Water Pollution Abatement Plan

FOR

NORTHSIDE SUBDIVISION CONSTRUCTION PLANS

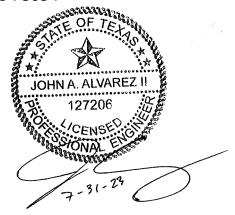
350 HWY 195

IN

GEORGETOWN, TEXAS

PREPARED FOR

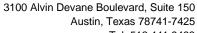
TRAILS, LLC 1127 NORTHSIDE SUBDIVITION GRANITE SHOALS, TEXAS 78654



August 2023



3100 Alvin Devane Boulevard, Suite 150 Austin, Texas 78741 Tel: 512.441.9493 Fax: 512.445.2286



Tel: 512.441.9493 Fax: 512.445.2286



August 1st, 2023

Water Section Manager
Texas Commission on Environmental Quality
Region 11 Office
12100 Park 35 Circle, Bldg A, Rm 179
Austin, Texas 78753

Re: Water Pollution Abatement Plan

Avery Lakeline Construction Plans

Austin, Texas

To whom it may concern:

On behalf of our client, Trails, LLC we are pleased to submit this Water Pollution Abatement Plan for your consideration. Please find enclosed the following items for your review:

- 1. Edwards Aquifer Application Cover Page (TCEQ-20705)
- 2. General Information Form (TCEQ-0587)
- 3. Geologic Assessment Form (TCEQ-0585)
- 4. Water Pollution Abatement Plan Application Form (TCEQ-0584)
- 5. Temporary Stormwater Section (TCEQ-0602)
- 6. Permanent Stormwater Section (TCEQ-0600)
- 7. Organized Sewage Collection System (TCEQ-0582)
- 8. Agent Authorization Form (TCEQ-0599)
- 9. Application Fee Form (TCEQ-0574)
- 10. Core Data Form (TCEQ-10400)
- 11. Construction Plans (Attachment D of Water Pollution Abatement Plan Application Form Application)

If you have any questions about any of the items included in this submittal, please call.

Sincerely,

John A Alvarez II, P.E.

Water Pollution Abatement Plan

FOR

NORTHSIDE SUBDIVISION CONSTRUCTION PLANS

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Geologic Assessment Form (TCEQ-0585)

Water Pollution Abatement Plan Application Form (TCEQ-0584)

Temporary Stormwater Section (TCEQ-0602) - Storm Water Pollution Prevention Plan

Permanent Stormwater Section (TCEQ-0600)

Organized Sewage Collection System Application (TCEQ-0582)

Agent Authorization Form (TCEQ-0599)

Application Fee Form (TCEQ-0574)

Core Data Form (TCEQ-10400)

Construction Plans (Attachment D of Water Pollution Abatement Plan Application Form Application)

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. <u>Edwards Aquifer applications</u> 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: Northside Subdivision					2. Regulated Entity No.: N/A			
3. Customer Name: Trails, LLC.				4. Cı	4. Customer No.:N/A			
5. Project Type: (Please circle/check one)	New	Modification		Extension		Exception		
6. Plan Type: (Please circle/check one)	WPAP	SCS UST AST		EXP	EXT	Technical Clarification	Optional Enhanced Measures	
7. Land Use: (Please circle/check one)	Residential	Non-residential			8. Site (ac		e (acres):	71.997
9. Application Fee:	9,300	10. Permanent I			BMP(s):		Batch Detention Pond	
11. SCS (Linear Ft.):	2,600	12. AST/UST (No			o. Tanks):		N/A	
13. County:	Williamson	14. Watershed:			_	Dry Berry Creek		k

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%2oGWCD%2omap.pdf

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

Austin Region						
County:	Hays	Travis	Williamson			
Original (1 req.)	_	_	_X_			
Region (1 req.)	_	_	_X_			
County(ies)	_	_	_X_			
Groundwater Conservation District(s)	Edwards Aquifer AuthorityBarton Springs/ Edwards AquiferHays TrinityPlum Creek	Barton Springs/ Edwards Aquifer	NA			
City(ies) Jurisdiction	AustinBudaDripping SpringsKyleMountain CitySan MarcosWimberleyWoodcreek	AustinBee CavePflugervilleRollingwoodRound RockSunset ValleyWest Lake Hills	AustinCedar ParkFlorence _X_GeorgetownJerrellLeanderLiberty HillPflugervilleRound 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 HillsFair Oaks RanchHelotesHill Country VillageHollywood ParkSan Antonio (SAWS)Shavano Park	BulverdeFair Oaks RanchGarden RidgeNew BraunfelsSchertz	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.					
John A. Alvarez II					
Print Name of Customer/Authorized Agent					
96	8/1/2023				
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):	Payable to TCEQ (Y/N):				
Core Data Form Complete (Y/N):	Check: Signed (Y/N):				
Core Data Form Incomplete Nos.:	Less than 90 days old (Y/N):				

General Information Form

Texas Commission on Environmental Quality

Print Name of Customer/Agent: John A. Alvarez II

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:

Da	Date: <u>8/1/2</u> 023	
Sig	Signature of Customer/Agent:	
Pi	Project Information	
1.	1. Regulated Entity Name: Northside Subdivision	
2.	2. County: Williamson	
3.	3. Stream Basin: <u>Dry Berry Creek</u>	
4.	4. Groundwater Conservation District (If applicable)	: <u>N/A</u>
5.	5. Edwards Aquifer Zone:	
	Recharge Zone Transition Zone	
6.	6. Plan Type:	
	WPAPSCSModification	☐ AST ☐ UST ☐ Exception Request

7.	Customer (Applicant):				
	Contact Person: Charles Holbrook and Doug Moss Entity: Trails, LLC Mailing Address: 1127 North ShoreWood City, State: Granite Shoals, Texas Telephone: 512-567-5003 Email Address:	Zip: <u>78654</u> FAX:			
8.	Agent/Representative (If any):				
	Contact Person: John A. Alvarez II Entity: Quiddity Engineering, LLC Mailing Address: 3100 Alvin Devane Blvd, Suite 150 City, State: Austin, Texas Telephone: (512) 685-5163 Email Address: jalvarez@quiddity.com	<u>0</u> Zip: <u>78741</u> FAX:			
9.	Project Location:				
	 ☐ The project site is located inside the city limits ☐ The project site is located outside the city limit jurisdiction) of ☐ The project site is not located within any city's 	s but inside the ETJ (extra-territorial			
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 on SH-195, Georgetown, 195 and IH-35. The project is located direct IH-35, Georgetown, TX 78628.				
11.	Attachment A – Road Map. A road map showing project site is attached. The project location and the map.	_			
12.	Attachment B - USGS / Edwards Recharge Zon USGS Quadrangle Map (Scale: 1" = 2000') of th The map(s) clearly show:				
	 ☑ Project site boundaries. ☑ USGS Quadrangle Name(s). ☑ Boundaries of the Recharge Zone (and Tran ☐ Drainage path from the project site to the better the second or the se				
13.	The TCEQ must be able to inspect the project solution Sufficient survey staking is provided on the protect the boundaries and alignment of the regulated features noted in the Geologic Assessment.	ject to allow TCEQ regional staff to locate			

⊠ Su	rvey staking will be completed by this date: 11/26/21
na	tachment C – Project Description. Attached at the end of this form is a detailed rrative description of the proposed project. The project description is consistent roughout 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. Existir	ng 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:
Prohib	oited Activities
	m aware that the following activities are prohibited on the Recharge Zone and are not oposed 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.
	m aware that the following activities are prohibited on the Transition Zone and are t proposed for this project:

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

Injection Control);

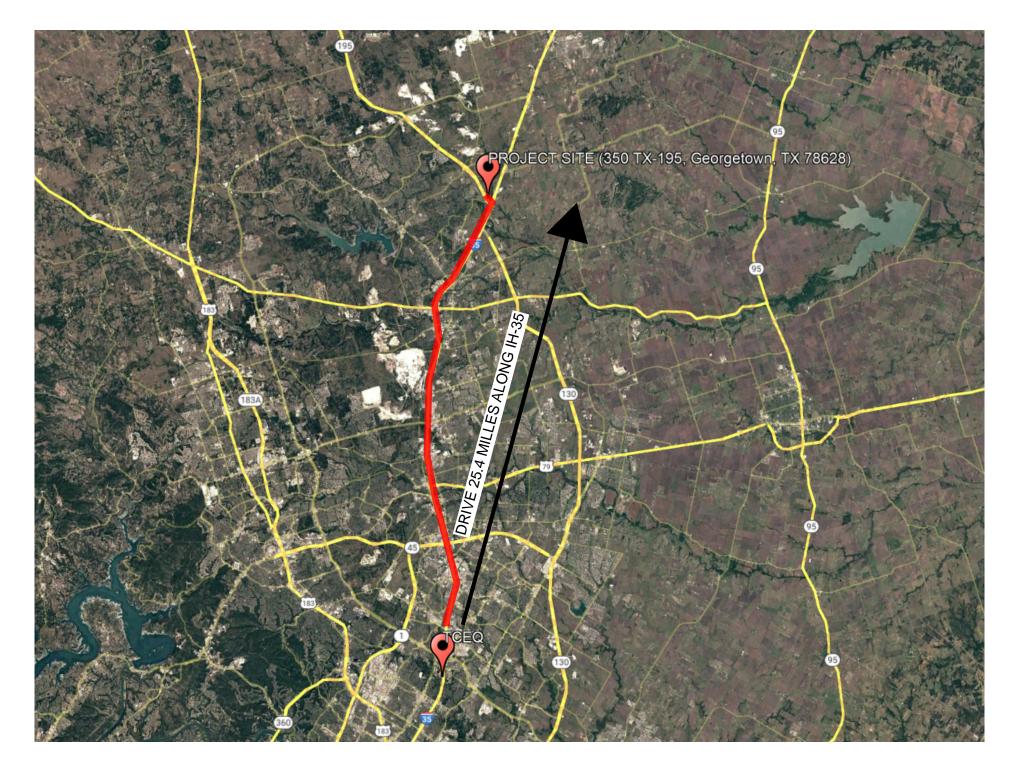
- (2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and
- (3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

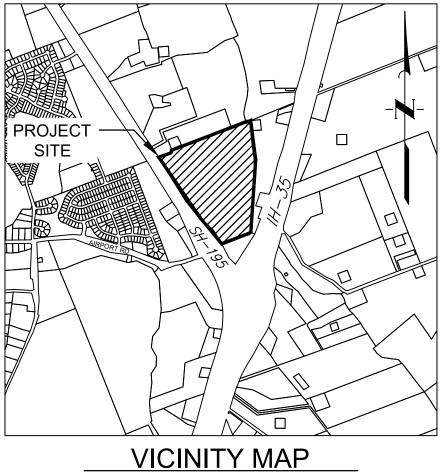
Administrative Information

18. Th	e fee for the plan(s) is based on:
	For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur. For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines. For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems. A request for an exception to any substantive portion of the regulations related to the protection of water quality. A request for an extension to a previously approved plan.
19. 🔀	Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:
	 ☐ TCEQ cashier ☐ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties) ☐ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)
20. 🔀	Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
21. 🗵	No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

GENERAL INFORMATION FORM – ATTAHCMENT A

Road Map





1"=2,000'

TRAILS, LLC WILLIAMSON COUNTY, TEXAS

JOB NORTHSIDE SUBDIVISION



ATTACHMENT

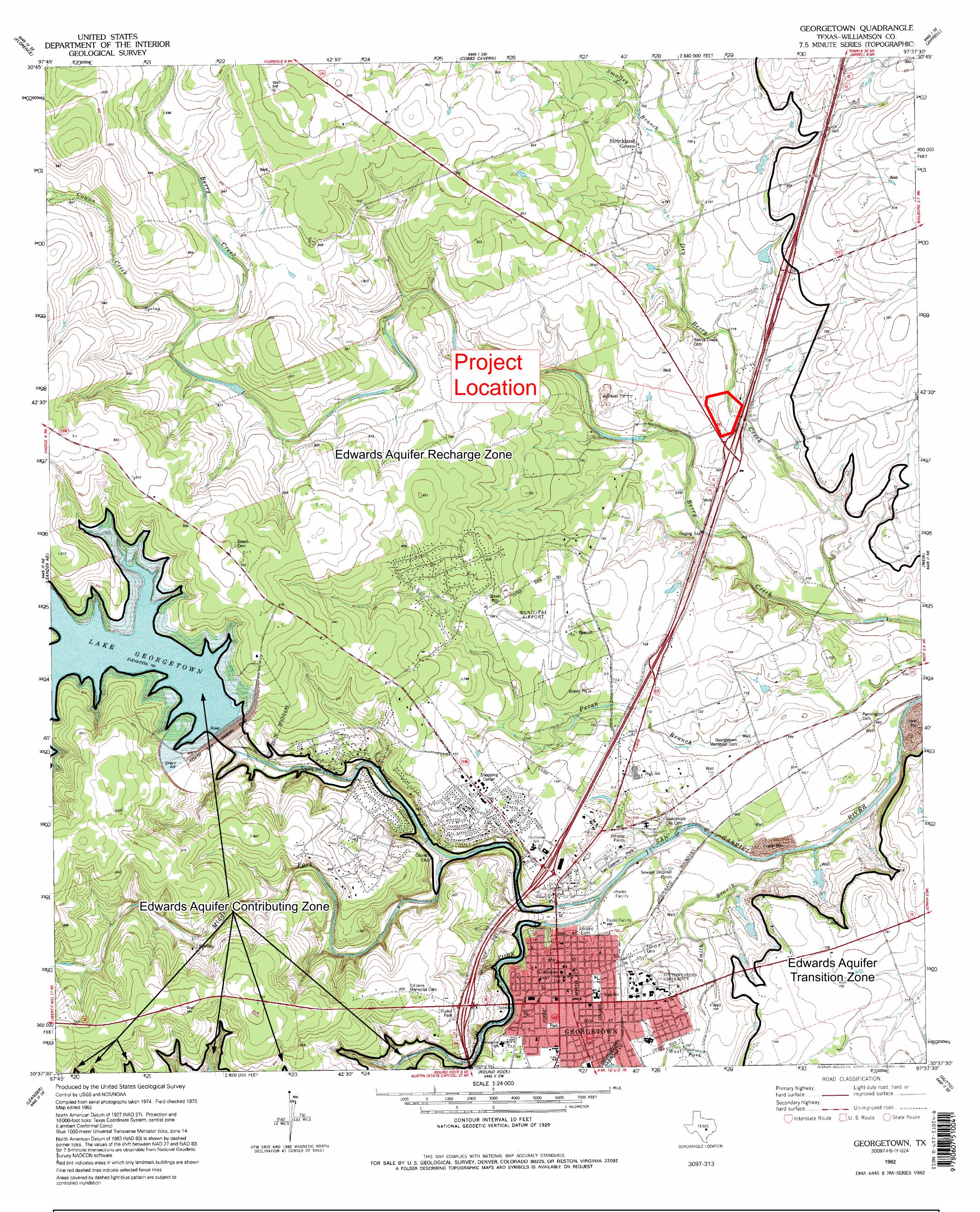
DATE: JUNE 2023

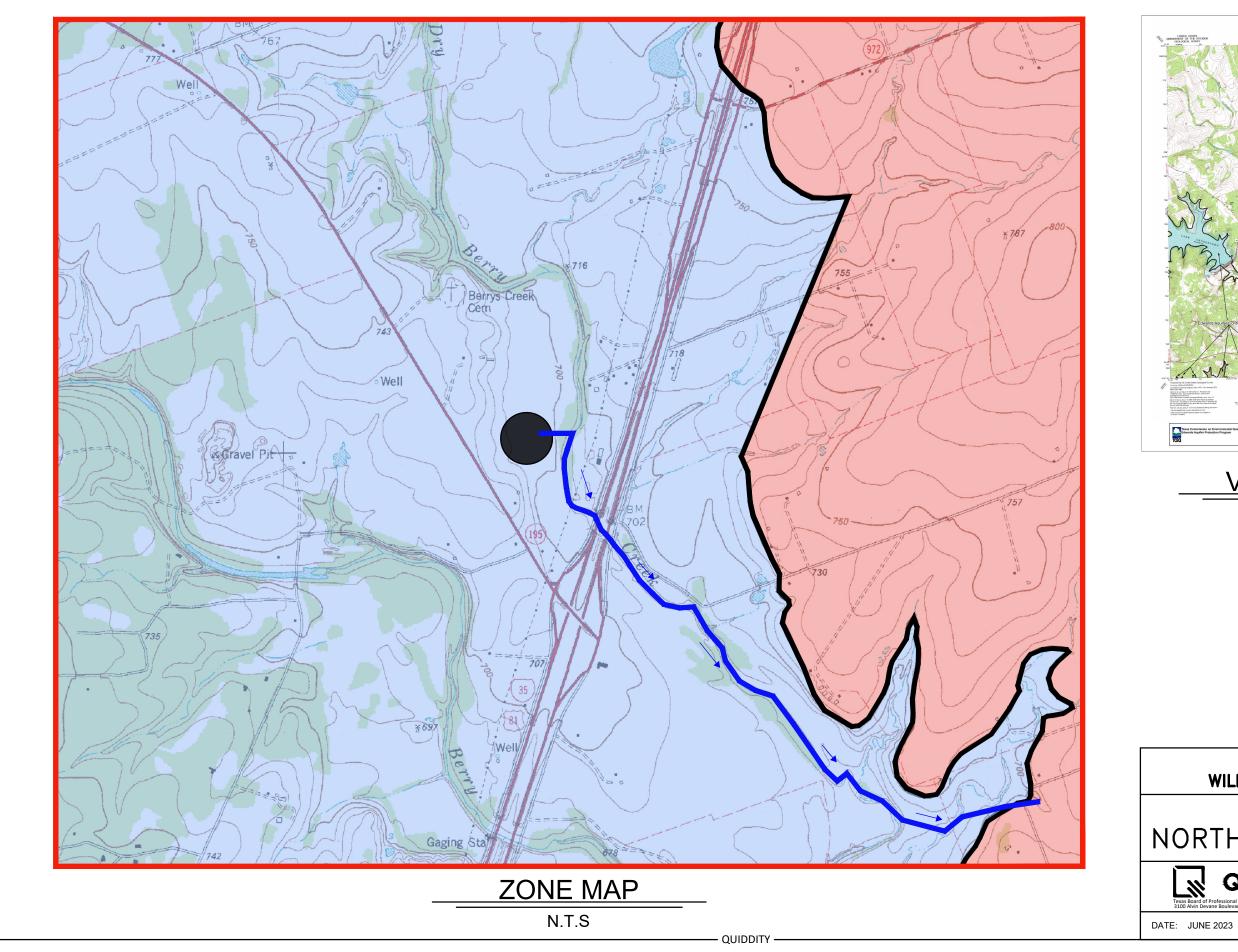
JOB NO. 16705-0003-00

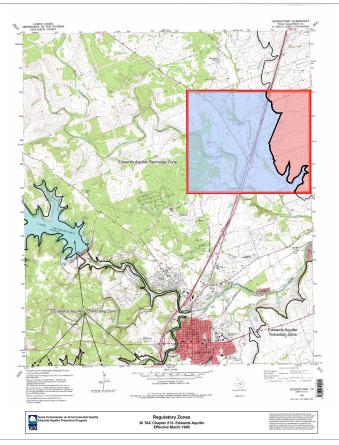
- QUIDDITY

GENERAL INFORMATION FORM – ATTAHCMENT B

USGS/ Edwards Aquifer Recharge Zone Map

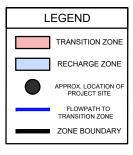






VICINITY MAP

N.T.S



TRAILS, LLC WILLIAMSON COUNTY, TEXAS

JOB NORTHSIDE SUBDIVISION



ATTACHMENT

JOB NO. 16705-0003-00

GENERAL INFORMATION FORM – ATTACHEMENT C

Project Description

The Northside Subdivision project of 71.997 acres is to entail the construction of one (1) multi-family lot, three (3) commercial lots, one (1) detention pond. This project will include the public and private infrastructure to accommodate these lots. This includes roadways, utilities, water quality, and detention. The water quality for each of these lots will be provided by an onsite batch storm water quality system with a stacked detention pond. The project is located at 350 Hwy. 195, Georgetown, TX 78633. It is in Williamson County. The area to be developed is owned by The Trails, LLC. This area is currently developed mostly as agricultural land with four existing structures onsite (one house, a shed, a silo, and a pump house). The project is currently zoned for agricultural use.

The site is located in the Dry Berry Creek Watershed, which is also classified as the recharge zone for the Edward's Aquifer by TCEQ. The offsite areas to the north consist of the Dry Berry Creek, and across the creek, an area with brush and grasslands with no development. The offsite to the east consists of undeveloped land. The offsite to the south of the property is SH-195. The offsite areas to the west consist of an area with brush and grasslands with a residence.

The existing site topography consists of a natural slope ranging from approximately 1–15%. The high point of the site sits at an elevation of 735' in the northwest corner of the site, and the low point is at an elevation of 682' located in the southeast corner of the site. The site is currently developed as agricultural land and vegetated with natural grass, brush, and trees. The existing site slopes generally towards Dry Berry Creek, which runs north to south through the eastern side of the site. Three distinct sub-basins labeled E-1, E-2, and E-3 were identified. Runoff from areas E-1 and E-2 flows east, and runoff from area E-3 flows west. All three existing drainage areas have an existing impervious cover of 0.0%.

Sub-basins were identified based on the proposed development layout (P-1, P-2, P-3 DET, P-4, P-5, P-6, and P7). The drainage areas were broken into the future proposed lots and their expected drainage designs. Impervious cover was calculated for each individual drainage area using the maximum allowable impervious cover for the lots (50% for multi-family residential, 70% for the first five (5) acres of non-residential lots, and 55% for the remaining acreage). The proposed pond on site will accommodate drainage areas P-1, P-2, P-3 and P-7 and be located on the central southern part of the site. The proposed pond has been sized according to the maximum impervious cover. Impervious cover in the development will be asphalt and concrete and is calculated depending on the area of roadways and shoulders, along with the impervious cover assumptions for the four (4) drainage areas previously mentioned. A majority of the runoff will be controlled and detained with the use of the onsite proposed detention pond before being released into Dry Berry Creek. Table 1 shows the summary of permanent BMP coverage of each lot along with the maximum impervious cover within each lot and area covered under each proposed BMP for future site plan developments.

Table 1 Summary Table

Drainage Area	Permanent BMP	Area (Acre)	Areas to be Controlled By Permanent BMPs (Acre)	Are Not Covered By Permanent BMPs (Acre)	Allowed Max Impervious Cover Percent (%)	Allowed Max Impervious Cover Area Controlled By Permanent BMPs (Acre)
P-1	Batch Detention Pond	14.57	14.57	0.00	60.15	8.76
P-2	Batch Detention Pond	15.00	15.00	0.00	50.00	7.5
P-3 DET	Batch Detention Pond	3.18	3.18	0.00	0.00	0.00
P-4	N/A	13.37	0.00	13.37	0.00	0.00
P-5	N/A	10.75	0.00	10.75	0.00	0.00
P-6	N/A	10.69	0.00	10.69	0.00	0.00
P-7	Batch Detention Pond	4.40	4.40	0.00	70.00	3.08

GEOLOGIC ASSESSMENT

FOR NORTHSIDE SUBDIVISION



GEOLOGIC ASSESSMENT FOR THE APPROXIMATELY 72-ACRE NORTHSIDE GEORGETOWN SUBDIVISION

Williamson County, Texas

May 2022

Submitted to:

Trails, LLC 1127 North Shorewood Granite Shoals, TX 78654

Prepared by:

aci consulting 1001 Mopac Circle Austin, Texas 78746 TBPG Firm License No. 50260

aci project #: 22-22-031

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.

Prin	t Name of Geologist: <u>Mark T. Adams</u>	Telephone: <u>(512) 347-9000</u>			
Dat	e: <u>5/19/2022</u>	Fax: <u>(512) 306-0974</u>			
-	resenting: <u>aci Group LLC TBPG License No. 5026</u> stration number)	(Name of Company and TBPG or TBPE			
Signature of Geologist: MARK T. ADAMS GEOLOGY					
Reg	ulated Entity Name: Northside Georgetown Su	bdivision CENSEO			
Pr	oject Information	Millianing			
1.	Date(s) Geologic Assessment was performed: <u>0</u>	2/22/22 & 03/01/22			
2.	Type of Project:				
3.	WPAP SCS Location of Project:	☐ AST ☐ UST			
	Recharge Zone Transition Zone Contributing Zone within the Transition Zon	e			

4.			ologic Assessmen able) is attached.		d Geologic Assessment Table
5. Ta	Hydrologi 55, Apper	c Soil Gro ndix A, Soi ct site, sho	ups* (Urban Hydr I Conservation Selow each soil type o	ology for Small W rvice, 1986). If the	e below and uses the SCS atersheds, Technical Release No. ere is more than one soil type on gic Map or a separate soils map.
Ch	aracteristics	and Thi	ckness		Group Definitions (Abbreviated)
				. A.	Soils having a high infiltration
	Soil Name	Group*	Thickness(feet)	В.	rate when thoroughly wetted. Soils having a moderate
	See section				infiltration rate when thoroughly
	4.0			_	wetted.
				C.	Soils having a slow infiltration rate when thoroughly wetted.
				D.	Soils having a very slow
					infiltration rate when thoroughly
					wetted.
6. 7.	members top of the the stratig	, and thick stratigra graphic co	knesses is attache phic column. Othellumn.	d. The outcroppin erwise, the upper	column showing formations, g unit, if present, should be at the most unit should be at the top of of the site specific geology
<i>,</i> .	including potential	any featu for fluid n	res identified in th	ne Geologic Assess	sment Table, a discussion of the stratigraphy, structure(s), and
8.			e Geologic Map(s Plan. The minimu	-	ic Map must be the same scale as)'
	Site Geolo	ogic Map S	n Scale: 1" = <u>100</u> ' Scale: 1" = <u>500</u> ' e (if more than 1 s	oil type): 1" = <u>400</u>	<u>'</u>
9.	Method of co	llecting p	ositional data:		
			System (GPS) tech lease describe me		ection:
10					labeled on the Site Geologic Map.
			its are shown and		
	. Zarrace ge	20.06ic all	are snown and	abcica on the Si	to occordic which.

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



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May 2022



May 2022

Geologic Assessment for the Northside Georgetown Subdivision located in Williamson County, Texas

1.0 INTRODUCTION

The Texas Commission on the Environmental Quality (TCEQ) regulates activities that have the potential to pollute the Edwards Aquifer through the Edwards Aquifer Protection Program. Projects meeting a certain criterion over the Edwards Aquifer Recharge Zone must submit an Edwards Aquifer Protection Plan (EAPP).

The purpose of this report is to identify all potential pathways for contaminant movement to the Edwards Aquifer and provide sufficient geologic information so that the appropriate Best Management Practices (BMPs) can be proposed in the Edwards Aquifer Protection Plan (EAPP). This report complies with the requirements of Title 30, Texas Administrative Code (TAC) Chapter 213 relating to the protection of the Edwards Aquifer Recharge Zone. Per the Rules, the Geologic Assessment must be completed by a Geologist licensed according to the Texas Geoscience Practice Act.

2.0 PROJECT INFORMATION

The Northside Georgetown Subdivision Tract, hereafter referred to as the subject area or site, is located north of the intersection of Interstate Highway 35 (I-35) and Highway (Hwy) 195, in the city of Georgetown, Williamson County, Texas (**Attachment A, Figure 1**). Pedestrian investigations of the 72-acre tract were performed on February 22 and March 1, 2022, by Marcos Cardenas and Andrew Marlow, under the supervision of Mark Adams, P.G. with **aci consulting**.

This report is intended to satisfy the requirements for a Geologic Assessment, which shall be included as a component of a Water Pollution Abatement Plan (WPAP) and Sewage Collection System Plan (SCS). The site is approximately 72 acres in total. The proposed site use is for multi-family and commercial development. The scope of the report consists of a site reconnaissance, field survey, and review of existing data and reports. Features identified during the field survey were ranked utilizing the Texas Commission on



Environmental Quality (TCEQ) matrix for Edwards Aquifer Recharge Zone features. The ranking of the features will determine their viability as "sensitive" features.

3.0 INVESTIGATION METHODS

The following investigation methods and activities were used to develop this report:

- Review of existing files and literature to determine the regional geology and any known caves associated with the project area;
- Review of past geological field reports, cave studies, and correspondence regarding the existing geologic features on the project area, if available;
- Site reconnaissance by a registered professional geologist to identify and examine caves, recharge features, and other significant geological structures;
- Evaluation of collected field data and a ranking of features using the TCEQ Ranking Table 0585 for the Edwards Aquifer Recharge Zone; and
- Review of historic aerial photographs to determine if there are any structural features present, and to determine any past disturbances on the subject property.

4.0 SOILS AND GEOLOGY

The following includes a site-specific description of the soils, geologic stratigraphy, geologic structure, and karstic characteristics as they relate to the Edwards aquifer. Also included in this section is a review of historic aerials for presence of geologic changes or changes to manmade features in bedrock.

Soils

According to the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey (2022), six soil units occur within the project alignment (**Attachment A, Figure 2**):

• EaD—Eckrant cobbly clay, 1 to 8 percent slopes

The Eckrant component makes up 85 percent of the map unit. Slopes are 1 to 8 percent. This component is on ridges on dissected plateaus. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 4 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is high. This soil is not flooded. It is not ponded.



There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria. Hydrologic Soil Group: D.

• KrA—Krum silty clay, 0 to 1 percent slopes

The Krum component makes up 100 percent of the map unit. Slopes are 0 to 1 percent. This component is on stream terraces on dissected plains. The parent material consists of clayey alluvium of Pleistocene age derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet the criteria for hydric soils. Hydrologic Soil Group: C.

• KrB—Krum silty clay, 1 to 3 percent slopes

The Krum component makes up 100 percent of the map unit. Slopes are 1 to 3 percent. This component is on stream terraces on dissected plains. The parent material consists of clayey alluvium of Pleistocene age derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet the criteria for hydric soils. Hydrologic Soil Group: C.

• OkA—Oakalla silty clay loam, 0 to 2 percent slopes, frequently flooded

The Oakalla component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on dissected plateaus. The parent material consists of loamy alluvium derived from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria. Hydrologic Soil Group: B.

• QuC—Queeny clay loam, 1 to 5 percent slopes

The Queeny component makes up 100 percent of the map unit. Slopes are 1 to 5 percent. This component is on paleoterraces on dissected plains. The parent material consists of



gravelly alluvium of Quaternary age derived from mixed sources. Depth to a root restrictive layer, petrocalcic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet the criteria for hydric soils. Hydrologic Soil Group: D.

• SvA—Sunev silty clay loam, 0 to 1 percent slopes

The Sunev component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on stream terraces on dissected plains. The parent material consists of loamy alluvium derived from limestone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet the criteria for hydric soils. Hydrologic Soil Group: B.

Geologic Stratigraphy

According to the Geologic Map of the Georgetown Quadrangle, Texas, three geologic units occur within the project alignment (**Attachment A, Figure 3**). These units and a description by Collins (1997) are as follows:

• Alluvium (Qal)

"Gravel, sand, silt, and clay along streams and rivers; inundated regularly. Gravel is mostly limestone and chert. Along minor drainages, includes undivided low terrace deposits. Includes some local bedrock outcrops that are undivided."

• Terrace Deposits (Qt)

"Gravel, sand, silt, and clay along streams and rivers. Mostly above flood level along entrenched streams and rivers. Larger deposits along San Gabriel River, Berry Creek, and Brush Creek are as thick as 36 ft and locally may be thicker. Deposits of adjacent terraces at different elevations are mapped separately."

5



Georgetown Formation (Kgt)

"Limestone and marl. Nodular, very fossiliferous, diagnostic marine megafossils include *Waconell wacoensis* (formerly *Kingena wacoensis*) and *Gryphaea washitaensis*. Rare small vugs. Uppermost Edwards aquifer strata. Thickness increases northward from ~65ft to 110ft"

Site-Specific Stratigraphic Column

Formation	Members	Thickness (Collins, 1997)
Quaternary Alluvium (Qal)	Quaternary Alluvium	-
Quaternary Terrace Deposits (Qt)	N/A	-
Georgetown Formation (Kgt)	Georgetown Limestone	65-110 feet

Geologic Structure

The geologic strata associated with the Edwards Aquifer include the Georgetown Limestone Formation of the Washita Group, the Edwards Limestone Group, which is interfingered with the Comanche Peak Formation, followed by the Walnut formation, and finally the Glen Rose Formation of the Trinity Group. These Groups dip gently to the southeast and are a characterized by the Balcones Fault Escarpment, a zone of en echelon normal faults downthrown to the southeast. Locally, the dominant structural trend of faults within the area is 25°, as evidenced by the mapped fault patterns (**Attachment A**, **Figure 4**). Thus, all features that have a trend ranging from 10° to 40° are considered "on trend" and were awarded the additional 10 points in the Geologic Assessment Table.

The subject area is underlain by Qal, Qt, and Kgt (Collins 1997). The geologic strata associated within the entire mapped site include the Georgetown Formation (Kgt) underlaying (in successive order) the Quaternary Terrace and Alluvial deposits. The trend for the contacts between these geologic units is roughly in a north/south direction.



Karstic Characteristics

In limestone landscapes, karst is expressed by erratically developed cavernous porosity from dissolution of bedrock as water combined with weak acids moves through the subsurface. Karst terrains are typical of the Edwards Limestone, occurring across a vast region of Central Texas, including the Balcones Fault Escarpment. The features produced by karst processes include, but are not limited to, sinkholes, solution cavities, solution enlarged fractures, and caves. These features can eventually provide conduits for fluid movement such as surface water runoff, as "point recharge" to the Edwards Aquifer. Faults and manmade features within bedrock can also provide conduits for point recharge in many cases.

According to Edwards aquifer zone map produced by the TCEQ (2005), the entire subject area is within the northern segment of the Edwards aquifer Recharge Zone. Thus, all karst features identified as sensitive within the project limits have the potential to be point recharge features into the Edwards aquifer.

