Fine-grained Soils (LL>50 _u) Soils with medium to high plasticity CH, MH, CH-MH	No data available; consult a competent soils engineer; Otherwise use E'=0			
Fine-grained Soils (LL<50) Soils with medium to no plasticity, CL, ML, ML-CL, with less than 25% coarse-grained particles	50	200	400	1000
Fine-grained Soils (LL<50) Soils with medium to no plasticity, CL, ML, ML-CL, with more than 25% coarse-grained particles	100	400	1000	2000
Coarse-grained Soils with Fines GM, GC, SM, SC ^c contains more than 12% fines				
Coarse-grained Soils with Little or no Fines GW, GP, SW, SP ^c contains less than 12% fines	200	1000	2000	3000
Crushed Rock	1000	3000	3000	3000
Accuracy in Terms of Percentage Deflection	± 2	± 2	± 1	± 0.5

Taken from: Howard, Amster K. "Soil Reaction for Buried Flexible Pipe"
U.S. Bureau of Reclamation, Denver, CO and the American Society of Civil Engineers.

Modulus of Soil Reaction for the in-situ soil is determined to be = 200 psi

PIPE BEDDING CLASS

Taken from the American Society for Testing and Material (ASTM) D 2321 and American Association of State Highway and Transportation Officials (AASHTO) M43, and as published on Table 7, in Deflection: The Pipe/Soil Mechanism UNI-TR-1-97, Uni-Bell PVC Pipe Association, Pg 24.

Pipe Embedment Material						E', psi (kPa) for Degree of Embedment Compaction				
ASTM D 2321*		ASTM D 2487		AASHTO M43	Min. Std. Proctor	Lift Placement Depth	Dumped	Slightly < 85%	Moderate 85% - 95%	High > 95%
Class	Description	Notation	Description	Notation	Density (%)					
IA	Open-graded, clean manufactured aggregates	N/A	Angular crushed stone or rock, crushed gravel, crushed slag; large voids with little or no fines	5 56	Dumped	18" (0.45 m)	1000 (6,900)	3000 (20,700)	3000 (20,700)	3000 (20,700)
IB	Dense-graded, clean manufactured, processed aggregates	N/A	Angular crushed stone or other Class IA material and stone/sand mixtures; little or no fines							
II	Clean, coarse-grained soils	GW	Well-graded gravel, gravel/sand mixtures; little or no fines	57 6 67	85%	12" (0.30 m)	N/R	1000 (6,900)	2000 (13,800)	3000 (20,700)
		GP	Poorly graded gravel, gravel/sand mixtures; little or no fines							
		SW	Well-graded sands, gravelly sands; little or no fines							
		SP	Poorly graded sands, gravelly sands; little or no fines							
III	Coarse-grained soils with fines	GM	Silty gravels, gravel/sand/silt mixtures	Gravel and sand with <10% fines	90%	9" (0.20 m)	N/R	N/R	1000 (6,900)	2000 (13,800)
		GC	Clayey gravels, gravel/sand/clay mixtures							
		SM	Silty sands, sand/silt mixtures							
		SC	Clayey sands, sand/clay mixtures							

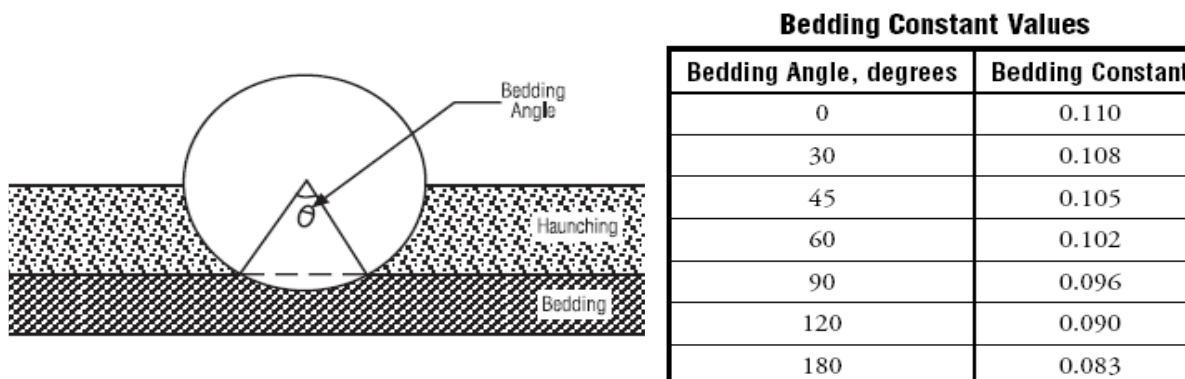
NOTE:

Per TCEQ guidelines, a contractor is allowed to use ASTM D 2321 Bedding Class 1A, 1B, II, or III at no less than 85% percent compaction. To grant the contractor its ability to make the proper judgment of which bedding class to use, the calculations provided in this Engineering Design Report reflect the use of **Bedding Class III, at 85%-95% compaction**, with an E' value of 1000 psi. This provides the "worst case" scenario for the SCS line. All other Bedding Class options will provide an improved value for the zeta factor as well as pipe deflection.

For Bedding Class III, 85%-95% Compaction, $E_b = 1000$ psi

PIPE BEDDING ANGLE

As Published on Figure 8 and Table 5, in Deflection: The Pipe/Soil Mechanism UNI-TR-1-97, Uni-Bell PVC Pipe Association, Pgs 18-19.



LIVE LOAD DETERMINATION

Source: AASHTO H20 and E80 Loads and as Published on Table 4, in Deflection: The Pipe/Soil Mechanism UNI-TR-1-97, Uni-Bell PVC Pipe Association, Pg 14.

Height of Cover (ft)	Live Load Transferred to Pipe, lb/in ²			Height of Cover (ft)	Live Load Transferred to Pipe, lb/in ²		
	Highway H20 ¹	Railway E80 ²	Airport ³		Highway H20 ¹	Railway E80 ²	Airport ³
1	12.50			14	*	4.17	3.06
2	5.56	26.39	13.14	16	*	3.47	2.29
3	4.17	23.61	12.28	18	*	2.78	1.91
4	2.78	18.40	11.27	20	*	2.08	1.53
5	1.74	16.67	10.09	22	*	1.91	1.14
6	1.39	15.63	8.79	24	*	1.74	1.05
7	1.22	12.15	7.85	26	*	1.39	*
8	0.69	11.11	6.93	28	*	1.04	*
10	*	7.64	6.09	30	*	0.69	*
12	*	5.56	4.76	35	*	*	*
				40	*	*	*

¹ Simulates 20 ton truck + impact

² Simulates 80,000 lb/ft railway load + impact

³ 180,000 lbs. dual tandem gear assembly. 26 inch spacing between tires and 66 inch center-to-center spacing between fore and aft tires under a rigid pavement 12 inches thick + impact.

* Negligible live load influence

PRISM LOAD DETERMINATION

Also referred to as the ‘dead’ load, the prism load is the pressure acting on the pipe by the weight of the soil column above a given section of the pipe. The following prism load columns are industry standards as referenced from Table 3, Deflection: The Pipe/Soil Mechanism UNI-TR-1-97, Uni-Bell PVC Pipe Association, Pg 13.

Table 3 Prism Load Soil Pressure (lbs/in ²)					
Height of Cover (ft)	Soil Unit Weight (lb/ft ³)				
	100	110	120	125	130
1	0.69	0.76	0.83	0.87	0.90
2	1.39	1.53	1.67	1.74	1.81
3	2.08	2.29	2.50	2.60	2.71
4	2.78	3.06	3.33	3.47	3.61
5	3.47	3.82	4.17	4.34	4.51
6	4.17	4.58	5.00	5.21	5.42
7	4.86	5.35	5.83	6.08	6.32
8	5.56	6.11	6.67	6.94	7.22
9	6.25	6.88	7.50	7.81	8.13
10	6.94	7.64	8.33	8.68	9.03
11	7.64	8.40	9.17	9.55	9.93
12	8.33	9.17	10.00	10.42	10.83
13	9.03	9.93	10.83	11.28	11.74
14	9.72	10.69	11.67	12.15	12.64
15	10.42	11.46	12.50	13.02	13.54
16	11.11	12.22	13.33	13.89	14.44
17	11.81	12.99	14.17	14.76	15.35
18	12.50	13.75	15.00	15.63	16.25
19	13.19	14.51	15.83	16.49	17.15
20	13.89	15.28	16.67	17.36	18.06
21	14.58	16.04	17.50	18.23	18.96
22	15.28	16.81	18.33	19.10	19.86
23	15.97	17.57	19.17	19.97	20.76
24	16.67	18.33	20.00	20.83	21.67
25	17.36	19.10	20.83	21.70	22.57
26	18.06	19.86	21.67	22.57	23.47
27	18.75	20.63	22.50	23.44	24.38
28	19.44	21.39	23.33	24.31	25.28
29	20.14	22.15	24.17	25.17	26.18
30	20.83	22.92	25.00	26.04	27.08
31	21.53	23.68	25.83	26.91	27.99
32	22.22	24.44	26.67	27.78	28.89
33	22.92	25.21	27.50	28.65	29.79
34	23.61	25.97	28.33	29.51	30.69
35	24.31	26.74	29.17	30.38	31.60
36	25.00	27.50	30.00	31.25	32.50
37	25.69	28.26	30.83	32.12	33.40
38	26.39	29.03	31.67	32.99	34.31
39	27.08	29.79	32.50	33.85	35.21
40	27.78	30.56	33.33	34.72	36.11
41	28.47	31.32	34.17	35.59	37.01
42	29.17	32.08	35.00	36.46	37.92
43	29.86	32.85	35.83	37.33	38.82
44	30.56	33.61	36.67	38.19	39.72
45	31.25	34.38	37.50	39.06	40.63
46	31.94	35.14	38.33	39.93	41.53
47	32.64	35.90	39.17	40.80	42.43
48	33.33	36.67	40.00	41.67	43.33
49	34.03	37.43	40.83	42.53	44.24
50	34.72	38.19	41.67	43.40	45.14

Note that the Prism Loads are calculated based upon the Marston Theory of Loads, developed by Professor Anson Marston, circa 1913, and is calculated using the formula:

$$P = \frac{\gamma_s * H}{144}$$

This formula determines the earth load on a flexible pipe and is regarded as a conservative approach to determining the dead load placed upon a buried flexible pipe.

At maximum burial depth of 7.03 feet, prism load = 6.35 psi

BUCKLING PRESSURE (ALLOWABLE)

Where:	q_a	=	Allowable buckling pressure (psi)	
	h	=	Height of soil above top of pipe (in)	= 84.36 in
	H	=	Depth of burial, feet, from ground surface to top of pipe	
	B'	=	Empirical coefficient of elastic support	
	E_b	=	Modulus of soil reaction for the bedding material (psi)	
	E	=	Modulus of elasticity of the pipe material (psi)	
	I	=	Moment of inertia of the pipe, per linear inch of pipe (in ³)	
	t	=	Pipe wall thickness (in)	
	D	=	Mean Pipe Diameter (in)	$D = 8.293$ in

Solving for the Empirical coefficient of elastic support, given by Luscher in 1966, as referenced on Pg 113 of Moser, A.P., Buried Pipe Design. 2nd Ed., McGraw-Hill:

$$B' = \frac{4(h^2 + Dh)}{1.5(2h + D)^2}$$

$$I = \left(\frac{t^3}{12} \right) = \left(\frac{\text{inches}^3}{\text{in}_{linear}} \right) =$$

$$B' = \frac{31264.8}{47000.4} = 0.665 \quad I = \frac{0.03659}{12} = 0.0030$$

Using the Allowable Buckling Pressure Equation as shown in Moser, A.P., Buried Pipe Design. 2nd Ed., McGraw-Hill, Pg 112, and an initial factor of safety (SF) of 2.5, the Allowable Buckling Pressure is then:

$$q_a = \frac{1}{FS} * \sqrt{32 * R_w * B' * E_b * \left(E * \frac{I}{D^3} \right)}$$

Where,
 $R_w = 1 - 0.33(h_w / h)$

$$q_a = \frac{1}{2.5} \sqrt{\left[\begin{matrix} 32 \\ \end{matrix} \right] \left[\begin{matrix} 1 \\ \end{matrix} \right] \left[\begin{matrix} 0.665 \\ \end{matrix} \right] \left[\begin{matrix} 1000 \\ \end{matrix} \right] \left[\begin{matrix} 400000 & \frac{0.0030}{570.34} \end{matrix} \right]}$$

$$q_a = 85.35 \quad \text{psi}$$

BUCKLING PRESSURE (INSTALLED CONDITION)

Where:	q_p	=	Pressure applied to pipe under installed conditions (psi)
	γ_w	=	Specific Weight of Water = 0.0361 (pci)
	γ_s	=	Specific Weight of Soil (pcf)
	W_c	=	Vertical Soil Load on the pipe per unit length (lb/in)
	L_L	=	Live load as determined from chart
	hw	=	Height of Groundwater above pipe, typically = 0
	D	=	Mean Pipe Diameter (in) D = 8.293 in
	t	=	Pipe Wall Thickness (in) t = 0.332 in

The Vertical Soil Load can be calculated using Equation 6.6 of Uni-Bell's Handbook of PVC Pipe , Ch VI Superimposed Loads on Buried Pipe, Pg 183

$$W_c = H \times \gamma_s \times (D + t)$$

Where: $\gamma_s = 130$ Value taken from:

$$W_c = \left[7.03 \right] \left[12 \text{ in/ft} \right] \left[130.00 \right] \left[\frac{1 \text{ ft}^3}{1728 \text{ in}^3} \right] \left[8.63 \right]$$

$$W_c = 54.74 \text{ lb/in}$$

At Max Pipe Depth (H) of 7.03 ft

Using the Equation on Pg 114 of Moser, A.P., Buried Pipe Design. 2nd Ed., McGraw-Hill, Pressure Applied to Pipe under installed conditions at its deepest installed depth (Note, since hw = 0, the Water Buoyancy Factor (R_w) = 1) is calculated to be:

$$q_p = \gamma_w h_w + R_w \left(\frac{W_c}{D} \right) + L_L \text{ and } L_L = 0 \quad R_w = 1 - 0.33(h_w / h)$$
$$q_p = 0.0361 \times 0 + 1 \times \left[\frac{54.74}{8.293} \right]$$
$$q_p = 6.60 \text{ psi}$$

Note: The pressure applied to the pipe under installed conditions is less than the Allowable Buckling Pressure of the specified pipe, (i.e.. $q_a > q_p$) therefore the design is acceptable for installation.

WALL CRUSHING CALCULATION

Where:	D_o	=	outside pipe diameter, in.	=	8.625 in
	P_c	=	Compressive stress or hydrostatic design basis (HDB). For typical PVC pipe assume 4,000 psi. For any other pipe material the HDB must be supplied by the pipe manufacturer.		
	A	=	surface area of the pipe wall, in. ² /ft	=	0.332 in. ² /ft
	γ_s	=	specific weight of soil, pcf,	=	130 pcf
	H	=	Depth of burial (ft) from ground surface to crown of pipe		

Using the Wall Crushing and Wall Thrust equations, as referenced in Plastic Pipe Design Manual published by Vylon Pipe, Pg 14 the Wall Crushing due to compressive stress can be found using the following:

$$P_c = \frac{T}{A} \quad \text{where T, Thrust, is calculated as } T = \frac{P_y D}{2}$$

Substituting the Thrust equation into the Wall Crushing equation:

$$P_c = \frac{\frac{P_y D}{2}}{A} = \frac{P_y D}{2A}$$

From the Marston Equation determining the Prism Load Calculation (See previous section on Prism Load), substitute the equation for P_y :

$$P_c = \frac{\frac{\gamma_s * H}{144} D}{2A} \quad \text{Rearranging this equation, it becomes: } 2AP_c = \frac{\gamma_s * H}{144} D$$

$$\text{And simplifies to: } 288AP_c = \gamma_s HD$$

Note that the Surface Area of the Pipe Wall, A , is per unit length in inches² per foot, a conversion factor (from feet to inches) of 12 must be applied, therefore,

$$24AP_c = \gamma_s HD$$

Solving for H , the equation becomes:

$$H = \frac{24 * P_c * A}{\gamma_s * D_o}$$

(Continued on next page)

Using this equation, and converting all units, solve for “height” of the soil column, or in other words, the depth of burial of the PVC pipe:

$$H = \frac{[24][4000][0.332 \times 12]}{130 \times 8.625} = 341.11$$

$$H = 341.11 \text{ feet}$$

Note: The resulting Wall Crushing will occur at a greater depth than the deepest burial depth of the proposed SCS lines, therefore pipe design is acceptable.

DEFLECTION ANALYSIS: LEONHARDT'S ZETA FACTOR

The Leonhardt's Zeta Factor Equation can be calculated using Equation 7.32 of Uni-Bell's Handbook of PVC Pipe , Ch VII Design of Buried PVC Pipe, Pg 268

Where: Do = Pipe Outer Diameter, in = 8.625
B = Trench Width, in, = 32.63 in
E_b = Modulus of soil reaction, bedding material (psi) = 1000
E_n = Modulus of soil reaction for the in-situ soil (psi) = 200

$$zeta = \frac{1.44}{f + [1.44 - f] \times \left[\frac{E_b}{E'_n} \right]}$$

where,

$$f = \frac{\frac{B}{Do} - 1}{1.154 + 0.444 \left[\frac{B}{Do} - 1 \right]}$$

$$f = \frac{2.782609}{2.387478} = 1.1655$$

Substituting f into the zeta equation:

$$zeta = \frac{1.44}{[1.166] + [0.274] \times [5.000]}$$

The Leonhardt Zeta factor is then determined as: **0.567**

PIPE STIFFNESS (Figure: 30 TAC §217.53(k)(3))

Using Equation B.1, as directed in 30 TAC §217.53(k)(3), to Calculate the Pipe Stiffness:

$$PS = C \times RSC \times \left(\frac{8.337}{D} \right)$$

Where: PS = Pipe Stiffness, for SDR-26 PVC (psi) = 11: 115 psi
C = Conversion factor = 0.8
RSC = Ring Stiffness Constant
D = Mean Pipe Diameter (in), D = 8.293 in

The RSC can be supplied by the manufacturer or calculated by rearranging Equation B.1

$$RSC = \frac{PS}{C \times \left(\frac{8.337}{D} \right)}$$

$$RSC = \frac{115}{0.804245}$$

$$RSC = 142.991$$

PREDICTED PIPE DEFLECTION

Using the Modified Iowa Equation, referenced and published by the Uni-Bell PVC Pipe association and found at <http://www.uni-bell.org/faq.html>, and Equation 14 of Deflection: The Pipe/Soil Mechanism UNI-TR-1-97, Uni-Bell PVC Pipe Association Pgs 17, the predicted pipe deflection can be calculated.

Where:	% $\Delta Y/D$	=	Predicted % vertical deflection under load
	P	=	Prism Load, psi
	K	=	Bedding angle constant, Assumed to = 0.096
	W'	=	Live Load, psi, = 0 At max depth (ft) : 7.03
	DR	=	Dimension Ratio = 26
	E	=	Modulus of tensile elasticity of the pipe material, psi
	E'	=	Modulus of Soil Reaction (zeta x Eb) = 567.38
	D _L	=	Deflection Lag Factor = 1.5

And using the Modified Iowa Equation:

$$(\%) \frac{\Delta Y}{D} = \frac{(D_L KP + KW') \times 100}{[2E / (3(DR - 1)^3)] + 0.061E'}$$

$$\text{Where, Prism Load, } P = \frac{\gamma_s * H}{144}$$

and/or from previous chart, prism load = 6.35 psi

The Predicted Deflection is determined as:

$$(\%) \frac{\Delta Y}{D} = \frac{[[1.5 \times 0.610] + 0] \times 100}{\left[\frac{800000}{46875} \right] + [0.061 \times 567.38]} = 1.77 \%$$

NOTE: 1.77 < 5%, therefore pipe design is acceptable

A deflection lag factor of 1.0 is typical for new pipes. Over the life of the pipe, the pipe will tend to deflect. Therefore, 1.5 is a conservative factor for the 50 year life.

PIPE STRAIN

Pipe strain is also known as the elongation of the pipe over the original length of the pipe. Under normal loading conditions of the PVC pipe, the variable that affects the elongation or straining of the pipe stems from either the flexure or deflection (i.e., bending) of the pipe within the bedding material (i.e. increased or excessive pipe deflection causing the pipe to elongate) or hoop stress within the pipe wall. Please note that pipe strain is not generally known to be the limiting performance factor during pipe failure. For this system, pipe deflection is limited to 5% for a SDR 26 pipe. This 5% deflection value is the industry accepted value placing the pipe within its straining limits. Therefore, as the calculated deflection above is shown to be less than 5%, the pipe and bedding class used in this system is within the acceptable straining limits for this pipe.

However, total Pipe strain is calculated as the combination of the before mentioned hoop stress and the maximum strain due to deflection. Both items are calculated below using Equations 15 and 16 found in Deflection: the Pipe/Soil Mechanism, UNI-TR-1-97, Published by the Uni-Bell PVC Pipe Association (Pgs 28-30):

Where:	ϵ_h	=	Maximum Pipe Strain due to Hoop Stress, in/in
	P	=	Pressure on the pipe (Live + Prism Loads), psi
	E	=	Modulus of Elasticity of the Pipe, psi
	t	=	Pipe Wall thickness (in) = 0.332
	D	=	Pipe Diameter, Outer (in) = 8.625

$$\epsilon_h = \frac{PD}{2tE}$$

Using the maximum cover for both live loads and prism loads as well as the previous unit weight of the soil:

$$\epsilon_h = \frac{\left[\frac{0.00}{2} + \frac{6.35}{0.332 \times 400,000} \right] \times 8.625}{1} = 2.062\text{E-}04 \frac{\text{in}}{\text{in}}$$

(Continued on following page)

Where:	ϵ_f	=	Maximum Pipe Strain due to Ring Deflection, in/in
	ΔY	=	Change in vertical pipe diameter under load, in, (numerator in the deflection equation, but in decimal form)
	t	=	Pipe Wall thickness (in) = 0.332
	D	=	Pipe Diameter, Outer (in) = 8.625
	DR	=	Dimension Ratio, PVC Pipe= 26

$$\epsilon_f = \frac{t}{D} \left[\frac{3\Delta Y / D}{1 - 2\Delta Y / D} \right] = \frac{1}{DR} \left[\frac{3\Delta Y}{D - 2\Delta Y} \right]$$

$$\epsilon_f = \frac{0.332}{8.625} \times \frac{274.320}{8.625 - 182.880} = -0.0606 \frac{\text{in}}{\text{in}}$$

$$\epsilon_{total} = -0.0604 \frac{\text{in}}{\text{in}}$$

TCEQ PIPE BEDDING AND TRENCHING REQUIREMENTS (30 TAC 217.54)

****These notes are provided in the Construction Documents on Plan Sheet CS1.1.**

a. Pipe Embedment

1. A rigid pipe must be laid with the adequate bedding, haunching, and initial backfill to support the anticipated load. The bedding classes that are allowed are A, B, or C, as described in American Society for Testing and Materials (ASTM) C 12, American National Standards Institute (ANSI) A 106.2, Water Environment Federation Manual of Practice No. 9 or American Society of Civil Engineers (ASCE) MOP 37.
2. A flexible pipe must be laid with the adequate bedding, haunching, and initial backfill to support the anticipated load. The bedding classes that are allowed are IA, IB, II, or III, as described in ASTM D-2321 or ANSI K65.171.
3. Debris, large clods, or stones that are greater than six inches in diameter, organic matter, or other unstable materials are prohibited as bedding, haunching, or initial backfill.
4. Backfill must not disturb the alignment of a collection system pipe.
5. If trenching encounters significant fracture, fault zones, caves, or solutional modification to the rock strata, an owner must halt construction until an engineer prepares a written report detailing how construction will accommodate these site conditions.

b. Compaction.

