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: Haverland BTR					**2. Regulated Entity No.:**			
3. Customer Name: TM BTR Texas, LLC					**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	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential		**8. Site (acres):**		40.56	
9. Application Fee:	$14,500		**10. Permanent BMP(s):**		Batch Detention			
11. SCS (Linear Ft.):	13,484		**12. AST/UST (No. Tanks):**					
13. County:	Williamson		**14. Watershed:**		Granger Lake-San Gabriel River			

Application Distribution

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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	___
Region (1 req.)	___	___	___
County(ies)	___	___	___
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	___	___	___	___	___
Region (1 req.)	___	___	___	___	___
County(ies)	___	___	___	___	___
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___Trinity-Glen Rose	___Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park ___San Antonio (SAWS) ___Shavano Park	___Bulverde ___Fair Oaks Ranch ___Garden Ridge ___New Braunfels ___Schertz	NA	___San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Benjamin Green
Print Name of Customer/Authorized Agent  08/22/2023
Signature of Customer/Authorized Agent Date

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

General Information Form

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Benjamin Green, P.E.

Date: 08/22/2023

Signature of Customer/Agent:

Project Information

1. Regulated Entity Name: TM BTR TEXAS, LLC
2. County: Williamson county
3. Stream Basin: San Gabriel
4. Groundwater Conservation District (If applicable): _____
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

   Contact Person: Ryan Mattox
   Entity: TM BTR TEXAS, LLC
   Mailing Address: 9601 Amberglen, STE 200
   City, State: Austin, TX Zip: 75201
   Telephone: 512-774-6239 FAX: _____
   Email Address: rmattox@taylormorrison.com

8. Agent/Representative (If any):

   Contact Person: Benjamin L. Green, P.E.
   Entity: Kimley-Horn
   Mailing Address: 5301 Southwest Pkwy, Bldg 2, Ste. 100
   City, State: Austin, TX Zip: 78735
   Telephone: 512-646-2243 FAX: _____
   Email Address: ben.green@kimley-horn.com

9. Project Location:

   ☒ The project site is located inside the city limits of Georgetown.
   ☐ 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 is located at the intersection of Weir Rd and Haverland Dr. It is located on the East side of Haverland and North side of Weir Rd.

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: At time of construction

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.

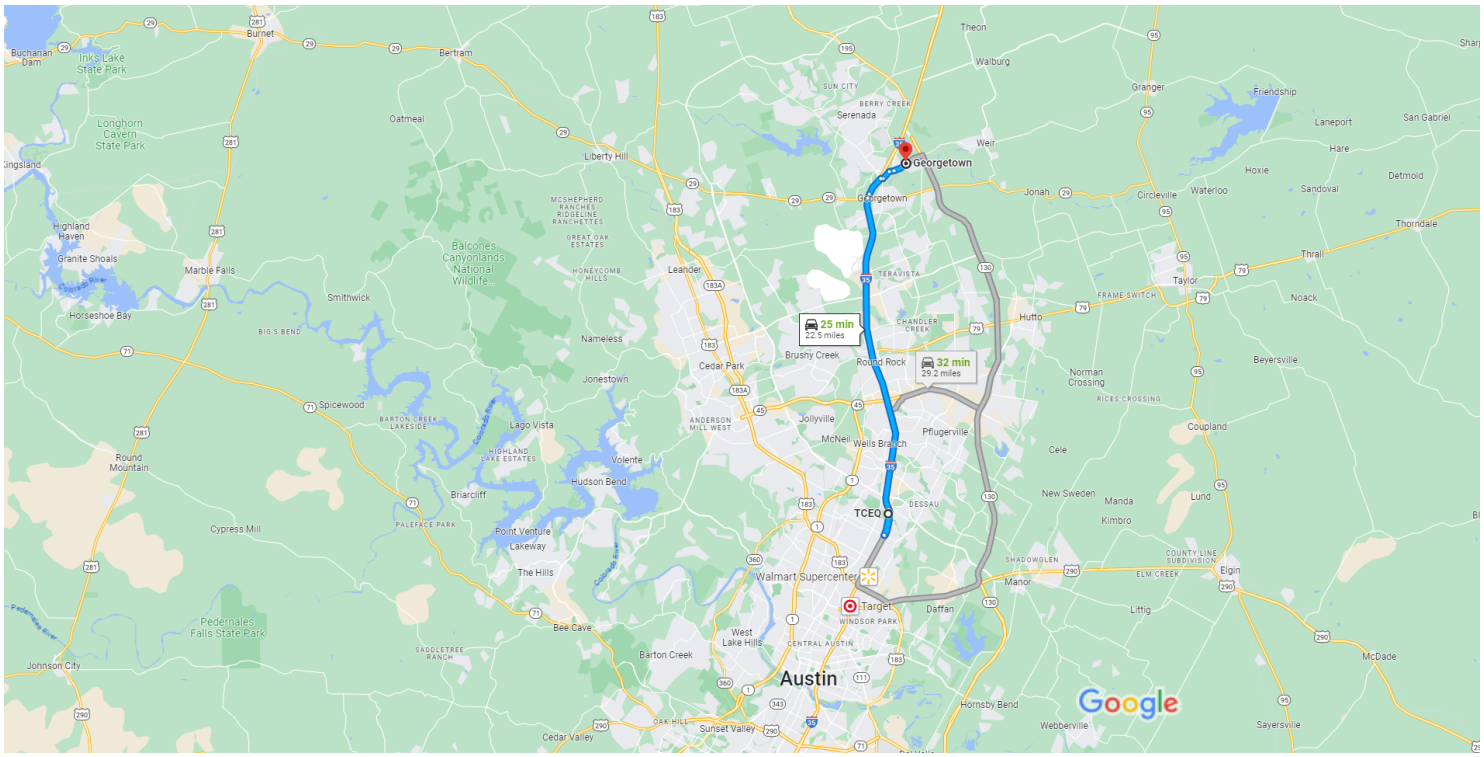
19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

☒ 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.

Google Maps TCEQ, 12100 Park 35 Cir, Austin, TX 78753 to Georgetown, Texas Drive 22.5 miles, 25 min



Map data ©2023 Google 2 mi

TCEQ
12100 Park 35 Cir, Austin, TX 78753

Get on I-35 N from S I-35 Frontage Rd and N Interstate 35 Frontage Rd

6 min (2.8 mi)

1. Head west toward Park 35 Cir

144 ft

2. Turn left toward Park 35 Cir

210 ft

3. Sharp left onto Park 35 Cir

0.1 mi

4. Turn right onto S I-35 Frontage Rd

1.2 mi

5. Use the left lane to turn left onto E Braker Ln

292 ft

6. Turn left onto N Interstate 35 Frontage Rd

1.3 mi

7. Use the left lane to take the ramp onto I-35 N

0.1 mi

Follow I-35 N to Interstate 35 Frontage Rd N in Georgetown. Take exit 262 from I-35 N

15 min (17.0 mi)

8. Merge onto I-35 N

16.8 mi

9. Take exit 262 toward Farm to Market Rd 2338/Granger/Farm to Market Rd 971

0.2 mi

Continue on Interstate 35 Frontage Rd N. Drive to Weir Rd

6 min (2.7 mi)

10. Merge onto Interstate 35 Frontage Rd N

1.1 mi

11. Turn right onto Williams Dr

0.1 mi

12. Use the left 2 lanes to turn left onto N Austin Ave

0.5 mi

13. Turn right onto Weir Rd

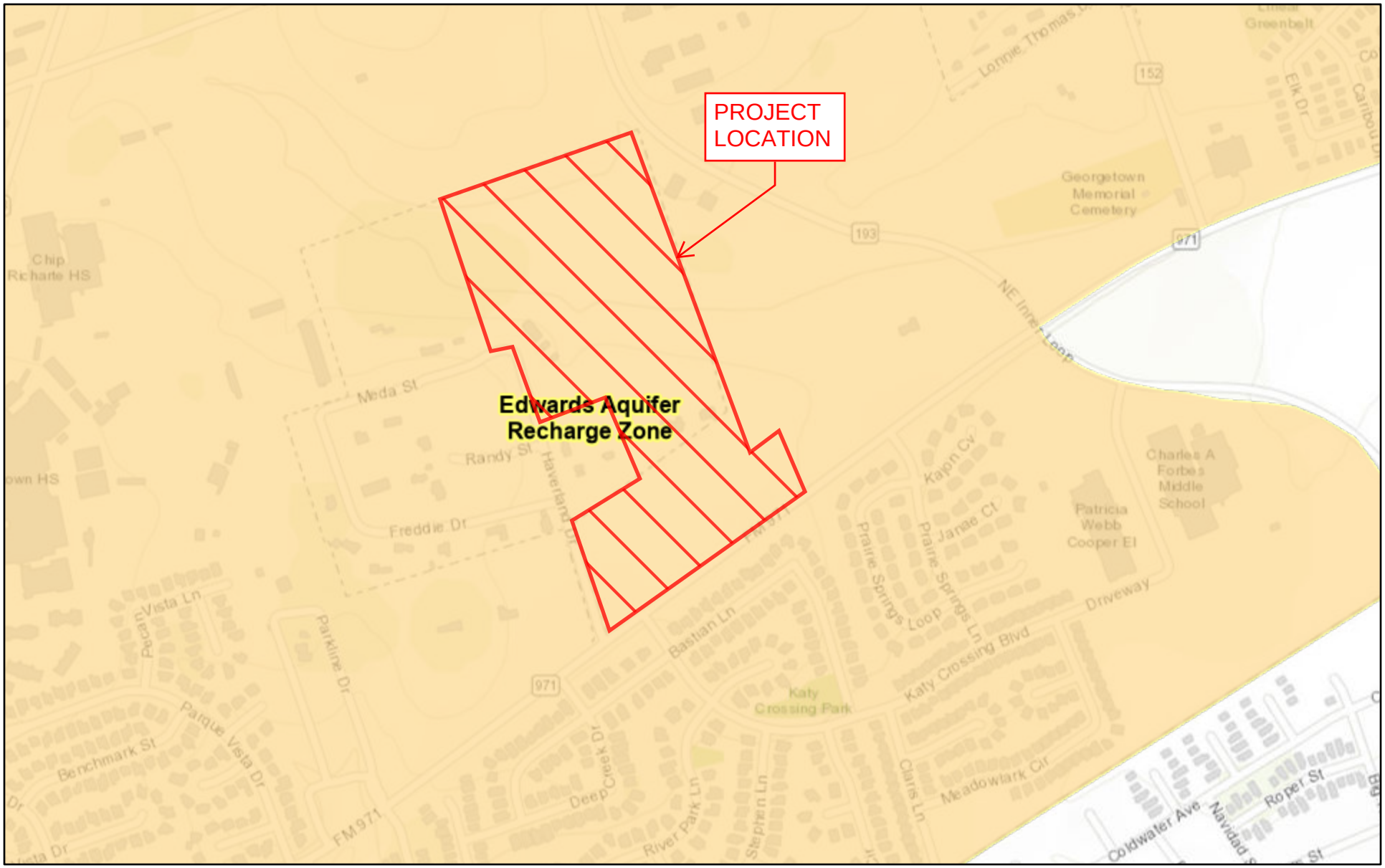
0.3 mi

14. Continue straight to stay on Weir Rd

0.7 mi

Georgetown
Texas

Edwards Aquifer Viewer Custom Print



8/22/2023, 9:55:59 AM

Edwards Aquifer Label

City/Place

TX Counties

7.5 Minute Quad Grid

TCEQ_EDWARDS_OFFICIAL_MAPS

1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

County of Williamson, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA, TCEQ

Web AppBuilder for ArcGIS

County of Williamson, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA | TCEQ |

Kimley»Horn

Attachment C: Project Description

Introduction

The content of this report is based on a 40.56-acre tract. The property in acquisition is located at the intersection of Haverland Road and Weir Road. It is located on the West side of TX-130 and North of FM 971. The client is proposing a new multi-family development. Kimley-Horn has prepared this Drainage Report to evaluate the existing drainage conditions and highlight the proposed drainage system needed to serve a proposed development.

The proposed improvements include mass grading, roadway and utility construction. Additionally, the improvement will include several water quality and detention facilities with their associated drainage infrastructure. This project is located within the Granger Lake-San Gabriel River Watershed.

According to Flood Insurance Rate Map 48491C0292F dated December 20, 2019, for Williamson County, Texas, some portion of this site is located in the Federal Emergency Management Agency's 100-year floodplain per. No floodplain modifications are proposed.

This tract is located within the Edwards Aquifer Recharge Zone.

GEOLOGIC ASSESSMENT

HAVERLAND DRIVE PARCELS
250 HAVERLAND DRIVE
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

ECS PROJECT NO. 51:3618

FOR

KIMLEY-HORN

JULY 14, 2023

July 14, 2023

Mr.Andy Graham, PE

Kimley-Horn
5301 Southwest Parkway
Building 2, Suite 100
Texas, 78735

ECS Project No. 51:3618

Reference: Geologic Assessment Report, Haverland Drive Parcels, 250 Haverland Drive, Georgetown, Williamson County Texas

Dear Mr. Graham:

ECS Southwest, LLP (ECS) is pleased to provide Kimley-Horn with a Geologic Assessment for the above referenced property. ECS' services were conducted in accordance with the services outlined in ECS Proposal No. 51:5225 authorized on July 7, 2023

ECS did not observe recharge features on the site. ECS would like to thank Kimley-Horn for the opportunity to provide you with this Geologic Assessment. We look forward to assisting you further with this project and other environmental concerns you may have. If you have any questions, please feel free to contact us at any time at 512-837-8005.

Sincerely,

ECS Southwest, LLP

Michael DeLalio
Assistant Staff Project Manager
mdelalio@ecslimited.com
512-837-8005

David Hill, P.E, P.G.
Geologic Assessment
Dwhill@ecslimited.com
512-837-8005

1.0 INTRODUCTION

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

The subject property is comprised of approximately 40.58 acres of undeveloped land. The subject property is identified by the Williamson County Central Appraisal District as portions of parcels R395952, R346339, R039625, R039638, R535034, R395953, R397684, R395954, and R039577, located at 250 Haverland Drive in Georgetown, Texas. The subject property is located over the Edwards Aquifer Recharge Zone.

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

2.0 SOIL UNITS

According to the United States Department of Agriculture (USDA) Soil Survey of Williamson County, Texas, there are six (6) soil units mapped on the site (Figure 5). The soils on site consist of Crawford clay, 1 to 3 percent slopes (CfB), Fairlie clay, 1 to 2 percent slopes (FaB), Georgetown clay loam, 0 to 2 percent slopes (GeB), Georgetown stony clay loam, 1 to 3 percent slopes (GsB), Krum silty clay, 1 to 3 percent slopes (KrB), and Queeny clay loam, 1 to 5 percent slopes (QuC)

Crawford clay, 1 to 3 percent slopes (CfB), is formed on plains from residuum weathered from limestone (USDA, 2023). The Hydrologic Soil Group is listed as D, and the soil is well drained. Flooding or ponding is reported as “none.” The depth to a restrictive layer is reported to be 20 to 40 inches to lithic bedrock, and the available water capacity is listed as low.

Fairlie clay, 1 to 2 percent slopes (FaB), is formed on ridges, from residuum weathered from Austin chalk formation (USDA, 2023). The Hydrologic Soil Group is listed as D, and the soil is moderately to well drained. Flooding or ponding is reported as “none.” The depth to a restrictive layer is reported to be 40 to 60 inches to paralithic bedrock, and the available water capacity is listed as moderate.

Georgetown clay loam, 0 to 2 percent slopes (GeB), is formed on ridges from clayey residuum weathered from limestone (USDA, 2023). The Hydrologic Soil Group is listed as D, and the soil is well drained. Flooding or ponding is reported as “none.” The depth to a restrictive layer is reported to be 20 to 40 inches to lithic bedrock, and the available water capacity is listed as low.

Georgetown stony clay loam, 1 to 3 percent slopes (GsB), is formed on ridges from clayey residuum weathered from limestone (USDA, 2023). The Hydrologic Soil Group is listed as D, and the soil is well drained. Flooding or ponding is reported as “none.” The depth to a restrictive layer is reported to be 20 to 40 inches to lithic bedrock, and the available water capacity is listed as low.

Krum silty clay, 1 to 3 percent slopes (KrB), is formed on stream terraces from clayey alluvium of pleistocene age derived from mixed sources(USDA, 2023). The Hydrologic Soil Group is listed as C, and the soil is well-drained. Flooding or ponding is reported as “none.” The depth to a restrictive layer is reported to be more than 80 inches, and the available water capacity is listed as moderate.

Queeny clay loam, 1 to 5 percent slopes (QuC), is formed on paleo terraces from gravelly alluvium of quaternary age derived from mixed sources (USDA, 2023). The Hydrologic Soil Group is listed as D, and the soil is well-drained. Flooding or ponding is reported as “none.” The depth to a restrictive layer is reported to be 10 to 20 inches to petrocalcic, and the available water capacity is listed as low.

3.0 GEOLOGY

3.1 Regional Geology

Ranging from north to south, two primary physiographic provinces are present in Williamson County: the Great Plain and the Gulf Coastal Plain. The Gulf Coastal Plain is comprised mainly of Blackland prairie.

The Great Plain is comprised chiefly of limestone plains, which locally merges with the Edwards Plateau in the vicinity of the Colorado River.

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

3.2 Site Geology

Geological information pertaining to the area was obtained from the Geologic Atlas of Texas, Austin Sheet, published by University of Texas at Austin, Bureau of Economic Geology (BEG), 1997. The subject property is situated on Terraces along streams (Qt) (Figure 6).

BEG describes Qt as "consist of three or more levels which may correspond to coastal Piestocene units; gravel, sand, silt, and clay in various proportions with gravel prominent in the older, higher terraces, gravel along Guadalupe River, siliceous, course, along Colorado River, mostly dolomite, limestone, chert, quartz, and various igneous and metamorphic rocks from the Llano Region and dolomite, limestone and chert from the Edwards Plateau; sand mostly quartz."

The Georgetown Limestone is inferred to lie just below the porous and permeable Qt. The Kgt is described by the BEG as "limestone and marl; mostly fine-grained, argillaceous, nodular, moderately indurated, light gray; some limestone, hard, brittle, thick-bedded, shite; some shale, marly soft, light gray to yellowish gray; marine megafossils include Kingena wacoensis and Gryphaea washitaensis; thickness 30 - 80 feet thing southward"

Obvious signs of faulting were not mapped or observed on the subject property.

4.0 HYDROLOGY

4.1 Site Hydrology

Based upon interpretation of the United States Geological Survey 7.5 Minute Series topographic quadrangle map, Georgetown, Texas Quadrangle (2019), and the onsite reconnaissance, the estimated onsite shallow groundwater flow direction is north to Pecan Branch located in the north portion of the subject property. Regional flow generally flows to the San Gabriel River to the south. It should be noted that shallow groundwater flow direction is estimated based on a review of published maps, surface topography, and site reconnaissance. Local conditions that may influence the subsurface hydrology would be local topography (hills and valleys), geologic anomalies, utilities, and nearby wells or sumps.

Seeps or springs were not observed on the subject property.

4.2 Surface Water Hydrology

Site drainage appears to slope generally to the north towards Pecan Branch located in the north portion of the subject property. Field observations and analysis are supported from the Georgetown Texas USGS Topographic Quadrangles (USGS, 2019). We did not observe groundwater seeps or discharges of any type from bedrock observed on the subject site.

5.0 SITE INVESTIGATION

The site reconnaissance was performed on July 11, 2023. The site investigation was performed by traversing the subject property in meandering transects, spaced 10 to 15 meters apart depending on thickness of vegetation. Photographs were taken to document any features observed during the reconnaissance.

The subject property is currently improved with three residences and multiple agricultural outbuildings. The subject property is covered by native and naturalized grasses, herbs, forbs, shrubs and trees such as scrub live oak (*Quercus turbinella*), switchgrass (*Panicum virgatum*), bermuda grass (*Cynodon dactylon*), cedar elm (*Ulmus americana*), Texas live oak (*Quercus fusiformis*), ashe juniper(J*uniperus ashei*), mexican hat (*Ratibida columnifera*), prickly pear (*Opuntia spp*.), greenbriar (*Smilax spp.*), spotted beebalm (*Monarda punctata*), hackberry (*Celtis occidentalis*), and muscadine grape(*Vitis rotundifolia*).

Evidence of septic systems associated with the residences were not observed during the site reconnaissance. Three (3) water wells were observed on the subject property within the vicinity of the residences. Improved drainage features were not observed on the subject property.

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

6.0 SUMMARY

The subject property is comprised of approximately 40.58 acres of undeveloped land. The subject property is identified by the Williamson County Central Appraisal District as portions of parcels R395952, R346339, R039625, R039638, R535034, R395953, R397684, R395954, and R039577, located at 250 Haverland Drive in Georgetown, Texas. The subject property is located over the Edwards Aquifer Contributing Zone.

Recharge features were not identified on the site. Caves, sinkholes or cavities were not observed on the subject property at the time of the site reconnaissance with the potential for contaminant movement into the Edwards Aquifer. Additionally, seeps or springs were not observed on the subject property.

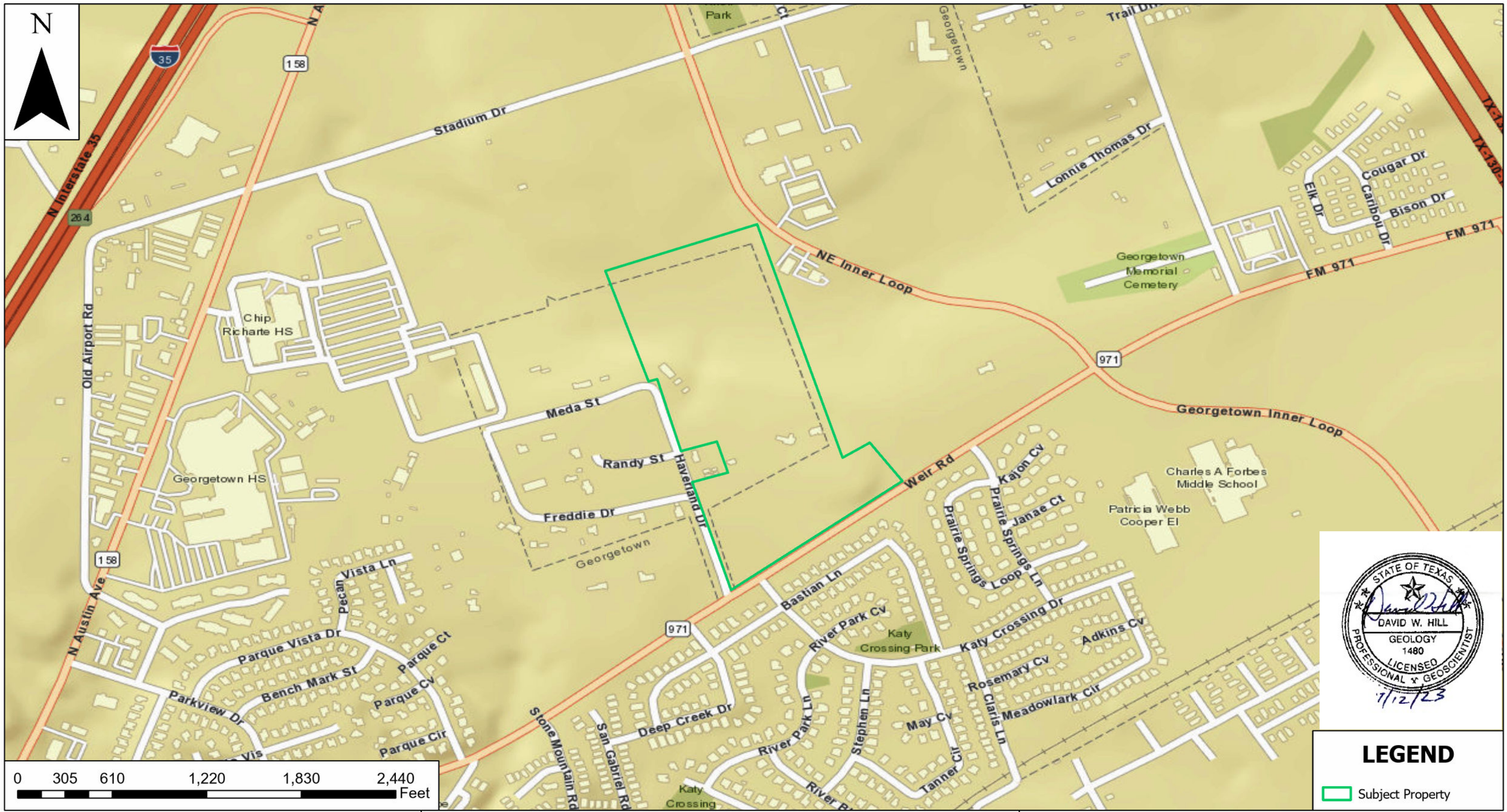
Improved drainage features were not observed on the subject property.

7.0 REFERENCES

(BEG) The University of Texas at Austin Bureau of Economic Geology, Geologic Map of Texas, Austin Sheet, 1997.

(USDA) United States Department of Agriculture (USDA) Custom Soil Survey of Williamson County, 2022.

(USGS) United States Geologic Survey (USGS), 7.5- Minute Topographic Quadrangle Georgetown, Texas. 2019.



STATE OF TEXAS
DAVID W. HILL
GEOLOGY
1480
LICENSED
PROFESSIONAL GEOSCIENTIST
7/12/23

LEGEND

Subject Property

ECS Southwest, LLC
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Austin, Texas 78728
Phone: (512) 837-8005
www.ecslimited.com

ECS Project No. 51:3618

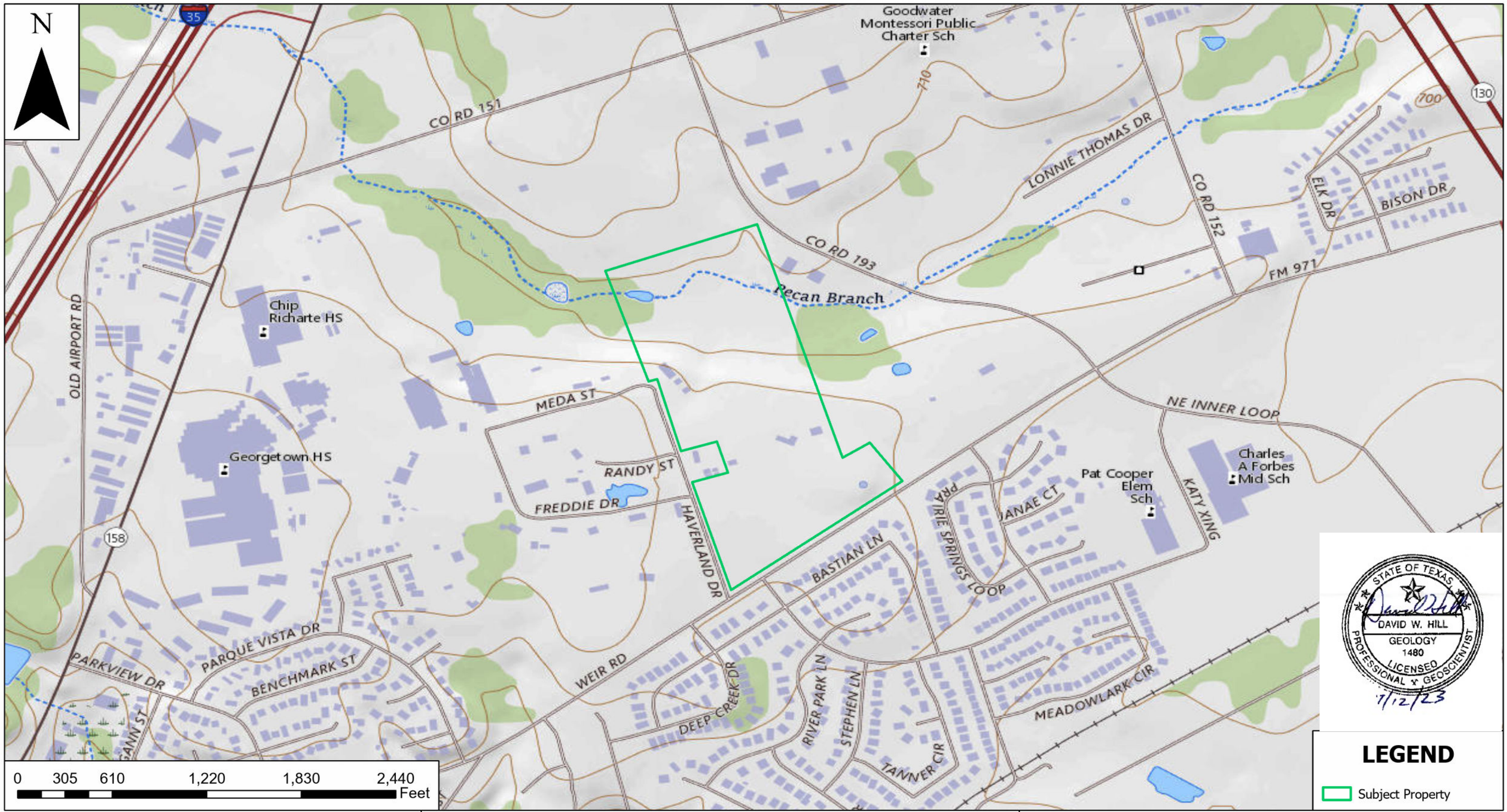
Haverland 40 Acre Parcel GA
250 Haverland Drive
Williamson County, Texas

Figure 1
Site Location

Project Acreage: 40 acres

USGS Quadrangle: Georgetown
Watershed: Pecan Branch

Service Layer Credits:
World Street Map: County of Williamson, Esri, HERE, Garmin, INCREMENT P, Intermap, NGA, USGS
USGS Topographic Map of the LOCALITY, STATE(S) Quadrangle (20XX)
Soils Data: USDA NRCS Web Soil Survey
Wetlands Data: National Wetlands Inventory
Floodplain Data: FEMA National Flood Hazard Layer
LIDAR Data: USGS 3D Elevation Program



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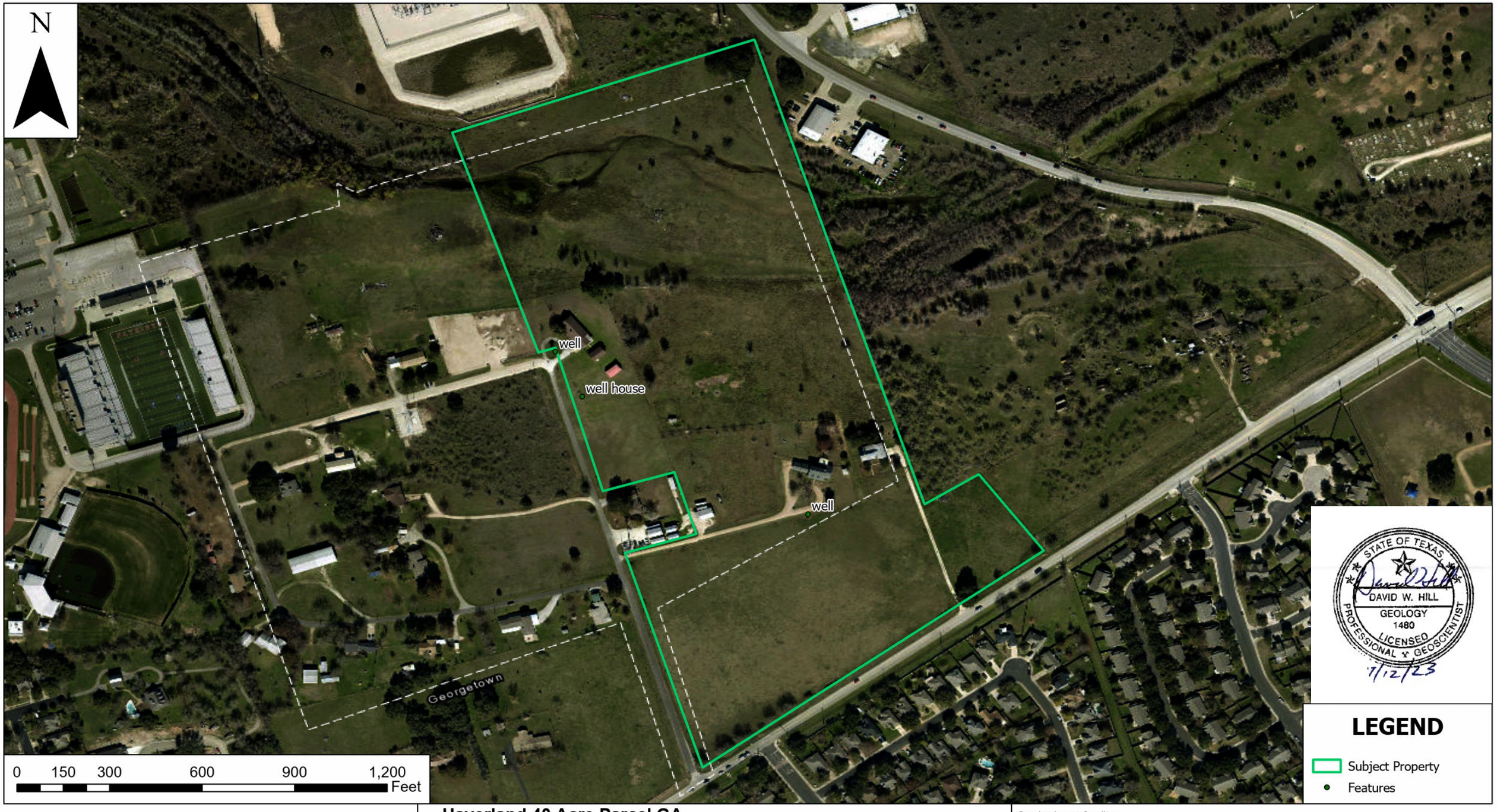
Williamson County, Texas

Project Acreage: 40 acres

Figure 2
Topographic Map

USGS Quadrangle: Georgetown
Watershed: Pecan Branch

Service Layer Credits:
USGSTopo: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed April, 2023.
USGS Topographic Map of the LOCALITY, STATE(S) Quadrangle (20XX)



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LEGEND

- Subject Property
- Features

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Haverland 40 Acre Parcel GA
250 Haverland Drive
Williamson County, Texas

Project Acreage: 40 acres

Figure 3
Aerial Map with Field Results

USGS Quadrangle: Georgetown
Watershed: Pecan Branch

Service Layer Credits:
World Imagery: Williamson County TX, Maxar, Microsoft
World Boundaries and Places: County of Williamson, Esri, HERE, Garmin, iPC
USGS Topographic Map of the LOCALITY, STATE(S) Quadrangle (20XX)
Soils Data: USDA NRCS Web Soil Survey
Wetlands Data: National Wetlands Inventory
Floodplain Data: FEMA National Flood Hazard Layer
LIDAR Data: USGS 3D Elevation Program

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LEGEND

Subject Property

NRCS Soils

- CfB
- FaB
- GeB
- GsB
- KrB
- QuC

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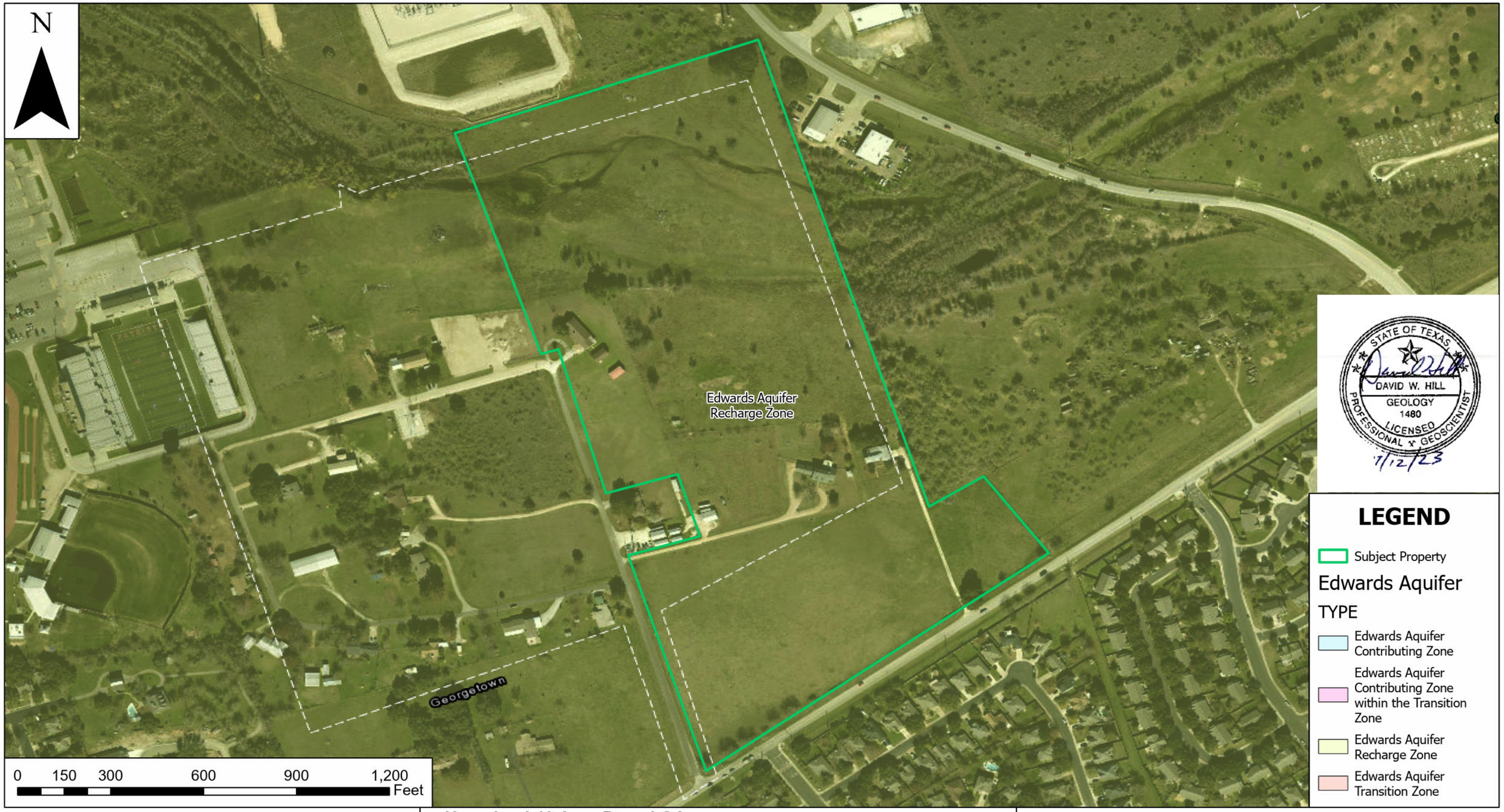
Williamson County, Texas

Project Acreage: 40 acres

Figure 4
NRCS Soils

USGS Quadrangle: Georgetown
Watershed: Pecan Branch

Service Layer Credits:
World Boundaries and Places: County of Williamson, Esri, HERE, Garmin, iPC
World Imagery: Williamson County TX, Maxar
USGS Topographic Map of the LOCALITY, STATE(S) Quadrangle (20XX)
Soils Data: USDA NRCS Web Soil Survey
Wetlands Data: National Wetlands Inventory
Floodplain Data: FEMA National Flood Hazard Layer
LIDAR Data: USGS 3D Elevation Program



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LEGEND

- Subject Property

Edwards Aquifer

TYPE

- Edwards Aquifer Contributing Zone
- Edwards Aquifer Contributing Zone within the Transition Zone
- Edwards Aquifer Recharge Zone
- Edwards Aquifer Transition Zone

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Williamson County, Texas

Project Acreage: 40 acres

Figure 5
Edwards Aquifer Map

USGS Quadrangle: Georgetown
Watershed: Pecan Branch

Service Layer Credits:
World Imagery: Williamson County TX, Maxar, Microsoft
World Boundaries and Places: County of Williamson, Esri, HERE, Garmin, iPC
USGS Topographic Map of the LOCALITY, STATE(S) Quadrangle (20XX)
Soils Data: USDA NRCS Web Soil Survey
Wetlands Data: National Wetlands Inventory
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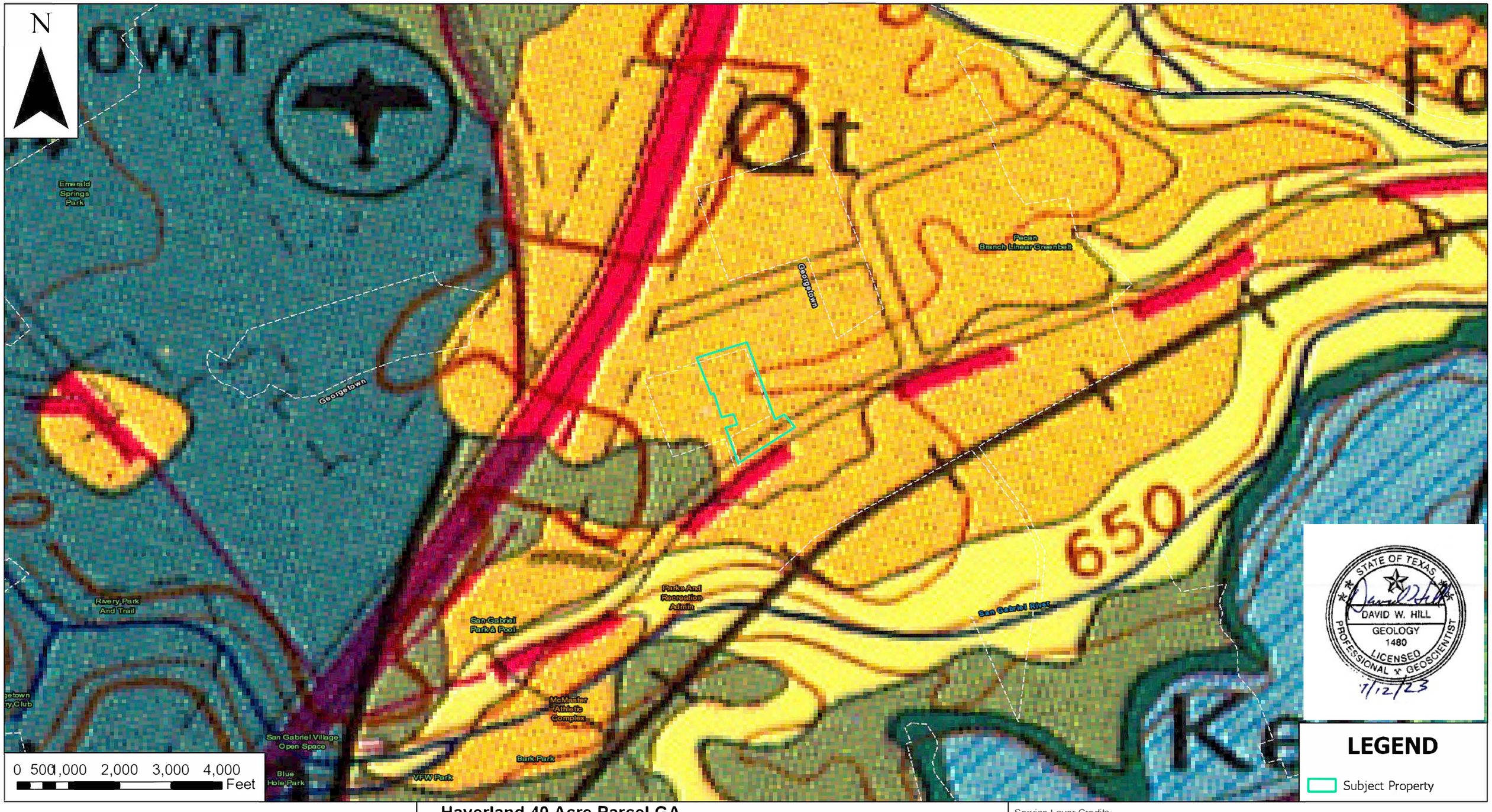

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Haverland 40 Acre Parcel GA
250 Haverland Drive
Williamson County, Texas

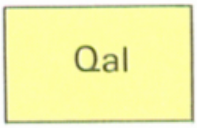
Figure 6
Area Geologic Map

Project Acreage: 40 acres

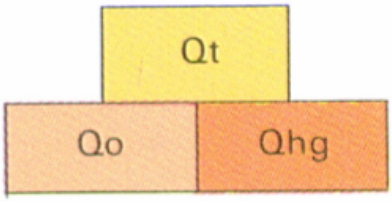
USGS Quadrangle: Georgetown
Watershed: Pecan Branch

Service Layer Credits:
World Boundaries and Places: County of Williamson, Esri, HERE, Garmin, iPC
World Imagery: Williamson County TX, Maxar
USGS Topographic Map of the LOCALITY, STATE(S) Quadrangle (20XX)
Soils Data: USDA NRCS Web Soil Survey
Wetlands Data: National Wetlands Inventory
Floodplain Data: FEMA National Flood Hazard Layer
LIDAR Data: USGS 3D Elevation Program

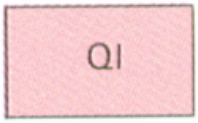
Stratigraphic Column
Haverland 40 Acre Parcel
Haverland Drive
Georgetown, Williamson County, Texas



Alluvium



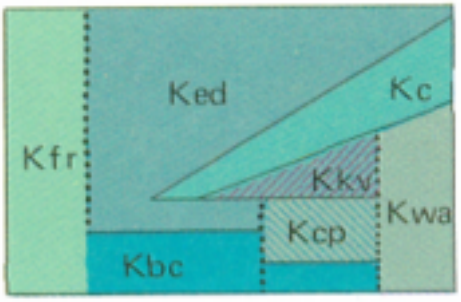
Fluviatile terrace deposits



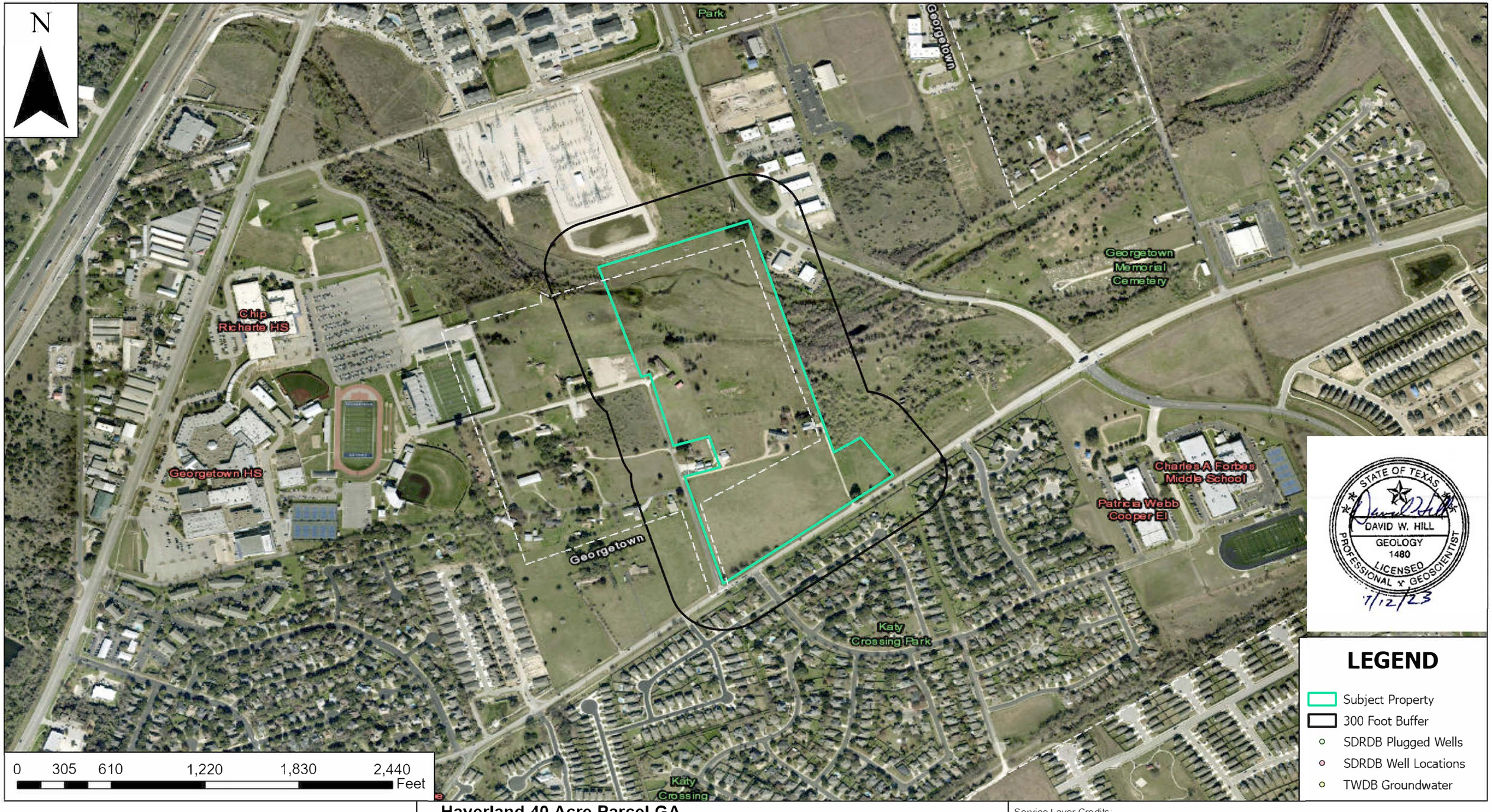
Lissie Formation undivided

Eagle Ford Group and Buda Limestone

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



Fredericksburg Group



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ECS Project No. 51:3618

Haverland 40 Acre Parcel GA
250 Haverland Drive
Williamson County, Texas

Figure 7
TWDB Well Map

Project Acreage: 40 acres

USGS Quadrangle: Georgetown
Watershed: Pecan Branch

Service Layer Credits:
World Boundaries and Places: County of Williamson, Esri, HERE, Garmin, iPC
World Imagery: Williamson County TX, Maxar
USGS Topographic Map of the LOCALITY, STATE(S) Quadrangle (20XX)
Soils Data: USDA NRCS Web Soil Survey
Wetlands Data: National Wetlands Inventory
Floodplain Data: FEMA National Flood Hazard Layer
LIDAR Data: USGS 3D Elevation Program

Attachment 1:

NRCS Soil Map Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Williamson County, Texas

July 10, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (Haverland Drive GA)

Map Scale: 1:4,200 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

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

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Williamson County, Texas
Survey Area Data: Version 23, Aug 24, 2022

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

Date(s) aerial images were photographed: Data not available.

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

Map Unit Legend (Haverland Drive GA)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CfB	Crawford clay, 1 to 3 percent slopes	2.3	5.8%
FaB	Fairlie clay, 1 to 2 percent slopes	9.4	23.0%
GeB	Georgetown clay loam, 0 to 2 percent slopes	7.4	18.2%
GsB	Georgetown stony clay loam, 1 to 3 percent slopes	7.7	18.8%
KrB	Krum silty clay, 1 to 3 percent slopes	12.8	31.5%
QuC	Queeny clay loam, 1 to 5 percent slopes	1.1	2.8%
Totals for Area of Interest		**40.9**	**100.0%**

Map Unit Descriptions (Haverland Drive GA)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor

components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Williamson County, Texas

CfB—Crawford clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2rspf
Elevation: 400 to 1,100 feet
Mean annual precipitation: 26 to 34 inches
Mean annual air temperature: 64 to 68 degrees F
Frost-free period: 230 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Crawford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crawford

Setting

Landform: Plains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 6 inches: clay
Bss - 6 to 27 inches: clay
R - 27 to 30 inches: bedrock

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: R081CY358TX - Deep Redland 29-35 PZ
Hydric soil rating: No

Minor Components

Denton

Percent of map unit: 4 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Fairlie

Percent of map unit: 4 percent
Landform: Ridges
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Georgetown

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R081CY361TX - Redland 29-35 PZ
Hydric soil rating: No

Purves

Percent of map unit: 2 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Hydric soil rating: No

FaB—Fairlie clay, 1 to 2 percent slopes

Map Unit Setting

National map unit symbol: djq1

Elevation: 550 to 850 feet
Mean annual precipitation: 30 to 42 inches
Mean annual air temperature: 64 to 68 degrees F
Frost-free period: 230 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Fairlie and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fairlie

Setting

Landform: Ridges
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from austin chalk formation

Typical profile

H1 - 0 to 8 inches: clay
H2 - 8 to 46 inches: clay
H3 - 46 to 54 inches: bedrock

Properties and qualities

Slope: 1 to 2 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

GeB—Georgetown clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t273
Elevation: 620 to 1,250 feet
Mean annual precipitation: 32 to 36 inches

Mean annual air temperature: 65 to 68 degrees F
Frost-free period: 230 to 260 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Georgetown and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Georgetown

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from limestone

Typical profile

A - 0 to 7 inches: clay loam
Bt - 7 to 35 inches: cobbly clay
R - 35 to 60 inches: bedrock

Properties and qualities

Slope: 0 to 2 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: R081CY361TX - Redland 29-35 PZ
Hydric soil rating: No

Minor Components

Tarpley

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R081CY361TX - Redland 29-35 PZ
Hydric soil rating: No

Eckrant

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Ecological site: R081CY360TX - Low Stony Hill 29-35 PZ
Hydric soil rating: No

GsB—Georgetown stony clay loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2t277
Elevation: 620 to 1,250 feet
Mean annual precipitation: 32 to 36 inches
Mean annual air temperature: 65 to 68 degrees F
Frost-free period: 230 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Georgetown and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Georgetown

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey residuum weathered from limestone

Typical profile

A - 0 to 7 inches: stony clay loam
Bt - 7 to 35 inches: cobbly clay
R - 35 to 60 inches: bedrock

Properties and qualities

Slope: 1 to 3 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: R081CY361TX - Redland 29-35 PZ
Hydric soil rating: No

Minor Components

Tarpley

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R081CY361TX - Redland 29-35 PZ
Hydric soil rating: No

Eckrant

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY360TX - Low Stony Hill 29-35 PZ
Hydric soil rating: No

Fairlie

Percent of map unit: 2 percent
Landform: Ridges
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

KrB—Krum silty clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: djqf
Elevation: 600 to 1,300 feet
Mean annual precipitation: 26 to 36 inches
Mean annual air temperature: 63 to 70 degrees F

Frost-free period: 230 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Krum and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Krum

Setting
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey alluvium of pleistocene age derived from mixed sources

Typical profile
H1 - 0 to 6 inches: silty clay
H2 - 6 to 44 inches: silty clay
H3 - 44 to 72 inches: silty clay

Properties and qualities
Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 50 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: Moderate (about 8.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R086AY007TX - Southern Clay Loam
Hydric soil rating: No

QuC—Queeny clay loam, 1 to 5 percent slopes

Map Unit Setting
National map unit symbol: djql
Elevation: 450 to 800 feet
Mean annual precipitation: 29 to 34 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 235 to 255 days
Farmland classification: Not prime farmland

Map Unit Composition

Queeny and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Queeny

Setting

Landform: Paleoterraces
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Gravelly alluvium of quaternary age derived from mixed sources

Typical profile

H1 - 0 to 18 inches: clay loam
H2 - 18 to 32 inches: cemented material
H3 - 32 to 99 inches: variable

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: 10 to 20 inches to petrocalcic
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Ecological site: R086AY002TX - Southern Chalky Ridge
Hydric soil rating: No

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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: Dave Hill Telephone: 512-837-8005

Date: July 14 2023 Fax: 512-837-8221

Representing: ECS Southwest, LLP, Geology Firm 50674 (Name of Company and TBPG or TBPE registration number)

Signature of Geologi

Regulated Entity Name: Haverland 40 Acre Parcel

Project Information

1. Date(s) Geologic Assessment was performed: July 11, 2023
2. Type of Project:

   ☒ WPAP ☐ AST
   ☐ SCS ☐ 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)
See Attached		

** 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" = 300'
   Site Geologic Map Scale: 1" = 300'
   Site Soils Map Scale (if more than 1 soil type): 1" = 400'

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 3 (#) 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 — PROJECT NAME:

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	
Water Well 1	-97.658631	30.662994	MB	30		x	x	x					N	5	35	x				Hillside
Water Well 2	-97.65887	30.663393	MB	30		x	x	x					N	5	35	x				Hillside
Water Well 3	-97.656627	30.66195	MB	30		x	x	x					N	5	35	x				Hillside

* DATUM: WGS 1984

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

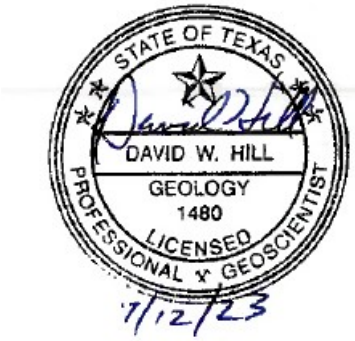
Gently sloping to Pecan Branch

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 7/14/2023

Sheet ___1___ of ___1___

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



Haverland Parcels Soils Units

Soil Series Unit Name	Group	Thickness (ft)
Crawford clay, 1 to 3 percent slopes (CfB)	D	≈2 to 3.5
Fairlie clay, 1 to 2 percent slopes (FaB)	D	≈3.5-5
Georgetown clay loam, 0 to 2 percent slopes (GeB)	D	≈2 to 3.5
Georgetown stony clay loam, 1 to 3 percent slopes (GsB)	D	≈2 to 3.5
Krum silty clay, 1 to 3 percent slopes (KrB)	C	>6.5
Queeny clay loam, 1 to 5 percent slopes (QuC)	D	≈0.8-1.6

NARRATIVE DESCRIPTION OF SITE-SPECIFIC GEOLOGY

Ranging from north to south, two primary physiographic provinces are present in Williamson County: the Great Plain and the Gulf Coastal Plain. The Gulf Coastal Plain is comprised mainly of Blackland prairie. The Great Plain is comprised chiefly of limestone plains, which merges with the Edwards Plateau in the vicinity of the Colorado River.

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

Geological information pertaining to the area was obtained from the Geologic Atlas of Texas, Austin Sheet, published by University of Texas at Austin, Bureau of Economic Geology (BEG), 1997. The subject property is situated on Terraces along streams (Qt) (Figure 6).

BEG describes Qt as "consist of three or more levels which may correspond to coastal Piestocene units; gravel, sand, silt, and clay in various proportions with gravel prominent in the older, higher terraces, gravel along Guadalupe River, siliceous, course, along Colorado River, mostly dolomite, limestone, chert, quartz, and various igneous and metamorphic rocks from the Llano Region and dolomite, limestone and chert from the Edwards Plateau; sand mostly quartz."

The Georgetown Limestone is inferred to lie just below the porous and permeable Qt. The Kgt is described by the BEG as "limestone and marl; mostly fine-grained, argillaceous, nodular, moderately indurated, light gray; some limestone, hard, brittle, thick-bedded, shite; some shale, marly soft, light gray to yellowish gray; marine megafossils include Kingena wacoensis and Gryphaea washitaensis; thickness 30 - 80 feet thing southward"

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

1 - Driveway in the north portion of the subject property

2 - South Residence

3 - Typical maintained area in the south portion

4 - South field facing southeast

5 - Along Driveway to east residence.

6 - Typical Vegetation in the southeast portion

7 - Typical field vegetation

8 - Oak in south portion

9 - Along south property boundary

10 - Typical field facing northwest

11 - Typical fallow agricultural field

12 - West side of the south residence

13 - Maintained area north of the residence

14 - Central fallow pasture

15 - Typical Pasture

16 - Central pasture facing west

17 - Typical floodplain

18 - Pasture facing west

19 - East portion of Pecan Branch

20 - Pasture north of Pecan Branch

21 - Forested area in northeast property corner

22 - Northeast property corner facing southwest

23 - Along the north property boundary

24 - Demolished structure north of Pecan Branch

25 - Pecan Branch in the west portion of the floodplain

26 - Wetland in northwest portion of the subject property

27 - Outflow east of wetland

28 - Floodplain

29 - Floodplain facing south

30 - Typical vegetation along the west boundary

31 - Southwest residence

32 - Fallow pasture

33 - Wellhouse

34 - West residence

35 - Typical vegetation

36 - South Driveway

37 - Outbuilding

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.

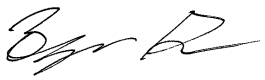
Signature

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: Benjamin Breen, P.E.

Date: 08/22/2023

Signature of Customer/Agent:



Regulated Entity Name: Haverland BTR

Regulated Entity Information

1. The type of project is:

   ☐ Residential: Number of Lots:_____
   ☒ Residential: Number of Living Unit Equivalents: 151
   ☐ Commercial
   ☐ Industrial
   ☐ Other:_____

2. Total site acreage (size of property): 40.56

3. Estimated projected population: 764

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	253,508	÷ 43,560 =	5.82
Parking	235,629	÷ 43,560 =	5.41
Other paved surfaces	122,290	÷ 43,560 =	2.81
Total Impervious Cover	611,427	÷ 43,560 =	14.04

Total Impervious Cover 14.04 **÷ Total Acreage** 40.56 **X 100 =** 34.62**% Impervious Cover**

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

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

For Road Projects Only

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

7. Type of project:

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

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

   ☐ Concrete
   ☐ Asphaltic concrete pavement
   ☐ Other: _____

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

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

10. Length of pavement area: _____ feet.

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

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

100% Domestic	158805 Gallons/day
_____% Industrial	_____ Gallons/day
_____% Commingled	_____ Gallons/day
TOTAL gallons/day _____	

15. Wastewater will be disposed of by:

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

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

☒ Sewage Collection System (Sewer Lines):

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

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

☒ The sewage collection system will convey the wastewater to the Pecan Branch WWTP (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

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

Site Plan Requirements

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

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

Site Plan Scale: 1" = 100'.

18. 100-year floodplain boundaries:

☒ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☐ 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): FIRM PANEL 48491C0291F, dated 12/20/2019

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.

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Attachment A: Factors Affecting Stormwater Quality

No industrial associated activity discharges are expected for this proposed residential development site. Surface water quality can be affected by disturbance during construction and by development after construction. Soil disturbance from clearing and grubbing and cut/fill operations can lead to a discharge of sediment unless adequate temporary erosion control measures are in place. For this project, the use of silt fence, construction entrances, inlet protection, and rock berms will prevent sediment from leaving the site. Siltation collected by the control measures will be cleaned from fences, berms, etc. on a routine schedule as outlined in the SWPPP and contract specifications.

During construction, surface water quality may also be affected by a spill of hydrocarbons or other hazardous substances used in construction. The most likely instances of a spill of hydrocarbons or hazardous substances are:

1. Refueling construction equipment.
2. Oil and grease from the asphalt pavement and vehicle traffic.
3. Performing operator-level maintenance, including adding petroleum, oils, or lubricants.
4. Normal silt build-up.
5. Unscheduled or emergency repairs, such as hydraulic fluid leaks.
6. Trash with becomes loose from subdivision residents.
7. Fertilizers used in the landscaping around the apartment buildings.

Every effort will be taken to be cautious and prevent spills. In the event of a fuel or hazardous substance spill as defined by the Reportable Quantities Table 1 (page 3) of the TCEQ's Small-Business Handbook for Spill Response (RG-285, June 1997), the contractor is required to clean up the spill and notify the TCEQ as required in RG-285. During business hours report spills to the TCEQ's Austin Regional Office at (512) 339-2929, after business hours call 1-800-832-8224, the Environmental Response Hotline or (512) 463-7727, the TCEQ Spill Reporting Hotline, which is also answered 24 hours a day.

After construction is complete, impervious cover for the tract of land is the major reason for degradation of water quality. Impervious cover includes the building foundation, street pavement and concrete sidewalks. Oil and fuel discharge from vehicles is anticipated. The proposed permanent BMPs on this project will help mitigate these occurrences.

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Attachment B: Volume and Character of Stormwater

Existing Hydrologic Conditions Analysis

The site has three existing drainage areas (DA-01, DA-02, and DA-03) that outfall at points of analyses (POA-A, POA-B, and POA-C), respectively. The delineated drainage basins account for all onsite runoff as well as water running onto the site from the adjacent tracts to the west.

The time of concentrations were calculated using the equations given in the City of Georgetown Drainage Criteria Manual (COG DCM) for sheet flow, shallow concentrated flow, and channel flow. City of Georgetown 24-hour rainfall hyetographs (COG DCM) were used to define the 2, 10, 25, and 100-year rainfall events. The result of the calculation of the existing flows through the watershed is summarized in Table 4.1.

Table 4.1 Existing Drainage Areas Summary

EXISTING CONDITIONS										
DRAINAGE AREA	AREA (AC.)	IMPERVIOUS COVER (%)	IMPERVIOUS COVER (AC)	BASE CN	Composite CN	TC (MIN)	Q_2 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{100} (CFS)
DA-01	17.65	4.9%	0.86	77	78	29.5	21.71	47.09	63.14	87.22
POA-A							**21.71**	**47.09**	**63.14**	**87.22**
DA-02	10.04	4.6%	0.46	71	72	39.7	7.15	18.04	25.46	36.82
POA-B							**7.15**	**18.04**	**25.46**	**36.82**
DA-03	4.68	4.5%	0.21	70	71	29.3	3.65	9.40	13.27	19.32
POA-C							**3.65**	**9.40**	**13.27**	**19.32**

Proposed Hydrologic Conditions Analysis

The proposed drainage delineations consider additional impervious cover added to the proposed site under development. The time of concentrations were reduced for onsite drainage areas from the existing TOCs due to the increased impervious cover and proposed underground conduit system. Flow from the southwestern portion of the site will be conveyed through the proposed underground storm conduit system which outfalls at one of the proposed detention ponds located at the northwestern portion of the site. Offsite runoff entering the site west of the property will be conveyed over land and also captured by the proposed detention pond. Flows captured by the pond outfall into an existing creek and travel downstream through POA-A. Flows from the northwestern portion of the property also travel over land and through the creek to POA-A, however, are not captured by the proposed pond. Flows from the southwestern and south-central portion of the site are conveyed through the underground storm conduit system which outfalls at another proposed detention pond located at the southwestern corner of the property. Runoff from this portion of the site travel through POA-B. Flows from the southeastern corner of the site are conveyed through POA-C and offsite to an existing swale along Weir Road. Flow patterns upstream of the subject property match existing conditions. Drainage conditions have been maintained by assuring the design peak flows do not exceed those in the existing conditions and the major points of analyses are not adversely affected.

The time of concentrations were calculated using the equations given in the City of Georgetown Drainage Criteria Manual (COG DCM) for sheet flow, shallow concentrated flow, and channel flow. City of Georgetown 24-hour rainfall hyetographs (per the COG DCM) were used to define the 2, 10, 25, and 100-year rainfall events. Detailed time of concentration calculations are included in the ***Appendix***. The result of the calculation of the proposed flows through the watershed is summarized in Table 4.2

Table 4.2 Proposed Drainage Areas Summary

PROPOSED CONDITIONS										
DRAINAGE AREA	AREA (AC.)	IMPERVIOUS COVER (%)	IMPERVIOUS COVER (AC)	BASE CN	Composite CN	TC (MIN)	Q_2 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{100} (CFS)
DA-01	20.57	55.2%	11.35	74	87	21.8	53.14	80.71	100.74	131.28
DA-02	5.00	3.4%	0.17	77	78	29.1	6.10	13.39	17.99	24.92
POA-A							**21.00**	**30.08**	**35.22**	**85.76**
DA-03	5.96	43.0%	2.56	72	83	11.4	12.57	22.02	27.78	36.91
POA-B							**7.04**	**17.88**	**24.55**	**34.58**
DA-04	1.59	43.3%	0.69	70	82	15.2	3.24	5.87	7.49	10.10
POA-C							**3.24**	**5.87**	**7.49**	**10.10**

Detention Analysis & Design

On-site detention is required to maintain previously determined flows. After water is detained by the onsite detention pond, the proposed flow is less than existing as shown below in Table 4.3.

Table 4.3 Existing vs. Proposed Summary

EXISTING VS. PROPOSED SUMMARY				
POINT OF ANALYSIS	Q_2 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{100} (CFS)
POA-A (EXISTING)	21.71	47.09	63.14	87.22
POA-A (PROPOSED)	21.00	30.08	35.22	85.76
POA-A DIFFERENCE (CFS)	**0.71**	**17.01**	**27.92**	**1.46**
POA-B (EXISTING)	7.15	18.04	25.46	36.82
POA-B (PROPOSED)	7.04	17.88	24.55	34.58
POA-B DIFFERENCE (CFS)	**0.11**	**0.16**	**0.91**	**2.24**
POA-C (EXISTING)	3.65	9.40	13.27	19.32
POA-C (PROPOSED)	3.24	5.87	7.49	10.10
POA-C DIFFERENCE (CFS)	**0.41**	**3.53**	**5.78**	**9.22**

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: Benjamin L. Green, P.E.

Date: 08/23/2023

Signature of Customer/Agent:

Regulated Entity Name: Haverland BTR

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: Granger Lake-San Gabriel River Wateshed

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.

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Attachment A: 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.

A list of reportable quantities can be found at https://www.tceq.texas.gov/response/spills/spill_rq.html.

Cleanup and Good House Keeping

- Clean up leaks and spills immediately.
- Neat and orderly storage of any chemicals, pesticides, fertilizers, fuels, etc. that are being stored on site.
- Regular garbage, rubbish, construction waste and sanitary waste disposal.
- Cleanup of sediments that have been tracked by vehicles or have been transported by wind or storm water about the site or onto nearby roads.
- 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.
- 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

- 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.
- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Absorbent materials should be promptly removed and disposed of properly.
- 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.

Manufacturer's recommended methods of spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and the cleanup supplies. Spills should be cleaned up immediately:

- Contain spread of the spill.
- Notify the project foreman immediately.
- 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.
- If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
- 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:

- 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.
- For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800)424-8802.
- Notification should first be made by telephone and followed up with a written report.
- The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.

Other agencies which may need to be consulted include, but not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc. The local emergency authority, as necessary, will implement its emergency management plans, which may include notifying and evacuating affected personnel. In the absence of a local emergency authority, the contractor shall take reasonable measure to notify potentially affected persons of the imminent health threat.

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Attachment B: Potential Sources of Contamination

Potential Source: Oil, grease, fuel, and hydraulic fluid contamination from construction equipment and vehicle dripping. Any spills shall be handled according to the Spill Response Actions in *Attachment A*.

Preventative Measures: Vehicle maintenance will be performed within the construction staging area or a local maintenance shop.

Potential Source: Asphalt wash -off after unexpected rain.

Preventative Measures: After placement of asphalt, emulsion, or coatings, the applicant will be responsible for immediate cleanup should an unexpected rain occur. During the entirety of the asphalt curing time, the applicant should maintain standby personnel and equipment to contain any asphalt wash-off.

Potential Source: Miscellaneous trash and litter from construction workers and material wrappings.

Preventative Measures: Trash containers will be placed throughout the site to encourage proper disposal of trash.

Potential Source: Silt leaving the site.

Preventative Measures: Contractor will install all temporary best management practices, described in *Attachment D,* prior to start of construction including the stabilized construction entrance to prevent tracking onto adjoining streets and to prevent the discharge of sediment to the San Gabriel River.

Potential Source: Construction Debris.

Preventative Measures: Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.

Potential Source: Soil and Mud from Construction Vehicle tires as they leave the site.

Preventative Measures: A stabilized construction exit shall be utilized as vehicles leave the site. Any soil, mud, etc. carried from the project onto public roads shall be cleaned up within 24 hours.

Potential Source: Sediment from soil, sand, gravel and excavated materials stock piled on site.

Preventative Measures: Silt fence shall be installed on the down gradient side of the stock piled materials. Reinforced rock berms shall be installed at all downstream discharge locations.

Potential Source: Portable toilet spill.

Preventative Measures: Toilets on the site will be emptied on a regular basis by the contracted toilet company.

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Attachment C: Sequence of Major Activities

The installation of erosion and sedimentation controls shall occur prior to any excavation of materials or major disturbances on the site. The sequence of major construction activities will be as follows. Approximate acreage to be disturbed is listed in parentheses next to each activity. The location of the temporary erosion control measures are shown on the Erosion & Sedimentation Control Sheets.