Review of Historic Aerials

Aerial photographs were reviewed for the site, and it was determined that ranching and agricultural activities occurred on the site since the first aerial image dated 1941 (Attachment C). Several small structures near the eastern portion of the site are visible in the 1941 aerial. Additional structures (likely related to agriculture) appear in the vicinity, near the eastern property boundary, in the 1954 aerial. Vegetation clearing along the western and eastern property boundaries is visible in the 1954 aerial. Interstate Highway 35 (I-35), located east of the subject area, appears to be expanding in the 1964 aerial. Additional structures to the north, east, and south of the site appear in the 1974 aerial and continue through the 1981 aerial. Additional developments around the subject area, including the resurfacing of nearby roads, and structures appear to the east, west, and north of the subject area appear in the 1995 aerial. I-35 appears to be expanded in the 2004 aerial, commercial structures appear to the west and east of the site, and an area in the eastern portion of the site appears to be inundated. Additional feeder roads for SH 195 as well as a residential subdivision to the west of the site first appear in the 2010 aerial. Several structures near the western boundary of the site are no longer visible in the 2010 aerial No major changes are visible within the subject area between the 2016 and 2020 aerial images.



5.0 SUMMARY OF FINDINGS

This report documents the findings of a geologic assessment conducted by **aci consulting** personnel on February 22, 2022, and March 01, 2022. A total of 13 features (manmade features in bedrock and non-karst features) were noted on the site. Comprehensive descriptions and recommendations for each feature can be found in **Attachment B**. All 11 manmade features in bedrock have been determined to be sensitive in order to call to the attention of the engineer. Both naturally occurring non-karst features, F-01 and F-02, have been determined to be non-sensitive and do not require any setbacks. No springs were identified within the subject area. A creek, Dry Berry Creek, runs through portions of the property along the eastern boundary.

6.0 GEORGETOWN WATER QUALITY ORDINANCE

As part of the Geologic Assessment, the subject area was surveyed to include pertinent information on springs, streams, and Georgetown Salamander Critical Habitat Units (CHUs). **aci consulting** verified that the site is within the Edwards Aquifer Recharge Zone based on the mapped boundaries. There were no springs, mapped salamander sites, or known surface or subsurface CHUs within the subject area. One stream, Dry Berry Creek, runs through portions of the property along the eastern boundary.

According to the City of Georgetown Edwards Aquifer Recharge Zone Water Quality Ordinance, the boundaries of the "Stream Buffer" are to coincide with the boundaries of the FEMA 1% floodplain or a calculated 1% floodplain, whichever is smaller. Based on project information, minor floodplain modifications are planned for the subject area and the site plan avoids the majority of the FEMA 1% floodplain areas. A calculated 1% floodplain has been determined for the site and will serve as the stream buffer (**Figure 6**). In the future, minor hiking trail improvements may be located in the floodplain park area

May 2022



7.0 REFERENCES

- Collins, E.W., 1997. *Geologic Map of the Georgetown Quadrangle, Texas*. Bureau of Economic Geology. Austin, Texas.
- (TCEQ) Texas Commission on Environmental Quality. 2004. Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones. October 1, 2004. Austin, Texas.
- (TCEQ) Texas Commission on Environmental Quality. 2005. "Edwards Aquifer Protection Program, Chapter 213 Rules Recharge Zone, Transition Zone, Contributing Zone, and Contributing Zone within the Transition Zone." Map. Digital data. September 1, 2005. Austin, Texas.
- (TWDB) Texas Water Development Board. 2022. Water Data Interactive Groundwater Data Viewer. Accessed on March 22, 2022. Available at: http://www2.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer
- (USDA NRCS) U.S. Department of Agriculture Natural Resources Conservation Service. 2022. WebSoilSurvey.com. Soil Survey Area: Williamson County, Texas. Date accessed: March 22, 2022.

Georgetown, Tx., Ordinance No.: 2013-59 (2013).



ATTACHMENT A

Site Maps

10



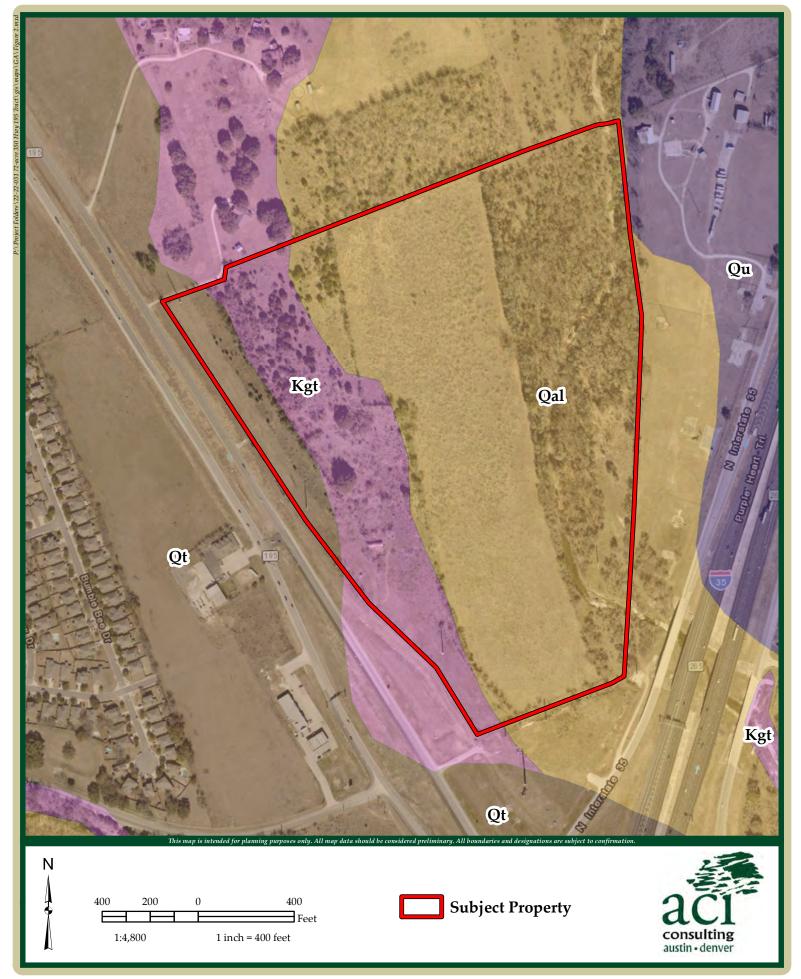
72-acre Northside Georgetown Subdivision Tract Figure 1: Site Location Map

aci Project No.: 22-22-031

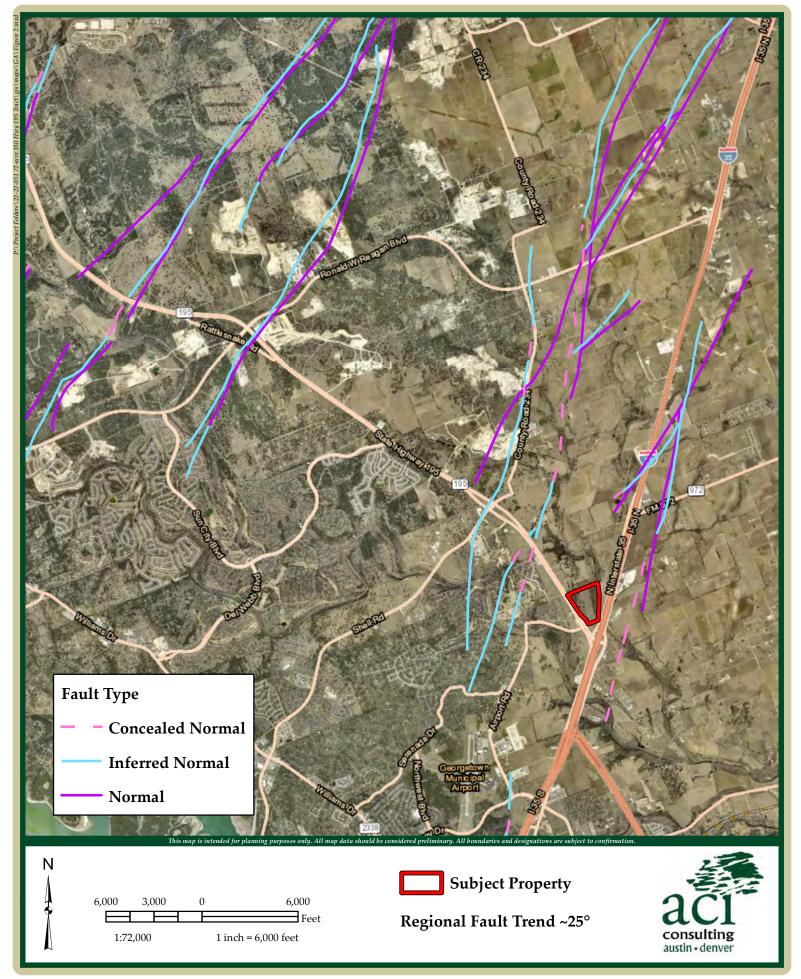
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72-acre Northside Georgetown Subdivision Tract Figure 2: Soils



72-acre Northside Georgetown Subdivision Tract Figure 3: Geology



72-acre Northside Georgetown Subdivision Tract Figure 4: Regional Trend

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ATTACHMENT B

Geologic Table Geologic and Manmade Feature Map (Figure 5) Feature Descriptions and Recommendations

May 2022

GEOL	OGIC ASSI	ESSMENT T	ABLE				PR	OJE	CT NA	ME		72-8	acre No	rthside Ge	eorget	own	Sub	divisi	on	
	LOCATIO	ON				FE	ATUF	RE C	HARAC	TEF	RISTIC	S			EVAL	LUAT	ION	PHY	SICA	L SETTING
1A	1B *	1C*	2A	2B	3		4		5	5A	6	7	8A	8B	9	1	10	1	11	12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIME	NSIONS (FEET)	TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENS	ITIVITY		ENT AREA RES)	TOPOGRAPHY
						Х	Υ	Z		10						<40	<u>>40</u>	<1.6	<u>>1.6</u>	
MB-01	30.709588	-97.65752	MB	30	Qt	6	6	?	-		-	-	?	10	40		Χ	Χ		Hillside
MB-02	30.709711	-97.657324	MB	30	Qt	3	3	?	-		•	-	?	10	40		Χ	Χ		Hillside
MB-03	30.710287	-97.655611	MB	30	Qal	3	3	?	-		-	-	?	10	40		Χ	Χ		Hillside
MB-04	30.7109	-97.65383	MB	30	Qal	3	3	?	-		-	-	?	10	40		Χ	Χ		Hillside
MB-05	30.707172	-97.65592	MB	30	Qt	6	6	?	-		•	-	?	10	40		Χ	Χ		Hillside
MB-06	30.706416	-97.655212	MB	30	Kgt	10	8	?	-		-	-	?	10	40		Χ	Χ		Hillside
MB-07	30.706296	-97.654978	MB	30	Kgt	0.4	0.4	?	-		-	-	?	10	40		Χ	Χ		Hillside
MB-08	30.705464	-97.654177	MB	30	Kgt	6	6	?	-		-	-	?	10	40		Х	Χ		Hillside
MB-09	30.706673	-97.655019	MB	30	Kgt	65	35	?	-		-	-	?	10	40		Χ	Χ		Hillside
MB-10	30.706838	-97.655124	MB	30	Kgt	25	15	?	-		-	-	?	10	40		Χ	Χ		Hillside
MB-11	30.706451	-97.652083	MB	30	Qal	95	20	?	-		-	-	?	10	40		Χ	Χ		Floodplain
F-01	30.709529	-97.651775	CD	5	Qal	20	12	5	-		-	-	O, V	10	15	Χ		Χ		Floodplain
F-02	30.706354	-97.651659	CD	5	Qal	14	13	5	-		-	-	C, V, X	15	20	Χ		Χ		Floodplain
				, and the second			·									·	·			

* DATUM: NAD 1983 State Plane 4203

2A TYPE	TYPE	2B POINTS
С	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
0	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
С	Coarse - cobbles, breakdown, sand, gravel
0	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
Χ	Other materials

12 TOPOGRAPHY
Cliff, Hillside, Drainage, Floodplain, Streambed

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

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

Date 5/19/2022

Sheet _1_ of _1_

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





GPS: 30.709588, -97.65752

This feature is a 'manmade feature in bedrock', an electric transmission pole, located on a gently sloping hillside in Terrace Deposits (Qt). The feature is approximately 6 feet long by 6 feet wide with an unknown depth. The infill material for this feature is unknown, and the catchment area is less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature has been deemed sensitive to bring to the attention of the engineer; however, no setbacks are required.

Recommendation: Notify engineer for proper handling.



MB-01



GPS: 30.709711, -97.657324

This feature is a 'manmade feature in bedrock', a fire hydrant, located on a gently sloping hillside in Terrace Deposits (Qt). The feature is approximately 3 feet long by 3 feet wide with an unknown depth. The infill material for this feature is unknown, and the catchment area is less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature has been deemed sensitive to bring to the attention of the engineer; however, no setbacks are required.

Recommendation: Notify engineer for proper handling.



MB-02



GPS: 30.710287, -97.655611

This feature is a 'manmade feature in bedrock', a fire hydrant, located on a gently sloping hillside in Alluvium Deposits (Qal). The feature is approximately 3 feet long by 3 feet wide with an unknown depth. The infill material for this feature is unknown, and the catchment area is less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature has been deemed sensitive to bring to the attention of the engineer; however, no setbacks are required.

Recommendation: Notify engineer for proper handling.



MB-03

20

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GPS: 30.7109, -97.65383

This feature is a 'manmade feature in bedrock', a fire hydrant, located on a gently sloping hillside in Alluvium Deposits (Qal). The feature is approximately 3 feet long by 3 feet wide with an unknown depth. The infill material for this feature is unknown, and the catchment area is less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature has been deemed sensitive to bring to the attention of the engineer; however, no setbacks are required.

Recommendation: Notify engineer for proper handling.



MB-04



F-01

GPS: 30.709529, W. -97.651775

This feature is a non-karst closed depression, located within a floodplain, in Alluvium Deposits (Qal). The feature is approximately 20 feet long by 12 feet wide by 5 feet deep. This feature is located on the opposite side of a stream bank, adjacent to Dry Berry Creek, and appears to be a scour-type erosional feature. No apertures or portals exhibiting vertical development were noted within the feature. The infill material for this feature consisted of cobbles, loose soils, organics, and vegetation including hackberry and catchweed bedstraw. The catchment area was determined to be less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature is non-sensitive.

Recommendation: There are no recommended setbacks as this feature is non-sensitive.



F-01



GPS: 30.707172, -97.65592

This feature is a 'manmade feature in bedrock', an electric transmission pole, located on a gently sloping hillside in Terrace Deposits (Qt). The feature is approximately 6 feet long by 6 feet wide with an unknown depth. The infill material for this feature is unknown, and the catchment area is less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature has been deemed sensitive to bring to the attention of the engineer; however, no setbacks are required.

Recommendation: Notify engineer for proper handling.



MB-05



GPS: 30.706416, -97.655212

This feature is a 'manmade feature in bedrock', a well, located on a gently sloping hillside in the Georgetown Limestone Formation. The feature is approximately 10 feet long by 8 feet wide with an unknown depth. The infill material for this feature is unknown, and the catchment area is less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature has been deemed sensitive to bring to the attention of the engineer; however, no setbacks are required.

Recommendation: Notify engineer for proper handling.



MB-06



GPS: 30.706296, -97.654978

This feature is a 'manmade feature in bedrock', a sewage line, located on a gently sloping hillside in the Georgetown Limestone Formation. The feature is approximately 0.4 feet in diameter with an unknown depth. The infill material for this feature is unknown, and the catchment area is less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature has been deemed sensitive to bring to the attention of the engineer; however, no setbacks are required.

Recommendation: Notify engineer for proper handling.



MB-07

25

May 2022



GPS: 30.705464, -97.654177

This feature is a 'manmade feature in bedrock', an electric transmission pole, located on a gently sloping hillside in the Georgetown Limestone Formation. The feature is approximately 6 feet long by 6 feet wide with an unknown depth. The infill material for this feature is unknown, and the catchment area is less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature has been deemed sensitive to bring to the attention of the engineer; however, no setbacks are required.

Recommendation: Notify engineer for proper handling.



MB-08



GPS: 30.706673, -97.655019

This feature is a 'manmade feature in bedrock', an ancillary structure, located on a gently sloping hillside in the Georgetown Limestone Formation. The feature is approximately 65 feet long by 35 feet wide with an unknown depth. The infill material for this feature is unknown, and the catchment area is less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature has been deemed sensitive to bring to the attention of the engineer; however, no setbacks are required.

Recommendation: Notify engineer for proper handling.



MB-09



GPS: 30.706838, -97.655124

This feature is a 'manmade feature in bedrock', an ancillary structure, located on a gently sloping hillside in the Georgetown Limestone Formation. The feature is approximately 25 feet long by 15 feet wide with an unknown depth. The infill material for this feature is unknown, and the catchment area is less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature has been deemed sensitive to bring to the attention of the engineer; however, no setbacks are required.

Recommendation: Notify engineer for proper handling.



MB-10

28

aci Project No.: 22-22-031

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F-02

GPS: 30.706354, -97.651659

This feature is a non-karst closed depression located in a floodplain within Alluvium Deposits (Qal). The feature is approximately 14 feet long by 13 feet wide by 5 feet deep. This feature appears to be a scour-type erosional feature located within the 1% annual chance flood zone. No apertures or portals exhibiting vertical development were noted within the feature. The infill material for this feature consisted of flood debris such as tires and chunks of concrete, as well as cobbles, loose soils, organics, and vegetation including hackberry and catchweed bedstraw. The catchment area was determined to be less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature is non-sensitive.

Recommendation: There are no recommended setbacks as this feature is non-sensitive.



F-02



GPS: 30.706451, -97.652083

This feature is a 'manmade feature in bedrock', an electric transmission pole, located in a floodplain within Alluvium Deposits (Qal). The feature is approximately 6 feet long by 6 feet wide with an unknown depth. The infill material for this feature is unknown, and the catchment area is less than 1.6 acres. In using Figure 1 from Instructions to Geologists, the relative infiltration rate for this feature was determined to be low and assigned a point value of 10 points. This feature has been deemed sensitive to bring to the attention of the engineer; however, no setbacks are required.

Recommendation: Notify engineer for proper handling.



MB-11



72-acre 350 Hwy 195 Tract



ATTACHMENT C

Historic Aerial Photographs

Prepared for:

ACI CONSULTING 1001 Mopac Circle Austin, TX 78746



Historical 72-acre 350 Hwy 195 Tract 350 Hwy 195 Aerial Georgetown, TX 78628 Photographs

Williamson County

PO #: 22-22-031

Monday, March 7, 2022



Date: 2020 Source: USDA









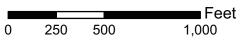


Date: 2004 Source: USDA

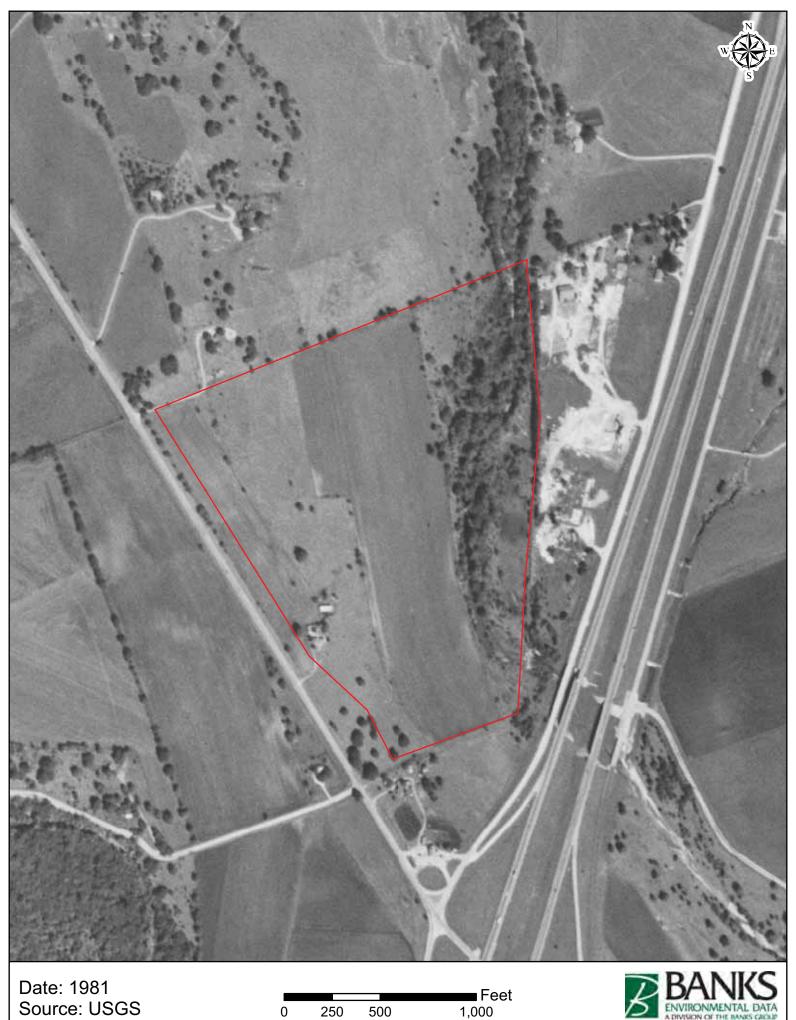


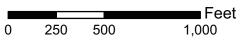


Date: 1995 Source: USGS









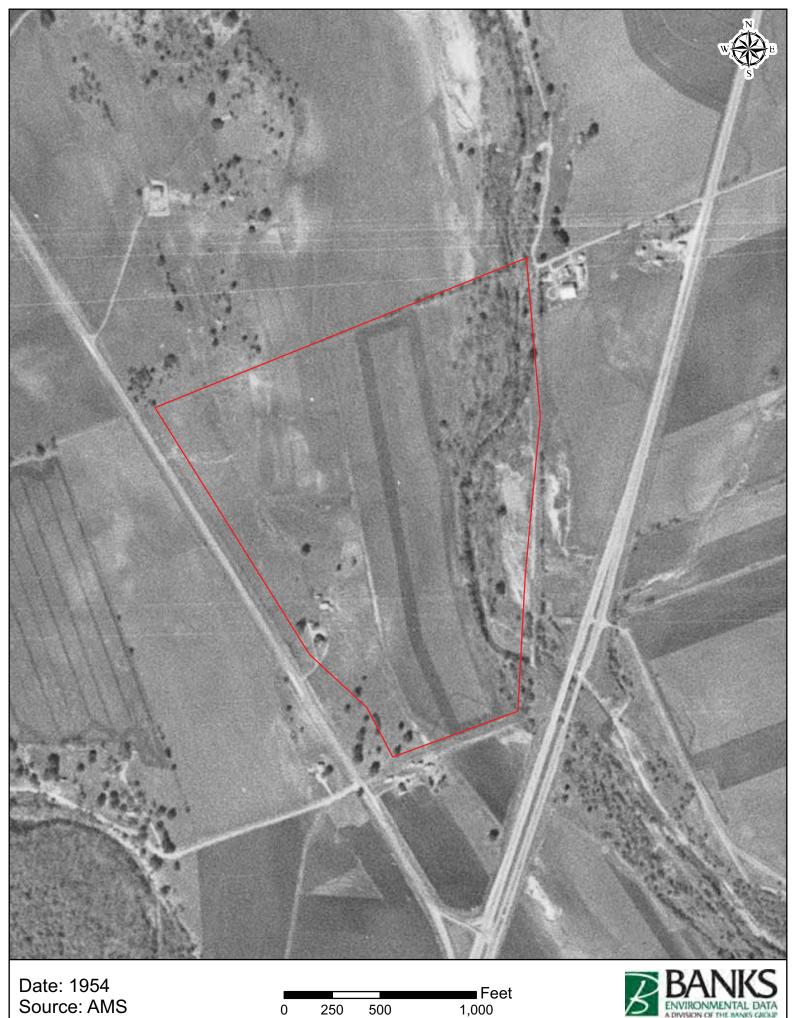




















AERIAL SOURCE DEFINITIONS

Acronym	Agency
NASA	National Aeronautics & Space Administration
AMS	Army Mapping Service
ASCS	Agricultural Stabilization & Conservation Service
SCS	Soil Conservation Service
USBR	United States Bureau of Reclamation
Fairchild	Fairchild Aerial Surveys
TXDOT	Texas Department of Transportation
BLM	Bureau of Land Management
USAF	United States Air Force
USCOE	United States Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WALLACE	Wallace-Zingery Aerial Surveys
TNRIS	Texas Natural Resources Information System



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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: John A. Alvare:	z
Date: 8/1/2023	
Signature of Customer/Agent:	
96	
Regulated Entity Name: Trails LLC	

Regulated Entity Information

1.	The type of project is:
	Residential: Number of Lots: 1 Residential: Number of Living Unit Equivalents:
	Commercial
	Industrial
	Other:

- 2. Total site acreage (size of property): 71.997
- 3. Estimated projected population:600
- 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	N/A	÷ 43,560 =	N/A
Parking	N/A	÷ 43,560 =	N/A
Other paved surfaces	842618.5	÷ 43,560 =	19.34
Total Impervious Cover	842618.5	÷ 43,560 =	19.34

Total Impervious Cover $\underline{19.34}$ ÷ Total Acreage $\underline{71.997}$ X 100 = $\underline{26.86}$ % 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. $L \times W = Ft^2 \div 43,560 Ft^2/Acre = acres.$
10.	Length of pavement area: feet.
	Width of pavement area: feet. L x W = $Ft^2 \div 43,560 \ Ft^2/Acre = acres.$ Pavement area acres \div 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.

TCEQ Executive Director. Mo	kisting roadways that do not require approval from the difications to existing roadways such as widening ing more than one-half (1/2) the width of one (1) existing om the TCEQ.
Stormwater to be gene	erated by the Proposed Project
volume (quantity) and charac occur from the proposed pro quality and quantity are base	Character of Stormwater. A detailed description of the cter (quality) of the stormwater runoff which is expected to ject is attached. The estimates of stormwater runoffed on the area and type of impervious cover. Include the for both pre-construction and post-construction conditions
Wastewater to be gene	erated by the Proposed Project
14. The character and volume of was	stewater is shown below:
100% Domestic% Industrial% Commingled TOTAL gallons/day 113075	<u>113075</u> Gallons/day Gallons/day Gallons/day
15. Wastewater will be disposed of b	py:
On-Site Sewage Facility (OSSF	-/Septic Tank):
will be used to treat and of licensing authority's (authority's (authority) and is suitable for the land is suitable for the requirements for onselating to On-site Sewag Each lot in this project/desize. The system will be one	y Letter from Authorized Agent. An on-site sewage facility dispose of the wastewater from this site. The appropriate norized agent) written approval is attached. It states that e use of private sewage facilities and will meet or exceed site sewage facilities as specified under 30 TAC Chapter 285 e Facilities. Evelopment is at least one (1) acre (43,560 square feet) in designed by a licensed professional engineer or registered y a licensed installer in compliance with 30 TAC Chapter
Sewage Collection System (Se	ewer Lines):
to an existing SCS.	om the wastewater generating facilities will be connected om the wastewater generating facilities will be connected
☐ The SCS was previously su ☐ The SCS was submitted w ☐ The SCS will be submitted be installed prior to Execu	ith this application. I at a later date. The owner is aware that the SCS may not

	The sewage collection system will convey the wastewater to the (name) Treatment Plant. The treatment facility is:
	Existing. Proposed.
16.	All private service laterals will be inspected as required in 30 TAC §213.5.
Si	te Plan Requirements
Ite	ms 17 – 28 must be included on the Site Plan.
17.	\square The Site Plan must have a minimum scale of 1" = 400'.
	Site Plan Scale: 1" = <u>100</u> '.
18.	100-year floodplain boundaries:
	 Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled. No part of the project site is located within the 100-year floodplain. The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s):
19.	The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, open space, etc. are shown on the plan.
	The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, open space, etc. are shown on the site plan.
20.	All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):
	\square There are $\underline{1}$ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)
	 The wells are not in use and have been properly abandoned. The wells are not in use and will be properly abandoned. The wells are in use and comply with 16 TAC §76.
	There are no wells or test holes of any kind known to exist on the project site.
21.	Geologic or manmade features which are on the site:
	 All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled. No sensitive geologic or manmade features were identified in the Geologic Assessment.
	Attachment D - Exception to the Required Geologic Assessment. A request and justification for an exception to a portion of the Geologic Assessment is attached.

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

WPAP - ATTCHEMENT A

Factors Affecting Surface Water Quality

Factors that may affect surface water quality are as follows:

Site Development Criteria

- The Site will be used to create both commercial and residential development.
- The future proposed development will increase the impervious cover of the project area to 26.86%, which will increase the levels of TSS in the storm runoff.
- When necessary, rock rip-rap or concrete outfall aprons will be designed to reduce runoff velocities resulting in settlement of suspended solids and minimizing scouring conditions.

Construction Stage

- Clearing will disturb areas and create the potential for pollutants to runoff from rainfall.
- Measures such as stabilizes construction entrance/exit, slit fencing, inlet protection, rock berms, and other measures which will reduce TSS in runoff leaving the site.

Vehicular Traffic

- Mud or fine particles may be left behind from vehicular traffic.
- Fluid may be left behind from vehicular traffic.

Landscape and Property Maintenance

- Pesticides or herbicides used for landscape maintenance may not be applied at a proper rate and may leak into groundwater or runoff into surface drains.
- Fine particles may be washed from driveway surfaces into roadways and drains.
- A maintenance plan will be implemented for all permanent BMP's in accordance with WPAP Attachment G Inspection, Maintenance, Repair, and Retrofit Plan.

WPAP - ATTCHEMENT B

Volume and Character of stormwater

The stormwater runoff calculations included in this section were based on the Soil Conservation Service (SCS) Method, available in HEC-HMS software. The USGS Web Soil Survey was used to determine the hydrologic soil groups of the site. One the hydrologic soil group was identified, the Runoff Curve Number (RCN) was determined in accordance with the City of Georgetown Drainage Criterial Manual. An RCN was calculated for each drainage area based on the soil group classification and proportion of each classification within each drainage area. The RCN was based off Table 3-6 Runoff Curve Numbers for Agricultural Land in the Georgetown DCM. The existing site was calculated to have an RCN of 77 with 0.00% impervious cover. A table with the proposed drainage calculations can be found in the Northside Subdivision construction plans on the existing drainage map (sheet 47). For the purposes of quantifying volume of stormwater, the proposed site was calculated to have a different RCN per drainage site. A table with the proposed drainage calculations can be found in the Northside Subdivision construction plans on the proposed drainage map (sheet 48).

The Existing and Proposed Drainage Area Maps for the proposed site are included in the section and show the drainage areas and flow patterns within the project. The drainage area map sheets also show the pre-construction and post-construction runoff rates at the analysis point including the offsite runoff paths, as well as a table summarizing the components of the HEC-HMS model for both the existing and proposed conditions.

On site impervious cover areas include paving for future multifamily and commercial developments.

WATER POLLUTION ABANTEMENT PLAN APPLICATION

Plan set

ATTN: CHARLES HOLBROOK AND DOUG MOSS

QUIDDITY ENGINEERING, INC. 3100 ALVIN DEVANE BLVD, SUITE 150 AUSTIN, TEXAS 78741 512-441-9493 ATTN: JOHN A. ALVAREZ, II

BEING ALL OF THAT CERTAIN TRACT OR PARCEL OF LAND CONTAINING 71.997 ACRES, MORE OR LESS, SITUATED IN THE JOHN BERRY SURVEY, ABSTRACT NO. 51,

RELATED CASES: 2022-15-PP

WILLIAMSON COUNTY, TEXAS.

ENGINEER:

48491C0283F & 48491C0285F, 12/20/2019

GENERAL PLAN NOTES

- 1. RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL, WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY CITY ENGINEERS.

- 4. THIS PROPERTY DOES WITHIN THE AE ZONE AS IDENTIFIED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY
- 5. RETAINING WALLS OVER FOUR FEET IN HEIGHT, MEASURED FROM THE TOP OF THE FOOTING TO THE TOP OF THE
- 6. UTILITY PROVIDERS FOR THIS DEVELOPMENT FOR WATER & WASTEWATER IS GEORGETOWN UTILITY SYSTEMS. ELECTRIC PROVIDER FOR THIS DEVELOPMENT IS PERDERNALES ELECTRIC CORPORATION.
- PRIOR TO ANY CHANNEL ALTERATION OR BRIDGE CONSTRUCTION, WHICH WILL CHANGE EXISTING FLOOD PATTERNS OR ELEVATIONS, A LETTER OF MAP AMENDMENT MUST BE SUBMITTED TO THE CITY OF GEORGETOWN FLOODPLAIN ADMISTRATOR FOR APPROVAL AND APPROVAL BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
- 8. THE SUBDIVISION SUBJECT TO THIS APPLICATION IS SUBJECT TO THE WATER QUALITY REGULATIONS OF THE CITY OF GEORGETOWN. (FOR PROPERTIES OVER THE EDWARDS AQUIFER RECHARGE ZONE)
- 9. A GEOLOGIC ASSESSMENT, IN ACCORDANCE WITH THE CITY OF GEORGETOWN WATER QUALITY REGULATIONS, WAS COMPLETED ON MARCH 1ST, 2022, ANY SPRINGS AND STREAMS AS IDENTIFIED IN THE GEOLOGIC ASSESSMENT ARE
- 10. THESE PLANS WERE PREPARED, SEALED, SIGNED, AND DATED BY A TEXAS LICENSED PROFESSIONAL ENGINEER. THEREFORE, BASED ON ENGINEER'S CONCURRENCE OF COMPLIANCE, THE 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.
- 11. THIS PROJECT IS SUBJECT TO ALL CITY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF SUBMITTAL OF THE PROJECT TO THE CITY.
- 12. ALL ELECTRIC DISTRIBUTION LINES AND INDIVIDUAL SERVICE LINES SHALL BE INSTALLED UNDERGROUND. IF OVERHEAD LINES EXISTED PRIOR TO UNDERGROUND INSTALLATION, SUCH POLES, GUY WIRES, AND RELATED STRUCTURES SHALL BE REMOVED FOLLOWING CONSTRUCTION OF THE UNDERGROUND INFRASTRUCTURE (ONLY APPLICABLE FOR RESIDENTIAL PROPERTY).
- 13. 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 (ONLY APPLICABLE FOR NON-RESIDENTIAL AND MULTI-FAMILY
- 14. ALL ELECTRIC AND COMMUNICATION INFRASTRUCTURE SHALL COMPLY WITH UDC SECTION 13.06.
- 15. THE PROPERTY SUBJECT TO THIS APPLICATION IS SUBJECT TO THE WATER QUALITY REGULATIONS OF THE CITY OF GEORGETOWN.
- 16. A GEOLOGIC ASSESSMENT, IN ACCORDANCE WITH THE CITY OF GEORGETOWN WATER QUALITY REGULATIONS, WAS COMPLETED ON May 2022. ANY SPRINGS AND STREAMS AS IDENTIFIED IN THE GEOLOGIC ASSESSMENT ARE SHOWN

REVISIONS/CORRECTIONS

NO.	DESCRIPTION	SHEET # DELETE (D) REVISE (R) ADD (A)	PLAN SET SHEET TOTAL	IMP COVER NET CHANGE (SF)	IMP COVER TOTAL SITE (SF/%)	COG APPROVAL DATE	IMAGE DATE

SUBDIVISION CONSTRUCTION PLANS

FOR

NORTHSIDE SUBDIVISION

350 HWY 195, GEORGETOWN, TX 78633

FOR

TRAILS, LLC



<u>VICINITY MAP</u> 1" = 1000'	JOHN A. ALVAREZ II 127206 127800 127206

LOT TABLE SIZE (AC.) **MULTI-FAMILY** 44.43 NON-RESIDENTIAL 27.58 72.01

ENGINEER'S PRELIMINARY REVIEW NOTE:

For Review. This document is released for purpose of review under the authority of John Alvarez, (PE127206) on April 17, 2023. It is not to be used for bidding, permit or construction

BENCHMARK INFORMATION:

THE ELEVATIONS (AND/OR CONTOURS) SHOWN HEREON ARE REFERENCED TO TBM #100, MAG

NAIL 735.14 FEET AND TBM #101, MAG NAIL 697.39 FEET, NAVD 88.