1. Compaction of an embedment envelope must meet the manufacturer's recommendations for the collection system pipe used in a project.
2. Compaction of an embedment envelope must provide the modulus of soil reaction for the bedding material necessary to ensure a wastewater collection system pipe's structural integrity as required by §217.53 of this title (relating to Pipe Design).
3. The placement of the backfill above a pipe must not affect the structural integrity of a pipe.

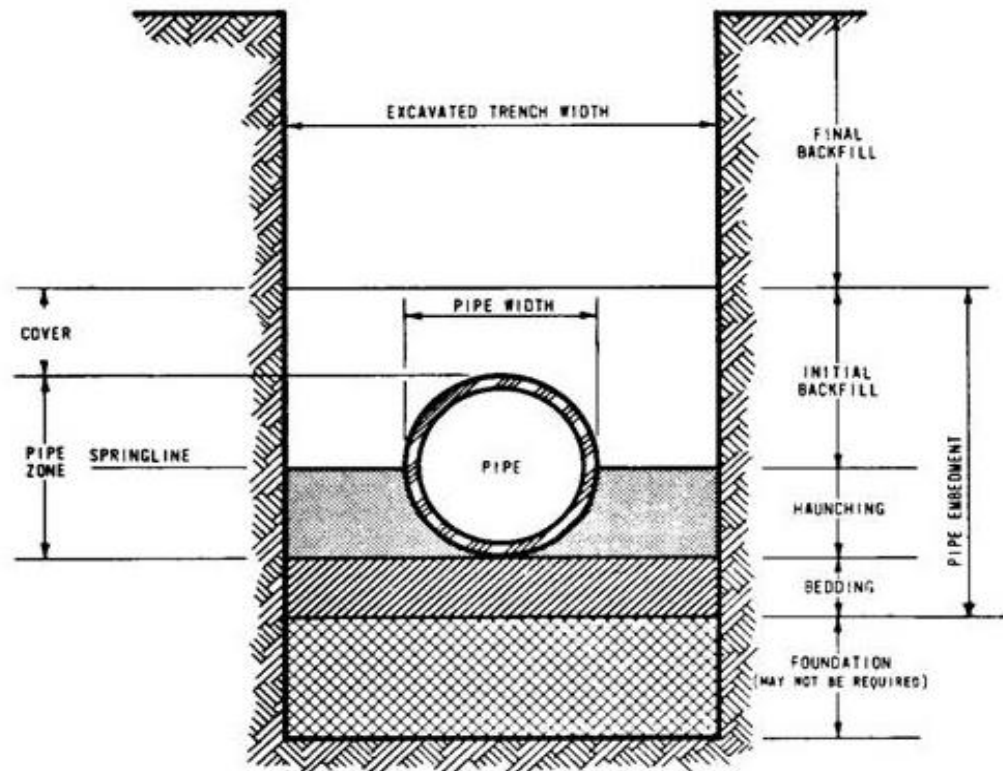
c. Envelope Size.

1. A minimum clearance of 6.0 inches below and on each side of the bell of all pipes to the trench walls and floor is required.
2. The embedment material used for haunching and initial backfill must be installed to a minimum depth of 12 inches above the crown of a pipe.

d. Trench Width.

1. The width of a trench must allow a pipe to be laid and jointed properly and must allow the backfill to be placed and compacted as needed.
2. The maximum and minimum trench width needed for safety and a pipe's structural integrity must be included in the report.
3. The width of a trench must be sufficient to properly and safely place and compact haunching materials.
4. The space between a pipe and a trench wall must be wider than the compaction equipment used in the pipe zone.

TRENCH CROSS-SECTION (30 TAC 217.54)



NOTE:

Trenching Cross Section 30 TAC 217.54 is annotated in the Construction Documents/Plan Sheets on **Sheet CS4.0.**

MANHOLE SPECIFICATIONS

30 TAC 217.55 Requirements with design comments:

- a. An owner must include manholes in a wastewater collection system at:
 1. All points of change in alignment, grade, or size;
 2. At the intersection of all pipes; and
 3. At the end of all pipes that may be extended at a future date.
- b. Manholes placed at the end of a wastewater collection system pipe that may be extended in the future must include pipe stub outs with plugs.
- c. A clean-out with watertight plugs may be installed in lieu of a manhole at the end of a wastewater collection system pipe if no extensions are anticipated. **(Clean outs not used in-lieu of manholes)**
Cleanout installations must pass all applicable testing requirements outlined for
- d. gravity collection pipes in §217.57 of this title (relating to Testing Requirements for Installation of Gravity Collection System Pipes). **(Clean outs not used in lieu of manholes)**
- e. A manhole must be made of monolithic, cast-in-place concrete, fiberglass, pre-cast concrete, high-density polyethylene, or equivalent material that provides adequate structural integrity. **(See the Pre-Cast Manhole Details following these construction notes)**
- f. The use of bricks to adjust a manhole cover to grade or construct a manhole is prohibited.
- g. Manholes may be spaced no further apart than the distances specified in the following table for a wastewater collection system with straight alignment and uniform grades, unless a variance based on the availability of cleaning equipment that is capable of servicing greater distances is granted by the executive director. **(Manholes are spaced no greater than 500 L.F.)**

Table C.2. - Maximum Manhole Spacing	
Pipe Diameter	Maximum Manhole
6-15	500
18-30	800
36-48	1000
54 or larger	2000

- h. Tunnels are exempt from manhole spacing requirements because of construction constraints. **(Not applicable)**

- i. An intersection of three or more collection pipes must have a manhole.
(Acknowledged)
- j. A manhole must not be located in the flow path of a watercourse, or in an area where ponding of surface water is probable. **(Maintained throughout the design of the SCS)**
- k. The inside diameter of a manhole must be no less than 48 inches. A manhole diameter must be sufficient to allow personnel and equipment to enter, exit, and work in the manhole and to allow proper joining of the collection system pipes in the manhole wall. **(See Manhole Details following these notes)**
- l. Manholes must meet the following requirements for covers, inlets, and bases.

- 1. Manhole Covers

- A. A manhole where personnel entry is anticipated requires at least a 30 inch diameter clear opening. (See Manhole Details following these construction notes)
- B. A manhole located within a 100-year flood plain must have a means of preventing inflow. **(Not applicable for this project)**
- C. A manhole cover construction must be constructed of impervious material. **(See Manhole Details following these construction notes)**
- D. A manhole cover that is located in a roadway must meet or exceed the American Association of State Highways and Transportation Officials standard M-306 for load bearing. **(Not applicable to this project.)**

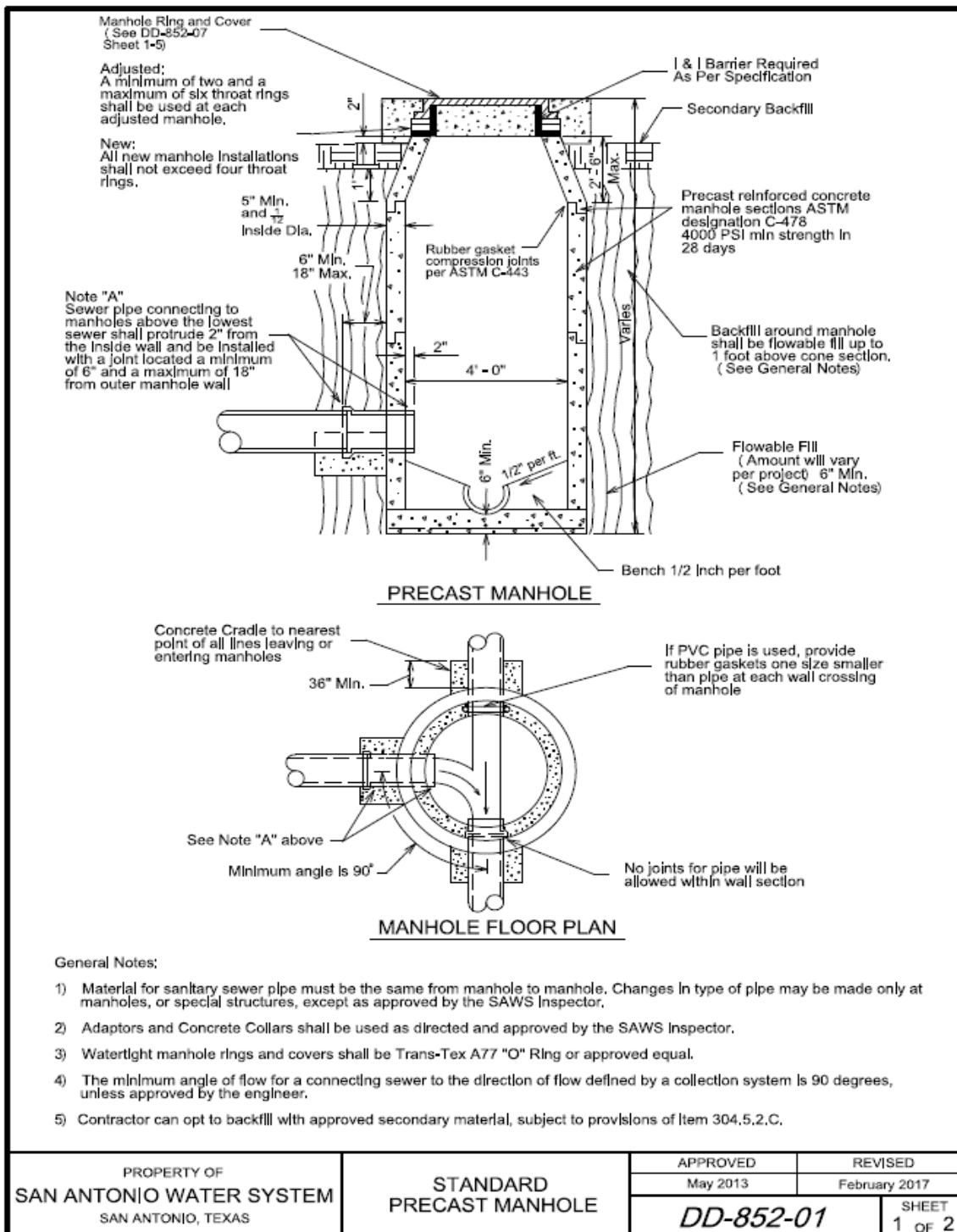
- 2. Manhole Inverts

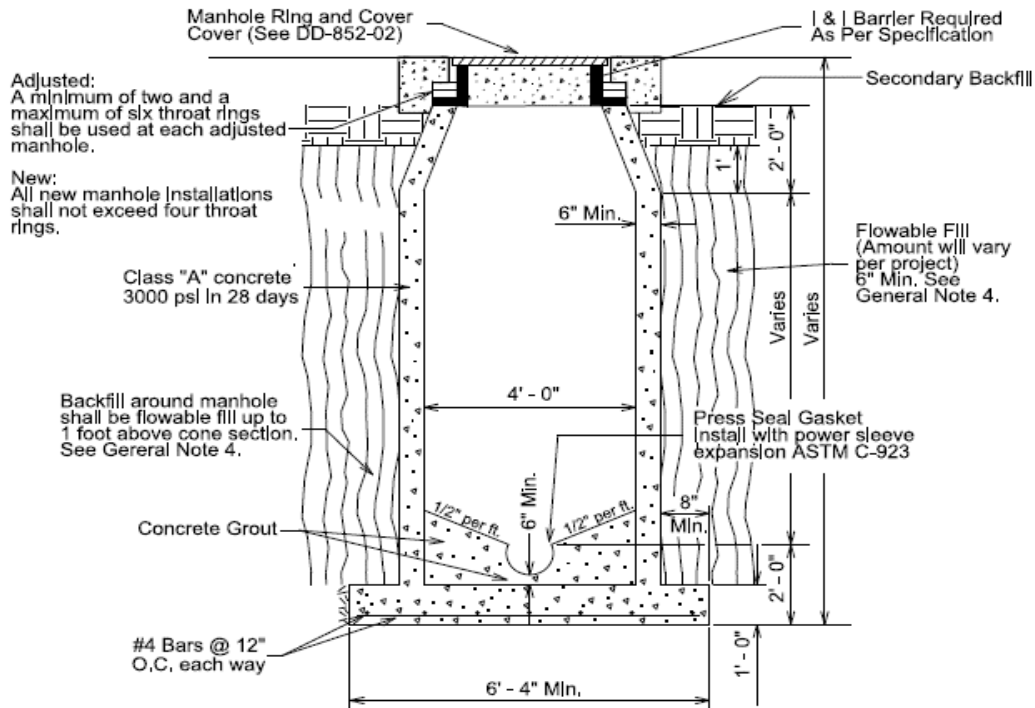
- A. The bottom of a manhole must contain a U-shaped channel that is a smooth continuation of the inlet and outlet pipes. **(See Sheet CS4.0)**
- B. A manhole connected to a pipe less than 15 inches in diameter must have a channel depth equal to at least half the largest pipe's diameter **(See Sheet CS4.0)**
- C. A manhole connected to a pipe at least 15 inches in diameter but not more than 24 inches in diameter must have a channel depth equal to at least three-fourths of the largest pipe's diameter **(Not applicable for this project)**
- D. A manhole connected to a pipe greater than 24 inches in diameter must have a channel depth equal to at least the largest pipe's diameter **(Not applicable for this project).**

- E. A manhole with pipes of different sizes must have the tops of the pipes at the same elevation and flow channels in the invert sloped on an even slope from pipe to pipe. **(Not applicable for this project)**
- F. A bench provided above a channel must slope at a minimum of 0.5 inch per foot. **(Noted.)**
- G. An invert must be filleted to prevent solids from being deposited if a wastewater collection system pipe enters a manhole higher than 24 inches above a manhole invert. **(Not applicable for this project)**
- H. A wastewater collection system pipe entering a manhole more than 24 inches above an invert must have a drop pipe. **(Not applicable to this project.)**
- m. The inclusion of steps in a manhole is prohibited. **(Steps are not included in SAWS manhole Details)**
- n. Connections. A manhole-pipe connection must use watertight, size-on-size resilient connectors that allow for differential settlement and must conform to American Society for Testing and Materials C-923. **(See Sheet CS4.0)**
- o. Venting. An owner must use an alternate means of venting if manholes are at more than 1,500 foot intervals and gasketed manhole covers are required for more than three manholes in sequence. Vents must meet the following requirements: **(Not applicable to this project.)**
 - 1. Vent design must minimize inflow;
 - 2. Vents must be located above a 100-year flood event elevation; and
 - 3. Tunnels must be vented in compliance with this subsection.
- p. Cleanouts. The size of a cleanout must be equal to the size of the wastewater collection system main. **(Not applicable to this project)**

Precast Manhole Information:

SAWS Specifications





MONOLITHIC MANHOLE

General Notes:

- 1) Material for sanitary sewer pipe must be the same from manhole to manhole. Changes in type of pipe may be made only at manholes, or special structures, except as approved by the SAWS project Engineer.
- 2) Adaptors and Concrete Collars shall be used as directed by the Engineer and as approved by the SAWS project Engineer.
- 3) Watertight manhole rings and covers shall be Trans-Tex A77 "O" Ring or approved equal.
- 4) Contractor can opt to backfill with approved secondary material, subject to provisions of Item 304.5.2.C.

PROPERTY OF
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS

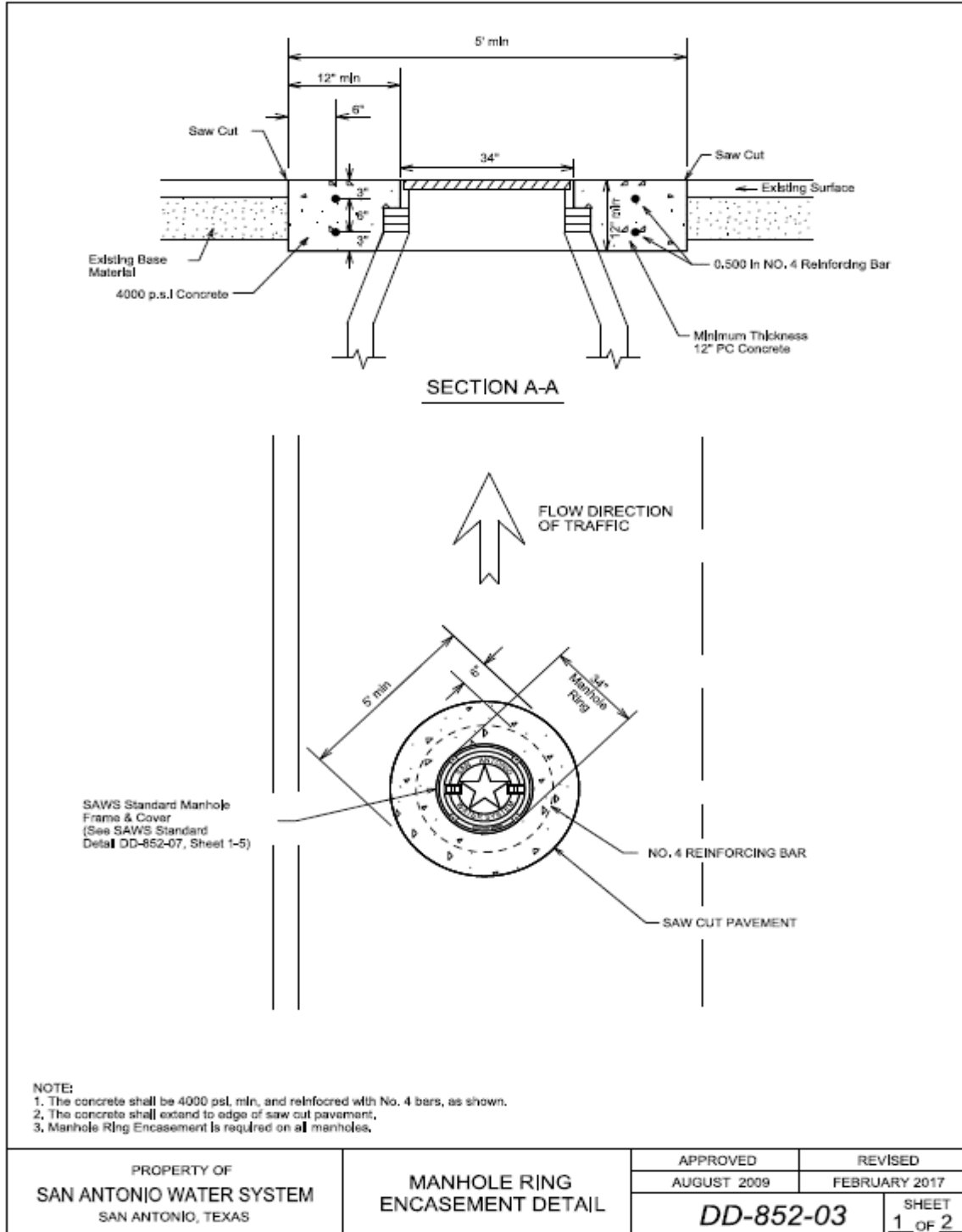
STANDARD
MONOLITHIC MANHOLE

APPROVED
March 2008

REVISED
May 2013

DD-852-01

SHEET
2 OF 2



ATTACHMENT A
WASTEWATER / SEWAGE CALCULATIONS

TPC COMMERCIAL- SCS REPORT
WASTEWATER/SEWAGE CALCULATIONS:

NUMBER OF ACRES WITHIN SUBDIVISION:

6.639

NUMBER OF EDU'S:

SAN ANTONIO WATER SYSTEM

Department Store/Retail Store = 4 * 5,000 SF = 20,000 SF

10000 SF * 0.07 GAL/SF = 700 GAL = **3.5** EDU'S

10000 SF * 0.07 GAL/SF = 700 GAL = **3.5** EDU'S

8 TOTAL EDU'S

PEAK WET WEATHER FLOW:

PEAK WET WEATHER FLOW = PEAK DRY WEATHER + I&I

PEAK DRY WEATHER FLOW = 2.5 * AVERAGE DAILY FLOW

PEAK DRY WEATHER:

AVG. DAILY WASTEWATER FLOW (ADF) IS 200 GALLONS PER DAY/EDU
 (SAN ANTONIO WATER SYSTEM UTILITY SERVICE REGULATIONS)

2.5 * 200 $\frac{\text{GAL/DAY} *}{\text{EDU}}$ 8 EDU'S = **4,000** GAL/DAY

INFLOW & INFILTRATION:

600 GAL PER ACRE/DAY

6.639 ACRES CONTRIBUTING

I&I = **3,983** GAL/DAY

PEAK WET WEATHER:

4,000 + 3,983 (GAL / DAY) = **7,983** GAL/DAY

7,983 $\frac{\text{GAL}}{\text{DAY}}$ * $\frac{1 \text{ CF}}{7.48 \text{ GAL}}$ = 1,067.30 $\frac{\text{CF}}{\text{DAY}}$

1,067.30 $\frac{\text{CF}}{\text{DAY}}$ $\frac{* 1 \text{ DAY} *}{24 \text{ HR}}$ $\frac{1 \text{ HR} *}{60 \text{ MIN.}}$ $\frac{1 \text{ MIN.}}{60 \text{ SEC.}}$ = **0.01235 CUBIC FEET/SEC**

ATTACHMENT B
SEWER AVAILABILITY DOCUMENTATION



June 11, 2025

Rheyne Rodriguez
Colliers Engineering and Design
3421 Paesanos Parkway, Ste. 200
San Antonio, Texas 78231

RE: File No. 2533 - Request for Category Determination for **2837 TPC Parkway, Approximately 6.639 Acres**, located southwest of the intersection of Ellis Park and Stone Oak Parkway.

Dear Ms. Rodriguez:

On May 27, 2025, the Aquifer Protection and Evaluation Section of the San Antonio Water System (SAWS) received a letter issued by your office requesting a category determination for the above-referenced project. Based on a review of the documentation submitted and in accordance with Chapter 34, Article VI, Division 6, Section 34-925 of the City Code, Category 2 classification of 2837 TPC Parkway, approximately 6.639 acres is confirmed.

In accordance with Ordinance No. 81491, an Aquifer Protection Plan for all Category 2 and 3 properties is required to be submitted to and approved by the Aquifer Protection & Evaluation Section of the San Antonio Water System prior to the release of Plats and/or Building Permits.

Should any documentation become available that would alter this Category designation, the documentation may be submitted to the San Antonio Water System for review and possible Category redesignation.

If you have any questions regarding this matter, please contact Bruce Keels at (210) 233-3173.