Intended Schedule or Sequence of Major Activities:

1. Construct Access (0.10 acres)
2. Installation of Temporary BMPs (40.58 acres)
3. Initiate Grubbing and Topsoil Stripping of Site (40.58 acres)
4. Rough Subgrade Preparation (earthwork, grading, street and drainage excavation and embankment) (40.58 acres)
5. Wet and Dry Utility Construction (12.17 acres)
6. Final Subgrade Preparation (40.58 acres)
7. Installation of Base Materials (40.58 acres)
8. Concrete (foundations, curbs, flatwork) (21.10 acres)
9. Building Construction (0.38 acres)
10. Paving Activities (81.29 acres)
11. Topsoil, Irrigation and Landscaping (12.17 acres)
12. Site cleanup and Removal of Temporary BMPs (21.10 acres)

Complete any necessary final dress up of areas. Conduct a final inspection and complete all punch list items.

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Attachment D: Temporary Best Management Practices

A. There is no storm water that originates up gradient from the site that will flow across the site.

B. 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. 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. Inlet protection will be placed over all existing and proposed inlets to stop the discharge of sediments into the sewer system. A staging and spoils area will be used to stage phases of construction and house spoils produced on site. Please reference the attached copy of the Erosion and Sedimentation Control Plans for specific locations and details of all controls.

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 solids 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.

The contractor is expected to inspect the controls weekly and after significant rainfalls to ensure proper function.

C. There are no sensitive geologic features within the boundaries of the project. However, the site will discharge into a San Gabriel surface stream. The temporary onsite BMPs will be used to treat stormwater runoff before it leaves the project and prevent pollutants from entering surface streams or any sensitive features down-gradient of the site.

D. There were no sensitive features on the 40.58-acre site identified during the geologic assessment. However, 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.

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Attachment F: 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. 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 cleanup of waste from concrete operations. The location of all structural temporary BMP's are shown on the erosion control plan sheet and details and specifications are provided on the erosion control details sheet which can be found at the end of this report under Section 9.

Description of Temporary BMPs

Temporary Construction Entrance/Exit

The purpose of a temporary gravel construction entrance is to provide a stable entrance/exit condition from the construction site and keep mud and sediment off public roads. A stabilized construction entrance is a stabilized pad of crushed stone located at any point traffic will be entering or leaving the construction site from a public right-of-way, street, alley, sidewalk or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking or flowing of sediment onto public rights-of-way. This practice should be used at all points of construction ingress and egress.

Excessive amounts of mud can also present a safety hazard to roadway users. To minimize the amount of sediment loss to nearby roads, access to the construction site should be limited to as few points as possible and vegetation around the perimeter should be protected were access is not necessary. A rock stabilized construction entrance should be used at all designated access points.

Silt Fence

The purpose of a silt fence is to intercept and detain water-borne sediment from unprotected areas of a limited extent. Silt fence is used during the period of construction near the perimeter of a disturbed area to intercept sediment while allowing water to percolate through. This fence should remain in place until the disturbed area is permanently stabilized. Silt fence should not be used where there is a concentration of water in a channel or drainage way. If concentrated flow occurs after installation, corrective action must be taken such as placing a rock berm in the areas of concentrated flow.

Silt fencing within the site may be temporarily moved during the day to allow construction activity provided it is replaced and properly anchored to the ground at the end of the day. Silt fences on the perimeter of the site or around drainage ways should not be moved at any time.

Concrete Washout Area

The purpose of concrete washout areas is to prevent or reduce the discharge of pollutants to stormwater from concrete waste by conducting washout offsite, performing onsite washout in a designated area, and training employees and subcontractors.
The following steps will help reduce stormwater pollution from concrete wastes:

- Incorporate requirements for concrete waste management into material supplier and subcontractor agreements.
- Avoid mixing excess amounts of fresh concrete.
- Perform washout of concrete trucks in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped onsite, except in designated areas.

- For onsite washout:
- Locate washout area at least 50 feet from sensitive features, storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
- Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly.

Below grade concrete washout facilities are typical. These consist of a lined excavation sufficiently large to hold expected volume of washout material. Above grade facilities are used if excavation is not practical. Temporary concrete washout facility (type above grade) should be constructed as shown on the details at the end of this section, with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations. Plastic lining material should be a minimum of 10 mil in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.

When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and disposed of. Materials used to construct temporary concrete washout facilities should be removed from the site of the work and disposed of. Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

Rock Berm

The purpose of a rock berm is to serve as a check dam in areas of concentrated flow, to intercept sediment-laden runoff, detain the sediment and release the water in sheet flow. The rock berm should be used when the contributing drainage area is less than 5 acres. Rock berms are used in areas where the volume of runoff is too great for a silt fence to contain. They are less effective for sediment removal than silt fences, particularly for fine particles, but are able to withstand higher flows than a silt fence. As such, rock berms are often used in areas of channel flows (ditches, gullies, etc.). Rock berms are most effective at reducing bed load in channels and should not be substituted for other erosion and sediment control measures further up the watershed.

Inlet Protection

In developments for which drainage is to be conveyed by underground storm sewers (i.e., streets with curbs and gutters), all inlets that may receive storm runoff from disturbed areas should be protected. Temporary inlet protection is a series of different measures that provide protection against silt transport or accumulation in storm sewer systems. This clogging can greatly reduce or completely stop the flow in the pipes. The different measures are used for different site conditions and inlet type

Attachment G: Drainage Area Maps

An existing and proposed drainage area map is provided in the construction plan section to support the requirement.

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Attachment I: Inspection and Maintenance for BMPs

Personnel Responsible for Inspections

The agent that performs the inspections should be knowledgeable of this general permit, familiar with the construction site, and knowledgeable of the SWPPP for the site. The contractor is to provide an inspector with a CPESC, CESSWI, or CISEC certification. Documentation of the inspector's qualifications is to be included in the attached Inspector Qualifications Log.

Inspection Guidelines for BMPs

The following sections address inspection and maintenance taken from the TNRCC Manual, "Complying with Edwards Aquifer Rules: Technical Guidance on Best Management Practices."

Silt Fence:

1. Inspection shall be made weekly and after each rainfall event, in accordance with Section 1.4.3 of RG-348.
2. Torn fabric shall be replaced or a second line of fencing parallel to the torn section shall be implemented as needed.
3. Accumulated silt shall be removed when it reaches a depth of six (6) inches. The silt shall be disposed of on an approved site and in such a manner that will not contribute to additional siltation.
4. Silt fence shall be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.

Inlet Protection:

1. Daily inspection shall be made by the contractor and silt accumulation must be removed when depth reaches 50 millimeters (two (2) inches).
2. Contractor shall monitor the performance of inlet protection during each rainfall event and immediately remove the inlet protections if the stormwater begins to overtop the curb.
3. Inlet protections shall be removed as soon as the source of sediment is stabilized.

Stabilized Construction Fence:

1. The entrance shall be maintained in a condition that will prevent tracking or flowing of sediment onto public roadway. This may require periodic top dressing with additional stone as conditions demand. As well as repair and clean out of any measure device used to trap sediment. All sediments that are spilled, dropped, washed or tracked onto a public roadway must be removed immediately.
2. Entrance shall be properly graded to prevent run-off from leaving the construction site.

Concrete Washout Area:

1. Routine inspection in accordance with Section 1.4.18 of RG-348 of the area to ensure that sufficient quantity and volume remain to contain all liquid and concrete waste generated by washout operations.
2. Plastic lining material should be a minimum of 10 millimeters in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.
3. When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and disposed of. Materials used to construct temporary concrete washout facilities should be removed from the site of the work and disposed of. Holes, depressions, or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

Sediment Basins:

1. Inspection should be made weekly and after each rainfall in accordance to Section 1.4.13 of RG-348.
2. To prevent clogging of the outlet structure of proposed water quality facilities implemented as temporary sediment basins, trash and other debris shall be removed promptly after each rainfall event.

3. Silt accumulation should be removed as well as basin re-graded to original dimensions once the capability of the facility has been reduced to 75% of original storage capacity.
4. Removed sediment should be redistributed in the respective phases' stockpiling area.

Rock Berm:

1. Inspection should be made weekly and after each rainfall in accordance to Section 1.4.5 of RG-348. If placed in streambeds, inspection should occur daily.
2. Accumulated silt shall be removed when it reached a depth of six (6) inches. The silt shall be disposed of on an approved site and in such a manner that will not contribute to additional siltation.
3. Loose wire sheathing shall be repaired immediately when necessary and the berm shall be reshaped as needed during inspection.
4. Berm shall be replaced if the structure ceases to function as initially intended due to factors such as silt accumulation, washout, construction traffic damage, etc.
5. When all upstream areas are stabilized and the accumulated silt has been removed, the rock berm should be removed and disposed of.

Inspection Schedule

The primary operator is required to complete inspections as specified above, and choose one of the two inspections listed below for all temporary stormwater controls not specifically listed.

☒ **Option 1:** Once every seven calendar days. If this alternative schedule is developed, then the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.

☐ **Option 2:** Once every 14 calendar days and within 24 hours of the end of a storm event of two inches or greater.

The inspections may occur on either schedule provided that documentation reflects the current schedule and that any changes to the schedule are conducted in accordance with the following provisions: the schedule may be changed a maximum of one time each month, the schedule change must be implemented at the beginning of a calendar month, and the reason for the schedule change must be documented (e.g., end of "dry" season and beginning of "wet" season).

If option 2 is the chosen frequency of inspections a rain gauge must be properly maintained on site or the storm event information from a weather station that is representative of the site location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, proper documentation of the total rainfall measured for that day must be recorded.
Personnel provided by the permittee must inspect:

- disturbed areas of the construction site that have not been finally stabilized;
- areas used for storage of materials that are exposed to precipitation;
- structural controls (for evidence of, or the potential for, pollutants entering the drainage system);
- sediment and erosion control measures identified in the SWP3 (to ensure they are operating correctly); and
- locations where vehicles enter or exit the site (for evidence of off-site sediment tracking).

Reductions in Inspection Frequency

Where sites have been finally or temporarily stabilized or where runoff is unlikely due to winter conditions (e.g. site is covered with snow, ice, or frozen ground exists), inspections must be conducted at least once every month. In arid, semi-arid, or drought-stricken areas, inspections must be conducted at least once every month and within 24 hours after the end of a storm event of 0.5 inches or greater. A record of the total rainfall measured, as well as the approximate beginning and ending dates of winter or drought conditions resulting in monthly frequency of inspections in the attached Rain Gauge Log.

In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable.

Inspection Report Forms

Use the Inspection Report Forms given as a checklist to ensure that all required areas of the construction site are addressed. There is space to document the inspector's name as well as when the inspections regularly take place. The tables will document that the required area was inspected. (If there were any areas of concern, briefly describe them in this space with a more detailed description in the narrative section. Use the last table to document any discharges found during the inspections).
Describe how effective the installed BMPs are performing. Describe any BMP failures that were noted during the investigation and describe any maintenance required due to the failure. If new BMPs are needed as the construction site changes, the inspector can use the space at the bottom of the section to list BMPs to be implemented before the next inspection.

Describe the inspector's qualifications, how the inspection was conducted, and describe any areas of non-compliance in detail. If an inspection report does not identify any incidents of non-compliance, then it must contain a certifying signature stating that the facility or site is in compliance. The report must be signed by a person and in a manner required by 30 TAC 305.128. There is space at the end of the form to allow for this certifying signature.

Whenever an inspection shows that BMP modifications are needed to better control pollutants in runoff, the changes must be completed within seven calendar days following the inspection. If existing BMPs are modified or if additional BMPs are needed, you must describe your implementation schedule, and wherever possible, make the required BMP changes before the next storm event.

The Inspection Report Form functions as the required report and must be signed in accordance with TCEQ rules at 30 TAC 305.128.

Corrective Action

Personnel Responsible for Corrective Actions

Both Primary and Secondary Operators are responsible for maintaining all necessary Corrective Actions. If an individual is specifically identified as the responsible party for modifying the contact information for that individual should be documented in the attached Inspector Qualifications Log.

Corrective Action Forms

The Temporary BMPs must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions must be completed within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the attached forms and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable. Actions taken as a result of inspections must be properly documented by completing the corrective action forms given.

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:

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 that 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.

Maintenance

Below are some maintenance practices to be used to maintain erosion and sediment controls:

- All measures will be maintained in good working order. The operator should correct any damage or deficiencies as soon as practicable after the inspection, but in no case later than seven (7) calendar days after the inspection.
- BMP Maintenance (as applicable)
- Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.
- Silt fence will be inspected for depth of sediment, tears, to see of the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
- Drainage swale will be inspected and repaired as necessary.
- Inlet control will be inspected and repaired as necessary.
- Check dam will be inspected and repaired as necessary.
- Straw bale dike will be inspected and repaired as necessary.
- Diversion dike will be inspected and any breaches promptly repaired.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
- If sediment escapes the site, accumulations must be removed at a frequency that minimizes off-site impacts, and prior to the next rain event, if feasible. If the permittee does not own or operate the off-site conveyance, then the permittee must to work with the owner or operator of the property to remove the sediment.
- Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

To maintain the above practices, the following will be performed:

- Maintenance and repairs will be conducted before the next anticipated storm event or as necessary to maintain the continued effectiveness of storm water controls. Following an inspection, deficiencies should be corrected no later than seven (7) calendar days after the inspection.

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Inspector Qualifications Log*

Inspector Name: ______________________
Qualifications (Check as appropriate and provide description):
n Training Course ______________________
n Supervised Experience ______________________
n Other ______________________

Inspector Name: ______________________
Qualifications (Check as appropriate and provide description):
n Training Course ______________________
n Supervised Experience ______________________
n Other ______________________

Inspector Name: ______________________
Qualifications (Check as appropriate and provide description):
n Training Course ______________________
n Supervised Experience ______________________
n Other ______________________

Inspector Name: ______________________
Qualifications (Check as appropriate and provide description):
n Training Course ______________________
n Supervised Experience ______________________
n Other ______________________

Inspector Name: ______________________
Qualifications (Check as appropriate and provide description):
n Training Course ______________________
n Supervised Experience ______________________
n Other ______________________

Inspector Name: ______________________
Qualifications (Check as appropriate and provide description):
n Training Course ______________________
n Supervised Experience ______________________
n Other ______________________

• *The agent that performs the* inspections *should be knou›ledgeable of this general permit, familiar north the* construction *site, and knou›ledgeable of the SWPPP for the site. The contractor is to prouide* nn *inspector north a CPESC, CESSWI, or C/S€C* cerriJcnrion.

Amendment Log

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

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Construction Activity Sequence Log

Name of Operator	Projected dates Month/year	Activity Disturbing Soil clearing, excavation, etc.	Location on-site where activity will be conducted	Acreage being disturbed

*Construction activity sequences for linear projects may be conducted on a rolling basis. As a result, construction activities may be at different stages at different locations in the project area. The Contractor is required to complete and update the schedule and adjust as necessary.

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Stormwater Control /ns£a//a£fon *and Removal Log*

Stormwater Control	Location On-Site	**Installation** Date	Removal Date

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Stabilization Activities Log

Date **Activity** Initiated	Description of Activity	Description of Stabilization Measure and Location	Date Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures Initiated

Stabilization and erosion control practices may include, but are not limited to: establishing temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, and protecting existing trees and vegetation. List practices used where they are located, when they will be implemented, and whether they are temporary (interim) or permanent.

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inspection frequency Log

Date	FrequencyScheduleandReasonforChange

Rain Gauge Log

Date	LocaûooofRaLoGauge	GaugeRea‹üng

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General Information		
Name of Project	Tracking No.	Inspection Date

Inspector Name, **Title &** Contact Information

Present Phase of Construction

Inspection Location (if multiple inspections are required, specify location where this inspection is being conducted)	

Inspection Frequency

Standard Frequency: Q Weekly Q Every *4 days and within •4 hours of a o.•5" rain

Increased Frequency: Q Every y days and within 4 hours of a o. s" rain

Reduced Frequency:

Once per month (for stabilized areas)

Once per month and within 24 hours of a 0.25" rain (for arid, semi-arid, or drought-stricken areas during seasonally dry periods or during drought)

Once per month (for frozen conditions where earth-disturbing activities are being conducted)

Was this inspection triggered by a o.a5" storm event? Q Yes Q No

If yes, how did you determined whether a o.z5" storm event has occurred?

Q Rain gauge on site Q Weather station representative of site. Specify weather station source:

Total rainfall amount that triggered the inspection (in inches):

Unsafe Conditions for Inspection

Did you determine that any portion of your site was unsafe for inspection? Q Yes Q No

If "yes", **complete the following:**

Describe the conditions that prevented you from conducting the inspection in this location:

Location(s) where conditions were found:

Condition and Effectiveness of Erosion and Sediment (E&S) Controls				
Type/Location of **E&S** Control	Repairs or Other Maintenance Needed?	Corrective Action Required?	Date on Which Maintenance or Corrective Action First Identified?	Notes
1.	QYes QNo	QYes QNo		
2.	QYes QNo	QYes QNo		
3.	QYes QNo	QYes QNo		
4.	QYes QNo	QYes QNo		
5.	QYes QNo	QYes QNo		
6.	QYes QNo	QYes QNo		
7.	QYes QNo	QYes QNo		
8.	QYes QNo	QYes QNo		
9.	QYes QNo	QYes QNo		
10.	QYes QNo	QYes QNo		

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Condition and Effectiveness of Pollution Prevention (Pa) Practices				
Type/Location of Pa Practices	Repalrsor Other Maintenance Needed?	Corrective Action Required?	Identification Date	Notes
1.	QYes QNo	QYes QNo		
2.	QYes QNo	QYes QNo		
3.	QYes QNo	QYes QNo		
4.	QYes QNo	QYes QNo		
5.	QYes QNo	QYes QNo		
6.	QYes QNo	QYes QNo		
7.	QYes QNo	QYes QNo		
8.	QYes QNo	QYes QNo		
9.	QYes QNo	QYes QNo		
10.	QYes QNo	QYes QNo		

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Stabilization of Exposed Soil			
Stabilization Area	Stabilization Method	Have You **Initiated Stabilization?**	Notes
1.		@ **YES** @ NO If yes, provide date:	
2.		@ **YES** @ NO If yes, provide date:	
3.		@ YES @ NO If yes, provide date:	
4.		@ YES @ NO If yes, provide date:	
5.		@ YES @ NO If yes, provide date:	

DescripflonofDicharges

Was a stormwater discharge or other discharge occurring from any pam of your site at the time of the inspection? Q Yes Q No
If"yes", provide the following information for each point of discharge:

Discharge Location	Observations
i.	Describe the discharge: At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? Q Yes Q No If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:
z.	Describe the discharge: At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? Q Yes Q No If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:
3.	Describe the discharge: At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? Q Yes Q No If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:

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Contractor or subcontractor Certifcaúon and sígnamre

"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 gathered and evaluated 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 that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Contractor or Subcontractor: _____ Date:

Printed Name and Affiliation: _____

Certification and Signature by Permittee

"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 gathered and evaluated 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 that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Permittee or "Duly Authorized Representative": Date:

Printed Name and **Affiliation:** _____

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Section A — **Initial** Report (Complete this section within 4 hours of discovering the condition that triggered corrective action)			
Name of Project	Tracking No.	Today's Date	
Date Problem First Discovered		Time Problem First Discovered	
Name and Contact Information of Individual Completing this Form			

What site conditions triggered the requirement to conduct corrective action:
Q A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Part z and/or 3
Q The stormwater controls that have been installed and maintained are not effective enough for the discharge to meet applicable water quality standards
Q A prohibited discharge has occurred or is occurring

Provide a description of the problem:

Deadline for completing corrective action *(Enter date that* is *either: (1)* no more *than calendar days after the date you discovered the problem, or (z) if it* is *infeasible to complete work within the first* dogs, *enter the date that* is *as* soon *as practicable following the ph day):*

If your estimated date of completion falls after the y-day deadline, explain (i) why you believe it is infeasible to complete work within 7 days, and (u) why the date you have established for making the new or modified stormwater control operational is the soonest practicable timeframe:

Section B — Corrective Action Progress
(Complete this section no later than 7 calendar days after discovering the condition that triggered corrective action)

Section B.i — Why the Problem Occurred

Cause(s) of Problem (Add an additional sheet if necessary)	How This Was Determined and the Date You Determined the Cause

Section B.a — **Stormwater Control Modifications to be Implemented to Correct** the Problem

List of Stormwater Control Modification(s) Needed to Correct Problem (Add an additional sheet if necessary)	Completion Date	SWPPP Update Necessary?	Notes
i.		QYes QNo Date:	
2.		QYes QNo Date:	
3.		QYes QNo Date:	

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Section A — **Initial** Report (Complete this section within 4 hours of discovering the condition that triggered corrective action)			
Name of Project	Tracking No.	Today's Date	
Date Problem First Discovered		Time Problem First Discovered	
Name and Contact Information of Individual Completing this Form			

What site conditions triggered the requirement to conduct corrective action:

Q A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Part z and/or 3

Q The stormwater controls that have been installed and maintained are not effective enough for the discharge to meet applicable water quality standards

Q A prohibited discharge has occurred or is occurring

Provide a description of the problem:

Deadline for completing corrective action *(Enter date that* is *either: (1)* no more *than calendar days* nder *the* dofe you *discouered the problem,* or *(z)* iJif *is infeasible to complete work within the first days, enter the date that is as soon as practicable follou›ing the fh day):*

If your estimated date of completion falls after the y-day deadline, explain (i) why you believe it is infeasible to complete work within 7 days, and (a) why the date you have established for making the new or modified stormwater control operational is the soonest practicable timeframe:

Section B — Corrective Action Progress (Complete this section no later than y calendar days after discovering the condition that triggered corrective action)	
Section B.i — Why the Problem Occurred	
Cause(s) of Problem (Add an additional sheet if necessary)	How This Was Determined and the Date You Determined the Cause

Section B.a — **Stormwater Control Modifications to** be **Implemented to Correct the Problem**			
List of Stormwater Control Modification(s) Needed to Correct Problem (Add an additional sheet if necessary)	Completion Date	SWPPP Update Necessary?	Notes
i.		QYes QNo Date:	
2.		QYes QNo Date:	
3.		QYes QNo Date:	

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Contractor orsubcontractorCertifcaúon andsígnamre
"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 gathered and evaluated 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 that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." Signature of Contractor or Subcontractor:_____Date: Printed Nameand Affiliation: _____

Cemifieation and Signature by Permittee
"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 gathered and evaluated 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 that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." **Signature of Permittee or** **"Duly Authorized Representative":**_____Date: **Printed** Name and **Affiliation:** _____

Kimley»Horn

Attachment J: 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:

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 that 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.

Maintenance

Below are some maintenance practices to be used to maintain erosion and sediment controls:

- All measures will be maintained in good working order. The operator should correct any damage or deficiencies as soon as practicable after the inspection, but in no case later than seven (7) calendar days after the inspection.
- BMP Maintenance (as applicable)
- Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.
- Silt fence will be inspected for depth of sediment, tears, to see of the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
- Drainage swale will be inspected and repaired as necessary.
- Inlet control will be inspected and repaired as necessary.
- Check dam will be inspected and repaired as necessary.
- Straw bale dike will be inspected and repaired as necessary.

- Diversion dike will be inspected and any breaches promptly repaired.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
- If sediment escapes the site, accumulations must be removed at a frequency that minimizes off-site impacts, and prior to the next rain event, if feasible. If the permittee does not own or operate the off-site conveyance, then the permittee must to work with the owner or operator of the property to remove the sediment.
- Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

To maintain the above practices, the following will be performed:

- Maintenance and repairs will be conducted before the next anticipated storm event or as necessary to maintain the continued effectiveness of storm water controls. Following an inspection, deficiencies should be corrected no later than seven (7) calendar days after the inspection.

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: Benjamin L. Green, P.E.

Date: 08/23/2023

Signature of Customer/Agent

Regulated Entity Name: Haverland BTR

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

Attachment B: BMPs for Up-Gradient Stormwater

Up-gradient storm water does exist based on current topography maps and field observations.

Stormwater flows onto the site from the western border. However, these flows are directed through the site in the Granger Lake - San Gabriel River Watershed and are not being directed into the proposed BMPs. There are no proposed BMPs for upgradient stormwater. Please refer to the Proposed Drainage Area Map that is provided at the end of this report in Section 8.

Kimley»Horn

Attachment C: BMPs for On-Site Stormwater

Multiple batch detention water quality ponds wills be used to treat the on-site stormwater. The TCEQ TSS Removal Calculations spreadsheet was used to design the proposed water quality pond and can be found in the Site Development Plans attached.

A batch detention basin is an extended detention basin modified to operate as a batch Approval of reactor. A valve on the first detention basin outlet is used to capture the produced runoff Innovative for a fixed amount of time and then release it. As in an extended detention basin, the Technology batch detention basin is primarily used to remove particulate pollutants and to reduce maximum runoff rates associated with development to their pre-development levels. Batch detention basins have superior water quality performance than traditional extended detention basins and achieve a total suspended solids (TSS) removal efficiency of 91%. (Middleton et al., 2006).

Kimley»Horn

Attachment D: BMPs for Surface Streams

The San Gabriel surface stream will be protected with multiple batch detention water quality ponds to treat the on-site stormwater. The TCEQ TSS Removal Calculations spreadsheet was used to design the proposed water quality pond and can be found in the Construction Plans attached.

A batch detention basin is an extended detention basin modified to operate as a batch Approval of reactor. A valve on the first detention basin outlet is used to capture the produced runoff Innovative for a fixed amount of time and then release it. As in an extended detention basin, the Technology batch detention basin is primarily used to remove particulate pollutants and to reduce maximum runoff rates associated with development to their pre-development levels. Batch detention basins have superior water quality performance than traditional extended detention basins and achieve a total suspended solids (TSS) removal efficiency of 91%. (Middleton et al., 2006).

There are no sensitive features on-site according to the Geologic Assessment.

Attachment F: 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 following Construction Plans, 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 technical guidance manual based upon project area and increase in impervious cover. All stormwater runoff from impervious areas will be treated by the proposed permanent BMP's to provide the overall required removal of at least 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, calculations, and construction notes for the project site improvements are provided in this section.

SUBMITTAL LOG

CIVIL SITE DEVELOPMENT PLANS
FOR
HAVERLAND BTR

170 HAVERLAND DR
GEORGETOWN, TX 78626

FOR REVIEW. THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF ANDY B. GRAHAM NO. 139295 ON DUE. IT IS NOT TO BE USED FOR BIDDING, PERMIT OR CONSTRUCTION.

ZONING:

MF-1 (Low-Density Multifamily)

FLOODPLAIN INFORMATION:

ACCORDING TO THE NATIONAL FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 48491C0485F, DATED 12/20/2019, THIS LOT IS LOCATED IN ZONE "X", WHICH IS AN AREA OUTSIDE THE FEMA DESIGNATED 100-YEAR FLOODPLAIN.

LEGAL DESCRIPTION:

AW0235 FLORES, A. SUR., ACRES 6.2142
AW0235 AW0235 - Flores, A. Sur., ACRES 1.82
AW0235 FLORES, A. SUR., ACRES 1.83
AW0235 FLORES, A. SUR., ACRES 1.67
AW0235 FLORES, A. SUR., ACRES 16.79
AW0235 AW0235 - Flores, A. Sur., ACRES 0.96, [TU Pct]
AW0235 FLORES, A. SUR., ACRES 4.77
AW0235 FLORES, A. SUR., ACRES 5.53
AW0235 FLORES, A. SUR., ACRES 1.0

SITE BENCHMARKS:

DESC: BENCHMARK 1 - MAG NAIL SET IN CONCRETE
ELEVATION= 710.48'

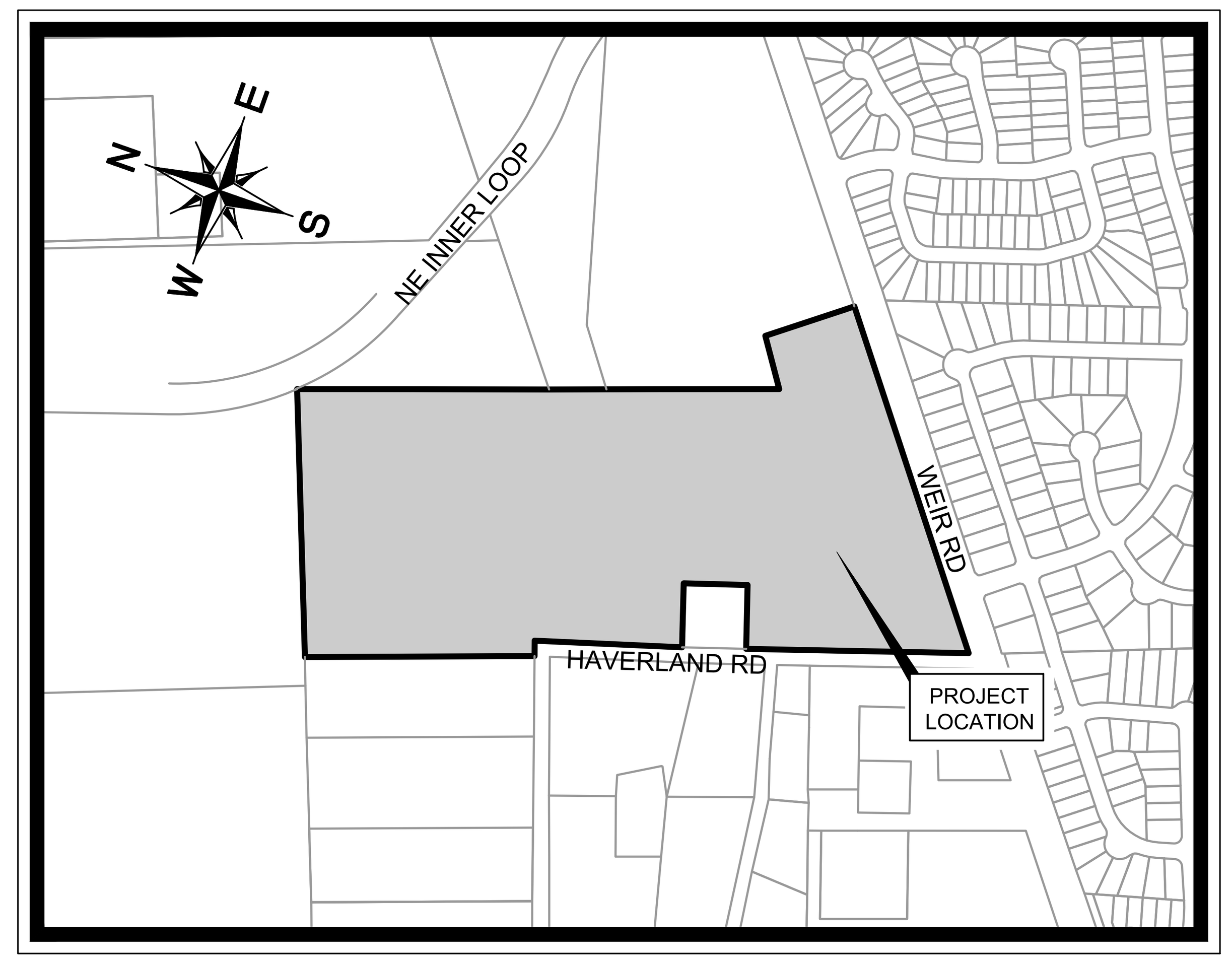
DESC: BENCHMARK 3 - MAG NAIL SET IN ASPHALT
ELEVATION= 717.87'

REFERENCE BENCHMARKS: CITY OF GEORGETOWN NO. 96-001 AND 96-005
DESC: ½" I.R. W/ALUMINUM CAP
RESPECTIVE ELEVATIONS: 642.70' AND 768.42'

PROJECT INFORMATION:
- PROPOSED USE: THIS PROJECT WILL CONSIST OF 146 MULTI-FAMILY BUILDINGS WITH A TOTAL OF 302 UNITS AND AN AMENITY CENTER, ALONG WITH A PUBLIC RIGHT-OF-WAY.
- ZONING DISTRICT: SDP: MF-1
- ACREAGE: 40.58 ACRES
- PROPOSED TOTAL IMPERVIOUS COVERAGE: 21%
- FINAL PLAT CASE NUMBER: 2023-13-PFP

GENERAL PLAN NOTES:

1. IT IS THE RESPONSIBILITY OF THE PROPERTY OWNER, AND SUCCESSORS TO THE CURRENT PROPERTY OWNER, TO ENSURE THE SUBJECT PROPERTY AND ANY IMPROVEMENTS ARE MAINTAINED IN CONFORMANCE WITH THIS SITE DEVELOPMENT PLAN.
2. THIS DEVELOPMENT SHALL COMPLY WITH ALL STANDARDS OF THE UNIFIED DEVELOPMENT CODE (UDC), THE CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND SPECIFICATIONS MANUAL, THE DEVELOPMENT MANUAL AND ALL OTHER APPLICABLE CITY STANDARDS.
3. THIS SITE DEVELOPMENT PLAN SHALL MEET THE UDC STORMWATER REQUIREMENTS.
4. ALL SIGNAGE REQUIRES A SEPARATE APPLICATION AND APPROVAL FROM THE INSPECTION SERVICES DEPARTMENT. NO SIGNAGE IS APPROVED WITH THE SITE DEVELOPMENT PLAN.
5. SIDEWALKS SHALL BE PROVIDED IN ACCORDANCE WITH THE UDC.
6. DRIVEWAYS WILL REQUIRE APPROVAL BY THE DEVELOPMENT ENGINEER OF THE CITY OF GEORGETOWN.
7. OUTDOOR LIGHTING SHALL COMPLY WITH SECTION 7.04 OF THE UDC.
8. SCREENING OF MECHANICAL EQUIPMENT, DUMPSTER AND PARKING SHALL COMPLY WITH CHAPTER 8 OF THE UDC. THE SCREENING IS SHOWN ON THE LANDSCAPE AND ARCHITECTURAL PLANS, AS APPLICABLE.
9. THE COMPANION LANDSCAPE PLAN HAS BEEN DESIGNED AND PLANT MATERIALS SHALL BE INSTALLED TO MEET ALL REQUIREMENTS OF THE UDC.
10. ALL MAINTENANCE OF REQUIRED LANDSCAPE SHALL COMPLY WITH THE MAINTENANCE STANDARDS OF THE CHAPTER 8 OF THE UDC.
11. A SEPARATE IRRIGATION PLAN SHALL BE REQUIRED AT THE TIME OF BUILDING PERMIT APPLICATION.
12. FIRE FLOW REQUIREMENTS OF 2000 PER MINUTE ARE BEING MET BY THIS PLAN.
13. ANY HERITAGE TREE NOTED ON THIS SITE DEVELOPMENT PLAN IS SUBJECT, IN PERPETUITY, TO THE MAINTENANCE, CARE PRUNING AND REMOVAL REQUIREMENTS OF THE UNIFIED DEVELOPMENT CODE.
14. THE CONSTRUCTION PORTION OF THESE PLANS WERE PREPARED, SEALED, SIGNED, AND DATED BY A TEXAS LICENSED PROFESSIONAL ENGINEER. THEREFORE, BASED ON THE ENGINEER'S CONCURRENCE OF COMPLIANCE, THE CONSTRUCTION PLANS FOR CONSTRUCTION OF THE PROPOSED PROJECT ARE HEREBY APPROVED SUBJECT TO THE STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS MANUAL AND ALL OTHER APPLICABLE CITY, STATE AND FEDERAL REQUIREMENTS AND CODES.
15. THIS PROJECT IS SUBJECT TO ALL CITY STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF SUBMITTAL OF THE PROJECT TO THE CITY.
16. WHERE NO EXISTING OVERHEAD INFRASTRUCTURE EXISTS, UNDERGROUND ELECTRIC UTILITY LINES SHALL BE LOCATED ALONG THE STREET AND WITHIN THE SITE. WHERE EXISTING OVERHEAD INFRASTRUCTURE IS TO BE RELOCATED, IT SHALL BE RE-INSTALLED UNDERGROUND AND THE EXISTING FACILITIES SHALL BE REMOVED AT THE DISCRETION OF THE DEVELOPMENT ENGINEER.
17. ALL ELECTRIC AND COMMUNICATION INFRASTRUCTURE SHALL COMPLY WITH UDC SECTION 13.06.



VICINITY MAP
SCALE: 1" = 500'

I CERTIFY THAT THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER MY AUTHORITY. IT IS NOT TO BE USED FOR BIDDING, PERMIT OR CONSTRUCTION.

DATE

SHEET INDEX

LANDSCAPE:
KIMLEY-HORN
5301 SOUTWEST PARKWAY, BUILDING 2, SUITE 100
AUSTIN, TEXAS 78745
ATTN: MORGAN DEPINE
(737) 295-0301
MORGAN.DEPINE@KIMLEY-HORN.COM

OWNER/DEVELOPER:
TAYLOR MORRISON
810 HESTER'S CROSSING, SUITE 235
BUILDING 1, SUITE 200
ROUND ROCK, TEXAS 78681
ATTN: RYAN MATTOX
(512) 774-6239
RMATTOX@TAYLORMORRISON.COM

SURVEYOR
KIMLEY-HORN AND ASSOCIATES, INC.
400 NORTH OKLAHOMA DRIVE, SUITE 105
CELINA, TX 75009
(469) 501-2200
ATTN: DANIEL R. ARTHUR

ENGINEER:
KIMLEY-HORN
5301 SOUTWEST PARKWAY, BUILDING 2, SUITE 100 AUSTIN, TEXAS 78745
KIMLEY-HORN.COM
(512) 418-1771
BEN.GREEN@KIMLEY-HORN.COM
ATTN: BENJAMIN L. GREEN

ARCHETICT:

PREPARED BY:
Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
AUSTIN, TEXAS 78735
CERTIFICATE OF REGISTRATION #928
Tel. No.(512) 418-1771
Fax No.(512) 418-1791

UTILITY CONTACTS:

1. CABLE COMPANY, CHUCK MCNEELY, CHARTER SPECTRUM, (512) 485-6423
12012 N. MOPAC EXPY, AUSTIN, TX 78758, CHUCK MCNEELY@CHARTER.COM
2. ELECTRIC COMPANY, AARON RAMIREZ, ONCOR, (817) 355-7057,
200 N. ECTOR DRIVE, EULESS, TX 76039, AARON.RAMIREZ@ONCOR.COM
3. GAS COMPANY, MARCO DELIRA, ATMOS,
3110 N. IH-35, ROUND ROCK, TX 78681, MARCO.DELIRA@ATMOSENERGY.COM
4. CITY WATER/UTILITIES DEPARTMENT, 300-1 INDUSTRIAL AVE., GEORGETOWN, TEXAS 78626, (512) 930-3640, CUSTOMERCARE@GEORGETOWN.ORG, GUS.GEORGETOWN.ORG

PROJECT INFORMATION	
REGULATING FIRE CODE	IFC 2015 W/ LOCAL AMENDMENTS
BUILDING TYPE PER IFC:	TYPE V-A
MAX BUILDING HEIGHT:	35'
AUTOMATIC FIRE SPRINKLER SYSTEM TYPE:	NFPA 13R
BUILDING FIRE AREA (SF)	37,751
AVAILABLE FIRE FLOW CALCS AT 20 PSI:	-
REQUIRED BUILDING FIRE FLOW PER IFC:	1,500 GPM
REDUCED FIRE FLOW AT 75% FIRE SPRINKLER REDUCTION:	1,500 GPM
*MINIMUM FIRE FLOW:	1,500 GPM

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date / /19

08/18/2023

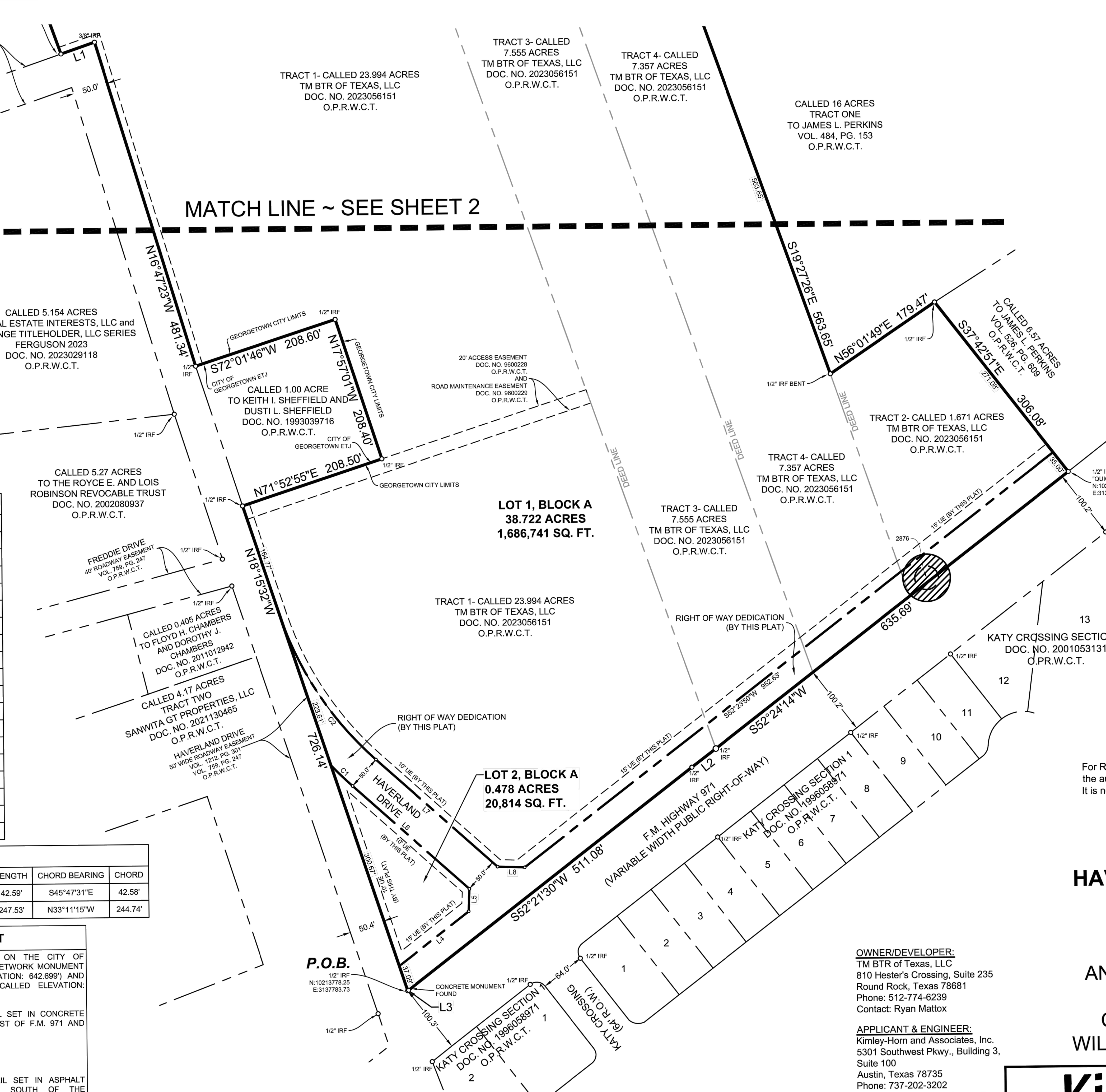
KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

COVER SHEET

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
1 OF 102

XXXXXXXXX



VICINITY MAP

1"=2000'

SITE

GRAPHIC SCALE IN FEET

1" = 100' @ 18X24

LINE TABLE

NO.	BEARING	LENGTH
L1	S71°01'35"W	50.37'
L2	S52°32'46"W	42.94'
L3	S58°00'48"W	1.62'
L4	N52°23'50"E	125.48'
L5	N02°08'26"E	31.97'
L6	S48°06'58"E	220.67'
L7	N48°06'58"W	229.95'
L8	N87°51'34"W	38.45'
L9	N87°37'17"E	228.52'
L10	S65°32'45"E	105.81'
L11	S32°59'56"E	71.37'
L12	N79°01'47"E	22.71'
L13	N48°54'31"E	49.13'
L14	N58°03'59"E	55.32'
L15	S89°18'28"E	109.93'
L16	S71°20'47"E	83.30'
L17	S80°54'28"E	94.31'
L18	S88°52'44"E	197.80'

CURVE TABLE

NO.	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD
C1	4°38'55"	525.00'	42.59'	S45°47'31"E	42.58'
C2	29°51'26"	475.00'	247.53'	N33°11'15"W	244.74'

BENCH MARK LIST

ELEVATIONS ARE BASED ON THE CITY OF GEORGETOWN CONTROL NETWORK MONUMENT NO. 96-001 (CALLED ELEVATION: 642.699') AND MONUMENT NO. 96-005 (CALLED ELEVATION: 768.420').

BENCHMARK 1 - MAG NAIL SET IN CONCRETE LOCATED +/- 400 FEET WEST OF F.M. 971 AND PRAIRE SPRINGS LANE.
N: 10214465.4'
E: 3138801.8'
ELEV: 710.48'

BENCHMARK 2 - MAG NAIL SET IN ASPHALT LOCATED +/- 100 FEET SOUTH OF THE INTERSECTION OF HAVERLAND DRIVE AND MEDA ST.
N: 10215000.8'
E: 3137357.4'
ELEV: 717.87'

LEGEND

P.O.B.	POINT OF BEGINNING
IRF	IRON ROD FOUND
IRFC	IRON ROD W/ CAP FOUND
IRSC	IRON ROD W/ CAP SET
P.U.E.	PUBLIC UTILITY EASEMENT
PEC	PEDERNALES ELECTRIC COOPERATIVE
R.O.W.	RIGHT-OF-WAY
O.P.R.W.C.T.	OFFICIAL PUBLIC RECORDS WILLIAMSON COUNTY, TEXAS

LINE TYPE LEGEND

BOUNDARY LINE
EASEMENT LINE
LOT LINE
ADJOINER LINE
BUILDING SETBACK
ROADWAY CENTERLINE
RIGHT OF WAY DEDICATION

For Review. This document is released for the purpose of review under the authority of Benjamin L. Green, P.E. No. 132190 on ________, 2023. It is not to be used for bidding, permit or construction.

FINAL PLAT
HAVERLAND SUBDIVISION

40.579 ACRES
LOTS 1 & 2, BLOCK A

ANTONIO FLORES SURVEY
ABSTRACT NO. 235
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

OWNER/DEVELOPER:
TM BTR of Texas, LLC
810 Hester's Crossing, Suite 235
Round Rock, Texas 78681
Phone: 512-774-6239
Contact: Ryan Mattox

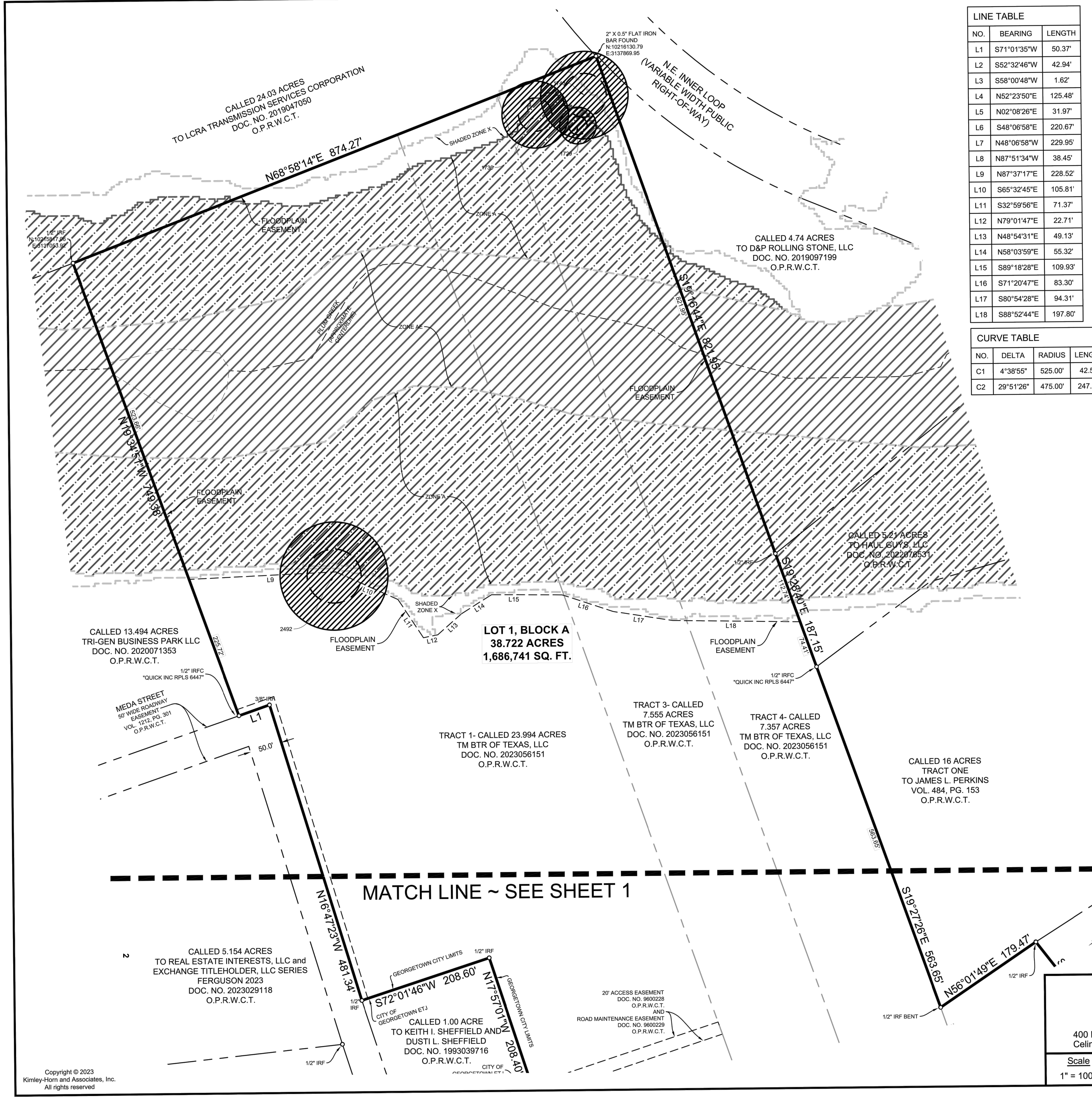
APPLICANT & ENGINEER:
Kimley-Horn and Associates, Inc.
5301 Southwest Pkwy., Building 3, Suite 100
Austin, Texas 78735
Phone: 737-202-3202
Contact : Benjamin L. Green, P.E.

SURVEYOR:
Kimley-Horn and Associates, Inc.
400 N. Oklahoma Dr, Suite 105
Celina, Texas 75009
Phone: 469-501-2172
Contact : Daniel Arthur, R.P.L.S.

Kimley»Horn
400 North Oklahoma Dr., Suite 105
Celina, Texas 75009
FIRM # 10194503
Tel. No. (469) 501-2200
www.kimley-horn.com

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
1" = 100'	MJS	MJS	07/17/2023	069264937	1 OF 4

CITY PROJECT NO. 2023-____-____



LINE TABLE

NO.	BEARING	LENGTH
L1	S71°01'35"W	50.37'
L2	S52°32'46"W	42.94'
L3	S58°00'48"W	1.62'
L4	N52°23'50"E	125.48'
L5	N02°08'26"E	31.97'
L6	S48°06'58"E	220.67'
L7	N48°06'58"W	229.95'
L8	N87°51'34"W	38.45'
L9	N87°37'17"E	228.52'
L10	S65°32'45"E	105.81'
L11	S32°59'56"E	71.37'
L12	N79°01'47"E	22.71'
L13	N48°54'31"E	49.13'
L14	N58°03'59"E	55.32'
L15	S89°18'28"E	109.93'
L16	S71°20'47"E	83.30'
L17	S80°54'28"E	94.31'
L18	S88°52'44"E	197.80'

CURVE TABLE

NO.	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD
C1	4°38'55"	525.00'	42.59'	S45°47'31"E	42.58'
C2	29°51'26"	475.00'	247.53'	N33°11'15"W	244.74'

VICINITY MAP

1"=2000'

SITE

GRAPHIC SCALE IN FEET

1" = 100' @ 18X24

LEGEND

P.O.B.	POINT OF BEGINNING
IRF	IRON ROD FOUND
IRFC	IRON ROD W/ CAP FOUND
IRSC	IRON ROD W/ CAP SET
P.U.E.	PUBLIC UTILITY EASEMENT
PEC	PEDERNALES ELECTRIC COOPERATIVE
R.O.W.	RIGHT-OF-WAY
O.P.R.W.C.T.	OFFICIAL PUBLIC RECORDS WILLIAMSON COUNTY, TEXAS

LINE TYPE LEGEND

BOUNDARY LINE
EASEMENT LINE
LOT LINE
ADJOINER LINE
BUILDING SETBACK
ROADWAY CENTERLINE
RIGHT OF WAY DEDICATION

FINAL PLAT
HAVERLAND SUBDIVISION

40.579 ACRES
LOTS 1 & 2, BLOCK A

ANTONIO FLORES SURVEY
ABSTRACT NO. 235
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

Kimley»Horn
400 North Oklahoma Dr., Suite 105
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CITY PROJECT NO. 2023-____-____

HAVERLAND BTR

170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

PRELIMINARY FINAL PLAT (SHEET 1 OF 2)

KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

08/18/2023

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

No.	REVISIONS	DATE	BY

SHEET NUMBER
2 OF 102

XXXXXXXXX

PROPERTY DESCRIPTION
40.579 ACRES

BEING a tract of land situated in the Antonio Flores Survey, Abstract No. 235, City of Georgetown, Williamson County, Texas and being all of Tract 1- called 23.994 acres, Tract 2- called 1.671 acres, Tract 3- called 7.555 acres and Tract 4- called 7.357 acres as described in deed to TM BTR of Texas, LLC as recorded in Document Number 2023056151, Official Public Records of Williamson County, Texas and being further described as follows:

BEGINNING at a 1/2 inch iron rod found at the south corner of said 23.994 acre tract, said point also being at the intersection of the northwest right-of-way line Farm-to-Market Highway Number 971, a variable width right-of-way, with the northeast right-of-way line of Haverland Drive, a 50 foot wide roadway easement recorded in Volume 1212, Page 301, and Volume 759, Page 247, Official Public Records of Williamson County, Texas;

THENCE North 18°15'32" West, 726.14 feet along the southwest line of said 23.994 acre tract and along the northeast right-of-way line of Haverland Drive to a 1/2 inch iron rod found at the south corner of a called 1.00 acre tract of land described in deed to Keith I. Sheffield and Dusti L. Sheffield as recorded in Document Number 1993039716, Official Public Records of Williamson County, Texas;

THENCE North 71°52'55" East, 208.50 feet along the southeast line of said 1.00 acre tract and the common line of said 23.994 acre tract to a 1/2 inch iron rod found at the east corner of said 1.00 acre tract;

THENCE North 17°57'01" West, 208.40 feet along the northeast line of said 1.00 acre tract and the common line of said 23.994 acre tract to a 1/2 inch iron rod found at the north corner of said 1.00 acre tract;

THENCE South 72°01'46" West, 208.60 feet along the northwest line of said 1.00 acre tract and the common line of said 23.994 acre tract to a 1/2 inch iron rod found at the west corner of said 1.00 acre tract, said point also being in the northeast right-of-way line of Haverland Drive;

THENCE North 16°47'23" West, 481.34 feet along the southwest line of said 23.994 acre tract and along the northeast right-of-way line of Haverland Drive to a 3/8 inch iron rod found at the intersection of the northeast right-of-way line of Haverland Drive with the northwest right-of-way line of Meda Street, a 50 foot wide roadway easement recorded in Volume 1212, Page 301, Official Public Records of Williamson County, Texas;

THENCE South 71°01'35" West, 50.37 feet along the northwest right-of-way line of Meda Street and the common line of said 23.994 acre tract to a 1/2 inch iron rod with cap stamped "QUICK INC RPLS 6447", said point also being the east corner of a called 13.494 acre tract of land described in deed to Tri-Gen Business Park LLC as recorded in Document Number 2020071353, Official Public Records of Williamson County, Texas;

THENCE North 19°34'51" West, 749.38 feet along the southwest line of said 23.994 acre tract and along the northeast line of said 13.494 acre tract to a 1/2 inch iron rod found at the most westerly corner of said 23.994 acre tract, said point being the north corner of said 13.494 acre tract, said point also being in the south line of a called 24.03 acre tract of land described in deed to LCRA Transmission Services Corporation as recorded in Document Number 2019047050, Official Public Records of Williamson County, Texas;

THENCE North 68°58'14" East, 874.27 feet along the south line of said 24.03 acre tract to a 2 inch by 1/2 inch flat iron bar found at the north corner of said 7.357 acre tract, said point also being in the southwest line of a called 4.74 acre tract of land described in deed to D&P Rolling Stone, LLC as recorded in Document Number 2019097199, Official Public Records of Williamson County, Texas;

THENCE along the northeast line of said 7.357 acre tract as follows:

South 19°16'44" East, 821.95 feet along the southwest line of said 4.74 acre tract to a 1/2 inch iron rod found at the west corner of a called 5.21 acre tract of land described in deed to Haul Guys, LLC as recorded in Document Number 2022076531, Official Public Records of Williamson County, Texas;

South 19°28'40" East, 187.15 feet along the southwest line of said 5.21 acre tract to a 1/2 inch iron rod with cap stamped "QUICK INC RPLS 6447" found at the south corner of said 5.21 acre tract, said point also being the west corner of Tract One- called 16 acres described in deed to James L. Perkins as recorded in Volume 484, Page 153, Official Public Records of Williamson County, Texas;

South 19°27'26" East, 563.65 feet along the southwest line of said 16 acre tract to a bent 1/2 inch iron rod found at the west corner of said 1.671 acre tract, said point also being the south corner of said 16 acre tract;

THENCE North 56°01'49" East, 179.47 feet along the northwest line of said 1.671 acre tract and along the southeast line of said 16 acre tract to a 1/2 inch iron rod found at the north corner of said 1.671 acre tract, said point also being the west corner of a called 6.57 acre tract of land described in deed to James L. Perkins as recorded in Volume 526, Page 609, Official Public Records of Williamson County, Texas;

THENCE South 37°42'51" East, 306.08 feet along the northeast line of said 1.671 acre tract and along the southwest line of said 6.57 acre tract to a 1/2 inch iron rod with cap stamped "QUICK INC RPLS 6447" found at the east corner of said 1.671 acre tract, said point being the south corner of said 6.57 acre tract, said point also being in the northeast right-of-way line of Farm-to-Market Highway Number 971;

THENCE along the northeast right-of-way line of Farm-to-Market Highway Number 971 as follows:

South 52°24'14" West, 635.69 feet to a 1/2 inch iron rod found at the south corner of said 7.555 acre tract, said point also being the east corner of said 23.994 acre tract;

South 52°32'46" West, 42.94 feet along the south line of said 23.994 acre tract to a 1/2 inch iron rod found for corner;

South 52°21'30" West, 511.08 feet along the south line of said 23.994 acre tract to a concrete monument found for corner;

South 58°00'48" West, 1.62 feet along the south line of said 23.994 acre tract to the **POINT OF BEGINNING** and containing 1,767,629 square feet or 40.579 acres of land.

NOTES:

1. Utility providers for this development are Water: City of Georgetown, Wastewater: City of Georgetown, and Electric: Pedernales Electric Cooperative.
2. All structures/ obstructions are prohibited in drainage easements.
3. There are areas within the boundaries of this subdivision in the 100-year floodplain as defined by FIRM Map Number 48491C0291F, and 48491C0292F, effective date of December 20, 2019.
4. No development shall begin prior to the issuance of a Floodplain Development Permit for each of the following lots: Lot 1.
5. In order to promote drainage away from a structure, the slab elevation should be built at least one-foot above the surrounding ground, and the ground should be graded away from the structure at a slope of 1/2" per foot for a distance of at least 10 feet.
6. All sedimentation, filtration, detention, and/or retention basins and related appurtenances shown shall be situated within a drainage easement or drainage lot. The owners, HOA, or assignees of the tracts upon which are located such easements, appurtenances, and detention facilities shall maintain same and be responsible for their maintenance, routine inspection, and upkeep.
7. Parkland Dedication requirements are being met by fee-in-lieu.
8. Any Heritage Tree as noted on this plat is subject, in perpetuity, to the maintenance, care, pruning and removal requirements of the City of Georgetown. Approved removal does not require modification of the plat.
9. All individual lots containing Heritage Trees are configured and designed so that the lot is developable for the intended purpose without requiring removal of the Heritage Trees or exceeding the percentage of allowable disturbance within the Heritage Trees CRZ.
10. A 10-foot or 15-foot Public Utility Easement is dedicated along all street frontages within this plat.
11. The monuments of this plat have been rotated to the NAD 83 - Texas Central Zone and NAVD 88.
12. The maximum impervious coverage per residential lot is 50 percent.
13. The landowner assumes all risks associated with improvements located in the right-of-way, or road widening easements. By placing anything in the right-of-way or road widening easements, the landowner indemnifies and holds the City of Georgetown, Williamson County, their officers, agents and employees harmless from any liability owing to property defects or negligence not attributable to them and acknowledges that the improvements may be removed by the City and/or County and that the owner of the improvements will be responsible for the relocation and/or replacement of the improvements.
14. The building of all streets, roads, and other public thoroughfares and any bridges or culverts necessary to be constructed or placed is the responsibility of the owners of the tract of land covered by this plat in accordance with the plans and specifications prescribed by the City of Georgetown and/or Williamson County, Texas. Neither the City of Georgetown nor Williamson County assumes any obligation to build any of the streets, roads, or other public thoroughfares shown on this plat or of constructing any of the bridges or drainage improvements in connection therewith. Neither the City of Georgetown nor Williamson County assumes any responsibility for drainage ways or easements in the subdivision, other than those draining or protecting the road system and streets in their respective jurisdictions.
15. Neither the City of Georgetown nor Williamson County assumes any responsibility for the accuracy of representations by other parties in this plat. Floodplain data, in particular, may change depending on subsequent development. It is further understood that the owners of the tract of land covered by this plat must install at their own expense all traffic control devices and signage that may be required before the streets in the subdivision have finally been accepted for maintenance by the City and/or County.
16. Right-of-way easements for widening roadways or improving drainage shall be maintained by the landowner until road or drainage improvements are actually constructed on the property. The City and/or County have the right at any time to take possession of any road widening easement for construction, improvement, or maintenance of the adjacent road.
17. Unless otherwise noted herein, all easements dedicated to the City of Georgetown by this plat shall be EXCLUSIVE to the City of Georgetown, and Grantor covenants that Grantor and Grantor's heirs, successors, and assigns shall not convey any other easement, license, or conflicting right to use in any manner, the area (or any portion thereof) covered by this grant.
18. All easements dedicated to the City of Georgetown by this plat additionally include the following rights: (1) the right of the City to change the size of any facilities installed, maintained, or operated within the easement area; (2) the right of the City to relocate any facilities within the easement area; and (3) the right of the City to remove from the easement area all trees and parts thereof, or other obstructions, which endanger or may interfere with the efficiency and maintenance of any facilities within the easement area.
19. This plat is subject to the provisions of the City of Georgetown Water Conservation Ordinance.
20. The subdivision subject to this application is subject to the Water Quality Regulations of the City of Georgetown.
21. A Geologic Assessment, in accordance with the City of Georgetown Water Quality Regulations, was completed on July 14, 2023. Any springs and streams as identified in the Geologic Assessment are shown herein.
22. State-owned riverbeds and beds of navigable streams in the public domain are held in trust for the public. There is hereby granted for the use and benefit of the public a continuing access easement for the free and unobstructed use of the navigable river and the right of portage along its banks, across any portion of the Property between the mean high-water marks of the river in its natural state.

TREE SCHEDULE

Key	Tree #	Size (individual trunks in inches)	Half CRZ (in feet)	Species
HT	1729	22X13	14.25	OAK
HT	1736	30X19X17X8	26	OAK
HT	1743	68	34	OAK
HT	2492	30X23X22X21X19X14X9	42	OAK
HT	2876	67	33.5	OAK

LEGEND: P = PROTECTED; HT = HERITAGE TREE; R = REMOVAL OF PROTECTED TREE; R-HT = REMOVAL OF HERITAGE TREE; D = DEAD OR DISEASED; NP = NOT PROTECTED; C = CREDIT TREE; X = PROHIBITED SPECIES (MUST BE REMOVED

STREET TABLE

STREET	CLASS	ROW	PAVEMENT	CURB TYPE	PED. CLEAR ZONE	DESIGN SPEED	LENGTH
F.M. HWY 971		100'	27' ASPHALT	N/A		VARIES	N/A
HAVERLAND DRIVE		220'	21' ASPHALT	N/A		NOT POSTED	N/A
(FUTURE) HAVERLAND DRIVE		50'	__' BACK TO BACK	6 INCH			

FINAL PLAT
HAVERLAND SUBDIVISION
40.579 ACRES
LOTS 1 & 2, BLOCK A

ANTONIO FLORES SURVEY
ABSTRACT NO. 235
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

Kimley»Horn
400 North Oklahoma Dr., Suite 105, Celina, Texas 75009 — FIRM # 10194503 — Tel. No. (469) 501-2200, www.kimley-horn.com

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
1" = 100'	MJS	MJS	07/17/2023	069264937	3 OF 4

CITY PROJECT NO. 2023-____-____

STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS

COUNTY OF WILLIAMSON §

I, TM BTR OF TEXAS, LLC, sole owner of the certain 40.579 acre tract of land shown hereon and described in a deed recorded in Document No. 2023056181 of the Official Records of Williamson County, Texas, do hereby certify there are no easement holders except as shown hereon; do hereby subdivide said tract as shown hereon; do hereby covenant to all restrictions listed herein, which shall run with the land; and do hereby dedicate to the public the streets, alleys, rights-of-way, easements, and public places shown hereon for such public purposes as Williamson County may deem appropriate. I hereby bind my heirs, successors, and assigns to warrant and forever defend such dedications, all and singular, to the public against every person whomsoever claiming or to claim the same or any part thereof. This subdivision is to be known as HAVERLAND SUBDIVISION.

TO CERTIFY WHICH, WITNESS by my hand this ______ day of _____________________, 2023

Ryan Mattox, Vice President
TM BTR of Texas, LLC
810 Hester's Crossing, Suite 235
Round Rock, Texas 78681

STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS

COUNTY OF WILLIAMSON §

Before me, the undersigned, a notary public in and for said county and state, on this day personally appeared Ryan Mattox, known to me to be the person whose name is subscribed to the foregoing instrument.

GIVEN UNDER MY HAND AND SEAL of office this ______ day of ______________ , 2023.

Notary Public in and for the State of Texas

My Commission expires on: __________________

STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS

COUNTY OF COLLIN §

I, Daniel Arthur, Registered Professional Land Surveyor in the State of Texas, do hereby certify that this plat is true and correctly made from an actual survey made on the ground of the property legally described hereon, and that there are no apparent discrepancies, conflicts, overlapping of improvements, visible utility lines or roads in place, except as shown on the accompanying plat, and that the corner monuments shown thereon were properly placed under my supervision in accordance with the subdivision regulations of the City of Georgetown, Texas.

TO CERTIFY WHICH, WITNESS my hand and seal at Celina, Collin County, Texas, this ____ day of ____________________, 2023.

Daniel Arthur
Registered Professional Surveyor No. 5933
State of Texas

ENGINEER'S CERTIFICATION

I, Ben Green, Registered Professional Engineer in the State of Texas, do hereby certify that this subdivision is in the Edwards Aquifer Recharge Zone, is encroached by a Zone A flood area, as denoted herein, and as defined by Federal Emergency Management Administration Flood Hazard Boundary Map, Community Panel Number 48491C0291F, and 48491C0292F, effective date December 20, 2019, and that each lot conforms to the City of Georgetown regulations.

The fully developed, concentrated stormwater runoff resulting from the one hundred (100) year frequency storm is contained within the drainage easements shown and/or public rights-of-way dedicated by this plat.

TO CERTIFY WHICH, WITNESS my hand and seal at Austin, Travis County, Texas, this ____ day of _________________, 2023.

Benjamin L. Green, P.E.
Registered Professional Engineer No. 132190
State of Texas

CITY FLOODPLAIN COORDINATOR

Based upon the representations of the engineer or surveyor whose seal is affixed hereto, and after review of the plat as represented by the said engineer or surveyor, I find that this plat complies with the requirements of Chapter 15.44, Flood Damage Prevention, of the Georgetown Municipal Code. This certification is made solely upon such representations and should not be relied upon for verifications of the facts alleged. The City of Georgetown disclaims any responsibility to any member of the public for independent verification of the representations, factual or otherwise, contained in this plat and the documents associated within it.

Wesley Wright, P.E., CFM, Floodplain Coordinator — Date
City of Georgetown

PLANNING AND ZONING COMMISION

This subdivision to be known as HAVERLAND SUBDIVISION has been accepted and approved for filing of record with the County Clerk of Williamson County, Texas, according to the minutes of the meeting of the Georgetown Planning and Zoning Commission on the ___ day of _____________, 20___, A.D.

Travis Perthuis, Chairman — Date

Stephen Dickey, Secretary — Date

PLANNING DIRECTOR

I, Sofia Nelson, Planning Director of the City of Georgetown, Texas, do hereby certify this plat is approved for filing of record with the County Clerk of Williamson County, Texas.

Sofia Nelson, Planning Director — Date

WILLIAMSON COUNTY CLERK

STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS

COUNTY OF WILLIAMSON §

I, Nancy Rister, Clerk of the County Court of said County, do hereby certify that the foregoing instrument in writing, with its certificate of authentication was filed for record in my office on the ________day of ________________, 20___, A.D., at _____ o'clock, __.M., and duly recorded this the ______ day of ___________________ , 20___, A.D., at ____ o'clock, __ .M., in the Official Public Records of said County in Document No. ___________________________.

TO CERTIFY WHICH, WITNESS my hand and seal at the County Court of said County, at my office in Georgetown, Texas, the date last shown above written.