7/31/2023 PREPARED BY

JOHN A. ALVAREZ, II



JOB NUMBER 16705-0003-00

TEXAS ONE CALL SYSTEM 1-800-245-4545 CALL BEFORE YOU. TEXAS ONE CALL PARTICIPANTS REQUEST 72 HOURS NOTICE BEFORE YOU DIG, DRILL, OR BLAST

	SHEET INDEX
Sheet Number	Sheet Title
01	COVER
02	GENERAL NOTES
03	APPROVED PRELIMINARY PLAT (1 OF 3)
04	APPROVED PRELIMINARY PLAT (2 OF 3)
05	APPROVED PRELIMINARY PLAT (3 OF 3)
06	FINAL PLAT (1 OF 3)
07	FINAL PLAT (2 OF 3)
08	FINAL PLAT (3 OF 3)
09	EXISTING CONDITIONS AND DEMOLITION
10	EROSION CONTROL PLAN
11	TREE PRESERVATION PLAN
12	TREE TABLES (1 OF 2)
13	TREE TABLES (2 OF 2)
14	OVERALL STREET
15	DRIVEWAY 1
16	ACCESS ROAD STA 0+00 TO 8+00
17	ACCESS ROAD STA 8+00 TO 16+00
18	ACCESS ROAD STA 16+00 TO END
19	DRIVEWAY 2
20	DECEL LANE 1
21	DECEL LANE 2
22	OVERALL WASTEWATER PLAN
23	WASTEWATER LINE A
24	WASTEWATER LINE B 0+00 TO 8+00
25	WASTEWATER LINE B STA 8+00 TO 15+92
26	WASTEWATER LINE C
27	OVERALL WATER PLAN
28	WATERLINE A 0+00 TO 9+00

WATERLINE B OVERALL STORM STORMLINE A STORMLINE B **INLET SHEET** OVERALL GRADING PLAN GRADING PLAN B GRADING PLAN C GRADING PLAN D GRADING PLAN E

WATERLINE A STA 9+00 TO 17+45

GRADING CROSS-SECTION 1 GRADING CROSS-SECTIONS 2 & 3 **GRADING CROSS-SECTION 4** POND PLAN

POND CROSS SECTION

POND DETAILS EXISTING DRAINAGE AREA MAP PROPOSED DRAINAGE AREA MAP

SUB-DRAINAGE AREA MAP DRAINAGE CALCS SIGNAGE

SIDEWALK AND TRAIL TxDOT Driveway Culvert 1 TxDOT Driveway Culvert 2

TRAFFIC CONTROL DETAILS CIVIL DETAILS (1 OF 13) CIVIL DETAILS (2 OF 13)

CIVIL DETAILS (3 OF 13) CIVIL DETAILS (4 OF 13) CIVIL DETAILS (5 OF 13)

CIVIL DETAILS (6 OF 13) CIVIL DETAILS (8 OF 13) CIVIL DETAILS (7 OF 13)

CIVIL DETAILS (9 OF 13) CIVIL DETAILS (10 OF 13) CIVIL DETAILS (11 OF 13)

CIVIL DETAILS (12 OF 13) CIVIL DETAILS (13 OF 13)

APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE **EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING** WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

- ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY OF GEORGETOWN MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN
- 2. CONTRACTOR SHALL CALL TEXAS 811 (811 OR 1-800-344-8377) FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET R.O.W.
- 3. FOR SLOPES OR TRENCHES GREATER THAN FIVE FEET IN DEPTH, A NOTE MUST BE ADDED STATING: "ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION."
- 4. ALL SITE WORK MUST ALSO COMPLY WITH ENVIRONMENTAL REQUIREMENTS.
- 5. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS AND PRIOR TO THE FOLLOWING, THE ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DRAINAGE, FILTRATION AND DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS:
- 6. DEVELOPER INFORMATION
 - A. OWNER: TRAILS, LLC
 - PHONE NO: 512-567-5003

PHONE NO: (512) 441-9493

- B. OWNERS REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS: CONSULTING ENGINEER, QUIDDITY ENGINEERING, LLC
- C. PERSON OR FIRM RESPONSIBLE FOR EROSION/SEDIMENTATION CONTROL:
- D. PERSON OR FIRM RESPONSIBLE FOR TREE/NATURAL AREA CONTROL:
- 7. CONTRACTOR TO TAKE ALL DUE PRECAUTIONS TO PROTECT EXISTING FACILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF THESE CONSTRUCTION OPERATIONS TO BE REPAIRED IMMEDIATELY BY THE CONTRACTOR, AT NO ADDITIONAL COST TO OWNER.
- 8. CONTRACTOR TO GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR TO MAKE CERTAIN THAT ALL CONSTRUCTION PERMITS THAT CAN ONLY BE ISSUED TO THE CONTRACTOR HAVE BEEN OBTAINED BY THE CONTRACTOR AT HIS EXPENSE PRIOR TO COMMENCEMENT OF WORK.
- 9. CONTRACTOR TO COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS REGARDING EXCESS AND WASTE MATERIAL, INCLUDING METHODS OF HANDLING AND DISPOSAL.
- 10. CONTRACTOR TO COORDINATE INTERRUPTIONS OF ALL UTILITIES AND SERVICES. ALL WORK TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY COMPANY OR AGENCY INVOLVED.
- 11. WHEN UNLOCATED OR INCORRECTLY LOCATED UNDERGROUND PIPING, OR A BREAK LOCATED IN THE LINE, OR OTHER UTILITIES AND SERVICES ARE ENCOUNTERED DURING SITE WORK OPERATIONS, NOTIFY THE APPLICABLE UTILITY COMPANY IMMEDIATELY TO OBTAIN PROCEDURE DIRECTIONS. COOPERATE WITH THE APPLICABLE UTILITY COMPANY IN MAINTAINING ACTIVE SERVICES IN OPERATION.
- 12. CONTRACTOR TO CONTROL DUST CAUSED BY THE WORK AND COMPLY WITH POLLUTION CONTROL REGULATIONS OF
- 13. THESE PLANS, PREPARED BY QUIDDITY ENGINEERING, LLC, DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF QUIDDITY ENGINEERING, LLC'S REGISTERED PROFESSIONAL ENGINEER(S) HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR TO PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS, INCLUDING THE PLANS AND SPECIFICATIONS REQUIRED BY HOUSE BILLS 662 AND 665 ENACTED BY THE TEXAS LEGISLATURE IN THE 70TH LEGISLATURE - REGULAR SESSION.
- 14. CONTRACTOR TO EXERCISE CAUTION DURING CONSTRUCTION NEAR AND AROUND GAS LINES. NOTIFY GAS COMPANY 72 HOURS PRIOR TO CONSTRUCTION.
- 15. BURNING IS NOT ALLOWED ON THIS PROJECT.
- 16. CONTRACTOR TO INSTALL 1/2-INCH-DIAMETER BY 12-INCH-LONG REBAR VERTICALLY, WITH TWO (2) FEET OF SURVEYOR'S RIBBON ATTACHED, AT END OF ALL PIPE STUBS. TOP OF BAR TO BE NOT LESS THAN 12 INCHES BELOW
- THE FINISHED GRADE. A. BLUE RIBBON - WATER LINE
- B. RED RIBBON WASTEWATER LINE

GOVERNING AUTHORITIES. (NO SEPARATE PAY.)

C. WHITE RIBBON - GAS LINE D. YELLOW RIBBON - TELECOM DUCT BANK

E. ORANGE RIBBON - ELECTRICAL DUCT BANK

- 17. MAKE CONNECTION BETWEEN NEW AND EXISTING ASPHALT BY REMOVING EXISTING ASPHALT, UNTIL FULL DEPTH BASE AND HMAC ARE ENCOUNTERED AND HMAC APPEARS TO BE IN SOUND CONDITION. PROVIDE EXPANSION JOINT AND DOWELS WHERE CONNECTING EXISTING CURB TO NEW.
- 18. A CURB LAYDOWN IS REQUIRED AT ALL POINTS WHERE THE PROPOSED SIDEWALK INTERSECTS THE CURB.
- 19. UNLESS OCCURRING AT AN EXPANSION JOINT, MAKE CONNECTION BETWEEN NEW AND EXISTING SIDEWALK BY EXPOSING AND CLEANING A ONE-FOOT LENGTH OF WELDED WIRE REINFORCEMENT AND LAPPING NEW REINFORCEMENT ONTO THIS LENGTH.
- 20. CONCRETE FOR SITE WORK TO BE CLASS "A" (5 SACK, 3000 PSI @ 28-DAYS) AND ALL REINFORCING STEEL TO BE ASTM A615 60. UNLESS OTHERWISE NOTED.
- 21. CONTRACTOR SHALL REFER TO THE TECHNICAL INVESTIGATION REPORT FOR THIS SITE FOR SUBSURFACE INFORMATION REGARDING THIS PROJECT. AT ITS EXPENSE THE CONTRACTOR IS ENCOURAGED TO MAKE ADDITIONAL SUBSURFACE INVESTIGATIONS.
- 22. ALL PRIVATE DRIVEWAYS WILL NOT EXCEED A GRADE OF 14% FOR THE FIRST 25' FROM EDGE OF RIGHT-OF-WAY AND WII L NOT REQUIRE CUT OR FILL OVER 8'.
- 23. SCREENING MATERIALS FOR SOLID WASTE COLLECTION AND LOADING AREAS SHALL BE THE SAME AS, OR OF EQUAL QUALITY TO. THE MATERIALS USED FOR THE PRINCIPLE BUILDING.
- 24. PRIOR TO BEGINNING CONSTRUCTION, THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL CONVENE A PRE-CONSTRUCTION CONFERENCE BETWEEN THE CITY OF GEORGETOWN, CONSULTING ENGINEER, CONTRACTOR, AND
- 25. BARRICADES, BUILT TO CITY OF GEORGETOWN STANDARD SPECIFICATIONS, SHALL BE CONSTRUCTED ON ALL DEAD-END STREETS AND AS NECESSARY DURING CONSTRUCTION TO MAINTAIN JOB SAFETY. (STREETS, ETC. MAY BE LISTED IN ADDITION TO OR INSTEAD OF NOTE.)
- 26. IF BLASTING IS PLANNED BY THE CONTRACTOR, A BLASTING PERMIT MUST BE SECURED PRIOR TO COMMENCEMENT OF ANY BLASTING.
- 27. ANY EXISTING PAVEMENT, CURBS, AND/ OR SIDEWALKS DAMAGED OR REMOVED WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE BEFORE ACCEPTANCE OF THE SUBDIVISION.
- 28. THE LOCATION OF ANY WATER AND / OR WASTEWATER LINES SHOWN ON THE PLANS MUST BE VERIFIED BY THE WATER
- 29. USE ONE CALL UTILITY SYSTEM: DIAL 472-2822, 48 HOURS BEFORE YOU DIG.
- 30. DO NOT DIG OR GRADE WITHIN 15 FEET OF THE TRANSMISSION STRUCTURES. GRADING NEAR ELECTRIC TRANSMISSION FACILITIES MUST BE COORDINATED WITH ELECTRIC PROVIDER PRIOR TO COMMENCEMENT OF GRADING.
- 31. WHEN THE CONSTRUCTION OF BUILDINGS AND THE USE OF SCAFFOLDING OCCURS WITHIN THE VICINITY OF TREES TO BE PRESERVED, THE CONTRACTOR IS LIMITED TO A MAXIMUM PRUNING OF 25% OF THE TREE CROWN/CANOPY.
- 1. THE MINIMUM CLEAR WIDTH OF AN ACCESSIBLE ROUTE IS 36 IN. IF THE ACCESSIBLE ROUTE IS LESS THAN 60 IN. WIDE AND LONGER THAN 200 FT., PASSING SPACES AT LEAST 60 IN. BY 60 IN. MUST BE LOCATED EVERY 200 FT.
- 2. SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 (5.0%) UNLESS DESIGNED AS A RAMP.
- 3. ACCESSIBLE PARKING SPACES MUST BE LOCATED ON A SURFACE WITH A SLOPE NOT EXCEEDING 1:50 (2.0%) IN ALL
- 4. ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50 (2.0%).

SITE CLEARING

CONDUCT SITE CLEARING OPERATIONS TO THE EXTENT SHOWN ON THE DRAWINGS, INCLUDING BUT NOT LIMITED TO: REMOVAL OF TREES AND OTHER VEGETATION. TOPSOIL STRIPPING. CLEARING AND GRUBBING, AND REMOVAL ALL IMPROVEMENTS ABOVE OR BELOW GRADE. REFER TO THE GEOTECHNICAL REPORT FOR THIS PROJECT FOR ADDITIONAL SITE PREPARATION REQUIREMENTS.

EXECUTION

- 1. SITE CLEARING OPERATIONS SHALL NOT DAMAGE OR INTERFERE WITH THE PUBLIC USE OF ROADS, WALKS, ADJACENT LAND OR FACILITIES AND EXISTING IMPROVEMENTS INTENDED TO REMAIN.
- 2. EXISTING TREES TO REMAIN SHALL BE PROTECTED IN COMPLIANCE WITH EROSION CONTROL PLANS.
- 3. CONTRACTOR SHALL REMOVE TREES, SHRUBS, GRASS AND OTHER VEGETATION, IMPROVEMENTS OR OBSTRUCTIONS INTERFERING WITH THE INSTALLATION OF NEW CONSTRUCTION OR AS SHOWN ON PLANS. CLEARING OPERATIONS SHALL INCLUDE REMOVAL OF STUMPS AND ROOTS.
- 4. CONTRACTOR SHALL STRIP TOPSOIL IN A MANNER APPROPRIATE TO SEGREGATE FROM UNDERLYING SUBSOIL. TOPSOIL STRIPPING NEAR TREES INTENDED TO REMAIN SHALL BE COMPLETED IN COMPLIANCE LANDSCAPE PLANS.
- 5. CONTRACTOR SHALL STRIP TOPSOIL IN A MANNER APPROPRIATE TO SEGREGATE FROM UNDERLYING SUBSOIL. TOPSOIL STRIPPING NEAR TREES INTENDED TO REMAIN SHALL BE COMPLETED IN COMPLIANCE LANDSCAPE PLANS.
- 6. SPOIL SHALL BE STORED ONLY IN AREAS SHOWN ON THE PLANS AND SHALL BE MAINTAINED IN ACCORDANCE WITH APPLICABLE POLLUTION PREVENTION PLANS OR PERMITS.
- 7. WASTE MATERIAL OR EXCESS TOPSOIL GENERATED AS A RESULT OF CLEARING AND GRADING OPERATIONS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. APPROPRIATE DISPOSAL OF ALL SPOIL MATERIAL SHALL BE AT THE CONTRACTOR'S EXPENSE. BURNING ON THE OWNER'S PROPERTY IS NOT PERMITTED.

DEMOLITION NOTES

1. EXPLOSIVES: THE USE OF EXPLOSIVES WILL NOT BE PERMITTED.

DEMOLISHED, PRIOR TO START OF DEMOLITION WORK.

CONDITIONS, ICE, FLOODING, OR POLLUTION.

- 2. TRAFFIC: CONDUCT DEMOLITION OPERATIONS AND THE REMOVAL OF DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND ADJACENT OCCUPIED OR USED FACILITIES.
- 3. PROTECTION: ENSURE THE SAFE PASSAGE OF PERSONS AROUND THE AREA OF DEMOLITION. CONDUCT OPERATIONS TO PREVENT INJURY TO ADJACENT BUILDINGS, STRUCTURES, FACILITIES, AND PERSONS.
- 4. DAMAGES: PROMPTLY REPAIR DAMAGES CAUSED TO ADJACENT FACILITIES BY DEMOLITION OPERATIONS AT NO COST
- 5. UTILITY SERVICES: THE CONTRACTOR WILL DISCONNECT AND SEAL THE UTILITIES SERVING STRUCTURE(S) TO BE
- 6. REMOVE FROM THE SITE DEBRIS, RUBBISH AND MATERIALS RESULTING FROM DEMOLITION OPERATIONS.
- 7. BURNING ON-SITE WILL ONLY BE ALLOWED IF APPROVED BY THE EPA AND LOCAL AUTHORITIES HAVING JURISDICTION. OTHERWISE, MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROPRIATE MANNER MEETING LOCAL, STATE, AND FEDERAL GUIDELINES.
- 8. ALL REMOVED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN A LEGAL, ENVIRONMENTALLY SAFE MANNER; RECYCLING OR SALVAGE OF MATERIALS IS STRONGLY RECOMMENDED AND ENCOURAGED - SEE MATERIAL SALVAGE NOTES.
- 9. POLLUTION CONTROLS: USE WATER SPRINKLING AND TEMPORARY ENCLOSURES TO LIMIT THE AMOUNT OF DUST AND DIRT RISING IN THE AIR TO THE LOWEST PRACTICAL LEVEL. DO NOT USE WATER WHEN IT MAY CREATE HAZARDOUS
- 10. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING PRIOR TO THE START OF THE WORK.
- 11. ITEMS OF SALVAGEABLE VALUE AND NOT USABLE FOR SITE INFRASTRUCTURE MAY BE REMOVED FROM THE STRUCTURE AND/OR SITE AND WILL BECOME THE PROPERTY OF THE CONTRACTOR. SALVAGEABLE ITEMS MUST BE REMOVED FROM THE STRUCTURE AND/OR SITE AS THE WORK PROGRESSES. STORAGE OR SALE OF REMOVED ITEMS ON THE SITE WILL NOT BE PERMITTED.
- 12. OWNER SHALL RECEIVE CREDIT FOR ITEMS OF SALVAGEABLE VALUE AND USABLE FOR SITE INFRASTRUCTURE.

FIRE DEPARTMENT NOTES

- 1. FIRE HYDRANTS SHALL BE INSTALLED WITH THE CENTER OF THE FOUR (4) INCH OPENING (STEAMER) AT LEAST 18 INCHES ABOVE FINISHED GRADE. THE STEAMER OPENING OF FIRE HYDRANTS SHALL FACE THE APPROVED FIRE ACCESS DRIVEWAY OR PUBLIC STREET AND SETBACK FROM THE CURB LINE(S) AN APPROVED DISTANCE, TYPICALLY THREE (3) TO SIX (6) FEET. THE AREA WITHIN THREE (3) FEET IN ALL DIRECTIONS FROM ANY FIRE HYDRANT SHALL BE FREE FROM OBSTRUCTIONS, AND THE AREA BETWEEN THE STEAMER OPENING AND THE STREET OR DRIVEWAY GIVING EMERGENCY VEHICLE ACCESS SHALL BE FREE OF OBSTRUCTIONS.
- TIMING OF INSTALLATIONS: WHEN FIRE PROTECTION FACILITIES ARE INSTALLED BY THE CONTRACTOR, SUCH FACILITIES SHALL INCLUDE SURFACE ACCESS ROADS. EMERGENCY ACCESS ROADS OR DRIVES SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING THE TIME OF CONSTRUCTION. WHEN THE FIRE DEPARTMENT ROVES AN ALTERNATIVE METHOD OF PROTECTION, THIS REQUIREMENT MAY BE MODIFIED AS DOCUMENTED IN TH APPROVAL OF THE ALTERNATE METHOD.
- 3. ALL EMERGENCY ACCESS ROADWAYS AND FIRE LANES, INCLUDING PERVIOUS/DECORATIVE PAVING SHALL BE FNGINEERED AND INSTALLED AS REQUIRED TO SUPPORT THE AXLE LOADS OF EMERGENCY VEHICLES. A LOAD CAPACITY SUFFICIENT TO MEET THE REQUIREMENTS FOR HS-20 LOADING (16 KIPS/WHEEL) AND A TOTAL VEHICLE LIVE LOAD OF 80,000 POUNDS IS CONSIDERED COMPLIANT WITH THIS REQUIREMENT.
- 4. THE MINIMUM VERTICAL CLEARANCE REQUIRED FOR EMERGENCY VEHICLES ACCESS ROADS OR DRIVES IS 14 FEET FOR THE FULL WIDTH OF THE ROADWAY OR DRIVEWAY.
- 5. DUMPSTERS AND CONTAINERS WITH AN INDIVIDUAL CAPACITY OF 1.5 CUBIC YARDS OR MORE SHALL NOT BE STORED IN BUILDINGS OR PLACED WITHIN TEN FEET OF COMBUSTIBLE WALLS, OPENINGS, OR COMBUSTIBLE ROOF EAVE LINES.

ELECTRIC UTILITY NOTES

- THE OWNER SHALL BE RESPONSIBLE FOR INSTALLATION OF TEMPORARY EROSION CONTROL. REVEGETATION AND TREE PROTECTION. IN ADDITION, THE OWNER SHALL BE RESPONSIBLE FOR ANY INITIAL TREE PRUNING AND TREE REMOVAL THAT IS WITHIN TEN FEET OF THE CENTER LINE OF THE PROPOSED OVERHEAD ELECTRICAL FACILITIES DESIGNED TO PROVIDE ELECTRIC SERVICE TO THIS PROJECT.
- THE OWNER OF THE PROPERTY IS RESPONSIBLE FOR MAINTAINING CLEARANCES REQUIRED BY THE NATIONAL ELECTRIC SAFETY CODE, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, CITY OF GEORGETOWN RULES AND REGULATIONS AND TEXAS STATE LAWS PERTAINING TO CLEARANCES WHEN WORKING IN CLOSE PROXIMITY TO OVERHEAD POWER LINES AND EQUIPMENT.
- 3. ANY RELOCATION OF ENERGY TRANSMISSION FACILITIES OR OUTAGES CAUSED BY THIS PROJECT WILL BE CHARGED
- 4. WARNING SIGNS MUST BE PLACED UNDER THE OVERHEAD TRANSMISSION FACILITIES AS NOTIFICATION OF THE ELECTRICAL HAZARD.
- FOR SAFETY REASONS, AERIAL EQUIPMENT, DUMPSTERS, STAGING OR SPOILS AREAS ARE RESTRICTED TO A MAXIMUM HEIGHT OF 20 FEET AROUND THE TRANSMISSION WIRE AND STRUCTURES.
- 6. 24-HOUR ACCESS TO ELECTRIC FACILITIES SHALL BE MAINTAINED.
- 7. PROPERTY OWNER AND CONTRACTOR ARE RESPONSIBLE FOR DUST CONTROLS TO MINIMIZE CONTAMINATION OF WIRE AND INSULATORS CAUSED BY DUST FROM THIS PROJECT. ANY SUBSEQUENT CLEANING OR ELECTRICAL OUTAGES CAUSED BY DUST FROM THIS PROJECT WILL BE CHARGED TO THE PROPERTY OWNER AND CONTRACTOR.
- PROPERTY OWNER IS RESPONSIBLE FOR ALL DAMAGES TO CURBNG, LANDSCAPING AND WALL PLACED AROUND THE ELECTRIC TRANSMISSION STRUCTURES/POLES/LINES CAUSED BY AUSTIN ENERGY DURING MAINTENANCE AND REPAIRS.

CITY OF GEORGETOWN GENERAL NOTES

- THESE CONSTRUCTION PLANS WERE PREPARED, SEALED 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
- 2. THIS PROJECT IS SUBJECT TO ALL CITY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF SUBMITTAL OF THE PROJECT OF THE CITY.
- 3. THE SITE CONSTRUCTION PLANS SHALL MEET ALL REQUIREMENTS OF THE APPROVED PLANS.
- 4. WASTEWATER MAINS AND SERVICE LINES SHALL BE SDR 26 PVC.

SPRINKLER SYSTEM, AND 200 PSI C900 PVC FOR ALL OTHERS.

- 5. WASTEWATER MAINS SHALL BE INSTALLED WITHOUT HORIZONTAL OR VERTICAL BENDS.
- 6. MAXIMUM DISTANCE BETWEEN WASTEWATER MANHOLES IS 500 FEET.
- . 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 THE CITY OF
- 9. WASTEWATER MAINS SHALL BE CAMERA TESTED BY THE CONTRACTOR AND SUBMITTED TO THE CITY ON DVD FORMAT
- 10. PRIVATE WATER SYSTEM FIRE LINES SHALL BE TESTED BY THE CONTRACTOR TO 200 PSI FOR 2 HOURS.
- 11. PRIVATE WATER SYSTEM SYSTEM FIRE LINES SHALL BE DUCTILE IRON PIPING FROM THE WATER MAIN TO THE
- 12. PUBLIC WATER SYSTEM MAINS SHALL BE 150 PSI C900 OVC AND TESTED BY THE CONTRACTOR AT 150 PSI FOR 4
- 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 BACTERIA TESTED BY THE CONTRACTOR ACCORDING TO THE CITY STANDARDS AND
- 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
- 19. ALL SIDEWALK RAMPS ARE TO BE INSTALLED WITH THE PUBLIC INFRASTRUCTURE.

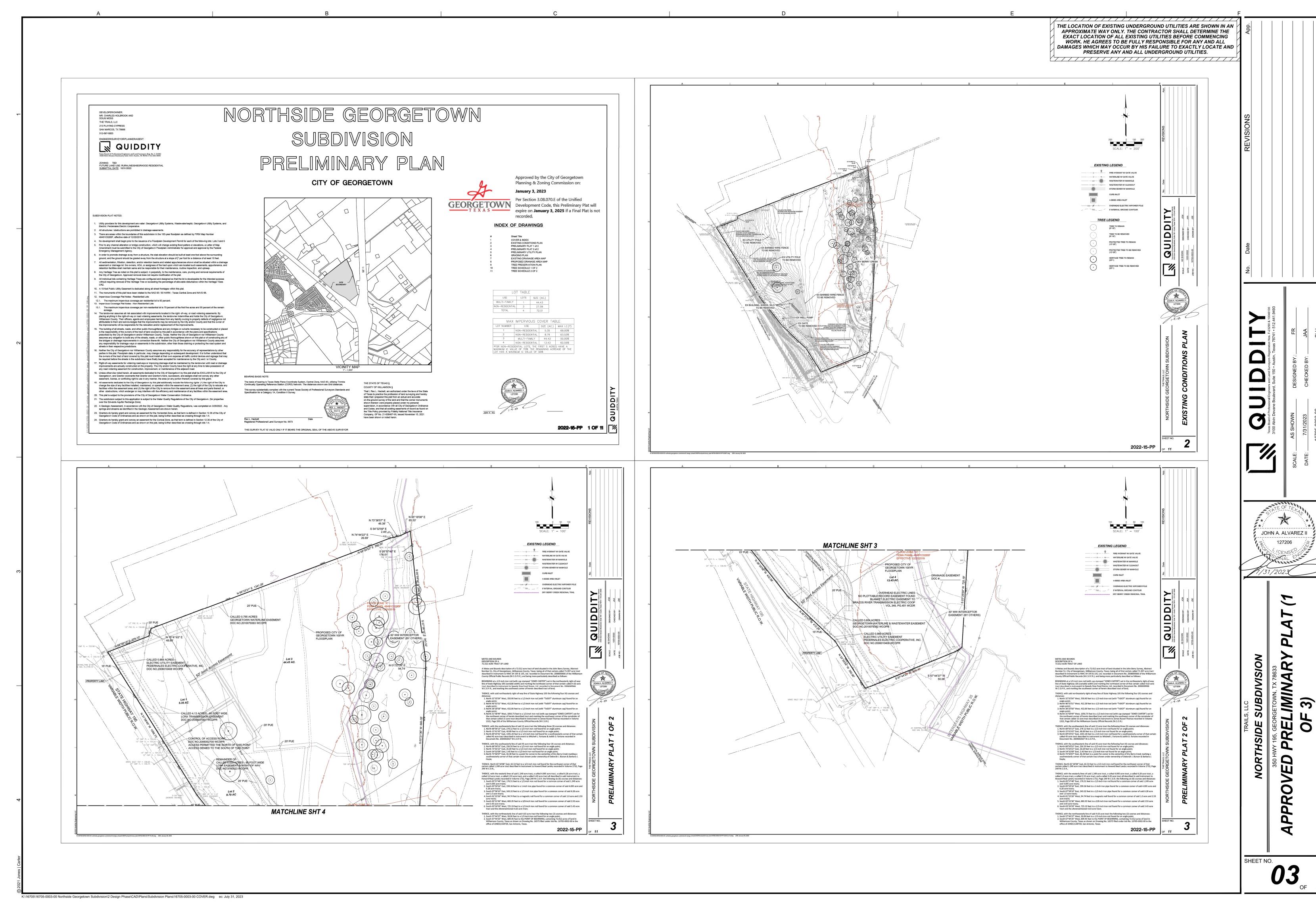
MINIMUM OF 2 INCHES THICK ON PUBLIC STREETS AND ROADWAYS.

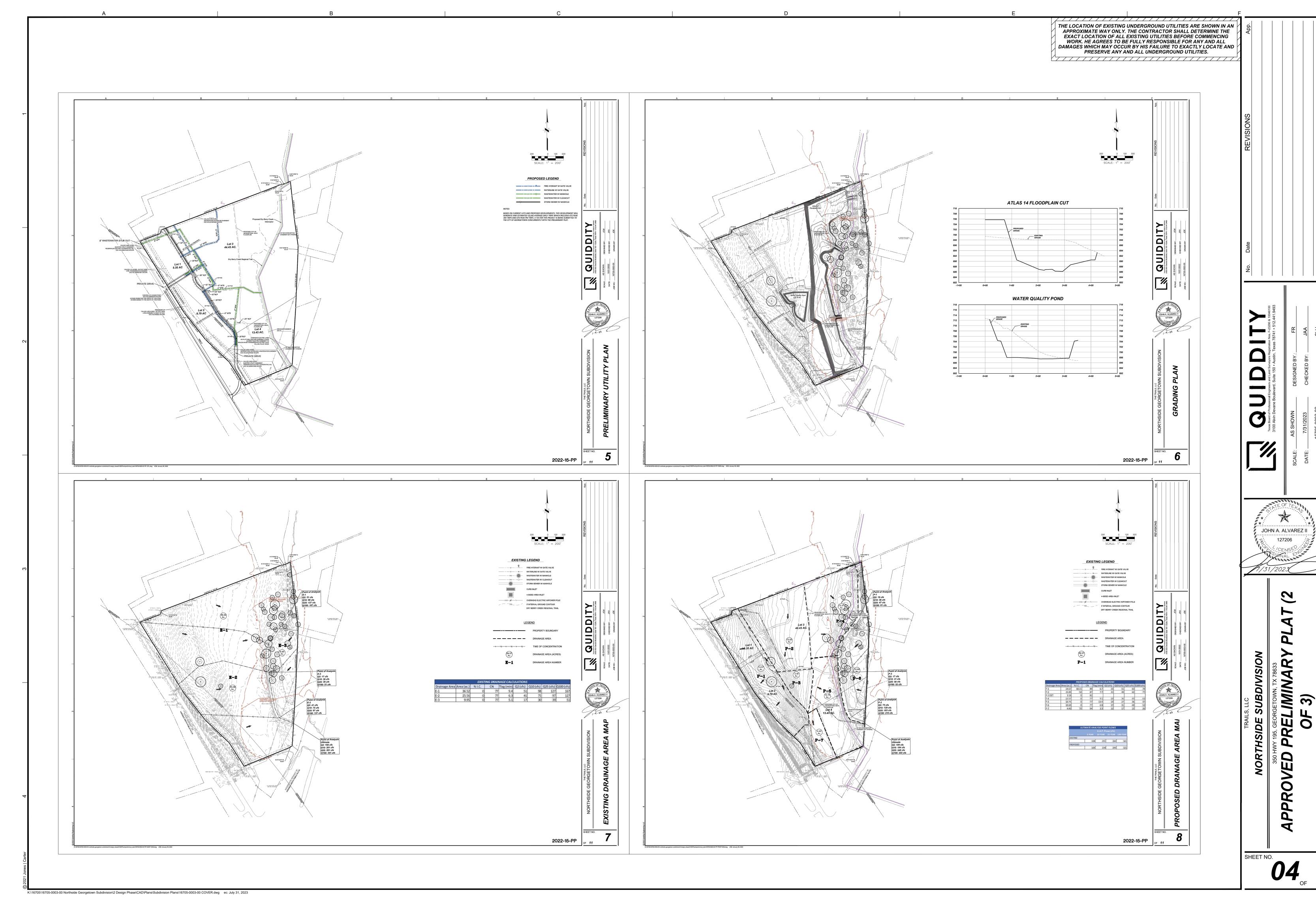
- 20. A MAINTENANCE BOND IS REQUIRED TO BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF THE PUBLIC IMPROVEMENTS. THIS BOND SHALL BE ESTABLISHED FOR 2 YEARS IN THE AMOUNT OF 10% OF THE COST OF THE PUBLIC IMPROVEMENTS AND SHALL FOLLOW THE CITY FORMAT.
- 21. RECORD DRAWINGS OF THE PUBLIC IMPROVEMENTS SHALL 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 (300P DPI). IF A DISK IS SUBMITTED, A BOND SET SHALL BE INCLUDED WITH THE DISK.