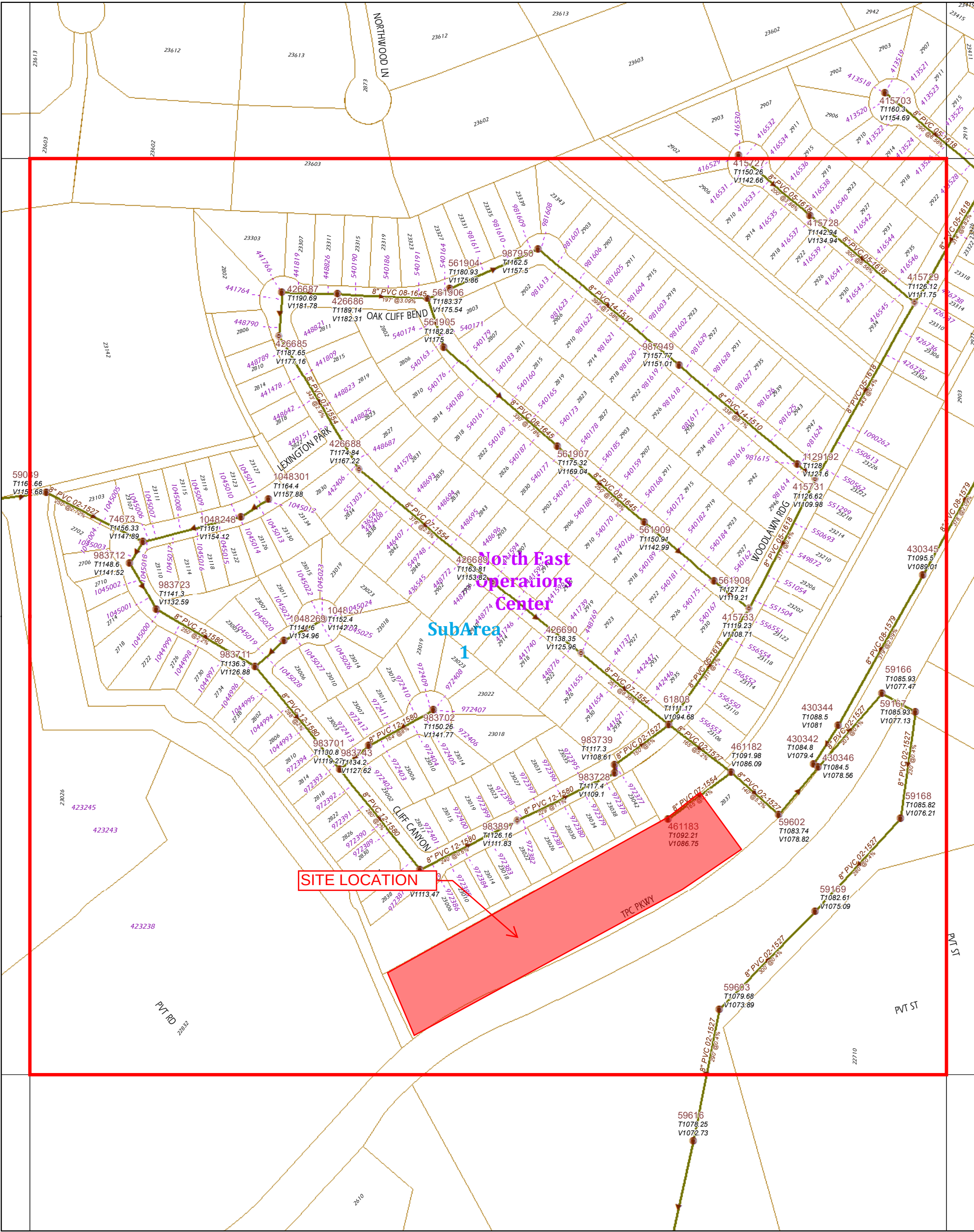
Sincerely,


Andrew Wiatrek, Manager
Edwards Aquifer and Watershed Protection Division

Approved:


Scott R. Halty, Director
Resource Protection and Compliance Department

SRH:bvk



CLEAN OUT

BREAK NODE

SIPHON INLET

SIPHON OUTLET

FLOW METER w\ SMART COVER

AIR BYPASS

SLUDGE

FORCE MAIN

OTHER

MONOLITHIC

JUNCTION BOX

DROP MANHOLE

FLOW METER

SMART COVER

STUB OUT

STANDARD

AIR RELEASE

FLOW METER

SMART COVER

PROP. MAINS

SEWER LATERALS

PVT MAINS

AIR BYPASS

OUTFALL MAIN

PROP. MAINS

SLUDGE

SIPHON MAIN

SEWER LATERALS

FORCE MAIN

GRAVITY MAIN

PVT MAINS

"SAWS GIS Mapping: A wealth of information at your fingertips"

0

100

200

Feet

SEWER BLOCK MAP

176662

SAN ANTONIO WATER SYSTEM
INFRASTRUCTURE PLANNING
GIS MAPPING DIVISION

Revised Date: Oct 31, 2023

Disclaimer:
This utility map is for reference only. The information may not represent what actually has been constructed. S.A.W.S explicitly disclaims any representation of the accuracy of the information and assumes no liability for any errors, omissions, or inaccuracies in the map regardless of how caused. Field verification should be done as necessary. S.A.W.S prohibits the reproduction or sale of this document. This utility map may not under any circumstances, be copied, reproduced or published in any form or media, or transferred to another without written permission of the San Antonio Water System.

174 664	176 664	178 664
174 662	176 662	178 662
174 660	176 660	178 660

ATTACHMENT C
GENERAL WASTEWATER NOTES

SAWS GENERAL SEWER NOTES

1. The Contractor is responsible for ensuring that no sanitary sewer overflow (SSO) occurs as a result of their work. All contractor personnel responsible for SSO prevention and control shall be trained on proper response. Should an SSO occur, the contractor shall:
 - A. Identify the source of the SSO and notify SAWS Emergency Operations Center (EOC) immediately at (210)233-2015. Provide the address of the spill and an estimated volume or flow.
 - B. Attempt to eliminate the source of the SSO.
 - C. Contain sewage from the SSO to the extent of preventing a possible contamination of waterways.
 - D. Clean up spill site (return contained sewage to the collection system if possible) and properly dispose of contaminated soil/materials.
 - E. Clean the affected sewer mains and remove any debris.
 - F. Meet all post-SSO requirements as per the EPA Consent Decree, including line cleaning and televising the affected sewer mains (at SAWS direction) within 24 hours.
 - G. Should the Contractor fail to address an SSO immediately and to SAWS satisfaction, they will be responsible for all costs incurred by SAWS, including any fines from EPA.
 - H. No separate measurement or payment shall be made for this work. All work shall be done according to guidelines set by the TCEQ and SAWS.
2. The Contractor shall provide bypass pumping of sewage around each segment of pipe to be replaced, in accordance with SAWS Standard Specification for Water and Sanitary Sewer Construction, item No. 864, "Bypass Pumping". Payment for such work will be made under the bid item "Sanitary Sewer (Bypass Pumping)" (Lump Sum) as per SAWS Standard Specification for Water and Sanitary Sewer Construction, item No. 864, "Bypass Pumping".

SAWS GENERAL SEWER NOTES

3. Prior to tie-ins, any shutdowns of existing force mains of any size must be coordinated with the SAWS Construction Inspection Division at 233-3500 and/or SAWS Production groups at least one week or more in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly.

4. ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: it shall be the responsibility of the Contractor to make allowances and adjustments for top of manholes to match the finished grade of the project's improvements.

***ATTACHMENT B
JUSTIFICATIONS AND CALCULATIONS
FOR DEVIATION IN STRAIGHT
ALIGNMENT WITHOUT MANHOLES***

Justification and Calculations for Deviation in Straight Alignment without Manholes

Not applicable. No deviation in straight alignment without a manhole is proposed with this sewer plan.

***ATTACHMENT C
JUSTIFICATIONS FOR VARIANCE
FROM
MAXIMUM MANHOLE SPACING***

Justification for Variance from Manhole Spacing

Not applicable. A request for a variance from manhole spacing is not necessary with this sewer design.

***ATTACHMENT D
CALCULATIONS FOR SLOPES FOR
FLOWS GREATER THAN 10.0 FEET PER
SECOND***

Explanation of Slopes for Flows Greater than 10.0 FPS

Not applicable. Slopes for this sewer system will not produce flows greater than 10 feet per second.

TEMPORARY STORMWATER SECTION

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: BURT P. WELLMANN, P.E.

Date: 9/17/25

Signature of Customer/Agent:



Regulated Entity Name: TPC COMMERCIAL

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: East Elm Creek

Temporary Best Management Practices (TBMPs)

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

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

- ☒ A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.
 - ☒ A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.
 - ☒ A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
 - ☒ A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.
8. ☒ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.
- ☐ **Attachment E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.
- ☒ There will be no temporary sealing of naturally-occurring sensitive features on the site.
9. ☒ **Attachment F - Structural Practices.** A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.
10. ☒ **Attachment G - Drainage Area Map.** A drainage area map supporting the following requirements is attached:
- ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.
 - ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.
 - ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.
 - ☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

- ☒ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.
11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations.** Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.
- ☒ N/A
12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.
13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.
14. ☒ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).
15. ☒ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.
16. ☒ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

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

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

- 18. ☒ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
- 19. ☒ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

- 20. ☒ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.
- 21. ☒ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.
- 22. ☒ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

SPILL RESPONSE ACTIONS

If there is an accidental spill on site, the contractor shall respond with appropriate action. The contractor will be required to contact the owner and in turn the owner will contact the TCEQ in the event of a spill on site. In addition to the following guidance, reference the latest version of TCEQ's Technical Guidance Manual (TGM) RG-348 Section 1.4.16.

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:
 - Contain the spread of the spill.
 - Recover spilled materials.
 - 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 not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

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 runoff 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 runoff of stormwater and the runoff of spills.
2. Discourage "topping off" of fuel tanks.
3. Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

POTENTIAL SOURCES OF CONTAMINATION

During Construction:

1. Oil, grease, fuel, and hydraulic fluid contamination from construction equipment and vehicle dripping.
2. Hydrocarbons from paving operations.
3. Miscellaneous trash and litter from construction workers and material wrappings.
4. Construction debris.
5. Silt leaving the site.

Ultimate Use:

1. Vehicle drippings within parking lot.
2. Stormwater runoff contamination from fertilizers, herbicides, and pesticides.
3. Groundwater contamination from leakage in wastewater system.

SEQUENCE OF MAJOR ACTIVITIES

Intended Schedule or Sequence of Major Activities:

1. Installation of BMPs
2. Rough Subgrade Preparation (earthwork, grading, street and drainage excavation and embankment) (Approximately 2.974Acres)
3. Wet and Dry Utility Construction
4. Final Subgrade Preparation (Approximately 2.974Acre)
5. Installation of Base Materials (Approximately 2.974 Acre)
6. Concrete (foundations, curbs, flatwork) (Approximately 2.974 Acre)
7. Paving Activities (Approximately 2.974 Acre)
8. Site cleanup and Removal of BMPs

TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

A: Temporary BMPs will be installed prior to soil disturbing construction activity. Silt fencing will be placed along the down-gradient sides of the property to prevent silt from escaping the construction area. Inlet protection will be placed on all inlets. A temporary construction entrance will be placed on site to reduce vehicle “tracking” onto adjoining streets. A concrete washout pit will be used to collect all excess concrete during construction. A construction staging area will be used for equipment storage and vehicle maintenance.

BMPs for this project will protect surface water or groundwater from turbid water, phosphorus, sediment, oil, and other contaminants, which may mobilize in storm water flows by slowing the flow of runoff to allow sediment and suspended solid to settle out of the runoff.

Practices may also be implemented on site for interim and permanent stabilization. Stabilization practices may include but are not limited to: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, and other similar measures.

B: The BMPs for this project are designed to allow water to pass through after sedimentation has occurred. Existing flow patterns will be maintained to any naturally-occurring sensitive features that are discovered during construction.

REQUEST TO TEMPORARILY SEAL A FEATURE

There will be no temporary sealing of any naturally occurring features on site.

STRUCTURAL PRACTICES

Structural BMPs will be used to limit runoff discharge of pollutants from exposed areas of the site. BMPs will be installed prior to soil disturbing construction activity. Silt fencing will be placed along the down-gradient sides of the property to prevent silt from escaping the construction area. Inlet protection will be placed on all storm water inlets to prevent pollutants from entering into the stormwater drainage system. A temporary construction entrance will be placed at the site entry/exit point to reduce tracking onto adjoining streets. A construction staging area will be used onsite to perform all vehicle maintenance and for equipment and material storage. A concrete truck washout pit will be placed on site to provide containment and easier clean up of waste from concrete operations. The location of all structural temporary BMP's is shown on the site plan (**Exhibit 2**) and details and specifications are provided in **Exhibit 4** which can be found at the end of this report under the appropriate tab.

DRAINAGE AREA MAP

An existing drainage area map and proposed/ultimate drainage area map are included with this report as **EXHIBIT 3A** and **EXHIBIT 3B**. The exhibits can be found at the end of this report under the appropriate **EXHIBIT 3** tab.

TEMPORARY SEDIMENT POND(S) PLANS AND CALCULATIONS

For this project, there are no disturbed areas over 10 acres within a common drainage watershed. Therefore, no temporary sediment ponds are proposed.

INSPECTION AND MAINTENANCE FOR BMPs

MAINTENANCE

All temporary and permanent erosion and sediment control BMPs will be maintained and repaired as needed to assure continued performance of their intended function. All maintenance and repair of BMPs will be conducted in accordance with manufacturers' specifications.

All temporary erosion and sediment control BMPs will be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment will be removed or stabilized on site. Disturbed soil areas resulting from removal of BMPs or vegetation will be permanently stabilized as soon as possible.

Erosion and sediment controls are designed to prevent soil erosion and sediment migration offsite, to the extent practicable, which may result from construction activity. This design considers local topography, soil type, and rainfall.

Control measures must be installed and maintained according to the manufacturer's specifications. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the permittee must replace or modify the control for site situations.

If sediment ponds are utilized the Sediment must be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%.

If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts, and whenever feasible, prior to the next rain event.

The controls must be installed, maintained, and operated in a manner that will limit, to the extent practicable, offsite transport of litter, construction debris, and construction materials.

INSPECTIONS

An inspection will be performed by the qualified personnel, as designated by the permittee, on a weekly basis and after any rainfall event. An inspection and maintenance report shall be made per inspection. An inspection form has been included in this report and in the SWPPP. Based on the inspection results, the controls shall be corrected before the next scheduled inspection.

A log of inspection results will be maintained on-site and will include the name of the inspector, date, major observations, and necessary corrective measures. Reports of maintenance and inspection activities will be maintained on-site, in conformance with the TPDES permit conditions. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWPPP. This report must be signed by the responsible party.

Major observations shall, at a minimum, include the following:

- The locations of discharges of sediment or other pollutants from the site;

- Locations of BMPs that need to be maintained;

- Locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and

- Location where additional BMPs are needed.

All needed repairs or modifications will be reported to the contractors to permit the timely implementation of required actions. Necessary repairs or modifications will be implemented within seven days of inspection. The SWPPP will be modified within seven days to reflect any modifications to measures as a result of inspection.

The SWPPP must be amended whenever there is a change in design, construction, operation or maintenance that has a significant effect on the discharge of pollutants to the waters of the United States that was not addressed in the SWPPP.

The SWPPP must be amended when inspections or investigations by site operations, local, state or federal officials indicate that the SWPPP is proving ineffective in eliminating or significantly minimizing pollutants from the construction site or otherwise is not achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity.

INSPECTION FORM

NAME OF INSPECTOR _____
(Inspector must attach a brief summary of qualifications to this report.)

DATE _____

BEST MANAGEMENT PRACTICES (BMPs)

☐ **Vegetative Buffers**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Soil Covering (Including mulch and temporary vegetation)**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Outlet Protection**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Sediment Control Basins**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Silt Fence**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Stabilized Entrances/Exits**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Construction Staging Areas**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Inlet Protection**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Gravel Filter Bags**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Vegetated Filter Strip**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Concrete Truck Washout Pit**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Trash Receptacles**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **General Site Cleanliness**

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Other** _____

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Other** _____

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

☐ **Other** _____

☐ In Compliance ☐ Out of Compliance ☐ Not Applicable

Comments/Maintenance Required: _____

MAJOR OBSERVATIONS

At a minimum, inspector shall note any evidence of erosion, sediment discharges from the site, BMPs requiring maintenance, BMPs requiring modification, and any additional BMPs required.

CERTIFICATION

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

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

INSPECTOR NAME/SIGNATURE

DATE

OWNER NAME/SIGNATURE

DATE

SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION

Construction practices shall disturb the minimal amount of existing ground cover as required for land clearing, grading, and construction activity for the shortest amount of time possible to minimize the potential of erosion and sedimentation from the site. Existing vegetation shall be maintained and left in place until it is necessary to disturb for construction activity. For this project the following stabilization practices will be implemented:

1. Hydraulic Mulch and Seeding: Disturbed areas subject to erosion shall be stabilized with hydraulic mulch and/or seeded and watered to provide interim stabilization. For areas that are not to be sodded as per the project landscaping plan, a minimum of 85% vegetative cover will be established to provide permanent stabilization.
2. Sodding and Wood Mulch: As per the project landscaping plan, Sodding and wood mulch will be applied to landscaped areas to provide permanent stabilization prior to project completion.

Records of the following shall be maintained by the permittee in the attached Project Timeline:

- a) The dates when major grading activities occur;
- b) The dates when construction activities temporarily or permanently cease on a portion of the site; and
- c) The dates when stabilization measures are initiated.

Stabilization measures must be initiated as soon as practical in portions of the site where construction activities have temporarily or permanently ceased, and except as provided in the following, must be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased:

Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practical.

Where construction activity on a portion of the site is temporarily ceased and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of the site.

In arid areas (areas with an average rainfall of 0-10 inches), semiarid areas (areas with an average annual rainfall of 10 to 20 inches), and areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practical. For interim stabilization during drought conditions best management practices will be implemented. These may include but are not limited to geotextile blankets and matting, hydromulch, diversion structures and/or structural controls such as silt fence and rock berms. These BMPs are to be maintained in accordance with the inspection/maintenance schedule provided in Attachment I.

PROJECT TIMELINE

DATES WHEN MAJOR GRADING ACTIVITIES OCCUR	
Date	Construction Activity

DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE	
Date	Construction Activity

DATES WHEN STABILIZATION MEASURES ARE INITIATED	
Date	Stabilization Activity

AGENT AUTHORIZATION FORM

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

I Gordon Hartman,
Print Name
Owner
Title - Owner/President/Other
of Gordon Hartman Family Foundation,
Corporation/Partnership/Entity Name
have authorized Colliers Engineering & Design Representatives
Print Name of Agent/Engineer
of Colliers Engineering & Design
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:

[Signature]
Applicant's Signature

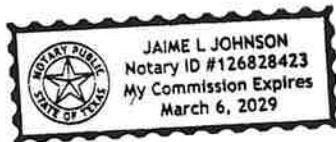
10/6/25
Date

THE STATE OF Texas §

County of Bexar §

BEFORE ME, the undersigned authority, on this day personally appeared Gordon Hartman 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 6 day of October, 2025.



[Signature]
NOTARY PUBLIC
Jaime L. Johnson
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 3/6/29

APPLICATION FEE FORM

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: TPC COMMERCIAL

Regulated Entity Location: 2837 TPC Parkway, San Antonio, TX 78259

Name of Customer: Gordon Hartman Family Foundation

Contact Person: Gordon V. Hartman

Phone: 210-490-1798

Customer Reference Number (if issued): CN _____

Regulated Entity Reference Number (if issued): RN _____

Austin Regional Office (3373)

☐ Hays

☐ Travis

☐ Williamson

San Antonio Regional Office (3362)

☒ Bexar

☐ Medina

☐ Uvalde

☐ Comal

☐ Kinney

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

☐ Austin Regional Office

☒ San Antonio Regional Office

☐ Mailed to: TCEQ - Cashier

☐ Overnight Delivery to: TCEQ - Cashier

Revenues Section

Mail Code 214

P.O. Box 13088

Austin, TX 78711-3088

12100 Park 35 Circle

Building A, 3rd Floor

Austin, TX 78753

(512)239-0357

Site Location (Check All That Apply):

☒ Recharge Zone

☐ Contributing Zone

☐ Transition Zone

Type of Plan	Size	Fee Due
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	\$
Sewage Collection System	387 L.F.	\$ 650.00
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: 9/17/25

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

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

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

Extension of Time Requests

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

CORE DATA FORM



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		RN

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)					
☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership							
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)							
<i>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).</i>							
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)				<i>If new Customer, enter previous Customer below:</i>			
Gordon Hartman Family Fondation							
7. TX SOS/CPA Filing Number		8. TX State Tax ID (11 digits)		9. Federal Tax ID (9 digits) 20-3537281	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				13. Independently Owned and Operated?			
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher				☐ Yes ☒ No			
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following							
☒ Owner ☐ Operator ☒ Owner & Operator ☐ Other:							
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant							
15. Mailing Address:	5210 Thousand Oaks, Ste 1318						
	City	San Antonio, TX	State	TX	ZIP	78233	ZIP + 4
16. Country Mailing Information (if outside USA)					17. E-Mail Address (if applicable)		
					Jaime@GordonHartman.com		

18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)
(210) 490-1798		() -

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							
<i>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).</i>							
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)							
TPC COMMERCIAL							
23. Street Address of the Regulated Entity: (No PO Boxes)	2837 TPC Parkway						
	City	San Antonio	State	TX	ZIP	78259	ZIP + 4
24. County	Bexar						

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:							
26. Nearest City					State	Nearest ZIP Code	
<i>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).</i>							
27. Latitude (N) In Decimal:		29.654264° N			28. Longitude (W) In Decimal:		-98.442197° W
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
29	39	15.35	-98	26	31.91		
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)		
6512	5399		531120		452319		
33. What is the Primary Business of this entity? (Do not repeat the SIC or NAICS description.)							
Development and leasing of nonresidential commercial buildings, including office suites and retail tenant spaces.							
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
		SCS		
☐ 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:	BURT P. WELLMANN, P.E.	41. Title:	Regional Discipline Leader
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(726) 223-4821		() -	burt.wellmann@collierseng.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:	Colliers Engineering & Design	Job Title:	Regional Discipline Leader
Name (In Print):	BURT P. WELLMANN, P.E.	Phone:	(726) 223- 4821
Signature:		Date:	9/17/25

EXHIBIT 1

1. CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
2. CONTACT SPECTRUM TO COORDINATE CABLE TV SERVICE. 1-800-222-5355.
3. CONTACT AT&T TO COORDINATE TELEPHONE SERVICE. 1-800-225-5288.
4. CONTACT CITY PUBLIC SERVICE TO PLAN ELECTRICAL SERVICES. (210)-353-2222.
5. CONTACT CITY PUBLIC SERVICE TO PLAN GAS SERVICES. (210)-353-2222.
6. CONTACT SAN ANTONIO WATER SYSTEMS TO PLAN WATER SERVICES. (210)-704-7297.
7. CONTACT SAN ANTONIO WATER SYSTEMS TO PLAN SANITARY SEWER SERVICES. (210)-704-7297.