Nancy Rister, Clerk
County Court of Williamson County, Texas

By: ___________________________________, Deputy

FINAL PLAT
HAVERLAND SUBDIVISION
40.579 ACRES
LOTS 1 & 2, BLOCK A

ANTONIO FLORES SURVEY
ABSTRACT NO. 235
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

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400 North Oklahoma Dr., Suite 105, Celina, Texas 75009 — FIRM # 10194503 — Tel. No. (469) 501-2200, www.kimley-horn.com

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1" = 100'	MJS	MJS	07/17/2023	069264937	4 OF 4

CITY PROJECT NO. 2023-____-____

3

SHEET NUMBER
3 OF 102

XXXXXXXXX

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

PRELIMINATY FINAL PLAT (SHEET 2 OF 2)

KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

08/18/2023

PRELIMINARY — FOR REVIEW ONLY — Not for construction or permit purposes. Kimley»Horn — Engineer BENJAMIN L. GREEN — P.E. No. 132190 — Date _/_/19

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

No.	REVISIONS	DATE	BY

GENERAL NOTES:

1. THESE CONSTRUCTION PLANS WERE PREPARED, SEALED, SIGNED AND DATED BY A TEXAS LICENSED PROFESSIONAL ENGINEER. THEREFORE BASED ON THE ENGINEER'S CONCURRENCE OF COMPLIANCE, THE CONSTRUCTION PLANS FOR CONSTRUCTION OF THE PROPOSED PROJECT ARE HEREBY APPROVED SUBJECT TO THE STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS MANUAL AND ALL OTHER APPLICABLE CITY, STATE AND FEDERAL REQUIREMENTS AND CODES.
2. THIS PROJECT IS SUBJECT TO ALL CITY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF SUBMITTAL OF THE PROJECT TO THE CITY.
3. THE SITE CONSTRUCTION PLANS SHALL MEET ALL REQUIREMENTS OF THE APPROVED SITE PLAN.
4. WASTEWATER MAINS AND SERVICE LINES SHALL BE SDR 26 PVC.
5. WASTEWATER MAINS SHALL BE INSTALLED WITHOUT HORIZONTAL OR VERTICAL BENDS.
6. MAXIMUM DISTANCE BETWEEN WASTEWATER MANHOLES IS 500 FEET.
7. WASTEWATER MAINS SHALL BE LOW PRESSURE AIR TESTED AND MANDREL TESTED BY THE CONTRACTOR ACCORDING TO CITY OF GEORGETOWN AND TCEQ REQUIREMENTS.
8. WASTEWATER MANHOLES SHALL BE VACUUM TESTED AND COATED BY THE CONTRACTOR ACCORDING TO CITY OF GEORGETOWN AND TCEQ REQUIREMENTS.
9. WASTEWATER MAINS SHALL BE CAMERA TESTED BY THE CONTRACTOR AND SUBMITTED TO THE CITY ON DVD FORMAT PRIOR TO PAVING THE STREETS.
10. PRIVATE WATER SYSTEM FIRE LINES SHALL BE TESTED BY THE CONTRACTOR TO 200 PSI FOR 2 HOURS.
11. PRIVATE WATER SYSTEM FIRE LINES SHALL BE DUCTILE IRON PIPING FROM THE WATER MAIN TO THE BUILDING SPRINKLER SYSTEM, AND 200 PSI C900 PVC FOR ALL OTHERS.
12. PUBLIC WATER SYSTEM MAINS SHALL BE 150 PSI C900 PVC AND TESTED BY THE CONTRACTOR AT 150 PSI FOR 4 HOURS.
13. ALL BENDS AND CHANGES IN DIRECTION ON WATER MAINS SHALL BE RESTRAINED AND THRUST BLOCKED.
14. LONG FIRE HYDRANT LEADS SHALL BE RESTRAINED.
15. ALL WATER LINES ARE TO BE BACTERIA TESTED BY THE CONTRACTOR ACCORDING TO THE CITY STANDARDS AND SPECIFICATIONS.
16. WATER AND SEWER MAIN CROSSINGS SHALL MEET ALL REQUIREMENTS OF THE TCEQ AND THE CITY.
17. FLEXIBLE BASE MATERIAL FOR PUBLIC STREETS SHALL BE TXDOT TYPE A GRADE 1.
18. HOT MIX ASPHALTIC CONCRETE PAVEMENT SHALL BE TYPE D UNLESS OTHERWISE SPECIFIED AND SHALL BE A MINIMUM OF 2 INCHES THICK ON PUBLIC STREETS AND ROADWAYS.
19. ALL SIDEWALK RAMPS ARE TO BE INSTALLED WITH THE PUBLIC INFRASTRUCTURE.
20. A MAINTENANCE BOND IS REQUIRED TO BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF THE PUBLIC IMPROVEMENTS. THIS BOND SHALL BE ESTABLISHED FOR 2 YEARS IN THE AMOUNT OF 10% OF THE COST OF THE PUBLIC IMPROVEMENTS AND SHALL FOLLOW THE CITY FORMAT.
21. RECORD DRAWINGS OF THE PUBLIC IMPROVEMENTS SHALL BE SUBMITTED TO THE CITY BY THE DESIGN ENGINEER PRIOR TO ACCEPTANCE OF THE PROJECT. THESE DRAWINGS SHALL BE ON MYLAR OR ON TIFF OR PDF DISK (300DPI). IF A DISK IS SUBMITTED, A BOND SET SHALL BE INCLUDED WITH THE DISK.

FIRE PROTECTION NOTES:

1. APPROVAL OF THIS SITE PLAN DOES NOT IMPLY APPROVAL TO INSTALL UNDERGROUND FIRE LINES. PRIOR TO INSTALLATION OF UNDERGROUND FIRE LINES, A SEPARATE PERMIT SHALL BE SUBMITTED, UNDER GROUND FIRE LINE SUPPLY.
2. BACKFLOW PROTECTION WILL BE PROVIDED IN ACCORDANCE WITH THE CITY OF GEORGETOWN REQUIREMENTS WHEN REQUIRED. BACKFLOW PROTECTION WILL BE INSTALLED IN ACCORDANCE WITH THE DETAIL PROVIDED IN THE UTILITY DRAWINGS.
3. ALL PRIVATE FIRE LINES AND WHAT THEY PROVIDE SERVICE TO WILL BE INSTALLED IN ACCORDANCE WITH NFPA 24 INSTILLATION OF PRIVATE SERVICE MAINS AND THEIR APPURTENANCES.
4. ALL TEES, PLUGS, CAPS, BENDS, REDUCERS, VALVES SHALL BE RESTRAINED AGAINST MOVEMENT. THRUST BLOCKING AND JOINT RESTRAINED WILL BE INSTALLED IN ACCORDANCE WITH NFPA 24.
5. ALL UNDERGROUND SHALL REMAIN UNCOVERED UNTIL A VISUAL INSPECTION IS CONDUCTED BY THE GEORGETOWN FIRE MARSHAL'S OFFICE (FMO). ALL JOINT RESTRAINTS AND THRUST BLOCKING SHALL BE UNCOVERED FOR VISUAL INSPECTION.
6. ALL UNDERGROUND SHALL BE FLUSHED PER THE REQUIREMENTS OF NFPA STANDARD 24 AND WITNESSED BY GEORGETOWN FMO.
7. ALL UNDERGROUND SHALL PASS A HYDROSTATIC TEST WITNESSED BY GEORGETOWN FMO. ALL JOINTS SHALL BE UNCOVERED FOR HYDROSTATIC TESTING. ALL PIPING AND ATTACHMENTS SUBJECTED TO SYSTEM WORKING PRESSURE SHALL BE TESTED AT 200 PSI. OR 50 PSI MORE THAN THE SYSTEM WORKING PRESSURE, WHICHEVER IS GREATER, AND SHALL MAINTAIN THAT PRESSURE + OR - 5 PSI FOR 2 HOURS.
8. FENCES, LANDSCAPING, AND OTHER ITEMS WILL NOT BE INSTALLED WITHIN 3 FT, AND WHERE THEY WILL OBSTRUCT THE VISIBILITY OR ACCESS TO HYDRANTS, OR REMOTE FDCS.
9. LICENSE REQUIREMENTS OF EITHER RME-U OR G. WHEN CONNECTING BY UNDERGROUND TO THE WATER PURVEYOR'S MAIN FROM THE POINT OF CONNECTION OR VALVE WHERE THE PRIMARY PURPOSE OF WATER IS FOR FIRE PROTECTION SPRINKLER SYSTEM.
10. A SEPARATE PERMIT IS REQUIRED FOR THE INSTALLATION OF PRIVATE SERVICE MAINS AND THEIR APPURTENANCES. UNDERGROUND FIRE LINE SUPPLY.

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TX REGISTERED ENGINEERING FIRM F-928

TBPE Firm No. 928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

GENERAL NOTES

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
4 OF 102

XXXXXXXXX

KH GENERAL NOTES

OVERALL:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THESE PLANS, CITY (OR TOWN) STANDARD DETAILS AND SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT AND ALL ISSUED ADDENDA, AND COMMONLY ACCEPTED CONSTRUCTION STANDARDS. THE CITY SPECIFICATIONS SHALL GOVERN WHERE OTHER SPECIFICATIONS DO NOT EXIST. IN CASE OF CONFLICTING SPECIFICATIONS OR DETAILS, THE MORE RESTRICTIVE SPECIFICATION AND DETAIL SHALL BE FOLLOWED.
2. THE CONTRACTOR SHALL COMPLY WITH CITY (OR TOWN) "GENERAL NOTES" FOR CONSTRUCTION, IF EXISTING AND REQUIRED BY THE CITY. FOR INSTANCES WHERE THEY CONFLICT WITH THESE KH GENERAL NOTES, THEN THE MORE RESTRICTIVE SHALL APPLY.
3. THE CONTRACTOR SHALL FURNISH ALL MATERIAL AND LABOR TO CONSTRUCT THE FACILITY AS SHOWN AND DESCRIBED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE APPROPRIATE AUTHORITIES' SPECIFICATIONS AND REQUIREMENTS.
4. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO DETERMINE EXISTING CONDITIONS.
5. THE EXISTING CONDITIONS SHOWN ON THESE PLANS WERE PROVIDED BY THE TOPOGRAPHIC SURVEY PREPARED BY THE PROJECT SURVEYOR, AND ARE BASED ON THE BENCHMARKS SHOWN. THE CONTRACTOR SHALL REFERENCE THE SAME BENCHMARKS.
6. THE CONTRACTOR SHALL REVIEW AND VERIFY THE EXISTING TOPOGRAPHIC SURVEY SHOWN ON THE PLANS REPRESENTS EXISTING FIELD CONDITIONS PRIOR TO CONSTRUCTION, AND SHALL REPORT ANY DISCREPANCIES FOUND TO THE OWNER AND ENGINEER IMMEDIATELY.
7. IF THE CONTRACTOR DOES NOT ACCEPT THE EXISTING TOPOGRAPHIC SURVEY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY AT THEIR OWN EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED PROFESSIONAL LAND SURVEYOR TO THE OWNER AND ENGINEER FOR REVIEW.
8. CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION SURVEYING AND STAKING.
9. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL CONTROL, INCLUDING BENCHMARKS PRIOR TO COMMENCING CONSTRUCTION OR STAKING OF IMPROVEMENTS. PROPERTY LINES AND CORNERS SHALL BE HELD AS THE HORIZONTAL CONTROL.
10. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS, ELEVATIONS, AND FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE ARCHITECT, ENGINEER, AND IF APPLICABLE THE CITY AND OWNER. NO CONSIDERATION WILL BE GIVEN TO CHANGE ORDERS FOR WHICH THE CITY, ENGINEER, AND OWNER WERE NOT CONTACTED PRIOR TO CONSTRUCTION OF THE AFFECTED ITEM.
11. CONTRACTOR SHALL THOROUGHLY CHECK COORDINATION OF CIVIL, LANDSCAPE, MEP, ARCHITECTURAL, AND OTHER PLANS PRIOR TO COMMENCING CONSTRUCTION. OWNER/ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY PRIOR TO COMMENCING WITH CONSTRUCTION.
12. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE BURIED OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA BEFORE COMMENCING WORK TO HAVE THEM LOCATE THEIR EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION.
13. CONTRACTOR SHALL CALL TEXAS 811 AN ADEQUATE AMOUNT OF TIME PRIOR TO COMMENCING CONSTRUCTION OR ANY EXCAVATION.
14. CONTRACTOR SHALL USE EXTREME CAUTION AS THE SITE CONTAINS VARIOUS KNOWN AND UNKNOWN PUBLIC AND PRIVATE UTILITIES.
15. THE LOCATIONS, ELEVATIONS, DEPTH, AND DIMENSIONS OF EXISTING UTILITIES SHOWN ON THE PLANS WERE OBTAINED FROM AVAILABLE UTILITY COMPANY MAPS AND PLANS, AND ARE CONSIDERED APPROXIMATE AND INCOMPLETE. IT SHALL BE THE CONTRACTORS' RESPONSIBILITY TO VERIFY THE PRESENCE, LOCATION, ELEVATION, DEPTH, AND DIMENSION OF EXISTING UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION SO THAT ADJUSTMENTS CAN BE MADE TO PROVIDE ADEQUATE CLEARANCES. THE ENGINEER SHALL BE NOTIFIED WHEN A PROPOSED IMPROVEMENT CONFLICTS WITH AN EXISTING UTILITY.
16. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ANY ADJUSTMENTS AND RELOCATIONS OF EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO, ADJUSTING EXISTING MANHOLES TO MATCH PROPOSED GRADE, RELOCATING EXISTING POLES AND GUY WIRES THAT ARE LOCATED IN PROPOSED DRIVEWAYS, ADJUSTING THE HORIZONTAL OR VERTICAL ALIGNMENT OF EXISTING UNDERGROUND UTILITIES TO ACCOMMODATE PROPOSED GRADE OR CROSSING WITH A PROPOSED UTILITY, AND ANY OTHERS THAT MAY BE ENCOUNTERED THAT ARE UNKNOWN AT THIS TIME AND NOT SHOWN ON THESE PLANS.
17. CONTRACTOR SHALL ARRANGE FOR OR PROVIDE, AT ITS EXPENSE, ALL GAS, TELECOMMUNICATIONS, CABLE, OVERHEAD AND UNDERGROUND POWER LINE, AND UTILITY POLE ADJUSTMENTS NEEDED.
18. CONTRACTOR IS RESPONSIBLE FOR COORDINATING INSTALLATION OF FRANCHISE UTILITIES THAT ARE NECESSARY FOR ON-SITE AND OFF-SITE CONSTRUCTION, AND SERVICE TO THE PROPOSED DEVELOPMENT.
19. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGES DUE TO THE CONTRACTORS' FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UTILITIES. THE OWNER OR ENGINEER WILL ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES. IF IT IS NECESSARY TO SHORE, BRACE, SWING OR RELOCATE A UTILITY, THE UTILITY COMPANY OR DEPARTMENT AFFECTED SHALL BE CONTACTED BY THE CONTRACTOR AND THEIR PERMISSION OBTAINED REGARDING THE METHOD TO USE FOR SUCH WORK.
20. BRACING OF UTILITY POLES MAY BE REQUIRED BY THE UTILITY COMPANIES WHEN TRENCHING OR EXCAVATING IN CLOSE PROXIMITY TO THE POLES. THE COST OF BRACING POLES WILL BE BORNE BY THE CONTRACTOR, WITH NO SEPARATE PAY ITEM FOR THIS WORK. THE COST IS INCIDENTAL TO THE PAY ITEM.
21. CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND POWER LINES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, FEDERAL AND UTILITY OWNER REGULATIONS PERTAINING TO WORK SETBACKS FROM POWER LINES.
22. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL REQUIRED CONSTRUCTION PERMITS, APPROVALS, AND BONDS PRIOR TO CONSTRUCTION.
23. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES A COPY OF THE CONTRACT DOCUMENTS INCLUDING PLANS, GEOTECHNICAL REPORT AND ADDENDA, PROJECT AND CITY SPECIFICATIONS, AND SPECIAL CONDITIONS, COPIES OF ANY REQUIRED CONSTRUCTION PERMITS, EROSION CONTROL PLANS, SWPPP AND INSPECTION REPORTS.
24. ALL SHOP DRAWINGS AND OTHER DOCUMENTS THAT REQUIRE ENGINEER REVIEW SHALL BE SUBMITTED BY THE CONTRACTOR SUFFICIENTLY IN ADVANCE OF CONSTRUCTION OF THAT ITEM, SO THAT NO LESS THAN 10 BUSINESS DAYS FOR REVIEW AND RESPONSE IS AVAILABLE.
25. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES, JURISDICTIONAL AGENCIES, AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO USE OF THE FACILITY AND THE FINAL CONNECTION OF SERVICES.
26. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS.
27. CONTRACTOR'S BID PRICE SHALL INCLUDE ALL INSPECTION FEES.
28. ALL SYMBOLS SHOWN ON THESE PLANS (E.G. FIRE HYDRANT, METERS, VALVES, INLETS, ETC.…) ARE FOR PRESENTATION PURPOSES ONLY AND ARE NOT TO SCALE. CONTRACTOR SHALL COORDINATE FINAL SIZES AND LOCATIONS WITH APPROPRIATE CITY INSPECTOR.
29. THE SCOPE OF WORK FOR THE CIVIL IMPROVEMENTS SHOWN ON THESE PLANS TERMINATES 5-FEET FROM THE BUILDING. REFERENCE THE BUILDING PLANS (E.G. ARCHITECTURAL, STRUCTURAL, MEP) FOR AREAS WITHIN 5-FEET OF THE BUILDING AND WITHIN THE BUILDING FOOTPRINT.
30. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR ALL FINAL BUILDING DIMENSIONS.
31. THE PROPOSED BUILDING FOOTPRINT(S) SHOWN IN THESE PLANS WAS PROVIDED TO KIMLEY-HORN AND ASSOCIATES, INC. (KH) BY THE PROJECT ARCHITECT AT THE TIME THESE PLANS WERE PREPARED. IT MAY NOT BE THE FINAL CORRECT VERSION BECAUSE THE BUILDING DESIGN WAS ONGOING. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFIRMING THE FINAL CORRECT VERSION OF THE BUILDING FOOTPRINT WITH THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO LAYOUT. DIMENSIONS AND/OR COORDINATES SHOWN ON THESE PLANS WERE BASED ON THE ABOVE STATED ARCHITECTURAL FOOTPRINT, AND ARE THEREFORE A PRELIMINARY LOCATION OF THE BUILDING. THE CONTRACTOR IS SOLELY RESPONSIBLE TO VERIFY WHAT PART OF THE BUILDING THE ARCHITECT'S FOOTPRINT REPRESENTS (E.G. SLAB, OUTSIDE WALL, MASONRY LEDGE, ETC.….) AND TO CONFIRM ITS FINAL POSITION ON THE SITE BASED ON THE FINAL ARCHITECTURAL FOOTPRINT, CIVIL DIMENSION CONTROL PLAN, SURVEY BOUNDARY AND/OR PLAT. ANY DIFFERENCES FOUND SHALL BE REPORTED TO KH IMMEDIATELY.
32. ALL CONSTRUCTION SHALL COMPLY WITH THE PROJECT'S FINAL GEOTECHNICAL REPORT (OR LATEST EDITION), INCLUDING SUBSEQUENT ADDENDA.
33. CONTRACTOR IS RESPONSIBLE FOR ALL MATERIALS TESTING AND CERTIFICATION, UNLESS SPECIFIED OTHERWISE BY OWNER. ALL MATERIALS TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR AND COMPLY WITH CITY STANDARD SPECIFICATIONS AND GEOTECHNICAL REPORT. TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING MATERIALS. OWNER SHALL APPROVE THE AGENCY NOMINATED BY THE CONTRACTOR FOR MATERIALS TESTING.
34. ALL COPIES OF MATERIALS TEST RESULTS SHALL BE SENT TO THE OWNER, ENGINEER AND ARCHITECT DIRECTLY FROM THE TESTING AGENCY.
35. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SHOW, BY THE STANDARD TESTING PROCEDURES OF THE MATERIALS, THAT THE WORK CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS.
36. DUE TO THE POTENTIAL FOR DIFFERENTIAL SOIL MOVEMENT ADJACENT TO THE BUILDING, THE CONTRACTOR SHALL ADHERE TO GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PROPOSED BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC TO FLATWORK ADJACENT TO THE BUILDING, IF NONE IS CURRENTLY EXISTING.
37. ALL CONTRACTORS MUST CONFINE THEIR ACTIVITIES TO THE WORK AREA. NO ENCROACHMENTS OUTSIDE OF THE WORK AREA WILL BE ALLOWED. ANY DAMAGE RESULTING THEREFROM SHALL BE CONTRACTOR'S SOLE RESPONSIBILITY TO REPAIR.
38. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, UTILITIES, MANHOLES, POLES, GUY WIRES, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, COMMUNICATION BOXES/PEDESTALS, AND OTHER FACILITIES TO REMAIN AND SHALL REPAIR ANY DAMAGES AT NO COST TO THE OWNER.
39. THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY PHYSICAL DAMAGE TO PRIVATE PROPERTY OR PUBLIC IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO: FENCES, WALLS, SIGNS, PAVEMENT, CURBS, UTILITIES, SIDEWALKS, GRASS, TREES, LANDSCAPING, AND IRRIGATION SYSTEMS, ETC.… TO ORIGINAL CONDITION OR BETTER AT NO COST TO THE OWNER.
40. ALL AREAS IN EXISTING RIGHT-OF-WAY DISTURBED BY SITE CONSTRUCTION SHALL BE REPAIRED TO ORIGINAL CONDITION OR BETTER, INCLUDING AS NECESSARY GRADING, LANDSCAPING, CULVERTS, AND PAVEMENT.
41. THE CONTRACTOR SHALL SALVAGE ALL EXISTING POWER POLES, SIGNS, WATER VALVES, FIRE HYDRANTS, METERS, ETC... THAT ARE TO BE RELOCATED DURING CONSTRUCTION.
42. CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION, INCLUDING MAINTAINING EXISTING DITCHES OR CULVERTS FREE OF OBSTRUCTIONS AT ALL TIMES.
43. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND SUBMITTING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENCHES. NO OPEN TRENCHES SHALL BE ALLOWED OVERNIGHT WITHOUT PRIOR WRITTEN APPROVAL OF THE CITY.
44. THE CONTRACTOR SHALL KEEP TRENCHES FREE FROM WATER.
45. SITE SAFETY IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
46. THESE PLANS DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE ENGINEER'S SEAL HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF ALL REQUIRED SAFETY PROCEDURES AND PROGRAMS.
47. SIGNS RELATED TO SITE OPERATION OR SAFETY ARE NOT INCLUDED IN THESE PLANS.
48. CONTRACTOR OFFICE AND STAGING AREA SHALL BE AGREED ON BY THE OWNER AND CONTRACTOR PRIOR TO BEGINNING OF CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITTING REQUIREMENTS FOR THE CONSTRUCTION OFFICE, TRAILER, STORAGE, AND STAGING OPERATIONS AND LOCATIONS.
49. LIGHT POLES, SIGNS, AND OTHER OBSTRUCTIONS SHALL NOT BE PLACED IN ACCESSIBLE ROUTES.
50. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
51. TOP RIM ELEVATIONS OF ALL EXISTING AND PROPOSED MANHOLES SHALL BE COORDINATED WITH TOP OF PAVEMENT OR FINISHED GRADE AND SHALL BE ADJUSTED TO BE FLUSH WITH THE ACTUAL FINISHED GRADE AT THE TIME OF PAVING.
52. CONTRACTOR SHALL ADJUST ALL EXISTING AND PROPOSED VALVES, FIRE HYDRANTS, AND OTHER UTILITY APPURTENANCES TO MATCH ACTUAL FINISHED GRADES AT THE TIME OF PAVING.
53. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION SEQUENCING AND PHASING, AND SHALL CONTACT THE APPROPRIATE CITY OFFICIALS, INCLUDING BUILDING OFFICIAL, ENGINEERING INSPECTOR, AND FIRE MARSHALL TO LEARN OF ANY REQUIREMENTS.
54. CONTRACTOR IS RESPONSIBLE FOR PREPARATION, SUBMITTAL, AND APPROVAL BY THE CITY OF A TRAFFIC CONTROL PLAN PRIOR TO THE START OF CONSTRUCTION, AND THEN THE IMPLEMENTATION OF THE PLAN.
55. CONTRACTOR SHALL KEEP A NEAT AND ACCURATE RECORD OF CONSTRUCTION, INCLUDING ANY DEVIATIONS OR VARIANCES FROM THE PLANS.
56. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AS-BUILT PLANS TO THE ENGINEER AND CITY IDENTIFYING ALL DEVIATIONS AND VARIATIONS FROM THESE PLANS MADE DURING CONSTRUCTION.

EROSION CONTROL:

1. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL EROSION CONTROL AND WATER QUALITY REQUIREMENTS, LAWS, AND ORDINANCES THAT APPLY TO THE CONSTRUCTION SITE LAND DISTURBANCE.
2. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE "TCEQ GENERAL PERMIT TO DISCHARGE UNDER THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM TXR 150000".
3. EROSION CONTROL DEVICES SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBANCE.
4. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT.
5. CONTRACTOR IS SOLELY RESPONSIBLE FOR INSTALLATION, IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL EROSION CONTROL DEVICES, BEST MANAGEMENT PRACTICES (BMPS), AND FOR UPDATING THE EROSION CONTROL PLAN DURING CONSTRUCTION AS FIELD CONDITIONS CHANGE.
6. CONTRACTOR SHALL DOCUMENT THE DATES OF INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL FOR EACH BMP EMPLOYED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IF APPLICABLE.
7. AS STORM SEWER INLETS ARE INSTALLED ON-SITE, TEMPORARY EROSION CONTROL DEVICES SHALL BE INSTALLED AT EACH INLET PER APPROVED DETAILS.
8. THE EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL THE AREA IT PROTECTS HAS BEEN PERMANENTLY STABILIZED.
9. CONTRACTOR SHALL PROVIDE ADEQUATE EROSION CONTROL DEVICES NEEDED DUE TO PROJECT PHASING.
10. CONTRACTOR SHALL OBSERVE THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES AND MAKE FIELD ADJUSTMENTS AND MODIFICATIONS AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE SITE. IF THE EROSION CONTROL DEVICES DO NOT EFFECTIVELY CONTROL EROSION AND PREVENT SEDIMENTATION FROM WASHING OFF THE SITE, THEN THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
11. OFF-SITE SOIL BORROW, SPOIL, AND STORAGE AREAS (IF APPLICABLE) ARE CONSIDERED AS PART OF THE PROJECT SITE AND MUST ALSO COMPLY WITH THE EROSION CONTROL REQUIREMENTS FOR THIS PROJECT. THIS INCLUDES THE INSTALLATION OF BMP'S TO CONTROL EROSION AND SEDIMENTATION AND THE ESTABLISHMENT OF PERMANENT GROUND COVER ON DISTURBED AREAS PRIOR TO FINAL APPROVAL OF THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR MODIFYING THE SWPPP AND EROSION CONTROL PLAN TO INCLUDE BMPS FOR ANY OFF-SITE THAT ARE NOT ANTICIPATED OR SHOWN ON THE EROSION CONTROL PLAN.
12. ALL STAGING, STOCKPILES, SPOIL, AND STORAGE SHALL BE LOCATED SUCH THAT THEY WILL NOT ADVERSELY AFFECT STORM WATER QUALITY. PROTECTIVE MEASURES SHALL BE PROVIDED IF NEEDED TO ACCOMPLISH THIS REQUIREMENT, SUCH AS COVERING OR ENCIRCLING THE AREA WITH AN APPROPRIATE BARRIER.
13. CONTRACTORS SHALL INSPECT ALL EROSION CONTROL DEVICES, BMPS, DISTURBED AREAS, AND VEHICLE ENTRY AND EXIT AREAS WEEKLY AND WITHIN 24 HOURS OF ALL RAINFALL EVENTS OF 0.5 INCHES OR GREATER, AND KEEP A RECORD OF THIS INSPECTION IN THE SWPPP BOOKLET IF APPLICABLE, TO VERIFY THAT THE DEVICES AND EROSION CONTROL PLAN ARE FUNCTIONING PROPERLY.
14. CONTRACTOR SHALL CONSTRUCT A STABILIZED CONSTRUCTION ENTRANCE AT ALL PRIMARY POINTS OF ACCESS IN ACCORDANCE WITH CITY SPECIFICATIONS. CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION TRAFFIC USES THE STABILIZED ENTRANCE AT ALL TIMES FOR ALL INGRESS/EGRESS.
15. SITE ENTRY AND EXITS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING AND FLOWING OF SEDIMENT AND DIRT ONTO OFF-SITE ROADWAYS. ALL SEDIMENT AND DIRT FROM THE SITE THAT IS DEPOSITED ONTO AN OFF-SITE ROADWAY SHALL BE REMOVED IMMEDIATELY.
16. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL SILT AND DEBRIS FROM THE AFFECTED OFF-SITE ROADWAYS THAT ARE A RESULT OF THE CONSTRUCTION, AS REQUESTED BY OWNER AND CITY. AT A MINIMUM, THIS SHOULD OCCUR ONCE PER DAY FOR THE OFF-SITE ROADWAYS.
17. WHEN WASHING OF VEHICLES IS REQUIRED TO REMOVE SEDIMENT PRIOR TO EXITING THE SITE, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP BMP.
18. CONTRACTOR SHALL INSTALL A TEMPORARY SEDIMENT BASIN FOR ANY ON-SITE DRAINAGE AREAS THAT ARE GREATER THAN 10 ACRES, PER TCEQ AND CITY STANDARDS. IF NO ENGINEERING DESIGN HAS BEEN PROVIDED FOR A SEDIMENTATION BASIN ON THESE PLANS, THEN THE CONTRACTOR SHALL ARRANGE FOR AN APPROPRIATE DESIGN TO BE PROVIDED.
19. ALL FINES IMPOSED FOR SEDIMENT OR DIRT DISCHARGED FROM THE SITE SHALL BE PAID BY THE RESPONSIBLE CONTRACTOR.
20. WHEN SEDIMENT OR DIRT HAS CLOGGED THE CONSTRUCTION ENTRANCE VOID SPACES BETWEEN STONES OR DIRT IS BEING TRACKED ONTO A ROADWAY, THE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASH-DOWN OPERATION SHALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF SITE WITHOUT FIRST FLOWING THROUGH ANOTHER BMP TO CONTROL SEDIMENTATION. PERIODIC RE-GRADING OR NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFECTIVENESS OF THE CONSTRUCTION ENTRANCE.
21. TEMPORARY SEEDING OR OTHER APPROVED STABILIZATION SHALL BE INITIATED WITHIN 14 DAYS OF THE LAST DISTURBANCE OF ANY AREA, UNLESS ADDITIONAL CONSTRUCTION IN THE AREA IS EXPECTED WITHIN 21 DAYS OF THE LAST DISTURBANCE.
22. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING CONSTRUCTION, ALWAYS CLEANING UP DIRT, LOOSE MATERIAL, AND TRASH AS CONSTRUCTION PROGRESSES.
23. UPON COMPLETION OF FINE GRADING, ALL SURFACES OF DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED. STABILIZATION IS ACHIEVED WHEN THE AREA IS EITHER COVERED BY PERMANENT IMPERVIOUS STRUCTURES, SUCH AS BUILDINGS, SIDEWALK, PAVEMENT, OR A UNIFORM PERENNIAL VEGETATIVE COVER.
24. AT THE CONCLUSION OF THE PROJECT, ALL INLETS, DRAIN PIPE, CHANNELS, DRAINAGEWAYS AND BORROW DITCHES AFFECTED BY THE CONSTRUCTION SHALL BE DREDGED, AND THE SEDIMENT GENERATED BY THE PROJECT SHALL BE REMOVED AND DISPOSED IN ACCORDANCE WITH APPLICABLE REGULATIONS.

STORM WATER DISCHARGE AUTHORIZATION:

1. CONTRACTOR SHALL COMPLY WITH ALL TCEQ AND EPA STORM WATER POLLUTION PREVENTION REQUIREMENTS.
2. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE TCEQ GENERAL PERMIT TO DISCHARGE UNDER THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM TXR 150000.
3. THE CONTRACTOR SHALL ENSURE THAT ALL PRIMARY OPERATORS SUBMIT A NOI TO TCEQ AT LEAST SEVEN DAYS PRIOR TO COMMENCING CONSTRUCTION (IF APPLICABLE), OR IF UTILIZING ELECTRONIC SUBMITTAL, PRIOR TO COMMENCING CONSTRUCTION. ALL PRIMARY OPERATORS SHALL PROVIDE A COPY OF THE SIGNED NOI TO THE OPERATOR OF ANY MS4 (TYPICALLY THE CITY) RECEIVING DISCHARGE FROM THE SITE.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IF APPLICABLE, INCLUDING POSTING SITE NOTICE, INSPECTIONS, DOCUMENTATION, AND SUBMISSION OF ANY INFORMATION REQUIRED BY THE TCEQ AND EPA (E.G. NOI).
5. ALL CONTRACTORS AND SUBCONTRACTORS PROVIDING SERVICES RELATED TO THE SWPPP SHALL SIGN THE REQUIRED CONTRACTOR CERTIFICATION STATEMENT ACKNOWLEDGING THEIR RESPONSIBILITIES AS SPECIFIED IN THE SWPPP.
6. A COPY OF THE SWPPP, INCLUDING NOI, SITE NOTICE, CONTRACTOR CERTIFICATIONS, AND ANY REVISIONS, SHALL BE SUBMITTED TO THE CITY BY THE CONTRACTOR AND SHALL BE RETAINED ON-SITE DURING CONSTRUCTION.
7. A NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO TCEQ BY ANY PRIMARY OPERATOR WITHIN 30 DAYS AFTER ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND A UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED ON ALL UNPAVED AREAS AND AREAS NOT COVERED BY STRUCTURES, A TRANSFER OF OPERATIONAL CONTROL HAS OCCURRED, OR THE OPERATOR HAS OBTAINED ALTERNATIVE AUTHORIZATION UNDER A DIFFERENT PERMIT. A COPY OF THE NOT SHALL BE PROVIDED TO THE OPERATOR OF ANY MS4 RECEIVING DISCHARGE FROM THE SITE.

DEMOLITION:

1. KH IS NOT RESPONSIBLE FOR THE MEANS AND METHODS EMPLOYED BY THE CONTRACTOR TO IMPLEMENT THIS DEMOLITION PLAN. THIS PRELIMINARY DEMOLITION PLAN SIMPLY INDICATES THE KNOWN OBJECTS ON THE SUBJECT TRACT THAT ARE TO BE DEMOLISHED AND REMOVED FROM THE SITE.
2. KH DOES NOT WARRANT OR REPRESENT THAT THE PLAN, WHICH WAS PREPARED BASED ON SURVEY AND UTILITY INFORMATION PROVIDED BY OTHERS, SHOWS ALL IMPROVEMENTS AND UTILITIES, THAT THE IMPROVEMENTS AND UTILITIES ARE SHOWN ACCURATELY, OR THAT THE UTILITIES SHOWN CAN BE REMOVED. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ITS OWN SITE RECONNAISSANCE TO SCOPE ITS WORK AND TO CONFIRM WITH THE OWNERS OF IMPROVEMENTS AND UTILITIES THE ABILITY AND PROCESS FOR THE REMOVAL OF THEIR FACILITIES.
3. THIS PLAN IS INTENDED TO GIVE A GENERAL GUIDE TO THE CONTRACTOR, NOTHING MORE. THE GOAL OF THE DEMOLITION IS TO LEAVE THE SITE IN A STATE SUITABLE FOR THE CONSTRUCTION OF THE PROPOSED DEVELOPMENT. REMOVAL OR PRESERVATION OF IMPROVEMENTS, UTILITIES, ETC. TO ACCOMPLISH THIS GOAL ARE THE RESPONSIBILITY OF THE CONTRACTOR.
4. CONTRACTOR IS STRONGLY CAUTIONED TO REVIEW THE FOLLOWING REPORTS DESCRIBING SITE CONDITIONS PRIOR TO BIDDING AND IMPLEMENTING THE DEMOLITION PLAN:
   a. ENVIRONMENTAL SITE ASSESSMENT PROVIDED BY THE OWNER,
   b. ASBESTOS BUILDING INSPECTION REPORT(S) PROVIDED BY THE OWNER,
   c. GEOTECHNICAL REPORT PROVIDED BY THE OWNER.
   d. OTHER REPORTS THAT ARE APPLICABLE AND AVAILABLE.
5. CONTRACTOR SHALL CONTACT THE OWNER TO VERIFY WHETHER ADDITIONAL REPORTS OR AMENDMENTS TO THE ABOVE CITED REPORTS HAVE BEEN PREPARED AND TO OBTAIN/REVIEW/AND COMPLY WITH THE RECOMMENDATION OF SUCH STUDIES PRIOR TO STARTING ANY WORK ON THE SITE.
6. CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS REGARDING THE DEMOLITION OF OBJECTS ON THE SITE AND THE DISPOSAL OF THE DEMOLISHED MATERIALS OFF-SITE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO REVIEW THE SITE, DETERMINE THE APPLICABLE REGULATIONS, RECEIVE THE REQUIRED PERMITS AND AUTHORIZATIONS, AND COMPLY.
7. KH DOES NOT REPRESENT THAT THE REPORTS AND SURVEYS REFERENCED ABOVE ARE ACCURATE, COMPLETE, OR COMPREHENSIVE SHOWING ALL ITEMS THAT WILL NEED TO BE DEMOLISHED AND REMOVED.
8. SURFACE PAVEMENT INDICATED MAY OVERLAY OTHER HIDDEN STRUCTURES, SUCH AS ADDITIONAL LAYERS OF PAVEMENT, FOUNDATIONS OR WALLS, THAT ARE ALSO TO BE REMOVED.

GRADING:

1. THE CONTRACTOR AND GRADING SUBCONTRACTOR SHALL VERIFY THE SUITABILITY OF EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE START OF CONSTRUCTION. THE CIVIL ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
2. CONTRACTOR SHALL OBTAIN ANY REQUIRED GRADING PERMITS FROM THE CITY.
3. UNLESS OTHERWISE NOTED, PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN IN PAVED AREA REFLECT TOP OF PAVEMENT SURFACE. IN LOCATIONS ALONG A CURB LINE, ADD 6-INCHES (OR THE HEIGHT OF THE CURB) TO THE PAVING GRADE FOR TOP OF CURB ELEVATION.
4. PROPOSED SPOT ELEVATIONS AND CONTOURS OUTSIDE THE PAVEMENT ARE TO TOP OF FINISHED GRADE.
5. PROPOSED CONTOURS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND DESIGNATED GRADIENT ARE TO BE USED IN CASE OF DISCREPANCY.
6. ALL FINISHED GRADES SHALL TRANSITION UNIFORMLY BETWEEN THE FINISHED ELEVATIONS SHOWN.
7. CONTOURS AND SPOT GRADES SHOWN ARE ELEVATIONS OF TOP OF THE FINISHED SURFACE. WHEN PERFORMING THE GRADING OPERATIONS, THE CONTRACTOR SHALL PROVIDE AN APPROPRIATE ELEVATION HOLD-DOWN ALLOWANCE FOR THE THICKNESS OF PAVEMENT, SIDEWALK, TOPSOIL, MULCH, STONE, LANDSCAPING, RIP-RAP AND ALL OTHER SURFACE MATERIALS THAT WILL CONTRIBUTE TO THE TOP OF FINISHED GRADE. FOR EXAMPLE, THE LIMITS OF EARTHWORK IN PAVED AREAS IS THE BOTTOM OF THE PAVEMENT SECTION.
8. NO REPRESENTATIONS OF EARTHWORK QUANTITIES OR SITE BALANCE ARE MADE BY THESE PLANS. THE CONTRACTOR SHALL PROVIDE THEIR OWN EARTHWORK CALCULATION TO DETERMINE THEIR CONTRACT QUANTITIES AND COST. ANY SIGNIFICANT VARIANCE FROM A BALANCED SITE SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CIVIL ENGINEER.
9. ALL GRADING AND EARTHWORK SHALL COMPLY WITH THE PROJECT'S FINAL GEOTECHNICAL REPORT (OR LATEST EDITION), INCLUDING SUBSEQUENT ADDENDA.
10. ALL EXCAVATION IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED. UNUSABLE EXCAVATED MATERIAL AND ALL WASTE RESULTING FROM SITE CLEARING AND GRUBBING SHALL BE REMOVED FROM THE SITE AND APPROPRIATELY DISPOSED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE.
11. EROSION CONTROL DEVICES SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF GRADING. REFERENCE EROSION CONTROL PLAN, DETAILS, GENERAL NOTES, AND SWPPP FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
12. BEFORE ANY EARTHWORK IS PERFORMED, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF THE PROJECT'S PROPERTY LINE AND SITE IMPROVEMENTS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK.
13. CONTRACTOR TO DISPOSE OF ALL EXCESS EXCAVATION MATERIALS IN A MANNER THAT ADHERES TO LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS. THE CONTRACTOR SHALL KEEP A RECORD OF WHERE EXCESS EXCAVATION WAS DISPOSED, ALONG WITH THE RECEIVING LANDOWNER'S APPROVAL TO DO SO.
14. CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF TOPSOIL AT THE COMPLETION OF FINE GRADING. CONTRACTOR SHALL REFER TO LANDSCAPE ARCHITECTURE PLANS FOR SPECIFICATIONS AND REQUIREMENTS FOR TOPSOIL.
15. CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION, INCLUDING MAINTAINING EXISTING DITCHES OR CULVERTS FREE OF OBSTRUCTIONS AT ALL TIMES.
16. NO EARTHWORK FILL SHALL BE PLACED IN ANY EXISTING DRAINAGE WAY, SWALE, CHANNEL, DITCH, CREEK, OR FLOODPLAIN FOR ANY REASON OR ANY LENGTH OF TIME, UNLESS THESE PLANS SPECIFICALLY INDICATE THIS IS REQUIRED.
17. TEMPORARY CULVERTS MAY BE REQUIRED IN SOME LOCATIONS TO CONVEY RUN-OFF.
18. REFER TO DIMENSION CONTROL PLAN, AND PLAT FOR HORIZONTAL DIMENSIONS.
19. THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND CONDITION FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
20. CONTRACTOR IS RESPONSIBLE FOR ALL SOILS TESTING AND CERTIFICATION, UNLESS SPECIFIED OTHERWISE BY OWNER. ALL SOILS TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR AND SHALL COMPLY WITH CITY STANDARD SPECIFICATIONS AND THE GEOTECHNICAL REPORT. SOILS TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING SOILS. THE OWNER SHALL APPROVE THE AGENCY NOMINATED BY THE CONTRACTOR FOR SOILS TESTING.
21. ALL COPIES OF SOILS TEST RESULTS SHALL BE SENT TO THE OWNER, ENGINEER AND ARCHITECT DIRECTLY FROM THE TESTING AGENCY.
22. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SHOW, BY THE STANDARD TESTING PROCEDURES OF THE SOILS, THAT THE WORK CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS.
23. THE SCOPE OF WORK FOR CIVIL IMPROVEMENT SHOWN ON THESE PLANS TERMINATES 5-FEET FROM THE BUILDING. CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND STRUCTURAL PLANS AND SPECIFICATIONS FILL, CONDITIONING, AND PREPARATION IN THE BUILDING PAD.
24. DUE TO THE POTENTIAL FOR DIFFERENTIAL SOIL MOVEMENT ADJACENT TO THE BUILDING, THE CONTRACTOR SHALL ADHERE TO GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PROPOSED BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC TO FLATWORK ADJACENT TO THE BUILDING, IF NONE IS CURRENTLY EXISTING.
25. CONTRACTOR SHALL ENSURE THAT SUFFICIENT POSITIVE SLOPE AWAY FROM THE BUILDING PAD IS ACHIEVED FOR ENTIRE PERIMETER OF THE PROPOSED BUILDING(S) DURING GRADING OPERATIONS AND IN THE FINAL CONDITION. IF THE CONTRACTOR OBSERVES THAT THIS WILL NOT BE ACHIEVED, THE CONTRACTOR SHALL CONTACT THE ENGINEER TO REVIEW THE LOCATION.
26. THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. CONTRACTOR SHALL CONTROL DUST BY SPRINKLING WATER, OR BY OTHER MEANS APPROVED BY THE CITY, AT NO ADDITIONAL COST TO THE OWNER.
27. CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS NEEDED FOR GRADING OPERATIONS AND TO ACCOMMODATE PROPOSED GRADE, INCLUDING THE UNKNOWN UTILITIES NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL REFER TO THE GENERAL NOTES "OVERALL" SECTION THESE PLANS FOR ADDITIONAL INFORMATION.
28. EXISTING TREE LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE. CONTRACTOR SHALL REPORT ANY DISCREPANCIES FOUND IN THE FIELD THAT AFFECT THE GRADING PLAN TO THE CIVIL ENGINEER.
29. CONTRACTOR SHALL FIELD VERIFY ALL PROTECTED TREE LOCATIONS, INDIVIDUAL PROTECTED TREE CRITICAL ROOT ZONES, AND PROPOSED SITE GRADING, AND NOTIFY THE CIVIL ENGINEER AND LANDSCAPE ARCHITECT OF ANY CONFLICTS WITH THE TREE PRESERVATION PLAN BY THE LANDSCAPE ARCHITECT PRIOR TO COMMENCING THE WORK.
30. TREE PROTECTION MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY STANDARD TREE PROTECTION DETAILS AND THE APPROVED TREE PRESERVATION PLANS BY THE LANDSCAPE ARCHITECT.
31. CONTRACTOR SHALL REFER TO THE LANDSCAPING AND TREE PRESERVATIONS PLANS FOR ALL INFORMATION AND DETAILS REGARDING EXISTING TREES TO BE REMOVED AND PRESERVED.
32. NO TREE SHALL BE REMOVED UNLESS A TREE REMOVAL PERMIT HAS BEEN ISSUED BY THE CITY, OR CITY HAS OTHERWISE CONFIRMED IN WRITING THAT ONE IS NOT NEEDED FOR THE TREE(S).
33. NO TREE SHALL BE REMOVED OR DAMAGED WITHOUT PRIOR AUTHORIZATION OF THE OWNER OR OWNER'S REPRESENTATIVE. EXISTING TREES SHALL BE PRESERVED WHENEVER POSSIBLE AND GRADING IMPACT TO THEM HELD TO A MINIMUM.
34. AFTER PLACEMENT OF SUBGRADE AND PRIOR TO PLACEMENT OF PAVEMENT, CONTRACTOR SHALL TEST AND OBSERVE PAVEMENT AREAS FOR EVIDENCE OF PONDING AND INADEQUATE SLOPE FOR DRAINAGE. ALL AREAS SHALL ADEQUATELY DRAIN TOWARDS THE INTENDED STRUCTURE TO CONVEY STORMWATER RUNOFF. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER AND ENGINEER IF ANY AREAS OF POOR DRAINAGE ARE DISCOVERED.
35. CONTRACTOR FIELD ADJUSTMENT OF PROPOSED SPOT GRADES IS ALLOWED, IF THE APPROVAL OF THE CIVIL ENGINEER IS OBTAINED.

RETAINING WALLS:

1. RETAINING WALLS SHOWN ARE FOR SITE GRADING PURPOSES ONLY, AND INCLUDE ONLY LOCATION AND SURFACE SPOT ELEVATIONS AT THE TOP AND BOTTOM OF THE WALL.
2. RETAINING WALL TYPE OR SYSTEM SHALL BE SELECTED BY THE OWNER.
3. RETAINING WALL DESIGN SHALL BE PROVIDED BY OTHERS AND SHALL FIT IN THE WALL ZONE OR LOCATION SHOWN ON THESE PLANS. STRUCTURAL DESIGN AND PERMITTING OF RETAINING WALLS, RAILINGS, AND OTHER WALL SAFETY DEVICES SHALL BE PERFORMED BY A LICENSED ENGINEER AND ARE NOT PART OF THIS PLAN SET.
4. RETAINING WALL DESIGN SHALL MEET THE INTENT OF THE GRADING PLAN AND SHALL ACCOUNT FOR ANY INFLUENCE ON ADJACENT BUILDING FOUNDATIONS, UTILITIES, PROPERTY LINES AND OTHER CONSTRUCTABILITY NOTES.
5. RETAINING WALL ENGINEER SHALL CONSULT THESE PLANS AND THE GEOTECHNICAL REPORT FOR POTENTIAL CONFLICTS.

PAVING:

1. ALL PAVING MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS, THE CITY STANDARD DETAILS AND SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT AND ALL ISSUED ADDENDA, AND COMMONLY ACCEPTED CONSTRUCTION STANDARDS. THE CITY SPECIFICATIONS SHALL GOVERN WHERE OTHER SPECIFICATIONS DO NOT EXIST. IN CASE OF CONFLICTING SPECIFICATIONS OR DETAILS, THE MORE RESTRICTIVE SPECIFICATION/DETAIL SHALL BE FOLLOWED.
2. ALL PRIVATE ON-SITE PAVING AND PAVING SUBGRADE SHALL COMPLY WITH THE PROJECT'S FINAL GEOTECHNICAL REPORT (OR LATEST EDITION), INCLUDING ALL ADDENDA.
3. ALL FIRELANE PAVING AND PAVING SUBGRADE SHALL COMPLY WITH CITY STANDARDS AND DETAILS. IF THESE ARE DIFFERENT THAN THOSE IN THE GEOTECHNICAL REPORT, THEN THE MORE RESTRICTIVE SHALL BE FOLLOWED.
4. ALL PUBLIC PAVING AND PAVING SUBGRADE SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
5. CONTRACTOR IS RESPONSIBLE FOR ALL PAVING AND PAVING SUBGRADE TESTING AND CERTIFICATION, UNLESS SPECIFIED OTHERWISE BY OWNER. ALL PAVING AND PAVING SUBGRADE TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR. TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING PAVING AND SUBGRADE. OWNER SHALL APPROVE THE AGENCY NOMINATED BY THE CONTRACTOR FOR PAVING AND PAVING SUBGRADE TESTING.
6. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SHOW, BY THE STANDARD TESTING PROCEDURES OF THE PAVING AND PAVING SUBGRADE, THAT THE WORK CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS.
7. DUE TO THE POTENTIAL FOR DIFFERENTIAL SOIL MOVEMENT ADJACENT TO THE BUILDING, THE CONTRACTOR SHALL ADHERE TO GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PROPOSED BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC TO FLATWORK ADJACENT TO THE BUILDING, IF NONE IS CURRENTLY EXISTING.
8. CURB RAMPS ALONG PUBLIC STREETS AND IN THE PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED BASED ON THE CITY STANDARD CONSTRUCTION DETAIL AND SPECIFICATIONS.
9. PRIVATE CURB RAMPS ON THE SITE (I.E. OUTSIDE PUBLIC STREET RIGHT-OF-WAY) SHALL CONFORM TO ADA AND TAS STANDARDS AND SHALL HAVE A DETECTABLE WARNING SURFACE THAT IS FULL WIDTH AND FULL DEPTH OF THE CURB RAMP, NOT INCLUDING FLARES.
10. ALL ACCESSIBLE RAMPS, CURB RAMPS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA AND TAS STANDARDS, LATEST EDITION.
11. ANY COMPONENTS OF THE PROJECT SUBJECT TO RESIDENTIAL USE SHALL ALSO CONFORM TO THE FAIR HOUSING ACT, AND COMPLY WITH THE FAIR HOUSING ACT DESIGN MANUAL BY THE US DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
12. CONTRACTOR SHALL CONSTRUCT PROPOSED PAVEMENT TO MATCH EXISTING PAVEMENT WITH A SMOOTH, FLUSH, CONNECTION.
13. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS FOR FIRE LANES, PARKING STALLS, HANDICAPPED PARKING SYMBOLS, AND MISCELLANEOUS STRIPING WITHIN PARKING LOT AND AROUND BUILDING AS SHOWN ON THE PLANS. ALL PAINT AND PAVEMENT MARKINGS SHALL ADHERE TO CITY AND OWNER STANDARDS.
14. REFER TO GEOTECHNICAL REPORT FOR PAVING JOINT LAYOUT PLAN REQUIREMENTS FOR PRIVATE PAVEMENT.
15. REFER TO CITY STANDARD DETAILS AND SPECIFICATIONS FOR JOINT LAYOUT PLAN REQUIREMENTS FOR PUBLIC PAVEMENT.
16. ALL REINFORCING STEEL SHALL CONFORM TO THE GEOTECHNICAL REPORT, CITY STANDARDS, AND ASTM A-615, GRADE 60, AND SHALL BE SUPPORTED BY BAR CHAIRS. CONTRACTOR SHALL USE THE MORE STRINGENT OF THE CITY AND GEOTECHNICAL STANDARDS.
17. ALL JOINTS SHALL EXTEND THROUGH THE CURB.
18. THE MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS SHALL BE 2 FEET.
19. CONTRACTOR SHALL SUBMIT A JOINTING PLAN TO THE ENGINEER AND OWNER PRIOR TO BEGINNING ANY OF THE PAVING WORK.
20. ALL SAWCUTS SHALL BE FULL DEPTH FOR PAVEMENT REMOVAL AND CONNECTION TO EXISTING PAVEMENT.
21. FIRE LANES SHALL BE MARKED AND LABELED AS A FIRELANE PER CITY STANDARDS.
22. UNLESS THE PLANS SPECIFICALLY DICTATE TO THE CONTRARY, ON-SITE AND OTHER DIRECTIONAL SIGNS SHALL BE ORIENTED SO THEY ARE READILY VISIBLE TO THE ONCOMING TRAFFIC FOR WHICH THEY ARE INTENDED.
23. CONTRACTOR IS RESPONSIBLE FOR INSTALLING NECESSARY CONDUIT FOR LIGHTING, IRRIGATION, ETC. PRIOR TO PLACEMENT OF PAVEMENT. ALL CONSTRUCTION DOCUMENTS (CIVIL, MEP, LANDSCAPE, IRRIGATION, AND ARCHITECT) SHALL BE CONSULTED.
24. BEFORE PLACING PAVEMENT, CONTRACTOR SHALL VERIFY THAT SUITABLE ACCESSIBLE PEDESTRIAN ROUTES (PER ADA, TAS, AND FHA) EXIST TO AND FROM EVERY DOOR AND ALONG SIDEWALKS, ACCESSIBLE PARKING SPACES, ACCESS AISLES, AND ACCESSIBLE ROUTES. IN NO CASE SHALL AN ACCESSIBLE RAMP SLOPE EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWALK CROSS SLOPE EXCEED 2.0 PERCENT. IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPE EXCEED 5.0 PERCENT. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL NOT EXCEED 2.0 PERCENT SLOPE IN ANY DIRECTION.
25. CONTRACTOR SHALL TAKE FIELD SLOPE MEASUREMENTS ON FINISHED SUBGRADE AND FORM BOARDS PRIOR TO PLACING PAVEMENT TO VERIFY THAT ADA/TAS SLOPE REQUIREMENTS ARE PROVIDED. CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO PAVING IF ANY EXCESSIVE SLOPES ARE ENCOUNTERED. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR ADA AND TAS SLOPE COMPLIANCE ISSUES.

STORM DRAINAGE:

1. ALL STORM SEWER MATERIALS AND CONSTRUCTION SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
2. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE STORM SEWER.
3. THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, CONDITION, HORIZONTAL, AND VERTICAL LOCATIONS OF ALL EXISTING STORM SEWER FACILITIES THAT ARE TO BE CONNECTED TO, PRIOR TO START OF CONSTRUCTION OF ANY STORM SEWER, AND SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED.
4. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF CURB INLETS AND GRATE INLETS AND ALL UTILITIES CROSSING THE STORM SEWER.
5. FLOW LINE, TOP-OF-CURB, RIM, THROAT, AND GRATE ELEVATIONS OF PROPOSED INLETS SHALL BE VERIFIED WITH THE GRADING PLAN AND FIELD CONDITIONS PRIOR TO THEIR INSTALLATION.
6. ALL PUBLIC STORM SEWER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO CITY PUBLIC WORKS STANDARD DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS.
7. ALL PRIVATE STORM SEWER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO THE APPLICABLE PLUMBING CODE. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS.
8. ALL PVC TO RCP CONNECTIONS AND ALL STORM PIPE CONNECTIONS ENTERING STRUCTURES OR OTHER STORM PIPES SHALL HAVE A CONCRETE COLLAR AND BE GROUTED TO ASSURE THE CONNECTION IS WATERTIGHT.
9. ALL PUBLIC STORM SEWER LINES SHALL BE MINIMUM CLASS III RCP. PRIVATE STORM SEWER LINES 18-INCHES AND GREATER SHALL BE CLASS III RCP OR OTHER APPROVED MATERIAL.
10. WHERE COVER EXCEEDS 20-FEET OR IS LESS THAN 2-FEET, CLASS IV RCP SHALL BE USED.
11. IF CONTRACTOR PROPOSES TO USE HDPE OR PVC IN LIEU OF RCP FOR PRIVATE STORM SEWER, CONTRACTOR SHALL SUBMIT TECHNICAL DATA TO THE OWNER, ENGINEER AND CITY ENGINEER/INSPECTOR FOR APPROVAL PRIOR TO ORDERING THE MATERIAL. ANY PROPOSED HDPE AND PVC SHALL BE WATERTIGHT.
12. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION SURVEYING FOR ALL STORM SEWER LINES.
13. EMBEDMENT FOR ALL STORM SEWER LINES, PUBLIC OR PRIVATE, SHALL BE PER CITY STANDARD DETAILS.
14. ALL WYE CONNECTIONS AND PIPE BENDS ARE TO BE PREFABRICATED AND INSTALLED PER MANUFACTURERS SPECIFICATIONS.
15. USE 4 FOOT JOINTS WITH BEVELED ENDS IF RADIUS OF STORM SEWER IS LESS THAN 100 FEET.
16. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND SUBMITTING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENCHES. NO OPEN TRENCHES SHALL BE ALLOWED OVERNIGHT WITHOUT PRIOR WRITTEN APPROVAL OF THE CITY.
17. THE CONTRACTOR SHALL KEEP TRENCHES FREE FROM WATER.

POND NOTES:

1. ANY PONDS THAT ARE INTENDED TO HOLD WATER INDEFINITELY SHALL BE CONSTRUCTED WATERTIGHT.
2. FOR ANY PONDS INTENDED TO HOLD WATER INDEFINITELY: THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR POND LINER SPECIFICATIONS.
3. A GEOTECHNICAL ENGINEER SHALL REVIEW AND APPROVE ALL POND LINER MATERIAL, PLACEMENT PROCEDURES, AND PROVIDE TESTING TO ENSURE THE POND LINER MATERIAL PLACED IS WATERTIGHT.
4. STORM SEWER PIPES AND HEADWALLS THAT CONNECT TO A POND INTENDED TO HOLD WATER INDEFINITELY SHALL BE INSTALLED WITH WATERTIGHT JOINTS TO AT LEAST 1-FOOT ABOVE THE NORMAL POOL WATER SURFACE ELEVATION.
5. ANY GRAVEL OR OTHER PERVIOUS EMBEDMENT AROUND PIPES OR OUTFALL STRUCTURES NEAR THE POND SHALL BE ELIMINATED FOR AT LEAST 20-FEET FROM THE POND SO NO ROUTE FOR WATER TO LEAK THROUGH THE EMBEDMENT MATERIAL IS PROVIDED. BACKFILL IN THESE AREAS SHALL BE OF IMPERVIOUS MATERIAL.
6. FOR ANY PONDS INTENDED TO HOLD WATER INDEFINITELY: THE WATER LEVEL FOLLOWING COMPLETION AND FILLING OF THE POND SHALL BE MONITORED BY THE CONTRACTOR FOR AT LEAST 60 DAYS TO OBSERVE WATER INFLOW, OUTFLOW, AND CALCULATE EVAPORATION TO VERIFY THAT THE POND IS WATERTIGHT.
7. FOR ANY PONDS INTENDED TO HOLD WATER INDEFINITELY: THE POND WATER LEVEL SHALL ALSO BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION SO THAT IT REMAINS FULL TO ITS DESIGN WATER LEVEL, AND IS NOT LOWERED, AS THIS MAY DRY-OUT THE POND LINER AND RISK ITS WATERTIGHT PROPERTIES.

WATER AND WASTEWATER:

1. ALL WATER AND WASTEWATER MATERIALS AND CONSTRUCTION SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
2. CONTRACTOR SHALL FIELD VERIFY THE SIZE, CONDITION, HORIZONTAL, AND VERTICAL LOCATIONS OF ALL EXISTING WATER AND WASTEWATER FACILITIES THAT ARE TO BE CONNECTED TO, PRIOR TO START OF CONSTRUCTION OF ANY WATER OR WASTEWATER CONSTRUCTION, AND SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED.
3. CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITY SERVICES ENTERING THE BUILDING.
4. THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATION OF ALL UTILITY CROSSINGS PRIOR TO THE INSTALLATION OF ANY PIPE.
5. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE WATER AND WASTEWATER IMPROVEMENTS.
6. ALL PUBLIC WATER AND WASTEWATER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO CITY PUBLIC WORKS STANDARD DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS.
7. ALL PRIVATE WATER AND WASTEWATER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO THE APPLICABLE PLUMBING CODE. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS.
8. FIRE SPRINKLER LINES SHALL BE DESIGNED AND INSTALLED BY A LICENSED FIRE SPRINKLER CONTRACTOR, AND COMPLY TO THE APPLICABLE CODES AND INSPECTIONS REQUIRED. THESE PLANS WERE PREPARED WITHOUT THE BENEFIT OF THE FIRE SPRINKLER DESIGN. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES.
9. EMBEDMENT FOR ALL WATER AND WASTEWATER LINES, PUBLIC OR PRIVATE, SHALL BE PER CITY STANDARD DETAILS.
10. CONTRACTOR SHALL TAKE REQUIRED SANITARY PRECAUTIONS, FOLLOWING ANY CITY, TCEQ, AND AWWA STANDARDS, TO KEEP WATER PIPE AND FITTINGS CLEAN AND CAPPED AT TIMES WHEN INSTALLATION IS NOT IN PROGRESS.
11. CONTRACTOR SHALL PROVIDE CONSTRUCTION SURVEYING FOR ALL WATER AND WASTEWATER LINES.
12. ALL WATER AND WASTEWATER SERVICES SHALL TERMINATE 5-FEET OUTSIDE THE BUILDING, UNLESS NOTED OTHERWISE.
13. CONTRACTOR SHALL COMPLY WITH CITY REQUIREMENTS FOR WATER AND WASTEWATER SERVICE DISRUPTIONS AND THE AMOUNT OF PRIOR NOTICE THAT IS REQUIRED, AND SHALL COORDINATE DIRECTLY WITH THE APPROPRIATE CITY DEPARTMENT.
14. CONTRACTOR SHALL SEQUENCE WATER AND WASTEWATER CONSTRUCTION TO AVOID INTERRUPTION OF SERVICE TO SURROUNDING PROPERTIES.
15. CONTRACTOR SHALL MAINTAIN WATER SERVICE AND WASTEWATER SERVICE TO ALL CUSTOMERS THROUGHOUT CONSTRUCTION (IF NECESSARY, BY USE OF TEMPORARY METHODS APPROVED BY THE CITY AND OWNER). THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
16. THE CONTRACTOR IS RESPONSIBLE TO PROTECT ALL WATER AND WASTEWATER LINES CROSSING THE PROJECT. THE CONTRACTOR SHALL REPAIR ALL DAMAGED LINES IMMEDIATELY. ALL REPAIRS OF EXISTING WATER MAINS, WATER SERVICES, SEWER MAINS, AND SANITARY SEWER SERVICES ARE SUBSIDIARY TO THE WORK, AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
17. VALVE ADJUSTMENTS SHALL BE CONSTRUCTED SUCH THAT THE COVERS ARE AT FINISHED SURFACE GRADE OF THE PROPOSED PAVEMENT.
18. THE ENDS OF ALL EXISTING WATER MAINS THAT ARE CUT, BUT NOT REMOVED, SHALL BE PLUGGED AND ABANDONED IN PLACE. THIS WORK SHALL BE CONSIDERED AS A SUBSIDIARY COST TO THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
19. ALL FIRE HYDRANTS, VALVES, TEES, BENDS, WYES, REDUCERS, FITTINGS, AND ENDS SHALL BE MECHANICALLY RESTRAINED AND/OR THRUST BLOCKED TO CITY STANDARDS.
20. CONTRACTOR SHALL INSTALL A FULL SEGMENT OF WATER OR WASTEWATER PIPE CENTERED AT ALL UTILITY CROSSINGS SO THAT THE JOINTS ARE GREATER THAN 9-FEET FROM THE CROSSING.
21. ALL CROSSINGS AND LOCATIONS WHERE WASTEWATER IS LESS THAN 9-FEET FROM WATER, WASTEWATER CONSTRUCTION AND MATERIALS SHALL COMPLY WITH TCEQ CHAPTER 217.53.
22. ALL CROSSING AND LOCATIONS WHERE WATER IS LESS THAN 9-FEET FROM WASTEWATER, WATER CONSTRUCTION AND MATERIALS SHALL COMPLY WITH TCEQ CHAPTER 290.44.
23. ALL WATER AND WASTEWATER SHALL BE TESTED IN ACCORDANCE WITH THE CITY, AWWA, AND TCEQ STANDARDS AND SPECIFICATIONS. AT A MINIMUM, THIS SHALL CONSIST OF THE FOLLOWING:
   a. ALL WATERLINES SHALL BE HYDROSTATICALLY TESTED AND CHLORINATED BEFORE BEING PLACED INTO SERVICE. CONTRACTOR SHALL COORDINATE WITH THE CITY FOR THEIR REQUIRED PROCEDURES AND SHALL ALSO COMPLY WITH TCEQ REGULATIONS.
   b. WASTEWATER LINES AND MANHOLES SHALL BE PRESSURE TESTED. CONTRACTOR SHALL COORDINATE WITH THE CITY FOR THEIR REQUIRED PROCEDURES AND SHALL ALSO COMPLY WITH TCEQ REGULATIONS. AFTER COMPLETION OF THESE TESTS, A TELEVISION INSPECTION SHALL BE PERFORMED AND PROVIDED TO THE CITY AND OWNER ON A DVD.
24. CONTRACTOR SHALL INSTALL DETECTABLE WIRING OR MARKING TAPE A MINIMUM OF 12" ABOVE WATER AND WASTEWATER LINES. MARKER DECALS SHALL BE LABELED "CAUTION - WATER LINE", OR "CAUTION - SEWER LINE". DETECTABLE WIRING AND MARKING TAPE SHALL COMPLY WITH CITY STANDARDS, AND SHALL BE INCLUDED IN THE COST OF THE WATER AND WASTEWATER PIPE.
25. DUCTILE IRON PIPE SHALL BE PROTECTED FROM CORROSION BY A LOW-DENSITY POLYETHYLENE LINER WRAP THAT IS AT LEAST A SINGLE LAYER OF 8-MIL. ALL DUCTILE IRON JOINTS SHALL BE BONDED.
26. WATERLINES SHALL BE INSTALLED AT NO LESS THAN THE MINIMUM COVER REQUIRED BY THE CITY.
27. CONTRACTOR SHALL PROVIDE CLEAN-OUTS FOR PRIVATE SANITARY SEWER LINES AT ALL CHANGES IN DIRECTION AND 100-FOOT INTERVALS, OR AS REQUIRED BY THE APPLICABLE PLUMBING CODE. CLEAN-OUTS REQUIRED IN PAVEMENT OR SIDEWALKS SHALL HAVE CAST IRON COVERS FLUSH WITH FINISHED GRADE.
28. CONTRACTOR SHALL PROVIDE BACKWATER VALVES FOR PLUMBING FIXTURES AS REQUIRED BY THE APPLICABLE PLUMBING CODE (E.G. FLOOR ELEVATION OF FIXTURE UNIT IS BELOW THE ELEVATION OF THE MANHOLE COVER OF THE NEXT UPSTREAM MANHOLE IN THE PUBLIC SEWER). CONTRACTOR SHALL REVIEW BOTH MEP AND CIVIL PLANS TO CONFIRM WHERE THESE ARE REQUIRED.
29. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND SUBMITTING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENCHES. NO OPEN TRENCHES SHALL BE ALLOWED OVERNIGHT WITHOUT PRIOR WRITTEN APPROVAL OF THE CITY.
30. THE CONTRACTOR SHALL KEEP TRENCHES FREE FROM WATER.

ABBREVIATIONS AND DEFINITIONS:

A	AREA
ADA	AMERICANS WITH DISABILITIES ACT
AWWA	AMERICAN WATER WORKS ASSOCIATION
B-B	BACK TO BACK
BC	BEGIN CURVE
BC	BACK OF CURB
BCR	BEGIN CURB RETURN
BMP	BEST MANAGEMENT PRACTICE
BOC	BACK OF CURB
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
BW	BOTTOM OF WALL
CFS	CUBIC FEET PER SECOND
CITY	CITY, TOWN, OR OTHER APPLICABLE LOCAL GOVERNMENT JURISDICTION
C/L	CENTERLINE
CL	CENTERLINE
CONC	CONCRETE
CY	CUBIC YARD
DEMO	DEMOLITION
DG	DECOMPOSED GRANITE
DTL	DETAIL
EA	EACH
EC	END CURVE
ECR	END CURB RETURN
EG	EXISTING GROUND
EL	ELEVATION
ELEC	ELECTRICAL / ELECTRICITY
ELEV	ELEVATION
EPA	UNITES STATES ENVIRONMENTAL PROTECTION AGENCY
ESMT	EASEMENT
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EX.	EXISTING
F-F	FACE TO FACE
FG	FINISHED GROUND
FH	FIRE HYDRANT
FL	FLOW LINE
FOC	FACE OF CURB
FT	FEET
HGL	HYDRAULIC GRADE LINE
KH	KIMLEY-HORN AND ASSOCIATES, INC.
KHA	KIMLEY-HORN AND ASSOCIATES, INC.
LAT	LATERAL
LF	LINEAR FEET
LT	LEFT
MAX	MAXIMUM
ME	MATCH EXISTING ELEVATION
MH	MANHOLE
MIN	MINUTE / MINIMUM
NO	NUMBER
NOI	NOTICE OF INTENT, REF. TCEQ GENERAL PERMIT
NOT	NOTICE OF TERMINATION, REF. TCEQ GENERAL PERMIT
NTS	NOT TO SCALE
OC	ON CENTER
OFF	OFFSET
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE / POINT OF COMPOUND CURVATURE
PGL	PROPOSED GRADE LINE
PI	POINT OF INFLECTION
PROP	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INFLECTION
PVMT	PAVEMENT
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT OF WAY
RT	RIGHT
SF	SQUARE FEET
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
SY	SQUARE YARD
TAS	ARCHITECTURAL BARRIERS TEXAS ACCESSIBILITY STANDARDS
TC	TOP OF CURB
TCEQ	TEXAS COMMISSION OF ENVIRONMENTAL QUALITY
TEMP	TEMPORARY
TXDOT	TEXAS DEPARTMENT OF TRANSPORTATION
TXMUTCD	TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
TW	TOP OF WALL
TYP	TYPICAL
VC	VERTICAL CURVE
WTR	WATER
WW	WASTEWATER

UTILITY CONTACTS:

1. CABLE COMPANY, **CHUCK MCNEELY, CHARTER SPECTRUM, (512) 485-6423 12012 N. MOPAC EXPY, AUSTIN, TX 78758, CHUCK MCNEELY@CHARTER.COM**
2. ELECTRIC COMPANY, **AARON RAMIREZ, ONCOR, (817) 355-7057, 200 N. ECTOR DRIVE, EULESS, TX 76039, AARON.RAMIREZ@ONCOR.COM**
3. GAS COMPANY, **MARCO DELIRA, ATMOS, 3110 N. IH-35, ROUND ROCK, TX 78681, MARCO.DELIRA@ATMOSENERGY.COM**
4. CITY WATER/UTILITIES DEPARTMENT, **300-1 INDUSTRIAL AVE., GEORGETOWN, TEXAS 78626, (512) 930-3640, CUSTOMERCARE@GEORGETOWN.ORG, GUS.GEORGETOWN.ORG**

THESE PLAN AND GENERAL NOTES REFER TO:
GEOTECHNICAL ENGINEERING REPORT
RABA KISTNER CONSULTANTS INC.
GES PROJECT NO. AAA22-129-00
10/28/2022
INCLUDING ALL REVISIONS AND ADDENDA TO THIS REPORT THAT MAY HAVE BEEN RELEASED AFTER THE NOTED DATE.