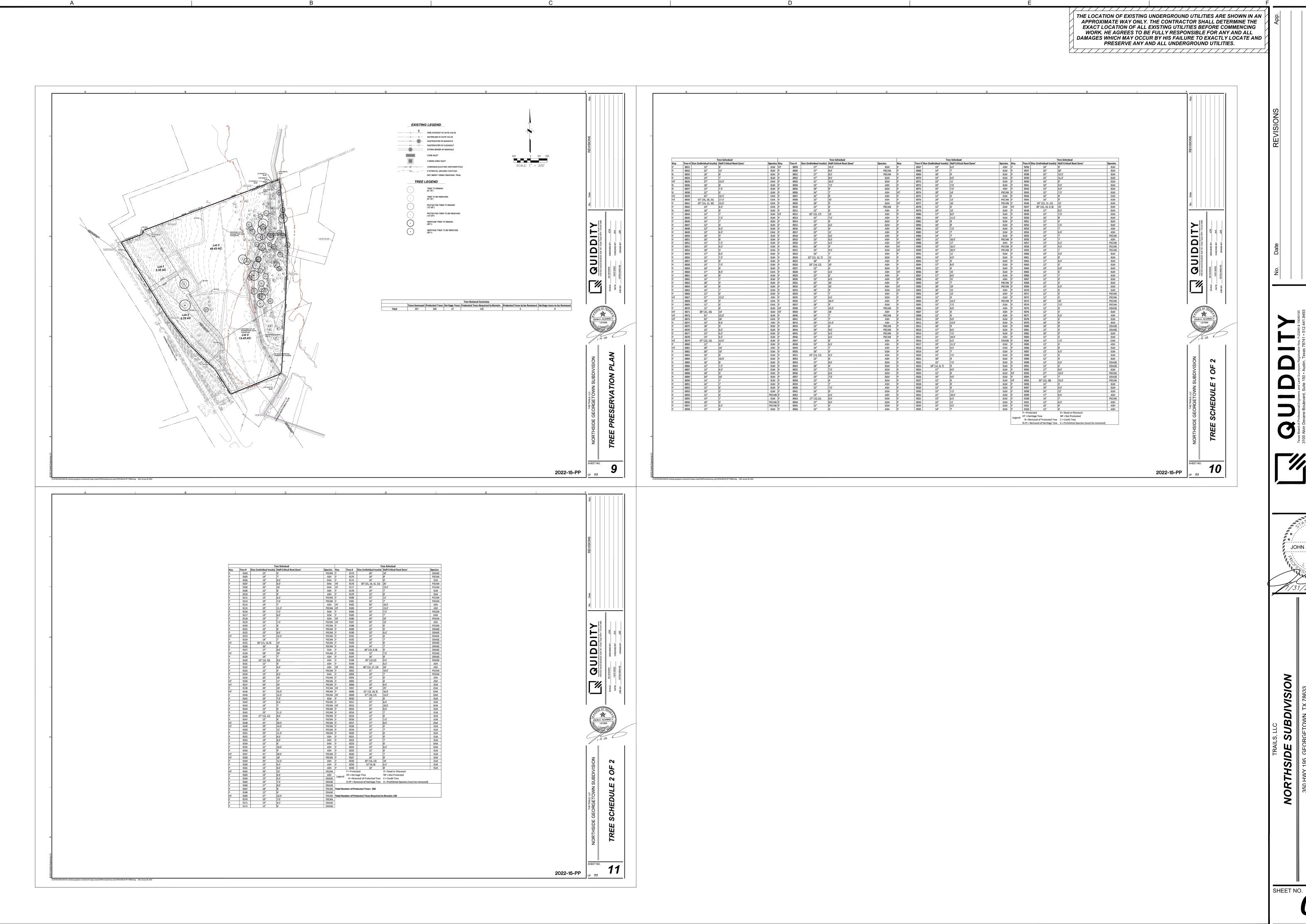


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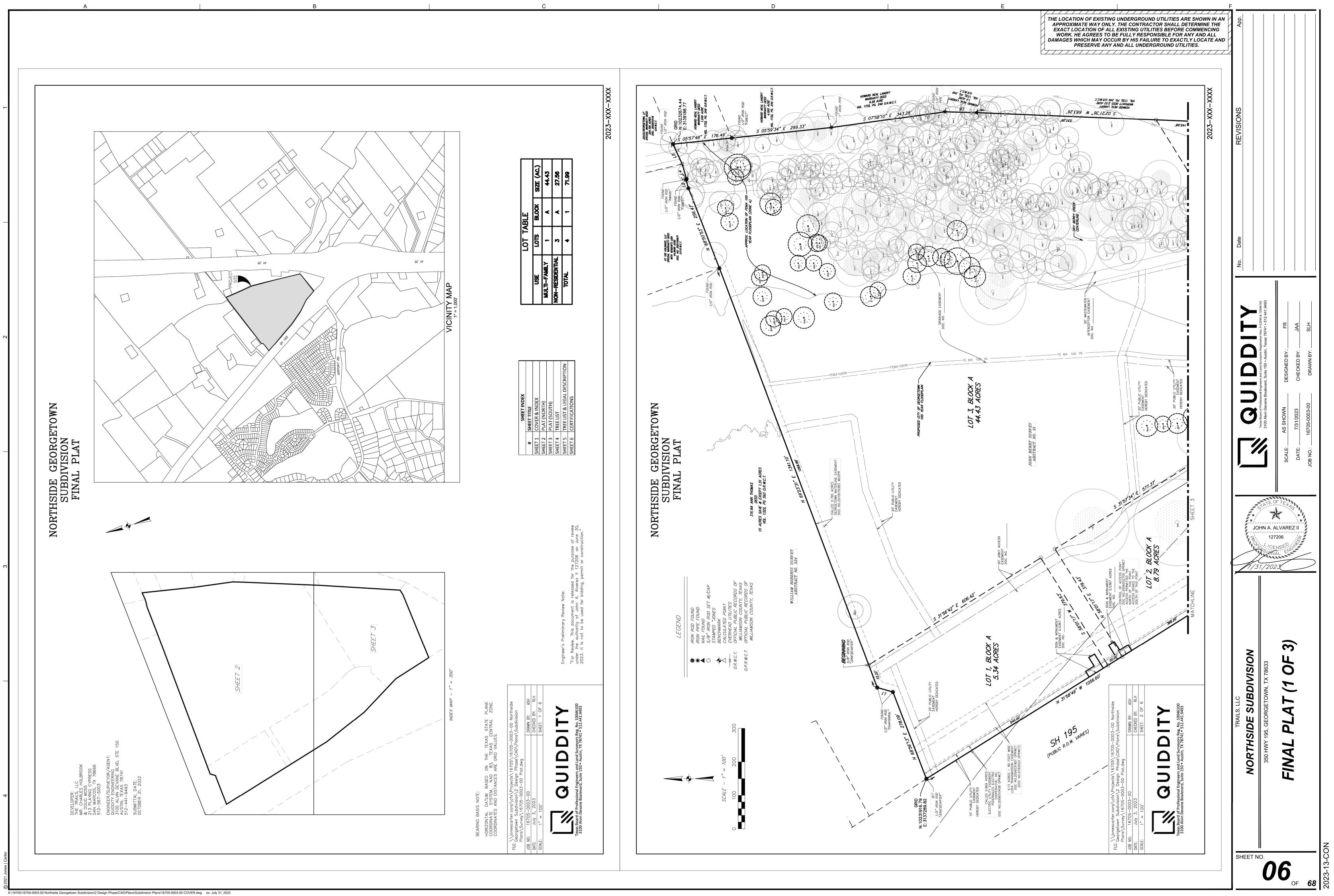
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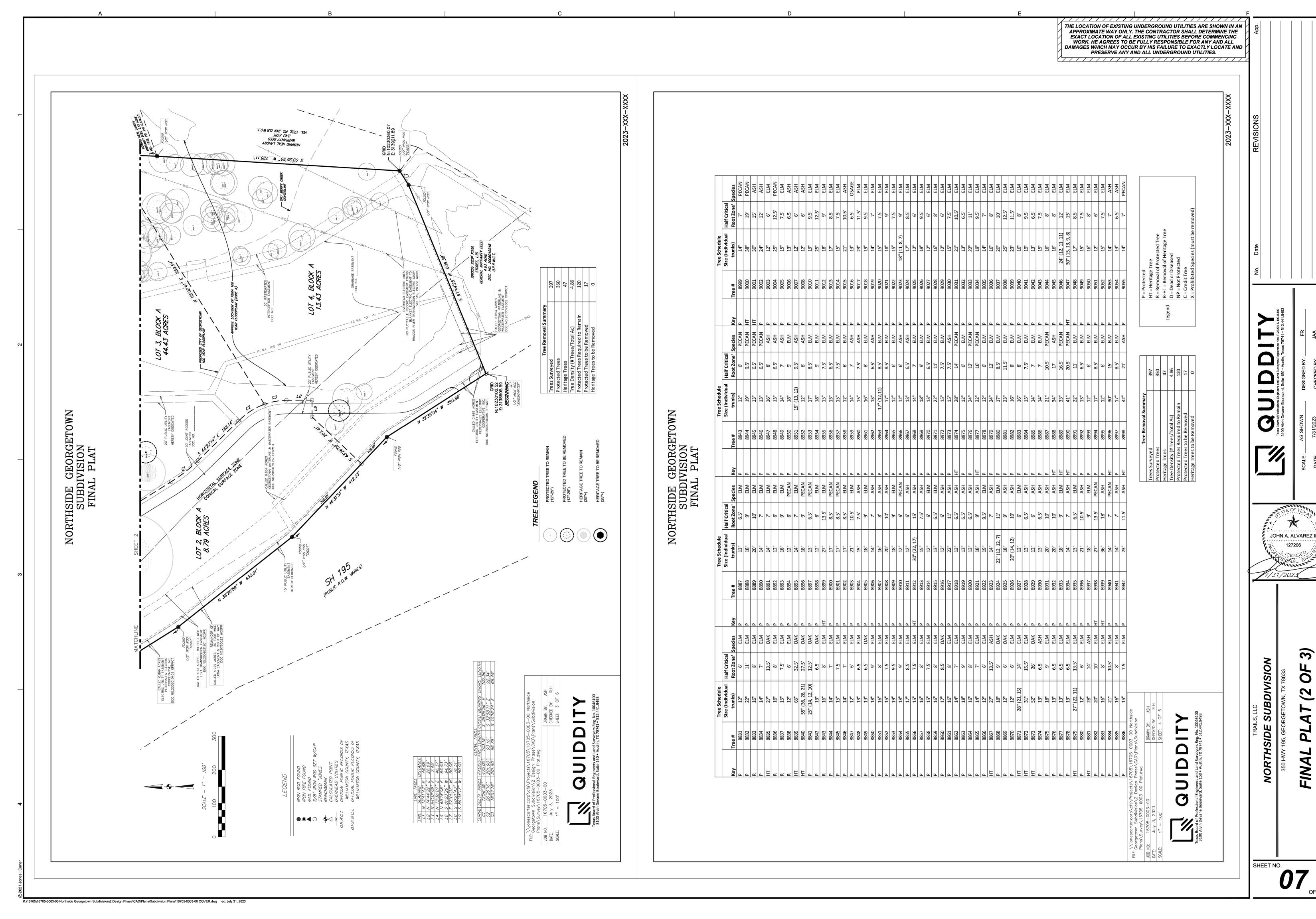
JOHN A. ALVAREZ II 127206 A Ы HWY 195, GEORGETOWN, TX 78635

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THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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SUBDIVISION

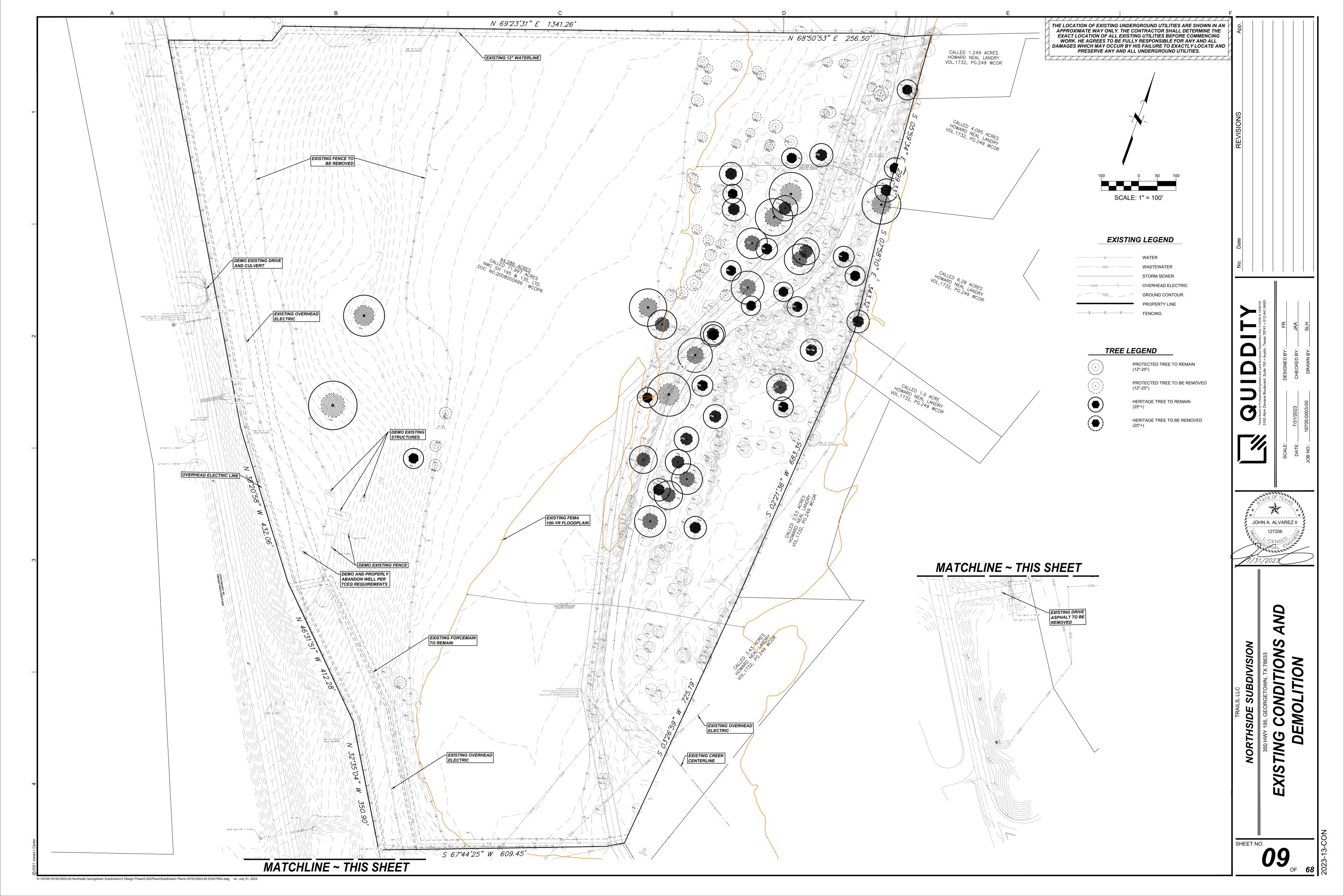
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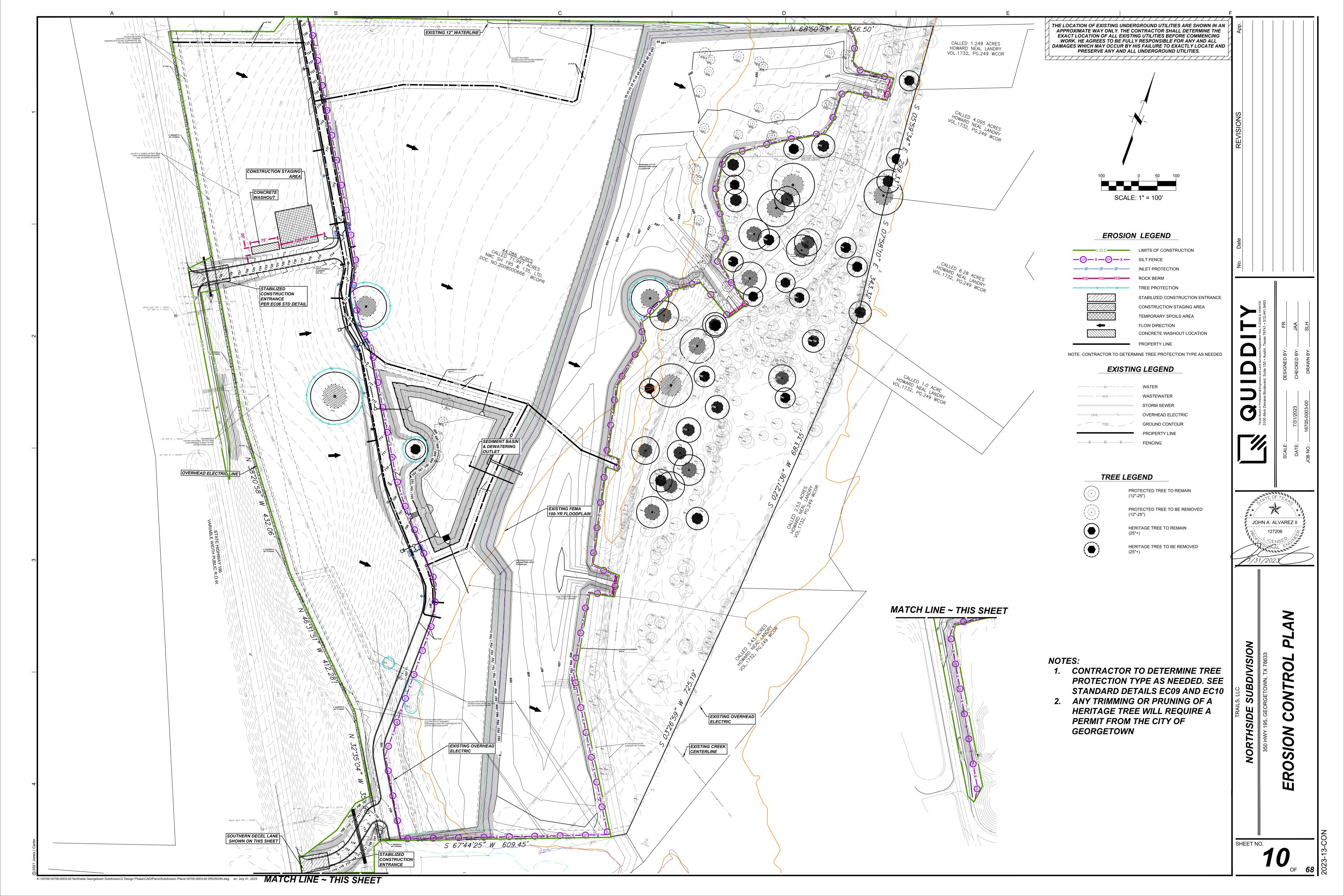
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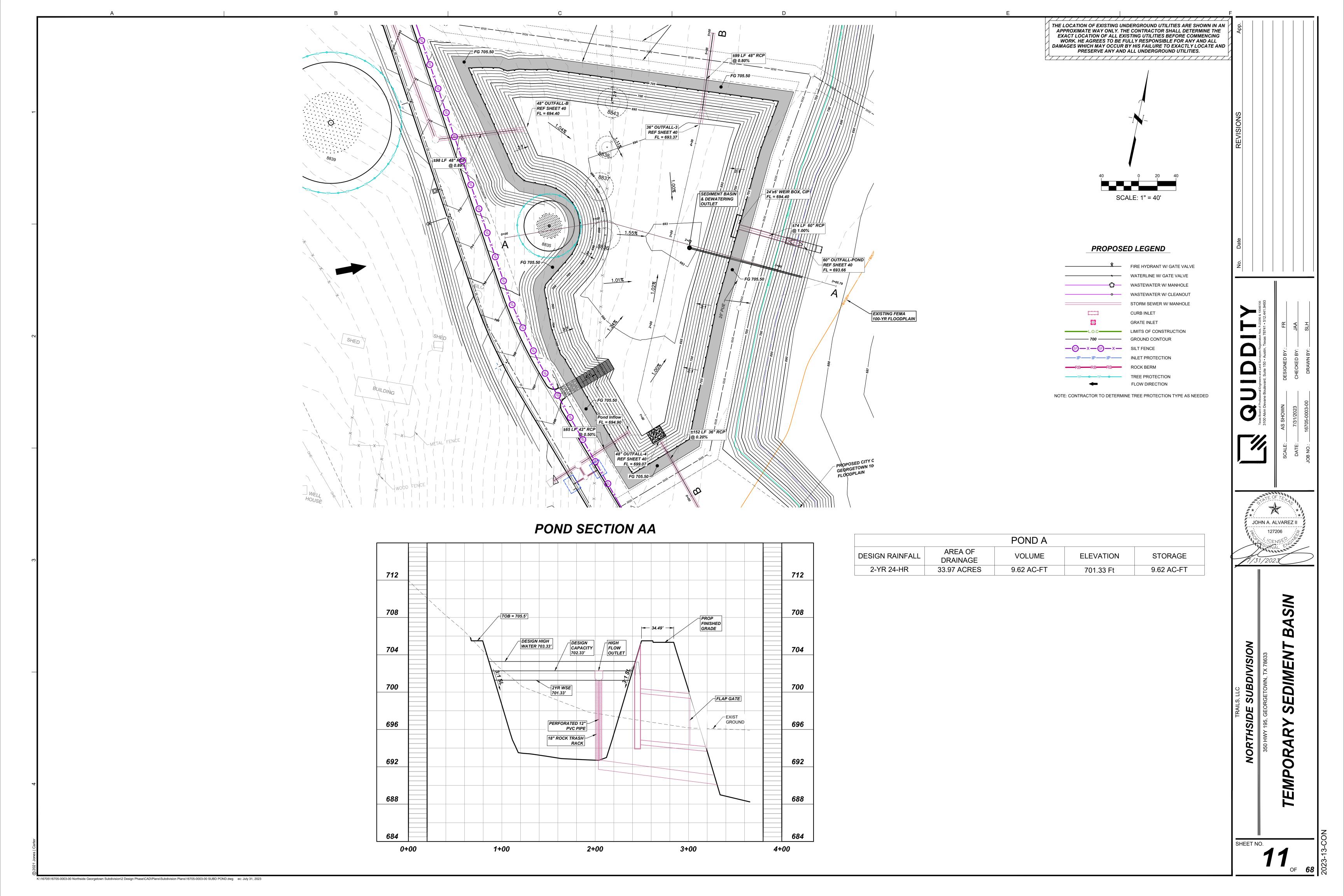
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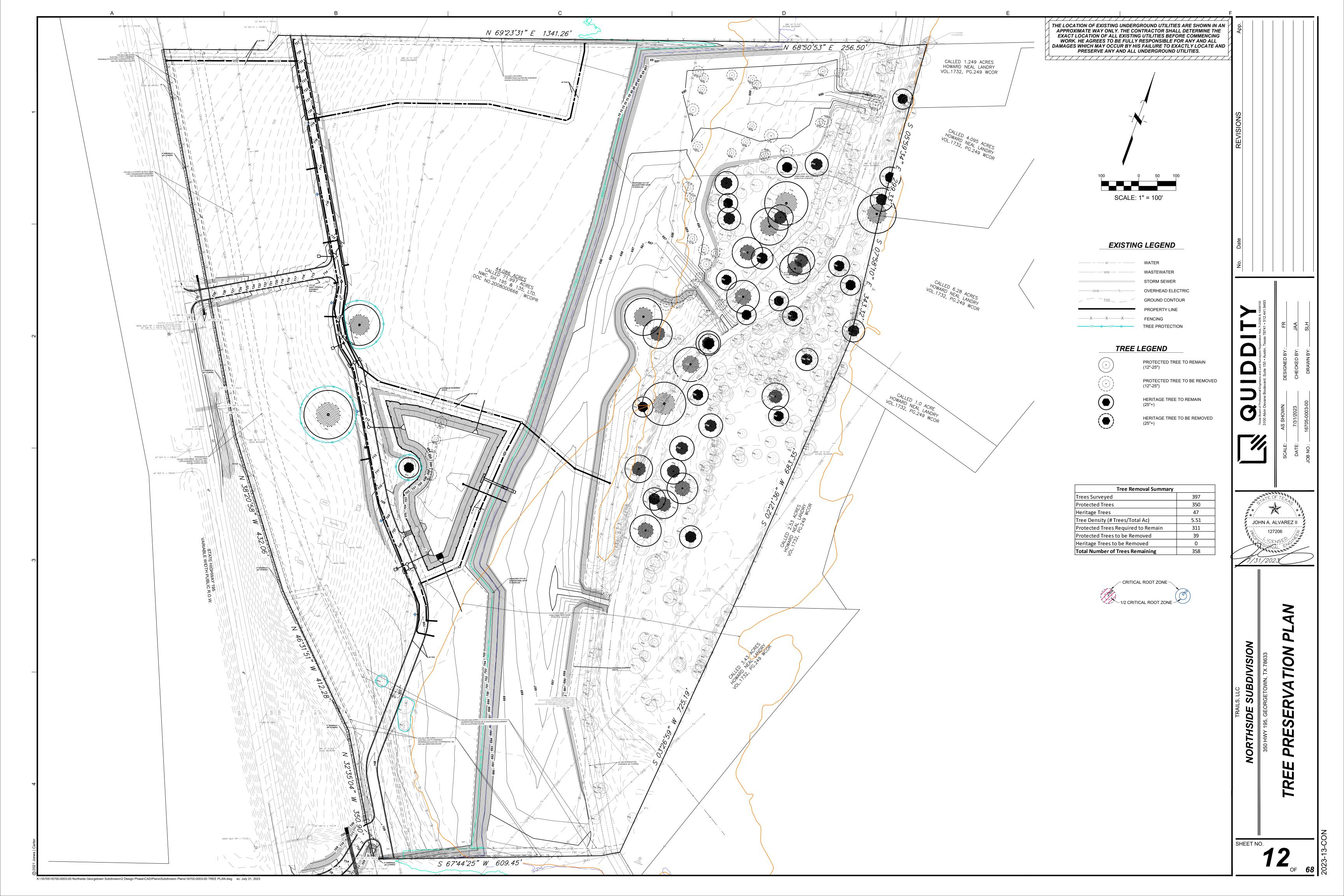
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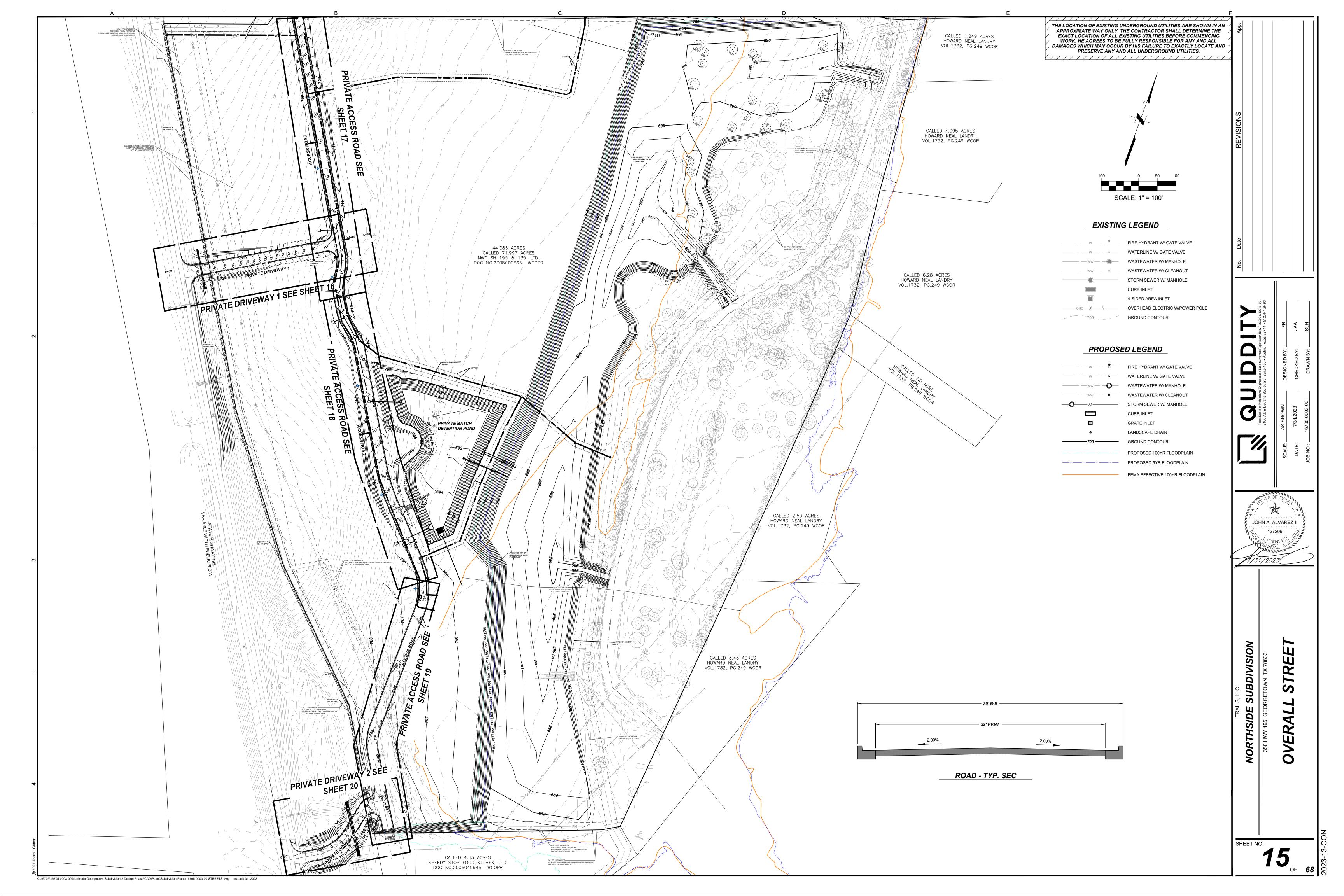
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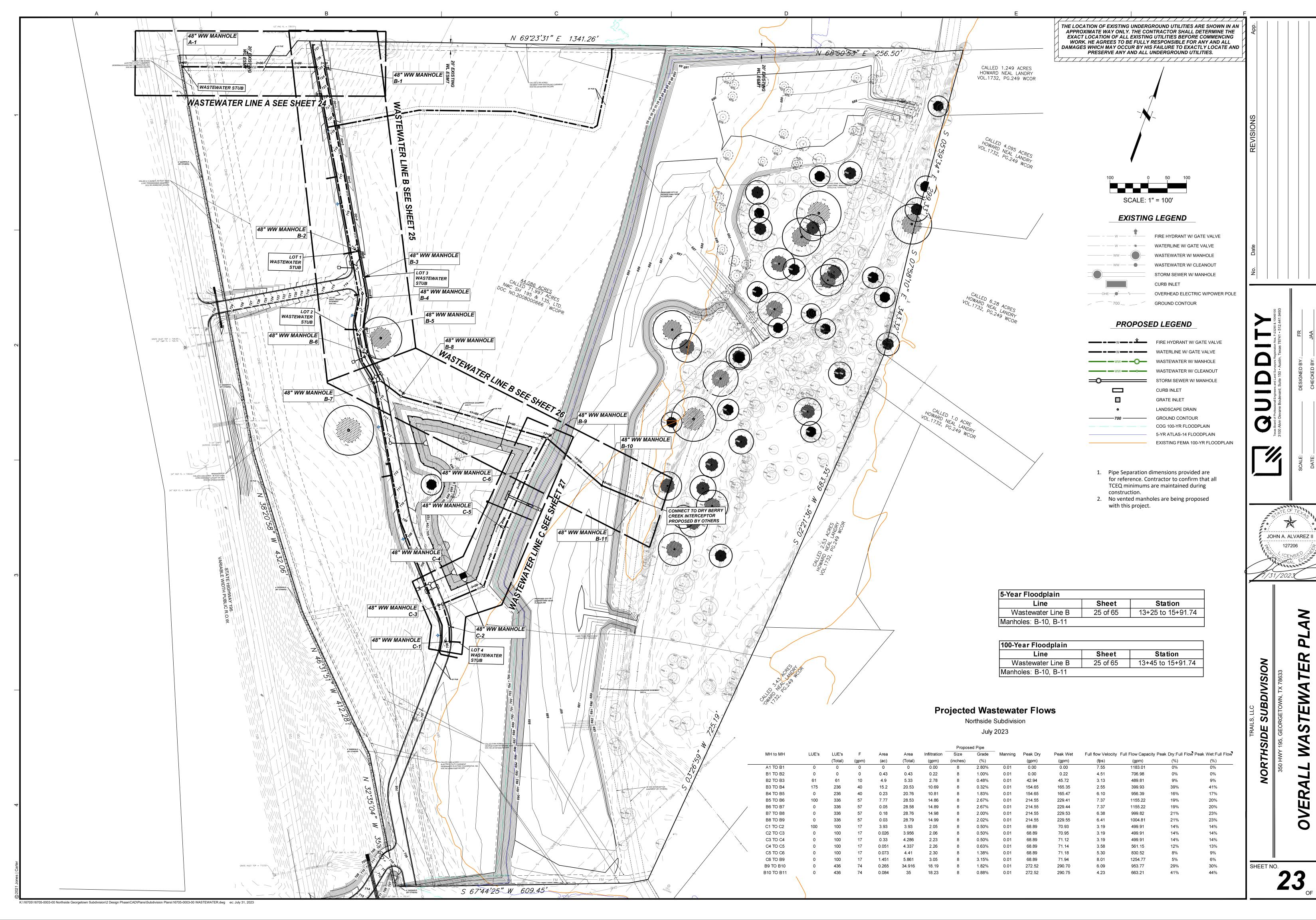