CONTRACTOR AND/OR CONTRACTORS' INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN / GEOTECHNICAL / SAFETY / EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE INFORMATION PROVIDED BY THE CONTRACTOR AND/OR CONTRACTORS' INDEPENDENTLY RETAINED EMPLOYEE OR CONTRACTORS' TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTORS' IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL BE IN ACCORDANCE WITH THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING WITH AS WELL AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTORS' INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS FOR THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

LINE DATA		
SEGMENT	DIRECTION	LENGTH
L1	S 61° 02' 19" W	130.46'
L2	S 65° 14' 10" W	147.37'

CURVE DATA					
SEGMENT	RADIUS	LENGTH	DELTA	CHORD	
C1	757.00'	422.50'	31° 58' 42"	N 45° 02' 58" E	417.04'
C2	914.00'	510.13'	31° 58' 41"	S 45° 02' 58" W	503.53'
C3	2957.00'	216.63'	4° 11' 51"	S 63° 08' 14" W	216.58'
C4	768.00'	215.81'	16° 06' 01"	S 57° 11' 10" W	215.10'

1. ALL OWNERS/OPERATORS ARE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH THE STORMWATER POLLUTION PREVENTION PLAN AND COMPLYING WITH THE REGULATIONS CONTAINED WITHIN IT.

1. ALL OPERATORS SHALL SUBMIT A NOTICE OF INTENT (NOI) AT LEAST 48 HOURS IN ADVANCE AND ALL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE IN PLACE PRIOR TO STARTING CONSTRUCTION ACTIVITIES.

2. CONTRACTOR TO ENSURE THAT STRUCTURAL BMP'S ARE INSTALLED WITHIN THE LIMITS OF THE SITE BOUNDARY.

1. CONTRACTOR SHOULD LIMIT CONSTRUCTION ACTIVITIES TO ONLY THOSE AREAS SHOWN TO BE DISTURBED ON THIS PLAN. IF ADDITIONAL VEGETATED AREAS ARE DISTURBED, THEY SHOULD BE PROTECTED WITH APPROPRIATE BEST MANAGEMENT PRACTICES UNTIL THE AREAS HAVE BEEN STABILIZED AS PER THE SPECIFICATIONS OF THE SWPPP. THE AREAS OF THIS ADDITIONAL SOIL DISTURBANCE AND THE MEASURES USED SHOULD BE SHOWN ON THE SITE PLAN AND NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.

3. ALL DISTURBED AREAS ARE NOT COVERED BY IMPERVIOUS COVER ARE TO BE STABILIZED PER THE SWPPP AND PROJECT SPECIFICATIONS PRIOR TO REMOVAL OF ANY BMP'S AND/OR PRIOR TO FILING A NOTICE OF TERMINATION (NOT).

AND PROJECT SPECIFICATIONS. THIS PHASING SHOULD BE NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.

5. CONTRACTOR TO ENSURE THEY HAVE MET ALL REQUIREMENTS OF THE SWPPP BEFORE FILING A NOTICE OF TERMINATION (NOT)

THE PREFERRED OPTION DURING THE CURRENT DROUGHT WITH REGARDS TO RE-VEGETATION IS TO PREPARE THE SEEDBED, ADDING TOPSOIL/COMPOST¹ AS REQUIRED, PLACE FERTILIZER AND PERMANENT SEED MIX, AND THEN CORRECTLY INSTALL A SOIL RETENTION EROSION (SR) OR CHANNEL LINER, WHICHEVER IS REQUIRED FOR THE LOCATION. NO WATERING TO ESTABLISH VEGETATION WOULD BE REQUIRED. INFORMATION ON APPROVED SRB AND CHANNEL LINERS FOR THE SLOPE AND SOIL TYPE FOR A SPECIFIC LOCATION CAN BE FOUND AT http://www.dot.state.tx.us/business/doing_business/product_evaluation/erosion_control.htm. INSTALLATION SHOULD BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATION WHICH SHOULD BE PROVIDED TO THE UTILITY INSPECTOR.

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.

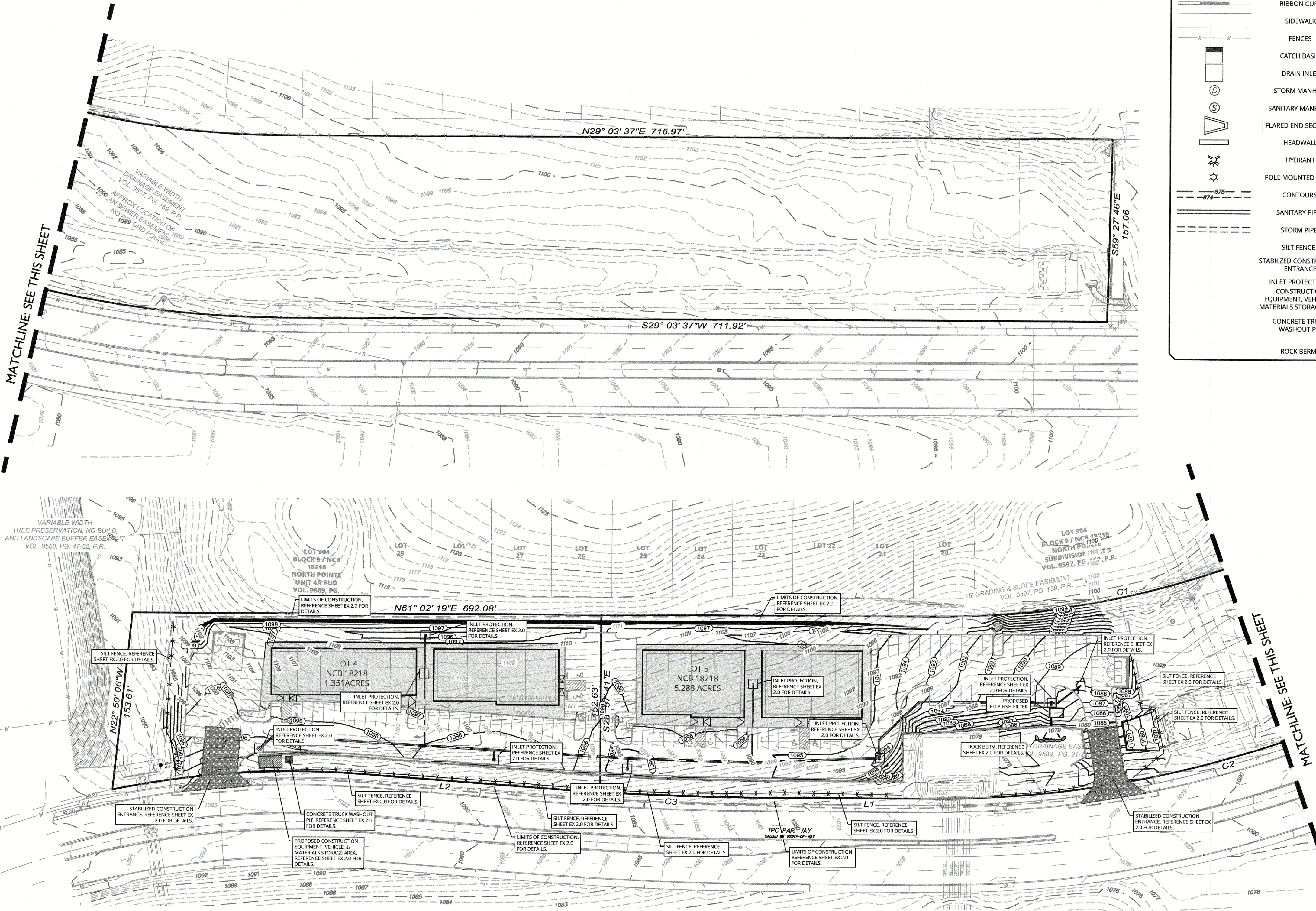
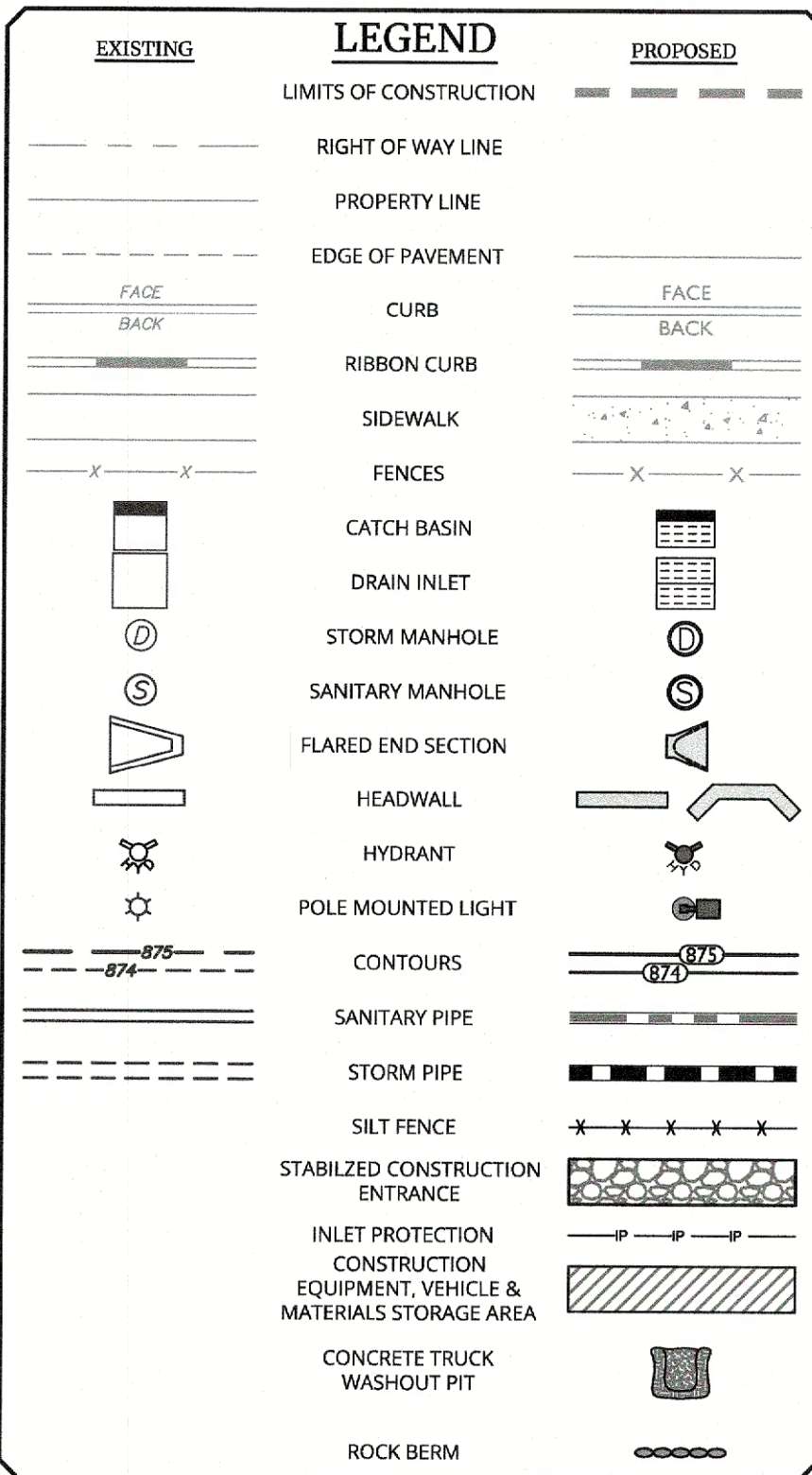
12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

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;

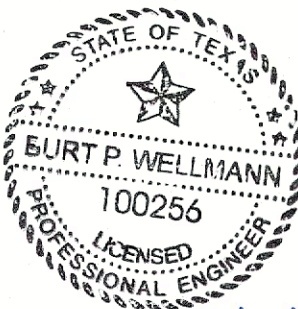
C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

<i>Austin Regional Office</i>	<i>San Antonio Regional Office</i>
12100 PARK 35 CIRCLE, BUILDING	14250 Judson Road
Austin, Texas 8753-1808	San Antonio, Texas 78233-4488
Phone(512) 339-2929	Phone(210) 490-3096
Fax (512) 339-3795	Fax (210) 545-4329



FOR STATE SPECIFIC DIRECT PHONE NUMBERS
VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION
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9/17/25

TPC COMMERCIAL

FOR
GORDON HARTMAN
FAMILY FOUNDATION

LOT 4
LOT 5
BLOCK 13
NCB 18218

SAN ANTONIO
BEXAR COUNTY
TEXAS

Engineering
& Design

AUSTIN
5901 Vega Avenue
Suite 100
Austin, TX 78735
Phone: 512.287.837
LIJERS ENGINEERING & DESIGN
TBE Firm#: F-14509
TBLP Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	JUNE 2025	RS	BW