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date / /19

08/18/2023

KHA PROJECT	DATE	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
069264937	JULY 23	AS SHOWN	BLG	ABG	BLG

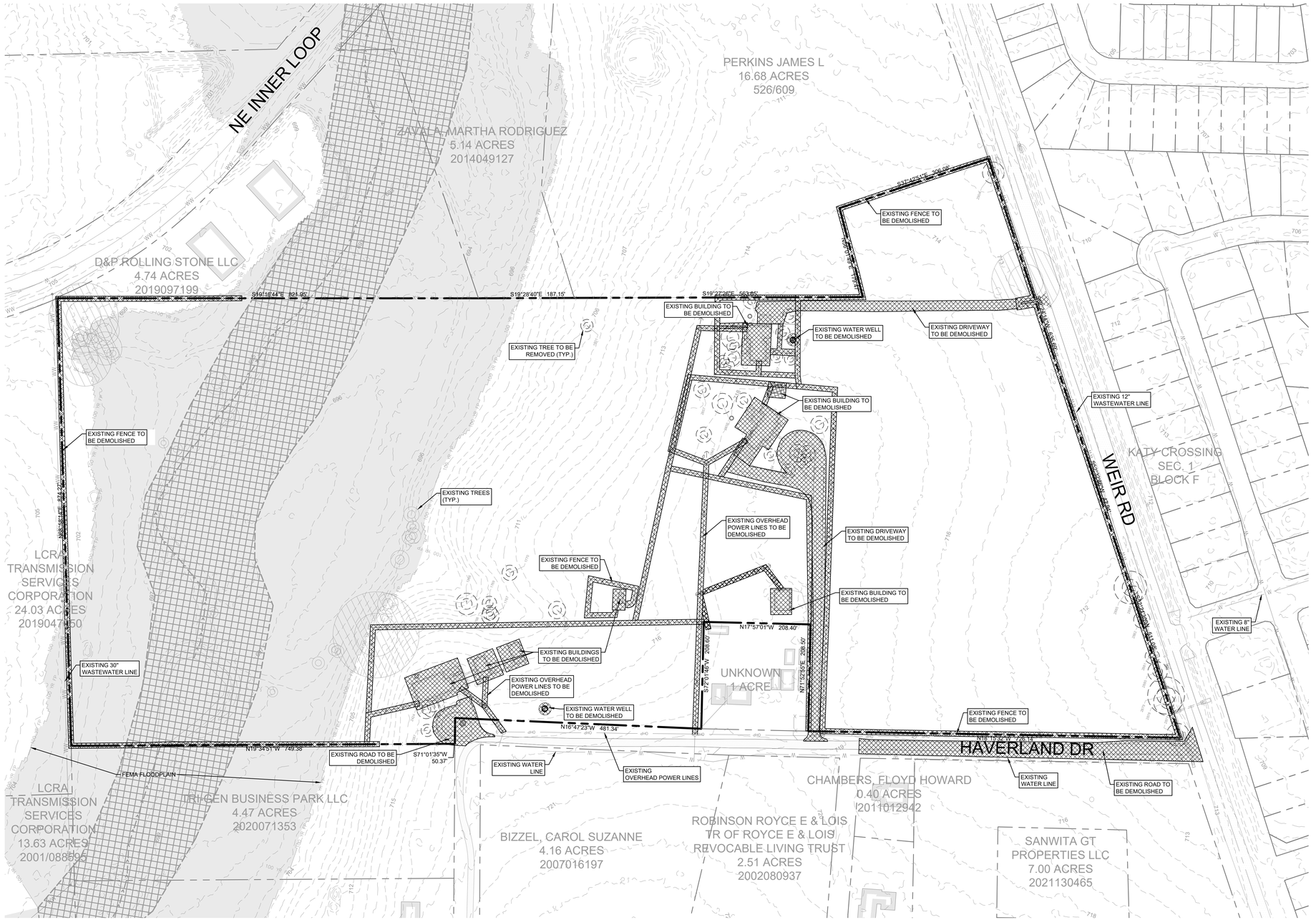
KIMLEY-HORN GENERAL NOTES

HAVERLAND BTR

170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
5 OF 102

XXXXXXXXX



0 100' 200'
GRAPHIC SCALE 100'

LEGEND

- PROPERTY LINE
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING WASTEWATER MANHOLE
- EXISTING FENCE
- DEMOLITION AREA: ITEMS TO BE REMOVED
- TREE TO REMAIN
- TREE TO BE REMOVED
- HERITAGE TREE

TREE TABLE

NO.	DESCRIPTION	NO.	DESCRIPTION
1541	10" ELM	2423	PEAR 22
1588	10" ELM	2424	PEAR 18
1641	16X10" ELM	2492	30X23X22X21X19X14X9" OAK
1681	16X12" ELM	2724	14" OAK
1700	12" ELM	2725	16" OAK
1701	10" ELM	2726	17" OAK
1725	18X15X14" ELM	2730	14" OAK
1727	12" ELM	2764	12" OAK
1729	22X13" OAK	2790	17" OAK
1736	30X19X17X8" OAK	2843	15" OAK
1740	16" OAK	2852	15" OAK
1741	15X8" OAK	2856	20" OAK
1742	15" OAK	2857	16" PECAN
1743	68" OAK	2866	14" OAK
1756	12" ELM	2867	12" OAK
1757	12" ELM	2868	12" OAK
1758	12" ELM	2869	14" OAK
1759	15" OAK	2870	16" OAK
1760	15X10" OAK	2871	21" OAK
1761	12X12" ELM	2872	12" OAK
1762	13" ELM	2873	16" OAK
1763	15" ELM	2874	12" OAK
1764	12" ELM	2875	14" OAK
1765	15" ELM	2876	67" OAK
1766	11X10X9" ELM	2877	22" HACKBERRY
1767	17" HACKBERRY	2878	18X17" HACKBERRY
1768	14" ELM	2879	18X15X14" HACKBERRY
1769	14" ELM	2880	19" HACKBERRY
1770	15" ELM	2881	14" HACKBERRY
1771	17" ELM	2882	16" HACKBERRY
1801	12" ELM	2883	17" HACKBERRY
2387	12" OAK	2885	16X12X12" HACKBERRY
2414	17" OAK	2904	12X10X8" HACKBERRY

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REFERENCE BENCHMARK:
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ELEVATION=642.70'
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ELEVATION=768.42'

811 Know what's below. Call before you dig.

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TX REGISTERED ENGINEERING FIRM F-928

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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

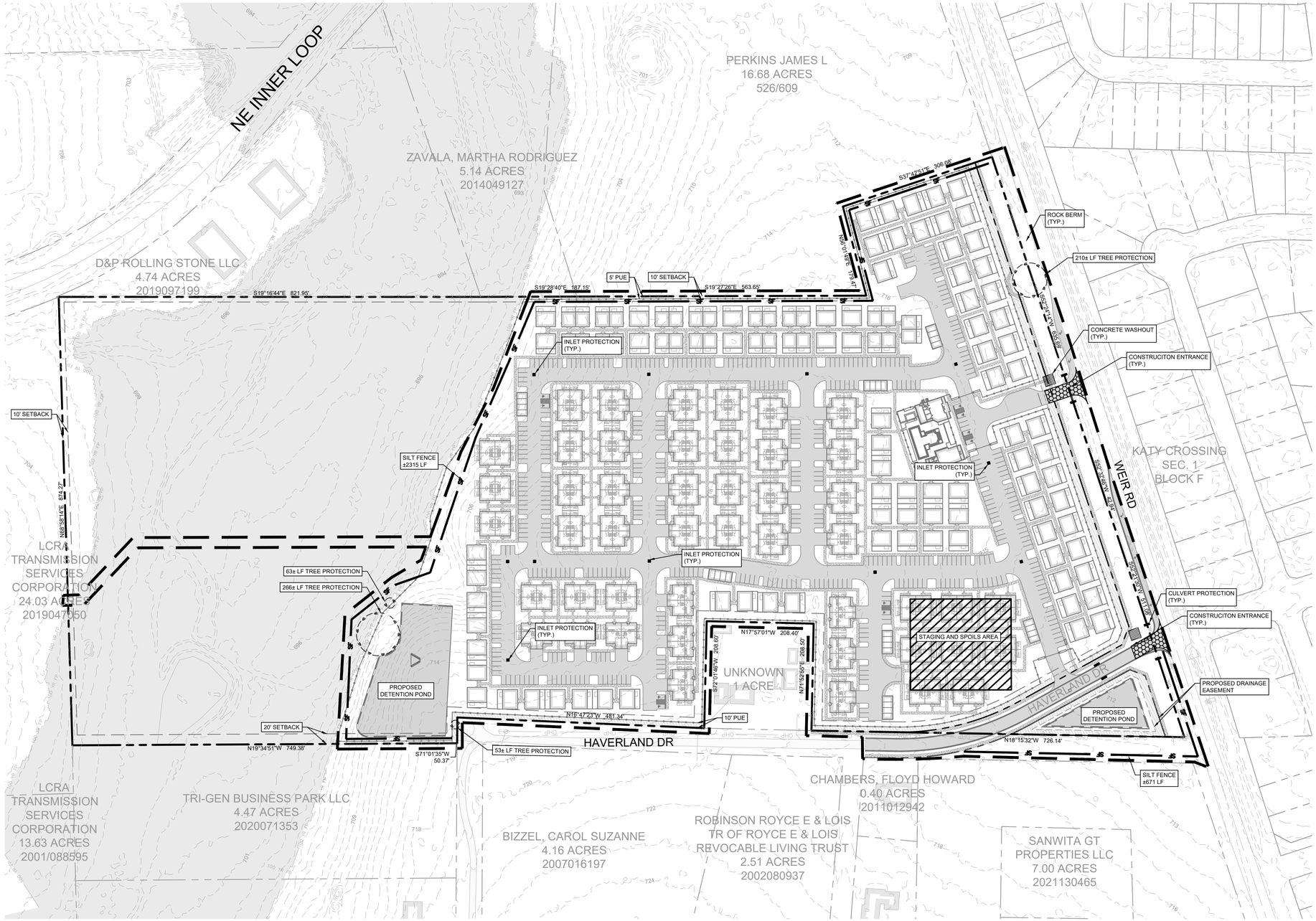
KHA PROJECT 069264937
DATE JULY 23
SCALE AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

EXISTING CONDITIONS AND DEMO PLAN

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
6 OF 102

XXXXXXXXX



0 100' 200'
GRAPHIC SCALE 100'

LEGEND

- PROPERTY LINE
- SILT FENCE
- TP — TREE PROTECTION
- PROPOSED INLET PROTECTION
- CONCRETE WASHOUT PIT
- CONSTRUCTION ENTRANCE
- ROCK BERM
- 450 — EXISTING CONTOURS
- 450 — PROPOSED CONTOURS
- LIMITS OF CONSTRUCTION AREA
- TREE TO REMAIN
- HERITAGE TREE TO REMAIN
- STAGING AND SPOILS AREA

NOTES:

1. CONTRACTOR IS SOLELY RESPONSIBLE FOR IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL SWPPP CONTROLS - CONTROLS SHOWN ON THIS SITE MAP ARE SUGGESTED CONTROLS ONLY.
2. CONTRACTOR SHALL RECORD INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL DATES FOR EACH BMP EMPLOYED (WHETHER CALLED OUT ON ORIGINAL SWPPP OR NOT) DIRECTLY ON THE SITE MAP.
3. THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF CEDAR PARK RULES AND REGULATIONS
4. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURE DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(D) OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
5. TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL AND LANDSCAPE PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING, THE BUILDING(S), AND SITE PAVING.
6. BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE: SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF.
7. ADDITIONAL EROSION AND SEDIMENTATION CONTROLS MAY BE REQUIRED BY THE CITY DURING CONSTRUCTION.
8. REFERENCE EROSION CONTROL NOTES AND DETAILS ON SHEET 7.
9. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING [ECM 1.4.4.B.3, SECTION 5, I.]. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY.[ECM 1.4.4.D.4].
10. ALL DISTURBED AREAS TO BE RE-VEGETATED PER CITY OF AUSTIN STANDARDS.
11. SEE LANDSCAPE ARCHITECT PLANS FOR TREE PRESERVATION PLAN AND TREE LIST.

BENCHMARKS

TBM:
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2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
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ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

KHA PROJECT 069264937	SCALE: AS SHOWN	DESIGNED BY: BLG
DATE JULY 23		DRAWN BY: ABG
		CHECKED BY: BLG

EROSION CONTROL PLAN

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
8 OF 102

XXXXXXXXX

0 100' 200'
GRAPHIC SCALE 100'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER CLEANOUT
- PROPOSED FIRE HYDRANT
- OHP — EXISTING OVERHEAD POWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WASTEWATER MANHOLE
- PROPOSED WALL
- X (TYPE X) — BUILDING NUMBER / BUILDING TYPE
- TREE TO REMAIN
- HERITAGE TREE TO REMAIN

NOTES:

1. ALL PARKING SPACES SHALL HAVE MINIMUM 7'-0" VERTICAL CLEARANCE.
2. WARNING SIGNS ARE REQUIRED TO BE PLACED UNDER THE OVERHEAD ELECTRIC LINES TO MAKE ALL PERSONNEL AWARE OF THE ELECTRIC HAZARD.
3. EVERY HANDICAP ACCESSIBLE PARKING SPACE SHALL BE IDENTIFIED BY A SIGN CENTERED 5 FEET ABOVE THE PARKING SURFACE, AT THE HEAD OF THE PARKING SPACE. THE SIGN MUST INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AND STATE RESERVED, OR EQUIVALENT LANGUAGE. SUCH SIGNS SHALL NOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE AND SHALL MEET THE CRITERIA SET FORTH IN UBC, 3108(c) AND ANSI A1171-1986-4.6.2.
4. CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
5. GROUND SURFACES ALONG ACCESSIBLE ROUTES MUST BE STABLE, FIRM, AND SLIP RESISTANT.
6. RETAINING WALLS OVER FOUR FEET IN HEIGHT MEASURED FROM THE BOTTOM OF THE FOOTING TO THE TOP OF THE WALL SHALL BE ENGINEERED AND REQUIRE A SEPARATE BUILDING PERMIT. [IBC CODE 105.2]
7. SEE ARCHITECTURAL PLANS FOR CARPORT DESIGN.
8. APPROVAL OF THESE PLANS BY THE CITY OF AUSTIN INDICATES COMPLIANCE WITH APPLICABLE CITY REGULATIONS ONLY. COMPLIANCE WITH ACCESSIBILITY STANDARDS SUCH AS THE 2010 STANDARDS FOR ACCESSIBLE DESIGN OR THE 2012 TEXAS ACCESSIBILITY STANDARDS WAS NOT VERIFIED. THE APPLICANT IS RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE ACCESSIBILITY STANDARDS.
9. ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50. [ANSI 403.3]
10. SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP. [ANSI 403.3]
11. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION IS 1:12. THE MAXIMUM RISE FOR ANY RAMP RUN IS 30 IN. [ANSI 405.2 - 405.6]
12. POND DRAINAGE FACILITIES MUST BE ENCLOSED BY A 6' IN HEIGHT FENCE.

SITE DATA TABLE

ZONING	MF-1 (LOW-DENSITY MULTIFAMILY)
ADDRESS	170 HAVERLAND DR. GEORGETOWN, TX, 78626
LEGAL DESCRIPTION	AW0235 FLORES, A. SUR., ACRES 6.2142 AW0235 AW0235 - Flores, A. Sur., ACRES 1.82 AW0235 FLORES, A. SUR., ACRES 1.83 AW0235 FLORES, A. SUR., ACRES 1.67 AW0235 FLORES, A. SUR., ACRES 16.79 AW0235 AW0235 - Flores, A. Sur., ACRES 0.96 AW0235 FLORES, A. SUR., ACRES 4.77 AW0235 FLORES, A. SUR., ACRES 5.53 AW0235 FLORES, A. SUR., ACRES 1.0
FIRE DESIGN CODES	2015 IFC
AUTOMATIC FIRE SPRINKLER SYSTEM TYPE (IF APPLICABLE)	NFPA 13R
CONSTRUCTION CLASSIFICATION	TYPE V-B
BUILDING FIRE AREA (GSF)	37,700 SF
FIRE FLOW DEMAND @ 20 PSI	1,500 GPM
REDUCED (25%) FIRE FLOW DEMAND @ 20 PSI FOR HAVING A SPRINKLER SYSTEM (GPM)	1,500 GPM
MINIMUM FIRE FLOW DEMAND	1,500 GPM
FIRE HYDRANT FLOW TEST DATE	3/27/2023
HIGH-RISE	NO

IMPERVIOUS COVER TABLE

ALLOWABLE IMPERVIOUS COVER	
TOTAL SITE AREA	40.56 AC (1767628.7584 SF)
IMPERVIOUS COVER ALLOWED	50%
PROPOSED IMPERVIOUS COVER	
PROPOSED IMPERVIOUS COVER	14.04 AC
PROPOSED IMPERVIOUS COVER	34.62%

PARKING TABLE

REQUIRED	
TOTAL UNITS PROPOSED	302
1-BEDROOM (136 UNITS)	204 SPACES
2-BEDROOM (166 UNITS)	332 SPACES
REQUIRED PARKING	1-BEDROOM = 136X1.5 = 204 SPACES 2-BEDROOM = 166X2 = 332 SPACES 5% VISITOR = 27 SPACES TOTAL = 563 SPACES
PROPOSED	
SURFACE PARKING	456 SPACES (78%)
TANDEM PARKING	50 SPACES (9%)
GARAGE PARKING	78 SPACES (13%)
PARKING	584 SPACES
ADA REQUIRED	8 SPACES
ADA PROVIDED	10 SPACES

BENCHMARKS

TBM:
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ELEVATION=710.48'
2. BENCHMARK 2
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REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
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08/29/2023

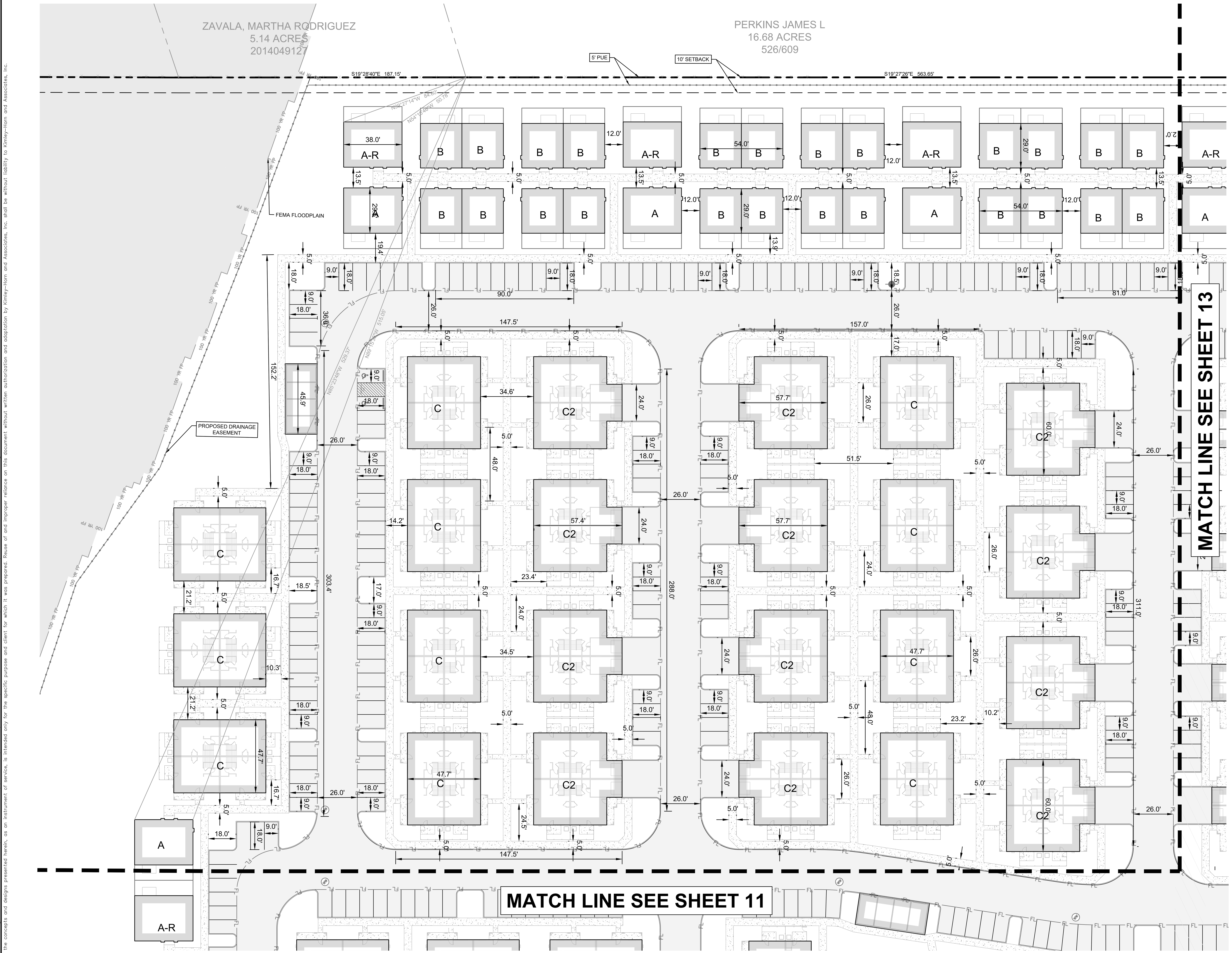
KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

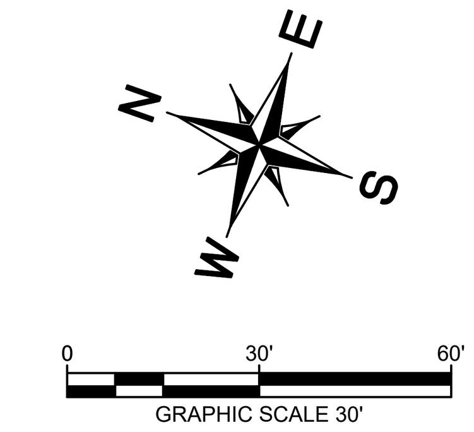
OVERALL SITE PLAN

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
9 OF 102

XXXXXXXXX





LEGEND

PROPERTY LINE
PROPOSED WALL

NOTES:

1. ALL FIRE DEPARTMENT ACCESS DRIVES/ROADS TO HAVE A MINIMUM 13'-6" VERTICAL CLEARANCE.
2. ESTABLISH FIRE ZONES AS SHOWN ON SITE BY PAINTING CURB RED. STENCIL THE WORDS "FIRE ZONE/TOW-AWAY ZONE" IN WHITE LETTERS AT LEAST 3 INCHES HIGH AT 35-FOOT INTERVALS ALONG THE CURB. ALSO, SIGNS SHALL BE POSTED AT BOTH ENDS OF A FIRE ZONE. ALTERNATE MARKING OF THE FIRE LANES MAY BE APPROVED BY THE FIRE CHIEF, PROVIDED THE FIRE LANES ARE CLEARLY IDENTIFIED AT BOTH ENDS AND AT INTERVALS NOT TO EXCEED 35 FEET. SEC. 901.4.2
3. ALL PARKING SPACES SHALL HAVE MINIMUM 7'-0" VERTICAL CLEARANCE.
4. EVERY HANDICAP ACCESSIBLE PARKING SPACE SHALL BE IDENTIFIED BY A SIGN CENTERED 5 FEET ABOVE THE PARKING SURFACE, AT THE HEAD OF THE PARKING SPACE. THE SIGN MUST INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AND STATE RESERVED, OR EQUIVALENT LANGUAGE. SUCH SIGNS SHALL NOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE AND SHALL MEET THE CRITERIA SET FORTH IN UBC, 3108(c) AND ANSI A1171-1986-4.6.2.
5. CONTRACTOR TO HAVE STAKING VERIFIED BY OWNER PRIOR TO PROCEEDING WITH CONSTRUCTION.
6. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
7. ALL RADII TO BE 3' UNLESS OTHERWISE NOTED.
8. SEE OVERALL SITE PLAN ON SHEET 9 FOR ADDITIONAL NOTES.
9. RETAINING WALLS OVER FOUR FEET IN HEIGHT MEASURED FROM THE BOTTOM OF FOOTING TO THE TOP OF THE WALL SHALL BE ENGINEERED AND REQUIRE A SEPARATE BUILDING PERMIT [IBC 105.2].
10. SCREENING FOR SOLID WASTE COLLECTION AND LOADING AREAS SHALL BE THE SAME AS, OR OF EQUAL QUALITY TO, PRINCIPAL BUILDING MATERIALS.
11. ALL STANDARD PARKING STALLS TO BE 9.0' WIDE BY 18.0' DEEP TO FACE OF CURB.
12. REFERENCE ARCHITECT FOR BUILDING DIM CONTROL.
13. THE MINIMUM SPACING REQUIRED BETWEEN DRIVEWAYS IS 275' PER PUD-ORD-2023-10.
14. ALL LIGHTING FIXTURES SHALL BE DESIGNED TO COMPLETELY CONCEAL AND FULLY SHIELD, WITHIN AN OPAQUE HOUSING, THE LIGHT SOURCE FROM VISIBILITY FROM ANY STREET RIGHT-OF-WAY. THE CONE OF LIGHT SHALL NOT CROSS ANY ADJACENT PROPERTY LINE. THE ILLUMINATION SHALL NOT EXCEED 2 FOOT CANDLES AT A HEIGHT OF THREE FEET AT THE PROPERTY LINE. ONLY INCANDESCENT, FLUORESCENT, COLOR-CORRECTED HIGH-PRESSURE SODIUM OR METAL HALIDE MAY BE USED. ALL VEHICLE OR PEDESTRIAN ACCESS SHALL BE SUFFICIENTLY LIGHTED TO ENSURE SECURITY OF PROPERTY AND PERSONS.
15. ALL TOOL, WALL AND GROUND MOUNTED MECHANICAL EQUIPMENT MUST BE SCREENED IN ACCORDANCE WITH CHAPTER 8 OF THE UDC. IF ROOF AND WALL MOUNTED EQUIPMENT OF ANY TYPE INCLUDING DUCT WORK AND LARGE VENTS IS PROPOSED IT SHALL BE SHOWN ON THE SITE PLAN AND SCREENING IDENTIFIED. SCREENING OF MECHANICAL EQUIPMENT SHALL RESULT IN THE MECHANICAL EQUIPMENT BLENDING IN WITH THE PRIMARY BUILDING AND NOT APPEARING SEPARATE FROM THE BUILDING AND SHALL E SCREENED FROM VIEW OF ANY RIGHTS-OF-WAY OR ADJOINING PROPERTIES.
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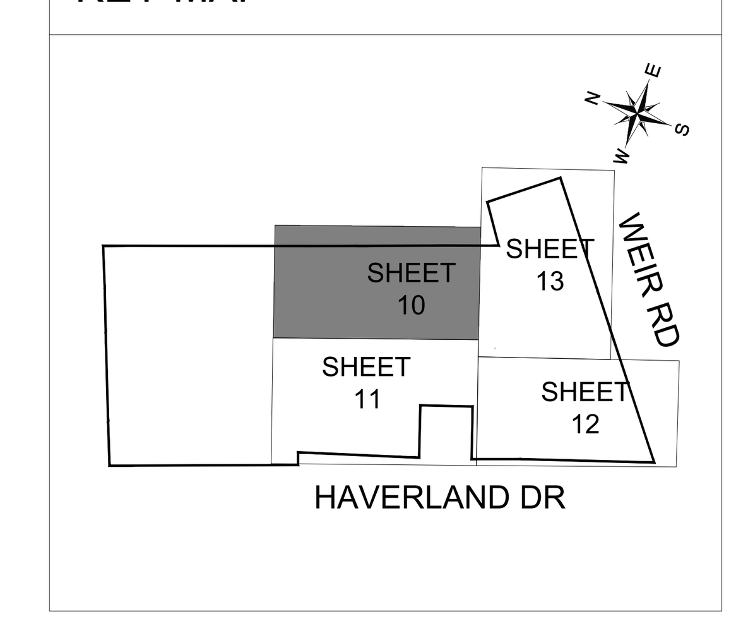
KEY MAP SCALE: 1:500



BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

Know what's below. Call before you dig.

No.	REVISIONS	DATE	BY

Kimley-Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley-Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date / /19

08/18/2023

KHA PROJECT	DATE	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
069264937	JULY 23	AS SHOWN	BLG	ABG	BLG

DIMENSION CONTROL PLAN (SHEET 1 OF 4)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
10 OF 102

XXXXXXXXX

MATCH LINE SEE SHEET 10

MATCH LINE SEE SHEET 12

HAVERLAND DR

BIZZEL, CAROL SUZANNE
4.16 ACRES
2007016197

ROBINSON ROYCE E & LOIS
TR OF ROYCE E & LOIS
REVOCABLE LIVING TRUST
2.51 ACRES
2002080937

UNKNOWN
1 ACRE

10' PUE

GRAPHIC SCALE 30'

LEGEND

PROPERTY LINE

PROPOSED WALL

NOTES:

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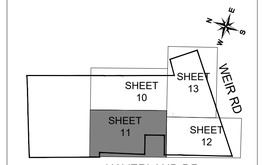
KEY MAP SCALE: 1:500



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ELEVATION=717.87

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1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

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No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
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TBPE Firm No. 928

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FOR REVIEW ONLY
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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

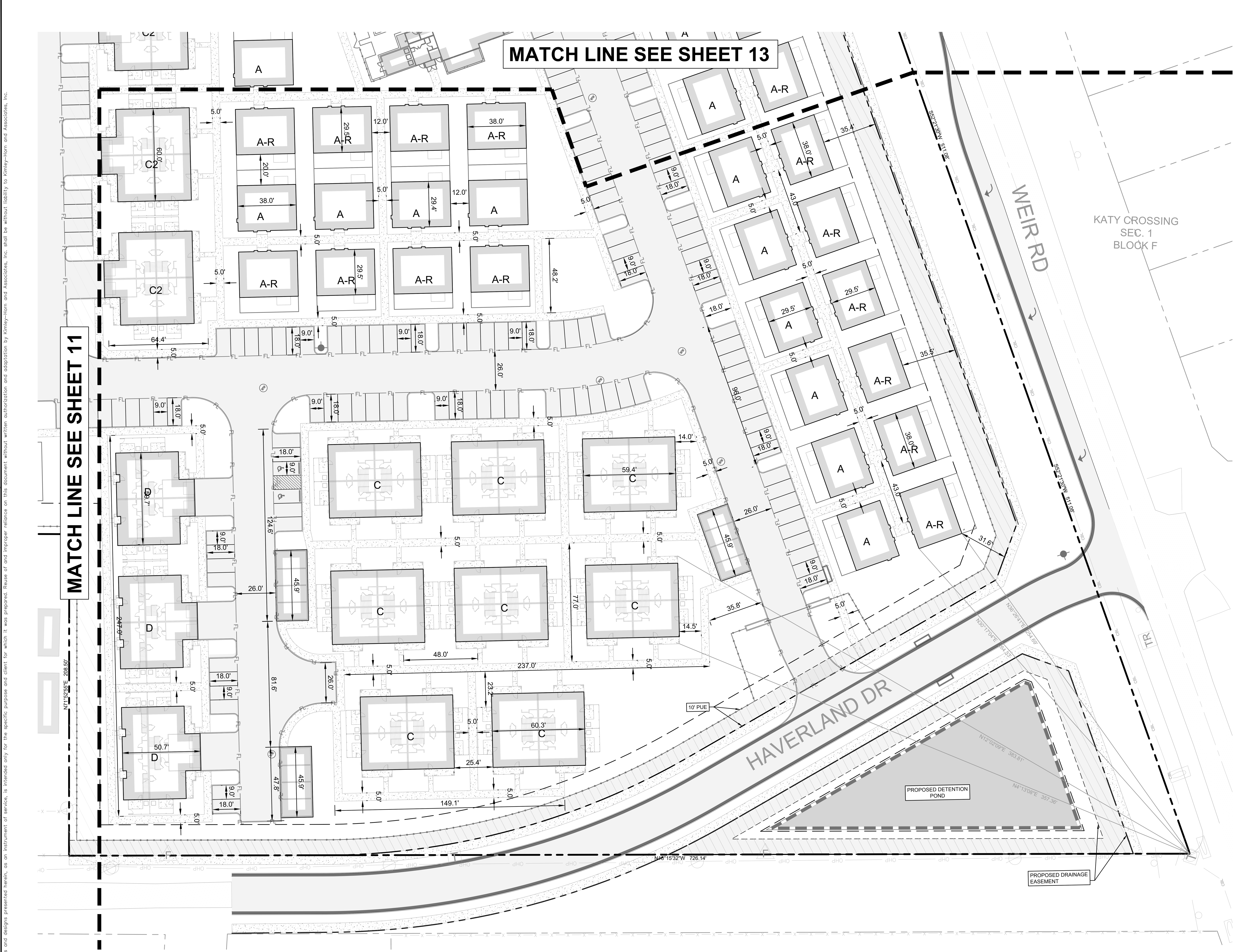
KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

DIMENSION CONTROL PLAN (SHEET 2 OF 4)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
11 OF 102

XXXXXXXXX



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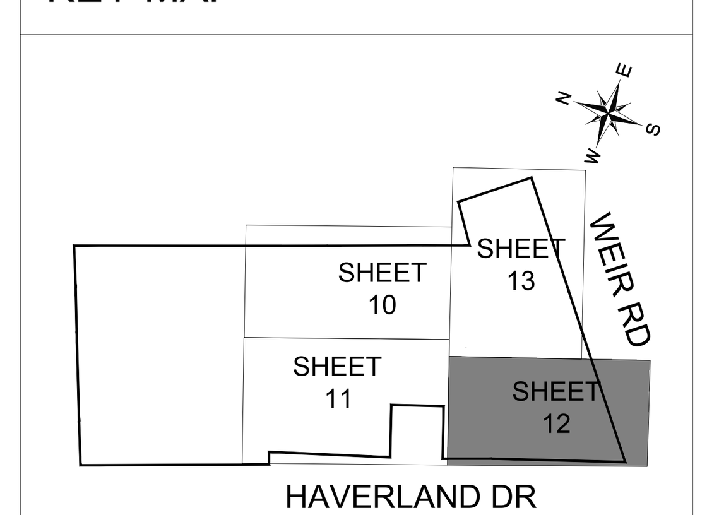

BENCHMARKS

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2. BENCHMARK 2
ELEVATION=717.87

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ELEVATION=642.70'
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ELEVATION=768.42'

811
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Call before you dig.

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Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

PRELIMINARY
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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date / /19

08/18/2023

KHA PROJECT	DATE	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
069264937	JULY 23	AS SHOWN	BLG	ABG	BLG

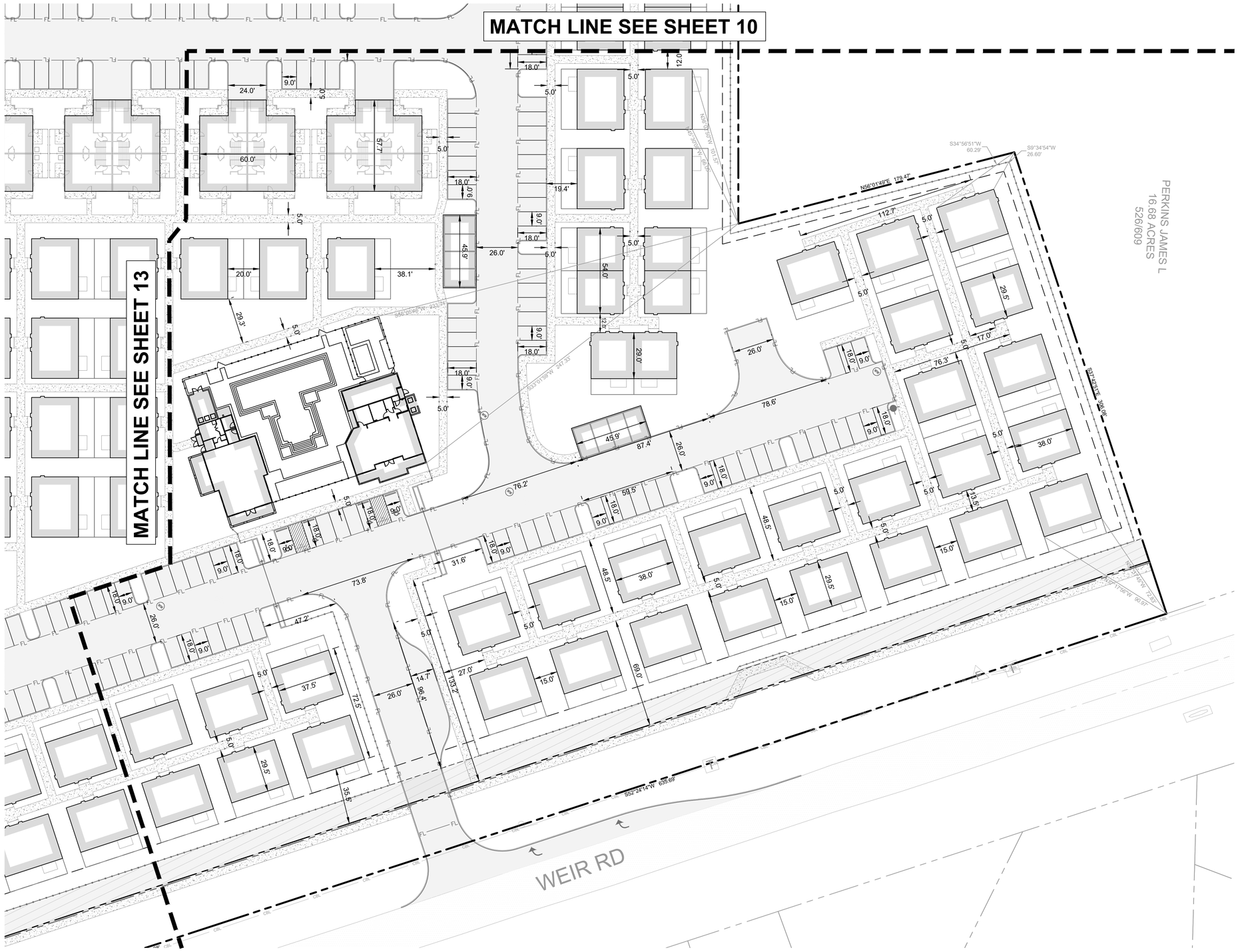
No.	REVISIONS	DATE	BY

DIMENSION CONTROL PLAN (SHEET 3 OF 4)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
12 OF 102

XXXXXXXXX



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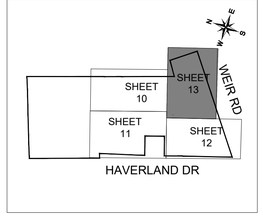
GRAPHIC SCALE 30'
0 30' 60'

LEGEND

PROPERTY LINE
PROPOSED WALL

KEY MAP SCALE: 1:500



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ELEVATION=717.87

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ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

811 Know what's below. Call before you dig.

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
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PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

KHA PROJECT 069264937		
DATE	JULY 23	
SCALE:	AS SHOWN	
DESIGNED BY:	BLG	
DRAWN BY:	ABG	
CHECKED BY:	BLG	

DIMENSION CONTROL PLAN (SHEET 4 OF 4)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
13 OF 102

XXXXXXXXX

0 60' 120'
GRAPHIC SCALE 60'

LEGEND

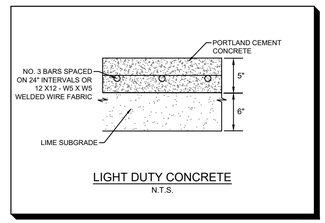
- PROPERTY LINE
- FL — PROPOSED FIRE LANE
- LIGHT DUTY CONCRETE PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED ADA STRIPING
- PROPOSED SIDEWALK
- PROPOSED WASTEWATER MANHOLE

NOTES:

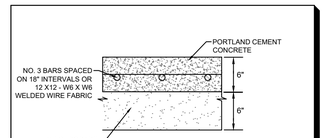
1. BLUE, BI-DIRECTIONAL REFLECTIVE PAVEMENT MARKER, ULTIMATE WET NIGHT VISIBILITY SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION AT THE CORRESPONDING ROADWAY STATION OFFSET 6" (SIX INCHES) FROM CENTER OF STREET TO THE SIDE HYDRANT IS LOCATED. AT INTERSECTIONS, MARKERS SHALL BE PLACED ON BOTH ROADWAYS ADJACENT TO HYDRANT.
2. REFERENCE GEOTECH REPORT # 20-0219 FOR DESIGN

EMRGENCY ACCESS NOTES

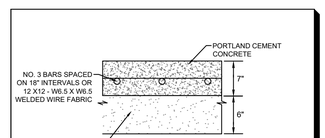
1) ACCESS DRIVES. PAVEMENT IDENTIFIED AS HEAVY DUTY SHALL BE DESIGNED TO SUPPORT THE WEIGHT OF A 75,000 POUNDS LIVE-LOAD UNDER ALL WEATHER CONDITIONS.



LIGHT DUTY CONCRETE
N.T.S.



MEDIUM DUTY CONCRETE
N.T.S.



HEAVY DUTY CONCRETE
N.T.S.

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TX REGISTERED ENGINEERING FIRM F-928

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Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

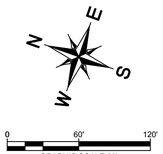
KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

PAVING PLAN

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
14 OF 102

XXXXXXXXX



LEGEND

	PROPERTY LINE
FFE=XXX.XX	PROPOSED FINISHED FLOOR ELEVATION
XXX.XX	PROPOSED TOP GRADE / TOP OF PAVEMENT ELEVATION
ME XXX.XX	MATCH EXISTING ELEVATION
TG XXX.XX	PROPOSED TOP OF GRATE
TW XXX.XX	PROPOSED GRADE AT TOP OF WALL
BW XXX.XX	PROPOSED GRADE AT BOTTOM OF WALL
EW XXX.XX	PROPOSED GRADE AT END OF WALL
	PROPOSED RETAINING WALL
555	PROPOSED CONTOUR
555	EXISTING CONTOUR
	EXISTING TREE TO REMAIN
X FFE: X	BUILDING NUMBER / BUILDING FINISHED FLOOR ELEVATION

NOTES:

1. ALL PROPOSED ELEVATIONS ARE TOP OF PAVEMENT OR NATURAL GROUND UNLESS OTHERWISE NOTED.
2. ALL TOP OF WALL ELEVATIONS ARE TO TOP OF GRADE AT WALL.
3. ALL BOTTOM OF WALL ELEVATIONS ARE TO BOTTOM OF GRADE AT WALL.
4. CONTRACTOR TO VERIFY A.D.A. COMPLIANCE FOR GRADES IN ALL SIDEWALK ACCESSIBLE ROUTES, INCLUDING DRIVEWAY CROSSINGS, SHALL CONFORM TO ALL APPLICABLE A.D.A. STANDARDS: NOT EXCEED 5.0% ALONG TRAVEL PATH WITH NOT MORE THAN 2.0% CROSS SLOPE AND NOT EXCEED 2.0% IN ANY DIRECTION IN ACCESSIBLE PARKING AREAS.
5. MAINTAIN EXISTING GRADE IN TREE WELLS. CONTRACTOR TO ENSURE POSITIVE DRAINAGE TO AREA INLETS.

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

811 Know what's **below.** **Call** before you dig.

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

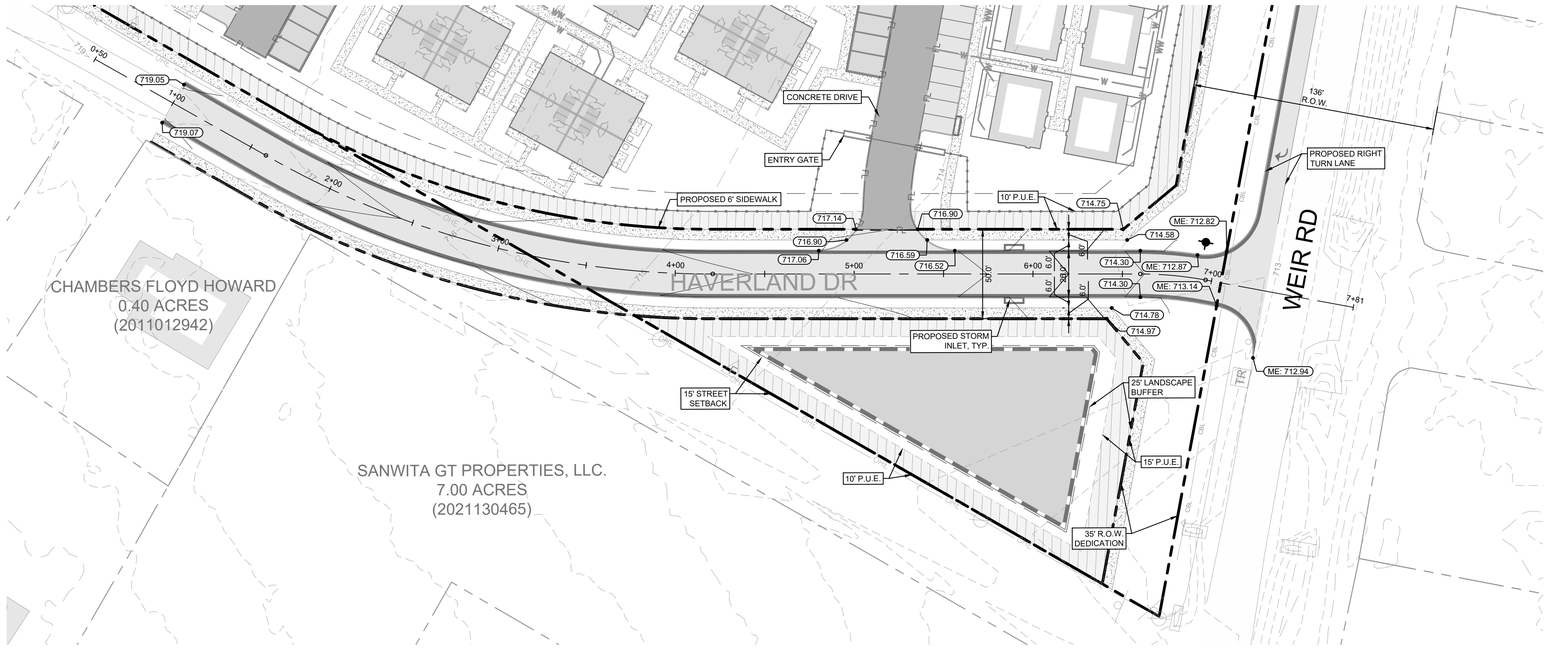
KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

OVERALL GRADING PLAN

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
15OF 102

XXXXXXXXX



0 40' 80'

GRAPHIC SCALE 40'

LEGEND

- PROPERTY LINE
- FL — PROPOSED FIRE LANE
- CONCRETE PAVEMENT (REF. GEOTECH REPORT FOR PUBLIC SECTION)
- PROPOSED SIDEWALK
- PROPOSED WASTEWATER MANHOLE
- XXX.XX — PROPOSED TOP GRADE / TOP OF PAVEMENT ELEVATION
- ME XXX.XX — MATCH EXISTING ELEVATION
- TG XXX.XX — PROPOSED TOP OF GRATE
- 555 — PROPOSED CONTOUR
- 555 — EXISTING CONTOUR

NOTES:

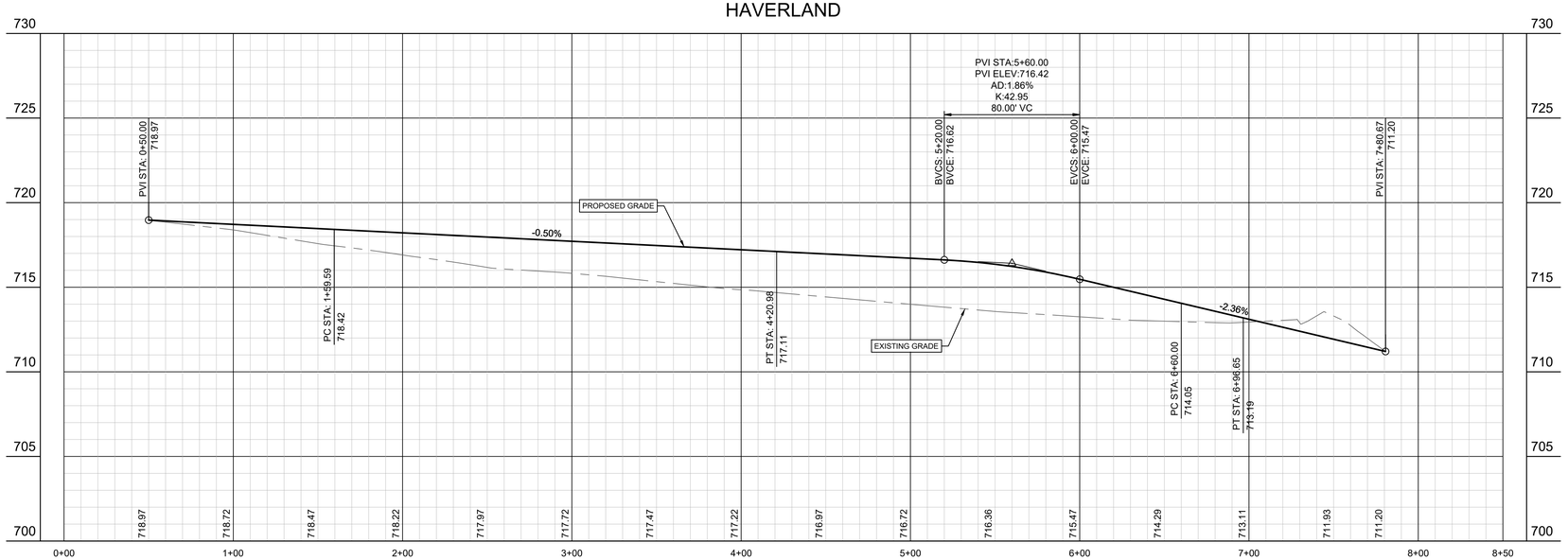
1. BLUE, BI-DIRECTIONAL REFLECTIVE PAVEMENT MARKER, ULTIMATE WET NIGHT VISIBILITY SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION AT THE CORRESPONDING ROADWAY STATION OFFSET 6" (SIX INCHES) FROM CENTER OF STREET TO THE SIDE HYDRANT IS LOCATED. AT INTERSECTIONS, MARKERS SHALL BE PLACED ON BOTH ROADWAYS ADJACENT TO HYDRANT.
2. ALL PROPOSED ELEVATIONS ARE TOP OF PAVEMENT OR NATURAL GROUND UNLESS OTHERWISE NOTED.
3. ALL TOP OF WALL ELEVATIONS ARE TO TOP OF GRADE AT WALL.
4. ALL BOTTOM OF WALL ELEVATIONS ARE TO BOTTOM OF GRADE AT WALL.
5. CONTRACTOR TO VERIFY A.D.A. COMPLIANCE FOR GRADES IN ALL SIDEWALK ACCESSIBLE ROUTES, INCLUDING DRIVEWAY CROSSINGS, SHALL CONFORM TO ALL APPLICABLE A.D.A. STANDARDS: NOT EXCEED 5.0% ALONG TRAVEL PATH WITH NOT MORE THAN 2.0% CROSS SLOPE AND NOT EXCEED 2.0% IN ANY DIRECTION IN ACCESSIBLE PARKING AREAS.
6. MAINTAIN EXISTING GRADE IN TREE WELLS. CONTRACTOR TO ENSURE POSITIVE DRAINAGE TO AREA INLETS.

EMRGENCY ACCESS NOTES

1) ACCESS DRIVES. PAVEMENT IDENTIFIED AS HEAVY DUTY SHALL BE DESIGNED TO SUPPORT THE WEIGHT OF A 75,000 POUNDS LIVE-LOAD UNDER ALL WEATHER CONDITIONS.

PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

HAVERLAND



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KHA PROJECT	069264937
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SCALE:	AS SHOWN
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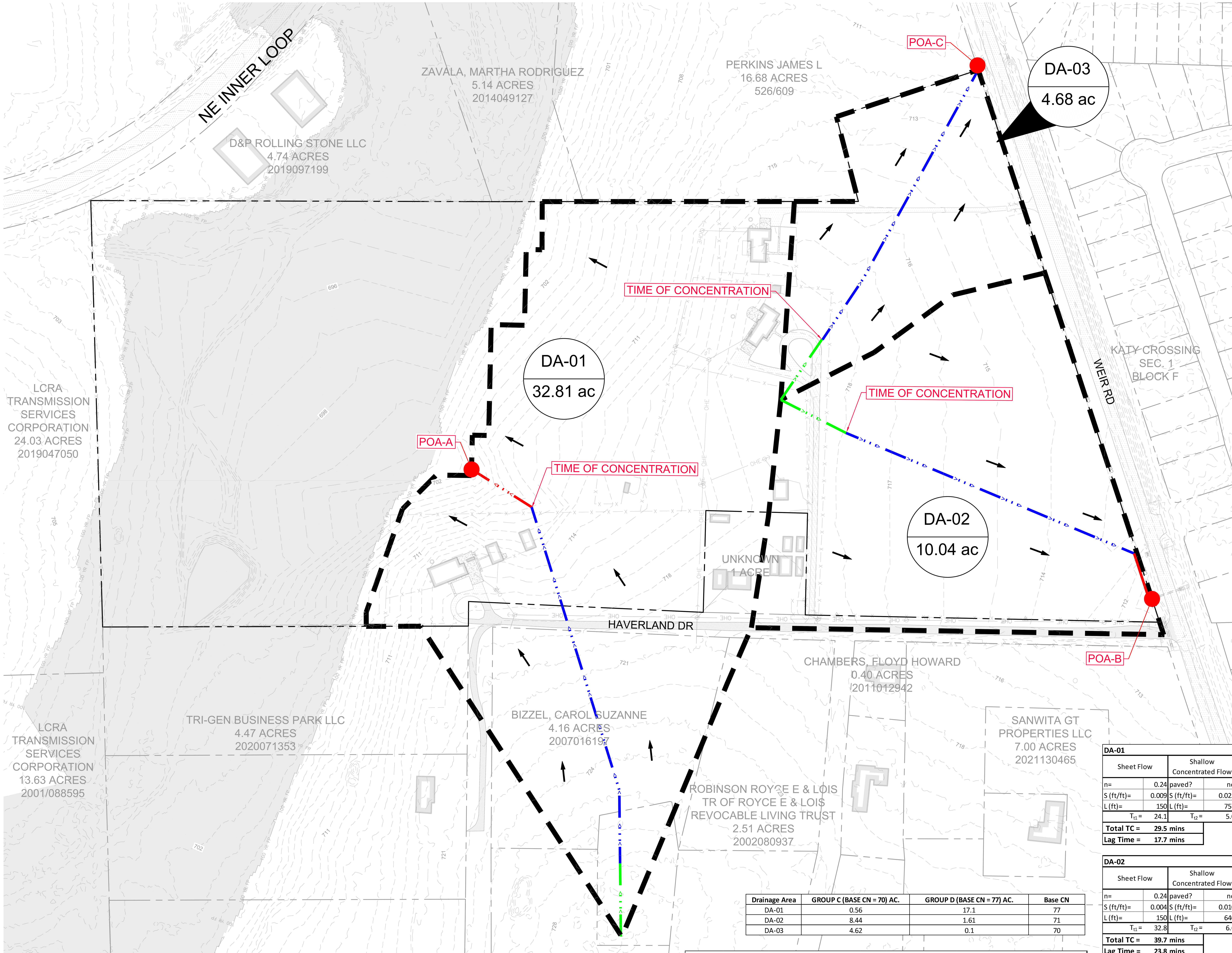
DRAWN BY:	ABG
CHECKED BY:	BLG

STREET P&P

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
16 OF 102

XXXXXXXXX



N E S W

0 100' 200'
GRAPHIC SCALE 100'

LEGEND

X-1 / 9.9 ac / 5.5 cfs	AREA DESIGNATOR AREA IN ACRES Q100 FLOW IN CFS
	PROPERTY LINE
	EXISTING STORM DRAIN LINE
	EXISTING DRAINAGE DIVIDE
	EXISTING STORM DRAIN INLET
	EXISTING STORM DRAIN MANHOLE
	EXISTING STORM DRAIN HEADWALL
	EXISTING FLOW DIRECTION
555	EXISTING CONTOUR
	SHEET FLOW
	SHALLOW CONCENTRATED FLOW
	CHANNEL FLOW
	TRANSLATION

Drainage Area	GROUP C (BASE CN = 70) AC.	GROUP D (BASE CN = 77) AC.	Base CN
DA-01	0.56	17.1	77
DA-02	8.44	1.61	71
DA-03	4.62	0.1	70

EXISTING CONDITIONS

DRAINAGE AREA	AREA (AC.)	IMPERVIOUS COVER (%)	IMPERVIOUS COVER (AC)	BASE CN	Composite CN	TC (MIN)	Q_2 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{100} (CFS)
DA-01	17.65	4.9%	0.86	77	78	29.5	21.71	47.09	63.14	87.22
POA-A							**21.71**	**47.09**	**63.14**	**87.22**
DA-02	10.04	4.6%	0.46	71	72	39.7	7.15	18.04	25.46	36.82
POA-B							**7.15**	**18.04**	**25.46**	**36.82**
DA-03	4.68	4.5%	0.21	70	71	29.3	3.65	9.40	13.27	19.32
POA-C							**3.65**	**9.40**	**13.27**	**19.32**

DA-01

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	no	v (fps)=	6
S (ft/ft)=	0.009	S (ft/ft)=	0.025	L (ft)=	145
L (ft)=	150	L (ft)=	757		
T_{t1} =	24.1	T_{t2} =	5.0	T_{t3} =	0.4

Total TC = 29.5 mins
Lag Time = 17.7 mins

DA-02

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	no	v (fps)=	6
S (ft/ft)=	0.004	S (ft/ft)=	0.010	L (ft)=	93
L (ft)=	150	L (ft)=	640		
T_{t1} =	32.8	T_{t2} =	6.6	T_{t3} =	0.3

Total TC = 39.7 mins
Lag Time = 23.8 mins

DA-03

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	no	v (fps)=	3
S (ft/ft)=	0.009	S (ft/ft)=	0.012	L (ft)=	0
L (ft)=	150	L (ft)=	638		
T_{t1} =	23.4	T_{t2} =	6.0	T_{t3} =	0.0

Total TC = 29.3 mins
Lag Time = 17.6 mins

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ELEVATION=717.87

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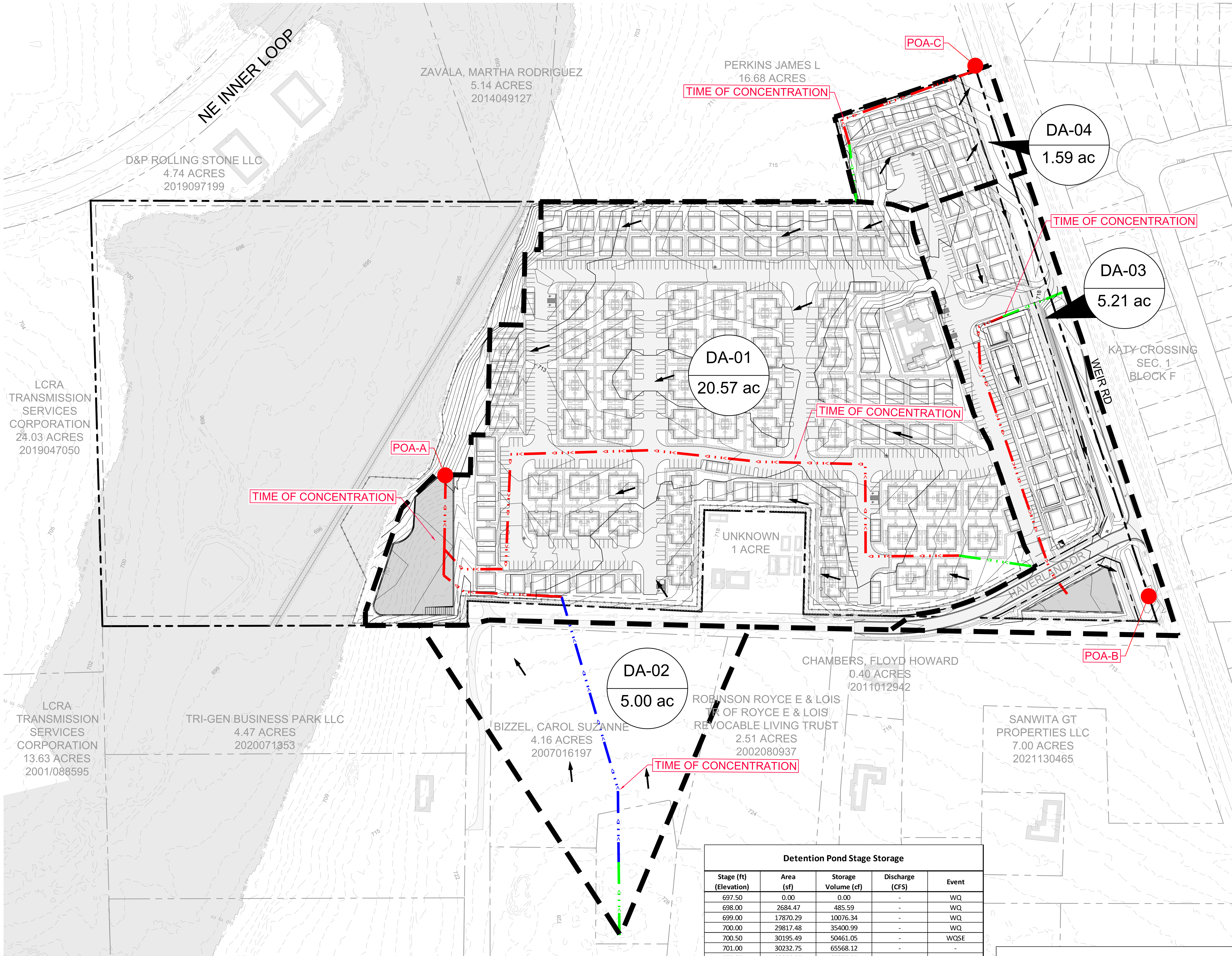
P.E. No. 132190 Date 09/22/2023

KHA PROJECT 069264937
DATE 09/22/2023
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

EXISTING DRAINAGE AREA MAP

HAVERLAND BTR
1015 FM 971,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
28 OF 123



GRAPHIC SCALE 100'

LEGEND

- AREA DESIGNATOR / AREA IN ACRES / Q100 FLOW IN CFS (X-1, 9.9 ac, 5.5 cfs)
- INLET NUMBER (A-1)
- PROPERTY LINE
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- PROPOSED DRAINAGE DIVIDE
- PROPOSED STORM DRAIN INLET
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN HEADWALL
- PROPOSED FLOW DIRECTION
- PROPOSED CONTOUR
- EXISTING CONTOUR
- SHEET FLOW
- SHALLOW CONCENTRATED FLOW
- CHANNEL FLOW
- TRANSLATION

Drainage Area	GROUP C (PROPOSED CN = 70) AC.	GROUP C (PROPOSED CN = 77) AC.	Base CN
DA-01	7.59	13.0	74
DA-02	0.00	5.0	77
DA-03	4.44	1.5	72
DA-04	2.77	0.0	70

PROPOSED CONDITIONS

DRAINAGE AREA	AREA (AC.)	IMPERVIOUS COVER (%)	IMPERVIOUS COVER (AC)	BASE CN	Composite CN	TC (MIN)	Q_2 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{100} (CFS)
DA-01	20.57	55.2%	11.35	74	87	21.8	53.14	80.71	100.74	131.28
DA-02	5.00	3.4%	0.17	77	78	29.1	6.10	13.39	17.99	24.92
POA-A							**21.00**	**30.08**	**35.22**	**85.76**
DA-03	5.96	43.0%	2.56	72	83	11.4	12.57	22.02	27.78	36.91
POA-B							**7.04**	**17.88**	**24.55**	**34.58**
DA-04	1.59	43.3%	0.69	70	82	15.2	3.24	5.87	7.49	10.10
POA-C							**3.24**	**5.87**	**7.49**	**10.10**

DA-01

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	no	v (fps)=	6
S (ft/ft)=	0.020	S (ft/ft)=	0.020	L (ft)=	1655
L (ft)=	150	L (ft)=	0		
T_{t1} =	17.2	T_{t2} =	0.0	T_{t3} =	4.6

Total TC = 21.8 mins
Lag Time = 13.1 mins

DA-03

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	yes	v (fps)=	6
S (ft/ft)=	0.020	S (ft/ft)=	0.020	L (ft)=	639
L (ft)=	72	L (ft)=	0		
T_{t1} =	9.6	T_{t2} =	0.0	T_{t3} =	1.8

Total TC = 11.4 mins
Lag Time = 6.8 mins

DA-02

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	no	v (fps)=	6
S (ft/ft)=	0.009	S (ft/ft)=	0.019	L (ft)=	472
L (ft)=	150	L (ft)=	491		
T_{t1} =	24.1	T_{t2} =	3.7	T_{t3} =	1.3

Total TC = 29.1 mins
Lag Time = 17.5 mins

DA-04

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	yes	v (fps)=	6
S (ft/ft)=	0.020	S (ft/ft)=	0.020	L (ft)=	345
L (ft)=	118	L (ft)=	0		
T_{t1} =	14.2	T_{t2} =	0.0	T_{t3} =	1.0

Total TC = 15.2 mins
Lag Time = 9.1 mins

EXISTING VS. PROPOSED SUMMARY

POINT OF ANALYSIS	Q_2 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{100} (CFS)
POA-A (EXISTING)	21.71	47.09	63.14	87.22
POA-A (PROPOSED)	21.00	30.08	35.22	85.76
POA-A DIFFERENCE (CFS)	**0.71**	**17.01**	**27.92**	**1.46**
POA-B (EXISTING)	7.15	18.04	25.46	36.82
POA-B (PROPOSED)	7.04	17.88	24.55	34.58
POA-B DIFFERENCE (CFS)	**0.11**	**0.16**	**0.91**	**2.24**
POA-C (EXISTING)	3.65	9.40	13.27	19.32
POA-C (PROPOSED)	3.24	5.87	7.49	10.10
POA-C DIFFERENCE (CFS)	**0.41**	**3.53**	**5.78**	**9.22**

Detention Pond Stage Storage

Stage (ft) (Elevation)	Area (sf)	Storage Volume (cf)	Discharge (CFS)	Event
697.50	0.00	0.00	-	WQ
698.00	2684.47	485.59	-	WQ
699.00	17870.29	10076.34	-	WQ
700.00	29817.48	35400.99	-	WQ
700.50	30195.49	50461.05	-	WQSE
701.00	30232.75	65568.12	-	-
702.00	30306.87	95837.97	-	-
703.00	30380.47	126181.69	-	-
703.11	30387.80	129220.10	21.00	2-YEAR
704.00	30453.54	156598.74	-	-
705.00	30526.09	187088.59	-	-
705.34	30547.75	196249.67	30.08	10-YEAR
706.00	30598.10	217650.73	-	-
706.95	30662.46	245218.02	35.22	25-YEAR
707.00	30669.59	248284.62	-	-
708.00	30740.55	278989.73	-	-
708.15	30754.68	285139.25	85.76	100-YEAR
709.00	30810.98	309765.54	-	-
709.50	30846.00	325179.79	-	-

Detention Pond Stage Storage

Stage (ft) (Elevation)	Area (sf)	Storage Volume (cf)	Discharge (CFS)	Event
710.50	0.00	0.00	-	WQ
711.00	3769.69	628.00	-	WQ
712.00	9026.52	6838.00	-	WQSE
713.00	9041.71	15872.00	-	-
713.20	-	17859.60	7.04	2-YEAR
713.61	-	21344.40	17.88	10-YEAR
713.76	-	22651.20	24.55	25-YEAR
713.95	-	24393.60	34.58	100-YEAR
714.00	9057.89	24922.00	-	-

BENCHMARKS

TBM:
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KHA PROJECT 069264937
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DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

PROPOSED DRAINAGE AREA MAP

HAVERLAND BTR

1015 FM 971,
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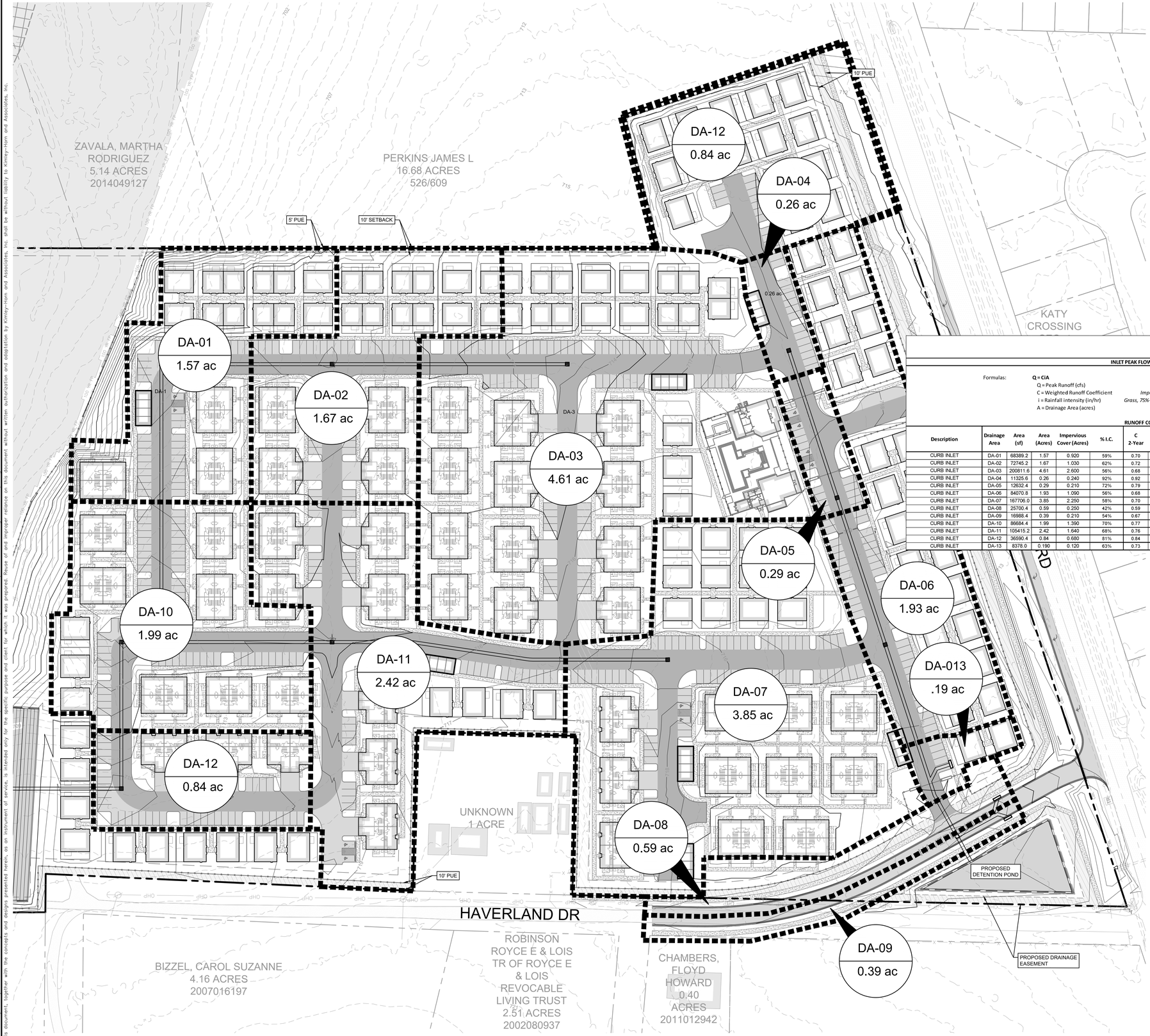

0 60' 120'
GRAPHIC SCALE 60'

LEGEND

- X-1 / 9.9 ac / 5.5 cfs — AREA DESIGNATOR, AREA IN ACRES, Q100 FLOW IN CFS
- A-1 — INLET NUMBER
- PROPERTY LINE
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- PROPOSED DRAINAGE DIVIDE
- PROPOSED STORM DRAIN INLET
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN HEADWALL
- PROPOSED FLOW DIRECTION
- 555 — PROPOSED CONTOUR
- 555 — EXISTING CONTOUR

Kimley»Horn

INLET PEAK FLOW CALCULATIONS - RATIONAL METHOD

Formulas: **Q = CiA**
Q = Peak Runoff (cfs)
C = Weighted Runoff Coefficient
i = Rainfall intensity (in/hr)
A = Drainage Area (acres)

Hydrologic Runoff Coefficients

	2 yr	10 yr	25 yr	100 yr
Impervious C (Concrete)	0.97	0.97	0.97	0.97
Grass, 75%+ Cover, 2-7% slopes	0.31	0.36	0.39	0.46

IDF Coefficients

	2 yr	10 yr	25 yr	100 yr
a	106.29	96.84	111.07	129.03
b	16.81	15.88	17.23	17.83
c	0.9076	0.7952	0.7815	0.7625

						RUNOFF COEFFICIENT (C)					RAINFALL INTENSITY (I)				PEAK RUNOFF (Q)			
Description	Drainage Area	Area (sf)	Area (Acres)	Impervious Cover (Acres)	% I.C.	C 2-Year	C 10-Year	C 25-Year	C 100-Year	Tc (min)	I 2-Year	I 10-Year	I 25-Year	I 100-Year	Q 2-Year	Q 10-Year	Q 25-Year	Q 100-Year
CURB INLET	DA-01	68389.2	1.57	0.920	59%	0.70	0.72	0.73	0.759	5.00	6.48	8.64	9.84	11.88	7.09	9.73	11.27	14.15
CURB INLET	DA-02	72745.2	1.67	1.030	62%	0.72	0.74	0.75	0.775	5.00	6.48	8.64	9.84	11.88	7.76	10.63	12.29	15.37
CURB INLET	DA-03	200811.6	4.61	2.600	56%	0.68	0.70	0.72	0.748	5.00	6.48	8.64	9.84	11.88	20.38	28.05	32.53	40.95
CURB INLET	DA-04	11325.6	0.26	0.240	92%	0.92	0.92	0.93	0.931	5.00	6.48	8.64	9.84	11.88	1.55	2.07	2.37	2.88
CURB INLET	DA-05	12632.4	0.29	0.210	72%	0.79	0.80	0.81	0.829	5.00	6.48	8.64	9.84	11.88	1.48	2.01	2.31	2.86
CURB INLET	DA-06	84070.8	1.93	1.090	56%	0.68	0.70	0.72	0.748	5.00	6.48	8.64	9.84	11.88	8.54	11.75	13.63	17.15
CURB INLET	DA-07	167706.0	3.85	2.250	58%	0.70	0.72	0.73	0.758	5.00	6.48	8.64	9.84	11.88	17.35	23.84	27.61	34.67
CURB INLET	DA-08	25700.4	0.59	0.250	42%	0.59	0.62	0.64	0.676	5.00	6.48	8.64	9.84	11.88	2.25	3.15	3.69	4.74
CURB INLET	DA-09	16988.4	0.39	0.210	54%	0.67	0.69	0.70	0.735	18.80	4.15	5.77	6.75	8.28	1.08	1.55	1.85	2.37
CURB INLET	DA-10	86684.4	1.99	1.390	70%	0.77	0.79	0.80	0.816	5.00	6.48	8.64	9.84	11.88	9.94	13.52	15.57	19.30
CURB INLET	DA-11	105415.2	2.42	1.640	68%	0.76	0.77	0.78	0.806	5.00	6.48	8.64	9.84	11.88	11.87	16.17	18.65	23.16
CURB INLET	DA-12	36590.4	0.84	0.680	81%	0.84	0.85	0.86	0.873	5.00	6.48	8.64	9.84	11.88	4.60	6.20	7.10	8.71
CURB INLET	DA-13	8378.0	0.190	0.120	63%	0.73	0.75	0.76	0.782	5.00	6.48	8.64	9.84	11.88	0.89	1.22	1.41	1.77

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INLET DRAINAGE AREA MAP

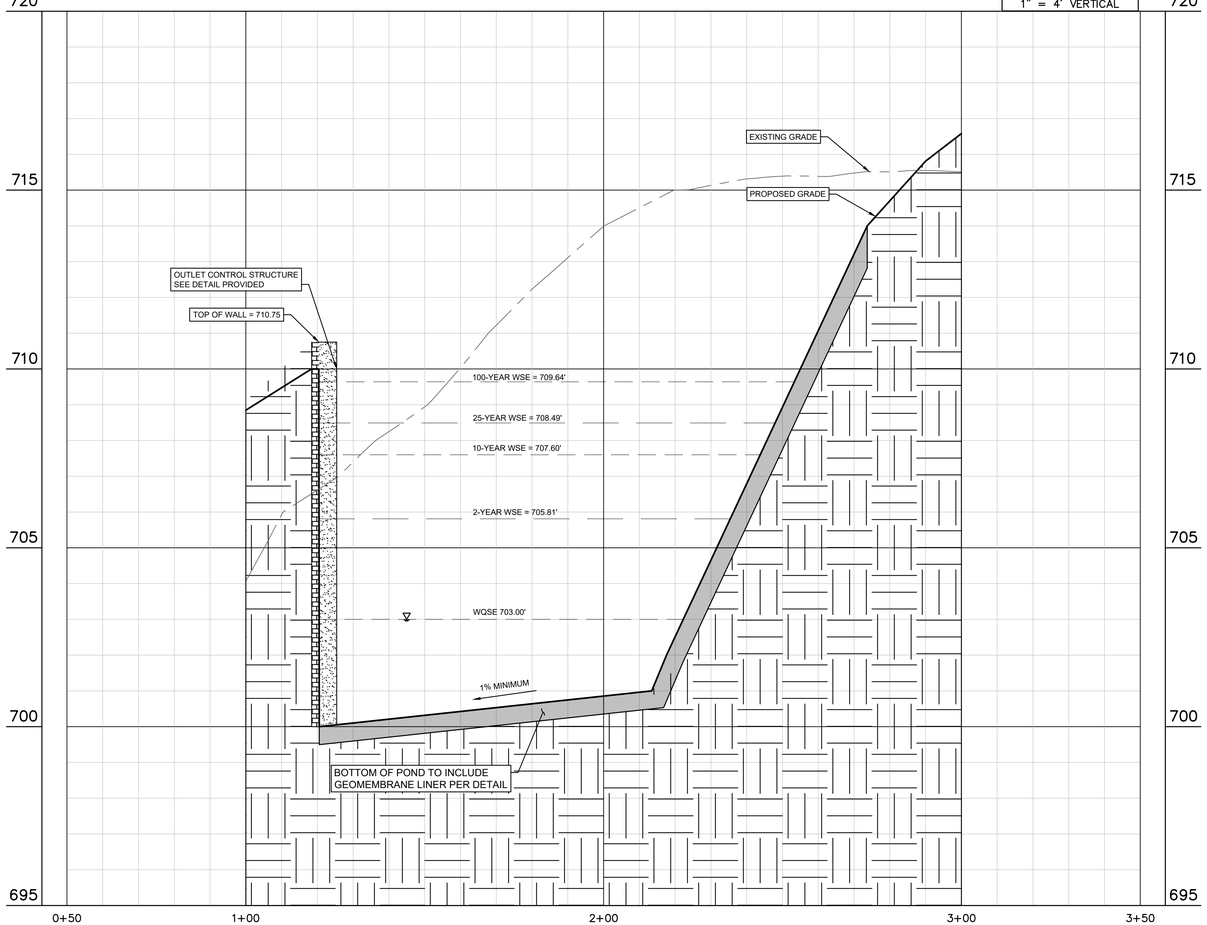
HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

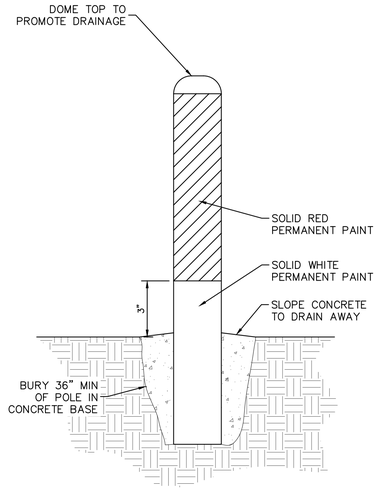
SHEET NUMBER
19 OF 102

XXXXXXXXX

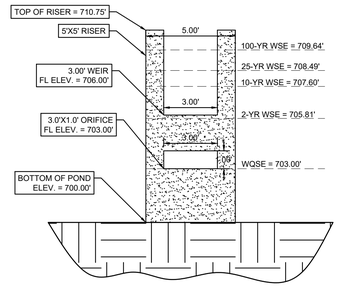
POND A

PROFILE SCALE
1" = 20' HORIZONTAL
1" = 4' VERTICAL





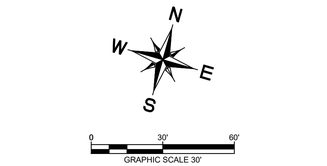
VERTICAL SEDIMENT DEPTH MARKER DETAIL
N.T.S.