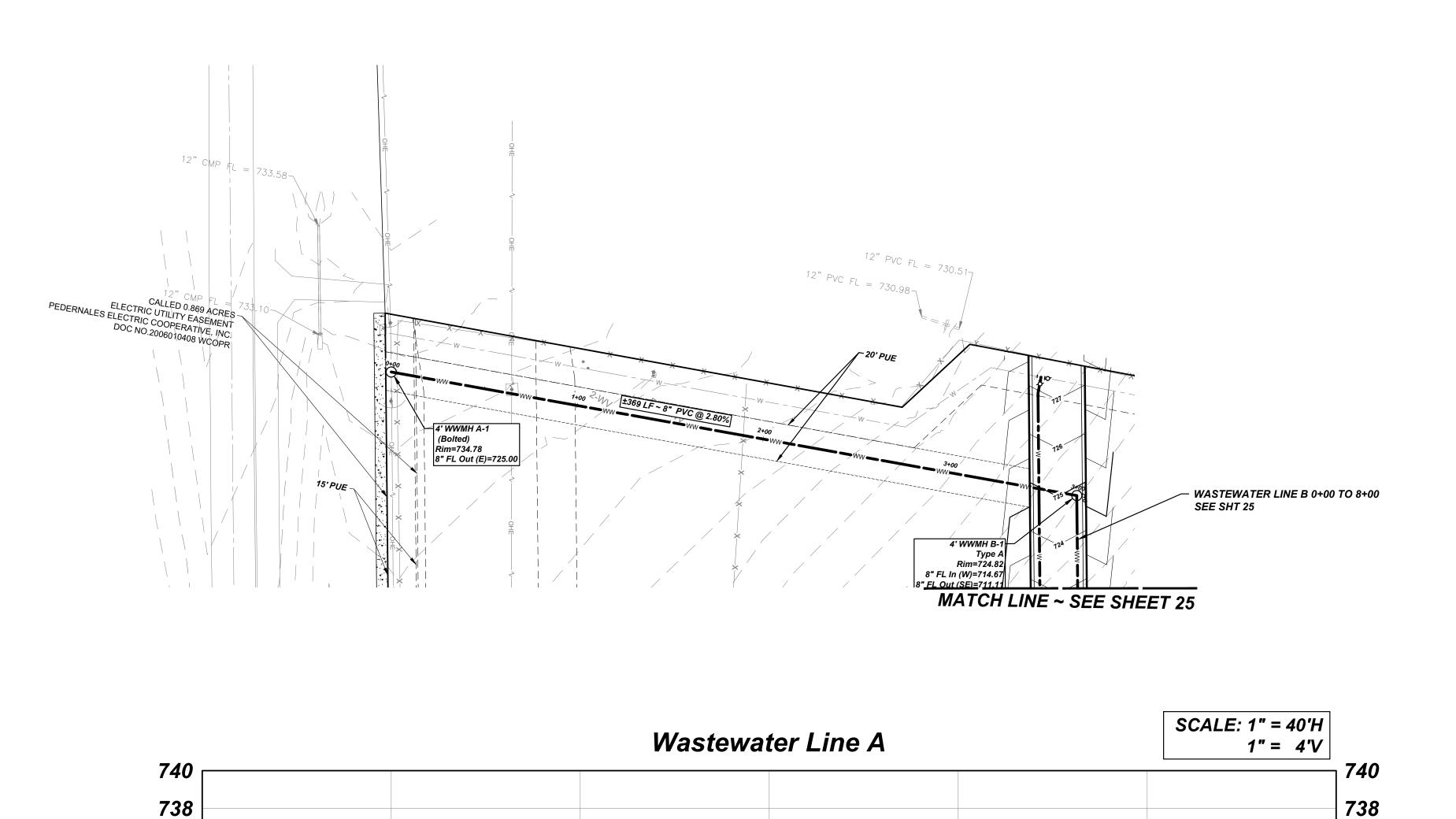


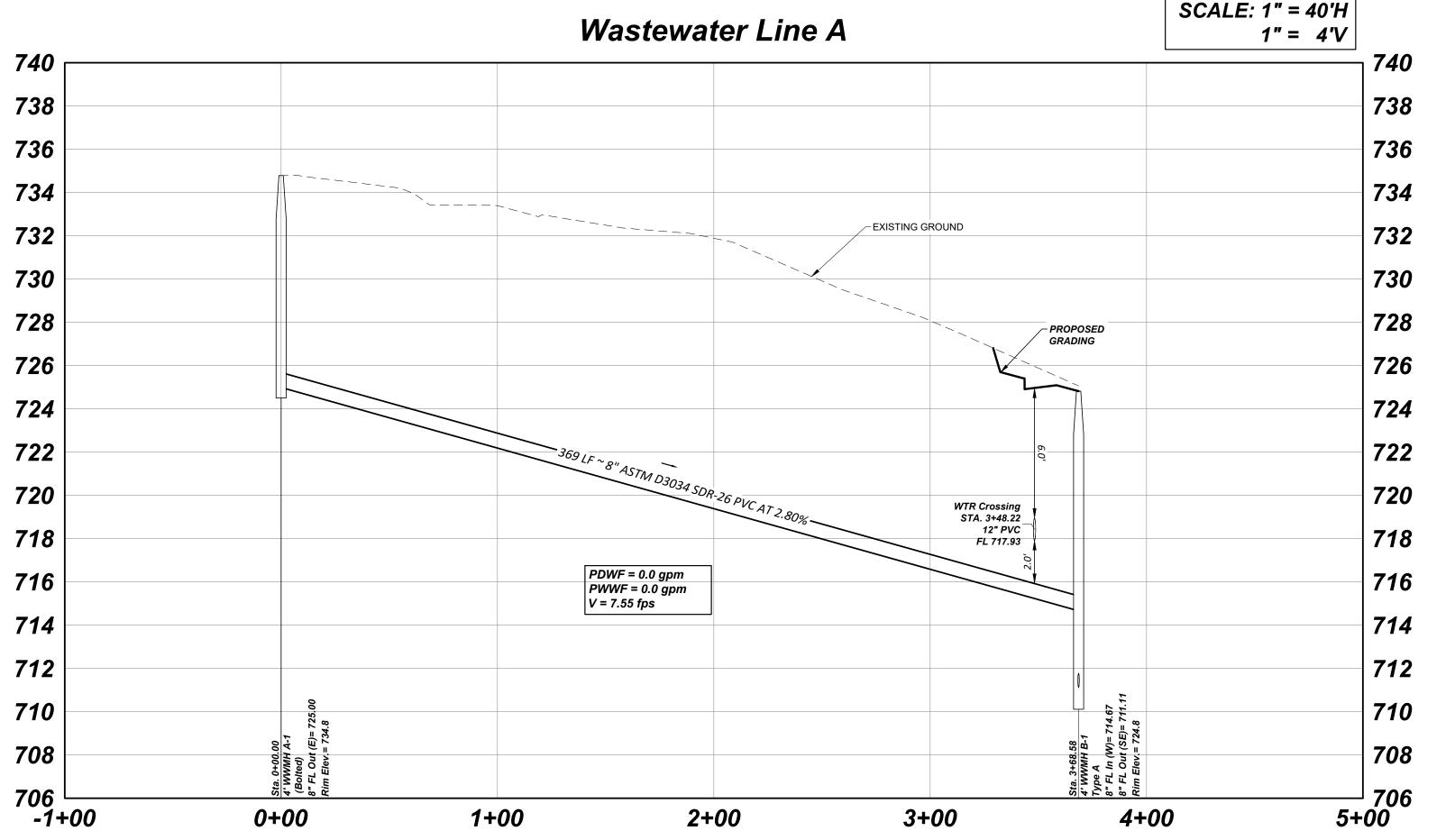




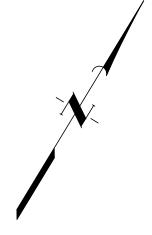






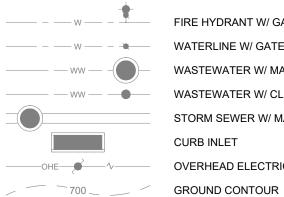


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EXISTING LEGEND



FIRE HYDRANT W/ GATE VALVE WATERLINE W/ GATE VALVE WASTEWATER W/ MANHOLE WASTEWATER W/ CLEANOUT STORM SEWER W/ MANHOLE CURB INLET OVERHEAD ELECTRIC W/POWER POLE

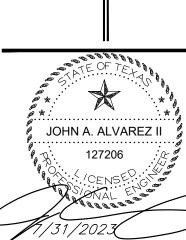
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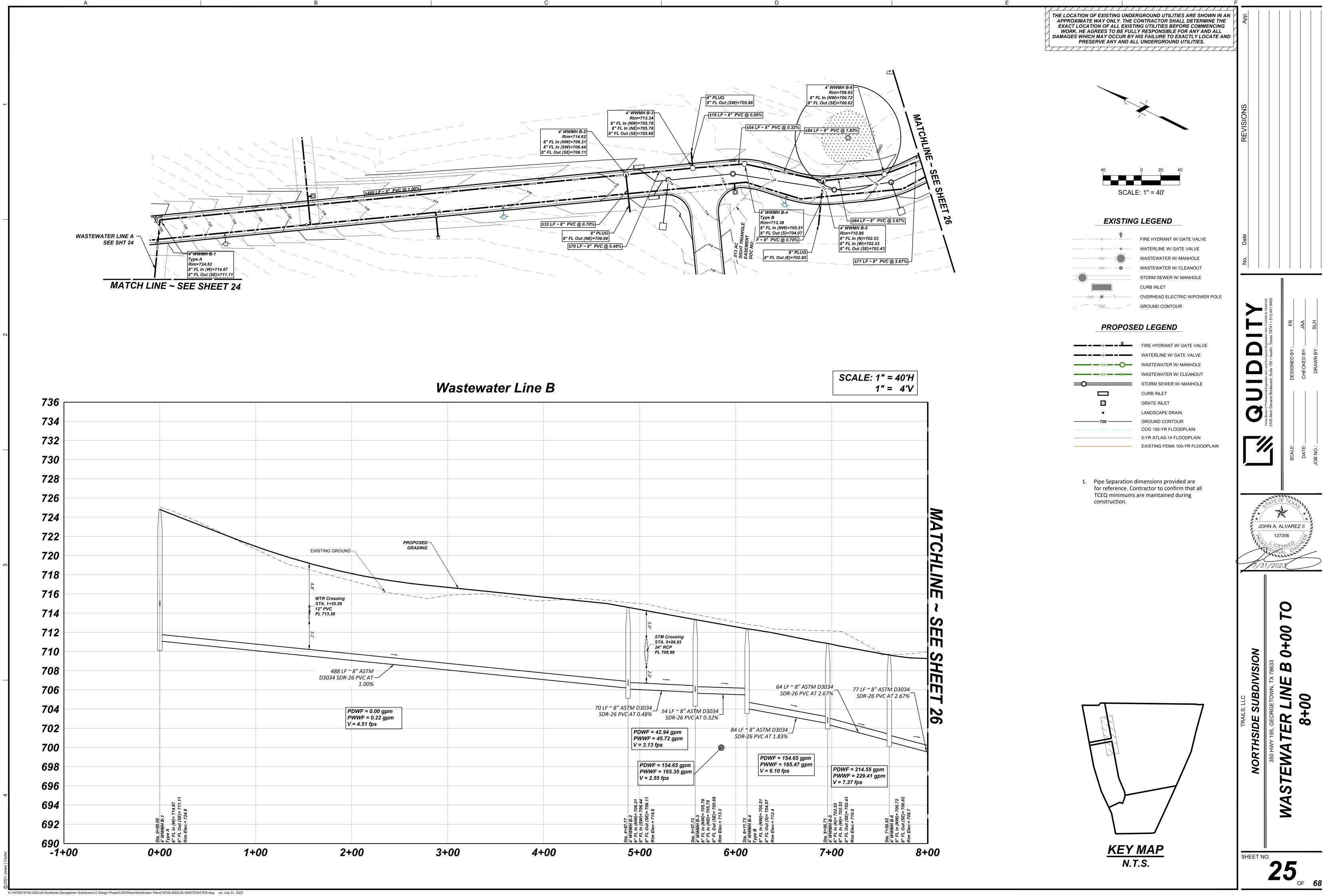
FIRE HYDRANT W/ GATE VALVE WATERLINE W/ GATE VALVE WASTEWATER W/ MANHOLE WASTEWATER W/ CLEANOUT STORM SEWER W/ MANHOLE **CURB INLET** GRATE INLET LANDSCAPE DRAIN GROUND CONTOUR COG 100-YR FLOODPLAIN 5-YR ATLAS-14 FLOODPLAIN EXISTING FEMA 100-YR FLOODPLAIN

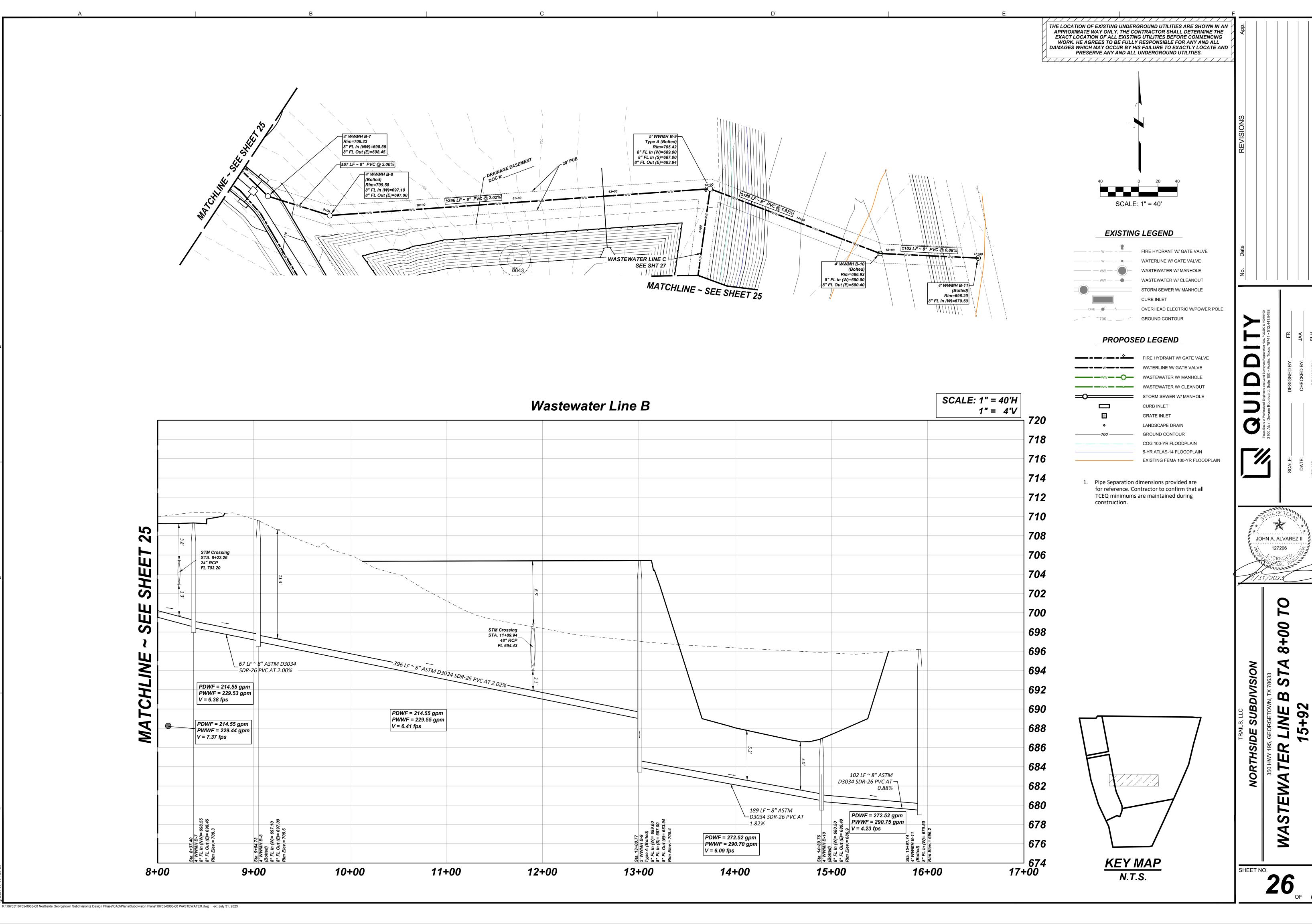
 Pipe Separation dimensions provided are for reference. Contractor to confirm that all TCEQ minimums are maintained during construction.

KEY MAP

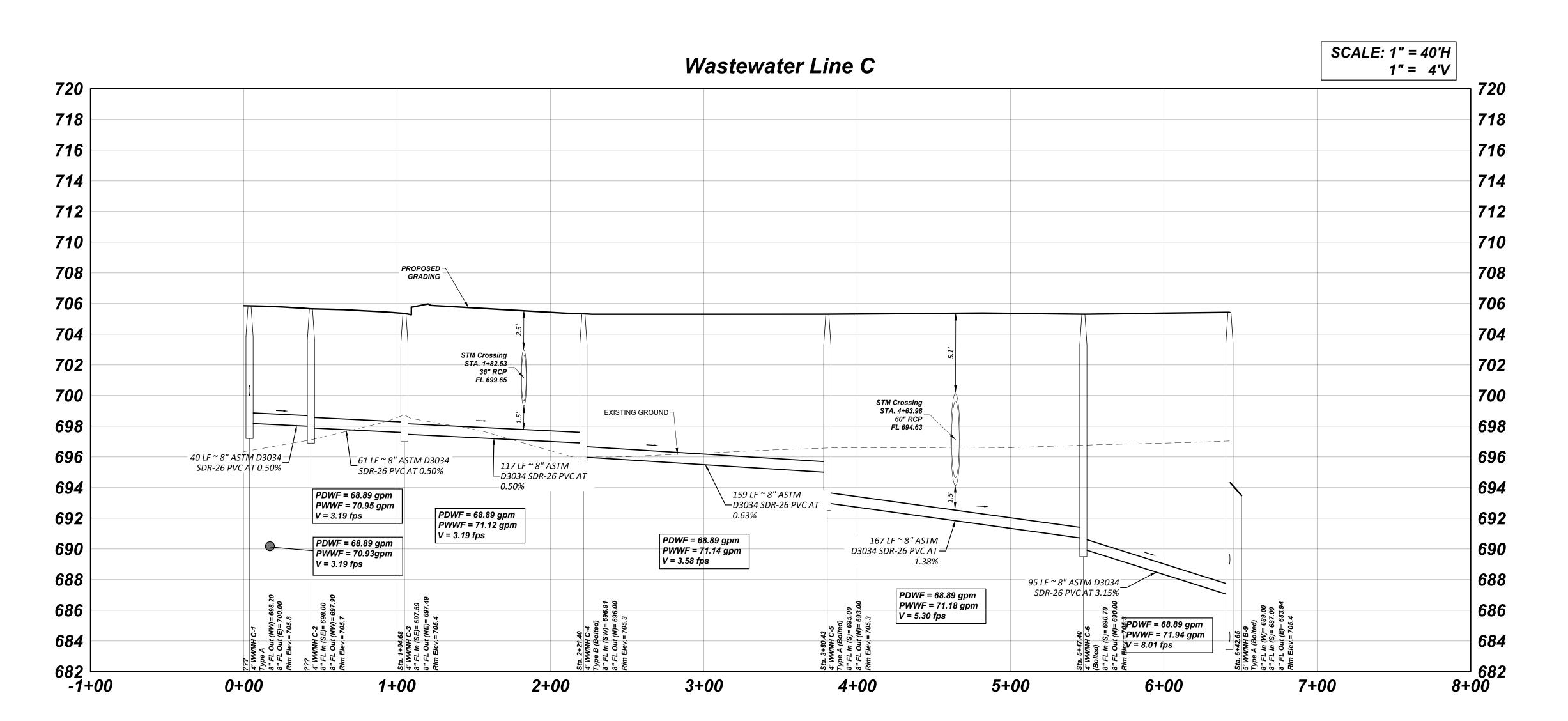


NORTHSIDE SUBDIVISION

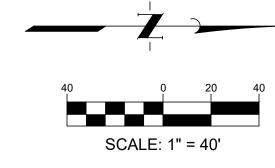




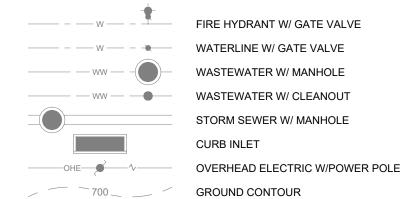
4' WWMH C-2 Rim=705.65 8" FL In (SE)=698.00 8" FL Out (NW)=697.90 - WASTEWATER LINE B STA 8+00 TO 15+92 8" FL Out (NW)=698.20 8" FL Out (E)=700.00 SEE SHT 26 Type B (Bolted) Rim=705.33 8" FL In (SW)=696.91 Type A (Bolted)
8" FL Out (N)=696.00 Rim=705.30 (Bolted) Rim=705.30 ±61 LF ~ 8"/PVC @ 0.50% 8" FL In (S)=690.70 8" FL Out (N)=690.00 8" FL Out (N)=693.00 ±40 LF ~ 8" PVC @/0.50% 5' WWMH B-9 Type A (Bolted) Rim=705.42 ±117 LF 7 8" PVC @ 0.50% 3+00 MM ±159 LF ~ 8" PVC @ 0.63% 8" PLUG 8" FL In (W)=699.86 8" FL In (W)=689.00 ±167 LF ~ 8" FVC @ 1.38% 8" FL In (S)=687.00 8" FL Out (E)=683.94 WASTEWATER LINE B STA 8+00 TO 15+92 SEE SHT 26



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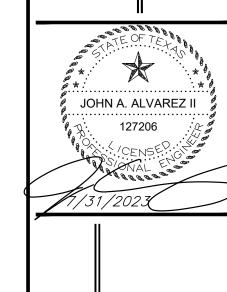


PROPOSED LEGEND

	FIRE HYDRANT W/ GATE VALVE
	WATERLINE W/ GATE VALVE
	WASTEWATER W/ MANHOLE
	WASTEWATER W/ CLEANOUT
	STORM SEWER W/ MANHOLE
	CURB INLET
	GRATE INLET
•	LANDSCAPE DRAIN
700 ———	GROUND CONTOUR
	COG 100-YR FLOODPLAIN
	5-YR ATLAS-14 FLOODPLAIN
	EXISTING FEMA 100-YR FLOODPLAIN

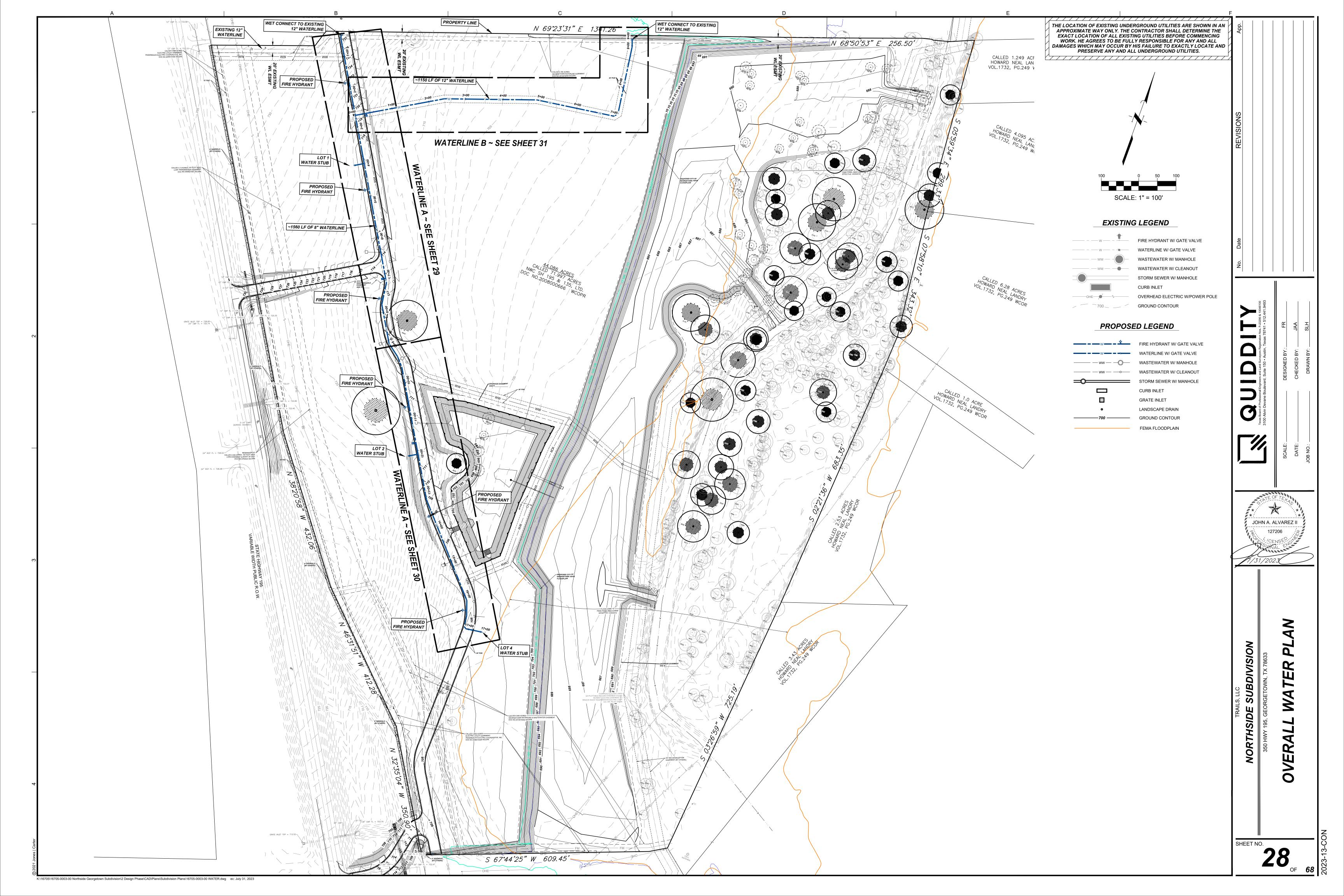
1. Pipe Separation dimensions provided are for reference. Contractor to confirm that all TCEQ minimums are maintained during construction.

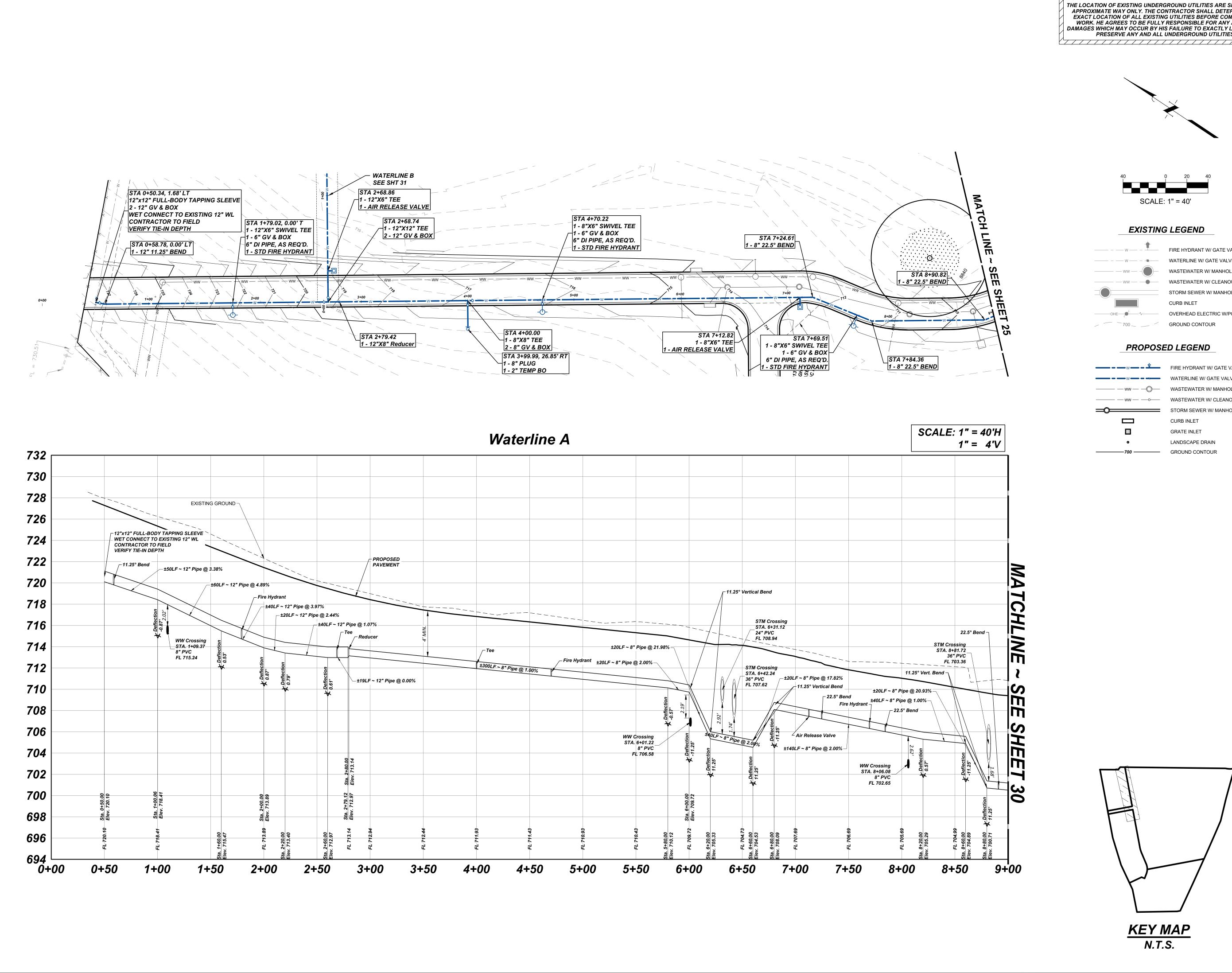
KEY MAP



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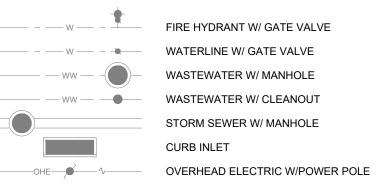
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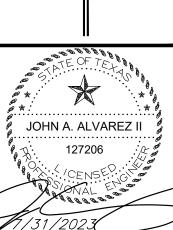
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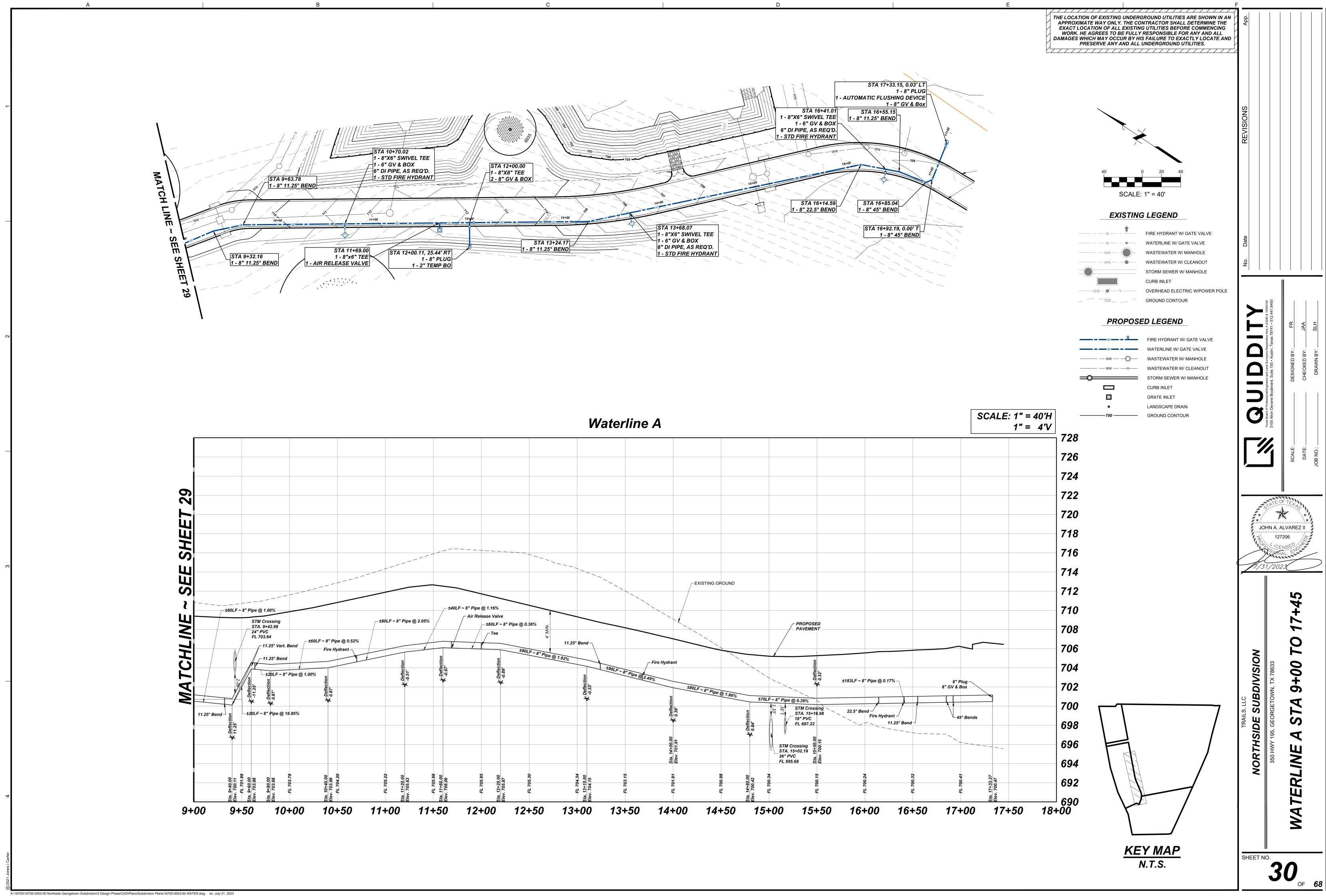