PROJECT NUMBER: 205-12-02	DRAWING NAME: TCEQ SITE PLAN
------------------------------	---------------------------------

SHEET TITLE

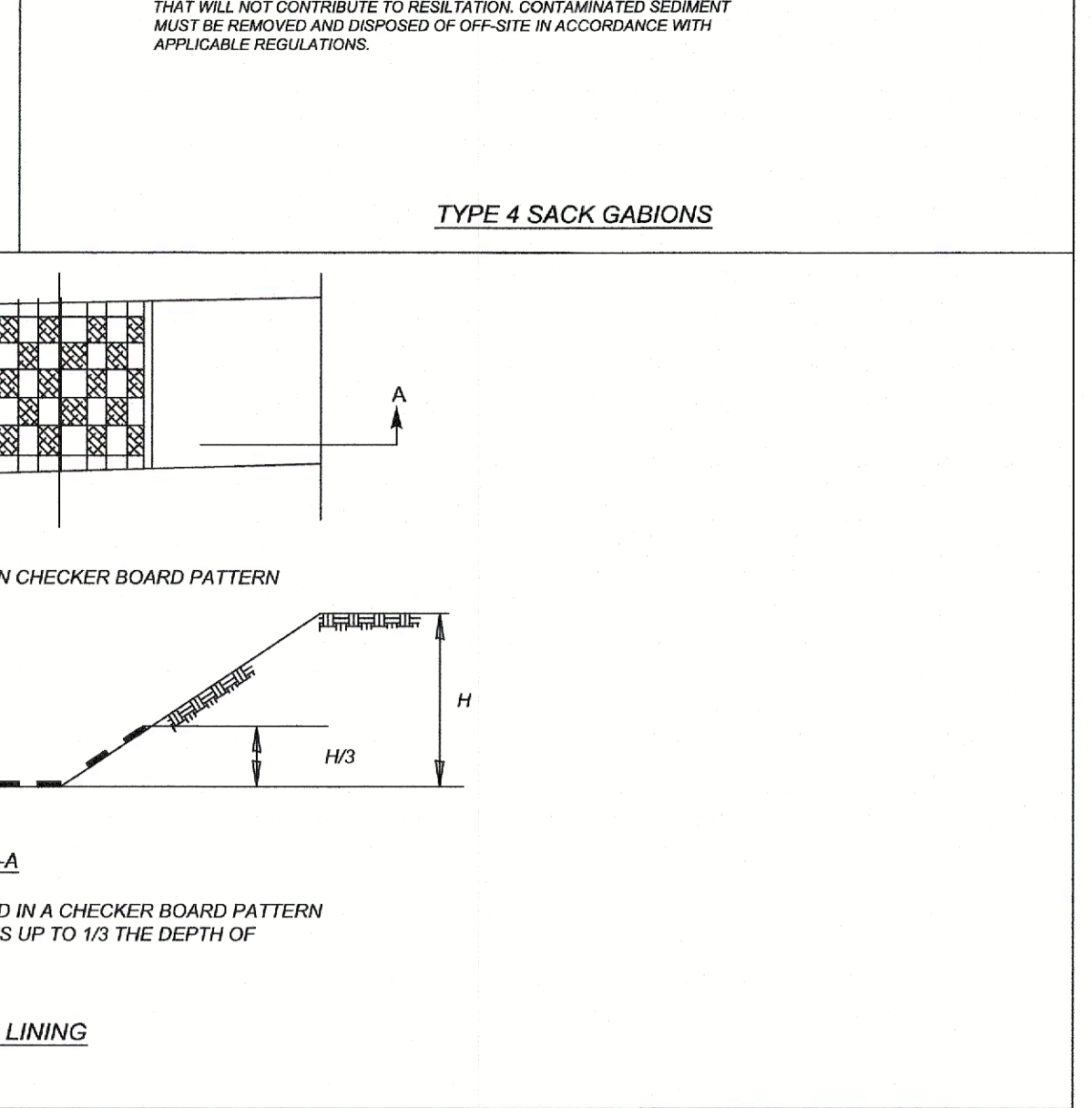
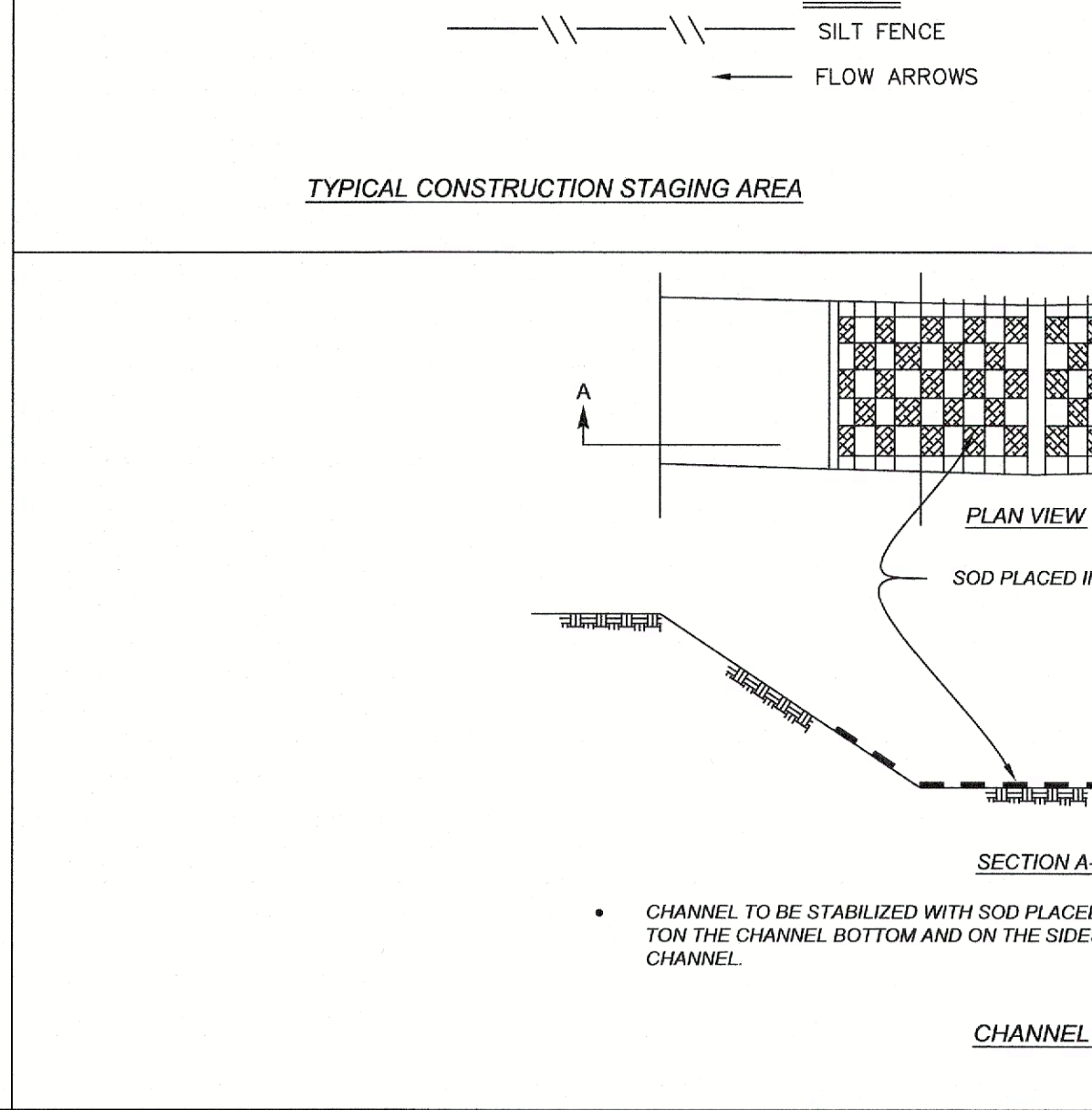
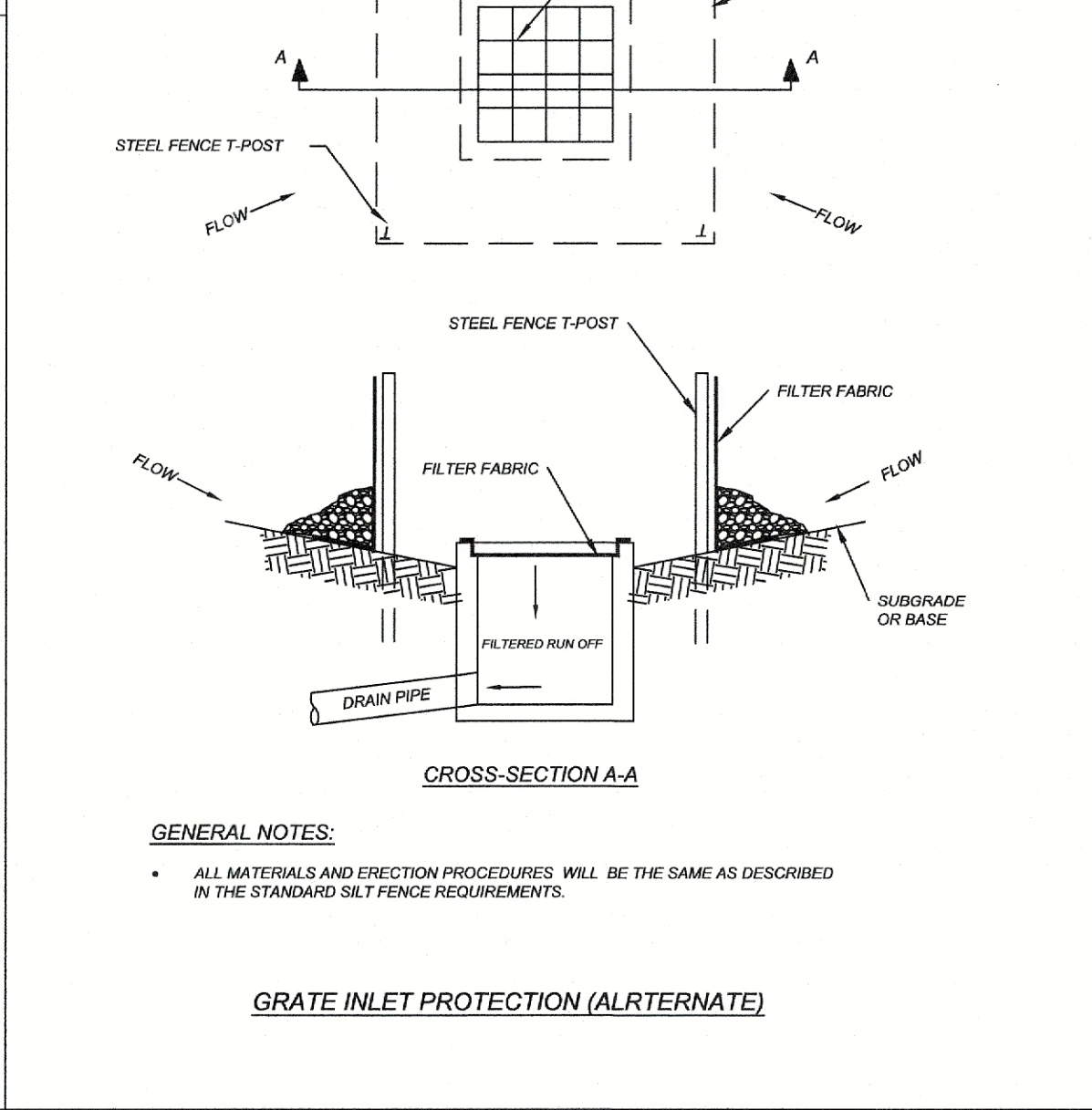
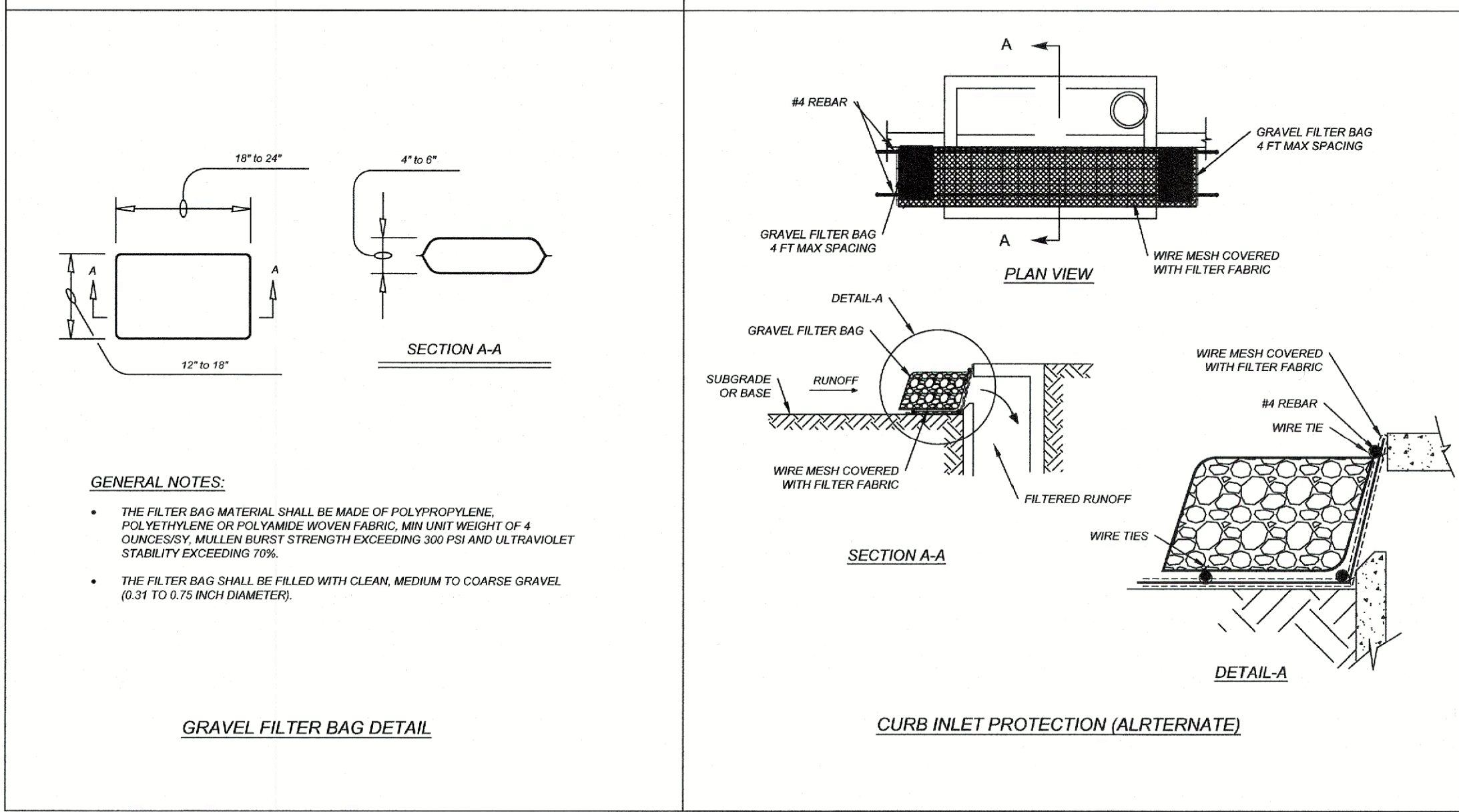
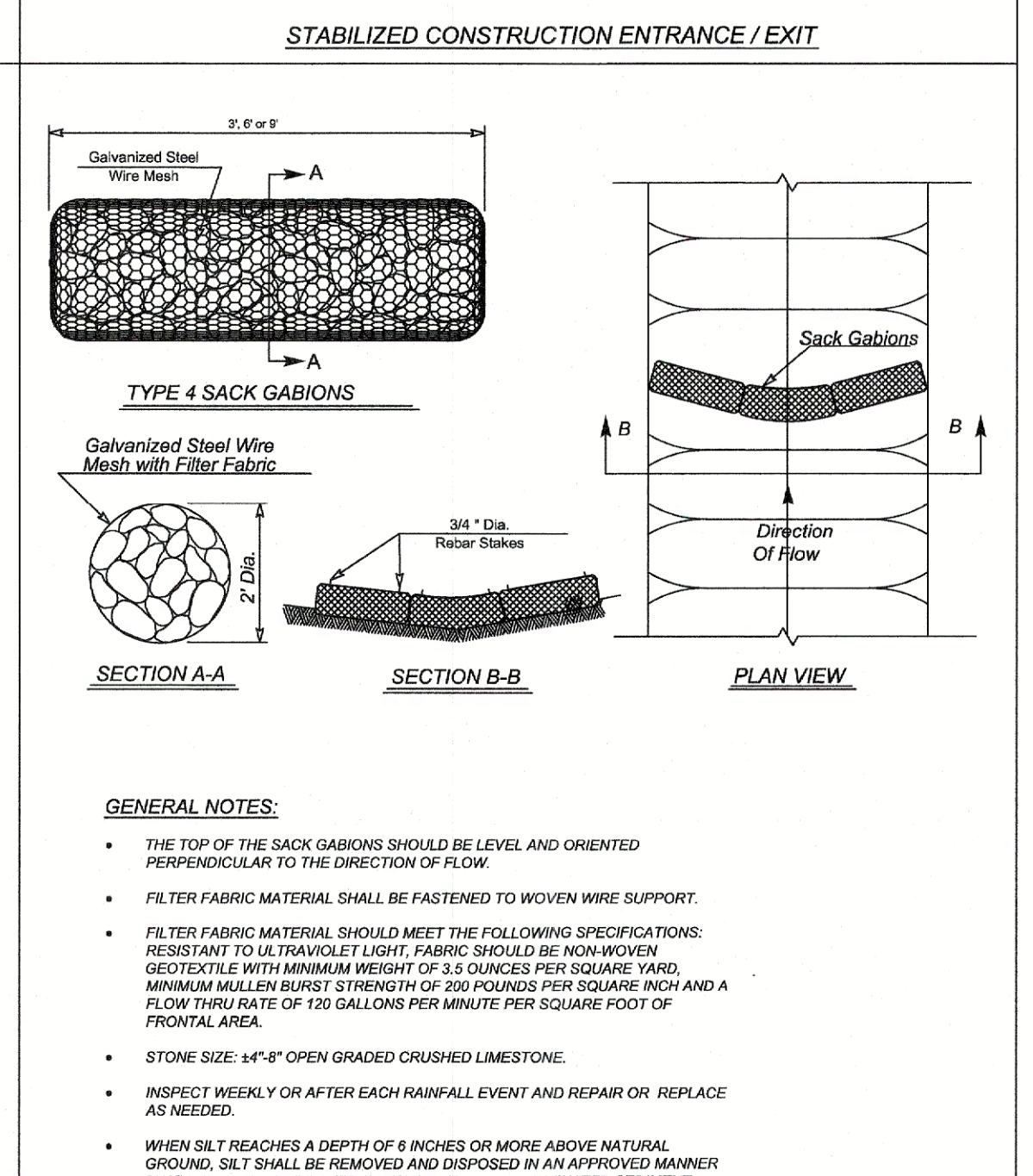
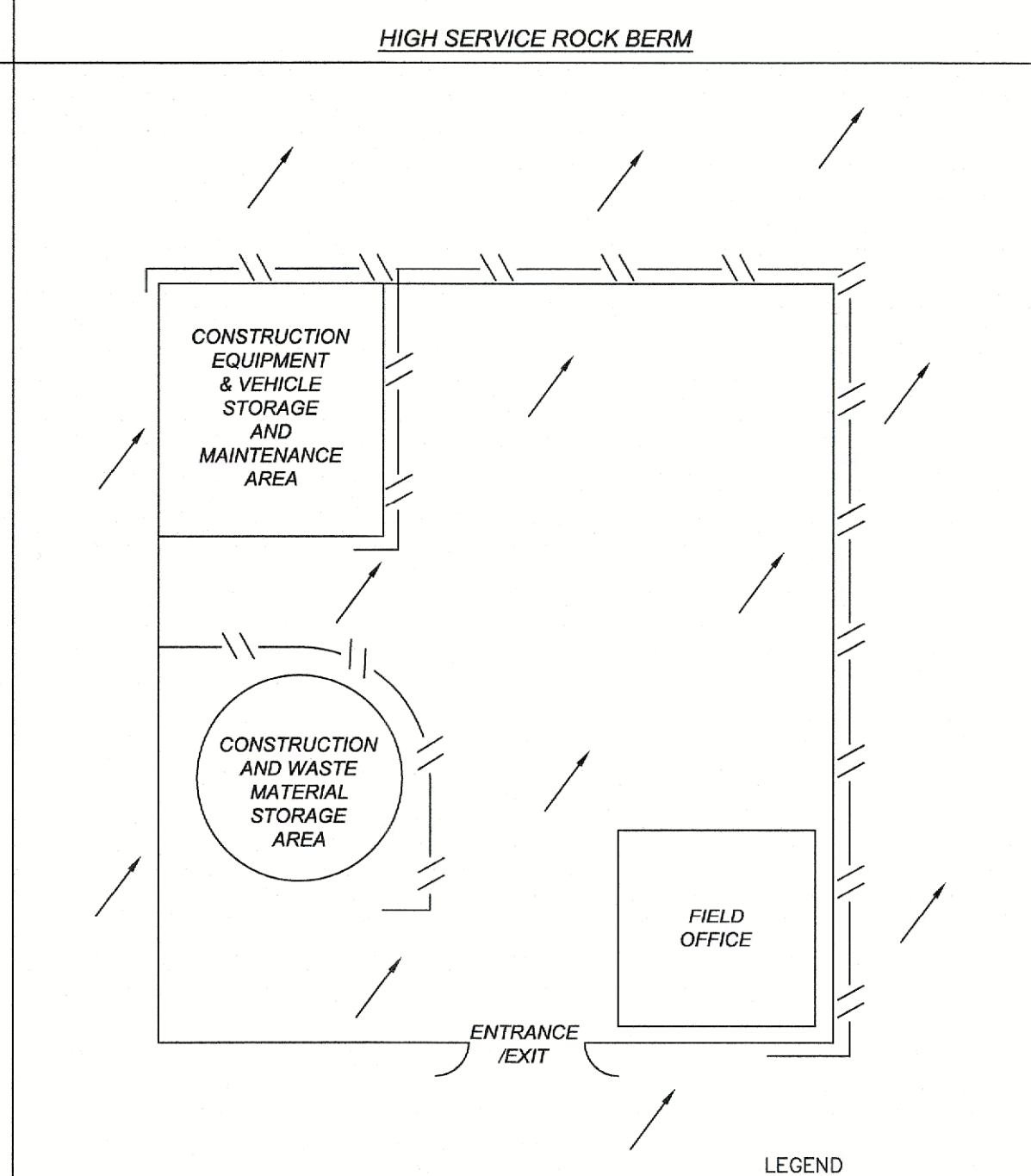
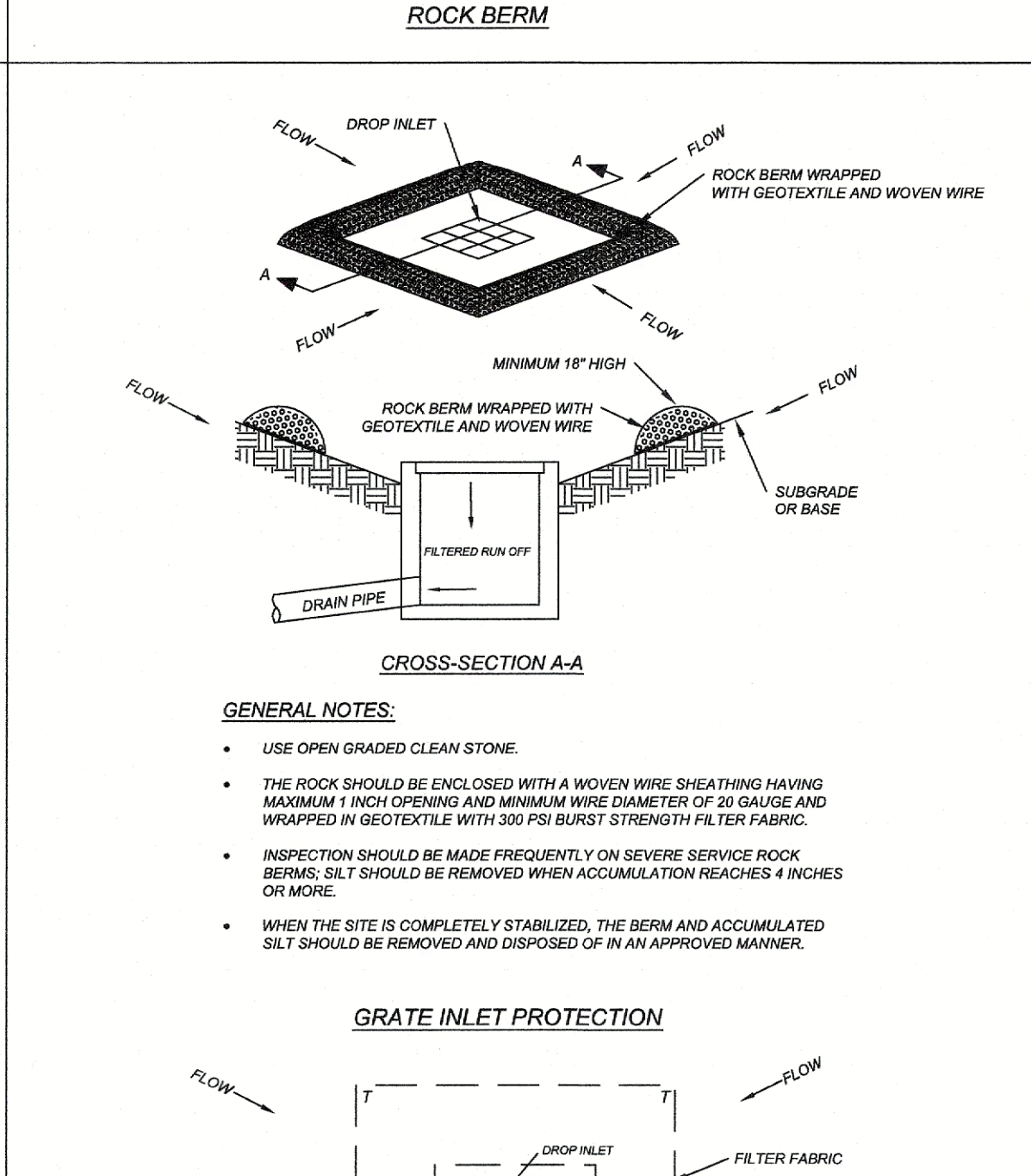
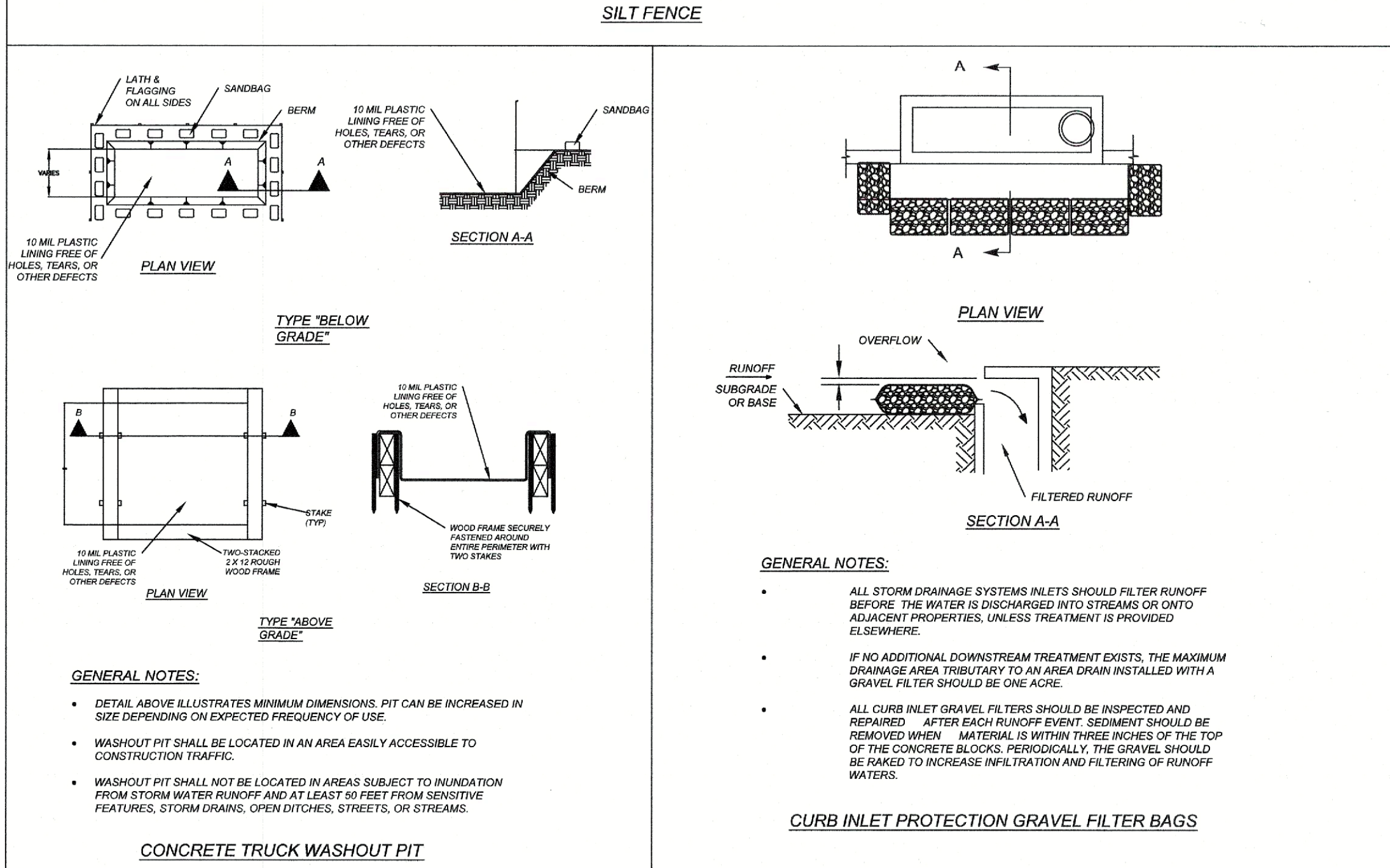
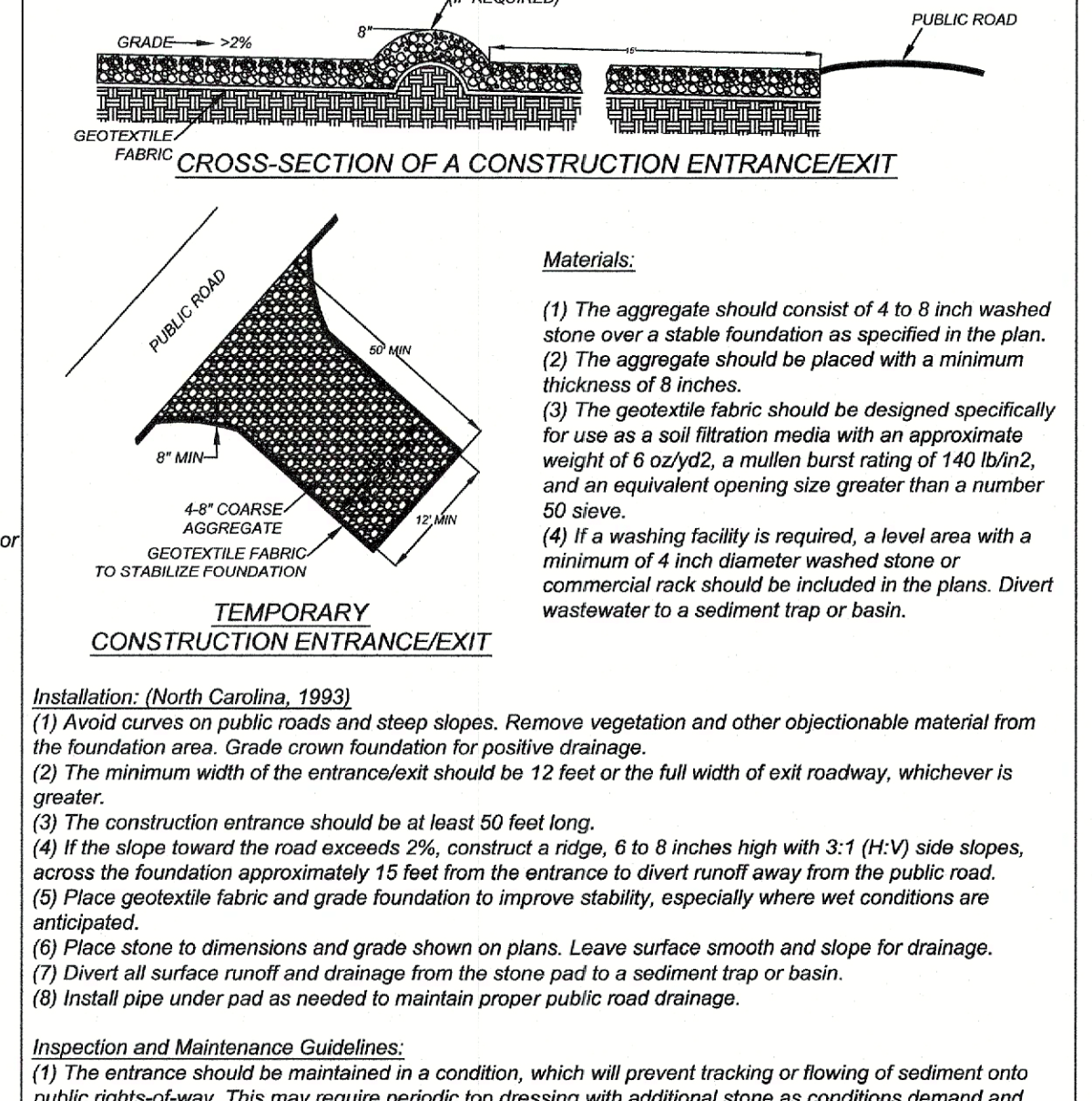
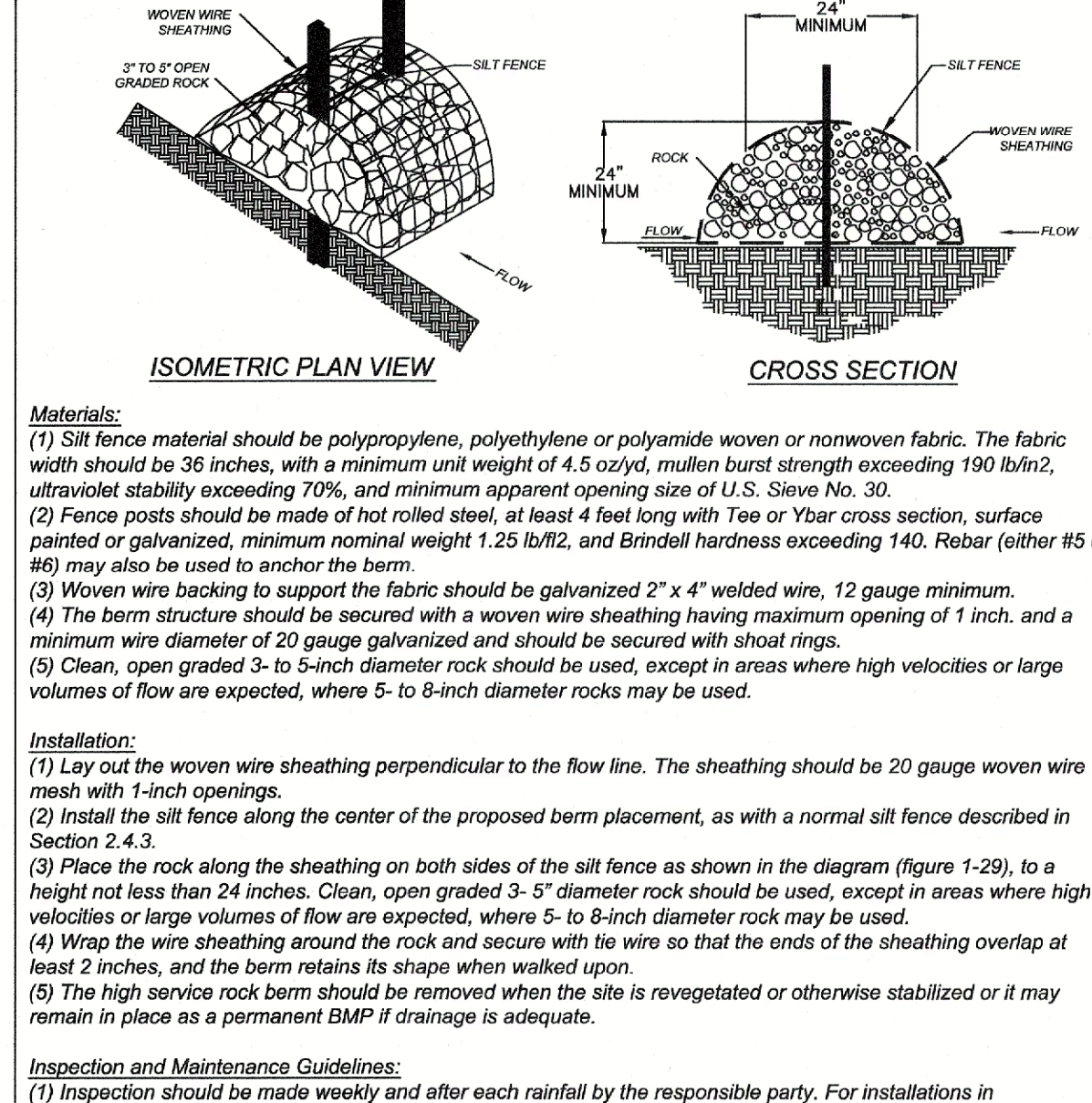
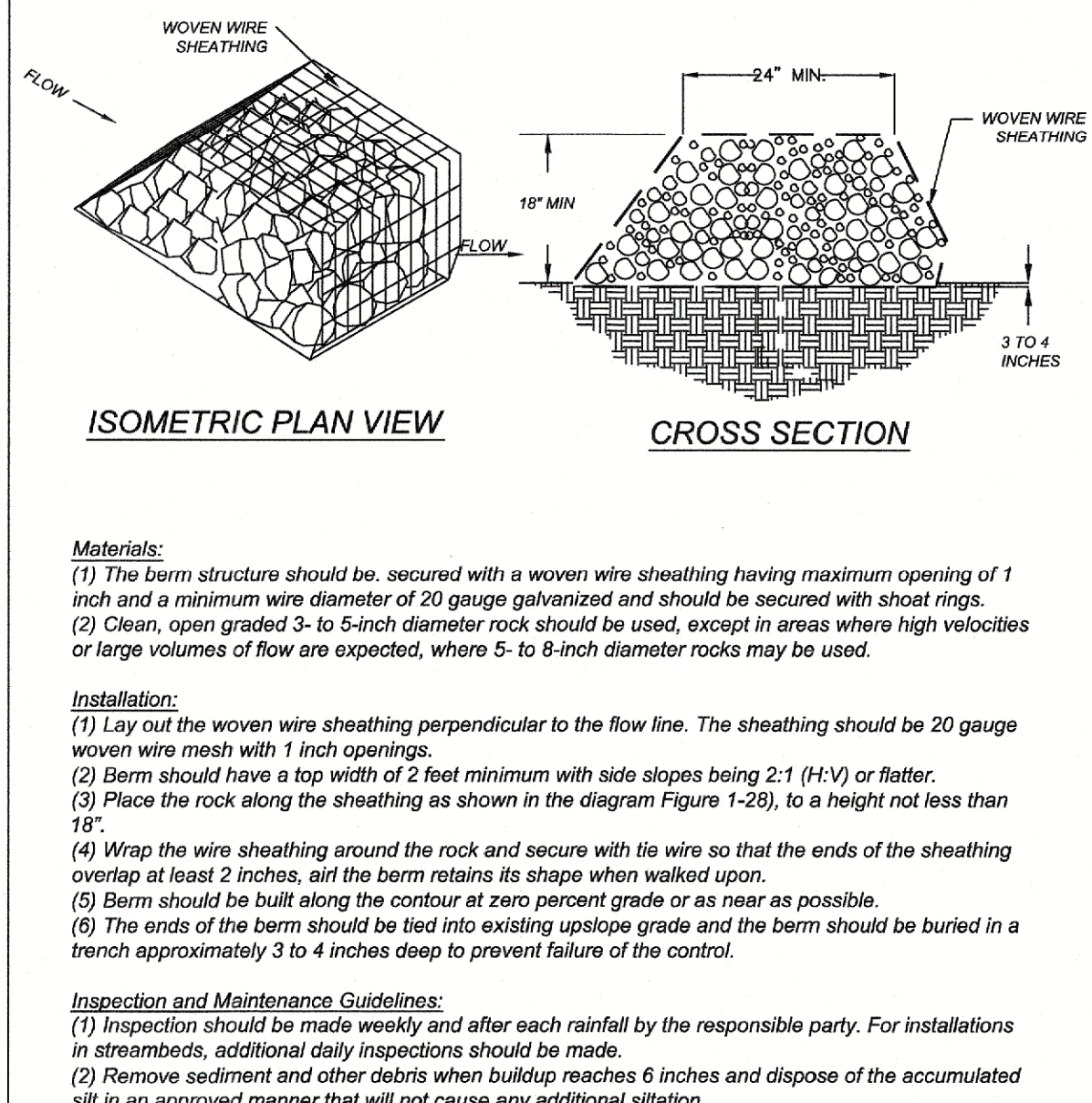
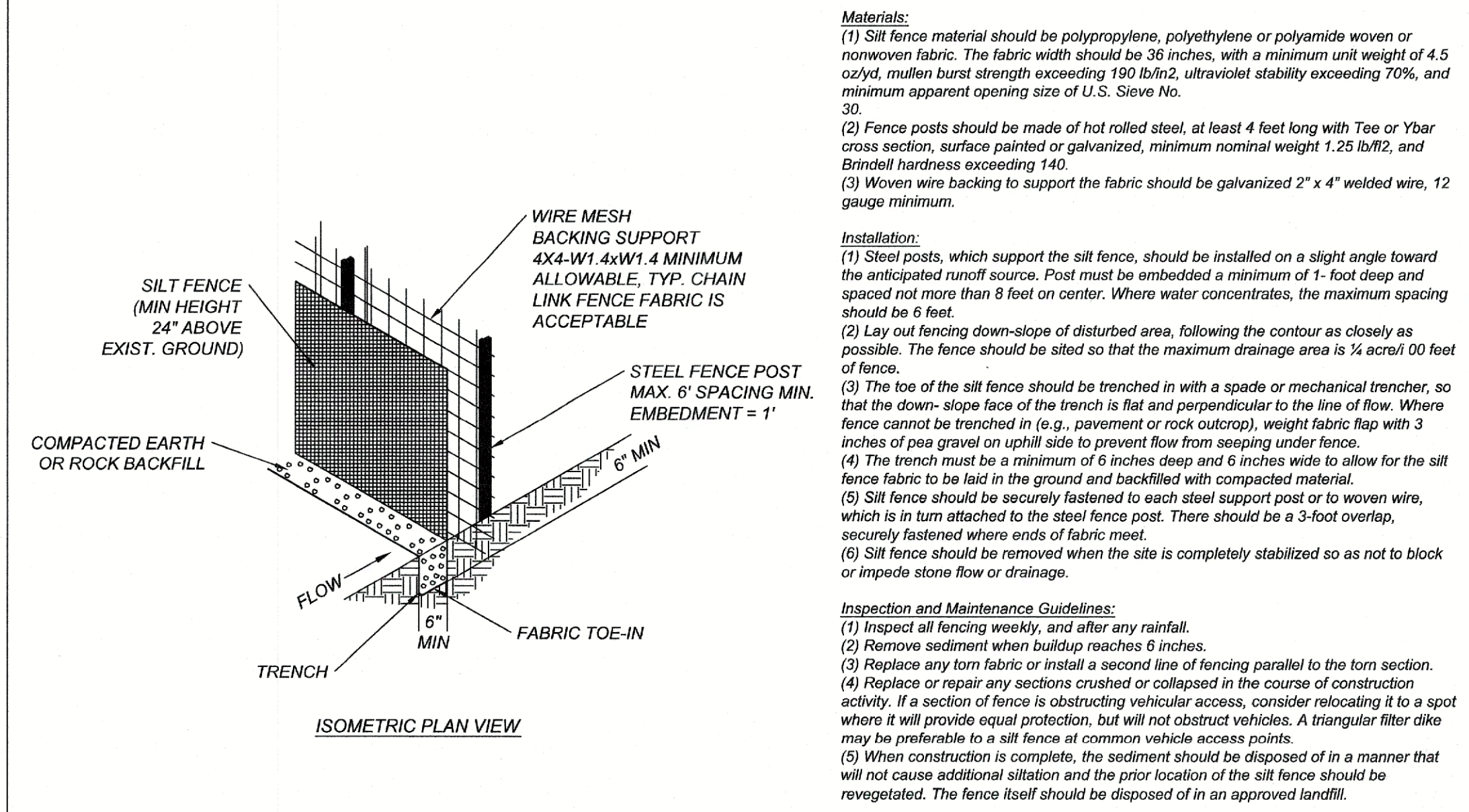
TCEO SITE PLAN