OUTLET CONTROL STRUCTURE
N.T.S.

Detention Pond Stage Storage

Stage (ft) (Elevation)	Area (sf)	Storage Volume (cf)	Event
700.00	0.00	0.00	WQ
701.00	13373.34	4458.00	WQ
702.00	19653.32	20871.00	WQ
703.00	20843.79	41116.00	WQSE
704.00	22032.88	62552.00	-
705.00	23220.57	85176.00	-
705.81	-	104544.00	2-YEAR
706.00	24406.88	108987.00	-
707.00	25591.81	133984.00	-
707.60	-	149846.40	10-YEAR
708.00	26775.34	160166.00	-
708.49	-	173368.80	25-YEAR
709.00	27957.49	187530.00	-
709.64	-	205603.20	100-YEAR
710.00	29138.25	216076.00	-
710.75	29960.73	237649.00	-



LEGEND

X-1 / 9.9 ac / 5.5 cfs	AREA DESIGNATOR AREA IN ACRES Q100 FLOW IN CFS
	PROPERTY LINE
	EXISTING STORM DRAIN LINE
	EXISTING DRAINAGE DIVIDE
	EXISTING STORM DRAIN INLET
	EXISTING STORM DRAIN MANHOLE
	EXISTING STORM DRAIN HEADWALL
	EXISTING FLOW DIRECTION
555	EXISTING CONTOUR

EQUATIONS:

ORIFICE:

$Q = C \times A \ (2 \times g \times H)^{1/2}$

Q = DISCHARGE (CFS)
C = ORIFICE COEFFICIENT (0.6)
H = EFFECTIVE HEAD (FT)
A = ORIFICE AREA (FT)
g = ACC. DUE TO GRAVITY (32.2 FT/S^2))

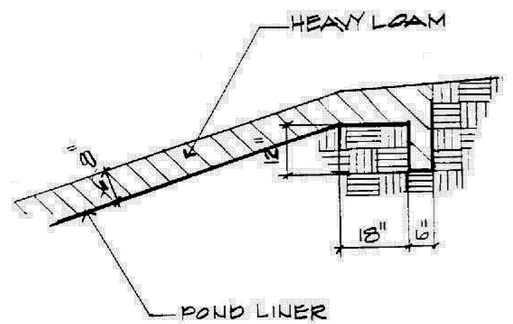
RECTANGULAR WEIR:

$Q = C \times L \times H^{3/2}$

Q = DISCHARGE (CFS)
C = WEIR COEFFICIENT (3.0)
H = HEIGHT ABOVE WEIR CREST (FT)
L = HORIZONTAL WEIR LENGTH (FT)

Property	Test Method	Unit	Specification (min)
Unit Weight		oz/yd^2	8
Filtration Rate		in/sec	0.08
Puncture Strength	ASTM D-751*	lb	125
Mullen Burst Strength	ASTM D-751	psi	400
Tensile Strength	ASTM D-1682	lb	200
Equiv. Opening Size	US Standard Sieve	No.	80

*modified



GEOMEMBRANE LINER SPECIFICATIONS AND DETAIL
N.T.S.

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TX REGISTERED ENGINEERING FIRM F-928
TBPE Firm No. 928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

KHA PROJECT 069264937	DATE JULY 23	SCALE: AS SHOWN	DESIGNED BY: BLG	DRAWN BY: ABG	CHECKED BY: BLG

POND PLAN
(SHEET 1 OF 2)

HAVERLAND BTR
170 HAVERLAND DR.
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
20OF 102

XXXXXXXXX

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Haverland
Date Prepared: 8/20/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: | Calculations from RG-348 | Pages 3-27 to 3-30

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

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	Williamson	
Total project area included in plan * =	42.53	acres
Predevelopment impervious area within the limits of the plan * =	1.36	acres
Total post-development impervious area within the limits of the plan* =	12.41	acres
Total post-development impervious cover fraction * =	0.29	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	9618	lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	20.57	acres
Predevelopment impervious area within drainage basin/outfall area =	1.17	acres
Post-development impervious area within drainage basin/outfall area =	9.78	acres
Post-development impervious fraction within drainage basin/outfall area =	0.48	
$L_{M\ THIS\ BASIN}$ =	7493	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Batch Detention
Removal efficiency = 91 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

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

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

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	20.57	acres
A_I =	9.78	acres
A_P =	10.79	acres
L_R =	10024	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	8300	lbs.
F =	0.83	

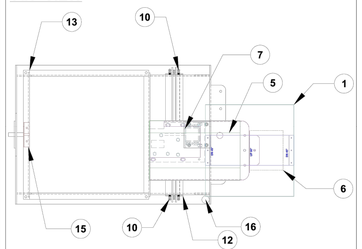
6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. | Calculations from RG-348 | Pages 3-34 to 3-36

Rainfall Depth =	1.20	inches
Post Development Runoff Coefficient =	0.34	
On-site Water Quality Volume =	30854	cubic feet

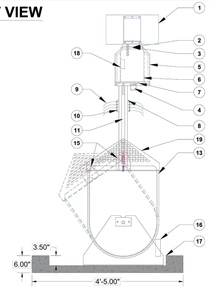
Calculations from RG-348 | Pages 3-36 to 3-37

Off-site area draining to BMP =	5.00	acres
Off-site Impervious cover draining to BMP =	0.17	acres
Impervious fraction of off-site area =	0.03	
Off-site Runoff Coefficient =	0.06	
Off-site Water Quality Volume =	1298	cubic feet
Storage for Sediment =	6430	
Total Capture Volume (required water quality volume(s) x 1.20) =	38583	cubic feet

TOP VIEW



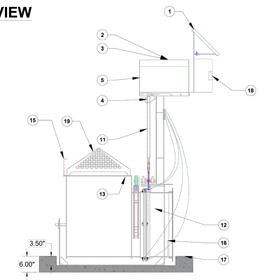
FRONT VIEW



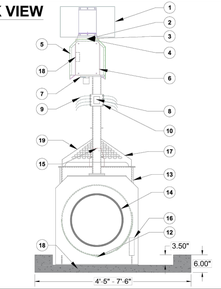
Parts List

Item	smartPOND Components
1	12 V SOLAR PANEL WITH 30 WATT CHARGING CAPACITY
2	ANTENNA (NOT DISPLAYED)
3	CELL DATA MODEM (NOT DISPLAYED)
4	CAMERA
5	LOCKABLE WEATHERPROOF ELECTRONIC BOX
6	CONTROL BOX W/ LOCKING LATCHES
7	PEDESTAL
8	REMOTE GREASE MANIFOLD
9	GREASE TUBES
10	GREASE FITTINGS
11	EXTENDED DRIVE SHAFT
12	24" Rotary Valve
13	24" Drum (30"-70" TALL)
14	Outlet Pipe (Size TBD By Engineer, Max 24")
15	Inclinometer
16	Level Transducer
17	6" Concrete Pad (By Others, Size Varies)
18	ON/OFF SWITCH
19	TRASH RACK

SIDE VIEW



BACK VIEW



NOTES:
FOR ABOVE GROUND APPLICATIONS, THE ENTIRE SYSTEM INCLUDING ALL NECESSARY COMPONENTS FOR OPERATION ASSEMBLE INTO ONE KIT AND ARE HOUSED UNDER A SINGLE LOCKABLE STEEL ENCLOSURE WITH THE SOLAR PANEL MOUNTED ON TOP. IN THIS CONFIGURATION, THE UNIT CAN BE INSTALLED ON A STABLE, LEVEL PAD AND BE BOLTED ONTO THE BACK OF THE OUTFALL PIPE WITH SIX ¾" BOLTS AND THEN SWITCHED TO THE "ON" POSITION.

FOR UNDERGROUND APPLICATIONS, THE VALVE IS INSTALLED IN A VAULT OR CONCRETE ENCASEMENT AS NEEDED. AN EXTENDED DRIVE SHAFT CONNECTS BETWEEN THE UNDERGROUND VALVE AND THE REST OF THE COMPONENTS, INCLUDING THE MOTOR AND ALL ELECTRONICS, WHICH ARE HOUSED IN THE LOCKABLE STEEL ENCLOSURE DIRECTLY ABOVE GROUND.

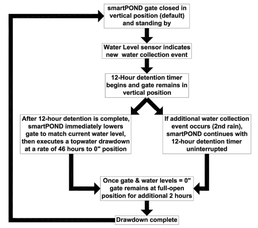
CONSTRUCTION ECO SERVICES

smartPOND Automated Stormwater Control.

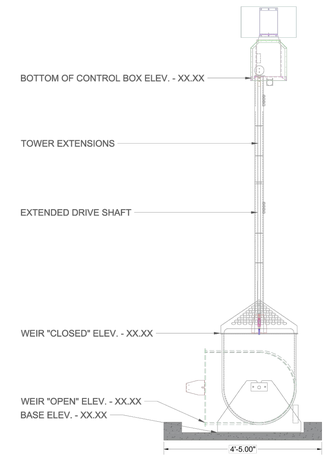
FOR ADDITIONAL INFORMATION PLEASE CONTACT: CONSTRUCTION ECO SERVICES, 832-456-1000, www.ecosvs.com

CONVERGENT WATER TECHNOLOGIES

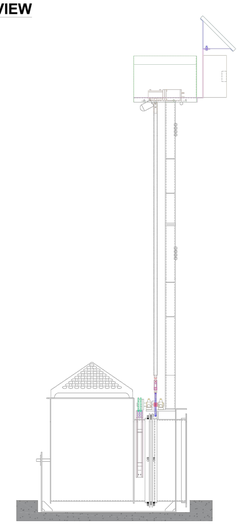
PROGRAMMABLE LOGIC FLOW CHART



FRONT VIEW



SIDE VIEW



CONSTRUCTION ECO SERVICES

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CONVERGENT WATER TECHNOLOGIES

REVISIONS | DATE | BY | No.

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TX REGISTERED ENGINEERING FIRM F-928, KIMLEY-HORN AND ASSOCIATES, INC.

TBPE Firm No. 928

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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

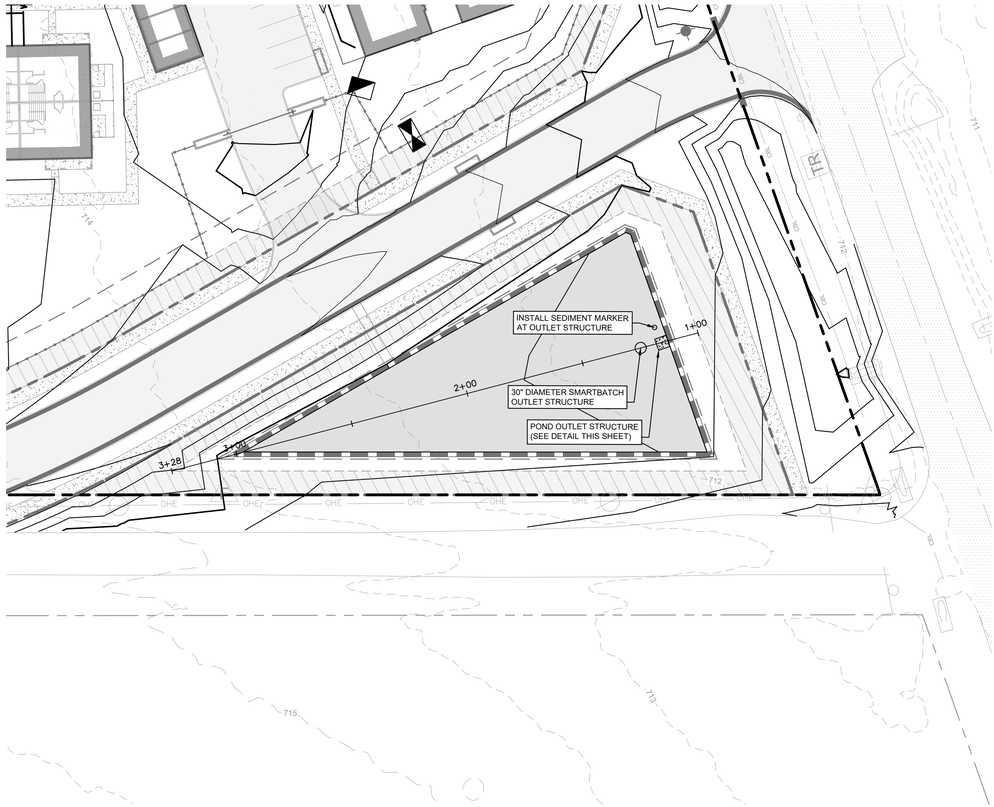
KHA PROJECT 069264937	DATE JULY 23	SCALE: AS SHOWN	DESIGNED BY: BLG	DRAWN BY: ABG	CHECKED BY: BLG

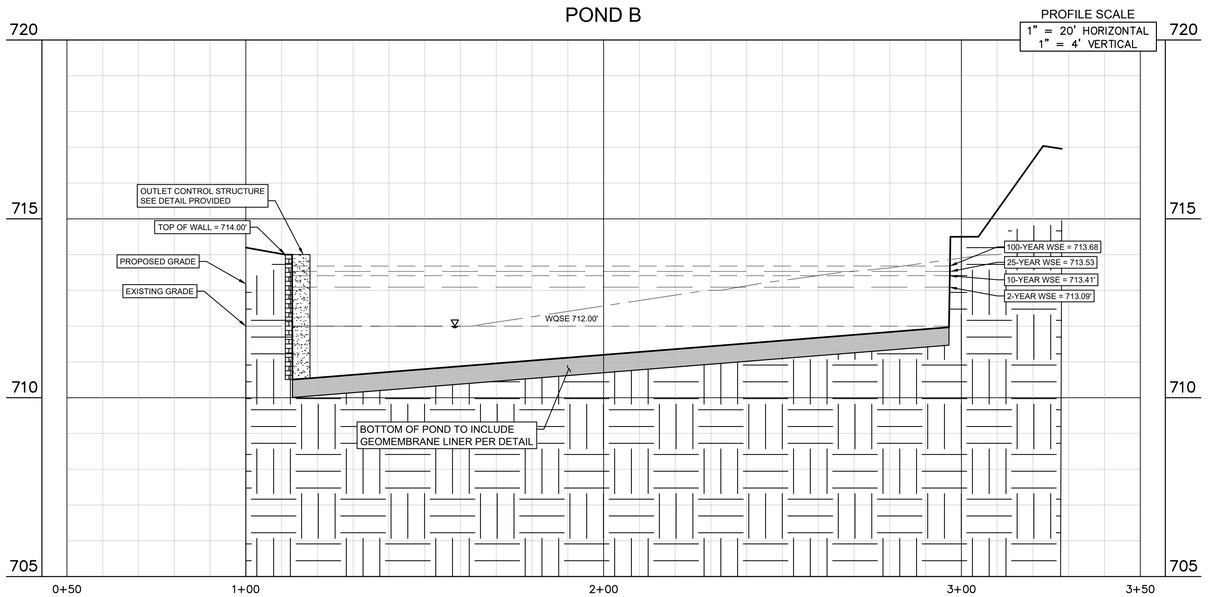
WQ DETIAL AND CALCS (SHEET 1 OF 2)

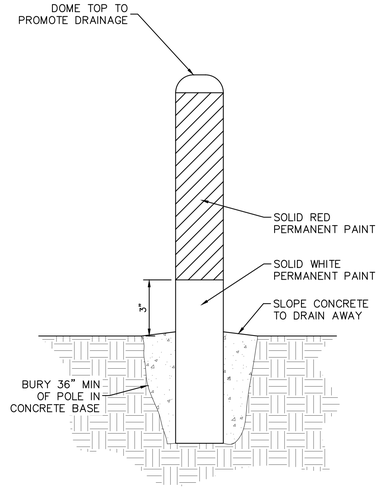
HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
21OF 102

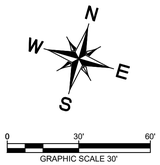
XXXXXXXXX







VERTICAL SEDIMENT DEPTH MARKER DETAIL
N.T.S.



LEGEND

X-1 / 9.9 ac / 5.5 cfs	AREA DESIGNATOR / AREA IN ACRES / Q100 FLOW IN CFS
	PROPERTY LINE
	EXISTING STORM DRAIN LINE
	EXISTING DRAINAGE DIVIDE
	EXISTING STORM DRAIN INLET
	EXISTING STORM DRAIN MANHOLE
	EXISTING STORM DRAIN HEADWALL
	EXISTING FLOW DIRECTION
555	EXISTING CONTOUR

EQUATIONS:

ORIFICE:

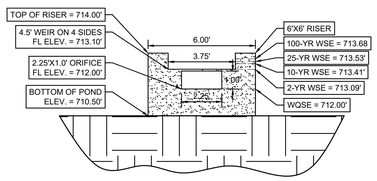
$Q = C \times A \times (2 \times g \times H)^{1/2}$

Q = DISCHARGE (CFS)
C = ORIFICE COEFFICIENT (0.6)
H = EFFECTIVE HEAD (FT)
A = ORIFICE AREA (FT)
g = ACC. DUE TO GRAVITY (32.2 FT/S^2))

RECTANGULAR WEIR:

$Q = C \times L \times H^{3/2}$

Q = DISCHARGE (CFS)
C = WEIR COEFFICIENT (3.0)
H = HEIGHT ABOVE WEIR CREST (FT)
L = HORIZONTAL WEIR LENGTH (FT)

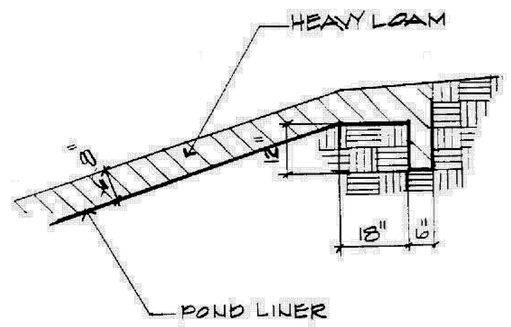


OUTLET CONTROL STRUCTURE
N.T.S.

Detention Pond Stage Storage			
Stage (ft) (Elevation)	Area (sf)	Storage Volume (cf)	Event
710.50	0.00	0.00	WQ
711.00	3769.69	628.00	WQ
712.00	9026.52	6838.00	WQSE
713.00	9041.71	15872.00	-
713.09	-	16552.80	2-YEAR
713.41	-	19602.00	10-YEAR
713.53	-	20473.20	25-YEAR
713.68	-	22215.60	100-YEAR
714.00	9057.89	24922.00	-

Property	Test Method	Unit	Specification (min)
Unit Weight		oz/yd^2	8
Filtration Rate		in/sec	0.08
Puncture Strength	ASTM D-751*	lb	125
Mullen Burst Strength	ASTM D-751	psi	400
Tensile Strength	ASTM D-1682	lb	200
Equiv. Opening Size	US Standard Sieve	No.	80

*modified



GEOMEMBRANE LINER SPECIFICATIONS AND DETAIL
N.T.S.

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
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P.E. No. 132190 Date __/__/19

08/18/2023

KHA PROJECT 069264937		SCALE:	AS SHOWN
	DATE JULY 23	DESIGNED BY:	BLG
		DRAWN BY:	ABG
		CHECKED BY:	BLG

POND PLAN
(SHEET 2 OF 2)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
22OF 102

XXXXXXXXX

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Haverland
Date Prepared: 8/20/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 — Pages 3-27 to 3-30

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

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	Williamson	
Total project area included in plan * =	42.53	acres
Predevelopment impervious area within the limits of the plan * =	1.36	acres
Total post-development impervious area within the limits of the plan* =	12.41	acres
Total post-development impervious cover fraction * =	0.29	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	9618	lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 2

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

Drainage Basin/Outfall Area No. = 2

Total drainage basin/outfall area =	5.21	acres
Predevelopment impervious area within drainage basin/outfall area =	0.19	acres
Post-development impervious area within drainage basin/outfall area =	1.97	acres
Post-development impervious fraction within drainage basin/outfall area =	0.38	
$L_{M\ THIS\ BASIN}$ =	1546	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Batch Detention
Removal efficiency = 91 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	4.89	acres
A_I =	1.97	acres
A_P =	2.92	acres
L_R =	2031	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 1546 lbs.

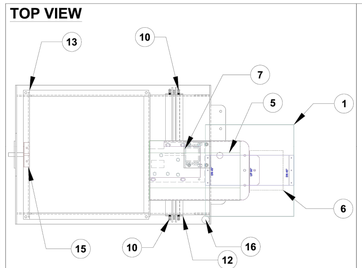
F = 0.76

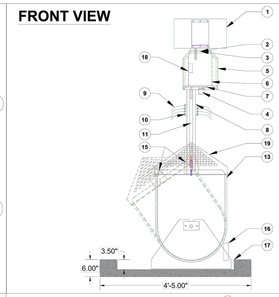
6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 — Pages 3-34 to 3-36

Rainfall Depth =	0.94	inches
Post Development Runoff Coefficient =	0.31	
On-site Water Quality Volume =	5165	cubic feet

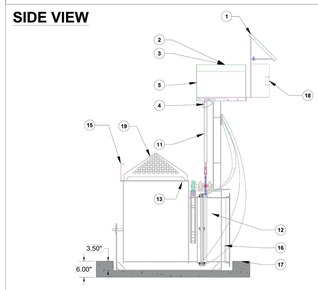
Calculations from RG-348 — Pages 3-36 to 3-37

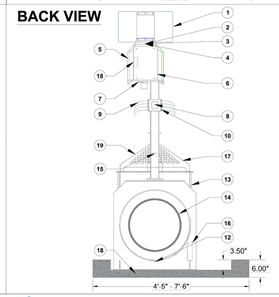
Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	1033	
Total Capture Volume (required water quality volume(s) x 1.20) =	6198	cubic feet





Item	smartPOND Components
1	12 V SOLAR PANEL WITH 30 WATT CHARGING CAPACITY
2	ANTENNA (NOT DISPLAYED)
3	CELL DATA MODEM (NOT DISPLAYED)
4	CAMERA
5	LOCKABLE WEATHERPROOF ELECTRONIC BOX
6	CONTROL BOX W/ LOCKING LATCHES
7	PEDESTAL
8	REMOTE GREASE MANIFOLD
9	GREASE TUBES
10	GREASE FITTINGS
11	EXTENDED DRIVE SHAFT
12	24" Rotary Valve
13	24" Drum (30"-70" TALL)
14	Outlet Pipe (Size TBD By Engineer, Max 24")
15	Inclinometer
16	Level Transducer
17	6" Concrete Pad (By Others, Size Varies)
18	ON/OFF SWITCH
19	TRASH RACK





NOTES:
FOR ABOVE GROUND APPLICATIONS, THE ENTIRE SYSTEM INCLUDING ALL NECESSARY COMPONENTS FOR OPERATION ASSEMBLE INTO ONE KIT AND ARE HOUSED UNDER A SINGLE LOCKABLE STEEL ENCLOSURE WITH THE SOLAR PANEL MOUNTED ON TOP. IN THIS CONFIGURATION, THE UNIT CAN BE INSTALLED ON A STABLE, LEVEL PAD AND BE BOLTED ONTO THE BACK OF THE OUTFALL PIPE WITH SIX ¾" BOLTS AND THEN SWITCHED TO THE "ON" POSITION.

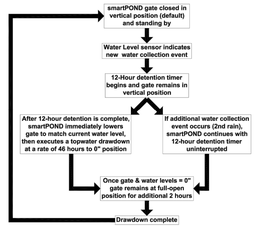
FOR UNDERGROUND APPLICATIONS, THE VALVE IS INSTALLED IN A VAULT OR CONCRETE ENCASEMENT AS NEEDED. AN EXTENDED DRIVE SHAFT CONNECTS BETWEEN THE UNDERGROUND VALVE AND THE REST OF THE COMPONENTS, INCLUDING THE MOTOR AND ALL ELECTRONICS, WHICH ARE HOUSED IN THE LOCKABLE STEEL ENCLOSURE DIRECTLY ABOVE GROUND.

CONSTRUCTION ECO SERVICES

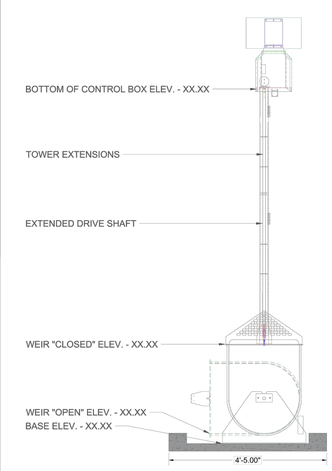
smartPOND Automated Stormwater Control.
FOR ADDITIONAL INFORMATION PLEASE CONTACT: CONSTRUCTION ECO SERVICES, 832-456-1000, www.ecosvs.com

CONVERGENT WATER TECHNOLOGIES

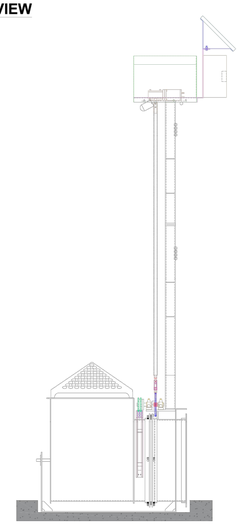
PROGRAMMABLE LOGIC FLOW CHART



FRONT VIEW



SIDE VIEW



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CONVERGENT WATER TECHNOLOGIES

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TX REGISTERED ENGINEERING FIRM F-928, KIMLEY-HORN AND ASSOCIATES, INC.

TBPE Firm No. 928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

KHA PROJECT 069264937	DATE JULY 23	SCALE: AS SHOWN	DESIGNED BY: BLG	DRAWN BY: ABG	CHECKED BY: BLG

WQ DETIAL AND CALCS (SHEET 2 OF 2)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
23OF 102

XXXXXXXXX

ZAVALA, MARTHA RODRIGUEZ
5.14 ACRES
2014049127

D&P ROLLING STONE LLC
4.74 ACRES
2019097199

LCRA TRANSMISSION SERVICES CORPORATION
24.03 ACRES
2019047050

LCRA TRANSMISSION SERVICES

UNKNOWN
1 ACRE

5' PUE

10' SETBACK

20' SETBACK

10' PUE

FEMA FLOODPLAIN

PROPOSED DETENTION POND

STA: 8+99.79 STRM-A
GRATE INLET
RIM: 711.50
↳ 42" OUT: 704.92
↳ 42" IN: 704.80

STA: 11+23.29 STRM-A
GRATE INLET
RIM: 712.97
↳ 42" OUT: 705.58
↳ 42" IN: 705.51

224 LF OF 42" HDPE @ 0.35%

308 LF OF 42" HDPE @ 0.35%

864 LF OF 42" HDPE @ 0.35%

STA: 1+00.00 STRM-B
STA: 5+35.79 STRM-A
INSTALL:
1-JUNCTION BOX
RIM: 712.51
↳ 48" OUT: 703.16
↳ 42" IN: 703.64
↳ 36" IN: 703.66

STA: 3+23.50 STRM-B
GRATE INLET
RIM: 713.97
↳ 36" OUT: 704.78
↳ 30" IN: 705.28

147 LF OF 30" HDPE @ 0.50%

224 LF OF 36" HDPE @ 0.50%

STA: 4+83.29 STRM-A
GRATE INLET
RIM: 710.55
↳ 54" OUT: 702.54
↳ 48" IN: 702.98

52 LF OF 48" HDPE @ 0.35%

101 LF OF 30" HDPE @ 0.50%

192 LF OF 54" HDPE @ 0.35%

176 LF OF 54" HDPE @ 0.35%

STA: 1+15.15 STRM-A
INSTALL:
1-HEADWALL

STA: 2+91.35 STRM-A
GRATE INLET
RIM: 715.50
↳ 54" OUT: 701.87
↳ 54" IN: 701.87

MATCH LINE SEE SHEET 25

0 60' 120'
GRAPHIC SCALE 60'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- PROPOSED STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

811 Know what's below. Call before you dig.

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TX REGISTRATION NO. F-928
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08/18/2023

KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

OVERALL STORM PLAN (SHEET 1 OF 2)

HAVERLAND BTR
170 HAVERLAND DR.
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
24 OF 102

XXXXXXXXX

0 60' 120'
GRAPHIC SCALE 60'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- PROPOSED STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
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- EXISTING FIRE HYDRANT
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ELEVATION=717.87

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Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date / /19

08/18/2023

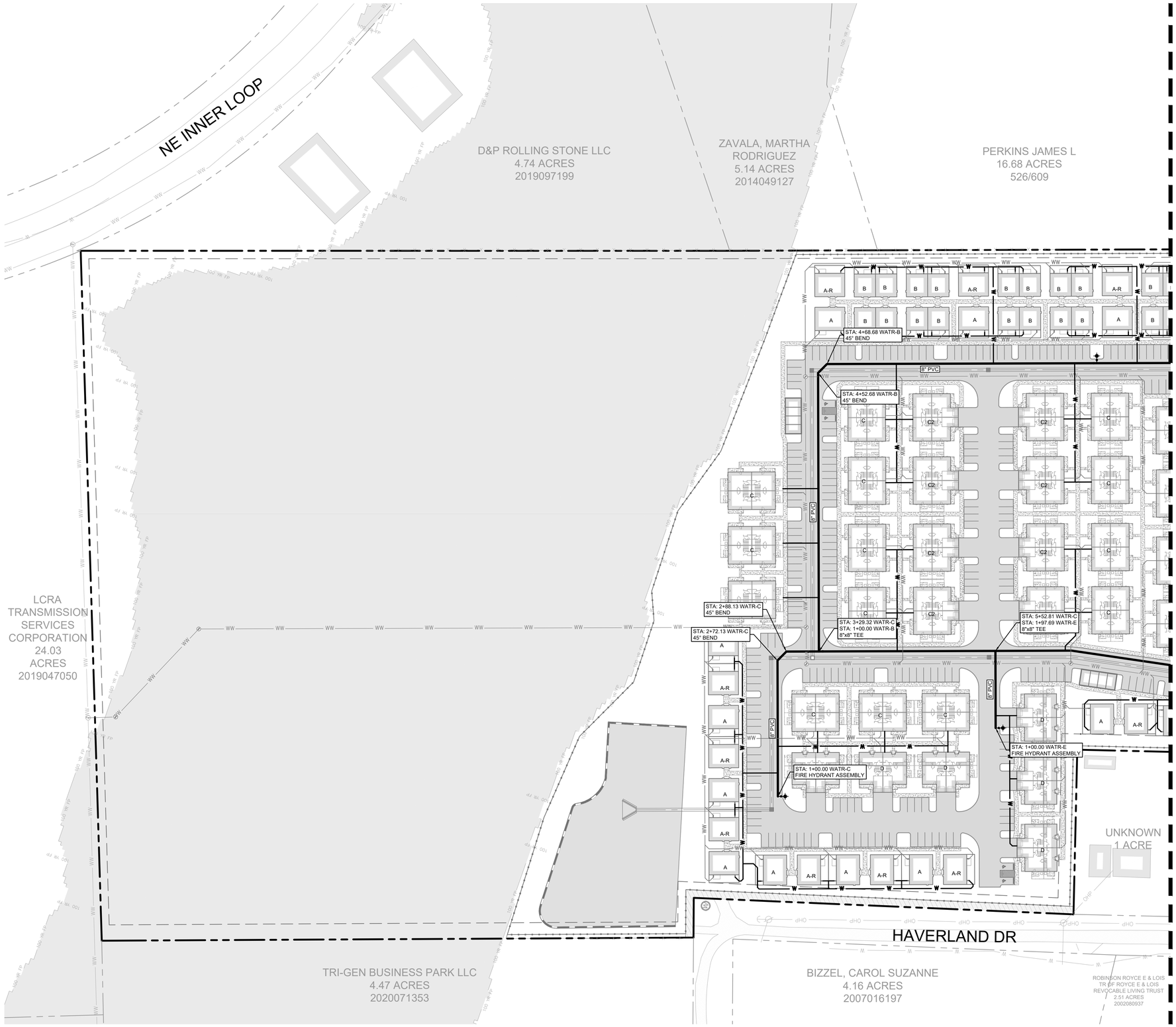
KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

OVERALL STORM (SHEET 2 OF 2)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER

XXXXXXXXX



N E S W

0 60' 120'
GRAPHIC SCALE 60'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WASTEWATER MANHOLE

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Kimley»Horn
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TEXAS REGISTERED ENGINEERING FIRM F-928
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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

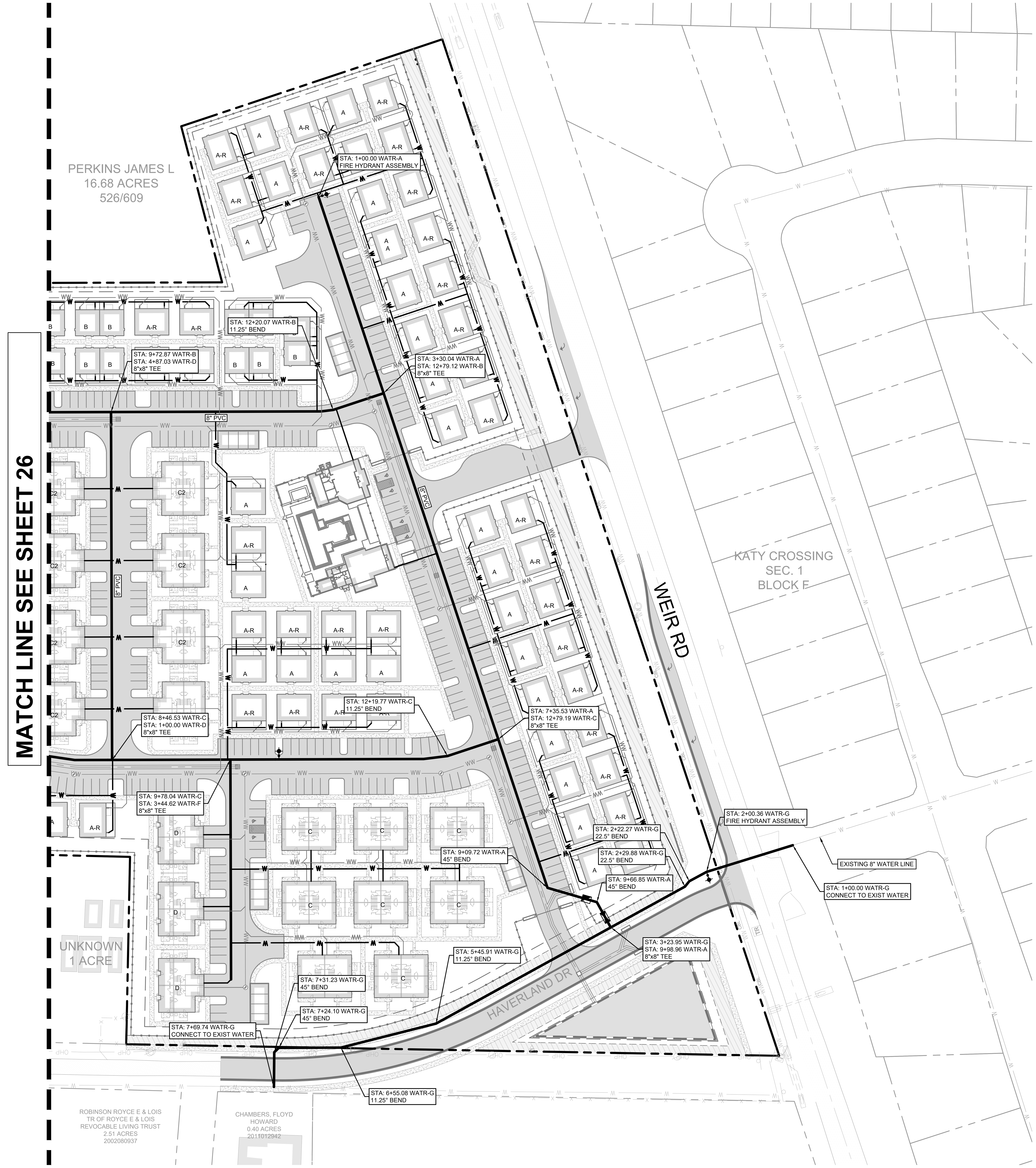
KHA PROJECT 069264937	DESIGNED BY: BLG
DATE JULY 23	DRAWN BY: ABG
SCALE: AS SHOWN	CHECKED BY: BLG

OVERALL WATER PLAN (SHEET 1 OF 2)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
26 OF 102

XXXXXXXXX

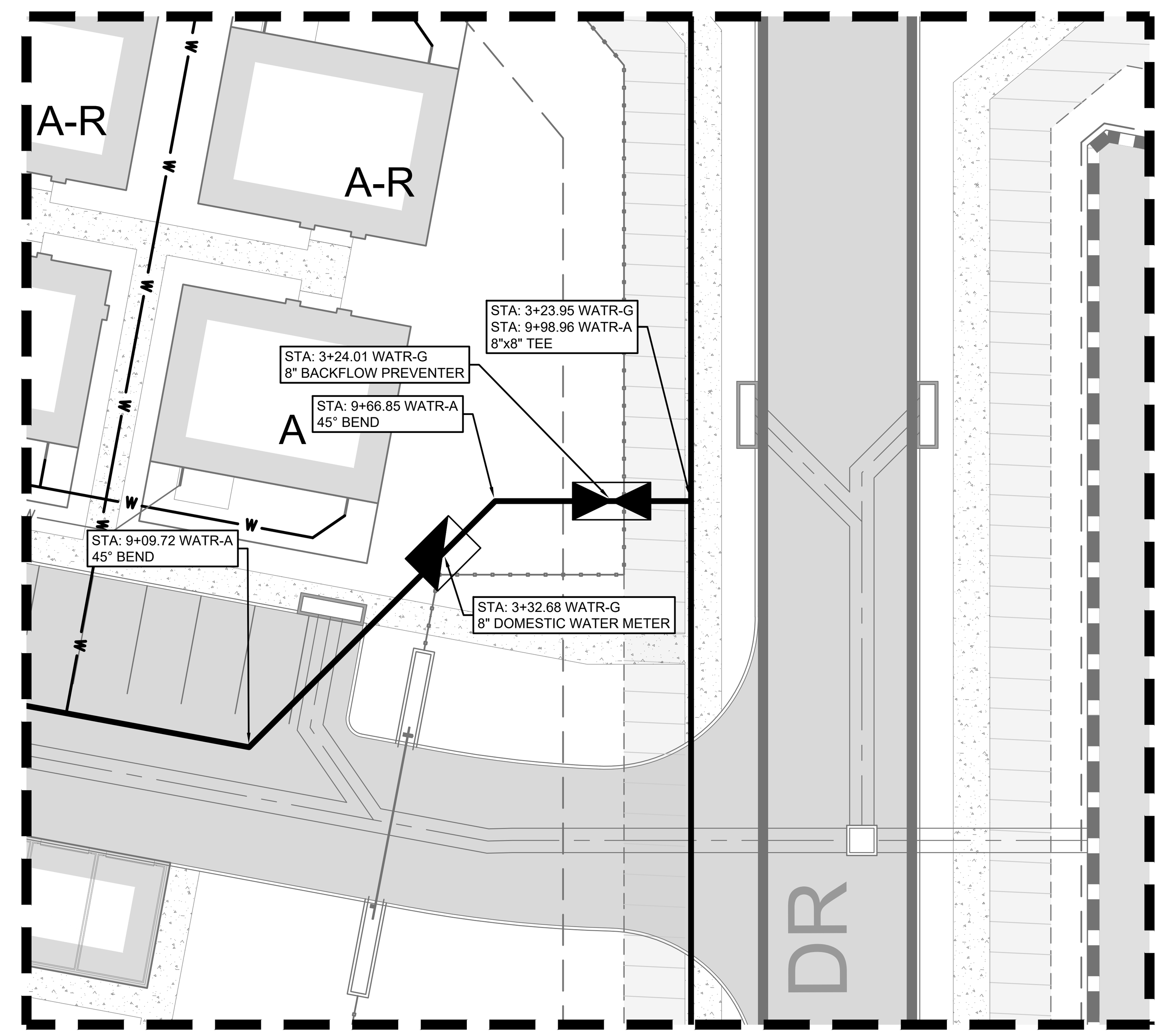


GRAPHIC SCALE 60'

0 60' 120'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WASTEWATER MANHOLE



BENCHMARKS

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2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
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ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

Know what's below. Call before you dig.

REVISIONS | No. | DATE | BY

Kimley-Horn
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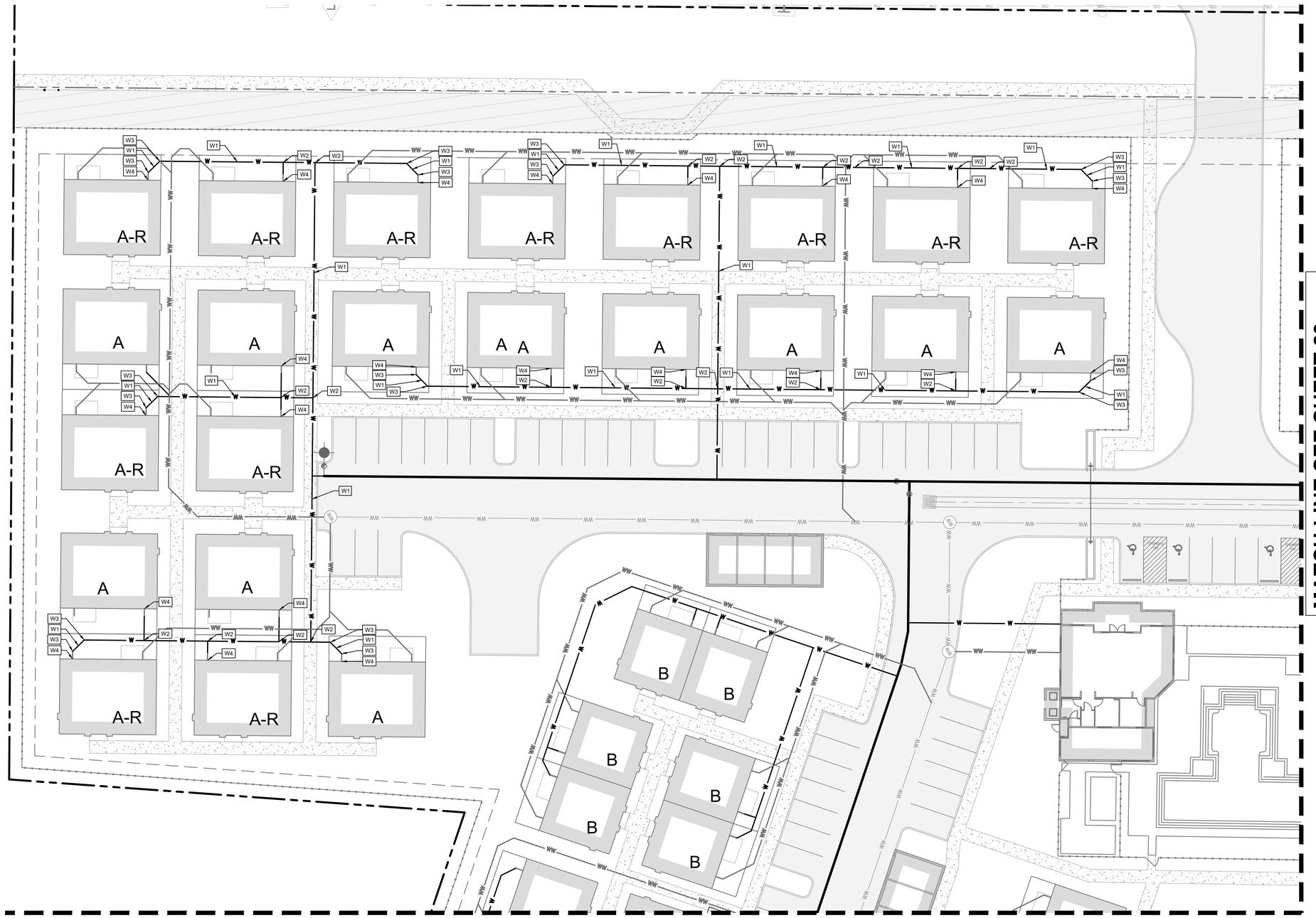
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

OVERALL WATER PLAN (SHEET 2 OF 2)

HAVERLAND BTR

170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

XXXXXXXXX



N E S W

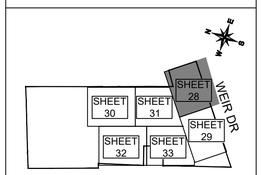
0 20' 40'
GRAPHIC SCALE 20'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WASTEWATER MANHOLE

KEY MAP

SCALE: 1:500



KEYNOTE LEGEND

W1	2" WATER LINE
W2	PROPOSED TEE
W3	PROPOSED 45° BEND
W4	SEE MEP FOR CONTINUATION

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
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ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

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P.E. No. 132190 Date / /19

08/18/2023

KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

WATER SERVICE PLAN (SHEET 1 OF 6)

HAVERLAND BTR

170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
28 OF 102

XXXXXXXXX

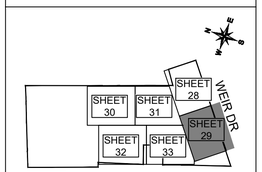
0 20' 40'
GRAPHIC SCALE 20'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WASTEWATER MANHOLE

KEY MAP

SCALE: 1:500



KEYNOTE LEGEND

W1	2" WATER LINE
W2	PROPOSED TEE
W3	PROPOSED 45° BEND
W4	SEE MEP FOR CONTINUATION

BENCHMARKS

TBM:
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KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
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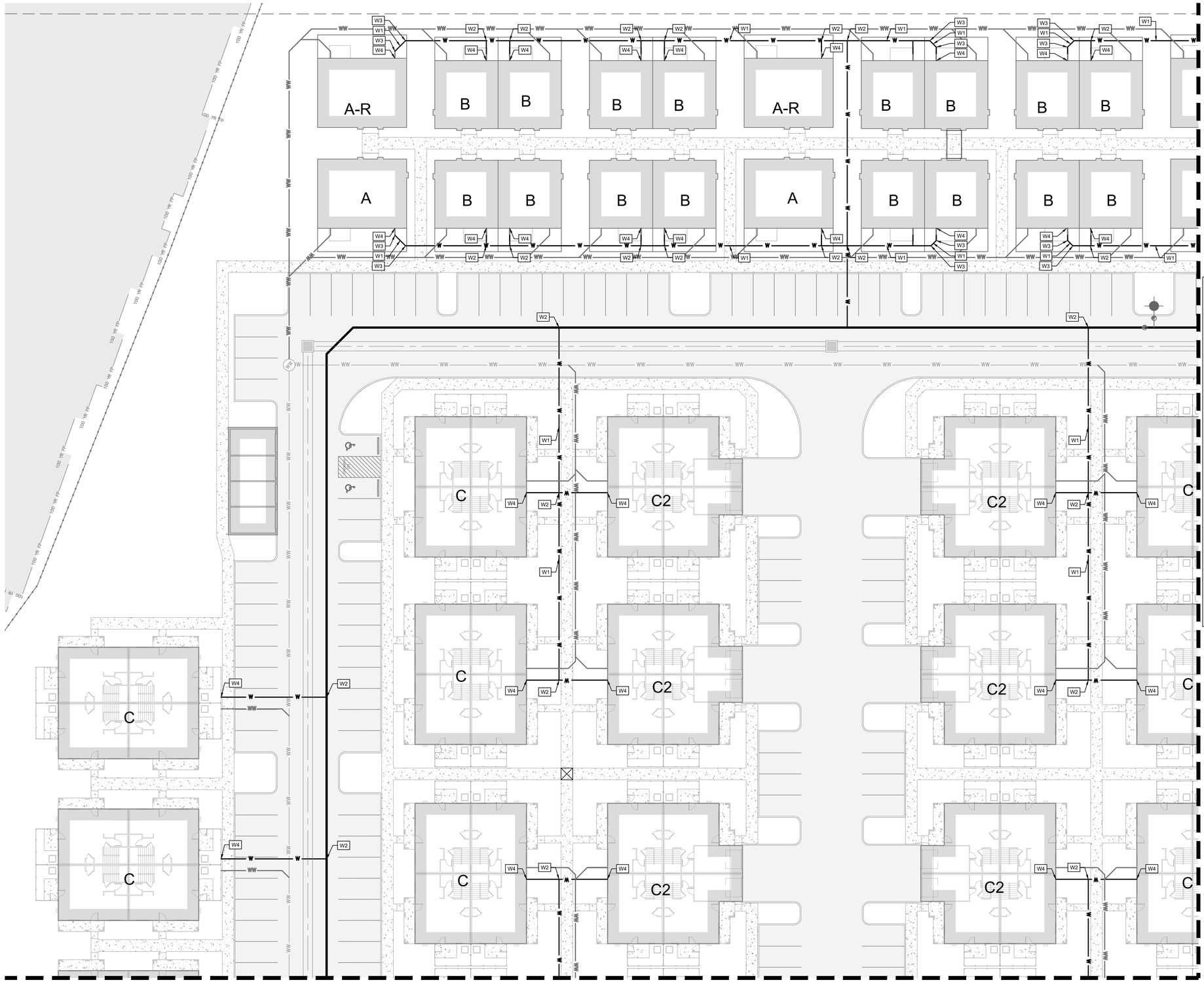
CHECKED BY: BLG

WATER SERVICE PLAN (SHEET 2 OF 6)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
29 OF 102

XXXXXXXXX



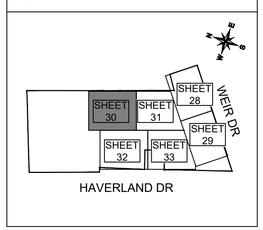
0 20' 40'
GRAPHIC SCALE 20'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WASTEWATER MANHOLE

KEY MAP

SCALE: 1:500



KEYNOTE LEGEND

W1	2" WATER LINE
W2	PROPOSED TEE
W3	PROPOSED 45° BEND
W4	SEE MEP FOR CONTINUATION

BENCHMARKS

TBM:
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ELEVATION=717.87

REFERENCE BENCHMARK:
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ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

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No.	REVISIONS	DATE	BY

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Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

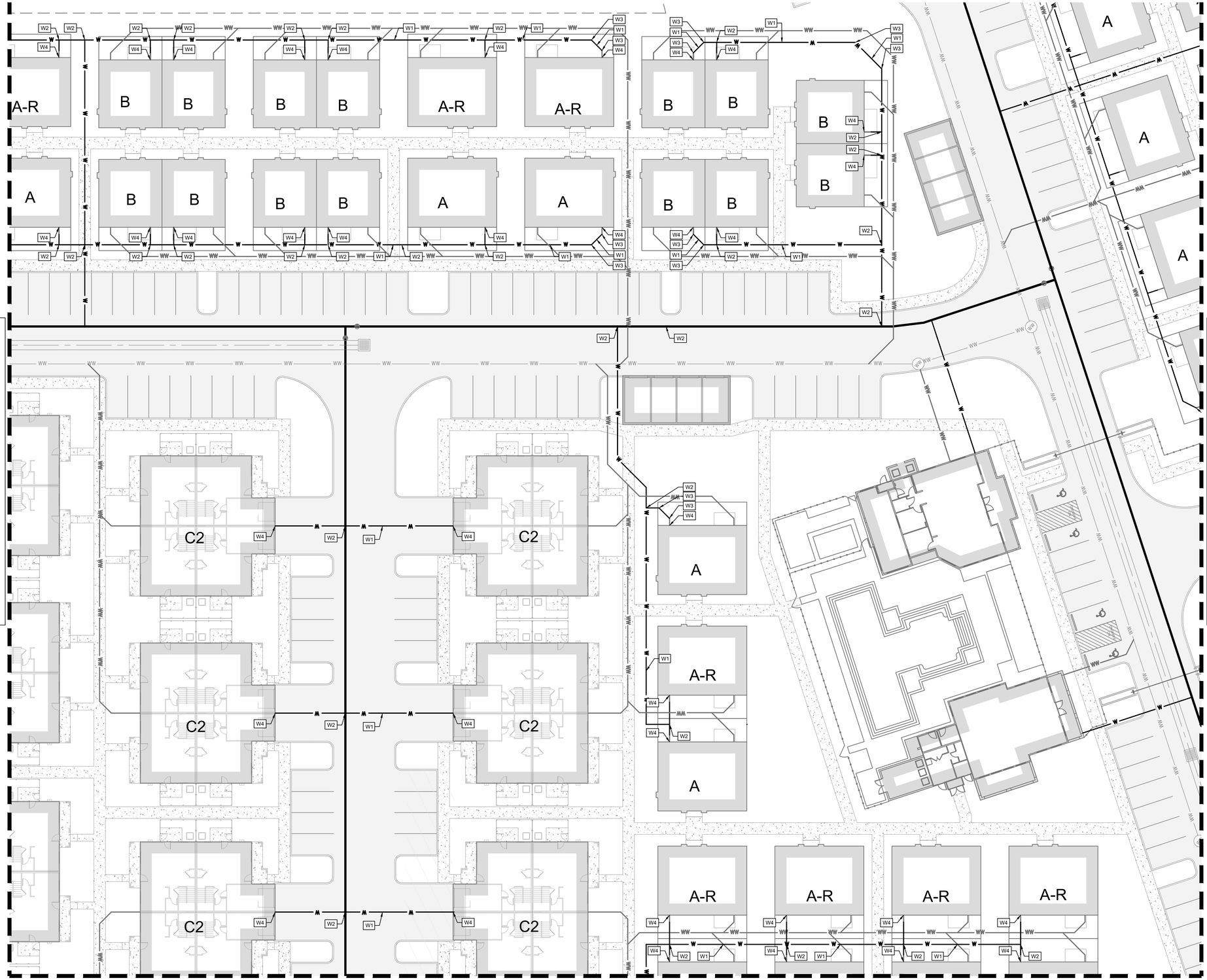
KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

WATER SERVICE PLAN (SHEET 3 OF 6)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
30 OF 102

XXXXXXXXX



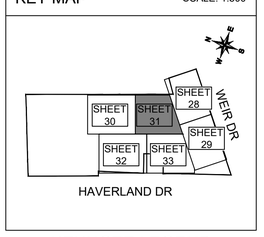
0 20' 40'
GRAPHIC SCALE 20'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WASTEWATER MANHOLE

KEY MAP

SCALE: 1:500



KEYNOTE LEGEND

W1	2" WATER LINE
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W3	PROPOSED 45° BEND
W4	SEE MEP FOR CONTINUATION

BENCHMARKS

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ELEVATION=642.70'
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ELEVATION=768.42'

811 Know what's below. Call before you dig.

No.	REVISIONS	DATE	BY

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08/18/2023

KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

WATER SERVICE PLAN (SHEET 4 OF 6)

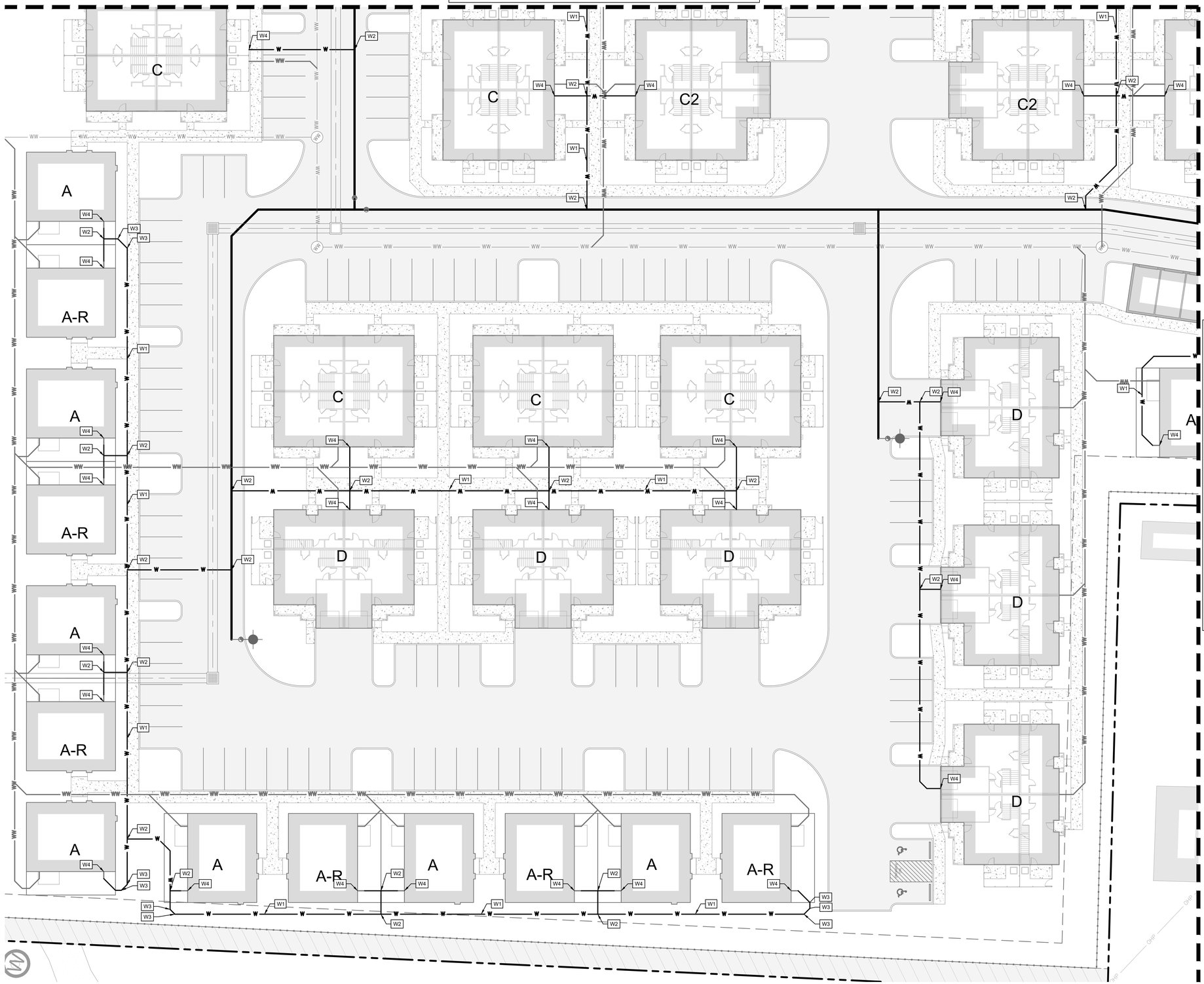
HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
31 OF 102

XXXXXXXXX

MATCH LINE SEE SHEET 30

MATCH LINE SEE SHEET 33



GRAPHIC SCALE 20'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WASTEWATER MANHOLE

KEY MAP

SCALE: 1:500

KEYNOTE LEGEND

W1	2" WATER LINE
W2	PROPOSED TEE
W3	PROPOSED 45° BEND
W4	SEE MEP FOR CONTINUATION

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

811 Know what's **below.** **Call** before you dig.

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TX REGISTERED ENGINEERING FIRM F-928
TBPE Firm No. 928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

WATER SERVICE PLAN (SHEET 5 OF 6)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
32 OF 102

XXXXXXXXX

GRAPHIC SCALE 20'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING WASTEWATER MANHOLE

KEY MAP

SCALE: 1:500

HAVERLAND DR

KEYNOTE LEGEND

W1	2" WATER LINE
W2	PROPOSED TEE
W3	PROPOSED 45° BEND
W4	SEE MEP FOR CONTINUATION

BENCHMARKS

TBM:
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ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
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ELEVATION=642.70'
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ELEVATION=768.42'

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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

KHA PROJECT	DATE	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
069264937	JULY 23	AS SHOWN	BLG	ABG	BLG

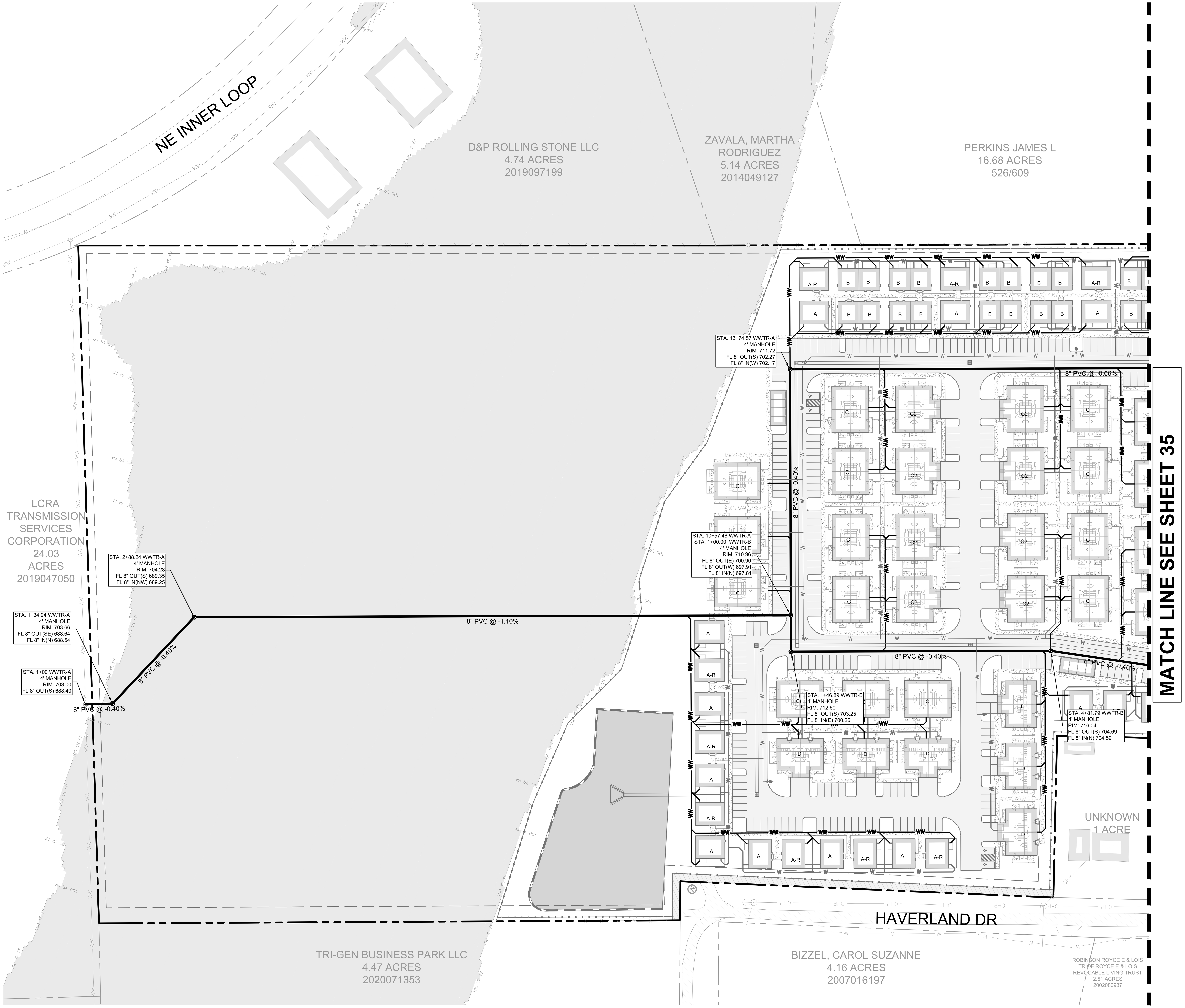
WATER SERVICE PLAN (SHEET 6 OF 6)

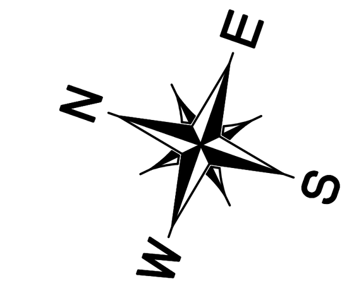
HAVERLAND BTR

170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
33 OF 102

XXXXXXXXX





0 60' 120'
GRAPHIC SCALE 60'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER CLEANOUT
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

Know what's below.
Call before you dig.