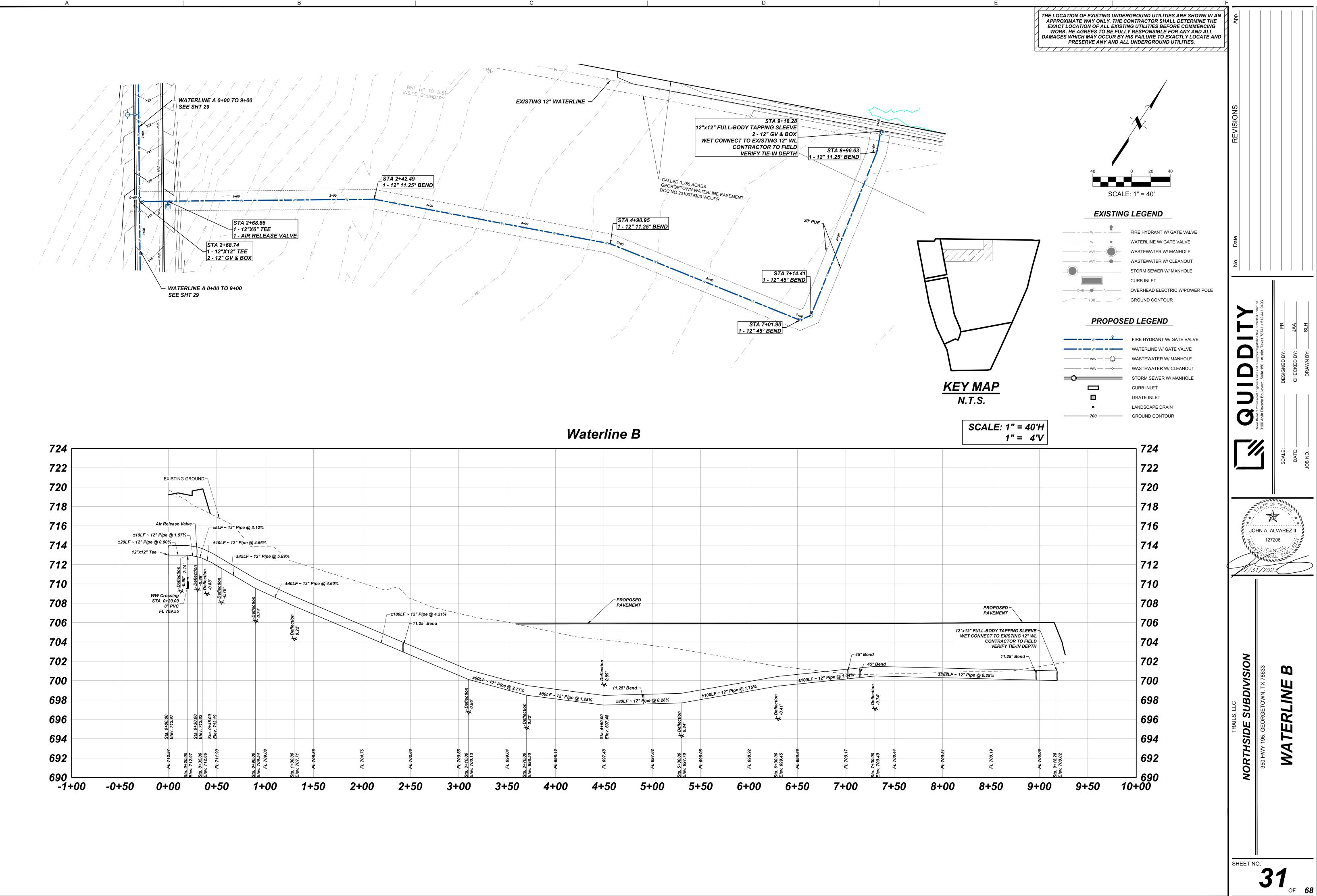
	FIRE HYDRANT W/ GATE VALVE
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	CURB INLET
	GRATE INLET



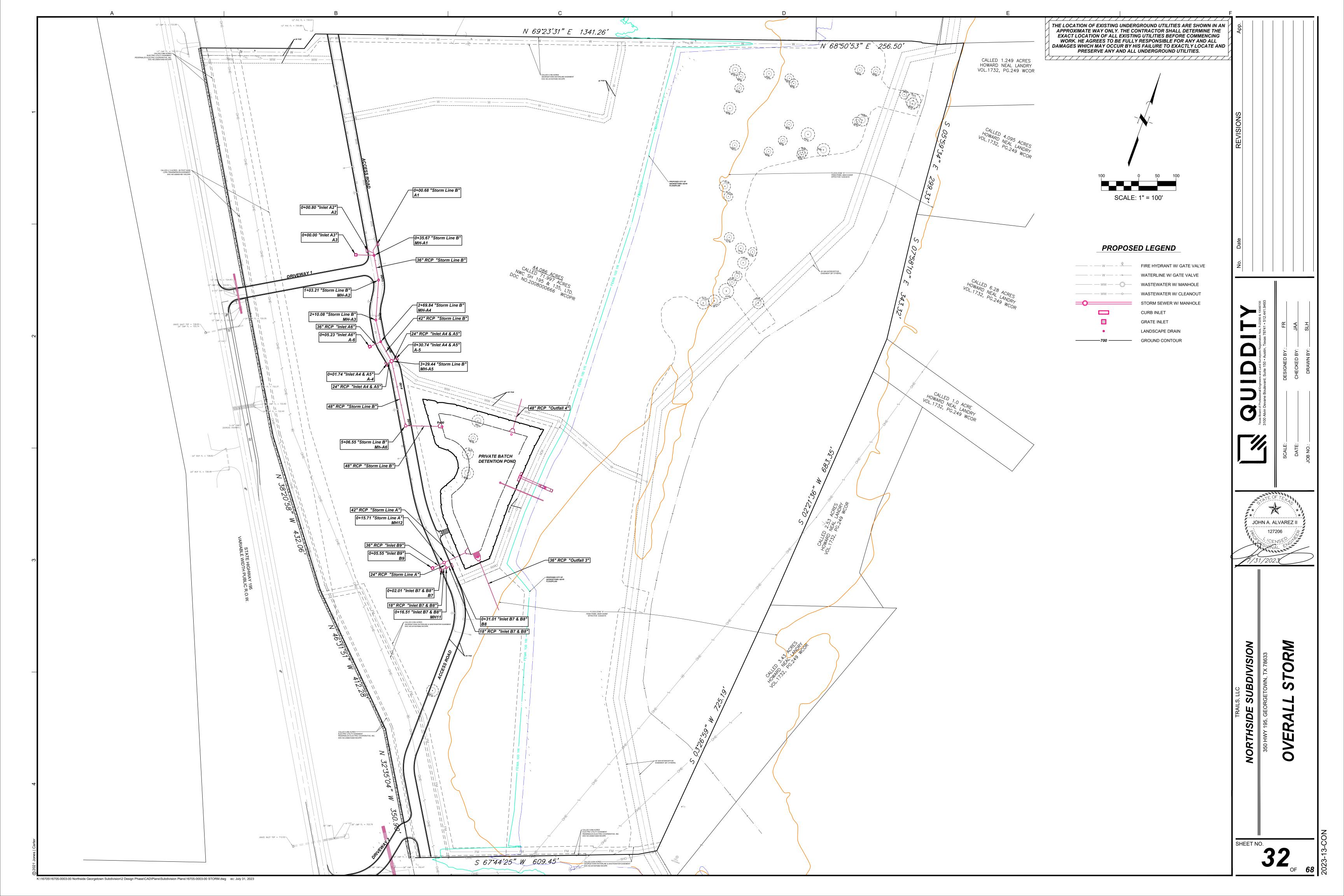


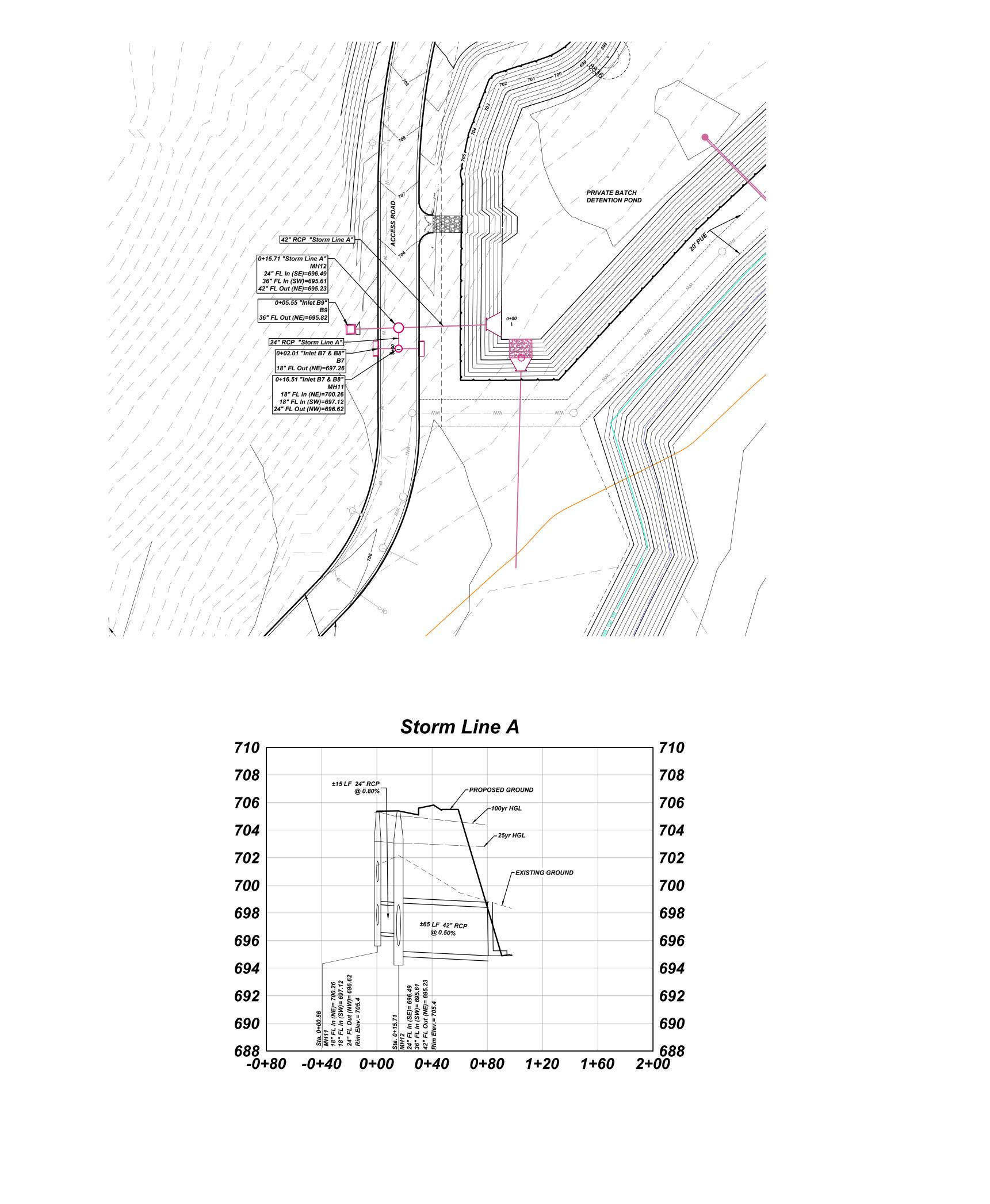
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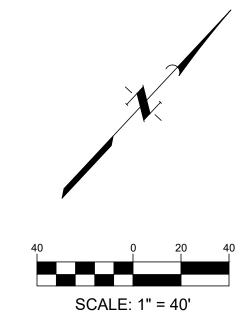
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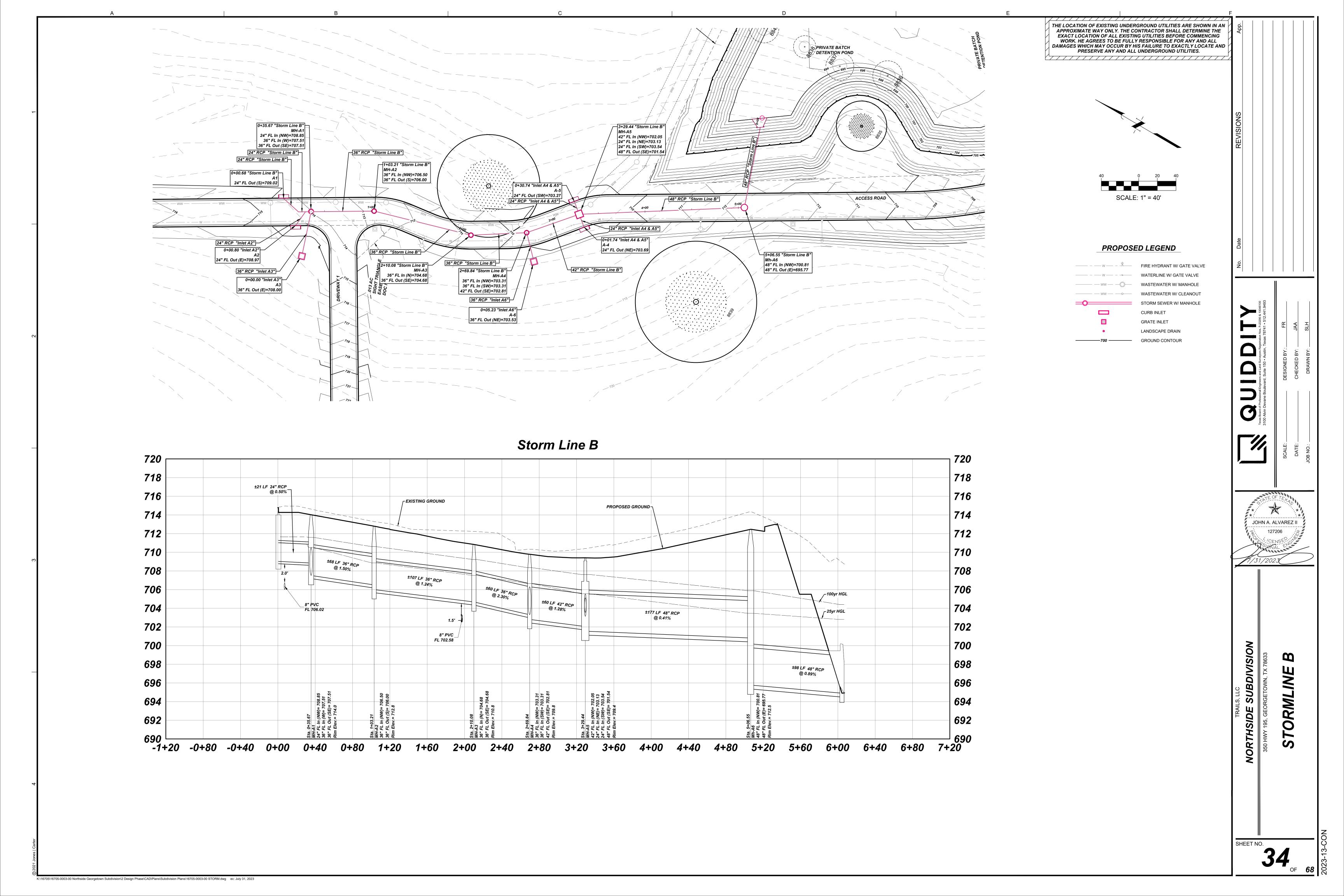
PROPOSED LEGEND

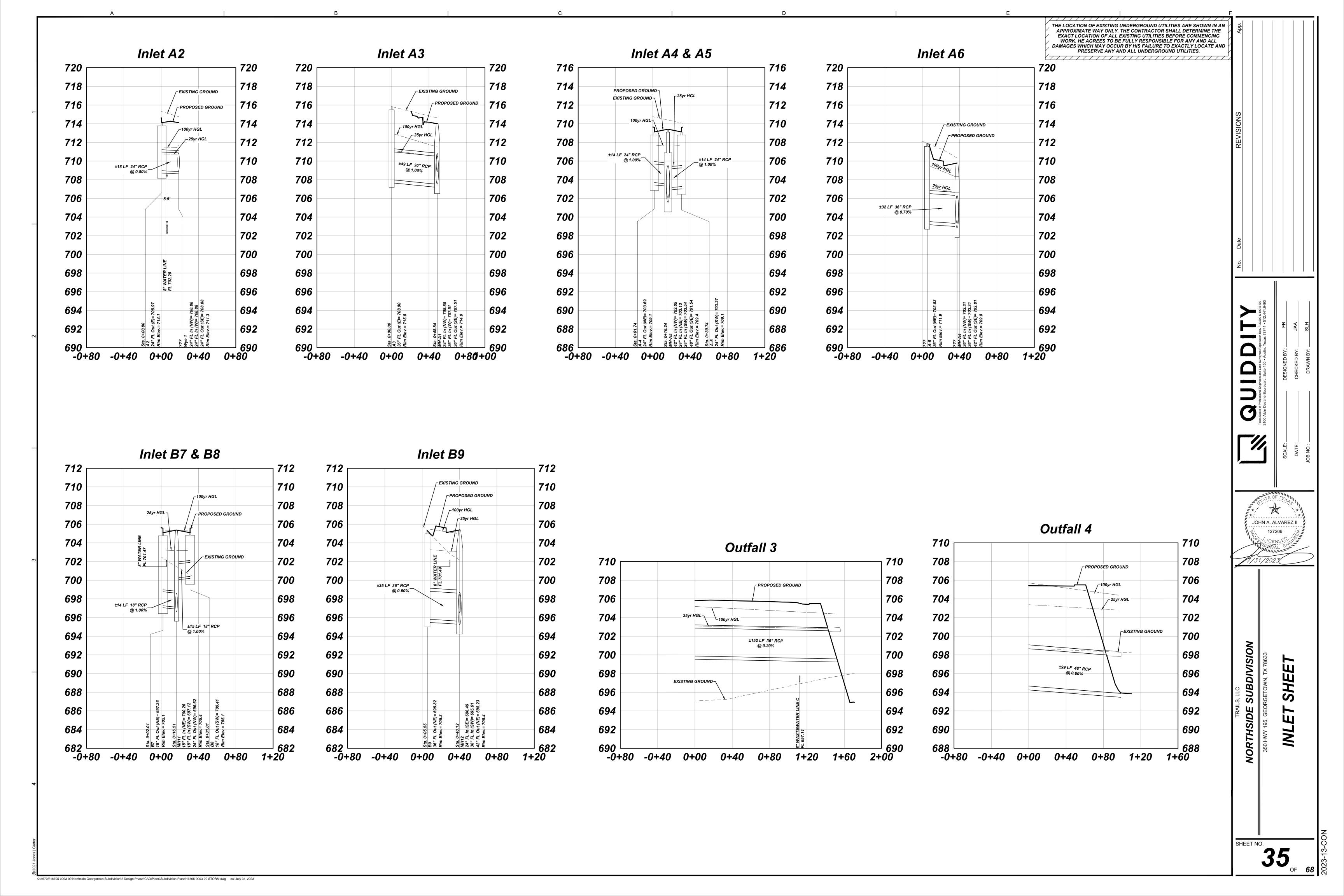
——— — W —— — — WATERLINE W/ GATE VALVE ──── ── WASTEWATER W/ MANHOLE STORM SEWER W/ MANHOLE **—————** GROUND CONTOUR

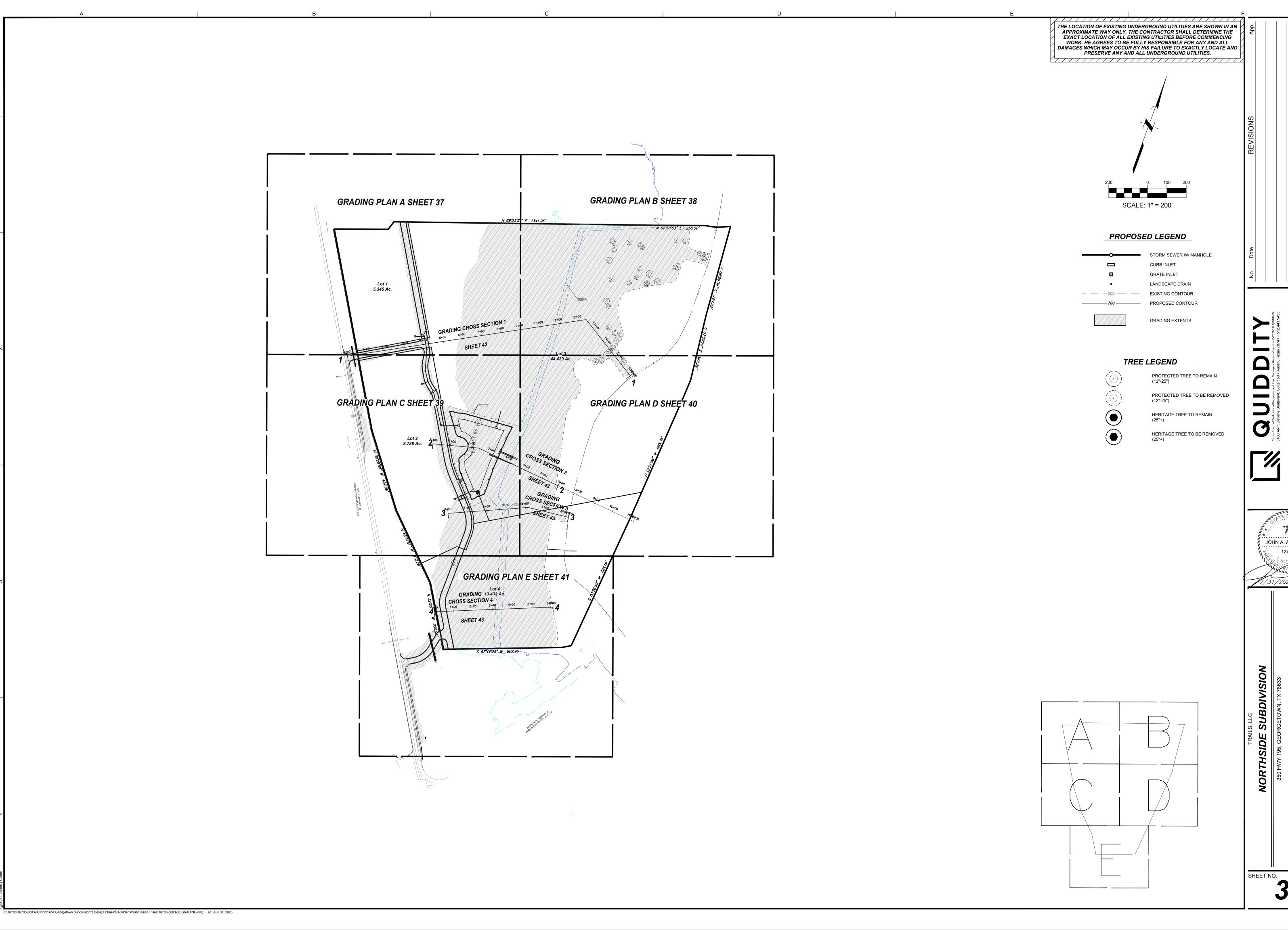
CURB INLET GRATE INLET LANDSCAPE DRAIN

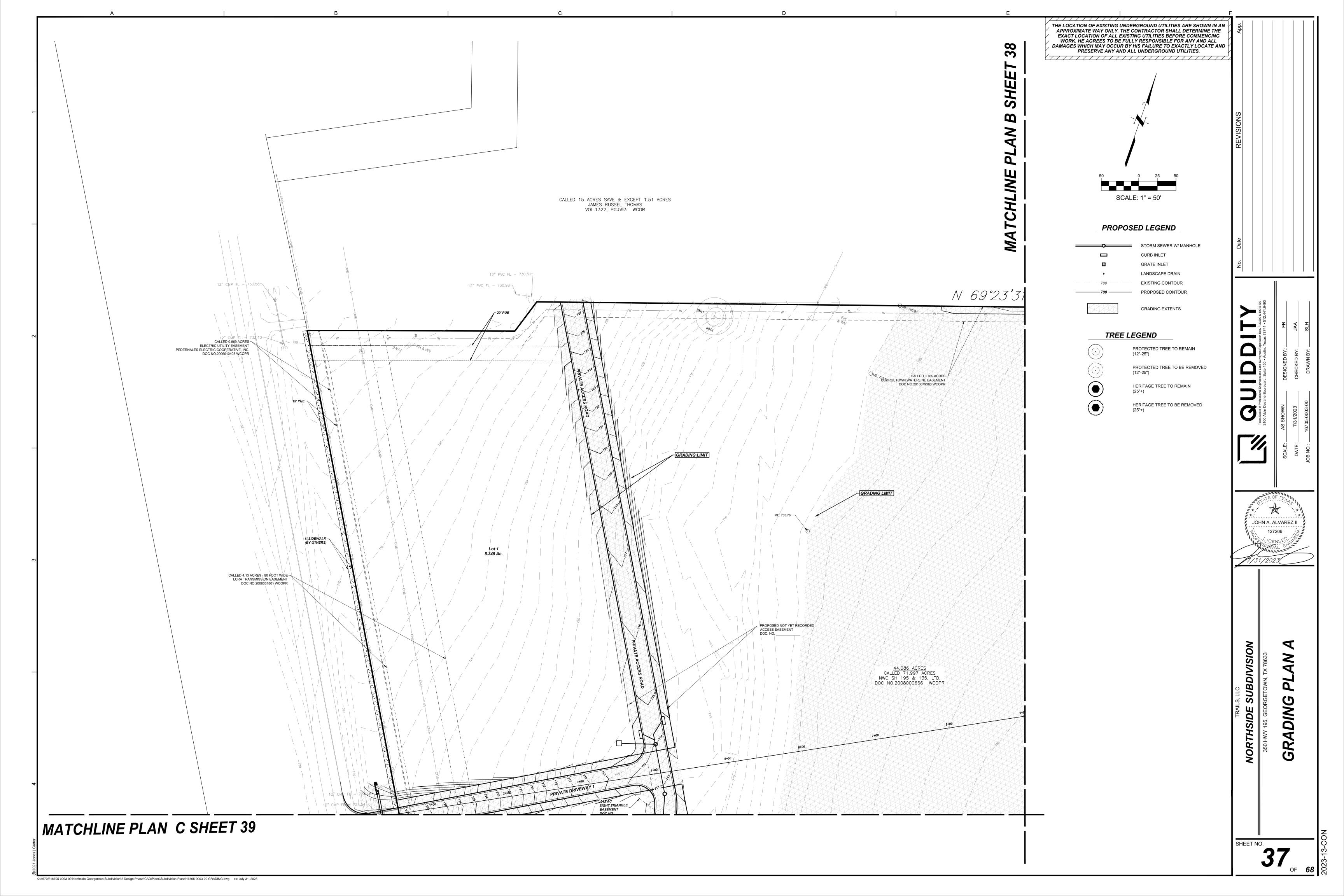
JOHN A. ALVAREZ II

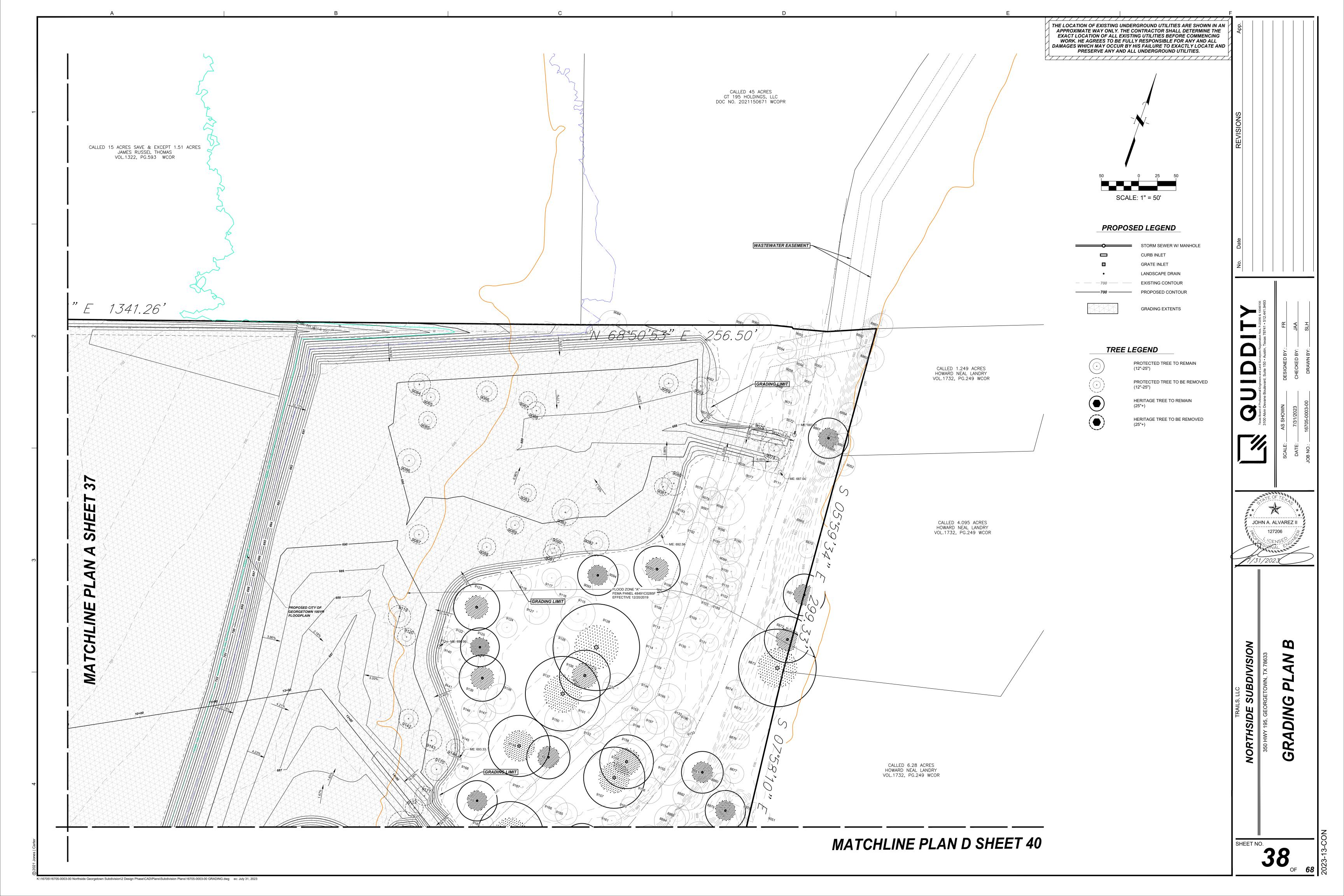
NORTHSIDE SUBDIVISION
350 HWY 195, GEORGETOWN, TX 78633