SHEET NUMBER

EX 1.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

EXHIBIT 2



Colliers

Engineering & Design

www.colliersengineering.com

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Formerly Known as

KFW

PROTECT YOURSELF

ALL STATES REQUIRE NOTIFICATION OF EXCAVATIONS. DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE.

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

STATE OF TEXAS

BURT P. WELLINGTON

100256

9/17/25

TPC COMMERCIAL

FOR

GORDON HARTMAN

FAMILY FOUNDATION

LOT 4

BLOCK 13

NCB 18218

SAN ANTONIO

BEXAR COUNTY

TEXAS

Colliers

Engineering & Design

AUSTIN

5901 Vega Avenue

Suite 100

Austin, TX 78735

Phone: 512.287.8370

COLLIERS ENGINEERING & DESIGN, INC.

1801 RIVER ST. SUITE 100

HOUSTON, TEXAS 77056

SCALE: AS SHOWN

DATE: JUNE 2025

DRAWN BY: RS

CHECKED BY: BW

PROJECT NUMBER: 205-12-02

DRAWING NAME: TCEQ SITE PLAN DETAILS

SHEET TITLE: TCEQ DETAILS

SHEET NUMBER: EX 2.0

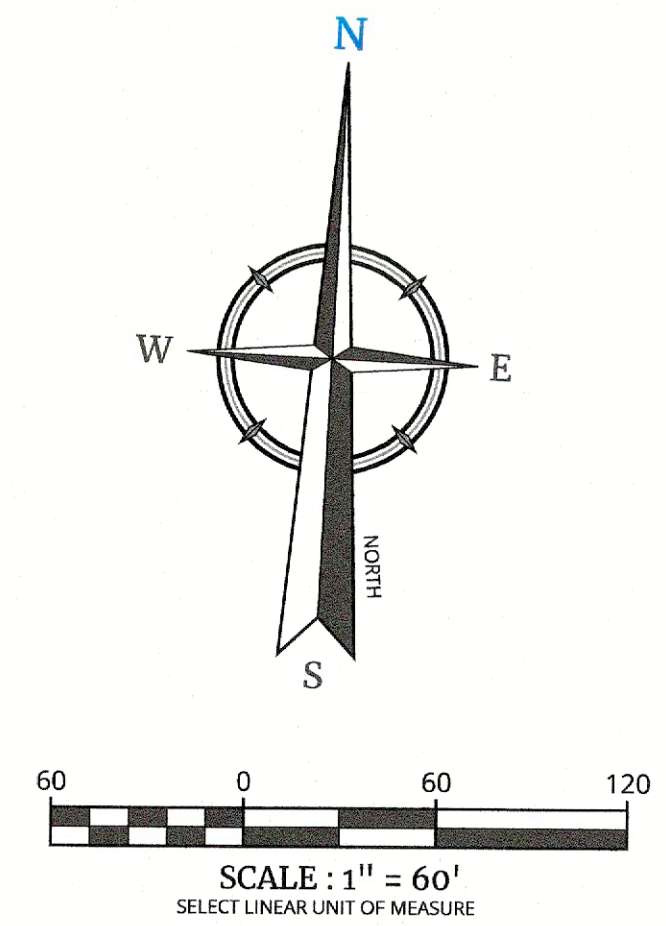
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

NOT FOR CONSTRUCTION

EXHIBIT 3

LEGEND

PROPERTY LINE	
EXISTING CONTOURS	
DRAINAGE AREA BOUNDARY	
SHEET FLOW	
SHALLOW CONCENTRATED, OVERLAND	
CHANNEL FLOW	



Colliers

Engineering
& Design

www.colliersengineering.com

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REV | DATE | DESCRIPTION

GORDON HARTMAN
FAMILY FOUNDATIONEXISTING DRAINAGE AREA
MAP

TPC COMMERCIAL

SAN ANTONIO, TEXAS

Drainage Area	SHEET FLOW					SHALLOW CONCENTRATED FLOW					CHANNEL FLOW			TOTAL/AREA
	n	L (ft)	P2 (in)	s %	Tt(min)	Paved/Unpaved	V (ft/s)	L (ft)	s (%)	Tt(min)	L (ft)	V (ft/s)	Tt(min)	
Existing														
1	0.40	100	4.44	10.45	9	unpaved	4.00	499	6.15	2	215	3.69	0.971	13
2	0.40	100	4.44	9.57	10	unpaved	3.60	219	4.98	1				11
3	0.40	100	4.44	11.10	9						1007	5.31	3.161	12

EXISTING RUNOFF CONDITIONS									
DRAINAGE AREA	ACRES	RUNOFF COEFFICIENT	TIME OF CONCENTRATION (MIN)	5 YEAR INTENSITY (IN/HR)	5 YEAR RUNOFF (CFS)	25 YEAR INTENSITY (IN/HR)	25 YEAR RUNOFF (CFS)	100 YEAR INTENSITY (IN/HR)	100 YEAR RUNOFF (CFS)
1	2.476	0.54	13	5.71	7.63	7.96	10.64	10.02	13.40
2	0.625	0.52	11	6.13	1.99	8.56	2.78	10.81	3.51
3	3.538	0.48	12	5.92	10.05	8.25	14.01	10.41	17.68

AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE	AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE	AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE
2.372	0.52	UNDEVELOPED	0.625	0.52	UNDEVELOPED	3.538	0.47	UNDEVELOPED
0.104	0.96	CONCRETE	0.00	0.96	CONCRETE	0.09	0.96	CONCRETE
COMPOSITE	0.54	DA 1	COMPOSITE	0.52	DA 2	COMPOSITE	0.48	DA 3

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3421 Paesanos Parkway,
Suite 103
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.

SCALE: AS SHOWN
DESIGNED BY: AS
DATE ISSUED: 07/03/2025
SHEET NAME:
DRAWN BY: AS
REVIEWED BY: AC
PROJECT NUMBER: 205-12-02

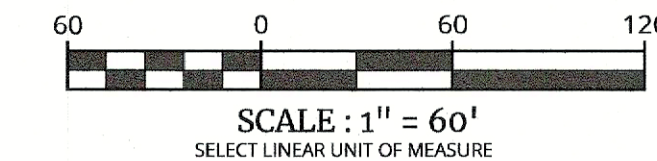
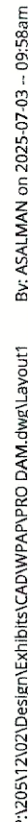
EXISTING DRAINAGE AREA

DRAWING NUMBER:

EX 3A

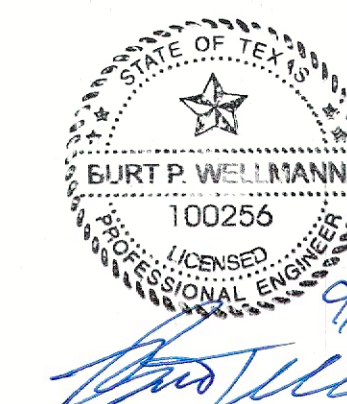
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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[illegible]

GORDON HARTMAN
FAMILY FOUNDATION

PROPOSED DRAINAGE AREA MAP

TPC COMMERCIAL

SAN ANTONIO, TEXAS

Drainage Area	SHEET FLOW					SHALLOW CONCENTRATED FLOW					CHANNEL FLOW			TOTAL/AREA
	n	L (ft)	P2 (in)	s %	Tt(min)	Paved/unpaved	V (ft/s)	L (ft)	s (%)	Tt(min)	L (ft)	V (ft/s)	Tt(min)	Tc(min)
Proposed														
1	0.15	100	4.44	2.90	7	unpaved	1.66	118	1.06	1	699	7.25	2	10
2	0.24	80	4.44	14.35	5	unpaved	1.61	60	1.00	1				6
3	0.24	91	4.44	14.63	5	unpaved	5.59	61	12.00	0	181	10.21	0	6
4	0.40	100	4.44	11.10	9						1007	5.31	3.161	12

PROPOSED/ULTIMATE RUNOFF CONDITIONS									
DRAINAGE AREA	ACRES	RUNOFF COEFFICIENT	TIME OF CONCENTRATION (MIN)	5 YEAR INTENSITY (IN/HR)	5 YEAR RUNOFF (CFS)	25 YEAR INTENSITY (IN/HR)	25 YEAR RUNOFF (CFS)	100 YEAR INTENSITY (IN/HR)	100 YEAR RUNOFF (CFS)
1	2.163	0.87	10	6.36	11.97	8.88	16.71	11.23	21.13
2	0.193	0.55	6	7.52	0.80	10.53	1.12	13.30	1.41
3	0.745	0.63	6	7.52	3.53	10.53	4.94	13.30	6.24
4	3.538	0.53	12	5.92	11.10	8.25	15.47	10.41	19.52

AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE	AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE	AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE	AREA IN ACRES	RUNOFF COEFFICIENT	LAND USE
0.460	0.52	UNDEVELOPED	0.180	0.52	UNDEVELOPED	0.509	0.47	UNDEVELOPED	3.450	0.52	UNDEVELOPED
1.704	0.96	COMMERCIAL	0.013	0.96	CONCRETE	0.24	0.96	CONCRETE	0.088	0.96	CONCRETE
COMPOSITE	0.87	DA 1	COMPOSITE	0.55	DA 2	COMPOSITE	0.63	DA 3	COMPOSITE	0.53	DA 4

Colliers
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Engineering
& Design

SCALE:
AS SHOWN

DESIGNED BY:
AS

DATE ISSUED:
07/03/202

SHEET NAME:

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Suite 103
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Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.