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TBPE Firm No. 928

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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date / /19

08/18/2023

KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

OVERALL WASTEWATER PLAN (SHEET 1 OF 2)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
34 OF 102

XXXXXXXXX

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER CLEANOUT
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

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Kimley»Horn
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PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TX REGISTRATION NO. F-928
TBPE Firm No. 928

PRELIMINARY
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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

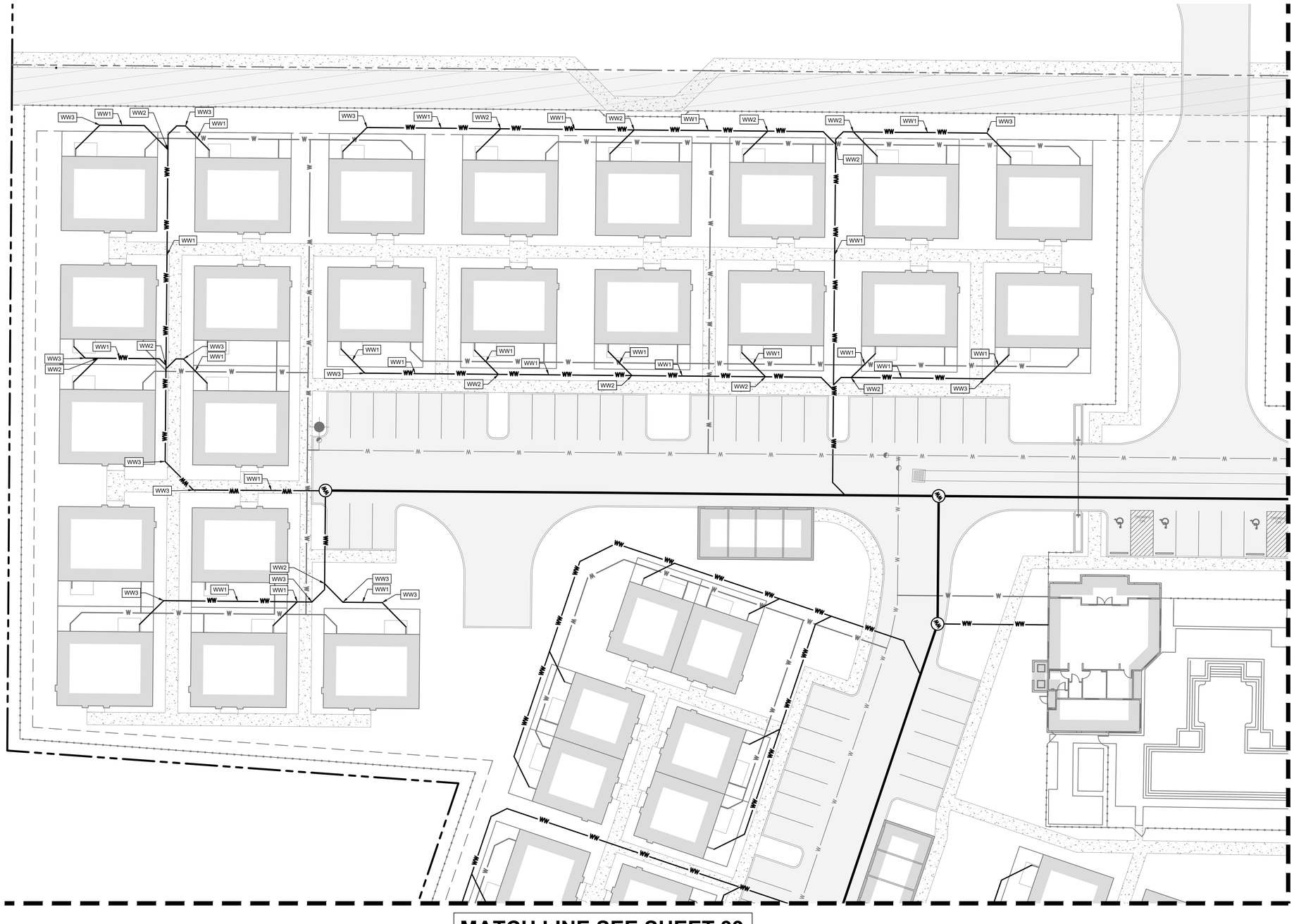
KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

OVERALL WASTEWATER PLAN (SHEET 2 OF 2)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
35 OF 102

XXXXXXXXX



N E S W

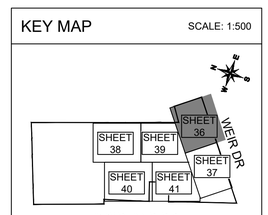
0 20' 40'
GRAPHIC SCALE 20'

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER CLEANOUT
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE

KEY MAP

SCALE: 1:500



KEYNOTE LEGEND

WW1	PRIVATE 3" WASTEWATER SERVICE (0.5% MIN. SLOPE)
WW2	45° WYE W/ CLEANOUT CONNECTION TO BUILDING. SEE MEP FOR CONTINUATION
WW3	45° 3" BEND W/ CLEANOUT
WW4	CONNECTION TO BUILDING. SEE MEP FOR CONTINUATION

BENCHMARKS

TBM:
1. BENCHMARK 1
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2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

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No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TX REGISTERED ENGINEERING FIRM F-928
TBPE Firm No. 928

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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

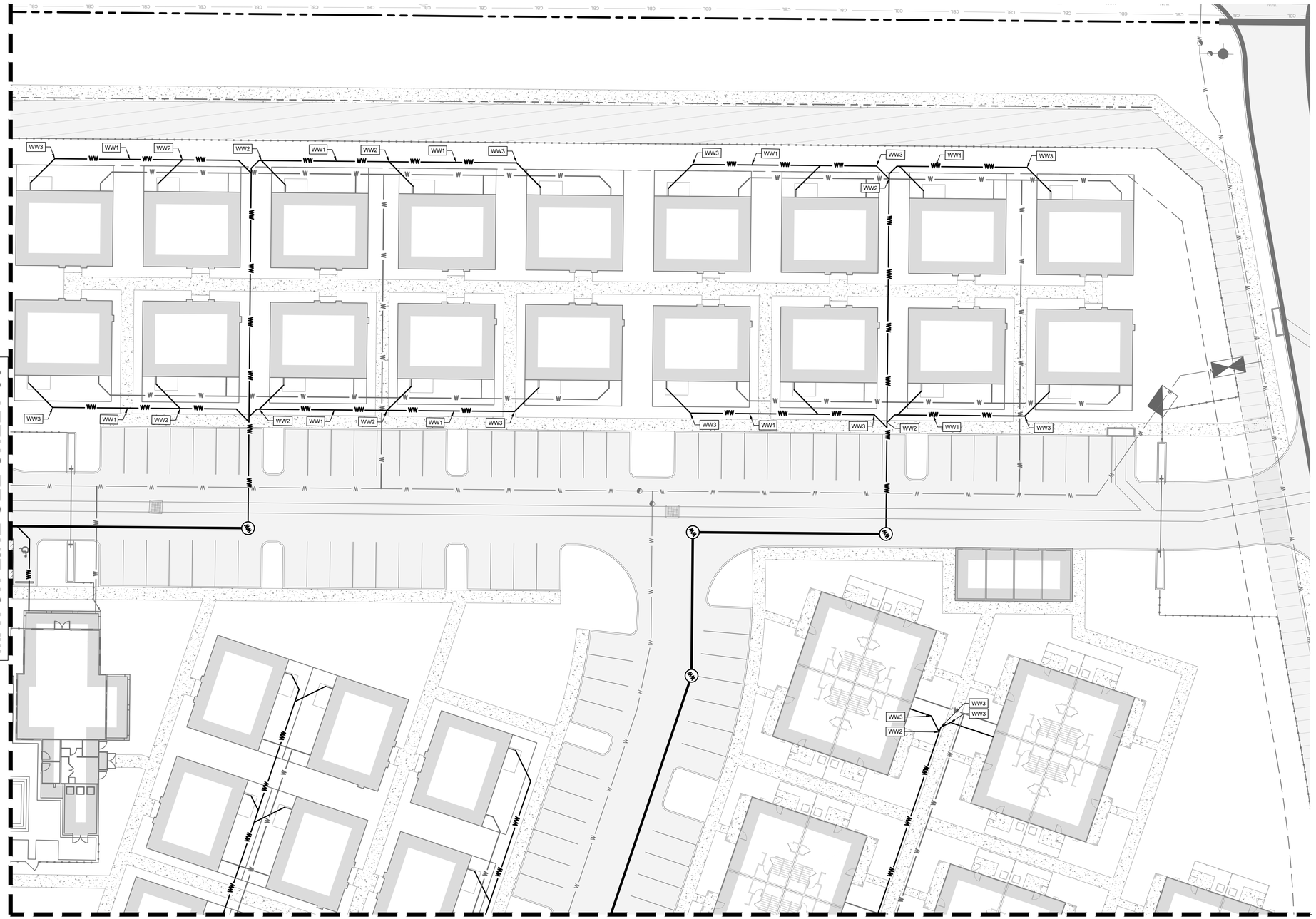
08/18/2023

KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

WASTEWATER SERVICE PLAN (SHEET 1 OF 6)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
36 OF 102



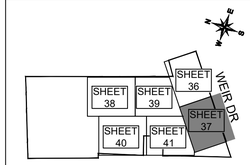
LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER CLEANOUT
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE

0 20' 40'
GRAPHIC SCALE 20'

KEY MAP

SCALE: 1:500



KEYNOTE LEGEND

WW1	PRIVATE 3" WASTEWATER SERVICE (0.5% MIN. SLOPE)
WW2	45° WYE W/ CLEANOUT CONNECTION TO BUILDING. SEE MEP FOR CONTINUATION
WW3	45° 3" BEND W/ CLEANOUT
WW4	CONNECTION TO BUILDING. SEE MEP FOR CONTINUATION

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

811 Know what's **below.** **Call** before you dig.

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TX KIMLEY-HORN AND ASSOCIATES, INC.

TBPE Firm No. 928

PRELIMINARY
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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

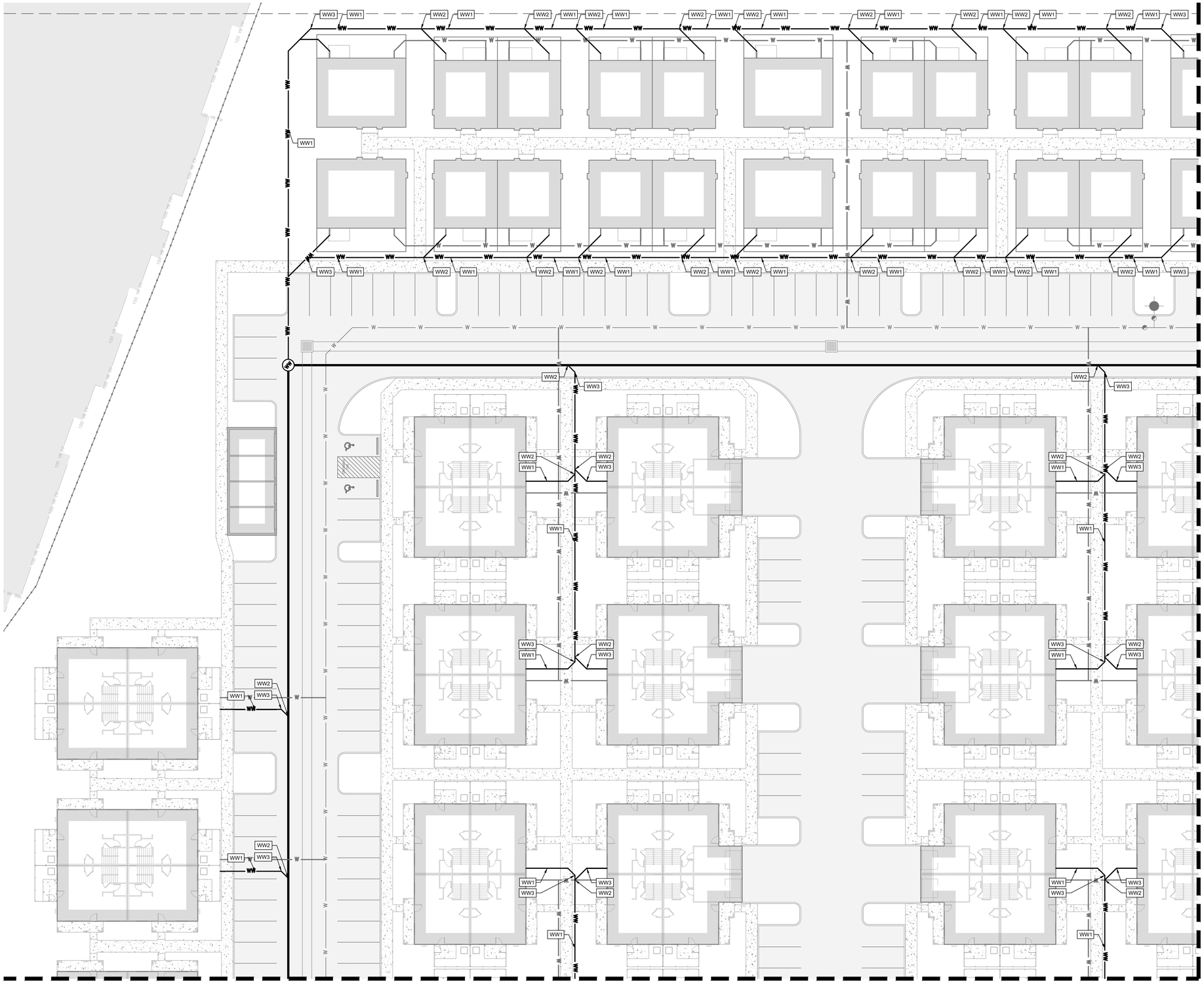
KHA PROJECT:	069264937
DATE:	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

WASTEWATER SERVICE PLAN (SHEET 2 OF 6)

HAVERLAND BTR

170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
37 OF 102



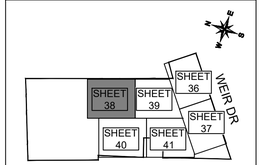
LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER CLEANOUT
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE

0 20' 40'
GRAPHIC SCALE 20'

KEY MAP

SCALE: 1:500



KEYNOTE LEGEND

WW1	PRIVATE 3" WASTEWATER SERVICE (0.5% MIN. SLOPE)
WW2	45° WYE W/ CLEANOUT CONNECTION TO BUILDING. SEE MEP FOR CONTINUATION
WW3	45° 3" BEND W/ CLEANOUT
WW4	CONNECTION TO BUILDING. SEE MEP FOR CONTINUATION

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

811 Know what's **below.** **Call** before you dig.

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TX REGISTERED ENGINEERING FIRM KIMLEY-HORN AND ASSOCIATES, INC.
TBPE Firm No. 928

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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

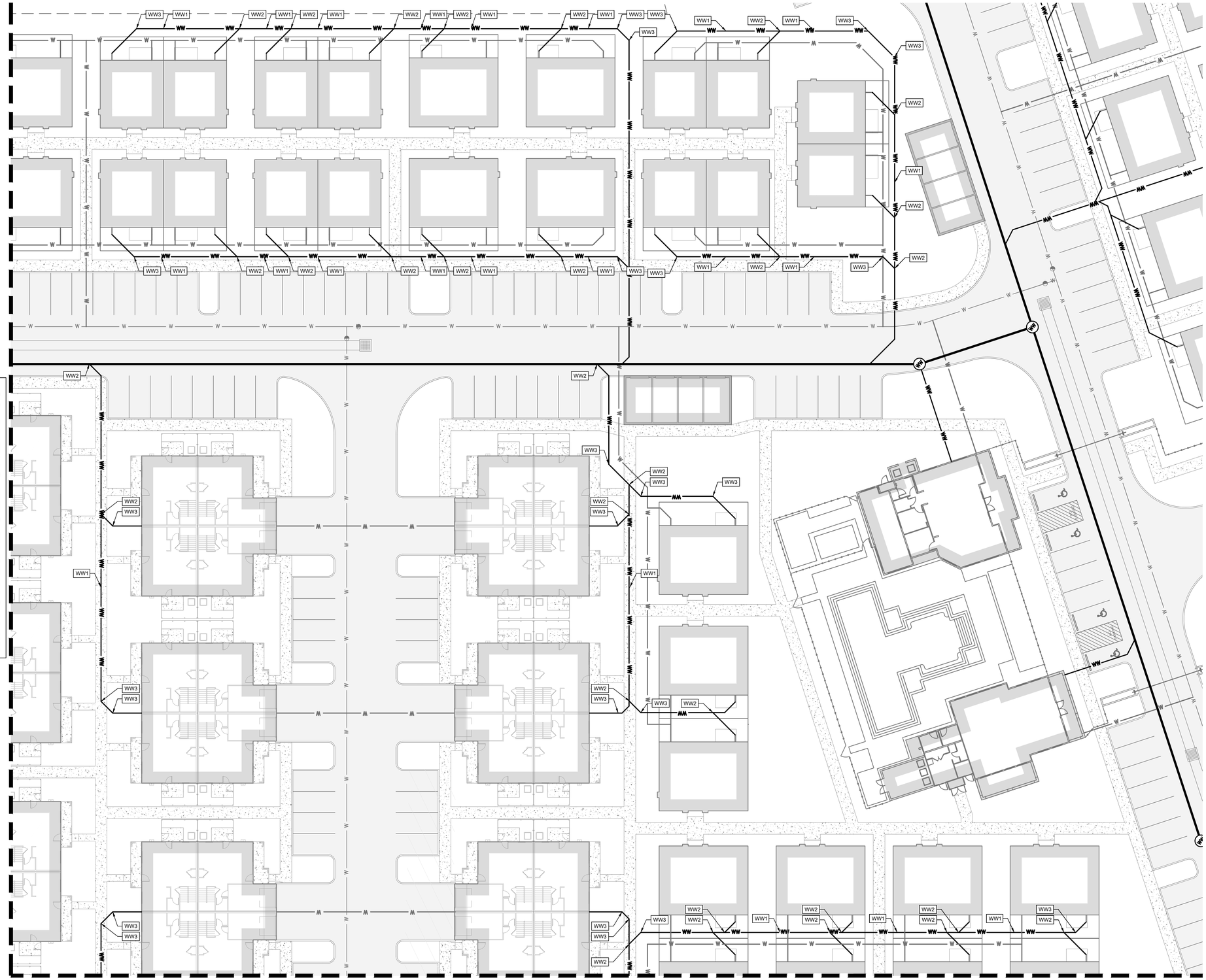
WASTEWATER SERVICE PLAN (SHEET 3 OF 6)

HAVERLAND BTR

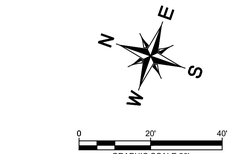
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
38 OF 102

MATCH LINE SEE SHEET 38



MATCH LINE SEE SHEET 41



LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER CLEANOUT
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE

KEY MAP

SCALE: 1:500

KEYNOTE LEGEND

WW1	PRIVATE 3" WASTEWATER SERVICE (0.5% MIN. SLOPE)
WW2	45° WYE W/ CLEANOUT CONNECTION TO BUILDING. SEE MEP FOR CONTINUATION
WW3	45° 3" BEND W/ CLEANOUT
WW4	CONNECTION TO BUILDING. SEE MEP FOR CONTINUATION

BENCHMARKS

TBM:
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ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

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No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TX REGISTERED ENGINEERING FIRM F-928

TBPE Firm No. 928

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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

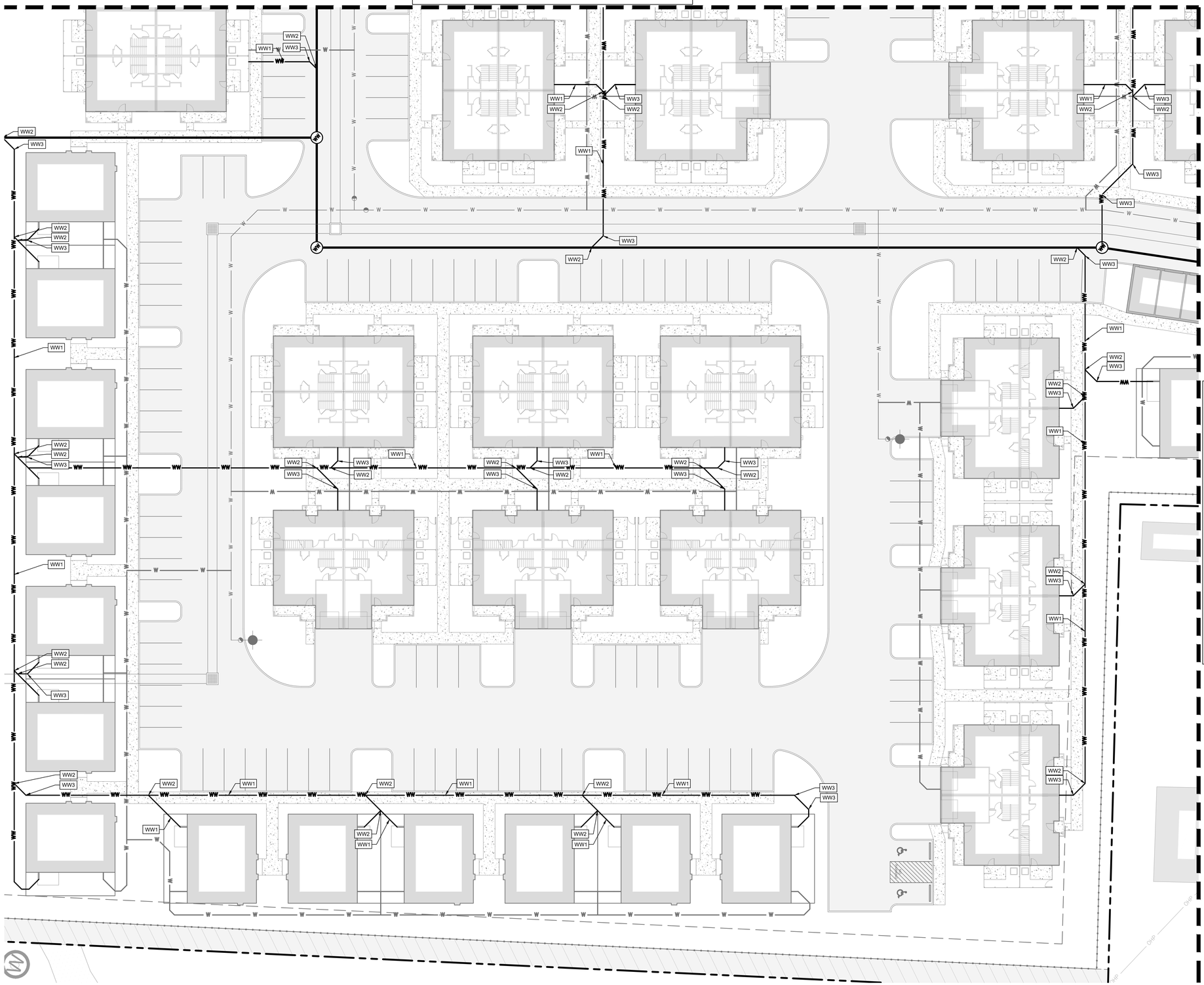
KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

WASTEWATER SERVICE PLAN (SHEET 4 OF 6)

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
39 OF 102

MATCH LINE SEE SHEET 38



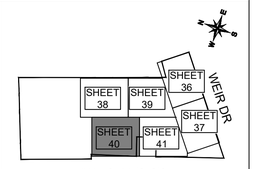
MATCH LINE SEE SHEET 39

LEGEND

- PROPERTY LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER CLEANOUT
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN LINE
- EXISTING STORM DRAIN INLET
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE

KEY MAP

SCALE: 1:500



KEYNOTE LEGEND

WW1	PRIVATE 3" WASTEWATER SERVICE (0.5% MIN. SLOPE)
WW2	45° WYE W/ CLEANOUT CONNECTION TO BUILDING. SEE MEP FOR CONTINUATION
WW3	45° 3" BEND W/ CLEANOUT
WW4	CONNECTION TO BUILDING. SEE MEP FOR CONTINUATION

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

Know what's **below.**
Call before you dig.

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING PRACTICE FIRM NO. F-928
TBPE Firm No. 928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

WASTEWATER SERVICE PLAN (SHEET 5 OF 6)

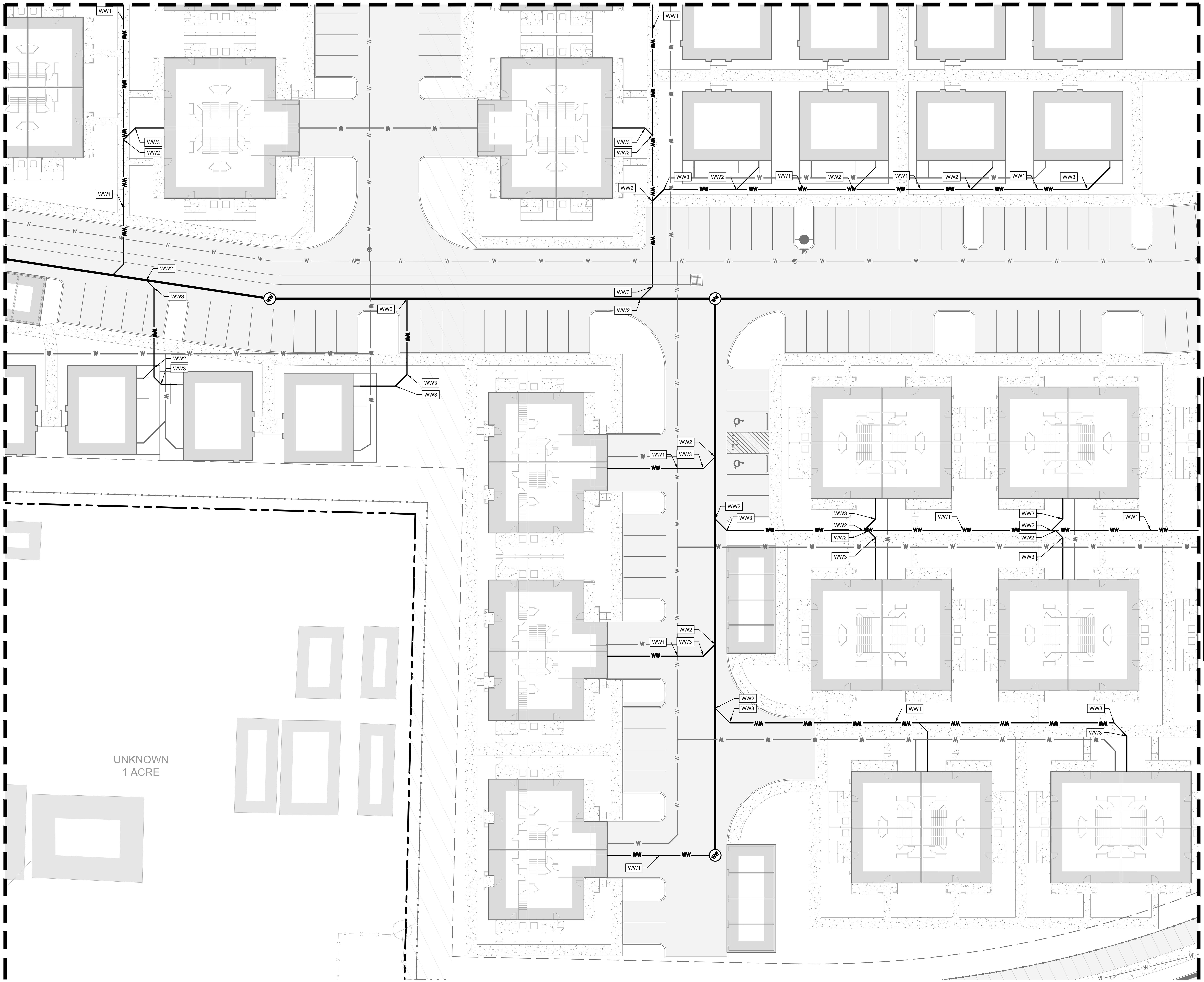
HAVERLAND BTR

170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
40 OF 102

MATCH LINE SEE SHEET 37

MATCH LINE SEE SHEET 40



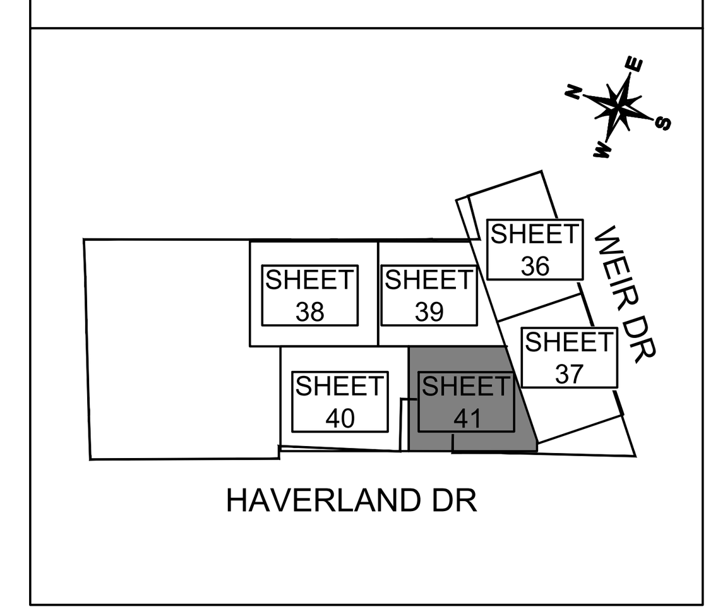
MATCH LINE SEE SHEET 37

GRAPHIC SCALE 20' (0, 20', 40')

LEGEND

	PROPERTY LINE
	PROPOSED WASTEWATER LINE
W	PROPOSED WATER LINE
WW	PROPOSED WASTEWATER MANHOLE
	PROPOSED WASTEWATER CLEANOUT
	PROPOSED FIRE HYDRANT
	PROPOSED STORM DRAIN LINE
	EXISTING STORM DRAIN INLET
OHP	EXISTING OVERHEAD POWER LINE
W	EXISTING WATER LINE
WW	EXISTING WASTEWATER LINE
	EXISTING STORM SEWER LINE
	EXISTING POWER POLE
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
WW	EXISTING WASTEWATER MANHOLE

KEY MAP SCALE: 1:500



KEYNOTE LEGEND

WW1	PRIVATE 3" WASTEWATER SERVICE (0.5% MIN. SLOPE)
WW2	45° WYE W/ CLEANOUT CONNECTION TO BUILDING. SEE MEP FOR CONTINUATION
WW3	45° 3" BEND W/ CLEANOUT
WW4	CONNECTION TO BUILDING. SEE MEP FOR CONTINUATION

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

811 Know what's below. Call before you dig.

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date / /19

08/18/2023

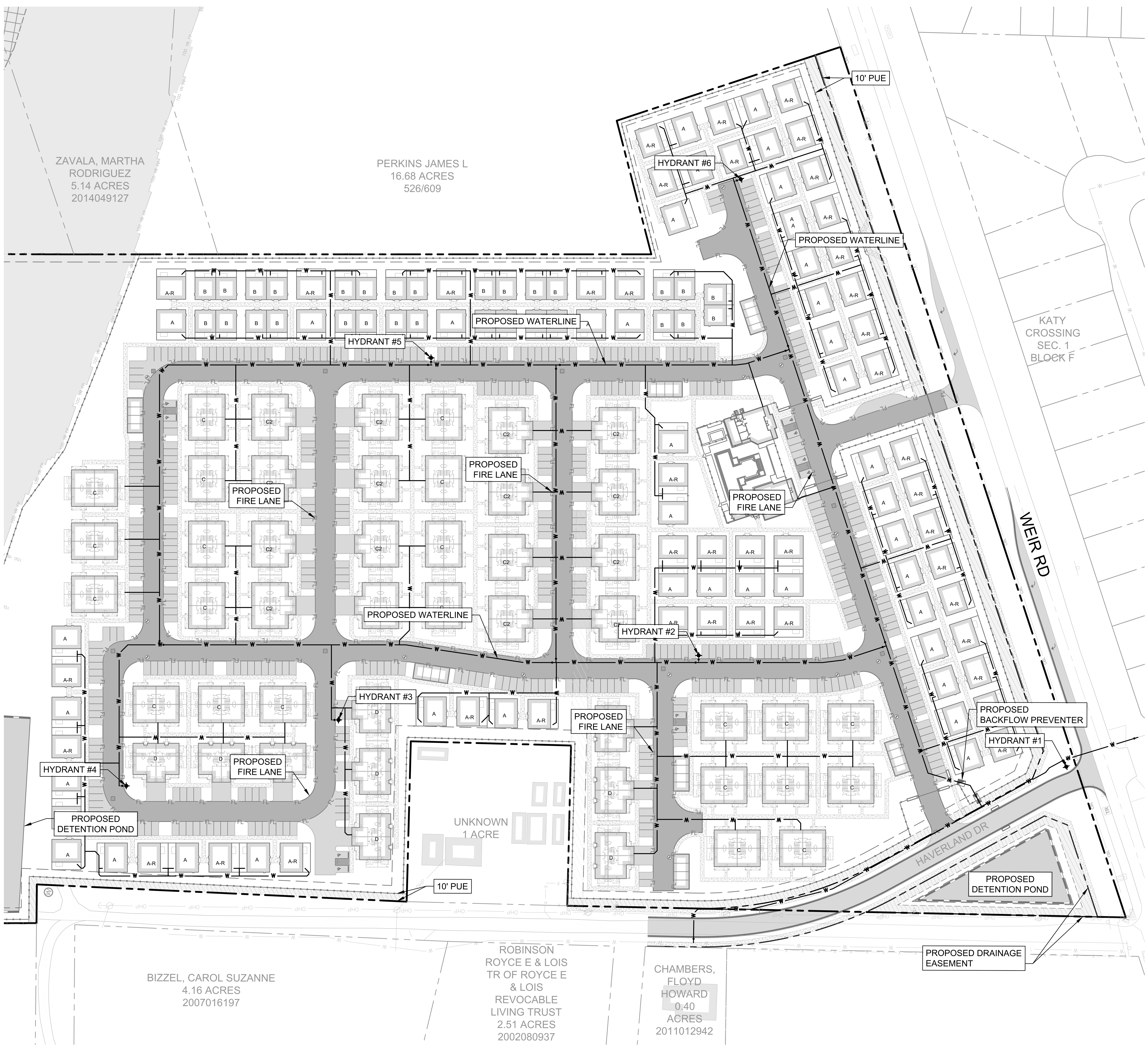
KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

WASTEWATER SERVICE PLAN (SHEET 6 OF 6)

HAVERLAND BTR

170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
41OF 102



0 60' 120'
GRAPHIC SCALE 60'

LEGEND

W	EXISTING WATER LINE
UGE	EXISTING UNDERGROUND ELECTRIC LINE
	PROPOSED FIRE HYDRANT
W	PROPOSED WATER LINE
FL	PROPOSED FIRE LANE STRIPING

NOTES

ALL FIRE DEPARTMENT CONNECTIONS (FDCS) SHALL BE MARKED AS APPROVED BY THE FIRE CODE OFFICIAL. TWO RED STREET LANE REFLECTORS (STIMSONITE MODEL 88AB OR SIMILAR) SHALL BE INSTALLED SIX INCHES FROM CENTERLINE OF THE FIRE APPARATUS ACCESS ROADWAY ON THE SIDE CLOSEST TO THE FDC. MARKERS SHALL BE PARALLEL TO THE FDC HAVING THE REFLECTIVE ENDS OF THE STREET MARKERS FACING THE DIRECTION OF TRAFFIC. 2015 IFC 912.7. A SIGN WITH THE ADDRESS/BUILDING NUMBER OF THE STRUCTURE PROTECTED SHALL ALSO BE PROVIDED IF A REMOTE FDC IS UDED. THE ADDRESS LETTERING SHALL BE MINIMUM 2-INCH STROKE.

BENCHMARKS

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ELEVATION=768.42'

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Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date / /19

08/18/2023

KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

FIRE PROTECTION PLAN

HAVERLAND BTR
170 HAVERLAND DR.
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
42 OF 102

XXXXXXXXX

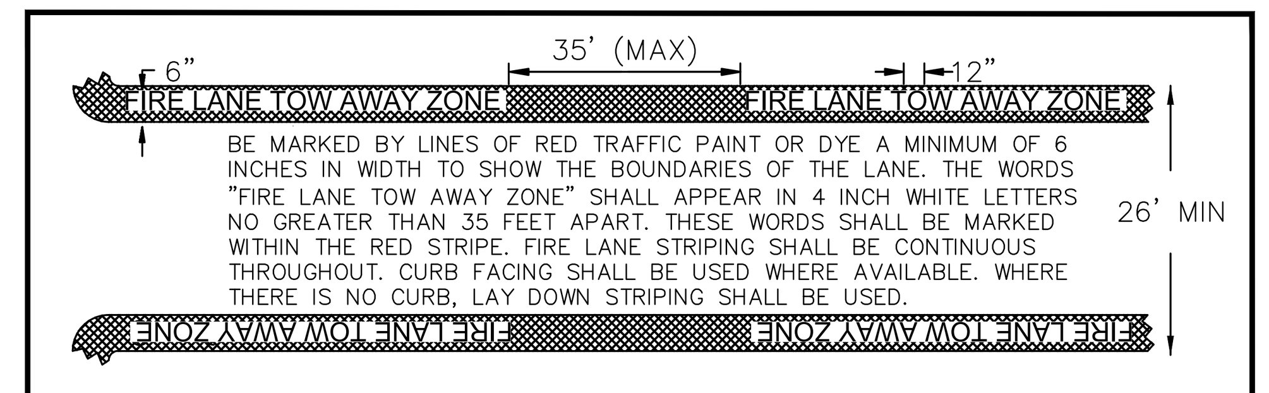
LEGEND

(hydrant symbol)	PROPOSED FIRE HYDRANT
—FL—	PROPOSED FIRE LANE STRIPING
(shaded box)	FIRE LANE CONCRETE PAVEMENT

CITY OF GEORGETOWN EMERGENCY ACCESS NOTES:

LA-D103.5 FIRE APPARATUS ACCESS ROAD GATES. GATES SECURING FIRE APPARATUS ACCESS ROADS SHALL COMPLY WITH ALL OF THE FOLLOWING CRITERIA:

1. THE MINIMUM UNOBSTRUCTED GATE WIDTH SHALL BE 20 FEET (6096MM). EXCEPTION: ONE- AND TWO-FAMILY DWELLINGS AS APPROVED BY THE FIRE CODE OFFICIAL.
2. GATES SHALL BE OF THE SWINGING OR SLIDING TYPE.
3. CONSTRUCTION OF GATES SHALL BE OF MATERIALS THAT ALLOW MANUAL OPERATION BY ONE PERSON.
4. GATE COMPONENTS SHALL ALWAYS BE MAINTAINED IN AN OPERATIVE CONDITION AND REPLACED OR REPAIRED WHEN DEFECTIVE.
5. ELECTRICALLY OPERATED GATES:
   A. SHALL BE EQUIPPED WITH A MEANS OF OPENING THE GATE BY FIRE DEPARTMENT PERSONNEL FOR EMERGENCY ACCESS. EMERGENCY ACCESS DEVICES SHALL BE APPROVED BY THE FIRE CODE OFFICIAL.
   B. SHALL BE IN THE FULLY OPENED POSITION FOR NE MORE THAN 30 SECONDS.
   C. SHALL HAVE A MANUAL OVERRIDE SYSTEM. MANUAL OVERRIDE OPERATIONS SHALL BE LOCATED ON THE ENTRANCE SIDE OF THE GATE, OR WHEN POWER HAS FAILED, THE GATE(S) SHALL OPEN AND STAY OPEN UNTIL POWER IS RESTORED FOR NORMAL OPERATIONS.
   D. SHALL HAVE INSTALLED APPROVED PREEMPTIVE CONTROL OPENING EQUIPMENT.
   E. EXCEPTIONS.
      I. DRIVEWAYS SERVING ONE- AND TWO-FAMILY DWELLINGS AS APPROVED BY THE FIRE CODE OFFICIAL.
      II. GATES SERVING AS AN EMERGENCY ACCESS WITH 24-HOUR STAFFED GATEHOUSES.
6. MANUAL OPENING GATES:
   A. MAY BE LOCKED WHEN APPROVED BY THE FIRE CODE OFFICIAL.
   B. IF EQUIPPED WITH A LOCK, KEYS SHALL BE PROVIDED FOR INSTALLATION INTO AN APPROVED FIRE DEPARTMENT KEY BOX. KEYS SHALL BE MAINTAINED CURRENT.
7. LOCKING DEVICE SPECIFICATIONS SHALL BE SUBMITTED FOR APPROVAL BY THE FIRE CODE OFFICIAL.
8. ELECTRIC GATE OPERATORS, WHERE PROVIDED, SHALL BE LISTED IN ACCORDANCE WITH UL 325.
9. GATES INTENDED FOR AUTOMATIC OPERATION SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED TO COMPLY WITH THE REQUIREMENTS OF ASTM F 2200.
10. A CONSTRUCTION PERMIT IN ACCORDANCE WITH SUBSECTION 503.6 IS REQUIRED TO INSTALL OR MODIFY A GATE ACROSS FIRE APPARATUS ROADWAYS.
11. MAINTENANCE OF GATES SECURING FIRE APPARATUS ACCESS. GATES SHALL BE MAINTAINED IN AN OPERATIVE CONDITION AND REPAIRED OR REPLACED WHEN DEFECTIVE. WHEN REQUIRED BY THE FIRE CODE OFFICIAL, DEFECTIVE GATES SHALL BE SECURED IN THE OPEN POSITION UNTIL REPAIRED.



FIRE LANE MARKING
N.T.S.

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

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Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date / /19

08/18/2023

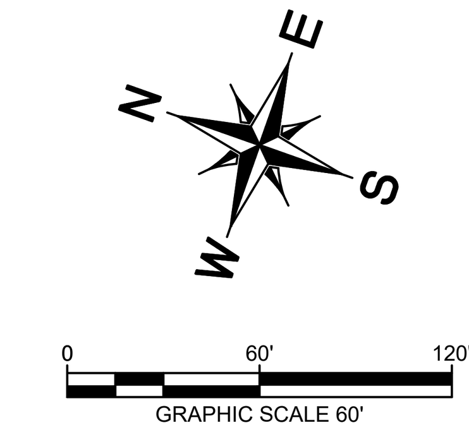
KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

EMERGENCY ACCESS PLAN

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
43 OF 102

XXXXXXXXX



LEGEND

W	EXISTING WATER LINE
G	EXISTING GAS LINE
UGE	EXISTING UNDERGROUND ELECTRIC LINE
✦	PROPOSED FIRE HYDRANT

BENCHMARKS

TBM:
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Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date / /19

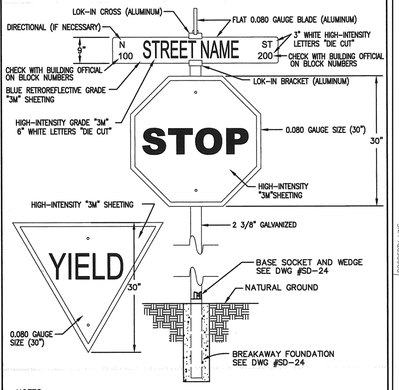
08/18/2023

KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

FRANCHISE UTILITY PLAN

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

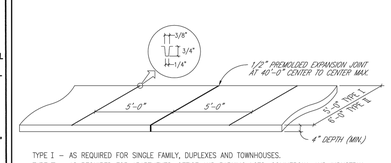
XXXXXXXXX



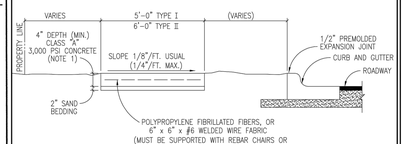
NOTES:
1. 7'-FOOT MIN. HEIGHT FROM GROUND TO BOTTOM OF SIGN.
2. ALL SIGNS TO BE IN CONFORMANCE WITH THE CURRENT EDITION OF THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
3. ALL SIGNAGE SHEETINGS SHALL BE HIGH-INTENSITY "3M" SHEETING.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE	REVISED 1/14/2014 WBD
ISSUANCE NOTE	ADOPTED 6/21/2006 TRB
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	SD25
STANDARD STREET SIGN DETAIL	SCALE: NTS DATE: 1/2003 DRAWN BY: MRS/AP APPROVED BY: TRB



TYPE I – AS REQUIRED FOR SINGLE FAMILY, DUPLEXES AND TOWNHOUSES.
TYPE II – AS REQUIRED FOR APARTMENTS, OFFICE AND PARKING LOTS, COMMERCIAL AND INDUSTRIAL.

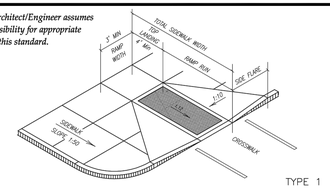


NOTES:
1. FOR ROLLER STAMPED SIDEWALK: MATCH TO SPECIFICATIONS.
2. STANDARD LOCATION OF SIDEWALK IS OFF BACK OF CURB. SPECIAL DESIGNS MAY BE APPROVED BY THE CITY ENGINEER, PRIOR TO FINAL DESIGN.
3. SIDEWALK SHALL CONFORM TO CURRENT AMERICANS WITH DISABILITIES ACT STANDARDS.
4. IF REQUIRED ALL SIDEWALKS SHALL BE SUBMITTED AND APPROVED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION BY THE ENGINEER RECORD.
5. ANY VARIANCE IN TEXTURE, GRADE OR ALIGNMENT MUST BE APPROVED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

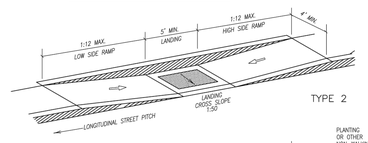
REVISION NOTE	ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	SD14
SIDEWALK SECTION AND JOINT DETAIL	SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB

The Architect/Engineer assumes responsibility for appropriate use of this standard.

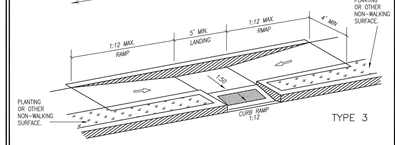


PERPENDICULAR CURB RAMPS

TYPE 1



TYPE 2



TYPE 3

PARALLEL CURB RAMPS

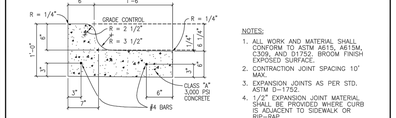
The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE	ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	SD31
SIDEWALK RAMP DETAILS TYPE 1-3	SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB

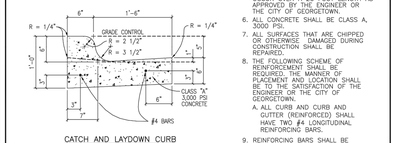
NOTES:
1. COMMERCIAL SIDEWALKS WIDTHS – 6'
RESIDENTIAL SIDEWALKS WIDTHS – 5'
2. ALL SLOPES ARE MAXIMUM ALLOWABLE. FLATTER SLOPES THAT WILL STILL DRAIN PROPERLY ARE ENCOURAGED.
3. ALL CONCRETE SURFACES SHALL RECEIVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE IN THE PLANS.
4. FOR PURPOSES OF WARNING, THE CURB RAMPS SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRASTS WITH THAT OF ADJOINING PEDESTRIAN ROUTES.
5. TEXTURES MAY CONSIST OF PAVERS WITH TRUNCATED DOMED SURFACES OR GROOVES. TEXTURES ARE REQUIRED TO BE DETECTABLE UNDERFOOT. SURFACES THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED.
6. COLOR CONTRAST, FOR EXAMPLE, CAN BE ACCOMPLISHED WITH COLORED CONCRETE PAVERS THAT HAVE TRUNCATED DOMES BY COLORED STAINED CONCRETE WITH GROOVES, EITHER OF WHICH WOULD PROVIDE A CONTRAST WITH TYPICALLY LIGHT COLORED CONCRETE.
7. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, VISIBILITY AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) PREPARED AND ADMINISTERED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).
8. RAISED MEDIANS SEPARATE OPPOSING DIRECTIONS OF TRAFFIC AND PROVIDE A REFUGE AREA FOR PEDESTRIANS IF THEY ARE UNABLE TO CROSS THE ENTIRE ROADWAY IN THE ALLOTTED SIGNAL PHASE. TO SERVE AS A REFUGE AREA, THE MEDIAN SHOULD BE A MINIMUM OF 4 FEET WIDE. MEDIANS SHOULD BE DESIGNED TO PROVIDE ACCESSIBLE PASSAGE OVER OR THROUGH THEM.
9. ALL SIDEWALK PLANS AND DETAILS SHALL BE SUBMITTED AND APPROVED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).
10. ANY PART OF THE ACCESSIBLE ROUTE WITH A SLOPE GRATER THAN 1:20 (5%) SHALL BE CONSIDERED A RAMP. IF A RAMP HAS A RISE GREATER THAN 6 INCHES OR A HORIZONTAL PROJECTION GREATER THAN 72 INCHES, THEN IT SHALL HAVE HANDRAILS ON BOTH SIDES. THE ONLY EXCEPTION IS AT CURB RAMPS. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. CURB RAMPS SHALL BE PROVIDED WHERE EVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB. CURB RAMPS ARE GENERALLY INTERPRETED AS ONLY THE PORTION TYING DIRECTLY INTO THE ROADWAY.
11. TRAFFIC SIGNAL OR ILLUMINATION POLES, GROUND BOXES, CONTROLLER BOXES, SIGNS, DRAINAGE FACILITIES AND OTHER ITEMS SHALL BE PLACED SO NOT TO OBSTRUCT THE ACCESSIBLE ROUTE.
12. ALL SIDEWALKS WILL BE DOWELED INTO EXISTING SIDEWALKS, DRIVEWALKS, DRIVEWAYS, INLET BOXES, RETAINING WALLS, ETC.
13. ALL SIDEWALK CROSS-SLOPES SHALL NOT EXCEED 1:50, UNLESS A VARIANCE IS PROVIDED BY TDLR.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

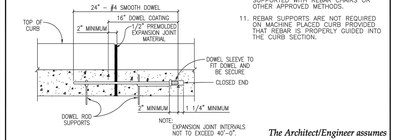
REVISION NOTE	ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	SD28
PEDESTRIAN RAMPS GENERAL NOTES	SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB



SPILL CURB



CATCH AND LAYDOWN CURB

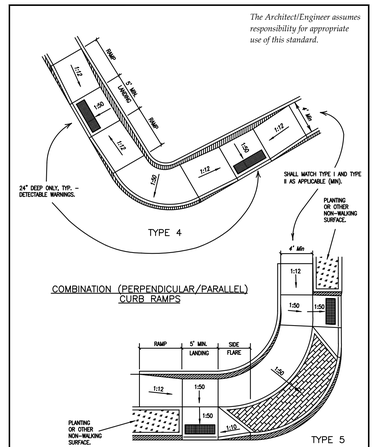


CURB DOWEL DETAIL

NOTES:
1. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309, AND D1752, BROOM FINISH EXPOSED SURFACE.
2. CONTRACTION JOINT SPACING 10' MAX.
3. EXPANSION JOINTS AS PER STD. ASTM D-1752.
4. 1/2" EXPANSION JOINT MATERIAL SHALL BE PROVIDED WHERE CURB IS ADJACENT TO SIDEWALK OR RIP-RAP.
5. TRANSITIONS BETWEEN CURBS OR DIFFERING CROSS SECTIONS SHALL OCCUR OVER A 20 FOOT LENGTH AS APPROVED BY THE ENGINEER OR THE CITY OF GEORGETOWN.
6. ALL CONCRETE SHALL BE CLASS A, 3000 PSI.
7. ALL SURFACES THAT ARE CHIPPED OR OTHERWISE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED.
8. THE FOLLOWING SCHEME OF REINFORCEMENT SHALL BE REQUIRED. THE MANNER OF PLACEMENT AND LOCATION SHALL BE SUBJECT TO SATISFACTION OF THE ENGINEER AND THE CITY OF GEORGETOWN.
   A. ALL CURB AND CURB AND GUTTER (REINFORCED) SHALL HAVE TWO #4 LONGITUDINAL REINFORCING BARS.
9. REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 15 INCH.
10. REINFORCING BARS SHALL BE SUPPORTED WITH METAL CHAIRS OR OTHER APPROVED METHODS.
11. REBAR SUPPORTS ARE NOT REQUIRED ON MACHINE PLACED CURB PROVIDED THAT REBAR IS PROPERLY GUIDED INTO THE CURB SECTION.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

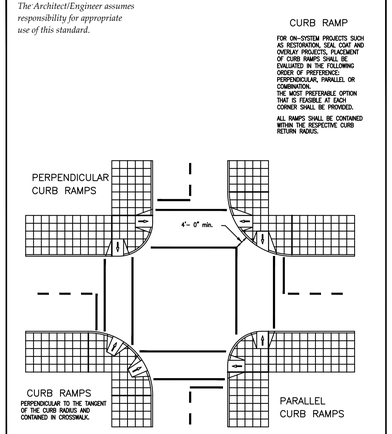
REVISION NOTE	ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	SD06
CURB AND GUTTER DETAILS	SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB



COMBINATION (PERPENDICULAR/PARALLEL) CURB RAMPS

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE	REVISED 6/26/2015 WBD
ISSUANCE NOTE	ADOPTED 6/21/2006 TRB
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	SD33
SIDEWALK RAMP DETAIL TYPES 4 & 5	SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB



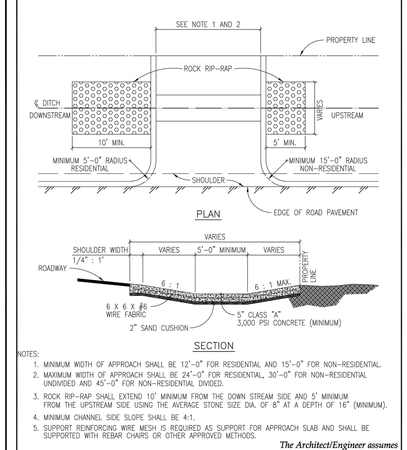
The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE	REVISED 6/26/2015 WBD
ISSUANCE NOTE	ADOPTED 6/21/2006 TRB
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	SD30
CURB RAMP PLACEMENTS AT INTERSECTIONS	SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB

CURB RAMP

FOR ON-SYSTEM PROJECTS SUCH AS RESTORATION, SEAL COAT AND OVERLAY PROJECTS, PLACEMENT OF CURB RAMPS SHALL BE EVALUATED IN THE FOLLOWING ORDER OF PREFERENCE: PERPENDICULAR, PARALLEL OR COMBINATION.
THE MOST PREFERABLE OPTION THAT IS FEASIBLE AT EACH CORNER SHALL BE PROVIDED.

ALL RAMPS SHALL BE CONTAINED WITHIN THE RESPECTIVE CURB RETURN RADIUS.



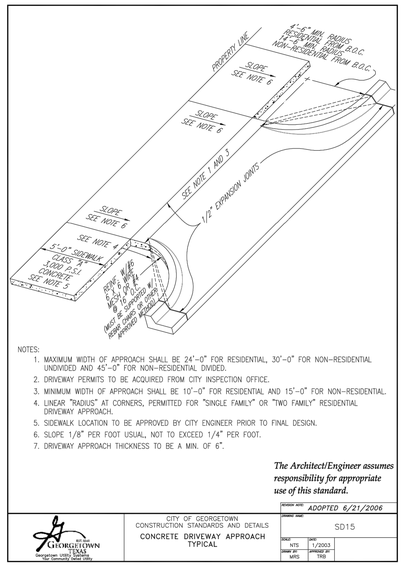
PLAN

SECTION

NOTES:
1. MINIMUM WIDTH OF APPROACH SHALL BE 12'-0" FOR RESIDENTIAL AND 15'-0" FOR NON-RESIDENTIAL.
2. MAXIMUM WIDTH OF APPROACH SHALL BE 24'-0" FOR RESIDENTIAL, 30'-0" FOR NON-RESIDENTIAL UNDIVIDED AND 45'-0" FOR NON-RESIDENTIAL DIVIDED.
3. ROCK RIP-RAP SHALL EXTEND 10' MINIMUM FROM THE DOWN STREAM SIDE AND 5' MINIMUM FROM THE UPSTREAM SIDE USING THE AVERAGE STONE SIZE DIA. OF 8" AT A DEPTH OF 16" (MINIMUM).
4. MINIMUM CHANNEL SIDE SLOPE SHALL BE 4:1.
5. SUPPORT REINFORCING WIRE MESH IS REQUIRED AS SUPPORT FOR APPROACH SLAB AND SHALL BE SUPPORTED WITH REBAR CHAIRS OR OTHER APPROVED METHODS.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

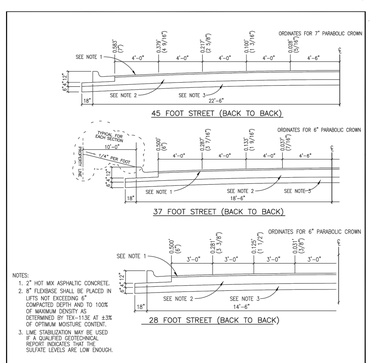
REVISION NOTE	ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	SD16
CONCRETE DIP DRIVEWAY APPROACH	SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB



NOTES:
1. MAXIMUM WIDTH OF APPROACH SHALL BE 24'-0" FOR RESIDENTIAL, 30'-0" FOR NON-RESIDENTIAL UNDIVIDED AND 45'-0" FOR NON-RESIDENTIAL DIVIDED.
2. DRIVEWAY PERMITS TO BE ACQUIRED FROM CITY INSPECTION OFFICE.
3. MINIMUM WIDTH OF APPROACH SHALL BE 10'-0" FOR RESIDENTIAL AND 15'-0" FOR NON-RESIDENTIAL.
4. LINEAR "RADIUS" AT CORNERS, PERMITTED FOR "SINGLE FAMILY" OR "TWO FAMILY" RESIDENTIAL DRIVEWAY APPROACH.
5. SIDEWALK LOCATION TO BE APPROVED BY CITY ENGINEER PRIOR TO FINAL DESIGN.
6. SLOPE 1/8" PER FOOT USUAL, NOT TO EXCEED 1/4" PER FOOT.
7. DRIVEWAY APPROACH THICKNESS TO BE A MIN. OF 6".

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE	ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	SD15
CONCRETE DRIVEWAY APPROACH TYPICAL	SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB



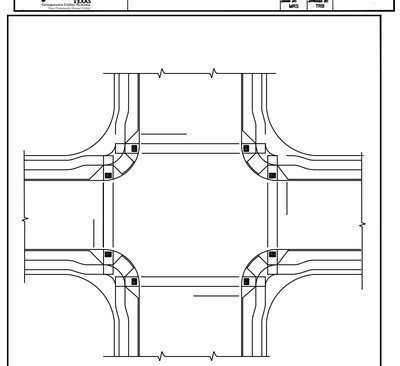
NOTES:
1. 2" HOT MIX ASPHALTIC CONCRETE.
2. 8" FLOWBASE SHALL BE PLACED IN LIFTS NOT EXCEEDING 6" COMPACTED DEPTH AND TO 100% OF MAXIMUM DENSITY AS DETERMINED BY TEX-113E AT ±3% OF OPTIMUM MOISTURE CONTENT.
3. LIME STABILIZATION MAY BE USED IF A QUALIFIED GEOTECHNICAL REPORT INDICATES THAT THE SULFATE LEVELS ARE LOW ENOUGH.

STREET AND ROADWAY DESIGN CRITERIA

STREET CLASSIFICATION	TOTAL EQUIVALENT 18K AXLE LOAD APPLICATIONS (20 YEAR FLEXIBLE DESIGN)
LOCAL	
ALLEY	20,000
RESIDENTIAL LANE	20,000
LOCAL STREET	20,000
COLLECTORS	
RESIDENTIAL	80,000
MAJOR NEIGHBORHOOD	290,000
ARTERIALS	
MINOR ARTERIAL	1,020,000
MAJOR ARTERIAL	5,200,000

The Architect/Engineer assumes responsibility for appropriate use of this standard.

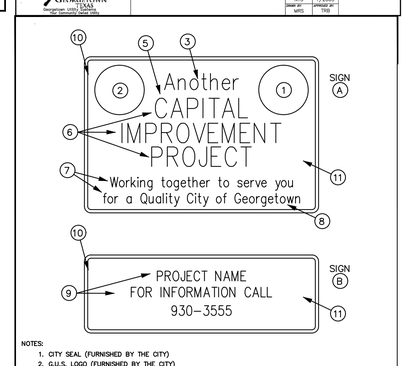
REVISION NOTE	ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	SD01
TYPICAL HALF CROSS – SECTIONS FOR H.M.A.C. SURFACED STREETS	SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB



NOTE: ALL RAMPS SHALL BE CONTAINED WITHIN THE RESPECTIVE CURB RETURN RADIUS.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

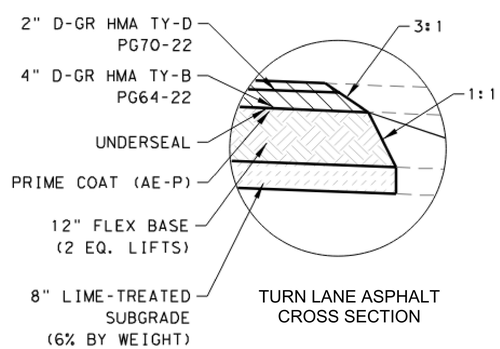
REVISION NOTE	REVISED 6/26/2015 WBD
ISSUANCE NOTE	ADOPTED 6/21/2006 TRB
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	SD29
TYPICAL INTERSECTON LAYOUT	SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB



NOTES:
1. CITY SEAL (FURNISHED BY THE CITY)
2. G.U.S. LOGO (FURNISHED BY THE CITY)
3. (1 3/4") BLUE LETTERS
4. (2 1/2") BLUE LETTERS
5. (1 1/4") SPACE
6. (3") BLUE LETTERS
7. (2") RED UPPER, (1 1/2") RED LOWER CASE LETTERS
8. (2") BLUE UPPER, (1 1/2") BLUE LOWER CASE LETTERS (City of Georgetown)
9. (10") LETTERS
10. (1 3/8") BLUE BORDER
11. REFLECTIVE SILVER SHEETING .050 ALUMINUM 2290, TRANSPARENT RED PAINT 712, BLUE PAINT 710, 3M CO. OR APPROVED EQUIVALENT.
12. REFER TO SHEET SD-26A

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE	REVISED 6/26/2015 WBD
ISSUANCE NOTE	ADOPTED 6/21/2006
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS	SD27
STANDARD STREET SIGN DETAIL II	SCALE: NTS DATE: 1/2003 DRAWN BY: MRS APPROVED BY: TRB



TURN LANE ASPHALT CROSS SECTION

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
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TBPE Firm No. 928

No.	REVISIONS	DATE	BY

ON THE GEORGETOWN
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Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date __/__/19

08/18/2023

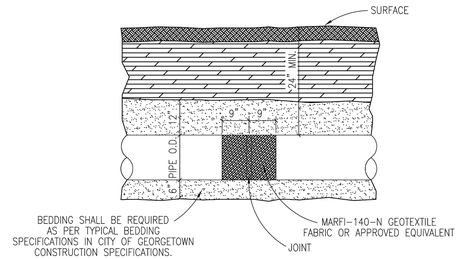
KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

PAVING DETAILS

HAVERLAND BTR
170 HAVERLAND DR.
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
46OF 102

XXXXXXXXX



NOTES

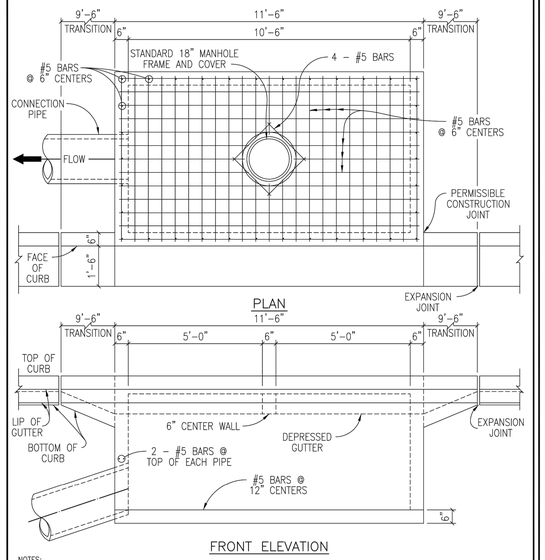
1. PIPE SHALL BE REINFORCED CONCRETE PIPE CLASS III UNLESS THE DEPTH OF PIPE REQUIRES A STRONGER CLASS.
2. ALL FITTINGS AND WYES SHALL BE MANUFACTURED AND NOT CONSTRUCTED ON THE PROJECT WITHOUT PRIOR APPROVAL FROM THE CITY.
3. ALL JOINTS SHALL BE WRAPPED WITH MARFI-140-N GEOTEXTILE FABRIC OR APPROVED EQUIVALENT. EACH JOINT SHALL BE WRAPPED WITH 18" WIDE FABRIC CENTERED ON THE JOINT.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006
DRAWING NAME: SD42

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT DETAIL (PROFILE) FOR STORM SEWER

SCALE	DATE
NTS	1/2003
DRAWN BY: MRS	APPROVED BY: TRB



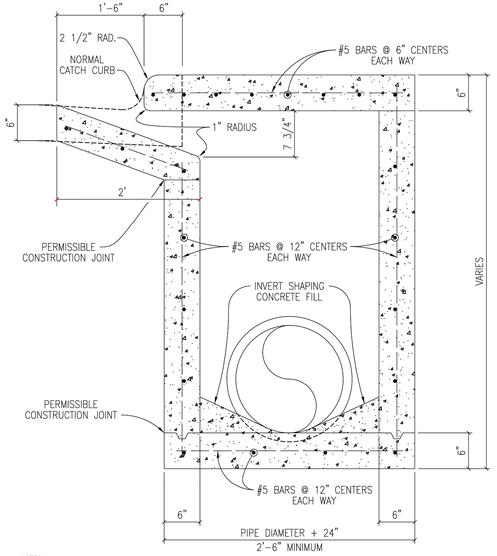
NOTES:
1. ALL CONCRETE SHALL BE CLASS "A" 3,000 PSI CONCRETE.
2. STORM SEWER PIPE MATERIAL TO BE R.C.P. (CLASS III) UNLESS OTHERWISE APPROVED BY THE CITY OF GEORGETOWN.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006
DRAWING NAME: SD09

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
CURB INLET DETAIL

SCALE	DATE
NTS	1/2003
DRAWN BY: MRS	APPROVED BY: TRB



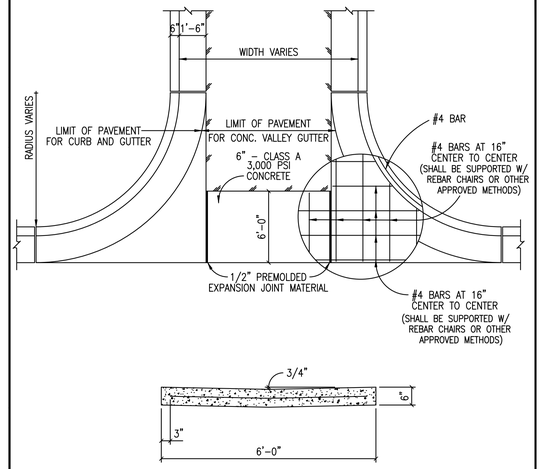
NOTES:
1. ALL CONCRETE SHALL BE CLASS "A" 3,000 PSI CONCRETE.
2. STORM SEWER PIPE MATERIAL TO BE R.C.P. (CLASS III) UNLESS OTHERWISE APPROVED BY THE CITY OF GEORGETOWN.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006
DRAWING NAME: SD10

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
CURB DRAIN INLET TYPICAL SECTION

SCALE	DATE
NTS	1/2003
DRAWN BY: MRS	APPROVED BY: TRB

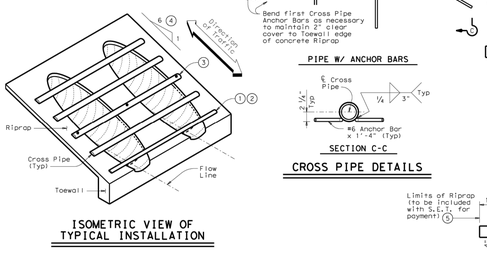


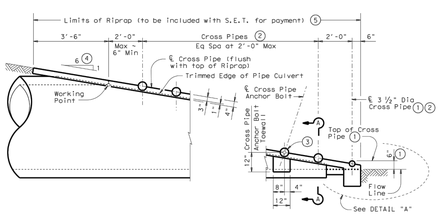
The Architect/Engineer assumes responsibility for appropriate use of this standard.

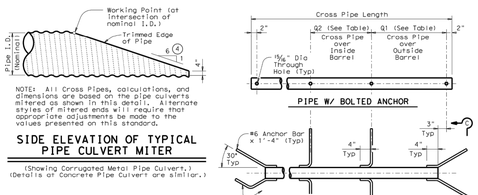
REVISION NOTE: ADOPTED 6/21/2006
DRAWING NAME: SD03

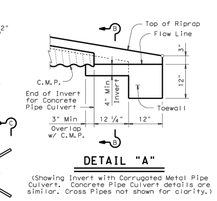
CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
CONCRETE VALLEY GUTTER DETAIL

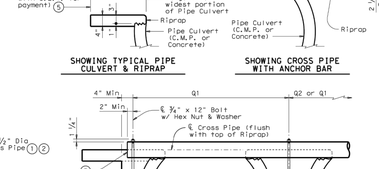
SCALE	DATE
NTS	1/2003
DRAWN BY: MRS	APPROVED BY: TRB

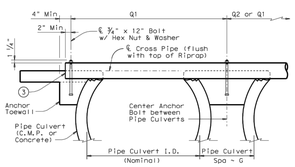












CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, & RIPRAP QUANTITIES (2)

Nominal Culvert I.D.	Conc Riprap (CY) (6)	Pipe Culvert Spa = G	Single Barrel ~ Q1	Multi-Barrel ~ Q1	Q2	Conditions for use of Cross Pipes	Cross Pipe Size
12"	0.6	9"	N/A	2'- 1"	1'- 9"	3 or more Pipe Culverts	3" Std (3.500" O.D.)
15"	0.7	11"	N/A	2'- 5"	2'- 2"		
18"	0.8	1'- 2"	N/A	2'-10"	2'- 8"		
21"	0.9	1'- 4"	N/A	3'- 2"	3'- 1"		
24"	0.9	1'- 7"	N/A	3'- 6"	3'- 7"		
27"	1.0	1'- 8"	N/A	3'-10"	3'-11"	3 or more Pipe Culverts	3 ½" Std (4.000" O.D.)
30"	1.1	1'-10"	N/A	4'- 2"	4'- 4"	2 or more Pipe Culverts	
33"	1.2	1'-11"	4'- 2"	4'- 5"	4'- 8"	All Pipe Culverts	
36"	1.3	2'- 1"	4'- 5"	4'- 9"	5'- 1"	All Pipe Culverts	4" Std (4.500" O.D.)
42"	1.5	2'- 4"	4'-11"	5'- 5"	5'-10"		
48"	1.7	2'- 7"	5'- 5"	6'- 0"	6'- 7"		
54"	2.0	3'- 0"	5'-11"	6'- 9"	7'- 6"	All Pipe Culverts	5" Std (5.563" O.D.)
60"	2.2	3'- 3"	6'- 5"	7'- 4"	8'- 3"		
66"	2.4	3'- 3"	6'-11"	7'-10"	8'- 9"		
72"	2.7	3'- 4"	7'- 5"	8'- 5"	9'- 4"		

1. The proper installation of the first Cross Pipe is critical for vehicle safety. The top of the first Cross Pipe must be placed at no more than 6" above the flow line.
2. Size of Cross Pipes, except the first bottom pipe, shall be as shown in the PIPE SIZE table. The first bottom pipe shall be 3 ½" Standard Pipe (4" O.D.).
3. The third Cross Pipe from the bottom of the Culvert shall always be installed using a bolted connection. Care shall be taken to ensure that Riprap concrete does not flow into the Cross Pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, all other Cross Pipes may also be installed using the bolted connection details.
4. Match Cross Slope as shown elsewhere in the plans. Cross Slope of 6:1 or flatter is required for vehicle safety.
5. Riprap placed beyond the limits shown will be paid as Concrete Riprap in accordance with Item 432, "Riprap".
6. Quantities shown are for one end of one reinforced Concrete Pipe Culvert. For multiple pipe culverts or for Corrugated Metal Pipe Culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.