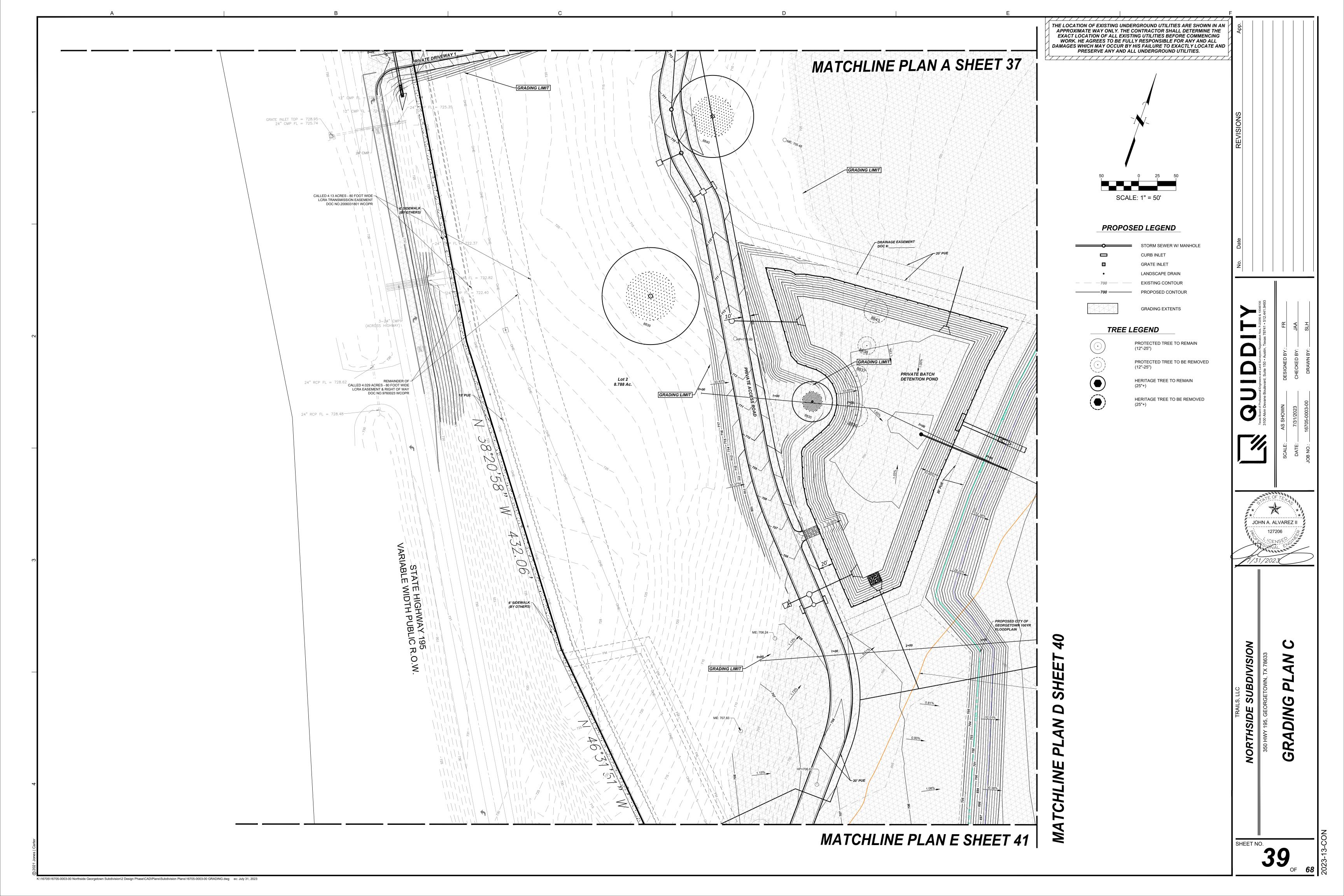


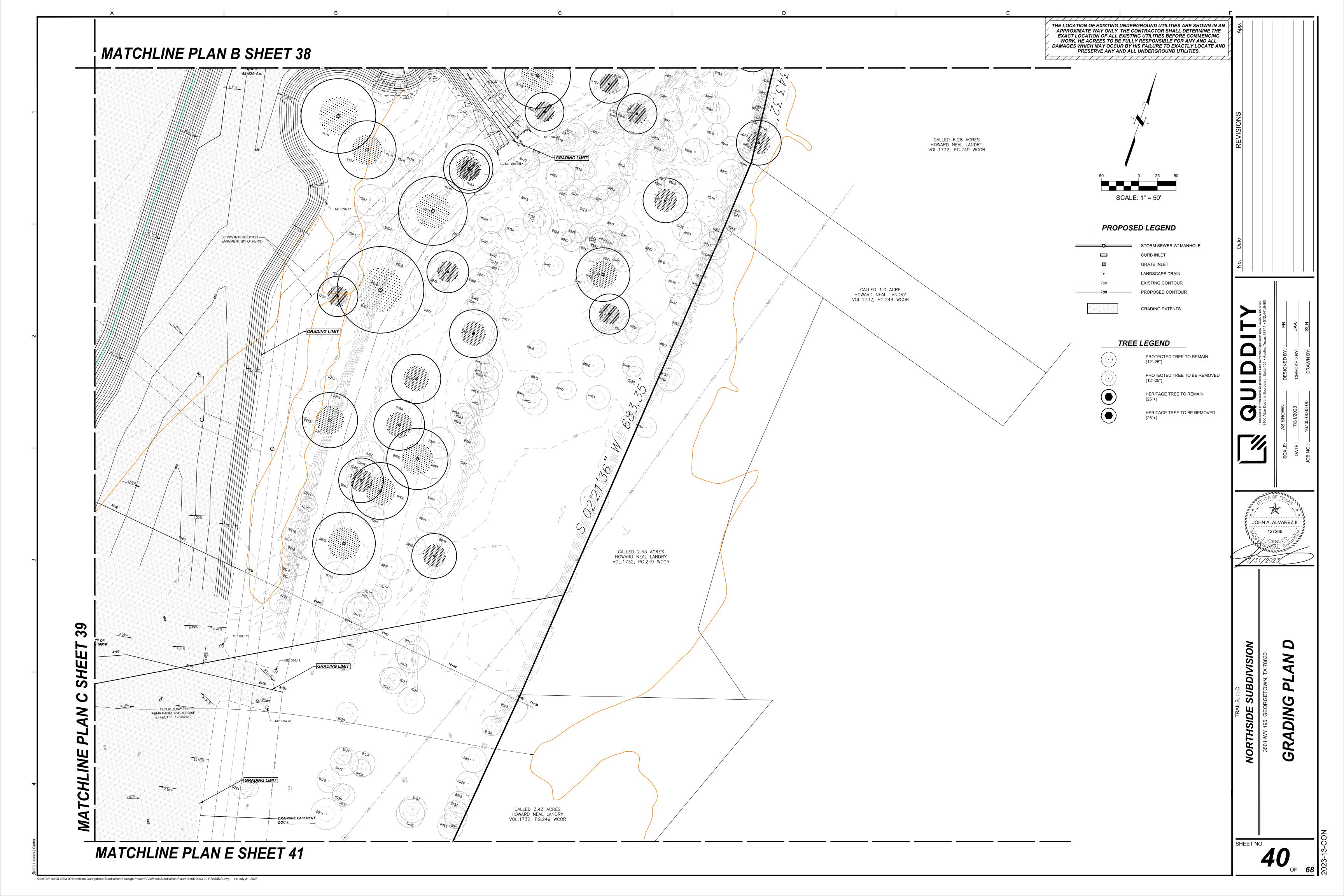


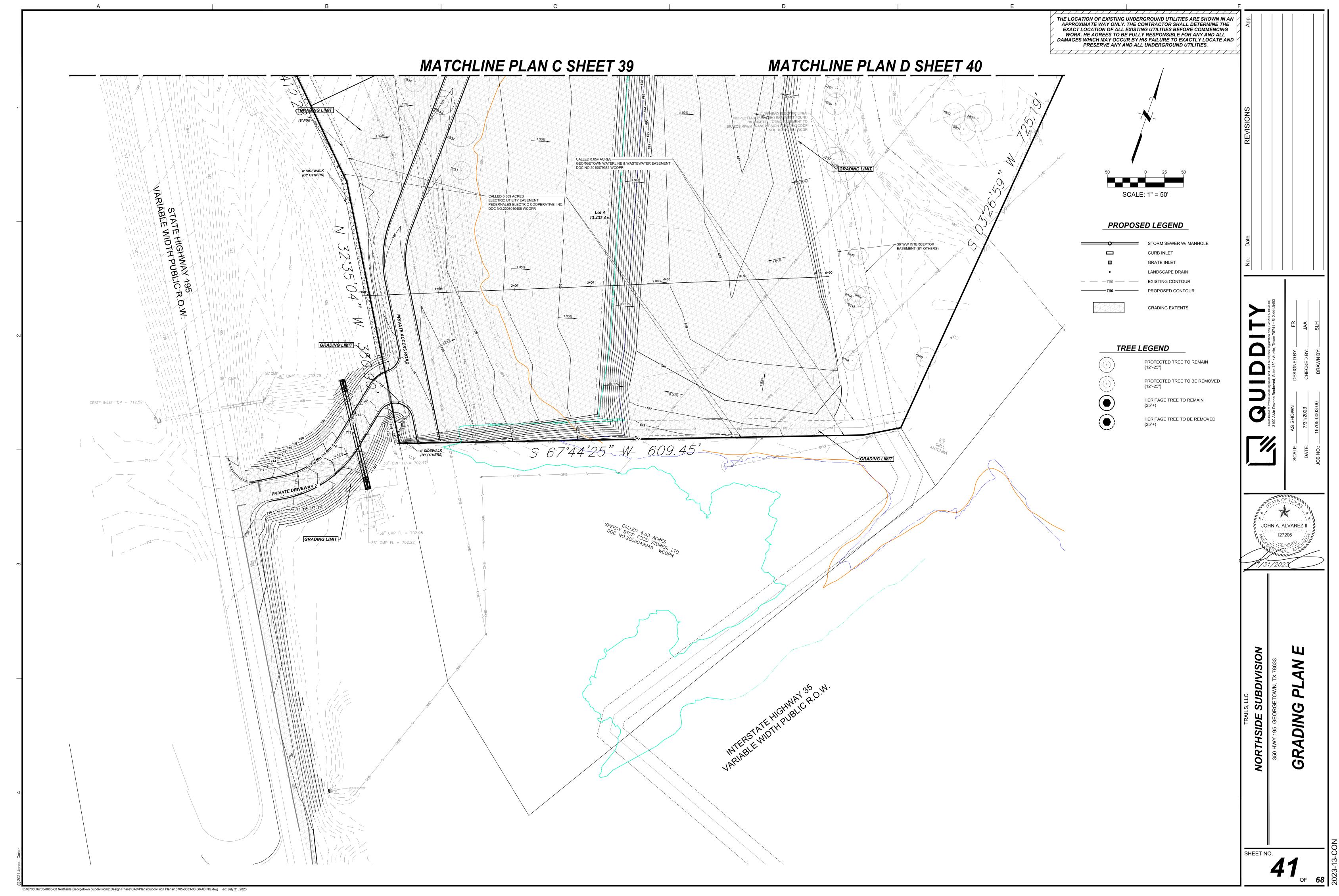


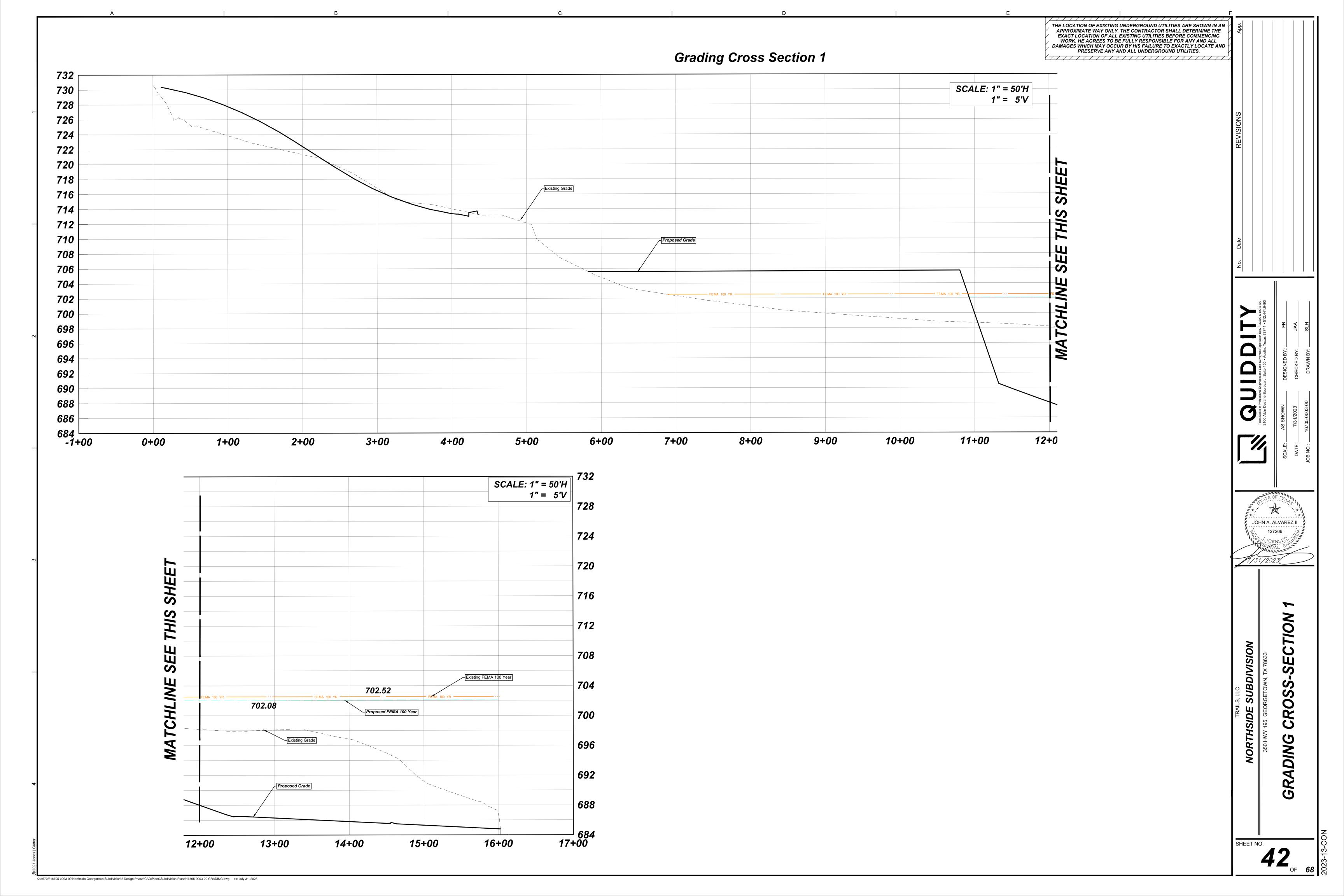


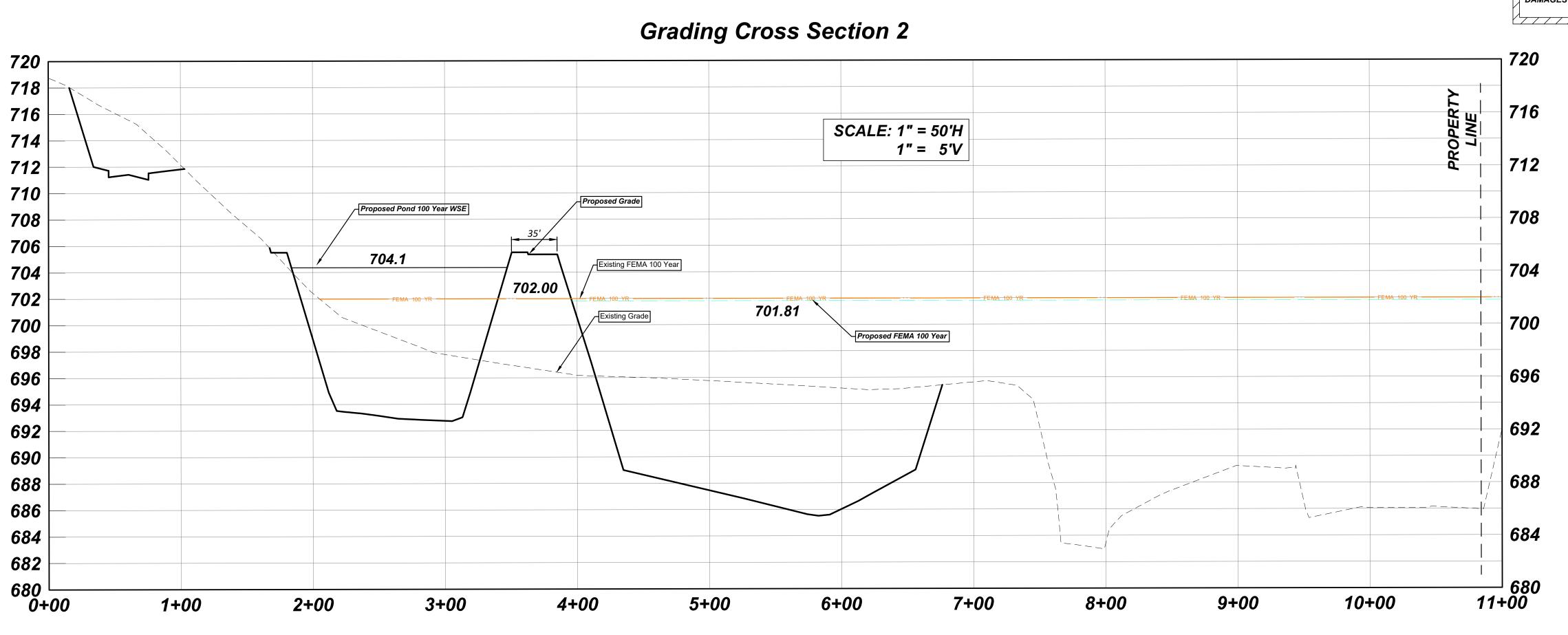


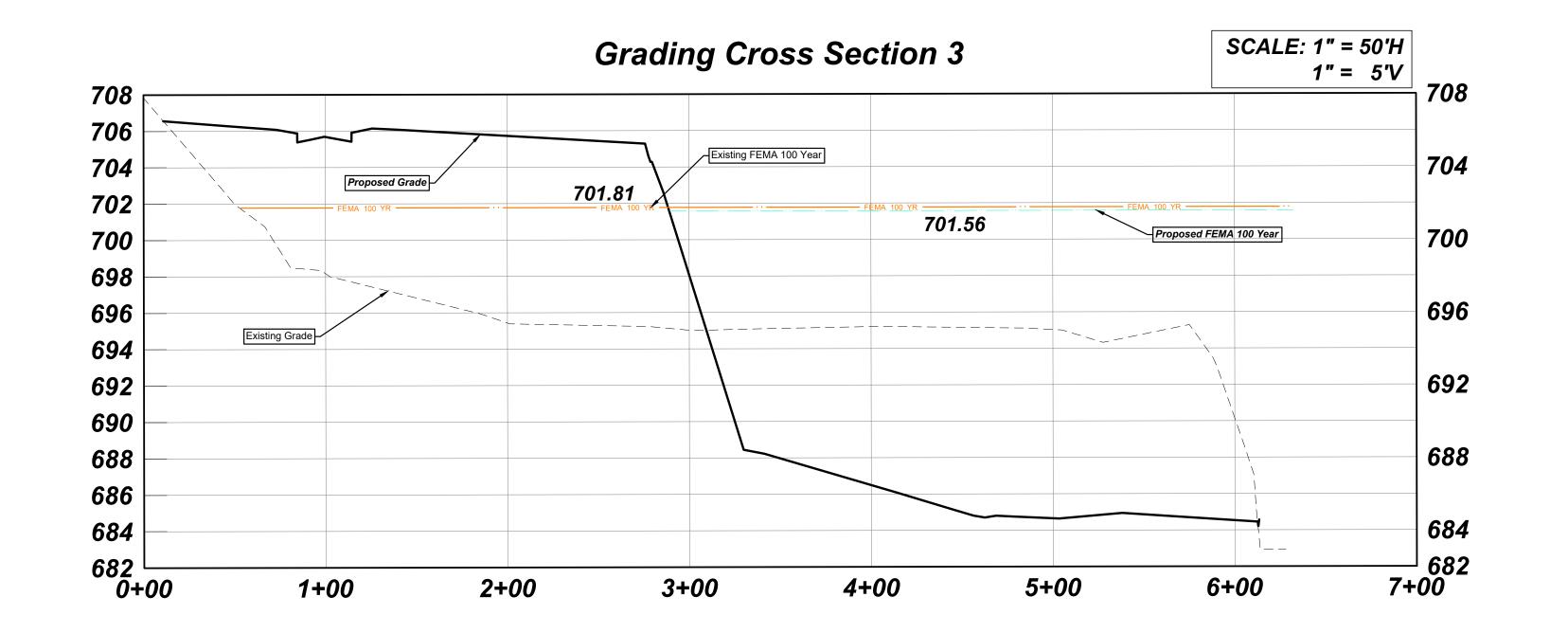










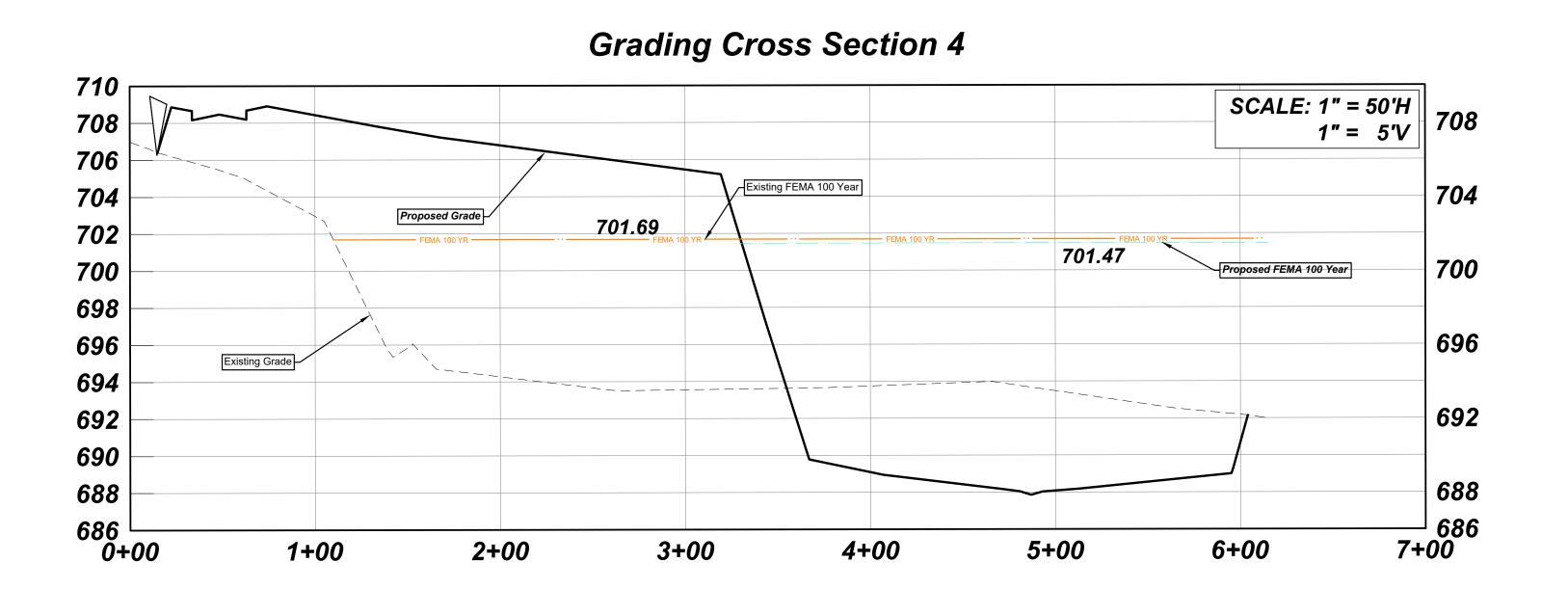


THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND

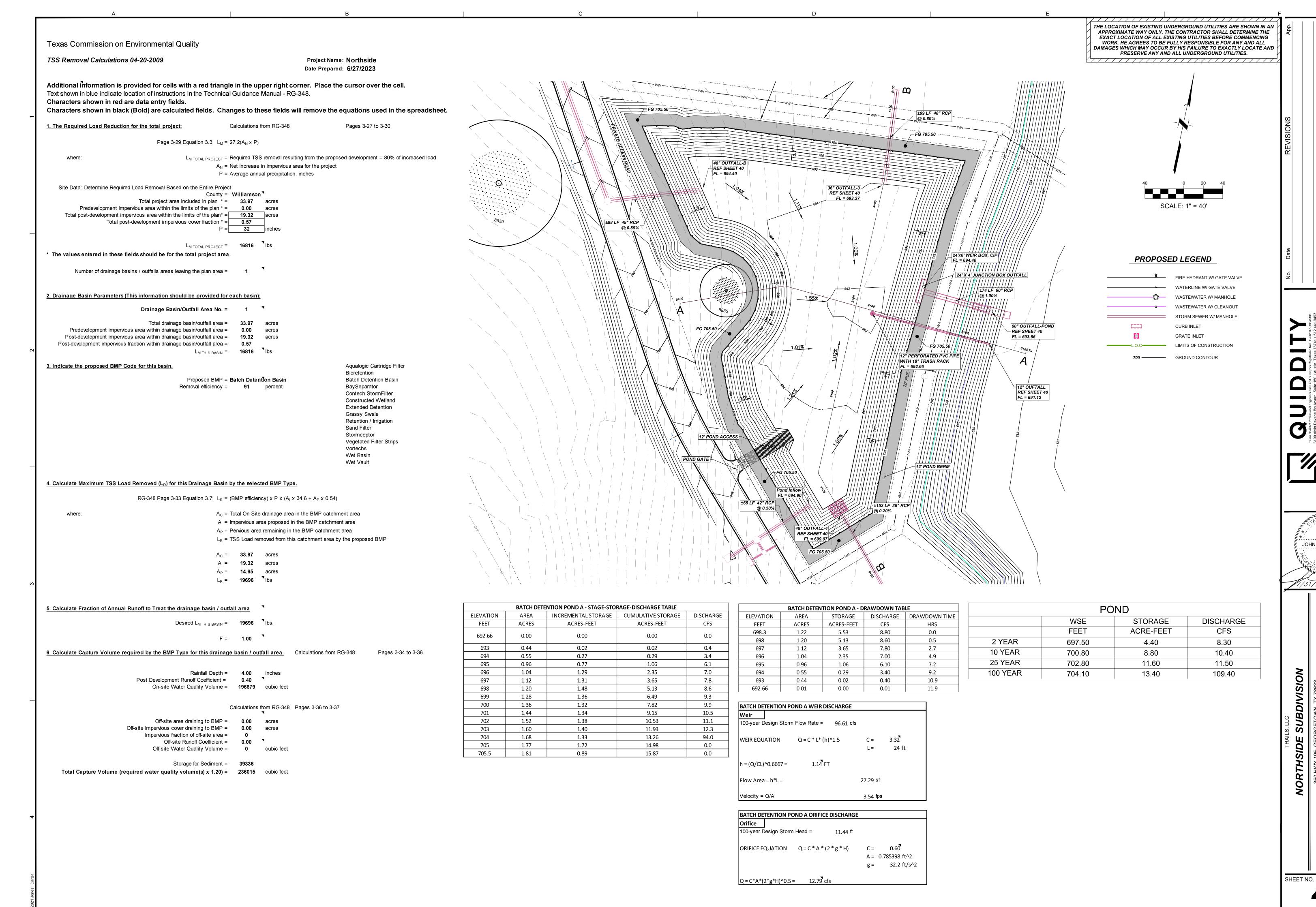
NORTHSIDE SUBDIVISION

SHEET NO.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.



NORTHSIDE SUBDIVISION
350 HWY 195, GEORGETOWN, TX 78633

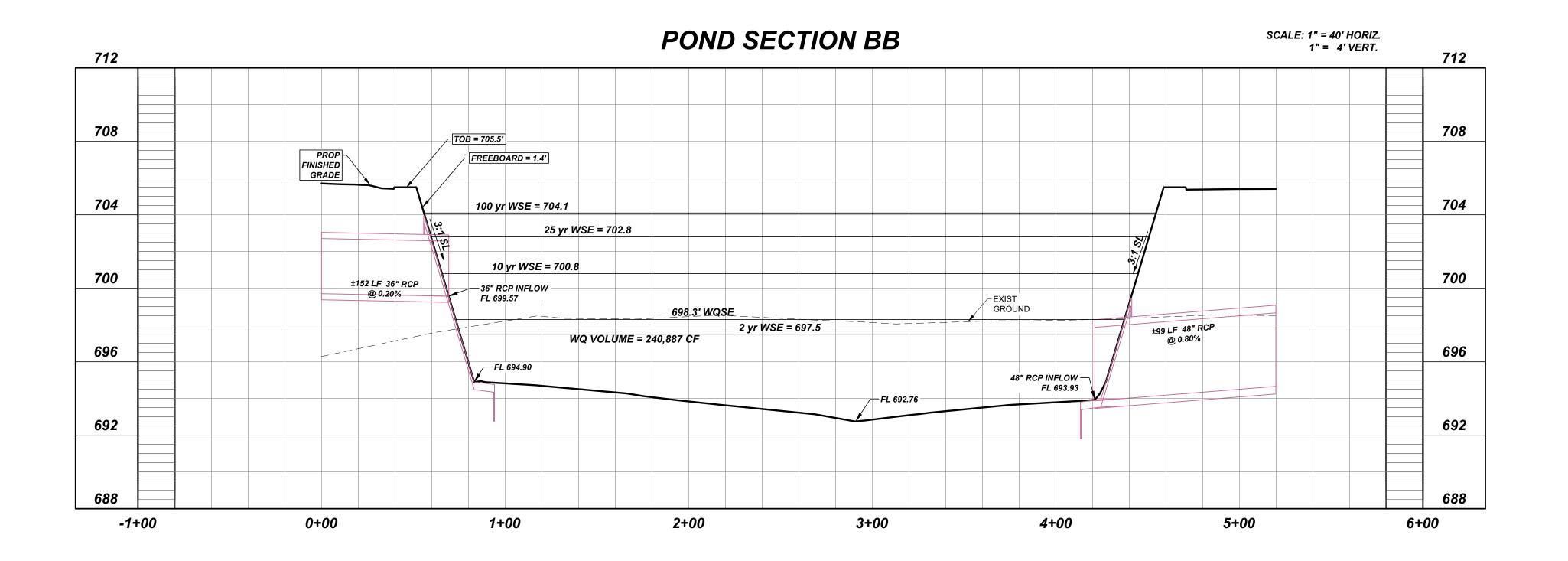


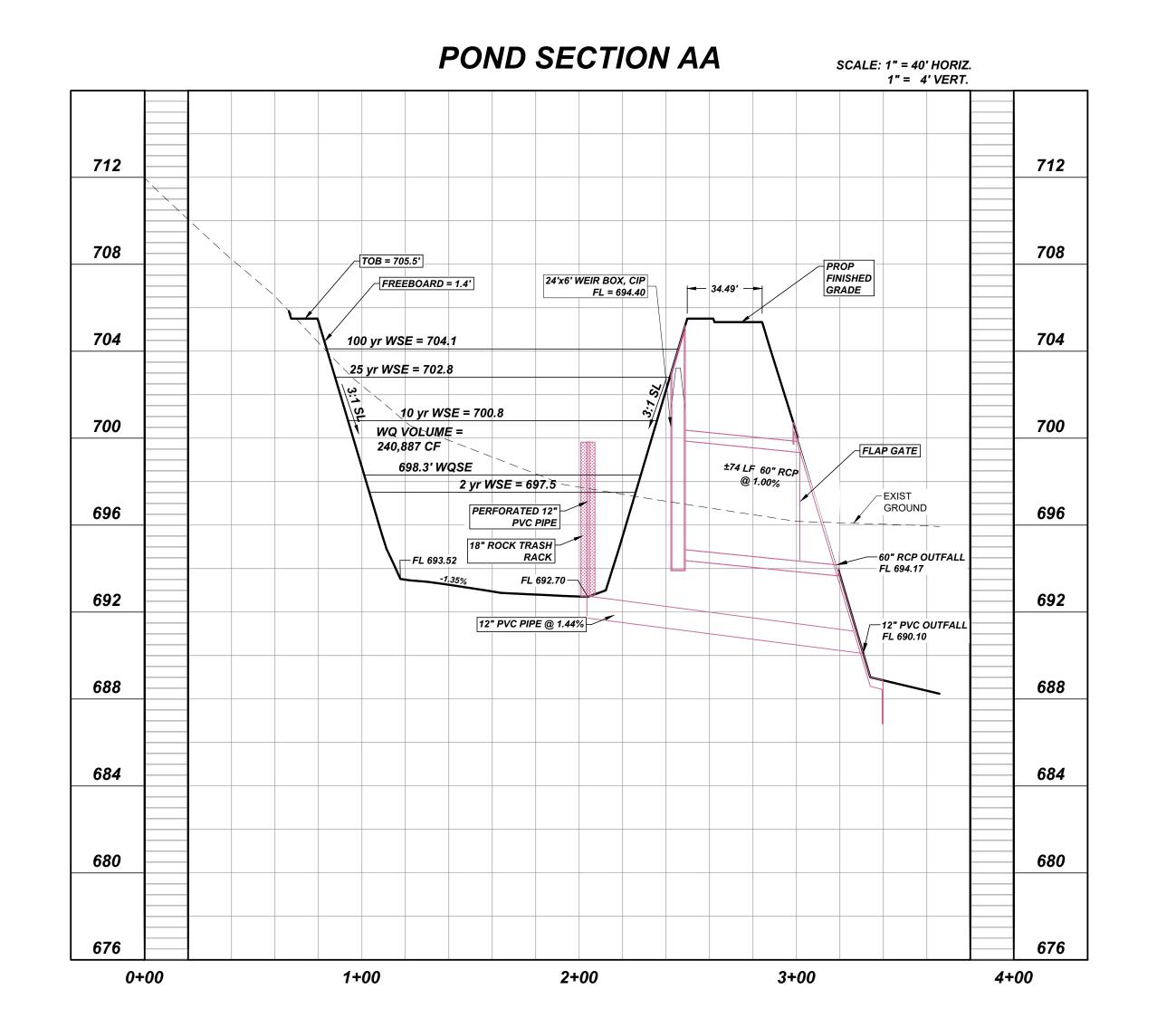
K:\16705\16705-0003-00 Northside Georgetown Subdivision\2 Design Phase\CAD\Plans\Subdivision Plans\16705-0003-00 SUBD POND.dwg ec: July 31, 2023

JOHN A. ALVAREZ II

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.



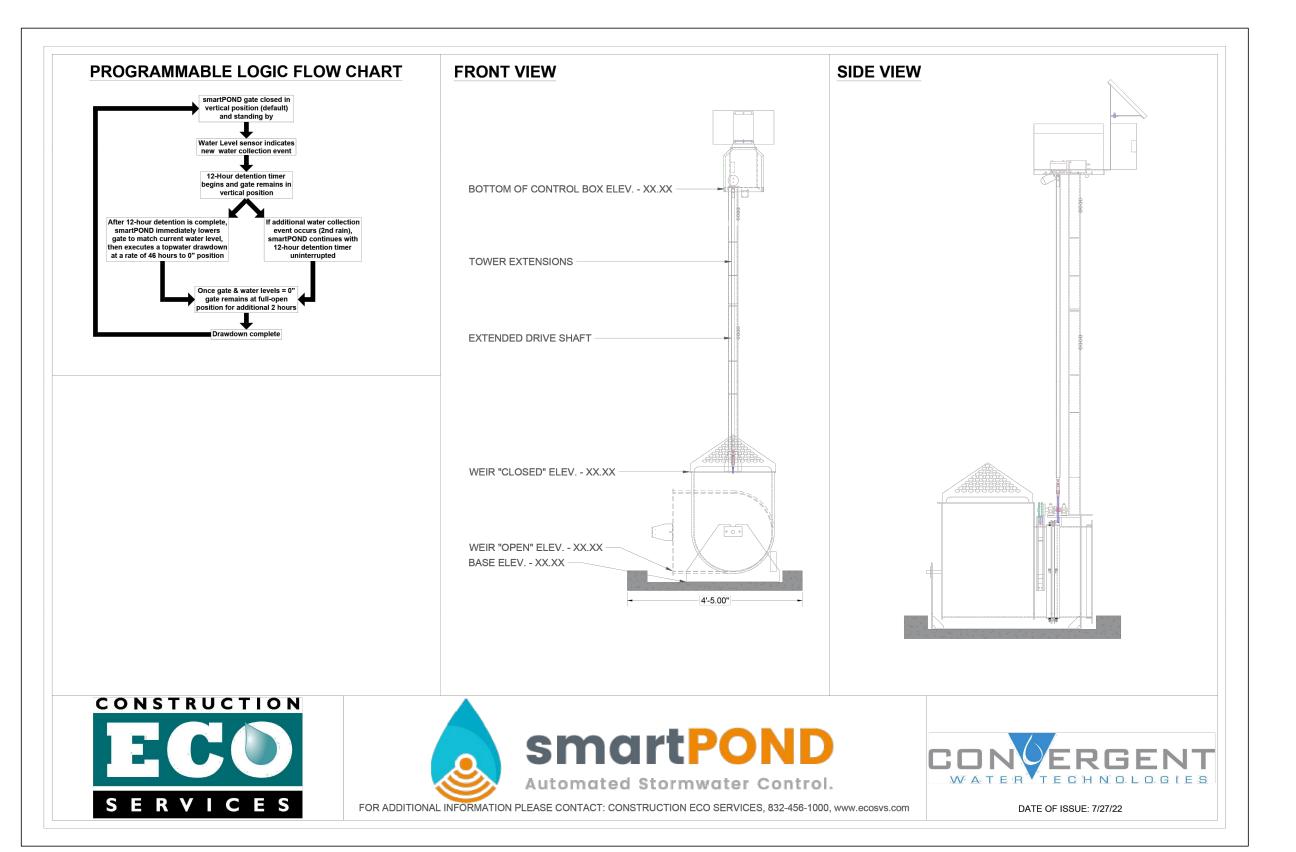




JOHN A. ALVAREZ II

NORTHSIDE SUBDIVISION
350 HWY 195, GEORGETOWN, TX 78633 POND

SHEET NO.