Phone: 210.97
COLLIERS ENGINEERING &

DRAWN BY:
AS

REVIEWED BY: _____
AC _____

PROJECT NUMBER
205-1

PROPOSED DRAINAGE
AREA

DRAWING NUMBER

EX 3B

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

EXHIBIT 4

PUBLIC SEWER PLANS

FOR

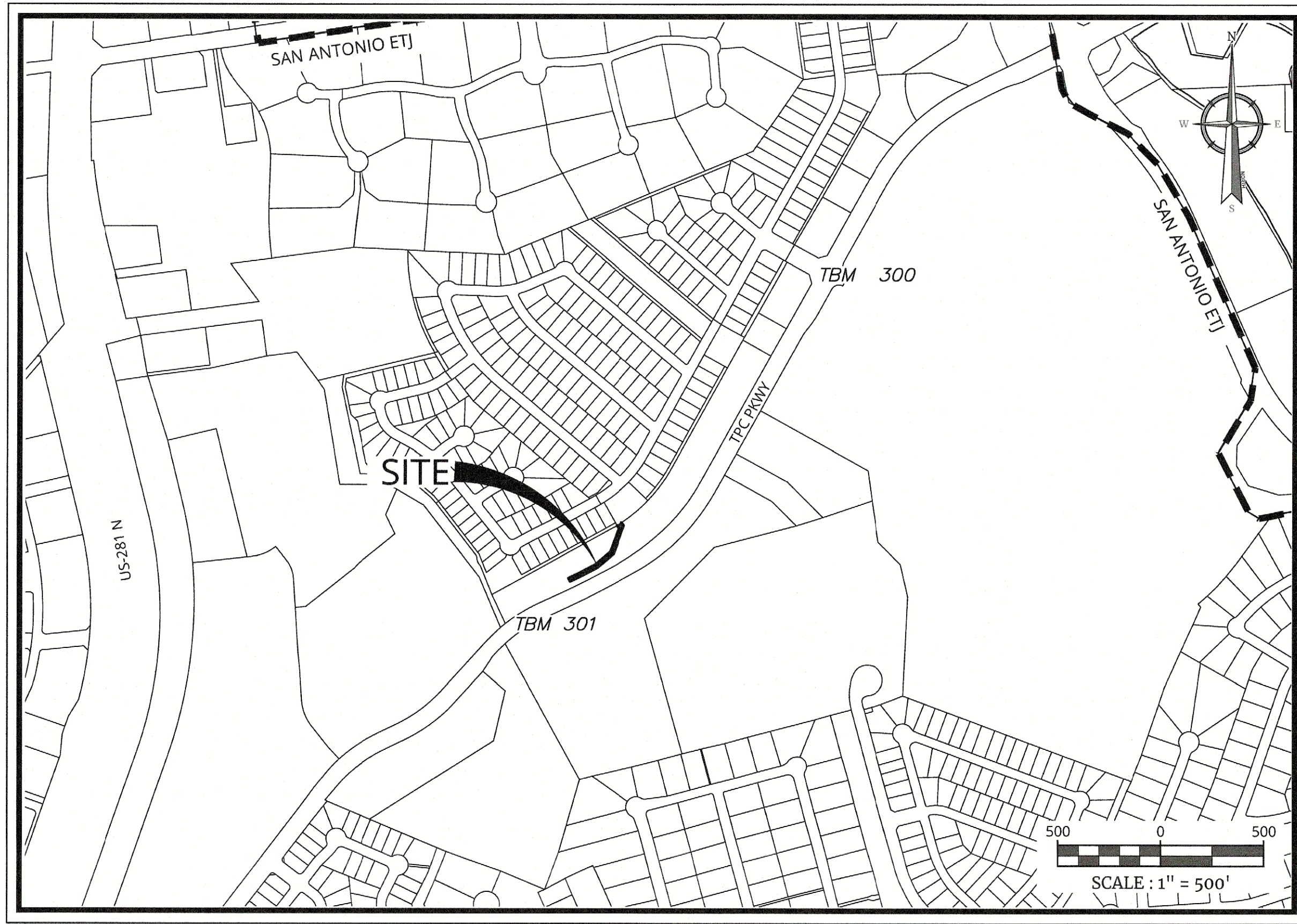
GORDON HARTMAN FAMILY FOUNDATION

TPC PKWY PUBLIC SEWER PLANS

LOTS 4 - 5, BLOCK 13, NCB 18218

SAN ANTONIO

BEXAR COUNTY, TEXAS



LOCATION MAP

SOURCE: IMAGE SOURCE

OWNER / DEVELOPER

HARTMAN GORDON FAMILY FOUNDATION

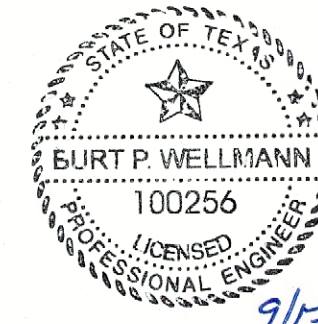
ATTN: GORDON HARTMAN

5210 THOUSAND OAKS DR., STE 1318

SAN ANTONIO, TX 78233

SHEET INDEX	
Sheet Number	Sheet Title
CS1.0	COVER SHEET
CS1.1	SANITARY SEWER GENERAL NOTES
CS2.0	OVERALL SEWER PLAN
CS2.1	LINE A STA 1+00.00 - END SEWER PLAN & PROFILE
CS2.2	SAWS DETAILS

REV	DATE	DRAWN BY	DESCRIPTION
1	11/11/11	1	1
2	11/11/11	2	2
3	11/11/11	3	3
4	11/11/11	4	4
5	11/11/11	5	5
6	11/11/11	6	6
7	11/11/11	7	7
8	11/11/11	8	8
9	11/11/11	9	9
10	11/11/11	10	10



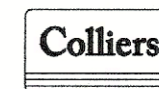
SANITARY SEWER IMPROVEMENTS

FOR

GORDON HARTMAN
FAMILY FOUNDATION

LOT 4
LOT 5
BLOCK 13
NCB 18218

SAN ANTONIO
BEXAR COUNTY
TEXAS

Engineering
& Design

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COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14509
TBPLS Firm#: 10194550

SCALE: AS SHOWN	DATE: XX/XX/XX	DRAWN BY: RS	CHECKED BY: AS
PROJECT NUMBER: 205-12-02		DRAWING NAME: C-CVER2051202	

SHEET TITLE

COVER SHEET

SHEET NUMBER

CS1.0

EAST SEWERSHED - DOS RIOS W.R.C.
PROJECT OVER THE EDWARDS AQUIFER RECHARGE ZONE

DEVELOPER'S NAME: GORDON HARTMAN FAMILY FOUNDATION
DEVELOPER'S ADDRESS: 5210 THOUSAND OAKS DR. STE 1318
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78233
PHONE#: (210)-493-2811 FAX#: _____ TOTAL ACREAGE: 6.639 AC.
SAWS BLOCK MAP#: 176662 TOTAL EDUS: 8
TOTAL LINEAR FOOTAGE OF PIPE: 387 L.F. - 8" SDR 26 PIPE
NUMBER OF LOTS: 2 SAWS JOB#: 25-xxxx PLAT NO.: _____

GENERAL CONSTRUCTION

PERMIT S.A.W.S. JOB# 25-xxxx

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

\\S:\ENGINEERING\CAD\NTES\SANANTONIO\2025\JANUARY\11. SANITARY SEWER GENERAL NOTES

BY: S:\ADMIN

Texas Commission on Environmental Quality
Organized Sewage Collection System (SCS)
General Construction Notes

1. This Organized Sewage Collection System must be constructed in accordance with 30 Texas Administrative Code (TAC) §213.5(c), the Texas Commission on Environmental Quality's (TCEQ) Edwards Aquifer Rules and any local government standard specifications.
2. All contractors conducting regulated activities associated with this proposed regulated project must be provided with copies of the Sewage Collection System plan and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors must be required to keep on-site copies of the plan and the approval letter.
3. A written notice of construction must be submitted to the presiding 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's start date; and
 - the contact information of the prime contractor.
4. Any modification to the activities described in the referenced SCS application following the date of approval may require the submittal of an SCS application to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval.

5. Prior to beginning any construction activity, all temporary erosion and sedimentation control measures must be properly installed and maintained in accordance with the manufacturers specifications. These control must remain in place until the disturbed areas have been permanently stabilized.

6. If any sensitive features are discovered during the wastewater line trenching activities, all regulated activities near the sensitive feature must be suspended immediately. The applicant must immediately notify the appropriate regional office of the TCEQ of the feature discovered. A geologist's assessment of the location and extent of the feature discovered must be reported to that regional office in writing and the applicant must submit a plan for ensuring the structural integrity of the sewer line or for modifying the proposed collection system alignment around the feature. The regulated activities near the sensitive feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from any potentially adverse impacts to water quality while maintaining the structural integrity of the line.

7. Sewer lines located within or crossing the 5-year floodplain of a drainage way will be protected from inundation and stream velocities which could cause erosion and scouring of backfill. The trench must be capped with concrete to prevent scouring of backfill, or the sewer lines must be encased in concrete. All concrete shall have a minimum thickness of six (6) inches.

8. Blasting procedures for protection of existing sewer lines and other utilities will be in accordance with the National Fire Protection Association criteria. Sand is not allowed as bedding or backfill in trenches that have been blasted. If any existing sewer lines are damaged, the lines must be repaired and retested.

9. All manholes constructed or rehabilitated on this project must have watertight size on size resilient connectors allowing for differential settlement. If manholes are constructed within the 100-year floodplain, the cover must have a gasket and be bolted to the ring. Where gasketed manhole covers are required for more than three manholes in sequence or for more than 1500 feet, alternate means of venting will be provided. Bricks are not an acceptable construction material for any portion of the manhole.

The diameter of the manholes must be a minimum of four feet and the manhole for entry must have a minimum clear opening diameter of 30 inches. These dimensions and other details showing compliance with the commission's rules concerning manholes and sewer line/manhole inverts described in 30 TAC §217.55 are included on Plan Sheet CS4.0.

It is suggested that entrance into manholes in excess of four feet deep be accomplished by means of a portable ladder. The inclusion of steps in a manhole is prohibited.

10. Where water lines and new sewer line are installed with a separation distance closer than nine feet (i.e., water lines crossing wastewater lines, water lines paralleling wastewater lines, or water lines next to manholes) the installation must meet the requirements of 30 TAC §217.53(d) (Pipe Design) and 30 TAC §230.44(e) (Water Distribution).

11. Where sewers lines deviate from straight alignment and uniform grade all curvature of sewer pipe must be achieved by the following procedure which is recommended by the pipe manufacturer: N/A.

If pipe flexure is proposed, the following method of preventing deflection of the joint must be used: N/A.

Specific care must be taken to ensure that the joint is placed in the center of the trench and properly bedded in accordance with 30 TAC §217.54.

12. New sewage collection system lines must be constructed with stub outs for the connection of anticipated extensions. The location of such stub outs must be marked on the ground such that their location can be easily determined at the time of connection of the extensions. Such stub outs must be manufactured wyes or tees that are compatible in size and material with both the sewer line and the extension. At the time of original construction, new stub-outs must be constructed sufficiently to extend beyond the end of the street pavement. All stub-outs must be sealed with a manufactured cap to prevent leakage. Extensions that were not anticipated at the time of original construction or that are to be connected to an existing sewer line not furnished with stub outs must be connected using a manufactured saddle and in accordance with accepted plumbing techniques.

If no stub-out is present an alternate method of joining laterals is shown in the detail on Plan Sheet CS4.0. (For potential future laterals).

The private service lateral stub-outs must be installed as shown on the plan and profile sheets on Plan Sheet CS3.0 and marked after backfilling as shown in the detail on Plan Sheet CS4.0.

13. Trenching, bedding and backfill must conform with 30 TAC §217.54. The bedding and backfill for flexible pipe must comply with the standards of ASTM D-2321, Classes IA, IB, II or III. Rigid pipe bedding must comply with the requirements of ASTM C 12 (ANSI A 106.2) classes A, B or C.

14. Sewer lines must be tested from manhole to manhole. When a new sewer line is connected to an existing stub or clean-out, it must be tested from existing manhole to new manhole. If a stub or clean-out is used at the end of the proposed sewer line, no private service attachments may be connected between the last manhole and the cleanout unless it can be certified as conforming with the provisions of 30 TAC §213.5(c)(3)(E).

16. All sewer lines must be tested in accordance with 30 TAC §217.57. The engineer must retain copies of all test results which must be made available to the executive director upon request. The engineer must certify in writing that all wastewater lines have passed all required testing to the appropriate regional office within 30 days of test completion and prior to use of the new collection system. Testing method will be:

- (a) For a collection system pipe that will transport wastewater by gravity flow, the design must specify an infiltration and exfiltration test or a low-pressure air test. A test must conform to the following requirements:
- (1) Low Pressure Air Test.
- (A) A low pressure air test must follow the procedures described in American Society For Testing And Materials (ASTM) C-828, ASTM C-924, or ASTM F-1417 or other procedure approved by the executive director, except as to testing times as required in Table C.3 in subparagraph (C) of this paragraph or Equation C.3 in subparagraph (B)(ii) of this paragraph.
- (B) For sections of collection system pipe less than 36 inch average inside diameter, the following procedure must apply, unless a pipe is to be tested as required by paragraph (2) of this subsection:
- (i) A pipe must be pressurized to 3.5 pounds per square inch (psi) greater than the pressure exerted by groundwater above the pipe.
- (ii) Once the pressure is stabilized, the minimum time allowable for the pressure to drop from 3.5 psi gauge to 2.5 psi gauge is computed from the following equation:

$$\text{Equation C.3} \quad T = \frac{0.085 \times D \times K}{Q}$$

Where:

- T = time for pressure to drop 1.0 pound per square inch gauge in seconds
- K = 0.000419 X D X L, but not less than 1.0
- D = average inside pipe diameter in inches
- L = length of line of same size being tested, in feet
- Q = rate of loss, 0.0015 cubic feet per minute per square foot internal surface
- (C) Since a K value of less than 1.0 may not be used, the minimum testing time for each pipe diameter is shown in the following Table C.3:

PIPE DIAMETER (INCHES)	MINIMUM TIME (SECONDS)	LENGTH FOR MINIMUM (FEET)	TIME FOR LONGER LENGTH (SECONDS/FOOT)
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	100	13.676
27	1530	88	17.309
30	1700	80	21.369
33	1870	72	25.856

- (D) An owner may stop a test if no pressure loss has occurred during the first 25% of the calculated testing time.
- (E) If any pressure loss or leakage has occurred during the first 25% of a testing period, then the test must continue for the entire test duration as outlined above, or until failure.
- (F) Wastewater collection system pipes with a 27 inch or larger average inside diameter may be air tested at each joint instead of following the procedure outlined in this section.
- (G) A testing procedure for pipe with an inside diameter greater than 33 inches must be approved by the executive director.
- (2) Infiltration/Exfiltration Test.
- (A) The total exfiltration, as determined by a hydrostatic head test, must not exceed 50 gallons per inch of diameter per mile of pipe per 24 hours at a minimum test head of 2.0 feet above the crown of a pipe at an upstream manhole.
- (B) An owner shall use an infiltration test in lieu of an exfiltration test when pipes are installed below the groundwater level.
- (C) The total exfiltration, as determined by a hydrostatic head test, must not exceed 50 gallons per inch diameter per mile of pipe per 24 hours at a minimum test head of two feet above the crown of a pipe at an upstream manhole, or at least two feet above existing groundwater level, whichever is greater.
- (D) For construction within a 25-year flood plain, the infiltration or exfiltration must not exceed 10 gallons per inch diameter per mile of pipe per 24 hours at the same minimum test head as in subparagraph (C) of this paragraph.
- (E) If the quantity of infiltration or exfiltration exceeds the maximum quantity specified, an owner shall undertake remedial action in order to reduce the infiltration or exfiltration to an amount within the limits specified. An owner shall retest a pipe following a remediation action.

- (b) If a gravity collection pipe is composed of flexible pipe, deflection testing is also required. The following procedures must be followed:
- (1) For a collection pipe with inside diameter less than 27 inches, deflection measurement requires a rigid mandrel.
- (A) Mandrel Sizing.
- (i) A rigid mandrel must have an outside diameter (OD) not less than 95% of the base inside diameter (ID) or average ID of a pipe, as specified in the appropriate standard by the ASTMs, American Water Works Association, UNI-BELL, or American National Standards Institute, or any related appendix.
- (ii) If a mandrel sizing diameter is not specified in the appropriate standard, the mandrel must have an OD equal to 95% of the ID of a pipe. In this case, the ID of the pipe, for the purpose of determining the OD of the mandrel, must equal be the average outside diameter minus two minimum wall thicknesses for OD controlled pipe and the average inside diameter for ID controlled pipe.
- (iii) All dimensions must meet the appropriate standard.
- (B) Mandrel Design.
- (i) A rigid mandrel must be constructed of a metal or a rigid plastic material that can withstand 200 psi without being deformed.
- (ii) A mandrel must have nine or more odd number of runners or legs.
- (iii) A barrel section length must equal at least 75% of the inside diameter of a pipe.
- (iv) Each size mandrel must use a separate proving ring.
- (C) Method Options.
- (i) An adjustable or flexible mandrel is prohibited.
- (ii) A test may not use television inspection as a substitute for a deflection test.
- (iii) If requested, the executive director may approve the use of a deflectometer or a mandrel with removable legs or runners

- on a case-by-case basis.
- (2) For a gravity collection system pipe with an inside diameter 27 inches and greater, other test methods may be used to determine vertical deflection.
- (3) A deflection test method must be accurate to within plus or minus 0.2% deflection.
- (4) An owner shall not conduct a deflection test until at least 30 days after the final backfill.
- (5) Gravity collection system pipe deflection must not exceed five percent (5%).
- (6) If a pipe section fails a deflection test, an owner shall correct the problem and conduct a second test after the final backfill has been in place at least 30 days.

17. All manholes must be tested to meet or exceed the requirements of 30 TAC §217.58.
- (a) All manholes must pass a leakage test.
- (b) An owner shall test each manhole (after assembly and backfilling) for leakage, separate and independent of the collection system pipes, by hydrostatic exfiltration testing, vacuum testing, or other method approved by the executive director.
- (1) Hydrostatic Testing.
- (A) The maximum leakage for hydrostatic testing or any alternative test methods is 0.025 gallons per foot diameter per foot of manhole depth per hour.
- (B) To perform a hydrostatic exfiltration test, an owner shall seal all wastewater pipes coming into a manhole with an internal pipe plug, fill the manhole with water, and maintain the test for at least one hour.
- (C) A test for concrete manholes may use a 24-hour wetting period before testing to allow saturation of the concrete.
- (2) Vacuum Testing.
- (A) To perform a vacuum test, an owner shall plug all lift holes and exterior joints with a non-shrink grout and plug all pipes entering a manhole.
- (B) No grout must be placed in horizontal joints before testing.
- (C) Stub-outs, manhole boots, and pipe plugs must be secured to prevent movement while a vacuum is drawn.
- (D) An owner shall use a minimum 80 in/lb/torque wrench to tighten the external clamps that secure a test cover to the top of a manhole.
- (E) A test head must be placed at the inside of the top of a cone section, and the seal inflated in accordance with the manufacturer's recommendations.
- (F) There must be a vacuum of 10 inches of mercury inside a manhole to perform a valid test.
- (G) A test does not begin until after the vacuum pump is off.
- (H) A manhole passes the test if after 2.0 minutes and with all valves closed, the vacuum is at least 9.0 inches of mercury.

18. All private service laterals must be inspected and certified in accordance with 30 TAC §213.5(c)(3)(i). After installation of and, prior to covering and connecting a private service lateral to an existing organized sewage collection system, a Texas Licensed Professional Engineer, Texas Registered Sanitarian, or appropriate city inspector must visually inspect the private service lateral and the connection to the sewage collection system, and certify that it is constructed in conformity with the applicable provisions of this section. The owner of the collection system must maintain such certifications for five years and forward copies to the appropriate regional office upon request. Connections may only be made to an approved sewage collection system.

Austin Regional office 12100 Park 35 Circle, Building A Austin, Texas 78753-1808 Phone (512) 339-2929 Fax (512) 339-3795	San Antonio Regional office 14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 440-3096 Fax (210) 545-4329
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TRENCH EXCAVATION SAFETY PROTECTION

Contractor and/or contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety protection systems, programs and/or procedures. The Contractor's implementation of the systems, programs and/or procedures shall provide for adequate trench excavation, safety protection that complies with as a minimum, OSHA standards for trench excavations. Specifically, Contractor and/or Contractor's independently retained employee or safety consultant shall implement a trench safety program in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavation.

I. WHERE A SEWER MAIN CROSSES OVER A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN NINE (9) FEET, ALL PORTIONS OF THE SEWER MAIN WITHIN NINE (9) FEET OF THE WATER LINE SHALL BE CONSTRUCTED USING 150 PSI PRESSURE RATED DUCTILE IRON, CAST IRON OR PVC PIPE AND JOINED WITH EQUALLY PRESSURE RATED PRESSURE RING GASKET CONNECTIONS OR CORROSION PROTECTED MECHANICAL COUPLING DEVICES OF A CAST IRON OR DUCTILE IRON MATERIAL. A SECTION OF 150 PSI PRESSURE RATED PIPE AT LEAST EIGHTEEN (18) FEET IN LENGTH MAY BE CENTERED ON THE WATER MAIN IN LIEU OF PIPE CONNECTION REQUIREMENTS. (NO SEPARATE PAY ITEM.)

II. WHERE A SEMI-RIGID OR RIGID SEWER MAIN CROSSES UNDER A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN NINE FEET BUT GREATER THAN TWO FEET, THE INITIAL BACKFILL SHALL BE CEMENT STABILIZED SAND (TWO OR MORE BAGS OF CEMENT PER CUBIC YARD OF SAND) FOR ALL SECTIONS OF THE SEWER WITHIN NINE FEET OF THE WATER MAIN.

III. WHERE A SEWER MAIN CROSSES UNDER A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN TWO FEET, THE SEWER MAIN SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC WITH A MINIMUM PRESSURE RATING OF 150 PSI WITHIN NINE FEET OF THE WATER MAIN. SHALL HAVE A SEGMENT OF SEWER PIPE CENTERED ON THE WATER MAIN, SHALL BE PLACED NO CLOSER THAN SIX INCHES BETWEEN OUTER DIAMETERS, AND SHALL BE JOINED WITH PRESSURE RING GASKET CONNECTIONS OR CORROSION PROTECTED MECHANICAL COUPLING DEVICES OF A CAST IRON OR DUCTILE IRON MATERIAL. A SECTION OF 150 PSI PRESSURE RATED PIPE OF A LENGTH GREATER THAN EIGHTEEN (18) FEET MAY BE CENTERED ON THE WATER MAIN IN LIEU OF PIPE CONNECTION REQUIREMENTS. (NO SEPARATE PAY ITEM.)

IV. WHERE A SEWER MAIN PARALLELS A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN NINE FEET, THE SEWER MAIN SHALL BE BELOW THE WATER MAIN, SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC WITH A MINIMUM PRESSURE RATING OF 150 PSI FOR BOTH PIPE AND JOINTS FOR A DISTANCE OF NINE FEET BEYOND THE POINT OF CONFLICT, SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE BETWEEN OUTER DIAMETERS OF TWO FEET VERTICALLY AND FOUR FEET HORIZONTALLY, AND SHALL BE JOINED WITH PRESSURE RING GASKET CONNECTIONS OR CORROSION PROTECTED MECHANICAL COUPLING DEVICES OF A CAST IRON OR DUCTILE IRON MATERIAL.

V. SANITARY SEWER MANHOLES SHALL NOT BE INSTALLED ANY CLOSER THAN NINE FEET TO WATER MAINS.

COMPACTION NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

GENERAL CONSTRUCTION (NOVEMBER 2024):

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:
- A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM"; TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER"; TAC TITLE 30 PART 1 CHAPTER 290.
- B. CURRENT TxDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."
- C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION."
- D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR CONSTRUCTION."
- E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).
2. THE CONTRACTOR SHALL OBTAIN SAWS STANDARD DETAILS FROM SAWS WEBSITE, https://apps.saws.org/business_center/specs/constspecs/ UNLESS OTHERWISE NOTED WITHIN DESIGN PLANS.
3. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500 (DURING REGULAR SAWS WORKING HOURS) AND PROVIDE NOTIFICATION PROCEDURES THE CONTRACTOR WILL USE TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS TWO (2) WEEKS PRIOR TO EXCAVATION. OUTSIDE OF REGULAR SAWS WORKING HOURS THE SAWS EOC SHOULD BE CONTACTED AT 210-704-7297.
4. IF NECESSARY, CONTRACTOR WILL COORDINATE USE OF SAWS PREMISES AT NO ADDITIONAL COST TO SAWS. SUCH EFFORTS INCLUDE, BUT ARE NOT LIMITED TO, OBTAINING SECURITY IDENTIFICATION BADGES REQUIRED FOR ACCESS TO SAWS FACILITIES.
5. LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.
6. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. AS-BUILTS FOR SAWS INFRASTRUCTURE CAN BE OBTAINED AT WEBSITE BELOW. CONTRACTOR SHALL COORDINATE PHYSICAL LOCATES FOR SAWS INFRASTRUCTURE THROUGH THE SAWS INSPECTOR. PLEASE ALLOW UP TO 7 TO BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS INFRASTRUCTURE. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:
- SAN ANTONIO WATER SYSTEM:
REQUEST AS-BUILTS: <https://www.saws.org/service/locates-service/>
COSA DRAINAGE 210-266-8433
COSA TRAFFIC SIGNAL OPERATIONS 210-207-7720
TEXAS STATEWIDE ONE CALL LOCATOR 1-800-545-6005 OR 811

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING, AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGES DONE BY THE PROJECT'S CONSTRUCTION.
8. CONTRACTOR SHALL NOT MAKE USE OF DUMPSTERS OR WASTE BINS THAT ARE INTENDED TO SERVE RESIDENTS AND/OR BUSINESSES.
9. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION AND BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT.
10. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
11. ALL WORK WITHIN THE 100-YEAR FLOODPLAIN SHALL BE DONE IN ACCORDANCE WITH FLOODPLAIN DEVELOPMENT PERMIT.
12. ANY WORK COMPLETED WITHOUT PRIOR WRITTEN AUTHORIZATION WHICH IS NOT INCLUDED IN THESE PLANS AND SPECIFICATIONS WILL NOT BE COMPENSATED BY THE SAN ANTONIO WATER SYSTEM.
13. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS.