GENERAL NOTES:

Cross Pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

Safety End Treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Cross Pipes.

Riprap and all necessary inverts shall be Concrete Riprap conforming to the requirements of Item 432, "Riprap".

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Cross Pipes shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Bolts and nuts shall conform to ASTM A307.

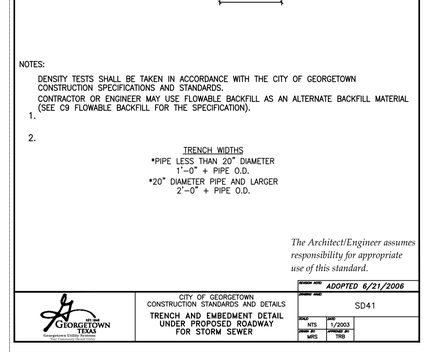
All steel components, except concrete reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.

Texas Department of Transportation — Bridge Division Standard

SAFETY END TREATMENT
FOR 12" DIA TO 72" DIA PIPE CULVERTS
TYPE II ~ PARALLEL DRAINAGE

SETP-PD

FILE: setpdtxt.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2010	CONT: 5017	JOB:	HIGHWAY:	
REVISIONS: 13-00 Add wire for synthetic fibers.	DIST:	COUNTY:	SHEET NO.:	



NOTES:

DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS AND STANDARDS.

CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL (SEE C9 FLOWABLE BACKFILL FOR THE SPECIFICATION).

1.

2.

TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

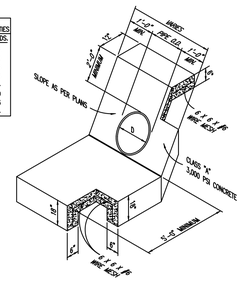
The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006
DRAWING NAME: SD41

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT DETAIL UNDER PROPOSED ROADWAY FOR STORM SEWER

SCALE	DATE
NTS	1/2003
DRAWN BY: MRS	APPROVED BY: TRB

MINIMUM RIP-RAP QUANTITIES	
PIPE	SQ. YDS.
18"	6.2
24"	6.9
27"	7.8
30"	9.5
36"	10.4
42"	12.0
48"	14.3
54"	16.4



NOTES:
1. WHEN HEADWALLS AND WINGWALLS ARE REQUIRED, THEY SHALL CONFORM TO THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARDS, OR AS DIRECTED BY THE CITY.
2. ENERGY DISSIPATERS SHALL BE REQUIRED IF PIPE VELOCITY IS GREATER THAN 5.0 F.P.S. OR AS DIRECTED BY THE CITY OF GEORGETOWN.
3. SUPPORT REINFORCING WIRE MESH REQUIRED AS SUPPORT FOR APPROACH SLAB AND SHALL BE SUPPORTED BY REBAR CHAIRS OR OTHER APPROVED METHODS.

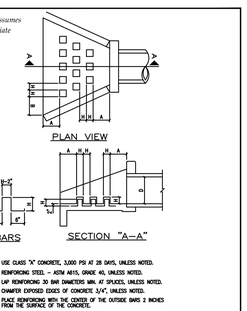
The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006
DRAWING NAME: SD19

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
TYPICAL CONCRETE RIP-RAP AT PIPE

SCALE	DATE
NTS	1/2003
DRAWN BY: MRS	APPROVED BY: TRB

The Architect/Engineer assumes responsibility for appropriate use of this standard.



NOTES:
1. USE CLASS "A" CONCRETE, 3,000 PSI AT 28 DAYS, UNLESS NOTED.
2. REINFORCING STEEL - ASTM A615, GRADE 40, UNLESS NOTED.
3. LAP REINFORCING 24 BAR DIAMETERS MIN. AT SPLICES, UNLESS NOTED.
4. CHAMFER EXPOSED EDGES OF CONCRETE 3/4", UNLESS NOTED.
5. PLACE REINFORCING WITH THE CENTER OF THE OUTSIDE BARS 2 INCHES FROM THE SURFACE OF THE CONCRETE.

TABLE OF DIMENSIONS FOR ENERGY DISSIPATOR DETAIL

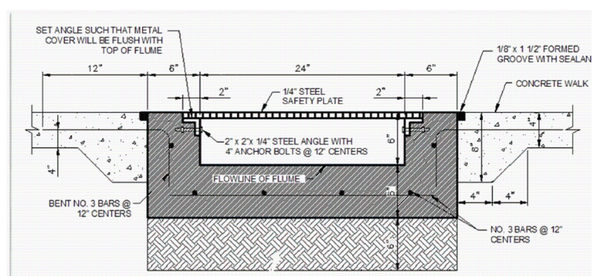
D PIPE DIAMETER (INCHES)	NUMBER OF ROWS OF DISSIPATORS	NUMBER OF DISSIPATORS IN FRONT ROW	W (INCHES)	A (INCHES)	B (INCHES)
12	1	3	4	4	8 1/8?5
18	2	4	4	4 1/2	9 1/2	15.3605
24	2	5	6	14 3/4	16 1/2
30	3	6	7 1/2	12 1/2	14 3/8
36	3	6	9	16 1/4	18 5/16
42	3	6	10 1/2	20	22 1/4
48	3	6	12	23 3/4	26 1/4
54	3	6	13 1/2	27 1/2	27 3/4
60	3	6	15	31 1/4	31 5/8

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006
DRAWING NAME: SD20

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
ENERGY DISSIPATER DETAIL

SCALE	DATE
NTS	1/2003
DRAWN BY: MRS	APPROVED BY: TRB



No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
TX REGISTERED ENGINEERING FIRM F-928
TBPE Firm No. 928

PRELIMINARY
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Not for construction or permit purposes.
Kimley»Horn
Engineer: BENJAMIN L. GREEN
P.E. No. 132190 Date: / /19

08/18/2023

KHA PROJECT	069264937
DATE	JULY 23
SCALE:	AS SHOWN
DESIGNED BY:	BLG
DRAWN BY:	ABG
CHECKED BY:	BLG

STORM DRAIN DETAILS

HAVERLAND BTR
170 HAVERLAND DR,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
47 OF 102

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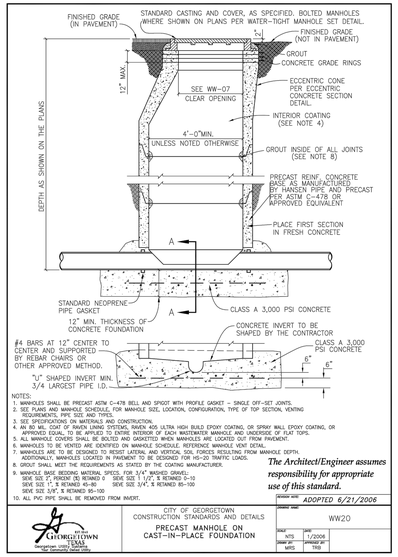


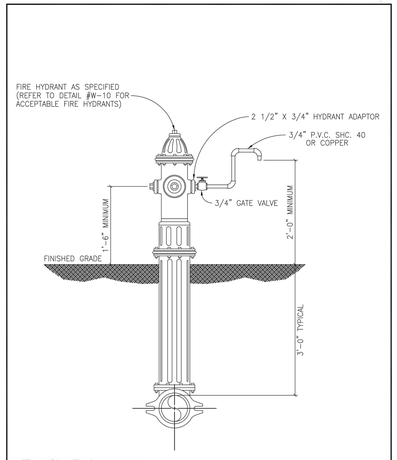
NOTES:
1. MANHOLES SHALL BE PRECAST ASTM C-478 BELL AND SPIGOT WITH PROFILE GASKET – SINGLE OFF-SET JOINTS.
2. SEE PLANS AND MANHOLE SCHEDULE, FOR MANHOLE SIZE, LOCATION, CONFIGURATION, TYPE OF TOP SECTION, VENTING REQUIREMENTS, PIPE SIZE AND TYPES.
3. SEE SPECIFICATIONS ON MATERIALS AND CONSTRUCTION.
4. AN 80 MIL. COAT OF RAVEN LINING SYSTEMS, RAVEN 405 ULTRA HIGH BUILD EPOXY COATING, OR SPRAY WALL EPOXY COATING, OR APPROVED EQUAL, TO BE APPLIED TO ENTIRE INTERIOR OF EACH WASTEWATER MANHOLE AND UNDERSIDE OF FLAT TOPS.
5. ALL MANHOLE COVERS SHALL BE BOLTED AND GASKETED WHEN MANHOLES ARE LOCATED OUT FROM PAVEMENT.
6. MANHOLES TO BE VENTED ARE IDENTIFIED ON MANHOLE SCHEDULE. REFERENCE MANHOLE VENT DETAIL.
7. MANHOLES ARE TO BE DESIGNED TO RESIST LATERAL AND VERTICAL SOIL FORCES RESULTING FROM MANHOLE DEPTH. ADDITIONALLY, MANHOLES LOCATED IN PAVEMENT TO BE DESIGNED FOR HS-20 TRAFFIC LOADS.
8. GROUT SHALL MEET THE REQUIREMENTS AS STATED BY THE COATING MANUFACTURER.
9. MANHOLE BASE BEDDING MATERIAL SPECS. FOR 3/4" WASHED GRAVEL:
   SIEVE SIZE 2", PERCENT (%) RETAINED 0
   SIEVE SIZE 1 1/2", % RETAINED 0–10
   SIEVE SIZE 1", % RETAINED 40–80
   SIEVE SIZE 3/4", % RETAINED 85–100
   SIEVE SIZE 3/8", % RETAINED 95–100
10. ALL PVC PIPE SHALL BE REMOVED FROM INVERT.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
PRECAST MANHOLE ON CAST-IN-PLACE FOUNDATION

WW20 | NTS | 1/2006 | DRAWN BY: MRS | CHECKED BY: TRB

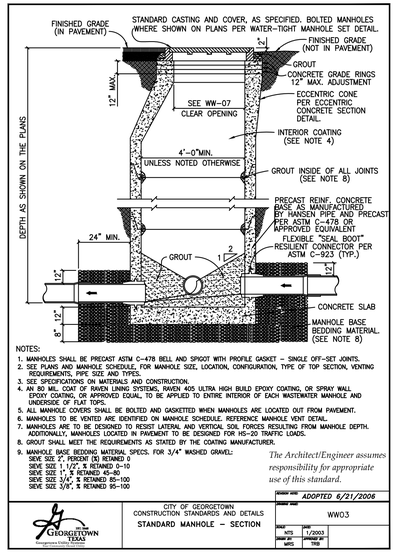


The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
FIRE HYDRANT SAMPLING POINT

W19 | NTS | 1/2003 | DRAWN BY: MRS | CHECKED BY: TRB



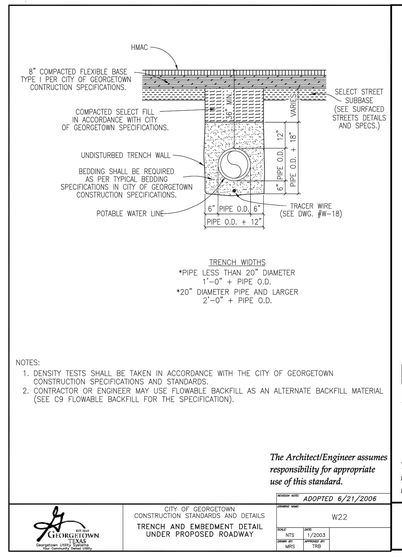
NOTES:
1. MANHOLES SHALL BE PRECAST ASTM C-478 BELL AND SPIGOT WITH PROFILE GASKET – SINGLE OFF-SET JOINTS.
2. SEE PLANS AND MANHOLE SCHEDULE, FOR MANHOLE SIZE, LOCATION, CONFIGURATION, TYPE OF TOP SECTION, VENTING REQUIREMENTS, PIPE SIZE AND TYPES.
3. SEE SPECIFICATIONS ON MATERIALS AND CONSTRUCTION.
4. AN 80 MIL. COAT OF RAVEN LINING SYSTEMS, RAVEN 405 ULTRA HIGH BUILD EPOXY COATING, OR SPRAY WALL EPOXY COATING, OR APPROVED EQUAL, TO BE APPLIED TO ENTIRE INTERIOR OF EACH WASTEWATER MANHOLE AND UNDERSIDE OF FLAT TOPS.
5. ALL MANHOLE COVERS SHALL BE BOLTED AND GASKETED WHEN MANHOLES ARE LOCATED OUT FROM PAVEMENT.
6. MANHOLES TO BE VENTED ARE IDENTIFIED ON MANHOLE SCHEDULE. REFERENCE MANHOLE VENT DETAIL.
7. MANHOLES ARE TO BE DESIGNED TO RESIST LATERAL AND VERTICAL SOIL FORCES RESULTING FROM MANHOLE DEPTH. ADDITIONALLY, MANHOLES LOCATED IN PAVEMENT TO BE DESIGNED FOR HS-20 TRAFFIC LOADS.
8. GROUT SHALL MEET THE REQUIREMENTS AS STATED BY THE COATING MANUFACTURER.
9. MANHOLE BASE BEDDING MATERIAL SPECS. FOR 3/4" WASHED GRAVEL:
   SIEVE SIZE 2", PERCENT (%) RETAINED 0
   SIEVE SIZE 1 1/2", % RETAINED 0–10
   SIEVE SIZE 1", % RETAINED 40–80
   SIEVE SIZE 3/4", % RETAINED 85–100
   SIEVE SIZE 3/8", % RETAINED 95–100

The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD MANHOLE – SECTION

WW03 | NTS | 1/2003 | DRAWN BY: MRS | CHECKED BY: TRB



TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

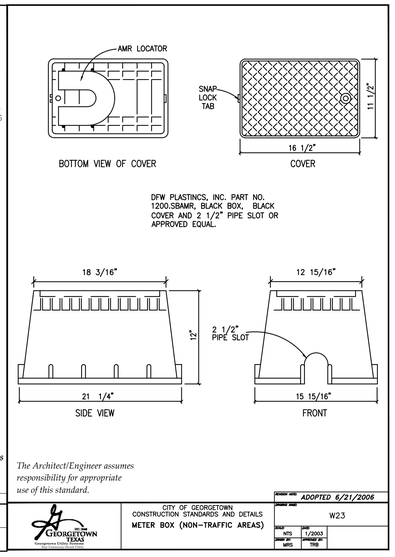
NOTES:
1. DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS AND STANDARDS.
2. CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL (SEE C9 FLOWABLE BACKFILL FOR THE SPECIFICATION).

The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT DETAIL UNDER PROPOSED ROADWAY

W22 | NTS | 1/2003 | DRAWN BY: MRS | CHECKED BY: TRB



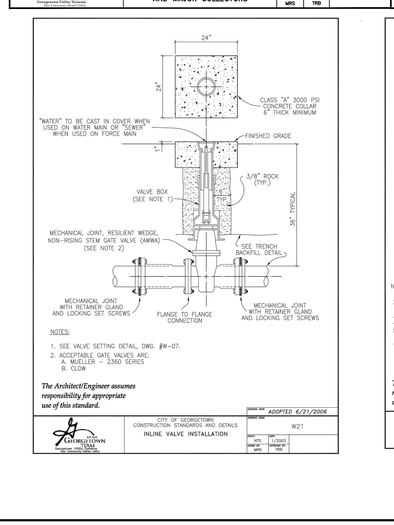
DFW PLASTINICS, INC. PART NO. 1200.SBAMR, BLACK BOX, BLACK COVER AND 2 1/2" PIPE SLOT OR APPROVED EQUAL.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
METER BOX (NON-TRAFFIC AREAS)

W23 | NTS | 1/2003 | DRAWN BY: MRS | CHECKED BY: TRB



NOTE: WHEN CROSSING A WATER MAIN, THE ELECTRIC CONDUIT MUST BE ENCASED WITH 3,000 PSI RED CONCRETE FOR FIVE (5) FEET BOTH SIDES FROM THE CROSSING POINT.

ELECTRIC CONDUIT CONCRETE ENCASEMENT DETAIL

CLASSIFICATION	ROW	B–B	PVMT.
LOCAL STREET	50'	28'	24'
RESIDENTIAL STREET	65'	37'	33'
MAJOR COLLECTOR	73'	45'	41'

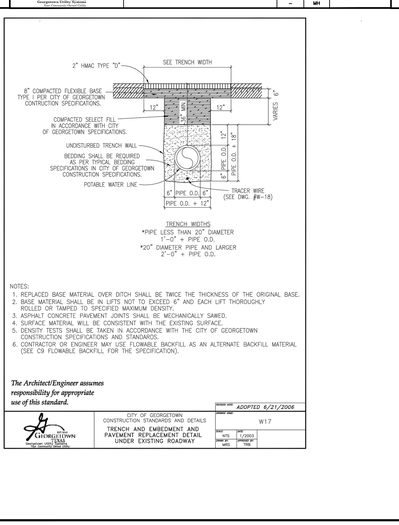
MINIMUM COVER BELOW FINISH–GRADE ALL UTILITIES UNDER ROADWAY – 36"	
ELECTRIC PRIMARY	36"
ELECTRIC SECONDARY	24"
WATER	36"
WASTEWATER	48"
STORM SEWER	36"
GAS	36"
TELECOMMUNICATIONS	36"

The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
UTILITY ASSIGNMENTS FOR LOCAL STREETS, RESIDENTIAL COLLECTORS AND MAJOR COLLECTORS

W01A | NTS | 1/2003 | DRAWN BY: MRS | CHECKED BY: TRB



NOTES:
1. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" OFFSET AND AT THE CENTERLINE AS SHOWN ON DETAIL "A".
2. WHERE NO SIDEWALK EXISTS, METER BOXES SHALL BE SET TO CONFORM TO FINISHED GRADE.
3. AUTHORIZED SERVICE LINE MATERIAL: POLYETHYLENE TUBING SHALL BE SDR–9. CLASS 200, SDR TUBING SHALL HAVE STAINLESS STEEL STIFFENERS.
4. ROTATE THE CORPORATION STOP SO THAT THE OPERATING NUT IS ACTUATED FROM THE VERTICAL POSITION RATHER THAN THE HORIZONTAL. SEE STD. RISER FOR CORP. STOP DETAIL, (DWG # W08).
5. SERVICE LINES SHALL BE CONTINUOUS FROM CORPORATION STOP TO CORPORATION STOP WITH NO FITTINGS IN BETWEEN.
6. SERVICE CASING SHALL NOT BE INSTALLED BY WATER JETTING UNDER ROADWAY.
7. CASING REQUIRED FOR ALL PAVEMENT CROSSINGS. 4" SDR–26 REQUIRED FOR OPEN–CUT. STEEL CASING PIPE REQUIRED FOR JACK AND BORE. LIMITS OF CASING SHOULD EXTEND SIX FEET BEYOND THE EDGE OF PAVEMENT OR BACK–OF–CURB.
8. BEDDING MATERIAL AS PER CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS.
9. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.
10. METER BOX TO BE CAPABLE OF HOUSING ITRON AUTOMATIC METER READING DEVICE. USE DFW–PLASTICS, INC. PART NO. 1200.SBAMR OR APPROVED EQUAL.
11. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY. SEE DETAIL W23.
12. CASING SHALL EXTEND OUT TO WITHIN 4' INSIDE OF THE R.O.W. LINE, ON BOTH SIDES.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 01/23/2013

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL WATER SERVICE–ELEVATION

W03 | NTS | 1/2013 | DRAWN BY: — | CHECKED BY: —

The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD AIR RELEASE VALVE FOR WATER MAIN

W12 | NTS | 1/2003 | DRAWN BY: MH | CHECKED BY: TRB

The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD AIR RELEASE VALVE FOR WATER MAIN

W13 | NTS | 1/2003 | DRAWN BY: MRS | CHECKED BY: TRB

NOTE: WHEN CROSSING A WATER MAIN, THE ELECTRIC CONDUIT MUST BE ENCASED WITH 3,000 PSI RED CONCRETE FOR FIVE (5) FEET BOTH SIDES FROM THE CROSSING POINT.

ELECTRIC CONDUIT CONCRETE ENCASEMENT DETAIL

CLASSIFICATION	ROW	B–B	PVMT.
LOCAL STREET	50'	28'	24'
RESIDENTIAL STREET	65'	37'	33'
MAJOR COLLECTOR	73'	45'	41'

MINIMUM COVER BELOW FINISH–GRADE ALL UTILITIES UNDER ROADWAY – 36"	
ELECTRIC PRIMARY	36"
ELECTRIC SECONDARY	24"
WATER	36"
WASTEWATER	48"
STORM SEWER	36"
GAS	36"
TELECOMMUNICATIONS	36"

The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
UTILITY ASSIGNMENTS FOR LOCAL STREETS, RESIDENTIAL COLLECTORS AND MAJOR COLLECTORS

WW01A | NTS | 1/2003 | DRAWN BY: MRS | CHECKED BY: TRB

NOTES:
1. SEE VALVE SETTING DETAIL, DWG. #W–07.
2. ACCEPTABLE GATE VALVES ARE:
   A. MUELLER – 2360 SERIES
   B. CLOW

The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
INLINE VALVE INSTALLATION

W21 | NTS | 1/2003 | DRAWN BY: MRS | CHECKED BY: TRB

TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER
1'–0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER
2'–0" + PIPE O.D.

NOTES:
1. REPLACED BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE.
2. BASE MATERIAL SHALL BE IN LIFTS NOT TO EXCEED 6" AND EACH LIFT THOROUGHLY ROLLED OR TAMPED TO SPECIFIED MAXIMUM DENSITY.
3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
4. SURFACE MATERIAL WILL BE CONSISTENT WITH THE EXISTING SURFACE.
5. DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS AND STANDARDS.
6. CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL (SEE C9 FLOWABLE BACKFILL FOR THE SPECIFICATION).

The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT AND PAVEMENT REPLACEMENT DETAIL UNDER EXISTING ROADWAY

W17 | NTS | 1/2003 | DRAWN BY: MRS | CHECKED BY: TRB

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM
STATE OF TEXAS REGISTRY #: F-928
TBPE Firm No. 928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer: BENJAMIN L. GREEN
P.E. No. 132190 Date: / /19

08/18/2023

KHA PROJECT 069264937
DATE: JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

UTILITY DETAILS

HAVERLAND BTR
170 HAVERLAND DR.
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
48 OF 102

XXXXXXXXX

GUIDELINES FOR DESIGN AND INSTALLATION OF TEMPORARY EROSION AND SEDIMENTATION CONTROLS

TYPE OF STRUCTURE	REACH LENGTH	MAXIMUM DRAINAGE AREA	SLOPE
SILT FENCE	N/A	2 ACRES	0 – 10%
	200 FEET	2 ACRES	10 – 20%
	100 FEET	1 ACRE	20 – 30%
	50 FEET	1/2 ACRE	> 30%
TRIANGLE FILTER DIKE	100 FEET	1/2 ACRE	< 30% SLOPE
	50 FEET	1/4 ACRE	> 30% SLOPE
ROCK BERM *, **	500 FEET	< 5 ACRES	0 – 10%

* FOR ROCK BERM DESIGN WHERE PARAMETERS ARE OTHER THAN STATED, DRAINAGE AREA CALCULATIONS AND ROCK BERM DESIGN MUST BE SUBMITTED FOR REVIEW.

** HIGH SERVICE ROCK BERMS MAY BE REQUIRED IN AREAS OF ENVIRONMENTAL SIGNIFICANCE AS DETERMINED BY THE CITY OF GEORGETOWN.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006

GEORGETOWN TEXAS EST. 1848 — Georgetown Utility Systems, Your Community Owned Utility

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TEMPORARY EROSION AND SEDIMENTATION CONTROL GUIDELINES

DRAWING NAME: EC01 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB

NOTE: THIS SECTION IS INTENDED TO ASSIST THOSE PERSONS PREPARING WATER POLLUTION ABATEMENT PLANS (WPAP) OR STORM WATER POLLUTION PREVENTION PLANS (SW3P) THAT COMPLY WITH FEDERAL, STATE AND/OR LOCAL STORM WATER REGULATIONS.

1. THE CONTRACTOR TO INSTALL AND MAINTAIN EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING, GRADING, OR EXCAVATION). CONTRACTOR TO REMOVE EROSION/SEDIMENTATION CONTROLS AT THE COMPLETION OF PROJECT AND GRASS RESTORATION.
2. ALL PROJECTS WITHIN THE RECHARGE ZONE OF THE EDWARD'S AQUIFER SHALL SUBMIT A BEST MANAGEMENT PRACTICES AND WATER POLLUTION AND ABATEMENT PLAN TO THE TNRCC FOR APPROVAL PRIOR TO ANY CONSTRUCTION.
3. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS TO BE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN AND WATER POLLUTION ABATEMENT PLAN. DEVIATIONS FROM THE APPROVED PLAN MUST BE SUBMITTED TO AND APPROVED BY THE OWNER'S REPRESENTATIVE.
4. ALL PLANTING SHALL BE DONE BETWEEN MAY 1 AND SEPTEMBER 15 EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING. IF PLANTING IS AUTHORIZED TO BE DONE OUTSIDE THE DATES SPECIFIED, THE SEED SHALL BE PLANTED WITH THE ADDITION OF WINTER FESCUE (KENTUCKY 31) AT A RATE OF 100lb/ACRE. GRASS SHALL BE COMMON BERMUDA GRASS, HULLED, MINIMUM 82% PURE LIVE SEED. ALL GRASS SEED SHALL BE FREE FROM NOXIOUS WEED, GRADE "A" RECENT CROP, RECLEANED AND TREATED WITH APPROPRIATE FUNGICIDE AT TIME OF MIXING. SEED SHALL BE FURNISHED IN SEALED, STANDARD CONTAINERS WITH DEALER'S GUARANTEED ANALYSIS.
5. ALL DISTURBED AREAS TO BE RESTORED AS NOTED IN THE WATER POLLUTION ABATEMENT PLAN.
6. THE PLANTED AREA TO BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL, BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF FOUR (4) INCHES. THE IRRIGATION TO OCCUR AT 10–DAY INTERVALS DURING THE FIRST TWO MONTHS TO INSURE GERMINATION AND ESTABLISHMENT OF THE GRASS . RAINFALL OCCURRENCES OF 1/2 INCH OR GREATER TO POSTPONE THE WATERING SCHEDULE ONE WEEK.
7. RESTORATION TO BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1–1/2 INCHES HIGH WITH 95% *COVERAGE,* PROVIDED NO BARE SPOTS LARGER THAN 25 SQUARE FEET EXIST.
8. A MINIMUM OF FOUR (4) INCHES OF TOPSOIL TO BE PLACED IN ALL AREAS DISTURBED BY CONSTRUCTION.
9. THE CONTRACTOR TO HYDROMULCH OR SOD (AS SHOWN ON PLANS) ALL EXPOSED CUTS AND FILLS UPON COMPLETION OF CONSTRUCTION.
10. EROSION AND SEDIMENTATION CONTROLS TO BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILDUP WITHIN TREE DRIPLINE.
11. TO AVOID SOIL COMPACTION, CONTRACTOR SHALL NOT ALLOW VEHICULAR TRAFFIC, PARKING, OR STORAGE OF EQUIPMENT OR MATERIALS IN THE TREE DRIPLINE AREAS.
12. WHERE A FENCE IS CLOSER THAN FOUR (4) FEET TO A TREE TRUNK, PROTECT THE TRUNK WITH STRAPPED–ON PLANKING TO A HEIGHT OF EIGHT (8) FEET (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE FENCING.
13. TREES TO BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.
14. ANY ROOT EXPOSED BY CONSTRUCTION ACTIVITY TO BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOPSOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN TWO DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
15. CONTRACTOR TO PRUNE VEGETATION TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND EQUIPMENT BEFORE DAMAGE OCCURS (RIPPING OF BRANCHES, ETC.). ALL FINISHED PRUNING TO BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE "NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES").
16. THE CONTRACTOR IS TO INSPECT THE CONTROLS AT WEEKLY INTERVALS AND AFTER EVERY RAINFALL EXCEEDING 1/4 INCH TO VERIFY THAT THEY HAVE NOT BEEN SIGNIFICANTLY DISTURBED. ANY ACCUMULATED SEDIMENT AFTER A SIGNIFICANT RAINFALL TO BE REMOVED AND PLACED IN THE OWNER DESIGNATED SPOIL DISPOSAL SITE. THE CONTRACTOR TO CONDUCT PERIODIC INSPECTIONS OF ALL EROSION/SEDIMENTATION CONTROLS AND TO MAKE ANY REPAIRS OR MODIFICATIONS NECESSARY TO ASSURE CONTINUED EFFECTIVE OPERATION OF EACH DEVICE.
17. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, TREE WELL, OR OTHER SUCH SITE DEVELOPMENT IMMEDIATELY ADJACENT TO A PROTECTED TREE, ERECT THE FENCE APPROXIMATELY TWO TO FOUR FEET (2'–4') BEHIND THE AREA IN QUESTION.
18. NO ABOVE AND/OR BELOW GROUND TEMPORARY FUEL STORAGE FACILITIES TO BE STORED ON THE PROJECT SITE.
19. IF EROSION AND SEDIMENTATION CONTROL SYSTEMS ARE EXISTING FROM PRIOR CONTRACTS, OWNER'S REPRESENTATIVE AND THE CONTRACTOR TO EXAMINE THE EXISTING EROSION AND SEDIMENTATION CONTROL SYSTEMS FOR DAMAGE PRIOR TO CONSTRUCTION. ANY DAMAGE TO PREEXISTING EROSION AND SEDIMENTATION CONTROLS NOTED TO BE REPAIRED AT OWNERS EXPENSE.
20. INTENTIONAL RELEASE OF VEHICLE OR EQUIPMENT FLUIDS ONTO THE GROUND IS NOT ALLOWED. CONTAMINATED SOIL RESULTING FROM ACCIDENTAL SPILL TO BE REMOVED AND DISPOSED OF PROPERLY.

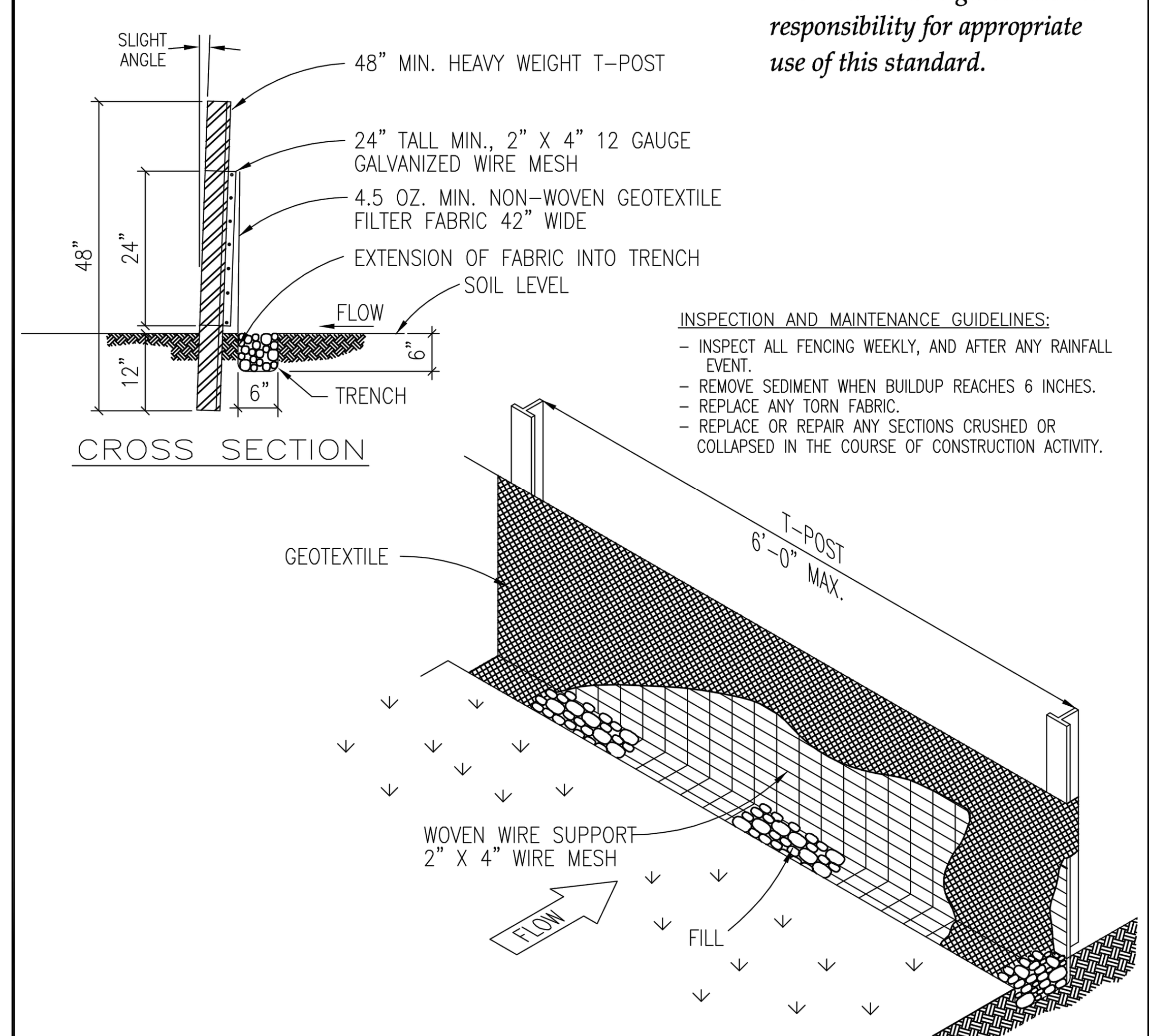
The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
EROSION AND SEDIMENTATION AND TREE PROTECTION NOTES

DRAWING NAME: EC01A | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB

The Architect/Engineer assumes responsibility for appropriate use of this standard.



INSPECTION AND MAINTENANCE GUIDELINES:

- INSPECT ALL FENCING WEEKLY, AND AFTER ANY RAINFALL EVENT.
- REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.
- REPLACE ANY TORN FABRIC.
- REPLACE OR REPAIR ANY SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY.

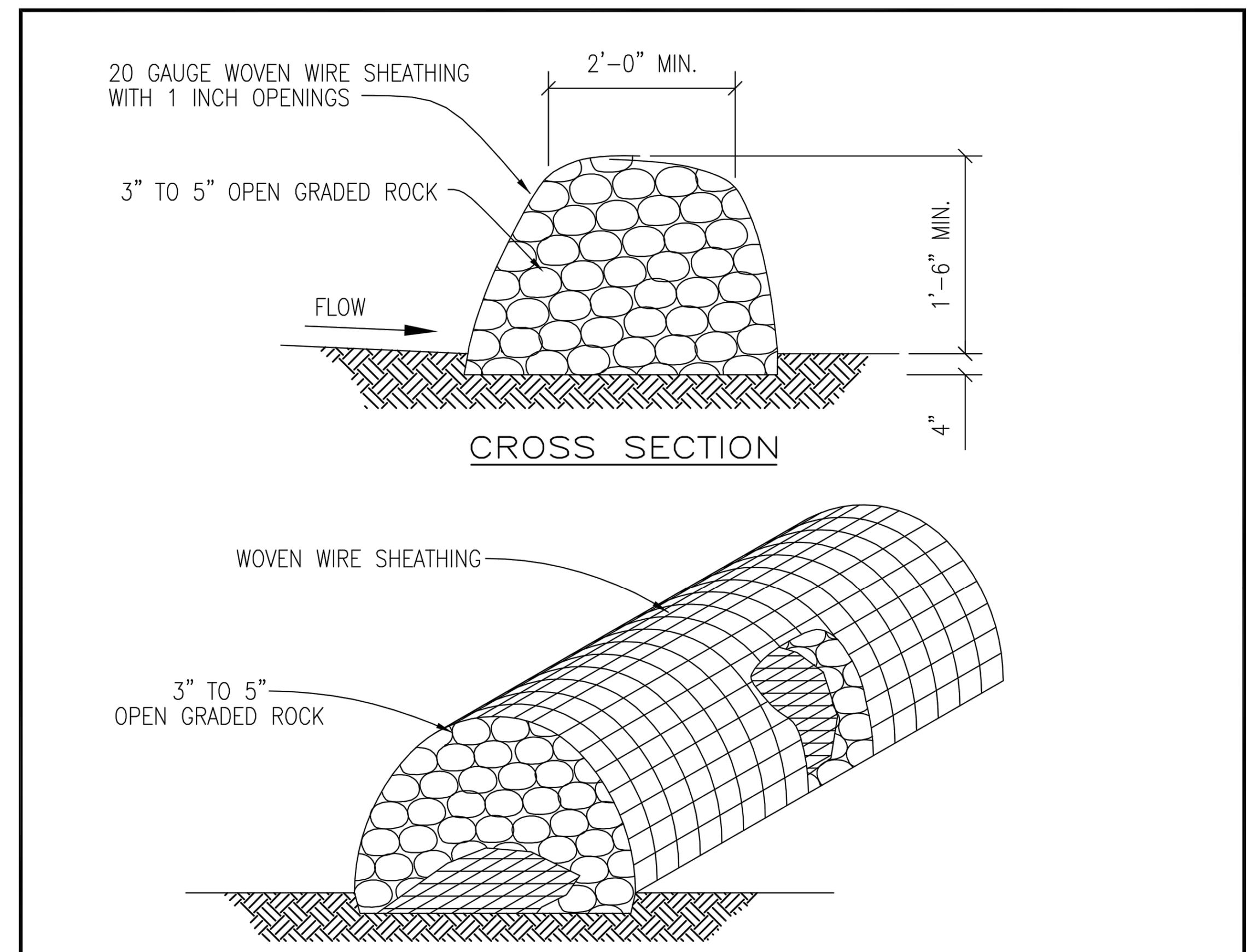
INSTALLATION:

- LAYOUT THE SILT FENCE FOLLOWING AS CLOSELY AS POSSIBLE TO THE CONTOUR.
- CLEAR THE GROUND OF DEBRIS, ROCKS, PLANTS (INCLUDING GRASSES TALLER THAN 2") TO PROVIDE A SMOOTH FLOW APPROACH SURFACE. EXCAVATE 6" DEEP X 6" WIDE TRENCH ON UPSTREAM SIDE OF FACE PER PLANS.
- DRIVE THE HEAVY DUTY T–POST AT LEAST 12 INCHES INTO THE GROUND AND AT A SLIGHT ANGLE TOWARDS THE FLOW.
- ATTACH THE 2" X 4" 12 GAUGE WELDED WIRE MESH TO THE T–POST WITH 11 1/2 GAUGE GALVANIZED T–POST CLIPS. THE TOP OF THE WIRE TO BE 24" ABOVE GROUND LEVEL. THE WELDED WIRE MESH TO BE OVERLAPPED 6" AND TIED AT LEAST 6 TIMES WITH HOG RINGS.
- THE SILT FENCE TO BE INSTALLED WITH A SKIRT A MINIMUM OF 6" WIDE PLACED ON THE UPHILL SIDE OF THE FENCE INSIDE EXCAVATED TRENCH. THE FABRIC TO OVERLAP THE TOP OF THE WIRE BY 1".
- ANCHOR THE SILT FENCE BY BACKFILLING WITH EXCAVATED DIRT AND ROCKS (NOT LARGER THAN 2").
- GEOTEXTILE SPLICES SHOULD BE A MINIMUM OF 18" WIDE ATTACHED IN AT LEAST 6 PLACES. SPLICES IN CONCENTRATED FLOW AREAS WILL NOT BE ACCEPTED.
- SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

REVISION NOTE: ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
SILT FENCE DETAIL

DRAWING NAME: EC02 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB



INSTALLATION:

- LAYOUT THE ROCK BERM FOLLOWING AS CLOSELY AS POSSIBLE TO THE CONTOUR.
- CLEAR THE GROUND OF DEBRIS, ROCKS OR PLANTS THAT WILL INTERFERE WITH INSTALLATION.
- PLACE WOVEN WIRE FABRIC ON THE GROUND ALONG THE PROPOSED INSTALLATION WITH ENOUGH OVERLAP TO COMPLETELY ENCIRCLE THE FINISHED SIZE OF THE BERM.
- PLACE THE ROCK ALONG THE CENTER OF THE WIRE TO THE DESIGNATED HEIGHT.
- WRAP THE STRUCTURE WITH THE PREVIOUSLY PLACED WIRE MESH SECURE ENOUGH SO THAT WHEN WALKED ACROSS THE STRUCTURE RETAINS IT'S SHAPE.
- SECURE WITH TIE WIRE.
- THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROX. 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.
- THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

INSPECTION AND MAINTENANCE GUIDELINES:

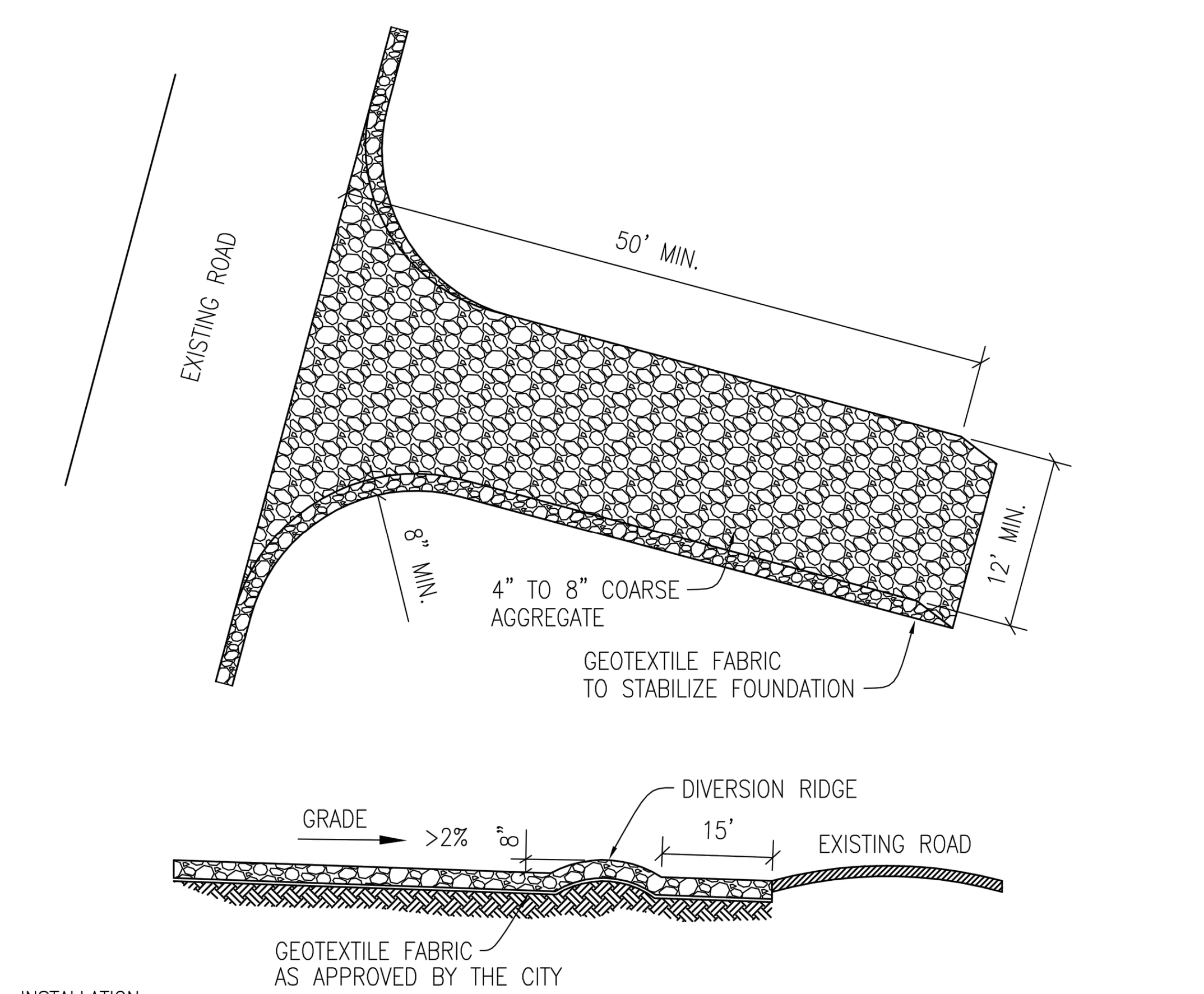
- INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL EVENT BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.
- REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER.
- REPAIR ANY LOOSE WIRE SHEATHING.
- THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
- THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
ROCK BERM DETAIL

DRAWING NAME: EC03 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB



INSTALLATION:

- CLEAR THE AREA OF DEBRIS, ROCKS OR PLANTS THAT WILL INTERFERE WITH INSTALLATION.
- GRADE THE AREA FOR THE ENTRANCE TO FLOW BACK ON TO THE CONSTRUCTION SITE. RUNOFF FROM THE STABILIZED CONSTRUCTION
- PLACE GEOTEXTILE FABRIC AS APPROVED BY THE CITY.
- PLACE ROCK AS APPROVED BY THE CITY.

INSPECTIONS AND MAINTENANCE GUIDELINES:

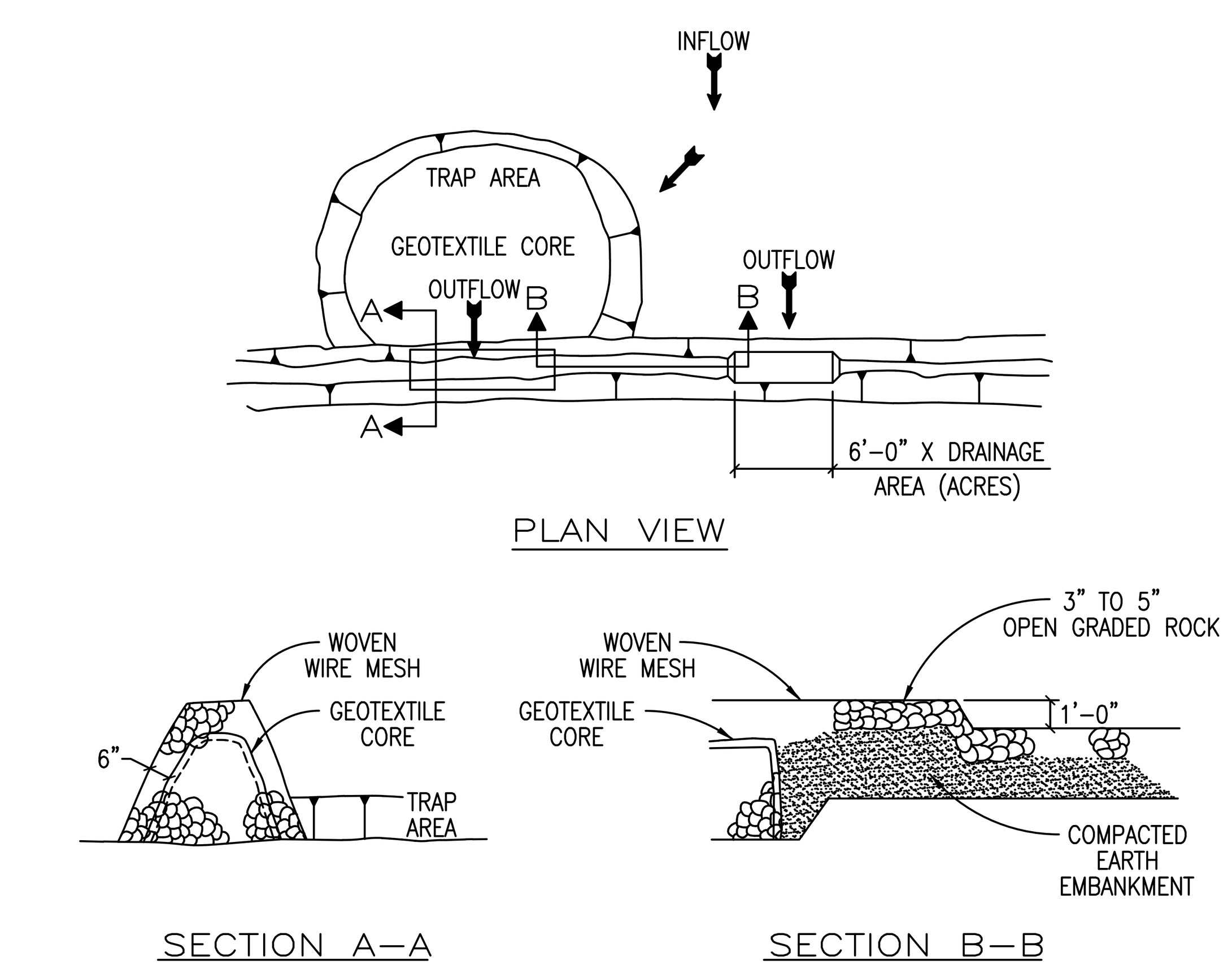
- THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
- ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ON TO PUBLIC RIGHTS–OF–WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
- WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY.
- WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
- ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STABILIZED CONSTRUCTION ENTRANCE

DRAWING NAME: EC06 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB



INSTALLATION:

- LOCATE THE SEDIMENT TRAP SO AS TO DISTURB AS FEW TREES AS POSSIBLE.
- CLEAR AND GRUB THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MATS.
- LAYOUT THE WIRE MESH AND THEN THE GEOTEXTILE FABRIC.
- CONSTRUCT THE GEOTEXTILE CORE AND CORRESPONDING ROCK EMBANKMENT TO THE DESIGNATED HEIGHT AND CONFIGURATION.
- WRAP THE STRUCTURE WITH THE PREVIOUSLY PLACED WIRE MESH SECURE ENOUGH SO THAT WHEN WALKED ACROSS THE STRUCTURE RETAINS IT'S SHAPE. SECURE WITH TIE WIRE.
- PLACE THE EMBANKMENT MATERIAL IN 8 TO 12 INCH LIFTS AND MACHINE COMPACT.

INSPECTION AND MAINTENANCE GUIDELINES:

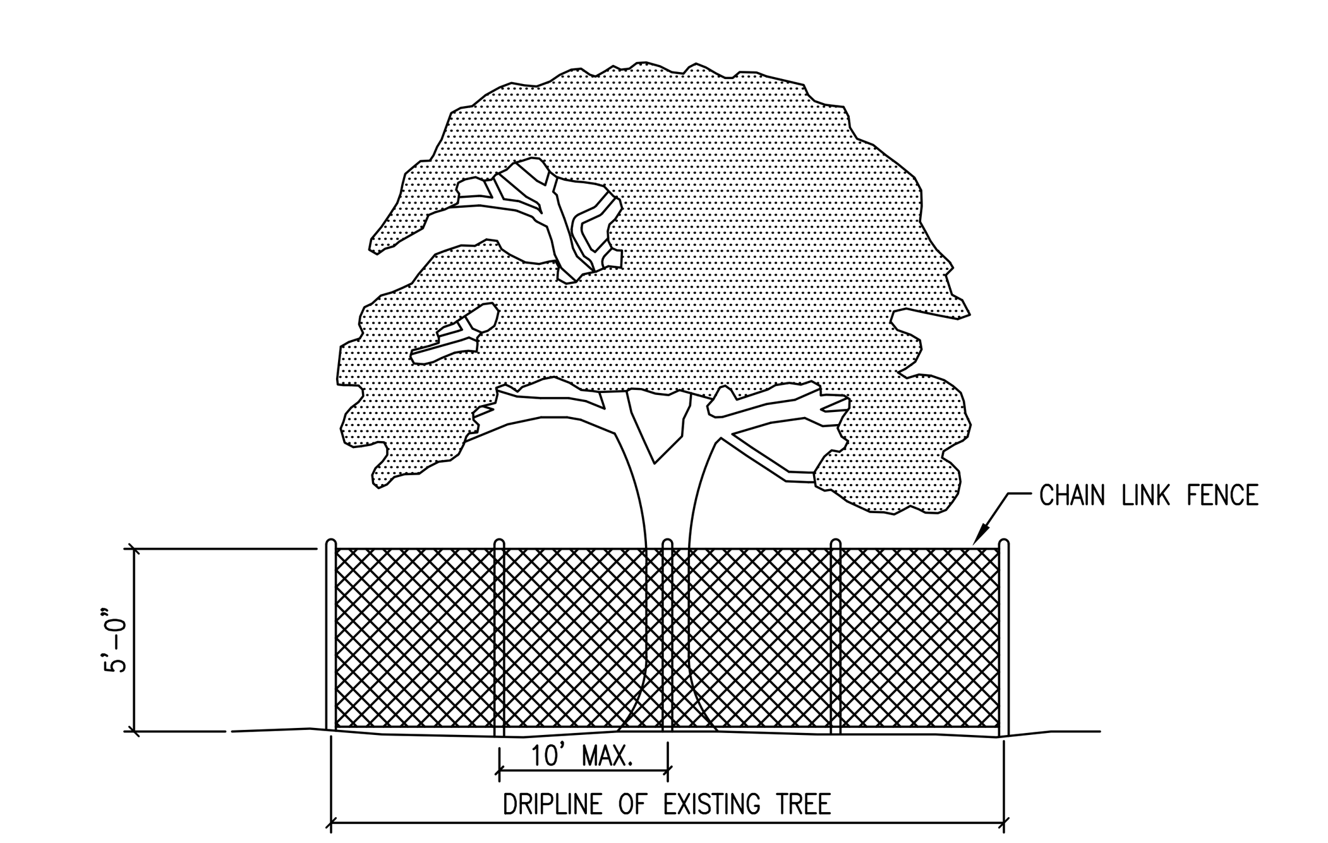
- INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. REPAIR SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
- TRASH AND OTHER DEBRIS SHOULD BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO HALF OF THE DESIGN DEPTH OF THE TRAP.
- SEDIMENT REMOVED FROM THE TRAP SHOULD BE DEPOSITED IN AN APPROVED SPOILS AREA AND IN SUCH A MANNER THAT IT WILL NOT CAUSE ADDITIONAL SILTATION.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
SEDIMENT TRAP DETAIL

DRAWING NAME: EC07 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB



NOTES:

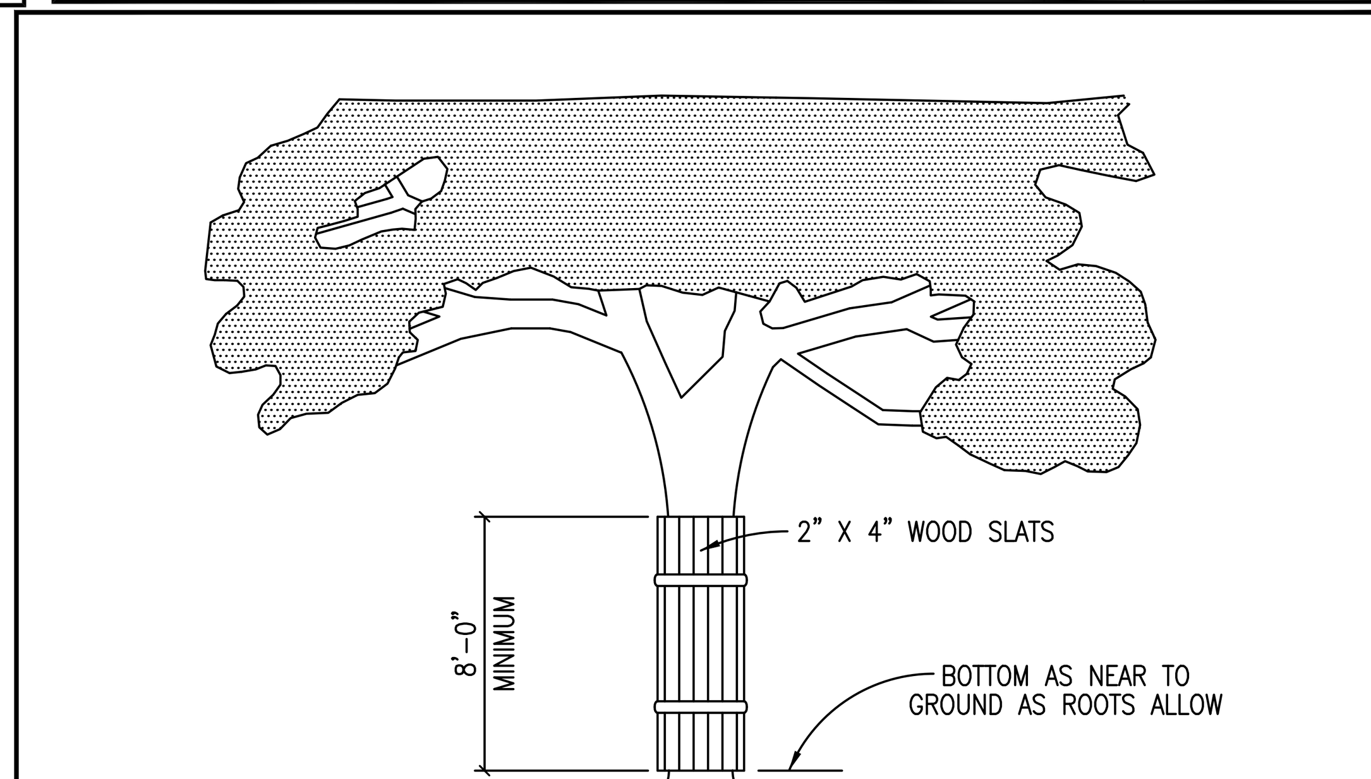
1. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING).
2. FENCES SHALL COMPLETELY SURROUND THE TREE, OR CLUSTERS OF TREES; WILL BE LOCATED AT THE OUTERMOST LIMIT OF THE TREE BRANCHES (DRIPLINE), AND WILL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
   A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MATERIALS.
   B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN SIX INCHES (6") CUT OR FILL, OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY.
   C. WOUNDS TO EXPOSED ROOTS, TRUNKS OR LIMBS BY MECHANICAL EQUIPMENT.
   D. OTHER ACTIVITIES DETRIMENTAL TO TREES, SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING AND FIRE.
3. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIPLINES MAY BE PERMITTED IN THE FOLLOWING CASES:
   A. WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.
   B. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN SIX FEET (6'–0") TO BUILDING.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TREE PROTECTION – CHAIN LINK FENCE

DRAWING NAME: EC09 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB



NOTES:

1. WHERE ANY EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN FOUR FEET (4'–0") TO A TREE TRUNK; PROTECT THE TRUNK WITH STRAPPED–ON–PLANKING TO A HEIGHT OF EIGHT FEET (8'–0"), OR TO THE LIMITS OF LOWER BRANCHING IN ADDITION TO THE REDUCED FENCING PROVIDED.
2. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOP SOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN TWO (2) DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE, AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
3. PRIOR EXCAVATION OR GRADE CUTTING WITHIN TREE DRIPLINE. MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT, TO MINIMIZE DAMAGE TO REMAINING ROOTS.
4. TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES SHOULD BE WATERED DEEPLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER. TREE CROWNS SHOULD BE SPRAYED WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
5. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.
6. NO LANDSCAPE TOPSOIL DRESSING GREATER THE FOUR INCHES (4") SHALL BE PERMITTED WITHIN THE DRIPLINE OF A TREE. NO SOIL IS PERMITTED ON THE ROOT FLARE OF ANY TREE.
7. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC AND EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISION NOTE: ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TREE PROTECTION – WOOD SLATS

DRAWING NAME: EC10 | SCALE: NTS | DATE: 1/2003 | DRAWN BY: MRS | APPROVED BY: TRB

No.	REVISIONS	DATE	BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date / /19

08/18/2023

KHA PROJECT 069264937
DATE JULY 23
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

EROSION CONTROL DETAILS

HAVERLAND BTR
170 HAVERLAND DR.
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
49 OF 102

XXXXXXXXX

Kimley»Horn

Attachment G: Inspection, Maintenance, Repair and Retrofit Plan

The inspection and maintenance plan outlines 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 owner to provide the inspections and maintenance as outlined in the plan for the duration of the project. The owner 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.

Disposal of accumulated silt shall be accomplished following Texas Commission on Environmental Quality guidelines and specifications.

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

Inspection and Maintenance For BMPs

Batch detention basins may have somewhat higher maintenance requirements than an extended detention basin since they are active stormwater controls. The maintenance activities are identical to those of extended detention basins with the addition of maintenance and inspections of the automatic controller and the valve at the outlet.

Inspections. Inspections should take place a minimum of twice a year. One inspection should take place during wet weather to determine if the basin is meeting the target detention time of 12 hours and a drawdown time of no more than 48 hours. The remaining inspections should occur between storm events so that manual operation of the valve and controller can be verified. The level sensor in the basin should be inspected and any debris or sediment in the area should be removed. The outlet structure and the trash screen should be inspected for signs of clogging. Debris and sediment should be removed from the orifice and outlet(s) as described in previous sections. Debris obstructing the valve should be removed. During each inspection, erosion areas inside and downstream of this BMP should be identified and repaired/revegetated immediately.

Mowing. The basin, basin side-slopes, and embankment of the basin must be mowed to prevent woody growth and control weeds. A mulching mower should be used, or the grass clippings should be caught and removed. Mowing should take place at least twice a year, or more frequently if vegetation exceeds 18 inches in height. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas.

Litter and Debris Removal. Litter and debris removal should take place at least twice a year, as part of the periodic mowing operations and inspections. Debris and litter should be removed from the surface of the basin. Particular attention should be paid to floatable debris around the outlet

structure. The outlet should be checked for possible clogging or obstructions and any debris removed.

Erosion control. The basin side slopes and embankment all may periodically suffer from slumping and erosion. To correct these problems, corrective action, such as regrading and revegetation, may be necessary. Correction of erosion control should take place whenever required based on the periodic inspections.

Nuisance Control. Standing water or soggy conditions may occur in the basin. Some standing water may occur after a storm event since the valve may close with 2 to 3 inches of water in the basin. Some flow into the basin may also occur between storms due to spring flow and residential water use that enters the storm sewer system. Twice a year, the facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.).

Structural Repairs and Replacement. With each inspection, any damage to structural elements of the basin (pipes, concrete drainage structures, retaining walls, etc.) should be identified and repaired immediately. An example of this type of repair can include patching of cracked concrete, sealing of voids, removal of vegetation from cracks and joints. The various inlet/outlet structures in a basin will eventually deteriorate and must be replaced.

Sediment Removal. A properly designed batch detention basin will accumulate quantities of sediment over time. The accumulated sediment can detract from the appearance of the facility and reduce the pollutant removal performance of the facility. The sediment also tends to accumulate near the outlet structure and can interfere with the level sensor operation. Sediment shall be removed from the basin at least every 5 years, when sediment depth exceeds 6 inches, when the sediment interferes with the level sensor or when the basin does not drain within 48 hours. Care should be taken not to compromise the basin lining during maintenance.

Logic Controller. The Logic Controller should be inspected as part of the twice yearly investigations. Verify that the external indicators (active, cycle in progress) are operating properly by turning the controller off and on, and by initiating a cycle by triggering the level sensor in the basin. The valve should be manually opened and closed using the open/close switch to verify valve operation and to assist in inspecting the valve for debris. The solar panel should be inspected and any dust or debris on the panel should be carefully removed. The controller and all other circuitry and wiring should be inspected for signs of corrosion, damage from insects, water leaks, or other damage. At the end of the inspection, the controller should be reset. A ladder may be required during the inspection process to access the controller box.

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

Kimley»Horn

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

Responsible Party: TM BTR of TEXAS, LLC

Mailing Address: 9601 Amberglen Boulevard, BLDG G, STE 200

City, State: Austin, TX Zip: 78729

Telephone: 512-774-6239 Fax:

I, the owner, 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.

Signature of Responsible Party DocuSigned by: Ryan Mattox 904913EE184648F... Date 8/29/2023

This Maintenance Plan is based on TCEQ Maintenance Guidelines.

By: Date 07/25/2022

Benjamin L. Green, P.E.

Kimley»Horn

Attachment I: Measures for Minimizing Surface Stream Contamination

All flows generated onsite due to this development are conveyed through a combination of sheet flow and storm sewer systems.

The TSS removal calculations are attached within the Construction Plans in Attachment F.

The Sowes Branch surface stream will be protected with multiple batch detention water quality ponds to treat the on-site stormwater. The TCEQ TSS Removal Calculations spreadsheet was used to design the proposed water quality pond and can be found in the Construction Plans attached.

A batch detention basin is an extended detention basin modified to operate as a batch Approval of reactor. A valve on the first detention basin outlet is used to capture the produced runoff Innovative for a fixed amount of time and then release it. As in an extended detention basin, the Technology batch detention basin is primarily used to remove particulate pollutants and to reduce maximum runoff rates associated with development to their pre-development levels. Batch detention basins have superior water quality performance than traditional extended detention basins and achieve a total suspended solids (TSS) removal efficiency of 91%. (Middleton et al., 2006).

There are no sensitive features on-site according to the Geologic Assessment.

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: HAVERLAND BTR

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: RYAN MATTOX
   Entity: TM BTR TEXAS, LLC
   Mailing Address: 9601 Amberglen Boulevard, Suite 200
   City, State: Austin, TX Zip: 78729
   Telephone: 512-774-6239 Fax: _____
   Email Address: rmattox@taylormorrison.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: Benjamin L. Green, P.E.
   Texas Licensed Professional Engineer's Number: 132190
   Entity: Kimley-Horn
   Mailing Address: 5301 Southwest Pkwy, Bldg 2, Ste 100
   City, State:Austin, TX Zip: 78735
   Telephone:512-646-2243 Fax:_____
   Email Address:ben.green@kimley-horn.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: 302
   ☐ Commercial
   ☐ Industrial
   ☐ Off-site system (not associated with any development)
   ☐ Other: _____

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

   100% Domestic _____ gallons/day
   _____% Industrial _____ gallons/day
   _____% Commingled _____ gallons/day
   Total gallons/day: _____

6. Existing and anticipated infiltration/inflow is 30510 gallons/day. This will be addressed by: increasing pipe size and slope.

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 _____, 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

Pipe Diameter(Inches)	*Linear Feet (1)*	*Pipe Material (2)*	*Specifications (3)*
8	3,892	PVC	AWWA C900
3	9,592	PVC	AWWA C900

Total Linear Feet: 13,484

(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 Pecan Branch WWTP (name) Treatment Plant. The treatment facility is:

   ☒ Existing
   ☐ Proposed

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

   ☒ The City of Georgetown 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

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
SSWR-A	34 Of 103	1+00	MANHOLE
SSWR-A	34 Of 103	1+34.94	MANHOLE
SSWR-A	34 Of 103	3+88.24	MANHOLE
SSWR-A	34 Of 103	10+57.46	MANHOLE
SSWR-A	34 Of 103	13+74.57	MANHOLE
SSWR-B	34 Of 103	1+46.89	MANHOLE
SSWR-B	34 Of 103	4+81.79	MANHOLE

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
SSWR-A	35 OF 103	21+50.83	MANHOLE
SSWR-A	35 OF 103	22+01.60	MANHOLE
SSWR-A	35 OF 103	24+44.96	MANHOLE
SSWR-B	35 OF 103	6+37.51	MANHOLE
SSWR-B	35 OF 103	8+27.61	MANHOLE
SSWR-B	35 OF 103	10+45.88	MANHOLE
SSWR-B	35 OF 103	11+02.19	MANHOLE
SSWR-B	35 OF 103	11+77.88	MANHOLE
SSWR-C	35 OF 103	3+31.18	MANHOLE
SSWR-D	35 OF 103	3+37.50	MANHOLE

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
SSWR-A	99 Of 126	24+75.40	MANHOLE
SSWR-B	100 Of 114	1+00.11	MANHOLE
SSWR-B	100 Of 114	3+59.72	MANHOLE

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" = 100'.

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

Line	*Sheet*	*Station*
SSWR-A	34 of 103	1+50 to 9+00
	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

Line	*Sheet*	*Station*
	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

Line	*Station or Closest Point*	*Crossing or Parallel*	*Horizontal Separation Distance*	*Vertical Separation Distance*

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

Line	*Manhole*	*Station*	*Sheet*

Line	*Manhole*	*Station*	*Sheet*

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

Line	*Manhole*	*Station*	*Sheet*

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

Line	*Profile Sheet*	*Station to Station*	*FPS*	*% Slope*	*Erosion/Shock Protection*

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

Standard Details	*Shown on Sheet*
Lateral stub-out marking **[Required]**	48 of 103
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) **[Required]**	48 of 103
Alternate method of joining lateral to existing SCS line for potential future connections **[Required]**	48 of 103
Typical trench cross-sections **[Required]**	48 of 103
Bolted manholes **[Required]**	48 of 103
Sewer Service lateral standard details **[Required]**	48 of 103
Clean-out at end of line **[Required, if used]**	of
Baffles or concrete encasement for shock/erosion protection **[Required, if flow velocity of any section of pipe >10 fps]**	of
Detail showing Wastewater Line/Water Line Crossing **[Required, if crossings are proposed]**	of
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) **[Required, if Flexible Pipe is used]**	of

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

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.

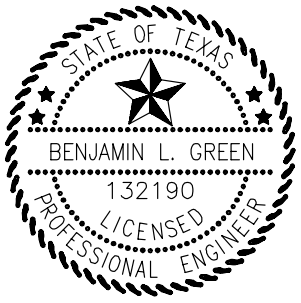
Signature

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: Benjamin L. Green, P.E.

Date: 08/22/2023

Place engineer's seal here:



Signature of Licensed Professional Engineer:

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

Pipe Diameter(Inches)	*% Slope required for minimum flow velocity of 2.0 fps*	*% Slope which produces flow velocity of 10.0 fps*
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)
Rh = hydraulic radius (ft)
S = slope (ft/ft)

ENGINEERING AND DRAINAGE STUDY

Haverland Dr.
Georgetown, Texas 78628

August 20, 2023

Prepared For:

City of Georgetown
406 W 8th Street
Georgetown, Texas 78628

Prepared By:

Kimley»Horn

5301 Southwest Parkway
Building 2, Suite 100
Austin, Texas 78735

TEXAS REGISTRATION #928

Job No. 067780331

TABLE OF CONTENTS

I. PROJECT OVERVIEW

The content of this report is based on a 40.58-acre tract of land. The property in acquisition is located on the corner of Weir Road (FM 971) and Haverland Drive, in Georgetown, Texas. The client is proposing a multi-family development consisting of 146 residential buildings (302 units) and an amenity center with associated utility and drainage improvements. The property is zoned as a MF-1 and will be dedicating 0.44 acres as public Right-of-Way (ROW) for the expansion of Weir Road (FM 971). This engineering and drainage report has been prepared for the proposed private improvements. Drainage assumptions were made based on additional impervious cover to be added to the proposed development in future conditions. Kimley-Horn has prepared this Drainage and Engineering Report to evaluate the existing drainage conditions and highlight the proposed drainage system needed to serve a proposed multi-family development.

This project is located within the Granger Lake-San Gabriel River Watershed in the San Gabriel River sub-basin of the Brazos River basin. According to Flood Insurance Rate Map 48491C0291F and 48491C0292F dated December 19, 2019, for Williamson County, Texas, the northern portion of this site is in the Federal Emergency Management Agency's 100-year floodplain per. No floodplain modifications are proposed. The entire 40.58-acre tract is located within the Edwards Aquifer Transition Zone.

II. CURRENT TRACT CONDITIONS

Legal Description

AW0235 FLORES, A. SUR., ACRES 6.2142
AW0235 AW0235 - Flores, A. Sur., ACRES 1.82
AW0235 FLORES, A. SUR., ACRES 1.83
AW0235 FLORES, A. SUR., ACRES 1.67
AW0235 FLORES, A. SUR., ACRES 16.79
AW0235 AW0235 - Flores, A. Sur., ACRES 0.96, [TU Pct]
AW0235 FLORES, A. SUR., ACRES 4.77
AW0235 FLORES, A. SUR., ACRES 5.53
AW0235 FLORES, A. SUR., ACRES 1.0

Land Use

The current land use is Single-Family Residential.

III. PROPOSED DEVELOPMENT

The proposed development includes the construction of a multi-family residential development, sidewalks, landscaping, stormwater management infrastructure, water, and sanitary sewer. The development will consist of one lot: a 40.58-acre multi-family lot. The multi-family lot and necessary private improvements are to be constructed with the associated site plan permit and the site is to be developed with future permits. The full development is to gain access from a proposed driveway off Weir Road.