WEEKEND WORK: CONTRACTORS ARE REQUIRED TO SUBMIT REQUEST TO THE SAWS INSPECTION DIVISION CONSTRUCTION DEPARTMENT BY 12:00PM ON THE WEDNESDAY PRIOR TO THE WEEKEND BEING REQUESTED. REQUEST SHOULD BE SENT TO CONSTRUCT@EOW@SAWS.ORG.

ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION AT NO COST TO SAWS.

14. PRE-CON SITE VIDEO: BEFORE THE START OF ANY CONSTRUCTION, THE SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO SAWS INSPECTIONS. A PRE-SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF THE EXISTING CONDITIONS (NSP).
15. POWER POLE BRACING: CONTRACTORS SHOULD BE ADVISED THAT THERE ARE EXISTING OVERHEAD UTILITY POLES ALONG THE PROJECT CORRIDOR. CONTRACTORS SHOULD FURTHER BE ADVISED THAT IF THE DISTANCE FROM THE OUTSIDE FACE OF A UTILITY TRENCH TO THE FACE OF A UTILITY POLE IS LESS THAN 5 FEET, SAID UTILITY POLE IS SUBJECT TO BRACING, BASED ON A DETERMINATION MADE BY UTILITY POLE OWNER. COSTS INCURRED BY CONTRACTOR FOR BRACING OF THESE UTILITY POLES IS SUBSIDIARY TO THAT RESPECTIVE UTILITY COMPANY'S WORK. IT IS ADVISABLE FOR THE CONTRACTOR TO REVIEW THE CONSTRUCTION DOCUMENTS AND VISIT THE CONSTRUCTION SITE TO DETERMINE POTENTIAL IMPACTS.
16. CONSTRUCTION SEQUENCING: IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SCHEDULE SEQUENCING FOR REMOVAL AND INSTALLATION OF EXISTING AND PROPOSED SAWS UTILITIES IN CONJUNCTION WITH GENERAL PROJECT CONSTRUCTION. SEQUENCE OF CONSTRUCTION ACTIVITIES SHALL BE CONSIDERED IN ORDER TO MINIMIZE THE EXTENT AND DURATION OF DISTURBANCES.
17. CONTRACTOR SHALL COMPLY WITH APPLICABLE REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE OVERSEEN BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). OSHA INFORMATION AND RELATED MATERIALS MAY BE OBTAINED AT <https://www.osha.gov> OR AT THE OSHA SAN ANTONIO OFFICE LOCATED AT FOUNTAINHEAD TOWER, SUITE 605 8200 W. INTERSTATE 10 SAN ANTONIO, TX 78230 WHICH IS ALSO REACHABLE BY PHONE AT (210) 472-5040.
18. TRENCH EXCAVATION SAFETY PROTECTION: CONTRACTOR AND/OR CONTRACTORS INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREAS IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH, AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTORS INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

WATER SECTION:

19. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS INSPECTION AND/OR SAWS PRODUCTION GROUPS AT LEAST TWENTY-FIVE (25) CALENDAR DAYS IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY. SAWS PRODUCTION CONTROL CENTER 210-233-2016
20. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIAL (ACM), MAYBE LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCURS. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER ITEM NO. 3000, "HANDLING ASBESTOS FOR REMOVAL". AC PIPE REMOVAL ON CONSTRUCTION PROJECTS (FOR TIE-INS) SHOULD BE IN LENGTH OF 26 LINEAR FEET (LF), LENGTHS OF 13 LF SHOULD BE REMOVED WHERE AC PIPE IS BEING REMOVED AND CROSSING PIPES, CONDUITS, OR BOXES.
21. VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN, THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE REMOVED AND REPLACED WITH A CAP/PLUG. (NSP)
22. DIVISION VALVES: DIVISION VALVES SHOWN ON PLANS OR NOT SHOWN ON PLANS BUT FOUND IN THE FIELD SHALL ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF AND ONLY WITH PRIOR WRITTEN APPROVAL OF THE SAWS DIRECTOR OF PRODUCTION AND OPERATIONS AND PROPER COORDINATION WITH ALL SAWS DEPARTMENTS. CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE INSPECTOR A MINIMUM OF TWENTY-FIVE (25) CALENDAR DAYS IN ADVANCE TO START THE COORDINATION PROCESS AND WILL BE INFORMED BY THE INSPECTOR WHEN THE DIVISION VALVE WILL BE OPERATED BY THE SAWS DISTRIBUTION AND COLLECTION STAFF. THE DIVISION VALVE CAN ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF MEMBER NOT THE INSPECTOR OR THE CONTRACTOR. OPERATION OF A DIVISION VALVE WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE SAWS DISTRIBUTION AND COLLECTION STAFF WILL CONSTITUTE A MATERIAL BREACH OF ANY WRITTEN SAWS CONTRACT OR PERMIT IN ADDITION TO SUBJECTING THE CONTRACTOR TO LIABILITY FOR ANY AND ALL FINES, FEES, OR OTHER DAMAGES, DIRECT OR CONSEQUENTIAL, THAT MAY ARISE FROM OR BE CAUSED BY THE OPERATION OF THE VALVE WITHOUT PRIOR WRITTEN PERMISSION. PLEASE BE INFORMED THAT THE APPROVAL OF THE OPERATION OR OPENING OR CLOSING OF A DIVISION VALVE CAN TAKE SEVERAL WEEKS FOR APPROVAL. DIVISION VALVES WILL ALSO HAVE A VALVE LID LABELED DIVISION VALVE AND A LOCKING MECHANISM INSTALLED WITH A KEY. THE LOCK AND KEY MECHANISM WILL BE PAID FOR BY THE CONTRACTOR BUT WILL BE INSTALLED BY SAWS DISTRIBUTION AND COLLECTION STAFF.
23. IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION 847, SAWS SHALL MACHINE CHLORINATE NEW WATER MAINS IF THE INTERCONNECTING WATER MAIN LENGTH IS GREATER THAN 800 FEET. CONTRACTOR SHALL CHLORINATE NEW MAINS WITH HTH IF THE INTERCONNECTING WATER MAIN LENGTH IS 800 FEET OR LESS.

SEWER NOTES:

24. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THEIR WORK. ALL CONTRACTOR PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:
- A. IDENTIFY THE SOURCE OF THE SSO AND NOTIFY THE SAWS EMERGENCY OPERATIONS CENTER (EOC) IMMEDIATELY AT 210-704-SAWS (210-704-7297), PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OR FLOW.
- B. ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.
- C. CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE CONTAMINATION OF WATERWAYS.
- D. CLEAN UP SPILL SITE (RETURN CONTAINED SEWAGE TO THE COLLECTION SYSTEM IF POSSIBLE) AND PROPERLY DISPOSE OF CONTAMINATED SOIL/MATERIALS. E. CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS.
- F. MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE-CLEANING AND TELEVISIONING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 24 HOURS.

SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY SAWS, INCLUDING ANY FINES FROM EPA.

NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND SAWS.

25. THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED, IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION ITEM NO. 865, "BYPASS PUMPING SMALL DIAMETER SANITARY SEWER MAINS" AND STANDARD SPECIFICATION ITEM NO. 864, "BYPASS PUMPING LARGE DIAMETER SANITARY SEWER MAINS" AS APPLICABLE. PAYMENT FOR SUCH WORK WILL BE MADE UNDER THE APPROPRIATE BID ITEM ASSOCIATED WITH SANITARY SEWER BYPASS PUMPING IN ACCORDANCE WITH SAWS STANDARD SPECIFICATIONS 865 AND 864.
26. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FLOW MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500 AND/OR SAWS PRODUCTION GROUPS AT LEAST TWO WEEKS OR MORE IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
27. ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY; IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS (NSP).
28. MANHOLE REMOVAL: WHERE EXISTING MANHOLES ARE TO BE REPLACED BY THE CONTRACTOR, THE EXISTING MANHOLES SHALL BE REMOVED. (NSP)
29. SMART MANHOLE COVERS: THE CONTRACTOR SHALL NOTIFY SAWS EOC AT 210-704-SAWS (210-233-7297) AND EITHER AMERICA ESPINOZA AT 210-233-2934 OR JOSE A. MARTINEZ AT 210-233-3071 A MINIMUM OF 72 HOURS, NOT COUNTING WEEKENDS OR SAWS HOLIDAYS, BEFORE WORKING ON THE PIPE OR MANHOLE. IN ORDER TO HAVE SAWS REMOVE THE SMART COVER, ANY DAMAGE DONE TO THE SMART COVER WILL BE CHARGED TO THE CONTRACTOR THROUGH A CHANGE ORDER.
30. FLOW METERS IN MANHOLES: THE CONTRACTOR SHALL NOTIFY BOBBY JOHNSON AT 210-233-3493 OR ABEL BORDUAT AT 210-233-3704 A MINIMUM OF 72 HOURS, NOT COUNTING WEEKENDS OR SAWS HOLIDAYS, BEFORE WORKING ON THE PIPE OR MANHOLE. IN ORDER TO HAVE SAWS REMOVE THE FLOW METER IN THE MANHOLE, ANY DAMAGE DONE TO THE FLOW METER WILL BE CHARGED TO THE CONTRACTOR THROUGH A CHANGE ORDER.

EAST VERSHERSD - DOS RIOS W.R.C.
PROJECT OVER THE EDWARDS AQUIFER RECHARGE ZONE

DEVELOPER'S NAME:	<u>GORDON HARTMAN FAMILY FOUNDATION</u>		
DEVELOPER'S ADDRESS:	<u>5210 THOUSAND OAKS DR. STE 1318</u>		
CITY:	<u>SAN ANTONIO</u>	STATE:	<u>TEXAS</u>
PHONE#:	<u>(210) - 493 - 2811</u>	FAX#:	<u>721-7833</u>
		TOTAL ACREAGE:	<u>6.639 AC.</u>
SAWS BLOCK MAP#:	<u>176662</u>	28 L.F. - 6" SDR 26 PIPE	TOTAL EDU# <u>8</u>
TOTAL LINEAR FOOTAGE OF PIPE:	<u>387 L.F. - 8" SDR 26 PIPE</u>		
NUMBER OF LOTS:	<u>2</u>	SAWS JOB#:	<u>25-xxxx</u>
		PLAT NO.:	<u>xxxxxx</u>

GENERAL CONSTRUCTION
PERMIT S.A.W.S. JOB# 25-xxxx

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STATE OF TEXAS
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100256
PROFESSIONAL ENGINEER
9/1/25

SANITARY SEWER IMPROVEMENTS

FOR

GORDON HARTMAN FAMILY FOUNDATION

LOT 4
LOT 5
BLOCK 13
NCB 18218

SAN ANTONIO
BEXAR COUNTY
TEXAS

Colliers

Engineering & Design

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COLLIERS ENGINEERING & DESIGN, INC.
TXPEL Form: 1019450

SCALE: AS SHOWN
DATE: XX/XX/XX
PROJECT NUMBER: 2025-12-02
DRAWING NAME: C:\GRL\NTES-SAWS\20251202

005-11-02

SANITARY SEWER GENERAL NOTES

SHEET NUMBER: CS1.1

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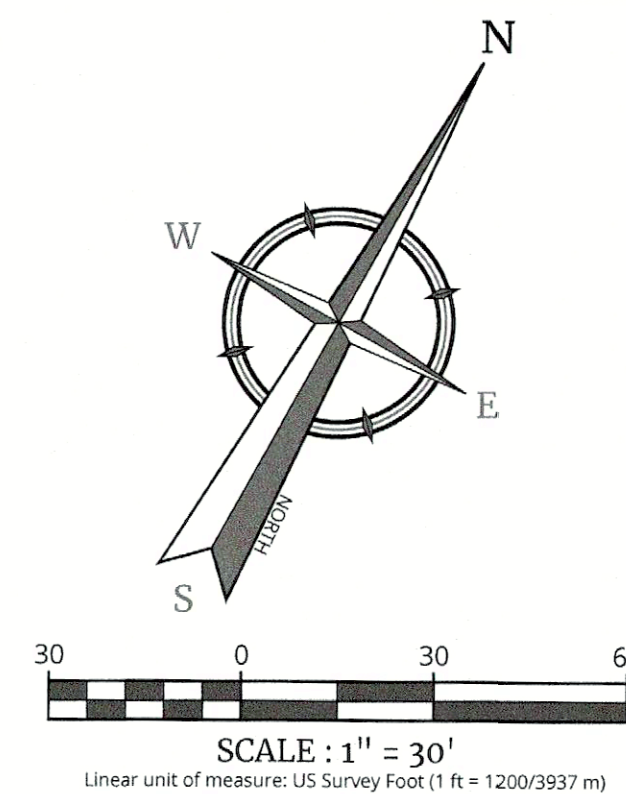
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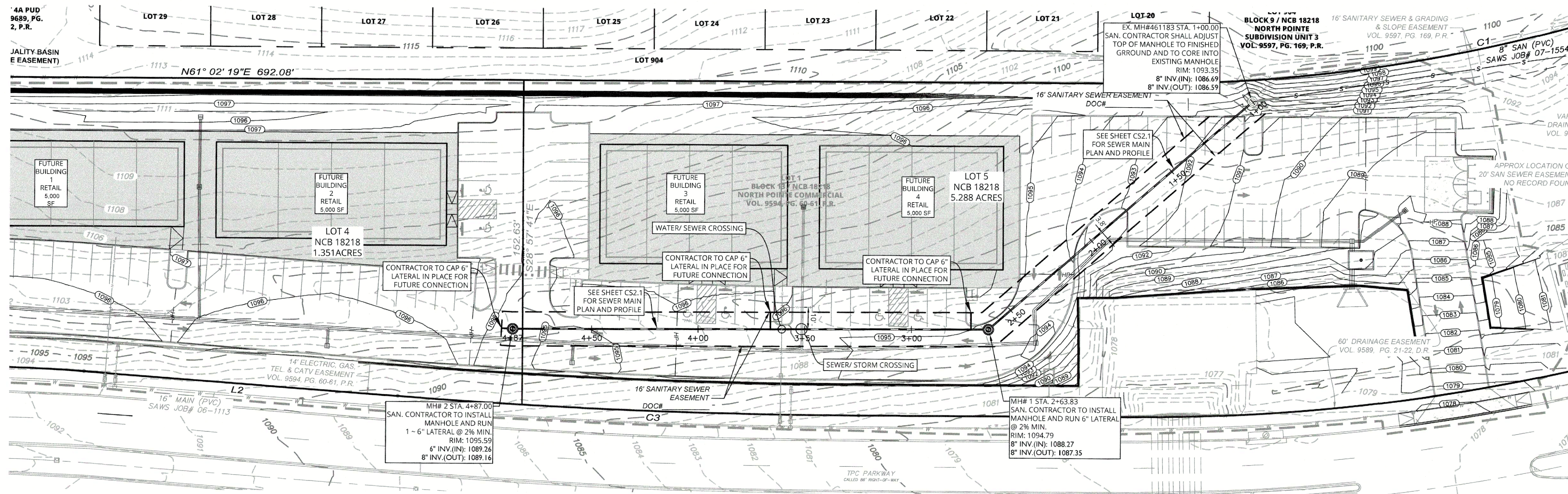


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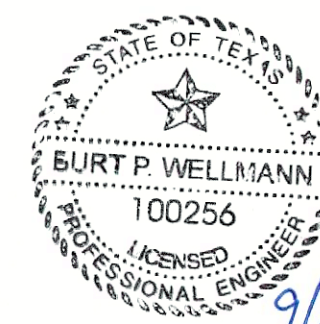
EXISTING	LEGEND	PROPOSED
	LIMITS OF CONSTRUCTION	
	RIGHT OF WAY LINE	
	PROPERTY LINE	
	EDGE OF PAVEMENT	
	CURB	
	DEPRESSED CURB	
	SIDEWALK	
	FENCES	
	CATCH BASIN	
	DRAIN INLET	
	STORM MANHOLE	
	SANITARY MANHOLE	
	FLARED END SECTION	
	HEADWALL	
	HYDRANT	
	POLE MOUNTED LIGHT	
	CABLE TV CONDUIT	
	WATER MAIN	
	GAS MAIN	
	TELEPHONE CONDUIT	
	ELECTRIC CONDUIT	
	SANITARY PIPE	
	STORM PIPE	



EAST SEWERSHED - DOS RIOS W.R.C.
PROJECT OVER THE EDWARDS AQUIFER RECHARGE ZONE

DEVELOPER'S NAME: GORDON HARTMAN FAMILY FOUNDATION	
DEVELOPER'S ADDRESS: 5210 THOUSAND OAKS DR., STE 1318	
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78233	
PHONE#: (210) - 493 - 2811 FAX#: TOTAL ACRES: 6.639 AC.	
SAWS BLOCK MAP#: 176662 28 L.F. - 6" SDR 26 PIPE TOTAL EDUS: 8	
TOTAL LINEAR FOOTAGE OF PIPE: 387 L.F. - 8" SDR 26 PIPE	
NUMBER OF LOTS: 2 SAWS JOB#: 25-xxxx PLAT NO.:	

GENERAL CONSTRUCTION
PERMIT S.A.W.S. JOB# 25-xxxx



SANITARY SEWER
IMPROVEMENTS
FOR
GORDON HARTMAN
FAMILY FOUNDATION

LOT 4
LOT 5
BLOCK 13
NCB 18218

SAN ANTONIO
BEXAR COUNTY
TEXAS

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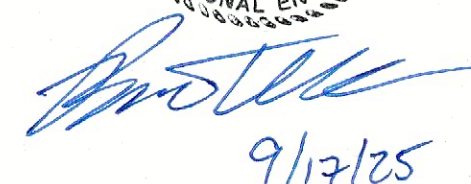
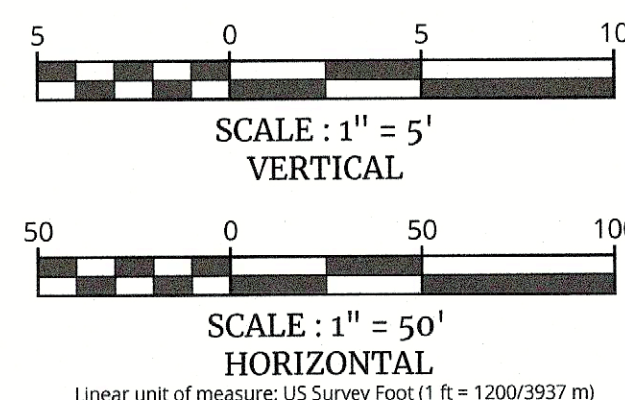
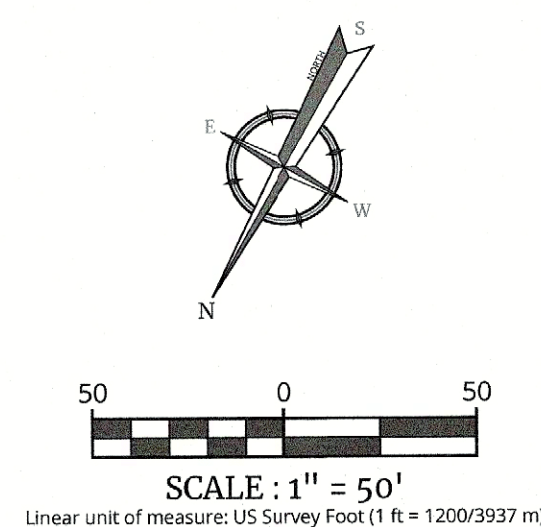
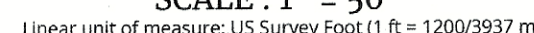
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TERRY KEMP P.E. 14000
TERRY'S FORM: 10194650

SCALE: AS SHOWN	DATE: XX/XX/XX	DRAWN BY: RS	CHECKED BY: AS
PROJECT NUMBER: 205-12-02	DRAWING NAME: C-UTIL2051202		

OVERALL SEWER PLAN

SHEET NUMBER:
CS2.0

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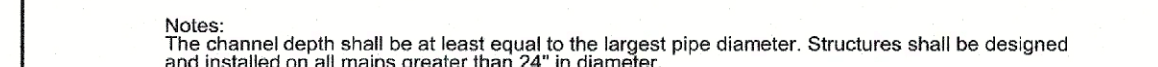
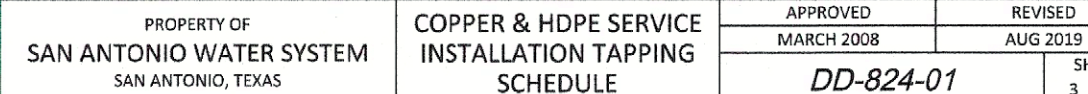
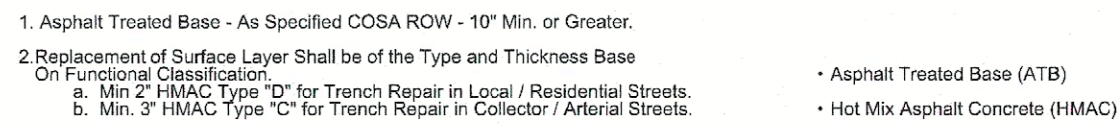
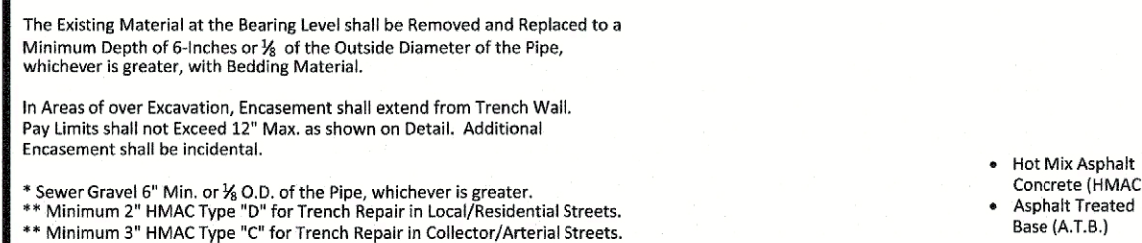
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COLLIERS ENGINEERING & DESIGN, INC.
TBE Firm#: F-14900
TBEFS Firm#: 101-94550

SHEET TITLE:

SHEET NUMBER:

DEVELOPER'S NAME: GORDON HARTMAN FAMILY FOUNDATION
DEVELOPER'S ADDRESS: 5210 THOUSAND OAKS DR. STE 1318
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78233
PHONE#: (210)-493-2811 FAX#: _____ TOTAL ACREAGE: 6.639 AC.
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NUMBER OF LOTS: 2 SAWS (JOB#): 25-xxxxxx PLAT NO.: _____

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION



SHEET OF 3	PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL SANITARY SEWER STRUCTURE	APPROVED	REVISED
			JANUARY 2005	AUG 2019
			DD-850-01	SHEET OF 1