IV. DRAINAGE ANALYSIS

Waterway Classification

This project is located within the Granger Lake-San Gabriel River Watershed in the San Gabriel River sub-basin of the Brazos River basin.

Flood Plain Information

According to Flood Insurance Rate Map 48491C0285F dated December 20, 2019, for Williamson County, Texas, a portion of this site is located in the Federal Emergency Management Agency's 100-year floodplain per. A copy of the FEMA FIRM Map is included in the ***Appendix***.

Drainage

This 40.58-acre tract mostly contains relatively flat slopes generally ranging from 1% to 4%. The site drains to three points of analysis (POA-A, POA-B, and POA-C) located at various portions of the property. The northwestern portion of the site drains through POA-A and is conveyed offsite through an existing creek. The southern portion of the site has split drainage to the east and west, POA-B and POA-C respectively. Drainage is sent to the drainage ditch along Wier Road where it is conveyed downstream. Reference ***Appendix A*** for the drainage area maps used in analysis.

Existing Hydrologic Conditions Analysis

The site has three existing drainage areas (DA-01, DA-02, and DA-03) that outfall at points of analyses (POA-A, POA-B, and POA-C), respectively. The delineated drainage basins account for all onsite runoff as well as water running onto the site from the adjacent tracts to the west.

The time of concentrations were calculated using the equations given in the City of Georgetown Drainage Criteria Manual (COG DCM) for sheet flow, shallow concentrated flow, and channel flow. City of Georgetown 24-hour rainfall hyetographs (COG DCM) were used to define the 2, 10, 25, and 100-year rainfall events. The result of the calculation of the existing flows through the watershed is summarized in Table 4.1.

Table 4.1 Existing Drainage Areas Summary

DRAINAGE AREA	AREA (AC.)	IMPERVIOUS COVER (%)	IMPERVIOUS COVER (AC)	BASE CN	Composite CN	TC (MIN)	Q_2 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{100} (CFS)
DA-01	17.65	4.9%	0.86	77	78	29.5	21.71	47.09	63.14	87.22
POA-A							**21.71**	**47.09**	**63.14**	**87.22**
DA-02	10.04	4.6%	0.46	71	72	39.7	7.15	18.04	25.46	36.82
POA-B							**7.15**	**18.04**	**25.46**	**36.82**
DA-03	4.68	4.5%	0.21	70	71	29.3	3.65	9.40	13.27	19.32
POA-C							**3.65**	**9.40**	**13.27**	**19.32**

Proposed Hydrologic Conditions Analysis

The proposed drainage delineations consider additional impervious cover added to the proposed site under development. The time of concentrations were reduced for onsite drainage areas from the existing TOCs due to the increased impervious cover and proposed underground conduit system. Flow from the southwestern portion of the site will be conveyed through the proposed underground storm conduit system which outfalls at one of the proposed detention ponds located at the northwestern portion of the site. Offsite runoff entering the site west of the property will be conveyed over land and also captured by the proposed detention pond. Flows captured by the pond outfall into an existing creek and travel downstream through POA-A. Flows from the northwestern portion of the property also travel over land and through the creek to POA-A, however, are not captured by the proposed pond. Flows from the southwestern and south-central portion of the site are conveyed through the underground storm conduit system which outfalls at another proposed detention pond located at the southwestern corner of the property. Runoff from this portion of the site travel through POA-B. Flows from the southeastern corner of the site are conveyed through POA-C and offsite to an existing swale along Weir Road. Flow patterns upstream of the subject property match existing conditions. Drainage conditions have been maintained by assuring the design peak flows do not exceed those in the existing conditions and the major points of analyses are not adversely affected.

The time of concentrations were calculated using the equations given in the City of Georgetown Drainage Criteria Manual (COG DCM) for sheet flow, shallow concentrated flow, and channel flow. City of Georgetown 24-hour rainfall hyetographs (per the COG DCM) were used to define the 2, 10, 25, and 100-year rainfall events. Detailed time of concentration calculations are included in the ***Appendix***. The result of the calculation of the proposed flows through the watershed is summarized in Table 4.2

Table 4.2 Proposed Drainage Areas Summary

PROPOSED CONDITIONS										
DRAINAGE AREA	AREA (AC.)	IMPERVIOUS COVER (%)	IMPERVIOUS COVER (AC)	BASE CN	Composite CN	TC (MIN)	Q_2 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{100} (CFS)
DA-01	20.57	55.2%	11.35	74	87	21.8	53.14	80.71	100.74	131.28
DA-02	5.00	3.4%	0.17	77	78	29.1	6.10	13.39	17.99	24.92
POA-A							**21.00**	**30.08**	**35.22**	**85.76**
DA-03	5.96	43.0%	2.56	72	83	11.4	12.57	22.02	27.78	36.91
POA-B							**7.04**	**17.88**	**24.55**	**34.58**
DA-04	1.59	43.3%	0.69	70	82	15.2	3.24	5.87	7.49	10.10
POA-C							**3.24**	**5.87**	**7.49**	**10.10**

Detention Analysis & Design

On-site detention is required to maintain previously determined flows. Both outfall areas maintain an TSS removal of 91% using batch detention. After water is detained by the onsite detention pond, the proposed flow is less than existing as shown below in Table 4.3.

Table 4.3 Existing vs. Proposed Summary

EXISTING VS. PROPOSED SUMMARY				
POINT OF ANALYSIS	Q_2 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{100} (CFS)
POA-A (EXISTING)	21.71	47.09	63.14	87.22
POA-A (PROPOSED)	21.00	30.08	35.22	85.76
POA-A DIFFERENCE (CFS)	**0.71**	**17.01**	**27.92**	**1.46**
POA-B (EXISTING)	7.15	18.04	25.46	36.82
POA-B (PROPOSED)	7.04	17.88	24.55	34.58
POA-B DIFFERENCE (CFS)	**0.11**	**0.16**	**0.91**	**2.24**
POA-C (EXISTING)	3.65	9.40	13.27	19.32
POA-C (PROPOSED)	3.24	5.87	7.49	10.10
POA-C DIFFERENCE (CFS)	**0.41**	**3.53**	**5.78**	**9.22**

Table 4.4 Detention Pond Stage Storage

Detention Pond Stage Storage				
Stage (ft) (Elevation)	Area (sf)	Storage Volume (cf)	Discharge (CFS)	Event
697.50	0.00	0.00	-	WQ
698.00	2684.47	485.59	-	WQ
699.00	17870.29	10076.34	-	WQ
700.00	29817.48	35400.99	-	WQ
700.50	30195.49	50461.05	-	WQSE
701.00	30232.75	65568.12	-	-
702.00	30306.87	95837.97	-	-
703.00	30380.47	126181.69	-	-
703.11	30387.80	129220.10	21.00	2-YEAR
704.00	30453.54	156598.74	-	-
705.00	30526.09	187088.59	-	-
705.34	30547.75	196249.67	30.08	10-YEAR
706.00	30598.10	217650.73	-	-
706.95	30662.46	245218.02	35.22	25-YEAR
707.00	30669.59	248284.62	-	-
708.00	30740.55	278989.73	-	-
708.15	30754.68	285139.25	85.76	100-YEAR
709.00	30810.98	309765.54	-	-
709.50	30846.00	325179.79	-	-

Detention Pond Stage Storage				
Stage (ft) (Elevation)	Area (sf)	Storage Volume (cf)	Discharge (CFS)	Event
710.50	0.00	0.00	-	WQ
711.00	3769.69	628.00	-	WQ
712.00	9026.52	6838.00	-	WQSE
713.00	9041.71	15872.00	-	-
713.20	-	17859.60	7.04	2-YEAR
713.61	-	21344.40	17.88	10-YEAR
713.76	-	22651.20	24.55	25-YEAR
713.95	-	24393.60	34.58	100-YEAR
714.00	9057.89	24922.00	-	-

V. ENGINEERING ANALYSIS

Existing Infrastructure

This site will be served by the City of Georgetown for both water and wastewater. There is an existing 30" wastewater line located along the northern property boundary in existing City of Georgetown wastewater easements. An existing 8" waterline is stubbed out to the south of the property boundary on the other side of the Weir Road (FM 971) Right-of-Way. These two existing lines will be used as connections for proposed infrastructure.

Proposed Infrastructure

The proposed development includes 146 multi-family buildings (302 units) and an amenity center, with each building being served individually by water and wastewater services.

Water services are also to be provided by the City of Georgetown. The water connection will come from an existing 8" water line that is stubbed out to the southwest. This stub out will need to be extended under the FM 971 ROW north to the southern property line. On-site service will be supplied by that 8" public water line and will be looped throughout the development. The 8" line will provide both fire and domestic services to the multifamily and amenity building. Private fire lines will be extended from the public system to the buildings. The domestic water lines will be extended from the 8" main to water meters and will become private after the meter.

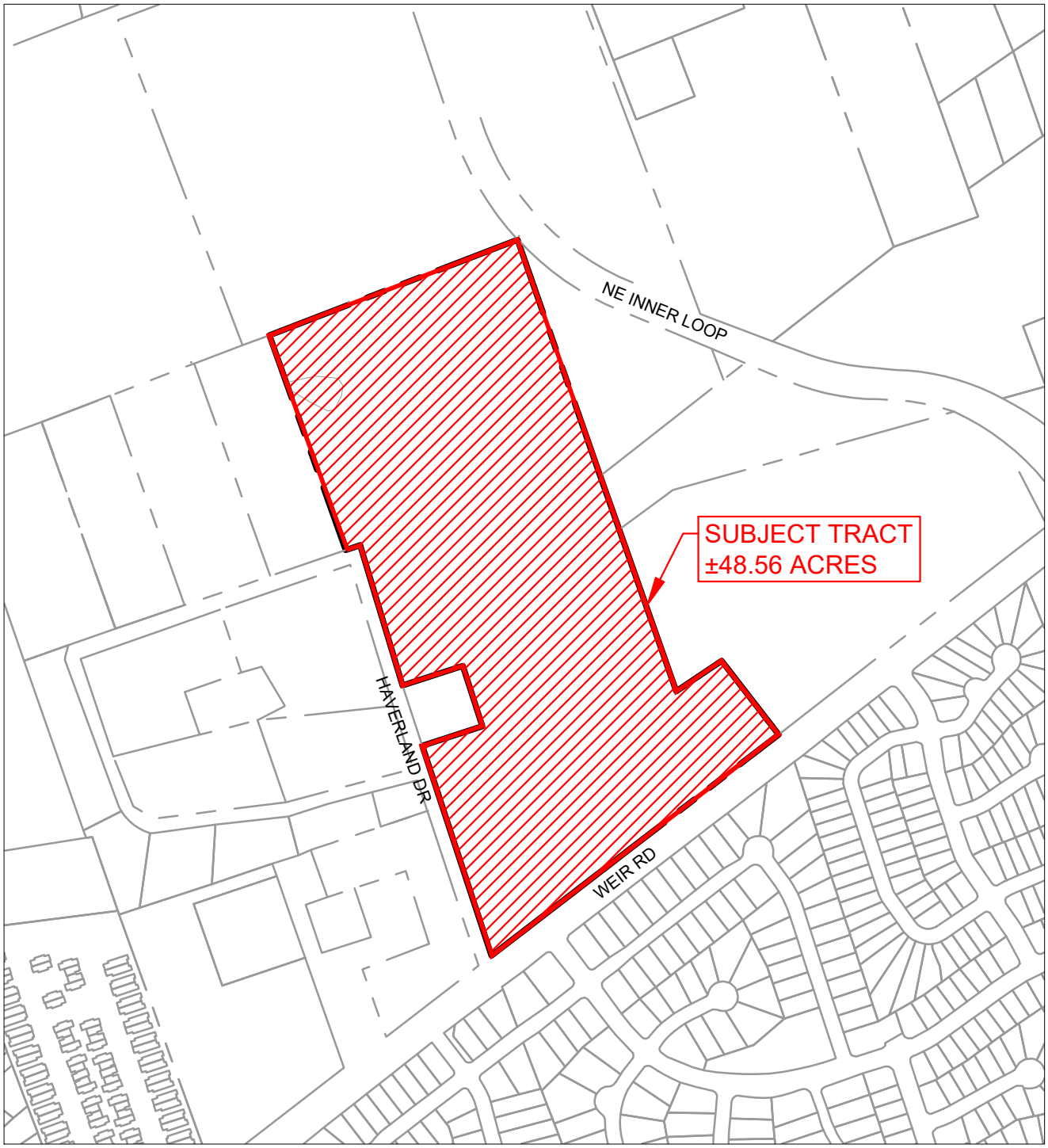
Wastewater services will be provided by the City of Georgetown and the proposed network will connect to an existing manhole for connection into the public system. The entire site, all multifamily residential buildings and amenity center, will drain to the north side of the property to connect to the existing manhole and 30" public wastewater line.

The wastewater Design used the following table for flows:

Wastewater Design Flows		
Service Population	764	people
Building Square Footage (retail)	0	sq ft
Building Square Footage (office)	0	sq ft
Dwelling Units (SF)	0	units
Dwelling Units (MF)	302	units
Contributing Drainage Area	40.7	acres
Average Dry Weather Flow - flow rates (ADWF)		
Single-Family	225	gal/day/dwelling unit
Multi-Family	112	gal/day/dwelling unit
Retail	225	gal/day/1000 sq ft
Office	65	gal/day/1000 sq ft
Peak Dry Weather Flow (PDWF)		
PDWF = ADWF * PF (Peaking Factor)		
PF = (18 + 0.139 * (F^0.5)) / (4 + 0.139 *(F^0.5))		
average wastewater flow	100	gal/day/capita
F	53.06	gal/min
PF	3.79	unitless
PDWF (Single-Family)	**0.00**	gal/day
PDWF (Multi-Family)	**128294.92**	gal/day
PDWF (Retail)	**0.00**	gal/day
PDWF (Office)	**0.00**	gal/day
Peak Wet Weather Flow (PWWF)		
PWWF = ADWF * PF + I/I		
I/I = Inflow/Infiltration	750	gal/day/acre of contibuting drainage area
I/I	30510	gal/day
PWWF (Multifamily)	**158804.92**	gal/day

VI. CONCLUSIONS

This report has fully documented the design of Haverland Dr Development. Standard engineering design methods were used to develop the plan and were described throughout this report. This report is meant to serve as an attendant document to the plan drawings to aid the reviewer in evaluating the different technical components of the plan.



LOCATION MAP

SCALE: 1"=500'

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND HAS BEEN PRODUCED WITHOUT THE BENEFIT OF A SURVEY, TOPOGRAPHY, UTILITIES, CONTACT WITH THE CITY, ETC.

HENRY, DEAN 8/24/2023 6:12 PM
K:\SAU_CIV\U\069264937-HAVERLAND DR\CAD\EXHIBITS\PLANSHEETS\SITE LOCATION EXHIBIT.DWG
8/22/2023 5:54 PM

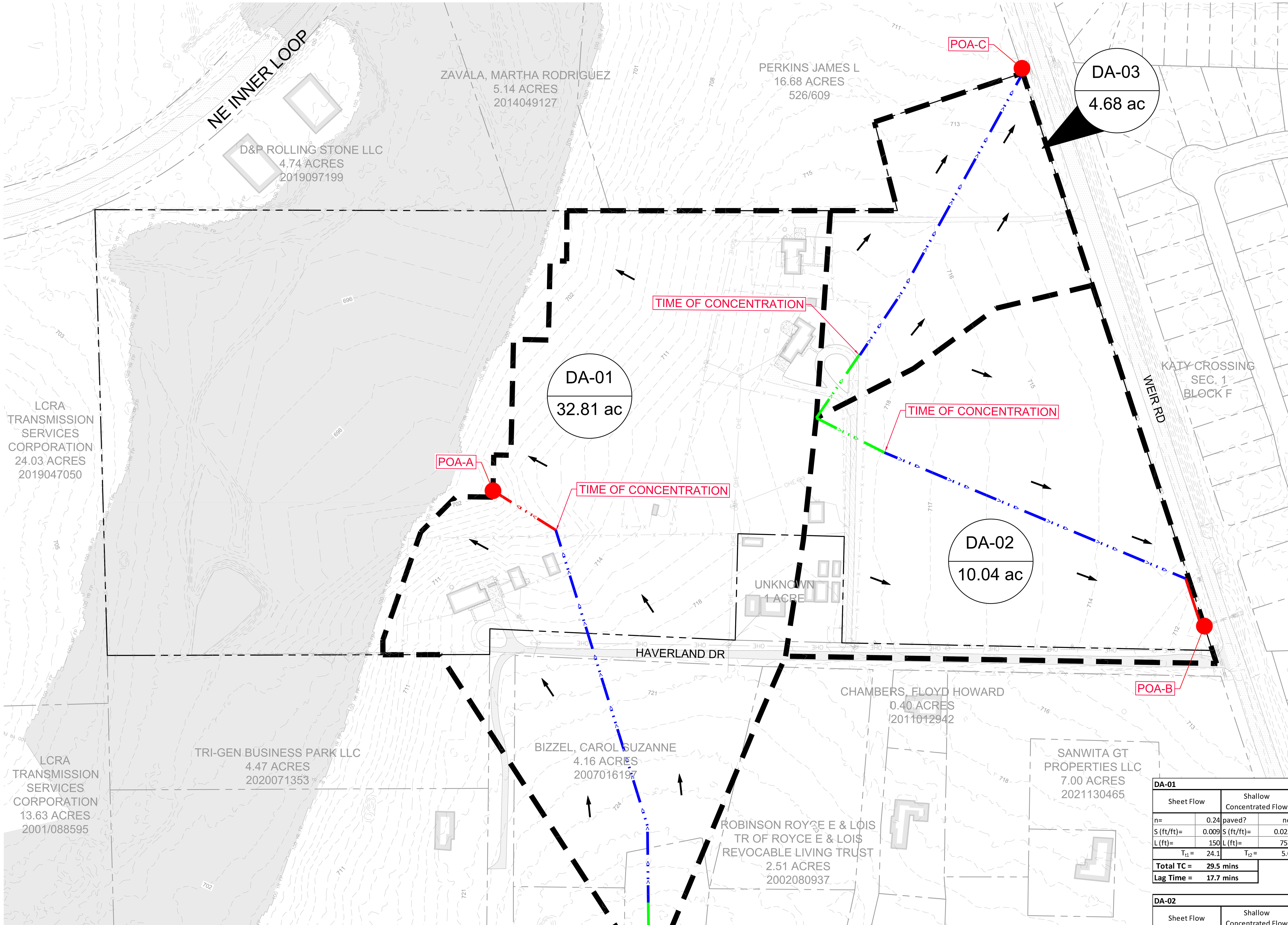
PLOTTED BY
DWG NAME
LAST SAVED

Kimley»Horn
2600 Via Fortuna
Terrace I, Suite 300
Austin, Texas 78746
State of Texas Registration No. F-928

HAVERLAND BTR
SITE LOCATION MAP
GEORGETOWN, WILLIAMSON COUNTY, TEXAS
August 2023

0 500' 1000'
GRAPHIC SCALE 500'

N
W E
S



0 100' 200'
GRAPHIC SCALE 100'

LEGEND

Symbol	Description
X-1 / 9.9 ac / 5.5 cfs	AREA DESIGNATOR / AREA IN ACRES / Q100 FLOW IN CFS
	PROPERTY LINE
	EXISTING STORM DRAIN LINE
	EXISTING DRAINAGE DIVIDE
	EXISTING STORM DRAIN INLET
	EXISTING STORM DRAIN MANHOLE
	EXISTING STORM DRAIN HEADWALL
	EXISTING FLOW DIRECTION
555	EXISTING CONTOUR
	SHEET FLOW
	SHALLOW CONCENTRATED FLOW
	CHANNEL FLOW
	TRANSLATION

Drainage Area	GROUP C (BASE CN = 70) AC.	GROUP D (BASE CN = 77) AC.	Base CN
DA-01	0.56	17.1	77
DA-02	8.44	1.61	71
DA-03	4.62	0.1	70

EXISTING CONDITIONS

DRAINAGE AREA	AREA (AC.)	IMPERVIOUS COVER (%)	IMPERVIOUS COVER (AC)	BASE CN	Composite CN	TC (MIN)	Q_2 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{100} (CFS)
DA-01	17.65	4.9%	0.86	77	78	29.5	21.71	47.09	63.14	87.22
POA-A							**21.71**	**47.09**	**63.14**	**87.22**
DA-02	10.04	4.6%	0.46	71	72	39.7	7.15	18.04	25.46	36.82
POA-B							**7.15**	**18.04**	**25.46**	**36.82**
DA-03	4.68	4.5%	0.21	70	71	29.3	3.65	9.40	13.27	19.32
POA-C							**3.65**	**9.40**	**13.27**	**19.32**

DA-01

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	no	v (fps)=	6
S (ft/ft)=	0.009	S (ft/ft)=	0.025	L (ft)=	145
L (ft)=	150	L (ft)=	757		
T_{t1} =	24.1	T_{t2} =	5.0	T_{t3} =	0.4
Total TC =	**29.5 mins**				
Lag Time =	**17.7 mins**				

DA-02

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	no	v (fps)=	6
S (ft/ft)=	0.004	S (ft/ft)=	0.010	L (ft)=	93
L (ft)=	150	L (ft)=	640		
T_{t1} =	32.8	T_{t2} =	6.6	T_{t3} =	0.3
Total TC =	**39.7 mins**				
Lag Time =	**23.8 mins**				

DA-03

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	no	v (fps)=	3
S (ft/ft)=	0.009	S (ft/ft)=	0.012	L (ft)=	0
L (ft)=	150	L (ft)=	638		
T_{t1} =	23.4	T_{t2} =	6.0	T_{t3} =	0.0
Total TC =	**29.3 mins**				
Lag Time =	**17.6 mins**				

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

811 Know what's below. Call before you dig.

No. | REVISIONS | DATE | BY

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM

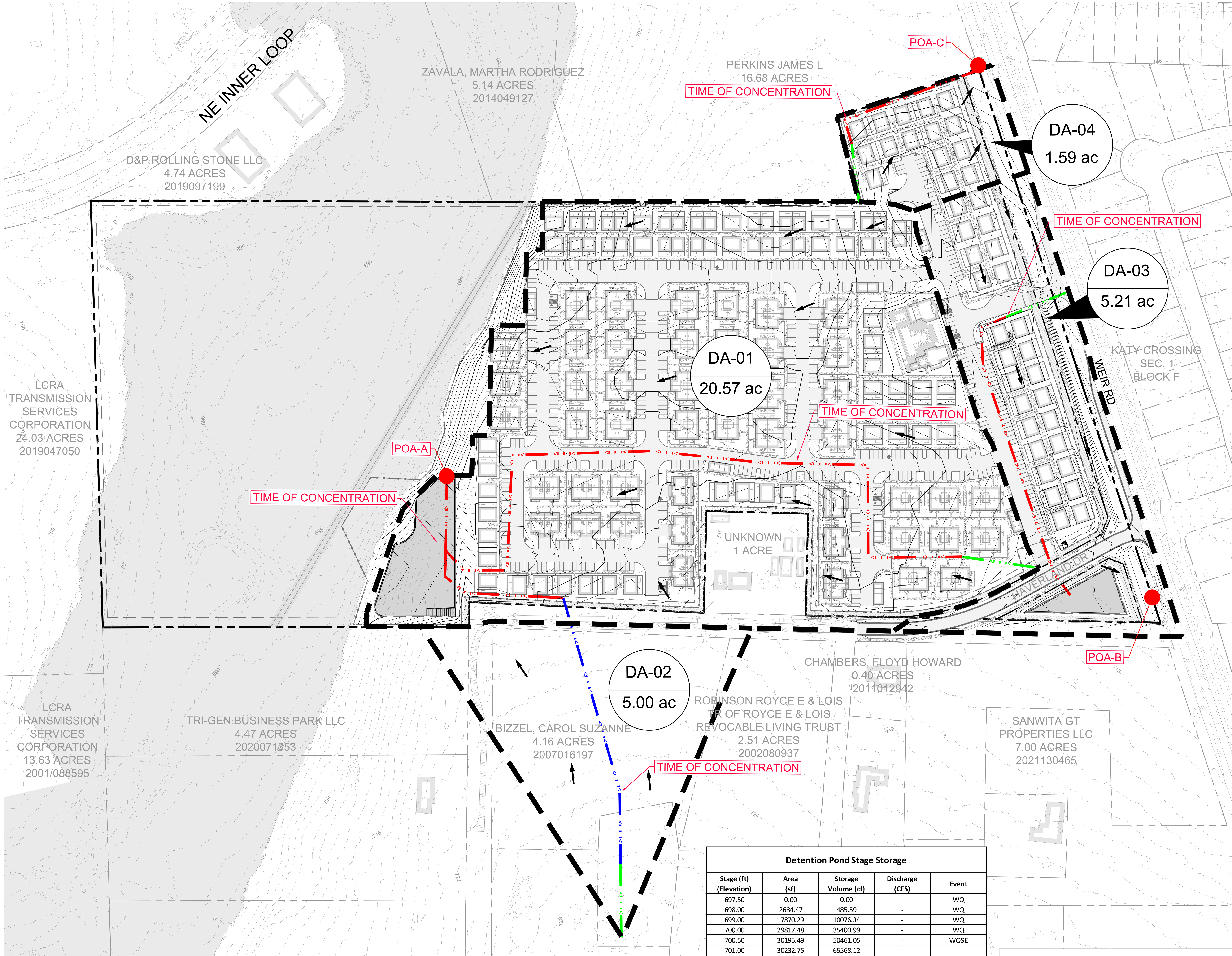
TBPE Firm No. 928

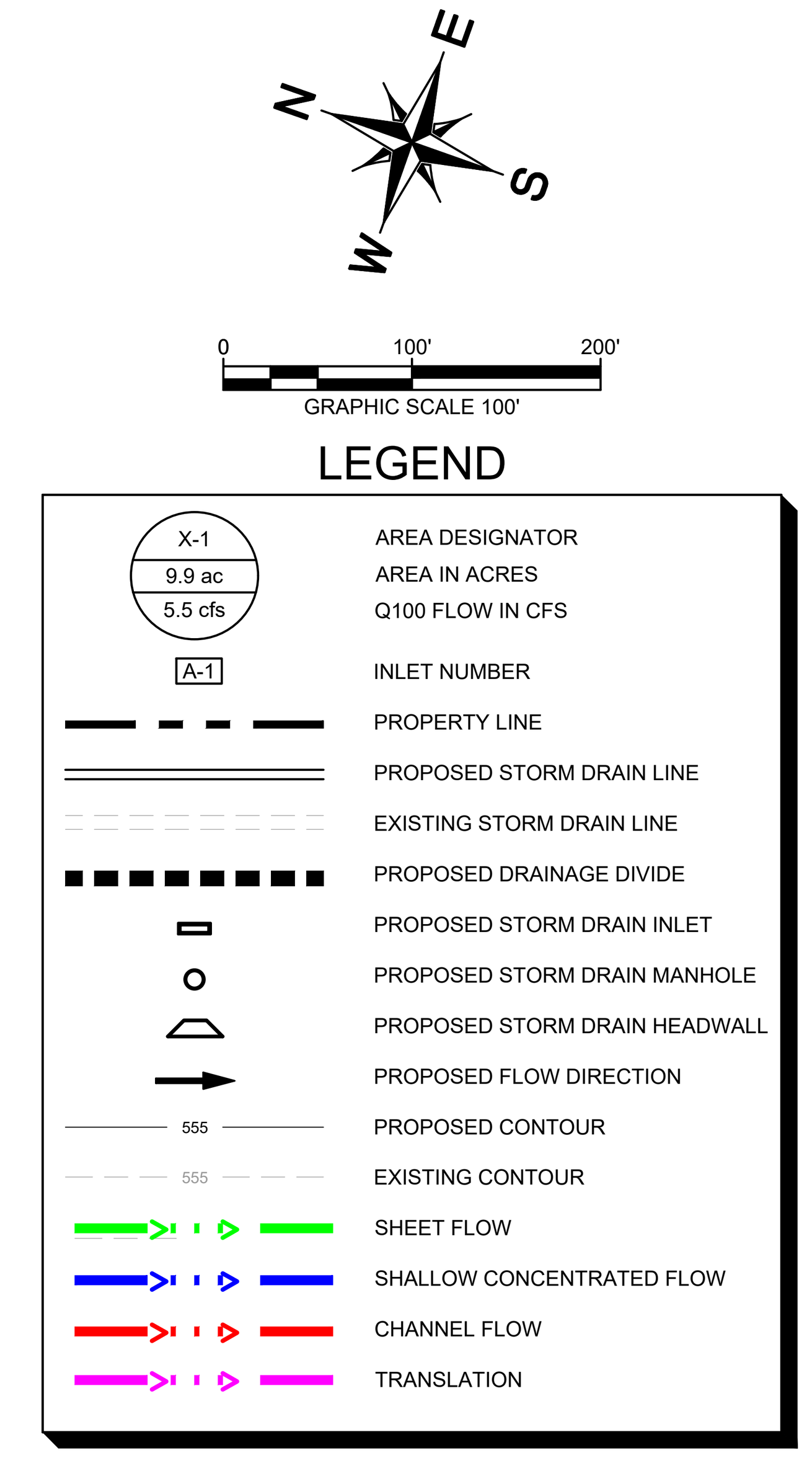
PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date 09/22/2023

KHA PROJECT 069264937
DATE 09/22/2023
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

EXISTING DRAINAGE AREA MAP

HAVERLAND BTR
1015 FM 971,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS





Drainage Area	GROUP C (PROPOSED CN = 70) AC.	GROUP C (PROPOSED CN = 77) AC.	Base CN
DA-01	7.59	13.0	74
DA-02	0.00	5.0	77
DA-03	4.44	1.5	72
DA-04	2.77	0.0	70

PROPOSED CONDITIONS

DRAINAGE AREA	AREA (AC.)	IMPERVIOUS COVER (%)	IMPERVIOUS COVER (AC)	BASE CN	Composite CN	TC (MIN)	Q_2 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{100} (CFS)
DA-01	20.57	55.2%	11.35	74	87	21.8	53.14	80.71	100.74	131.28
DA-02	5.00	3.4%	0.17	77	78	29.1	6.10	13.39	17.99	24.92
POA-A							**21.00**	**30.08**	**35.22**	**85.76**
DA-03	5.96	43.0%	2.56	72	83	11.4	12.57	22.02	27.78	36.91
POA-B							**7.04**	**17.88**	**24.55**	**34.58**
DA-04	1.59	43.3%	0.69	70	82	15.2	3.24	5.87	7.49	10.10
POA-C							**3.24**	**5.87**	**7.49**	**10.10**

DA-01

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	no	v (fps)=	6
S (ft/ft)=	0.020	S (ft/ft)=	0.020	L (ft)=	1655
L (ft)=	150	L (ft)=	0		
T_{t1} =	17.2	T_{t2} =	0.0	T_{t3} =	4.6

Total TC = 21.8 mins
Lag Time = 13.1 mins

DA-03

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	yes	v (fps)=	6
S (ft/ft)=	0.020	S (ft/ft)=	0.020	L (ft)=	639
L (ft)=	72	L (ft)=	0		
T_{t1} =	9.6	T_{t2} =	0.0	T_{t3} =	1.8

Total TC = 11.4 mins
Lag Time = 6.8 mins

DA-02

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	no	v (fps)=	6
S (ft/ft)=	0.009	S (ft/ft)=	0.019	L (ft)=	472
L (ft)=	150	L (ft)=	491		
T_{t1} =	24.1	T_{t2} =	3.7	T_{t3} =	1.3

Total TC = 29.1 mins
Lag Time = 17.5 mins

DA-04

Sheet Flow		Shallow Concentrated Flow		Channel Flow	
n=	0.24	paved?	yes	v (fps)=	6
S (ft/ft)=	0.020	S (ft/ft)=	0.020	L (ft)=	345
L (ft)=	118	L (ft)=	0		
T_{t1} =	14.2	T_{t2} =	0.0	T_{t3} =	1.0

Total TC = 15.2 mins
Lag Time = 9.1 mins

EXISTING VS. PROPOSED SUMMARY

POINT OF ANALYSIS	Q_2 (CFS)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{100} (CFS)
POA-A (EXISTING)	21.71	47.09	63.14	87.22
POA-A (PROPOSED)	21.00	30.08	35.22	85.76
POA-A DIFFERENCE (CFS)	**0.71**	**17.01**	**27.92**	**1.46**
POA-B (EXISTING)	7.15	18.04	25.46	36.82
POA-B (PROPOSED)	7.04	17.88	24.55	34.58
POA-B DIFFERENCE (CFS)	**0.11**	**0.16**	**0.91**	**2.24**
POA-C (EXISTING)	3.65	9.40	13.27	19.32
POA-C (PROPOSED)	3.24	5.87	7.49	10.10
POA-C DIFFERENCE (CFS)	**0.41**	**3.53**	**5.78**	**9.22**

Detention Pond Stage Storage

Stage (ft) (Elevation)	Area (sf)	Storage Volume (cf)	Discharge (CFS)	Event
697.50	0.00	0.00	-	WQ
698.00	2684.47	485.59	-	WQ
699.00	17870.29	10076.34	-	WQ
700.00	29817.48	35400.99	-	WQ
700.50	30195.49	50461.05	-	WQSE
701.00	30232.75	65568.12	-	-
702.00	30306.87	95837.97	-	-
703.00	30380.47	126181.69	-	-
703.11	30387.80	129220.10	21.00	2-YEAR
704.00	30453.54	156598.74	-	-
705.00	30526.09	187088.59	-	-
705.34	30547.75	196249.67	30.08	10-YEAR
706.00	30598.10	217650.73	-	-
706.95	30662.46	245218.02	35.22	25-YEAR
707.00	30669.59	248284.62	-	-
708.00	30740.55	278989.73	-	-
708.15	30754.68	285139.25	85.76	100-YEAR
709.00	30810.98	309765.54	-	-
709.50	30846.00	325179.79	-	-

Detention Pond Stage Storage

Stage (ft) (Elevation)	Area (sf)	Storage Volume (cf)	Discharge (CFS)	Event
710.50	0.00	0.00	-	WQ
711.00	3769.69	628.00	-	WQ
712.00	9026.52	6838.00	-	WQSE
713.00	9041.71	15872.00	-	-
713.20	-	17859.60	7.04	2-YEAR
713.61	-	21344.40	17.88	10-YEAR
713.76	-	22651.20	24.55	25-YEAR
713.95	-	24393.60	34.58	100-YEAR
714.00	9057.89	24922.00	-	-

BENCHMARKS

TBM:
1. BENCHMARK 1
ELEVATION=710.48'
2. BENCHMARK 2
ELEVATION=717.87

REFERENCE BENCHMARK:
1. CITY OF GEORGETOWN NO. 96-001
ELEVATION=642.70'
2. CITY OF GEORGETOWN NO. 96-005
ELEVATION=768.42'

811
Know what's below.
Call before you dig.

Kimley»Horn
5301 SOUTHWEST PARKWAY, BUILDING 2, SUITE 100
Austin, Texas 78746
PHONE: 512-646-2237
WWW.KIMLEY-HORN.COM

TBPE Firm No. 928

PRELIMINARY
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
Engineer BENJAMIN L. GREEN
P.E. No. 132190 Date 09/22/2023

No.	REVISIONS	DATE	BY

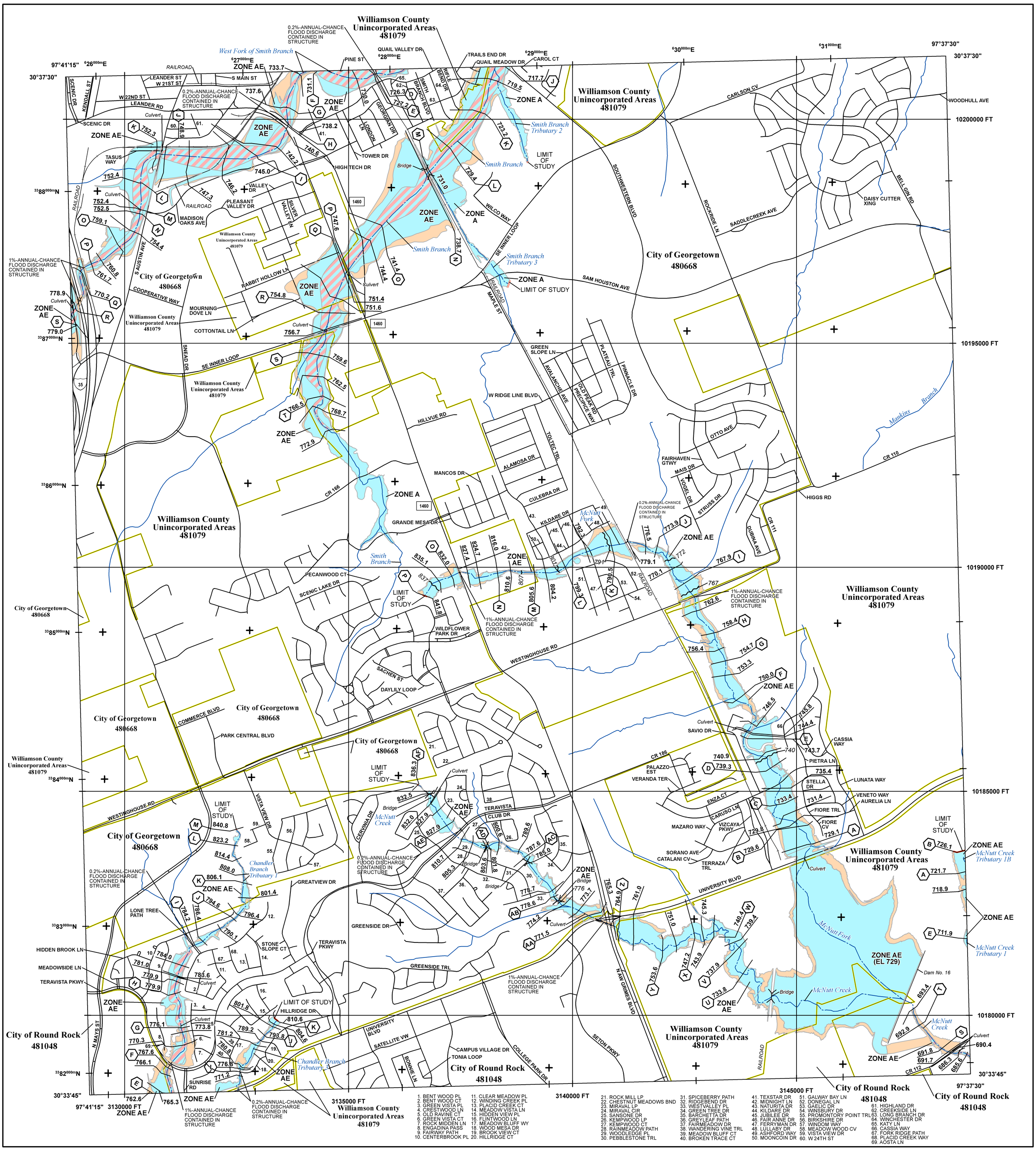
KHA PROJECT 069264937
DATE 09/22/2023
SCALE: AS SHOWN
DESIGNED BY: BLG
DRAWN BY: ABG
CHECKED BY: BLG

PROPOSED DRAINAGE AREA MAP

HAVERLAND BTR
1015 FM 971,
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

SHEET NUMBER
29 OF 123

2023-54-SDP



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*

OTHER AREAS
- NO SCREEN — Areas of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert or Storm Sewer
- Levee, Dike or Floodwall

OTHER FEATURES
- Cross Sections with 1% Annual Chance (18.2)
- Water Surface Elevation (BFE) (17.5)
- Coastal Transect (8)
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation Line (BFE) (513)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was derived from digital data obtained from Texas Natural Resource Information Systems (TNRIS), dated 2000; United States Census Bureau, dated 2015; United States Geological Survey, dated 2005; and the Williamson County Geographic Information Systems (GIS) Department, dated 2014 and 2017.

SCALE

N

Map Projection:
Texas State Plane Central (FIPS ZONE 4203); North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 1,000 feet 1:12,000

0 1,000 2,000 4,000 feet

0 250 500 1,000 meters

PANEL LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

WILLIAMSON COUNTY, TEXAS
and Incorporated Areas

PANEL 485 OF 750

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
GEORGETOWN, CITY OF	480668	0485	F
ROUND ROCK, CITY OF	481048	0485	F
WILLIAMSON COUNTY	481079	0485	F

VERSION NUMBER
2.3.3.3

MAP NUMBER
48491C0485F

MAP REVISED
DECEMBER 20, 2019

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

I Ryan Mattox,
Print Name

Vice President,
Title - Owner/President/Other

of TM BTR TEXAS, LLC,
Corporation/Partnership/Entity Name

have authorized Benjamin Green, P.E.
Print Name of Agent/Engineer

of Kimley-Horn and Associates, Inc.
Print Name of Firm

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

I also understand that:

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

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

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

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

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

ELECTRONICALLY RECORDED 2023056181
Williamson County, Texas Total Pages: 15

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM ANY INSTRUMENT BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

GF 22-31774H

SPECIAL WARRANTY DEED

THE STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF WILLIAMSON §

THAT, **ESQUINA AVENIDA LLC**, a Texas limited liability company (hereinafter called "Grantor"), for and in consideration of $10.00 and other good and valuable consideration paid to Grantor by **TM BTR OF TEXAS, LLC**, an Arizona limited liability company (hereinafter called "Grantee"), whose address is c/o TaylorMorrison BTR, Inc., 810 Hester's Crossing, Suite 235, Round Rock, Texas 78681, the receipt and sufficiency of which consideration is hereby acknowledged and confessed by Grantor, has GRANTED, TRANSFERRED and CONVEYED and by these presents does GRANT, TRANSFER and CONVEY unto Grantee all of the following described land located and situated in Williamson County, Texas (collectively the "Land"), to-wit:

Tract 1: Being a 23.994 acre tract of land, more or less, located in the ANTONIO FLORES SURVEY, ABSTRACT NO. 235, in Williamson County, Texas, being all of that certain 24.002 acre tract of land conveyed in Warranty Deed recorded in Document No. 2015102566, Official Public Records, Williamson County, Texas. Said 23.994 acre tract being more particularly described by metes and bounds in Exhibit "A-1" attached hereto and made a part hereof;

Tract 2: Being a 1.671 acre tract of land, more or less, located in the ANTONIO FLORES SURVEY, ABSTRACT NO. 235, in Williamson County, Texas, being all of that certain 1.67 acre tract of land conveyed in General Warranty Deed recorded in Document No. 2015102565, Official Public Records, Williamson County, Texas. Said 1.671 acre tract being more particularly described by metes and bounds in Exhibit "A-2" attached hereto and made a part hereof;

Tract 3: Being a 7.555 acre tract of land, more or less, out of the ANTONIO FLORES SURVEY, ABSTRACT NO. 235, in Williamson County, Texas, being all of that certain 7.55 acre tract of land conveyed in Warranty Deed recorded in Volume 2695, Page 596, Official Public Records, Williamson County, Texas. Said 7.555 acre tract being more particularly described by metes and bounds in Exhibit "A-3" attached hereto and made a part hereof; and

Tract 4: Being a 7.357 acre tract of land, more or less, out of the ANTONIO FLORES SURVEY, ABSTRACT NO. 235, in Williamson County, Texas, being all of that certain 7.357 acre tract of land conveyed in Warranty Deed recorded in Volume 2695, Page 591, Official Public Records, Williamson County, Texas. Said 7.357 acre tract being more particularly described by metes and bounds in Exhibit "A-4" attached hereto and made a part hereof;

together with all buildings, structures, fixtures and other improvements located on the Land, if any (the "Improvements"); all easements and rights of ingress and egress and any other similar rights, if any, benefiting the Land (the "Easements"); and all rights and appurtenances to the extent pertaining to the foregoing, including, but not limited to, any right, title and interest of Grantor in and to (a) adjacent streets, roadways, alleys and rights-of-way, (b) sewer, water and other utility rights and capacity, (c) reversionary rights and rights by limitation or prescription, and (d) entitlements, permits, licenses, consents and other development or other approvals granted by any governmental or quasi-governmental authority that solely relate to the Land or development thereof (the "Rights and Appurtenances"). The Land, together with the Improvements, the Easements, and the Rights and Appurtenances, are hereinafter collectively referred to as the "Property."

This Special Warranty Deed is made by Grantor and is accepted by Grantee subject to those matters more particularly described on Exhibit B attached hereto and made a part hereof by reference (hereinafter called the "Permitted Exceptions").

TO HAVE AND TO HOLD the Property, together with all and singular the rights, benefits, privileges, easements, tenements, hereditaments, appurtenances and interests thereon or in anywise appertaining thereto, unto Grantee, Grantee's successors and assigns, forever; and, subject to the Permitted Exceptions, Grantor does hereby bind Grantor, Grantor's successors and assigns, to warrant and forever defend all and singular the Property unto Grantee, Grantee's successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by, through or under Grantor but not otherwise.

IN CONNECTION WITH THE CONVEYANCE OF THE PROPERTY AS PROVIDED FOR IN THE PURCHASE AND SALE AGREEMENT BY AND BETWEEN GRANTOR AS SELLER AND GRANTEE AS BUYER DATED SEPTEMBER 22, 2022 ([AS AMENDED], THE "AGREEMENT"), EXCEPT FOR THE REPRESENTATIONS AND WARRANTIES EXPRESSLY SET FORTH IN THE AGREEMENT AND IN ANY OF THE DOCUMENTS TO BE DELIVERED BY GRANTOR TO GRANTEE ON THE DATE HEREOF, GRANTOR HAS NOT MADE AND DOES NOT MAKE ANY REPRESENTATIONS, WARRANTIES, OR COVENANTS OF ANY KIND OR CHARACTER WHATSOEVER, WHETHER EXPRESS OR IMPLIED, WITH RESPECT TO THE QUALITY OR CONDITION OF THE PROPERTY, THE SUITABILITY OF THE PROPERTY FOR ANY AND ALL ACTIVITIES OR USES WHICH GRANTEE MAY CONDUCT OR WISH TO CONDUCT THEREON, COMPLIANCE BY THE PROPERTY WITH ANY LAWS, RULES, ORDERS, STATUTES, ORDINANCES OR REGULATIONS OF ANY APPLICABLE GOVERNMENTAL AUTHORITY, OR HABITABILITY, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE, AND SPECIFICALLY, GRANTOR DOES NOT MAKE ANY

REPRESENTATIONS OR WARRANTIES REGARDING THE HAZARDOUS WASTE, AS DEFINED BY THE LAWS OF THE STATE OF TEXAS AND ANY REGULATIONS ADOPTED PURSUANT THERETO OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY REGULATIONS AT 40 C.F.R., PART 261, OR THE DISPOSAL OF ANY HAZARDOUS WASTE OR ANY OTHER HAZARDOUS OR TOXIC SUBSTANCES IN OR ON THE PROPERTY. EXCEPT FOR THE REPRESENTATIONS AND WARRANTIES EXPRESSLY SET FORTH IN THE AGREEMENT AND IN ANY OF THE DOCUMENTS TO BE DELIVERED BY GRANTOR TO GRANTEE ON THE DATE HEREOF, GRANTEE HEREBY ACCEPTS THE PROPERTY WITH THE PROPERTY BEING IN ITS PRESENT AS IS, WHERE IS, WITH ALL FAULTS CONDITION. GRANTEE ACKNOWLEDGES AND AGREES THAT GRANTEE IS EXPERIENCED IN THE OWNERSHIP AND OPERATION OF PROPERTIES SIMILAR TO THE PROPERTY AND THAT GRANTEE HAS (OR GRANTEE'S AGENTS HAVE) INSPECTED, ASSESSED, TESTED, EXAMINED, AND STUDIED THE PROPERTY (COLLECTIVELY, THE "TESTS") TO GRANTEE'S SATISFACTION AND GRANTEE IS QUALIFIED TO MAKE OR CAUSE SUCH TESTS AND ANALYZE THE RESULTS THEREOF. GRANTEE ACKNOWLEDGES THAT EXCEPT FOR THE REPRESENTATIONS AND WARRANTIES EXPRESSLY SET FORTH IN THE AGREEMENT AND IN ANY OF THE DOCUMENTS TO BE DELIVERED BY GRANTOR TO GRANTEE ON THE DATE HEREOF, IT IS RELYING FULLY ON GRANTEE'S (OR GRANTEE'S AGENTS') TESTS OF THE PROPERTY AND NOT UPON ANY STATEMENT (ORAL OR WRITTEN) WHICH MAY HAVE BEEN MADE (OR PURPORTEDLY MADE) BY GRANTOR OR ANY OF ITS AGENTS OR REPRESENTATIVES. GRANTEE ACKNOWLEDGES THAT GRANTEE HAS (OR GRANTEE'S AGENTS HAVE) THOROUGHLY TESTED THE PROPERTY TO THE EXTENT DEEMED NECESSARY BY GRANTEE IN ORDER TO ENABLE GRANTEE TO EVALUATE THE CONDITION OF THE PROPERTY AND ALL OTHER ASPECTS OF THE PROPERTY (INCLUDING, BUT NOT LIMITED TO, THE ENVIRONMENTAL CONDITION OF THE PROPERTY), AND GRANTEE ACKNOWLEDGES THAT, GRANTEE IS RELYING SOLELY UPON ITS OWN (OR ITS AGENTS') TESTS OF THE PROPERTY, EXCEPT FOR THE REPRESENTATIONS AND WARRANTIES EXPRESSLY SET FORTH IN THE AGREEMENT AND IN ANY OF THE DOCUMENTS TO BE DELIVERED BY GRANTOR TO GRANTEE ON THE DATE HEREOF.

Grantor warrants payment of ad valorem taxes through 2022, other than any "rollback" or other similar taxes (if any) attributable to any periods prior to the date hereof, but that may hereafter be assessed against all or any portion of the Property as a result of any change in use of the Property, and Grantee hereby confirms that under the terms of the Agreement, Grantee has assumed the liability and obligation to pay all such "rollback" or other similar taxes (if any) attributable to any periods prior to the date hereof.

EXECUTED this 5th day of July, 2023.

GRANTOR:

ESQUINA AVENIDA LLC,
a Texas limited liability company

By: _____
Name: William Scott Stribling
Title: Manager

THE STATE OF TEXAS §
§
COUNTY OF Williamson §

This instrument was acknowledged before me on this the 5th day of July, 2023, by William Scott Stribling, Manager of Esquina Avenida LLC, a Texas limited liability company, on behalf of said liability company.

JADE WHELIHAN
My Notary ID # 7163384
Expires May 9, 2025

_____
Notary Public in and for the State of Texas

Upon Recordation, Return To:
Corridor Title, LLC
171 Benney Drive, Building I
Dripping Springs, Texas 78620
Attention: Jade Whelihan

EXHIBIT A-1

TRACT 1 - 23.994 ACRE TRACT OF LAND:

BEING A 23.994 ACRE TRACT OF LAND, LOCATED IN THE ANTONIO FLORES SURVEY, ABSTRACT NO. 235, WILLIAMSON COUNTY, TEXAS, SAID 23.994 ACRE TRACT BEING ALL OF THAT CERTAIN 24.002 ACRE TRACT OF LAND RECORDED IN DOCUMENT NO. 2015102566, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS; SAID 23.994 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a 1/2" iron rod located in the northwest right-of-way line of FM Highway 971, said point being the southwest corner of adjacent 7.55 acre tract of land, recorded in Volume 2695, Page 596, Official Public Records, Williamson County, Texas, the southeast corner of said 24.002 acre tract, said point being the southeast corner of the herein described tract;

Thence, with the northwest right-of-way line FM Highway 971, the southeast lines of said 24.002 acre tract the following three (3) courses and distances:

1. **S 52° 29' 00" W**, a distance of **42.93'** (record, Doc. No. 2015102566, S 53° 37' 09" W, 43.02') to a ½" iron rod located for an angle point of the herein described tract;

2. **S 52° 20' 41" W**, a distance of **511.09'** (record, Doc. No. 2015102566, S 53° 58' 20" W, 511.13') to a Texas Department of Transportation Concrete Monument, located for angle point of the herein described tract;

3. **S 68° 57' 09" W**, a distance of **1.64'** (record, Doc. No. 2015102566, S 61° 25' 34" W, 1.68') to a ½" iron rod located at the southwest corner of said 24.002 acre tract, said point being the southeast corner of a 50' wide roadway easement described in Volume 1016, Page 221, Deed Records, Williamson County, Texas, a southeast corner of an additional 50' wide roadway easement described in Volume 1212, Page 305, Deed Records, Williamson County, Texas, and being the southwest corner of the herein described tract;

4. **Thence,** departing the northwest right-of-way line of FM Highway 971, following the common line of said 24.002 acre tract and said 50' wide road easement, **N 18° 15' 23" W**, a distance of **726.00'** (record, Doc. No. 2015102566, N 16° 40' 17" W, 725.83') to a ½" iron rod located at a southwest corner of a called 1.0 acre tract of land, recorded in Volume 2380, Page 589, Official Public Records, Williamson County, Texas, said point being an exterior corner of said 24.002 acre tract and being an exterior corner of the herein described tract;

Thence, with the common lines of said 24.002 acre tract and said 1.0 acre tract the following three (3) courses and distances:

5. **N 71° 50' 29" E**, a distance of **208.63'** (record, Doc. No. 2015102566, N 73° 28' 45" E, 208.63') to a ½" iron rod located for corner;

6. **N 17° 58' 55" W**, a distance of **208.26'** (record, Doc. No. 2015102566, N 16° 25' 28" W, 208.55') to a ½" iron rod located for corner;

7. **S 72° 00' 26" W**, a distance of **208.60'** (record, Doc. No. 2015102566, S 73° 36' 57" W, 208.74') to a ½" iron rod located at the northwest corner of said 1.0 acre tract, an exterior corner of said 24.002 acre tract, said point being in the east line of said 50' wide road easement recorded in Volume 1212, Page 305, Deed Records, Williamson County, Texas, and being an exterior corner of the herein described tract;

Thence, continuing with the common line of said 24.002 acre tract and said 50' wide road easement, the following two (2) courses and distances:

8. **N 16° 48' 43" W**, a distance of **481.40'** (record, Doc. No. 2015102566, N 15° 14' 40" W, 481.48') to a 3/8" iron rod located for corner;

9. **S 71° 00' 46" W**, a distance of **50.15'** (record, Doc. No. 2015102566, S 72° 47' 20" W, 50.15') to a ½" iron rod with a blue "QUICK INC RPLS 6447" plastic cap set at an exterior corner of said 24.002 acre tract, a southeast corner of a called 13.494 acre tract of land, recorded in Document No. 2020071353, Official Public Records, Williamson County, Texas, said point being an exterior corner of the herein described tract;

10. **Thence,** with a southwest line of said 24.002 acre tract, the northeast line of said 13.494 acre tract, **N 19° 35' 40" W**, a distance of **749.17'** (record, Doc. No. 2015102566, N 17° 59' 20" W, 749.71') to a ½" iron rod located at the northwest corner of said 24.002 acre tract, the northeast corner of said 13.494 acre tract, said

point being in the southeast line of a called 24.03 acre tract recorded in Document No. 2019047050, Official Public Records, Williamson County, Texas, and being the northwest corner of the herein described tract;

Thence, with the northwest lines of said 24.002 acre tract, the southeast line of said 24.03 acre tract the following three (3) courses and distances:

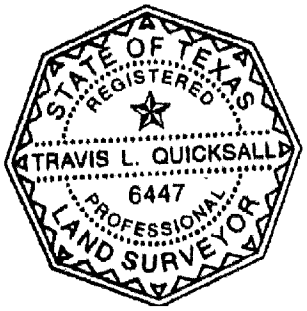
11. **N 68° 44' 15" E**, a distance of **175.46'** (record, Doc. No. 2015102566, N 70° 21' 35" E, 175.19') to a ½" iron rod with a blue "QUICK INC RPLS 6447" plastic cap set for an angle point of the herein described tract;

12. **N 69° 03' 01" E**, a distance of **330.27'** (record, Doc. No. 2015102566, N 70° 40' 00" E, 330.13') to a leaning 3/8" iron rod located for an angle point of the herein described tract;

13. **N 69° 02' 37" E**, a distance of **36.87'** (record, Doc. No. 2015102566, N 70° 39' 16" E, 37.05') to a leaning ½" iron rod located at the northeast corner of said 24.002 acre tract, the northwest corner of said 7.55 acre tract, said point being the northeast corner of the herein described tract;

14. **Thence,** with the common line of said 24.002 acre tract and said 7.55 acre tract, **S 19° 18' 19" E**, a distance of **2007.24'** (record, Doc. No. 2015102566, S 17° 44' 05" E, 2007.47') to the **POINT OF BEGINNING** containing **23.994 acres** of land.

Note: The basis of bearing was established using the Trimble VRS Network, NAD (83), Texas State Plane Coordinate System, Central Zone, 4203, US Survey Foot, Grid. A survey plat was prepared by a separate document.



Travis L. Quicksall RPLS #6447
Date: 08/03/2022
Job #22-0146 Tract 1

EXHIBIT A-2

TRACT 2 – 1.671 ACRE TRACT OF LAND:

BEING A 1.671 ACRE TRACT OF LAND, LOCATED IN THE ANTONIO FLORES SURVEY, ABSTRACT NO. 235, WILLIAMSON COUNTY, TEXAS, SAID 1.671 ACRE TRACT BEING ALL OF THAT CERTAIN 1.67 ACRE TRACT OF LAND RECORDED IN DOCUMENT NO. 2015102565, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS; SAID 1.67 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a 1/2" iron rod located in the northwest right-of-way line of FM Highway 971, said point being the southwest corner of said 1.67 acre tract, the southeast corner of a called 7.36 acre tract of land, recorded in Volume 2695, Page 591, Official Public Records, Williamson County, Texas, said point being the southwest corner of the herein described tract;

1. **Thence,** with the southwest line of said 1.67 acre tract, a northeast line of said 7.36 acre tract, **N 19° 05' 55" W**, a distance of **334.59'** (record, Doc. No. 2015102565, N 17° 14' 00" W, 334.78'), to a 1/2" iron rod located at the northwest corner of said 1.67 acre tract, the southwest corner of a called 16.00 acre tract, known as "Tract 1", recorded in Volume 606, Page 873, Deed Records, Williamson County, Texas, said point being the northwest corner of the herein described tract;

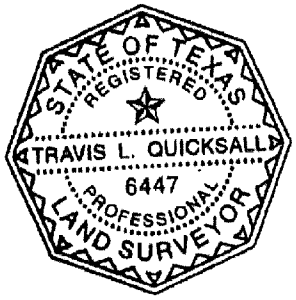
2. **Thence,** with the northwest line of said 1.67 acre tract, the southeast line of said 16.00 acre tract, **N 56° 00' 01" E**, a distance of **179.46'** (record, Doc. No. 2015102565, N 57° 53' 30" E, 179.66'), to a 1/2" iron rod locate at the northeast corner of said 1.67 acre tract, the western most corner of a called 6.57 acre tract recorded in Volume 526, Page 609, Deed Records, Williamson County, Texas, said point being the northeast corner of the herein described tract of land;

3. **Thence,** with the northeast line of said 1.67 acre tract, the southwest line of said 6.57 acre tract, **S 37° 43' 39" E**, a distance of **306.13'** (record, Doc. No. 2015102565, S 35° 50' 10" E, 306.13'), to a 1/2" iron rod with a blue "QUICK INC RPLS 6447" plastic cap set at the southeast corner of said 1.67 acre tract, the southwest corner of

said 6.57 acre tract, said point being in the northwest right-of-way line of said FM Highway 971, and being the southeast corner of said 1.671 acre tract;

4. **Thence,** with the southeast line of said 1.67 acre tract, the northwest right-of-way line of FM highway 971, **S 52° 25' 15" W**, a distance of **285.96'** (record, Doc. No. 2015102565, S 54° 16' 10" W, 286.09'), to the **POINT OF BEGINNING** containing **1.671 acres** of land.

Note: The basis of bearing was established using the Trimble VRS Network, NAD (83), Texas State Plane Coordinate System, Central Zone, 4203, US Survey Foot, Grid. A survey plat was prepared by a separate document.



Travis L. Quicksall RPLS #6447
Date: 08/03/2022
Job #22-0146 Tract 2

EXHIBIT A-3

TRACT 3 – 7.555 ACRE TRACT OF LAND:

BEING A 7.555 ACRE TRACT OF LAND, LOCATED IN THE ANTONIO FLORES SURVEY, ABSTRACT NO. 235, WILLIAMSON COUNTY, TEXAS, SAID 7.555 ACRE TRACT BEING ALL OF THAT CERTAIN 7.55 ACRE TRACT OF LAND RECORDED IN VOLUME 2695, PAGE 596, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS; SAID 7.555 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a 1/2" iron rod located in the northwest right-of-way line of FM Highway 971, said point being the southwest corner of said 7.55 acre tract of land, the southeast corner of a called 24.002 acre tract of land, recorded in Document No. 2015102565, Official Public Records, Williamson County, Texas, and being the southwest corner of the herein described tract;

1. **Thence,** with the common line of said 7.55 acre tract and said 24.002 acre tract, **N 19° 18' 19" W**, a distance of **2007.24'** (record, Vol. 2695, Page 596, N 17° 25' 00" W, 2007.55'), to a leaning 3/8" iron rod located at the northwest corner of said 7.55 acre tract, the northeast corner of said 24.002 acre tract, said point being in the southeast line of said of a called 24.03 acre tract recorded in Document No. 2019047050, Official Public Records, Williamson County, Texas, and being the northwest corner of the herein described tract;

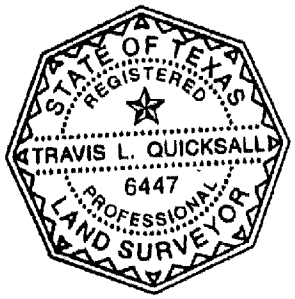
2. **Thence,** with the northwest line of said 7.55 acre tract, the southeast line of said 24.03 acre tract, **N 69° 29' 26" E**, a distance of **165.94'** (record, Vol. 2695, Page 596, N 70° 28' 30" E, 165.69') to a 1" inner diameter iron pipe located at the northeast corner of said 7.55 acre tract, the northwest corner of a called 7.36 acre tract of land, recorded in Volume 2695, Page 591, Official Public Records, Williamson County, Texas, said point being the northeast corner of the herein described tract;

3. **Thence,** with the common line of said 7.55 acre tract and said 7.36 acre tract, **S 19° 18' 57" E**, a distance of **1955.93'** (record, Vol. 2695, Page 596, S 17° 26' 00" E, 1956.20') to a ½" iron rod located in the northwest right-of-way line of FM Highway 971, said point being the southeast corner of said 7.55 acre tract, the southwest

corner of said 7.36 acre tract, and being the southeast corner of the herein described tract;

4. **Thence,** with the northwest right-of-way line of FM Highway 971, the southeast line of said 7.55 acre tract, **S 52° 27' 12" W**, a distance of **175.05'** (record, Vol. 2695, Page 596, S 54° 16' 10" W, 175.14') to the **POINT OF BEGINNING** containing **7.555 acres** of land.

Note: The basis of bearing was established using the Trimble VRS Network, NAD (83), Texas State Plane Coordinate System, Central Zone, 4203, US Survey Foot, Grid. A survey plat was prepared by a separate document.



Travis L. Quicksall RPLS #6447
Date: 08/03/2022
Job #22-0146 Tract 3

EXHIBIT A-4

TRACT 4 – 7.357 ACRE TRACT OF LAND:

BEING A 7.357 ACRE TRACT OF LAND, LOCATED IN THE ANTONIO FLORES SURVEY, ABSTRACT NO. 235, WILLIAMSON COUNTY, TEXAS, SAID 7.357 ACRE TRACT BEING ALL OF THAT CERTAIN 7.36 ACRE TRACT OF LAND RECORDED IN VOLUME 2695, PAGE 591, OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS; SAID 7.357 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a 1/2" iron rod located in the northwest right-of-way line of FM Highway 971, said point being the southeast corner of said 7.36 acre tract of land, the southwest corner of a called 1.67 acre tract of land, recorded in Document No. 2015102565, Official Public Records, Williamson County, Texas, and being the southwest corner of the herein described tract;

1. **Thence,** with the northwest right-of-way line of FM Highway 971, the southeast line of said 7.36 acre tract, **S 52° 20' 36" W**, a distance of **174.78'** (record, Vol. 2695, Page 591, S 54° 16' 10" W, 174.83'), to a ½" iron rod located at the southwest corner of said 7.36 acre tract, the southeast corner of a called 7.55 acre tract of land recorded in Volume 2695, Page 596, Official Public Records, Williamson County, Texas, said point being the southwest corner of the herein described tract;

2. **Thence,** with the common line of said 7.36 acre tract and said 7.55 acre tract, **N 19° 18' 57" W**, a distance of **1955.93'** (record, Vol. 2695, Page 591, N 17° 26' 00" W, 1956.20'), to a 1" inner diameter iron pipe, located at the northwest corner of said 7.36 acre tract, the northeast corner of said 7.55 acre tract, said point being in the southeast line of said of a called 24.03 acre tract recorded in Document No. 2019047050, Official Public Records, Williamson County, Texas, and being the northwest corner of the herein described tract;

3. **Thence,** with the northwest line of said 7.36 acre tract, the southeast line of said 24.03 acre tract, **N 68° 27' 24" E**, a distance of **165.86'** (record, Vol. 2695, Page 591, N 70° 28' 25" E, 165.72'), to 0.5" x 2" flat iron bar, located at the northeast corner of said 7.36 acre tract, the southeast corner of said 24.03 acre tract, the northwest

corner of a called 4.74 acre tract of land, recorded in Document No. 2019097199, Official Public Records, Williamson County, Texas, said point being the northeast corner of the herein described tract;

4. **Thence,** with the northeast line of said 7.36 acre tract, the southwest line of said 4.74 acre tract, **S 19° 16' 24" E,** a distance of **821.93'** (record, Vol. 2695, Page 591, S 17° 24' 30" E, 822.31'), to a 1/2" iron rod located at an angle point of said 7.36 acre tract, said point being the southeast corner of said 4.74 acre tract, the western most corner of the remainder of a called 25.8 acre tract of land, described in Volume 1129, Page 778, Official Public Records, Williamson County, Texas;

5. **Thence,** with the northeast line of said 7.36 acre tract, the southwest line of the remaining portion of said 25.8 acre tract, **S 19° 27' 54" E,** a distance of **187.13'** (record, Vol. 2695, Page 591, S 17° 36' 00" E, 187.13'), to a 1/2" iron rod with a blue "QUICK INC RPLS 6447" plastic cap set at an angle point of said 7.36 acre tract, the southwest corner of the remaining portion of said 25.8 acre tract, the western most corner of a called 16.00 acre tract known as "Tract 1", recorded in Volume 606, Page 873, Deed Records, Williamson County, Texas, said point being an angle point of the herein described tract;

6. **Thence,** with the northeast line of said 7.36 acre tract, the southwest line of said 16.00 acre tract, **S 19° 28' 24" E,** a distance of **563.73'** (record, Vol. 2695, Page 591, S 17° 34' 20" E, 563.15'), to a 1/2" iron rod located at the southwest corner of said 16.00 acre tract, the northwest corner of a called 1.67 acre tract, recorded in Document No. 2015102565, Official Public Records, Williamson County, Texas, said point being an angle point of the herein described tract;

7. **Thence,** with the northeast line of said 7.36 acre tract, the southwest line of said 1.67 acre tract, **S 19° 05' 55" E,** a distance of **334.59'** (record, Vol. 2695, Page 591, S 17° 14' 00" E, 334.78'), to the **POINT OF BEGINNING** containing **7.357 acres** of land.

Note: The basis of bearing was established using the Trimble VRS Network, NAD (83), Texas State Plane Coordinate System, Central Zone, 4203, US Survey Foot, Grid. A survey plat was prepared by a separate document.

Travis L. Quicksall RPLS #6447
Date: 08/03/2022
Job #22-0146 Tract 4

EXHIBIT B TO SPECIAL WARRANTY DEED

PERMITTED EXCEPTIONS

1. Easement granted to Jonah Water Supply Corporation, dated January 10, 1972, recorded in Volume 563, Page 550, of the Deed Records of Williamson County, Texas.

2. Easement granted to Tony Gauntt and Shelia Gauntt, dated December 28, 1995, recorded in Document No. 9600228, of the Official Records of Williamson County, Texas. (Tract 1)

3. Terms, conditions, and stipulations in that certain Road Maintenance Agreement, by and between Billy H. Miller and Mary Ann Miller and Ton Gauntt and Sheila Gauntt, as recorded in Document No. 9600229, of the Official Records of Williamson County, Texas. (Tracts 1 and 3)

4. Undivided interest in and to all oil, gas and other minerals in, on, under or that may be produced from the herein described property, together with all rights relating thereto, express or implied, reserved unto Laura Daniel in deed to Jessie Daniel Ames, dated April 19, 1932, and recorded in Volume 261, Page 557, of the Deed Records of Williamson County, Texas.

ELECTRONICALLY RECORDED
OFFICIAL PUBLIC RECORDS

2023056181

Pages: 15 Fee: $78.00
07/07/2023 02:50 PM
MBARRICK

Nancy E. Rister, County Clerk
Williamson County,Texas

SIGNATURE PAGE:

DocuSigned by:
Ryan Mattox
904913EE184648F...

Applicant's Signature

8/29/2023

Date

THE STATE OF Texas §

County of Williamson §

BEFORE ME, the undersigned authority, on this day personally appeared Ryan Mattox 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 29th day of August, 2023

DIANE M MARTINEZ
Notary ID #132015237
My Commission Expires
May 15, 2027

NOTARY PUBLIC

Diane Martinez
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 05/15/2027

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Haverland BTR
Regulated Entity Location: 170 Haverland Dr, Georgetown, Tx 78626
Name of Customer: TM BTR TEXAS, LLC
Contact Person: Ryan Mattox Phone: 512-774-6239
Customer Reference Number (if issued):CN _____
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☒ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

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

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

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	40.56 Acres	$ 8,000.00
Sewage Collection System	13,484 L.F.	$ 6,500.00
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: DocuSigned by: Ryan Mattox 904913EE184648F...

Date: 8/29/2023

Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

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

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

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

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

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

SECTION II: Customer Information

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

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

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

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

TM BTR of Texas, LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
0803492797	32072808424	844366123	

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

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

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

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

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

15. Mailing Address:

9601 Amberglen Boulevard, Suite 200

City	State	ZIP	ZIP + 4
Austin	TX	78729	

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

18. Telephone Number	19. Extension or Code	20. Fax Number (*if applicable*)
(512) 774-6239		( ) -

SECTION III: Regulated Entity Information

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

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

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

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

Haverland BTR

23. Street Address of the Regulated Entity: *(No PO Boxes)*	170 Haverland Dr.							
	City	GEORGETOWN	**State**	TX	**ZIP**	78626	**ZIP + 4**	
24. County								

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Located at the intersection of Haverland Road and Weir Road. It is located on the West side of TX-130 and Nouth side of FM 971.

26. Nearest City	**State**	**Nearest ZIP Code**
Georgetown	TX	78642

27. Latitude (N) In Decimal:	30.656569	**28. Longitude (W) In Decimal:**	97.656569

Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
1522	1531	236117	531311

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

Multi-Family

34. Mailing Address:	**9601 Amberglen Boulevard, Suite 200**							
	City	**Austin**	**State**	**TX**	**ZIP**	**78729**	**ZIP + 4**	

35. E-Mail Address:	

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

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

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

SECTION IV: Preparer Information

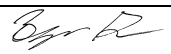
40. Name:	Benjamin L. Green, P.E	**41. Title:**	

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 646-2243		( ) -	ben.green@kimley-horn.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Kimley-Horn	**Job Title:**	
Name *(In Print):*	Benjamin L. Green, P.E.	**Phone:**	(512) 646- **2243**

Signature:		**Date:**	08/22/2023