BLOCK DIAGRAM

LOCKABLE ELECTRONIC BOX

CONTROLLER

ADDITIONAL

INSTRUMENTATION

DC MOTOR

VALVE POSITION SENSOR

SOLAR PANEL

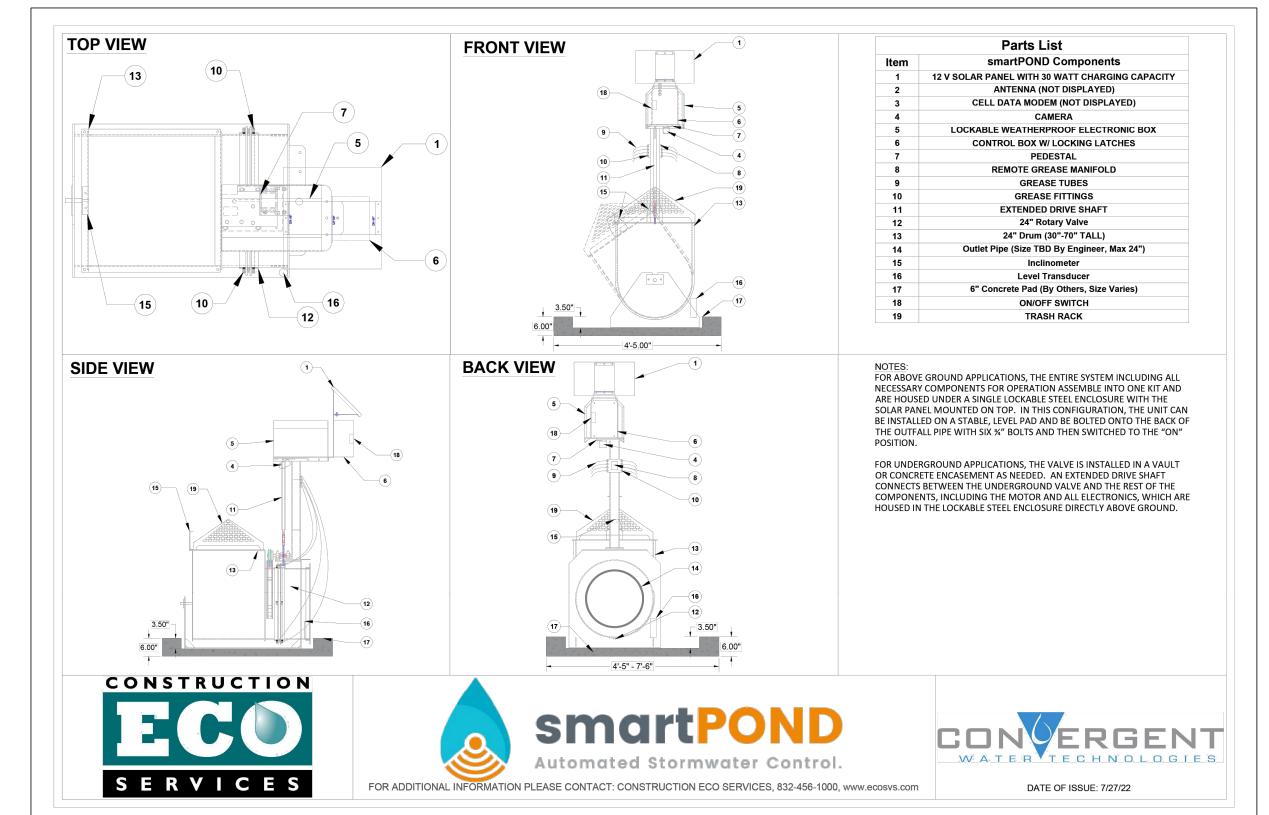
SOLAR CHARGE CONTROLLER

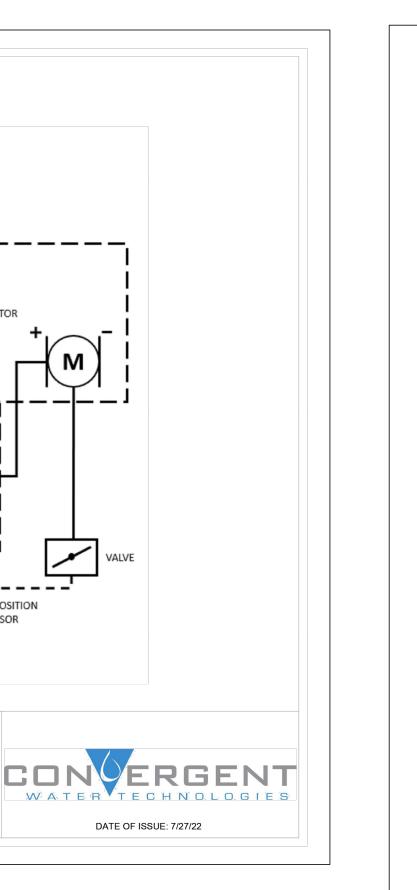
BATTERY

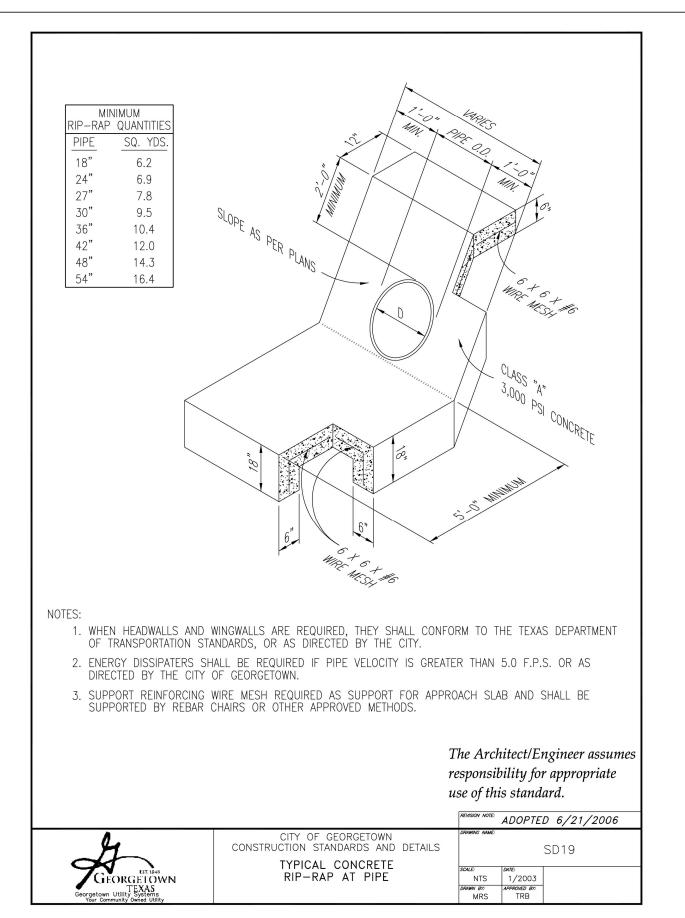
LEVEL SENSOR

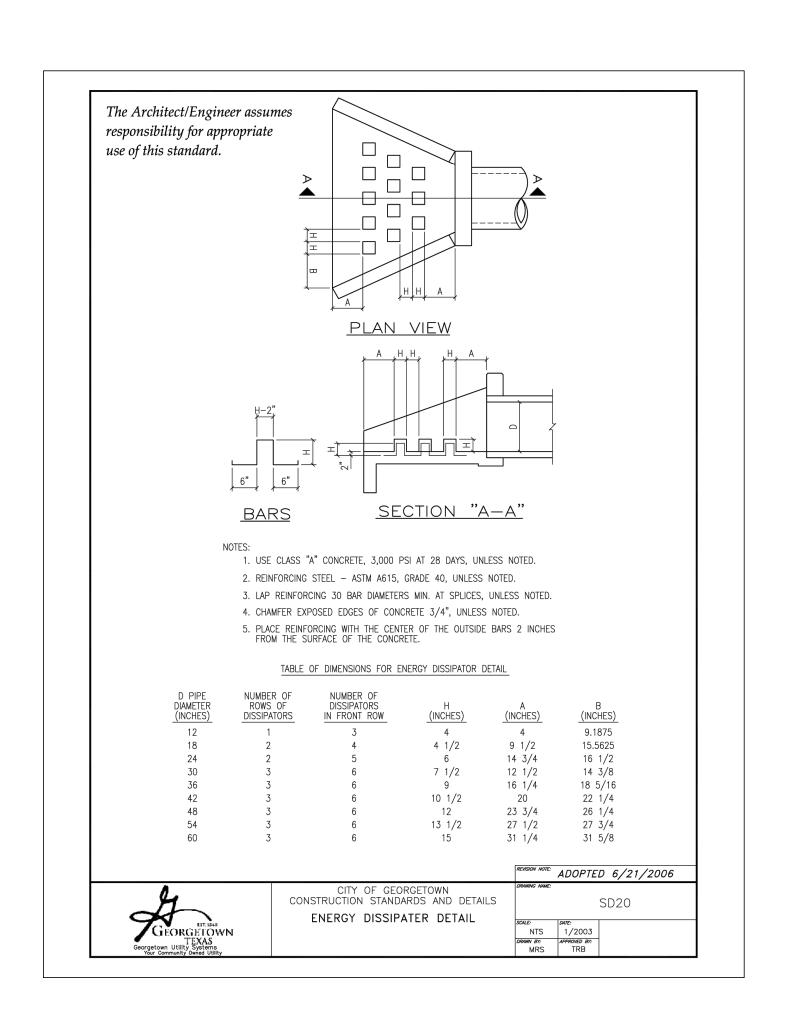
Automated Stormwater Control.

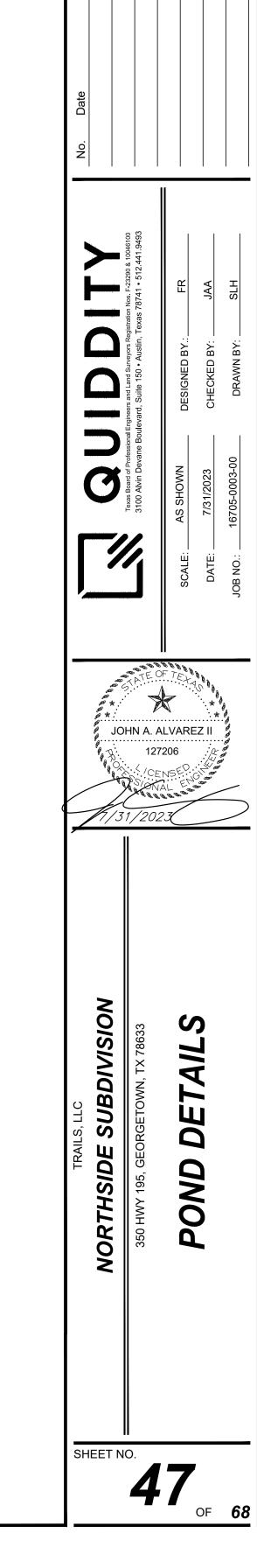
FOR ADDITIONAL INFORMATION PLEASE CONTACT: CONSTRUCTION ECO SERVICES, 832-456-1000, www.ecosvs.com











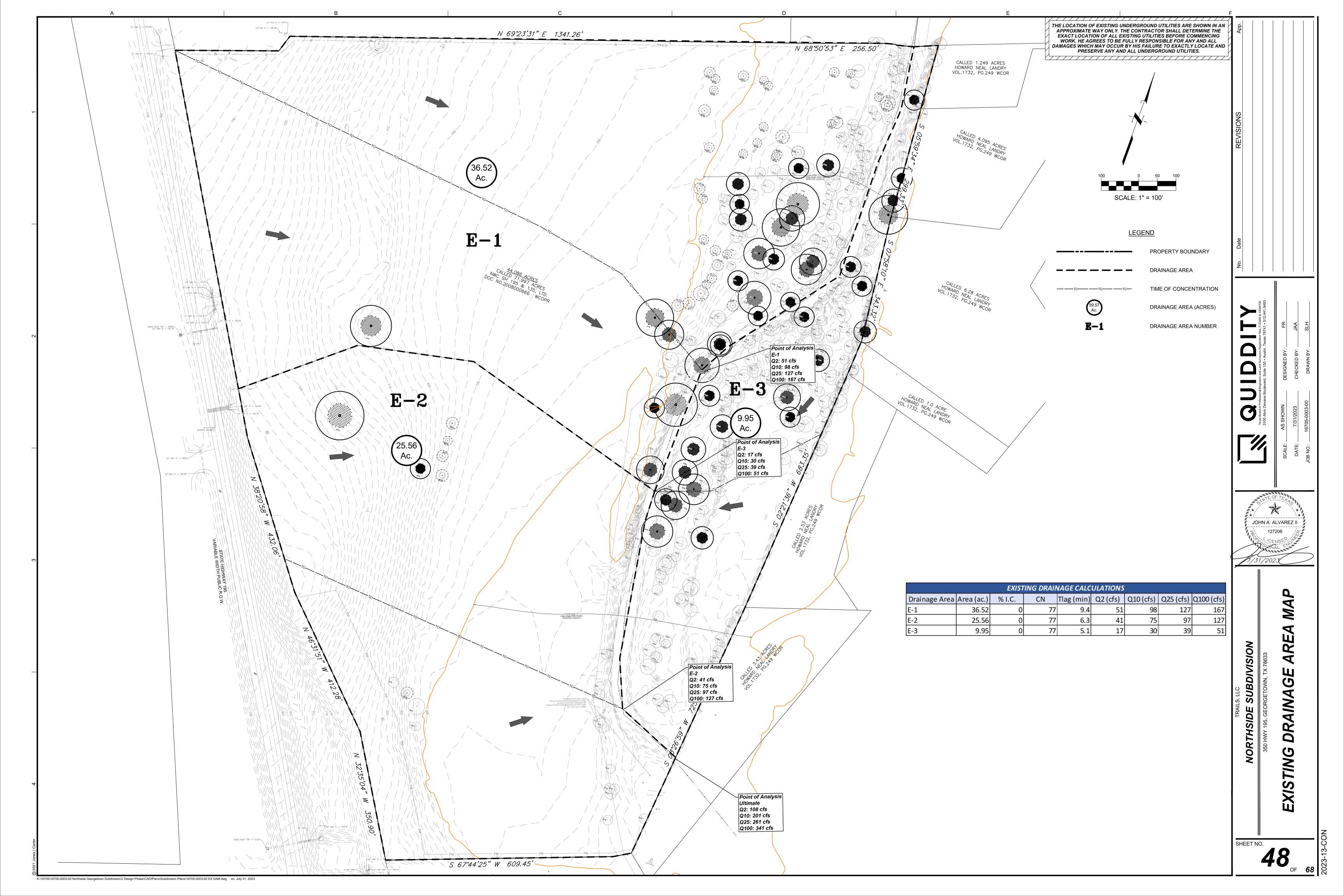
THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE **EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING** WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND

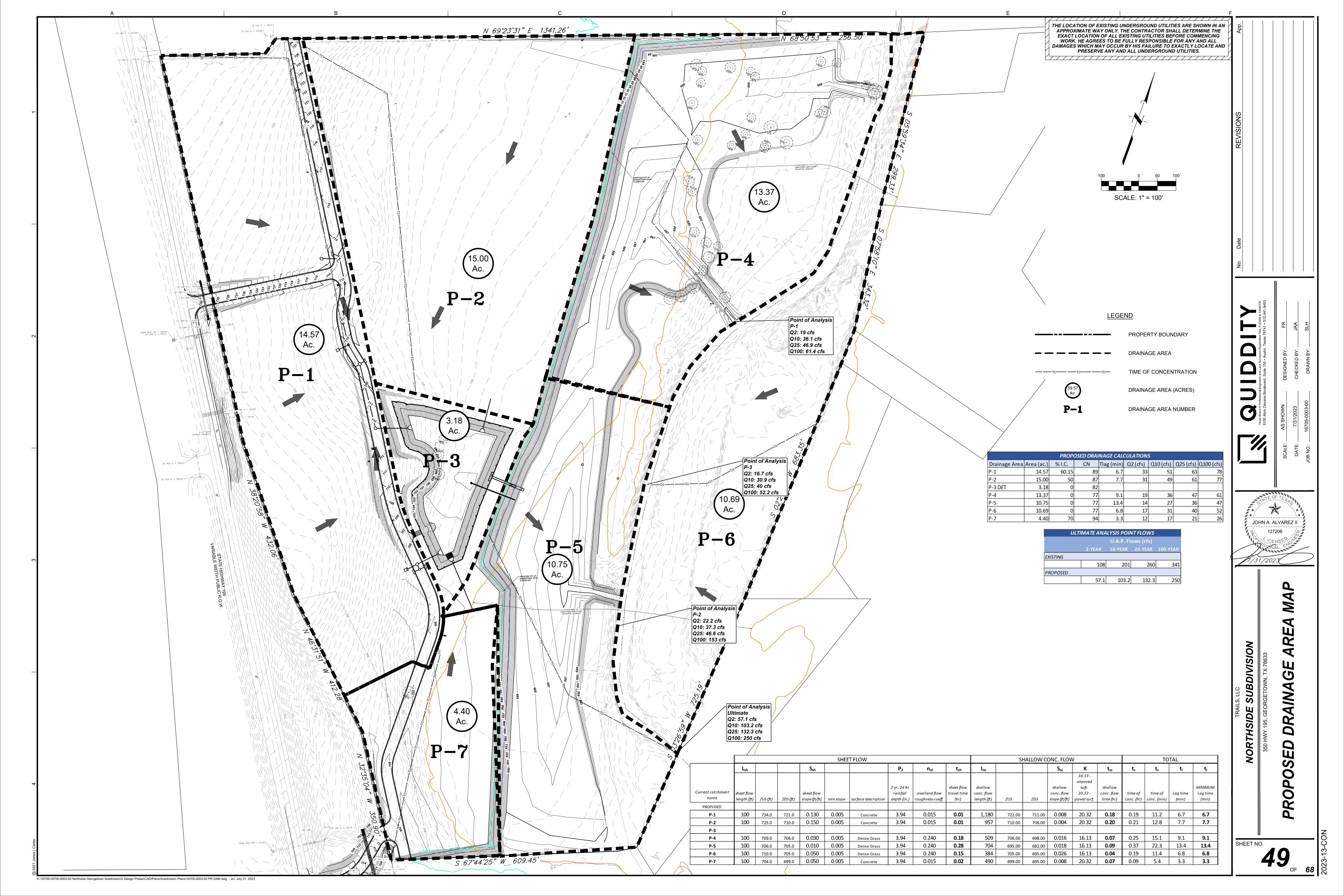
PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

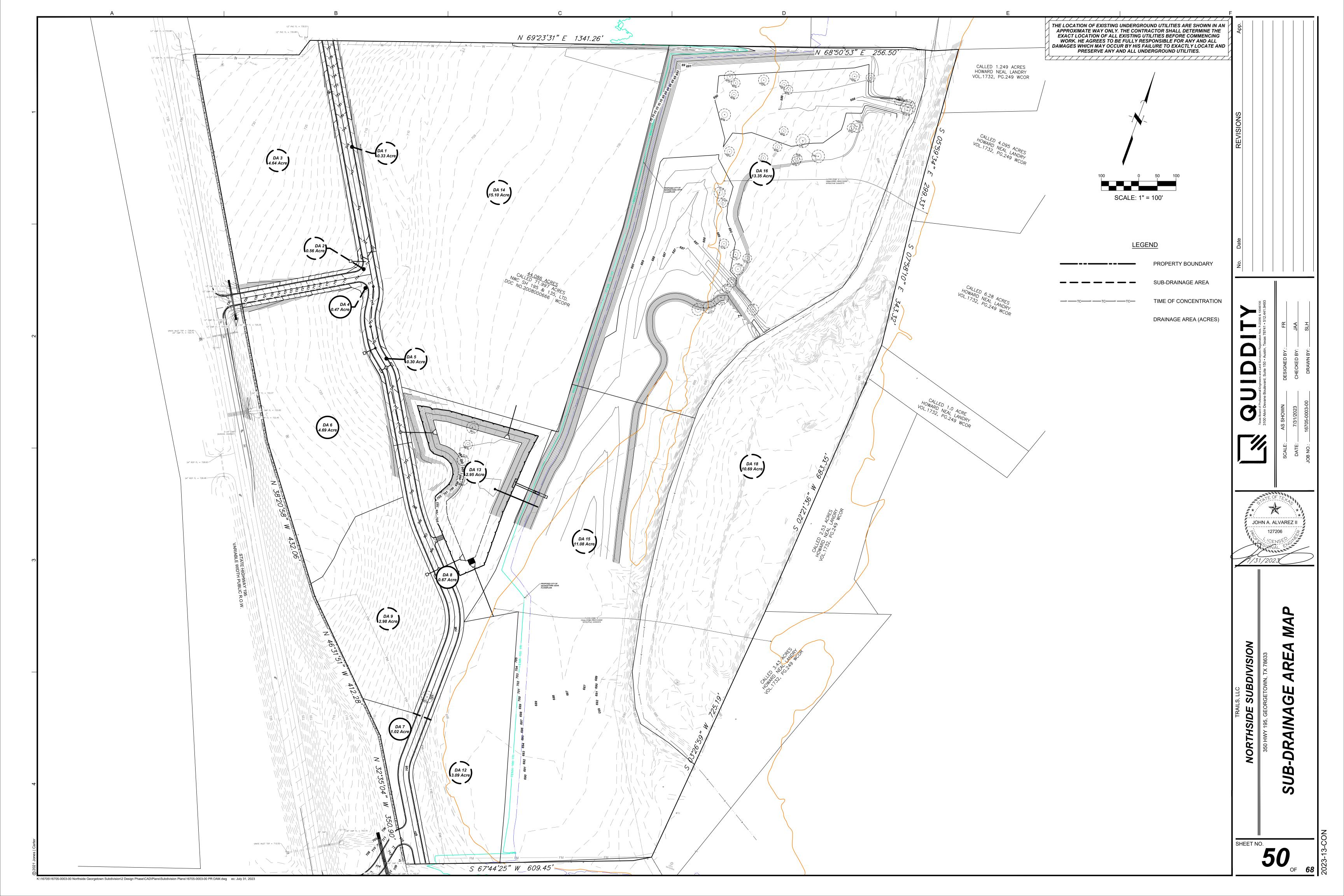
K:\16705\16705-0003-00 Northside Georgetown Subdivision\2 Design Phase\CAD\Plans\Subdivision Plans\16705-0003-00 SUBD POND.dwg ec: July 31, 2023

PROGRAMMABLE LOGIC FLOW CHART

CONSTRUCTION







THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

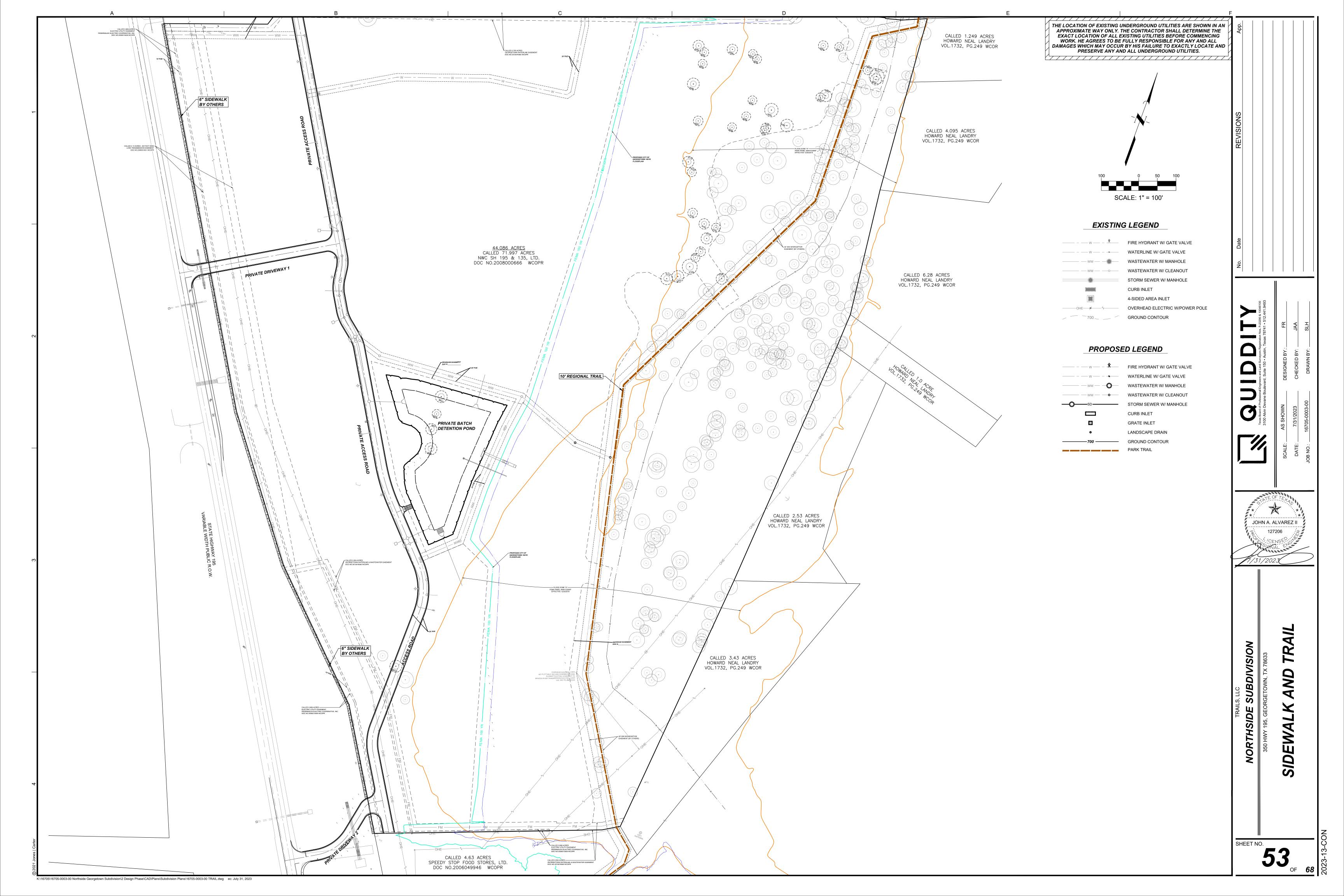
STORM SEWER 25 yr

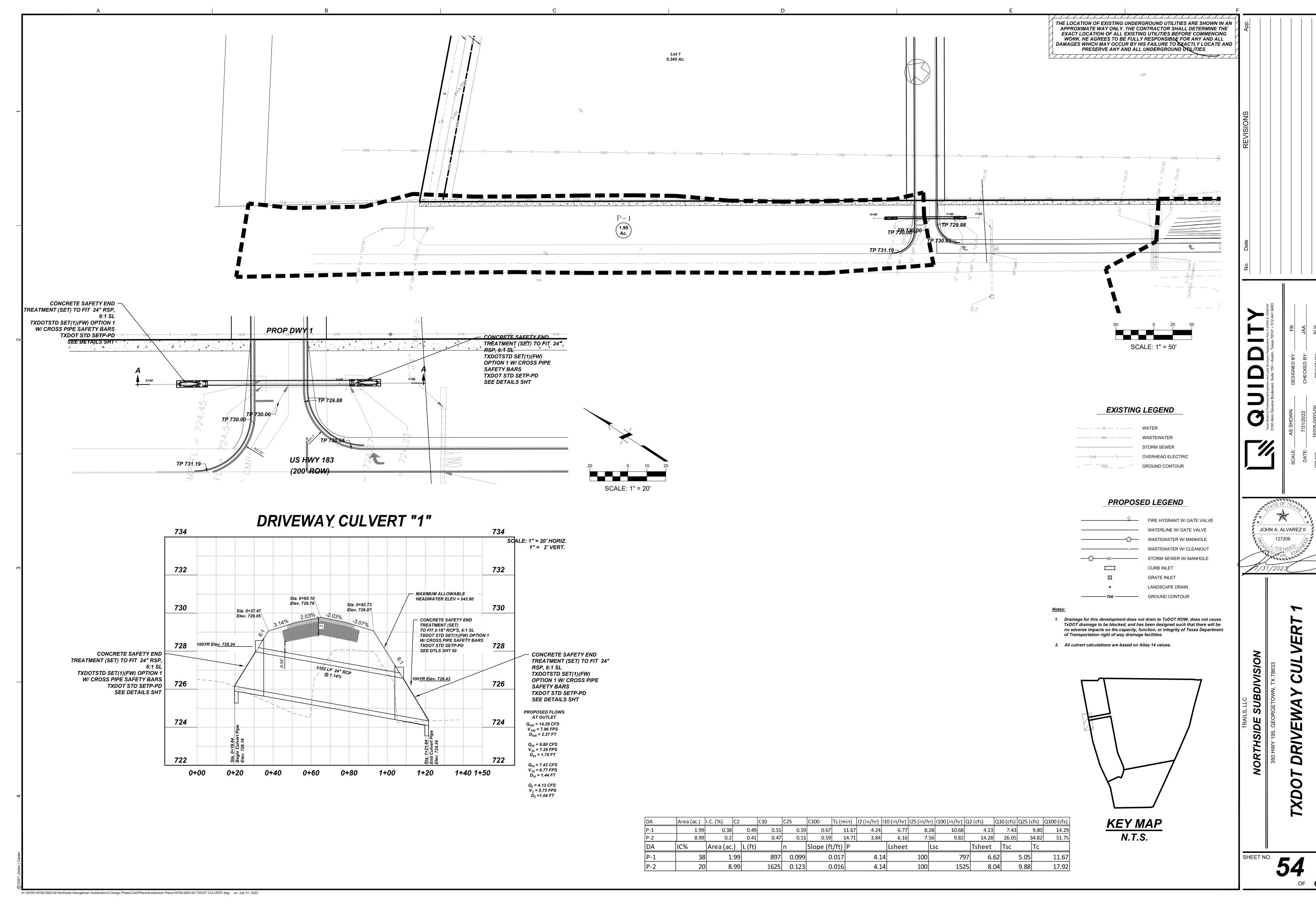
2	25-yr Intens	sity = a/(t+b	o)^c																												
	a ₂₅ =			111.07																											
	b ₂₅ =			17.23								Γ																			
	c ₂₅ =			0.7815													Trunk	Line Design						"*" Indicates	an inlet latei	al connection	with unio	que formul	a for junct	ion loss.	
			Т	1		1	Т		Г											<u> </u>	T 1				Т	1		T	Г	1	
		1		l											_									Junction/	Hydraulic						Top of
	Inlet /	Inlet /		Total	Time	Time		Total Area	a 	Intensity				Pipe Diam.	Вох	Area	Perimeter		Full Flow	Full Flow	Actual	Hydraulic		MH	Grade	Dwnstm	Vert	Upstrm	Rise in	Pipe	MH/Inle
nage	MH	MH	Area	Area	Conc.	Conc. + Pipe	Runoff	x "C"	C	" "	Q_{25}	Mannings	Length	or Box Rise	Span			Grade	Velocity	Capacity	Velocity	Gradient	K	Loss	Elevation	Flowline	Adj	Flowline	Pipe	Crown	Elevation
rea	From	То	(acres)	(acres)	(min)	(min)	"C"		(Weighted)	(in/hr)	(cfs)	"n"	(ft.)	(in.)	(in.)			(ft./ft.)	(fps)	(cfs)	(out)	(ft/ft)	(Constant)	(feet)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
									 																						
1	A1	Bend 1	0.33	0.33	5.00	5.07	0.76	0.25	0.76	9.84	2.47	0.013	21.4	24		3.142	6.283185307	0.0050	5.09	16.00	0.79	0.0001	0.25	0.0024	711.03	708.92	0	709.03	0.11	711.03	714.33
	Bend 1	Wye 1	0.00	0.33	5.07	5.09	0.00	0.25	0.76	9.82	2.47	0.013	7.6	24		3.142	6.283185307	0.0050	5.09	16.00	0.79	0.0001	0.25	0.0024	710.92	708.88	0	708.92	0.04	710.92	714.04
2	A2	Wye 1	0.56	0.56	5.00	5.06	0.76	0.43	0.76	9.84	4.21	0.013	17.9	24		3.142	6.283185307	0.0050	5.09	16.00	1.34	0.0003	0.25	0.0070	710.97	708.88	0	708.97	0.09	710.97	714.04
	Wye 1	MH1	0.00	0.89	5.09	5.11	0.00	0.68	0.76	9.81	6.66	0.013	6.0	24		3.142	6.283185307	0.0050	5.09	16.00	2.12	0.0009	0.25	0.0175	710.88	708.85	0.85	708.88	0.03	710.88	713.96
3	А3	MH1	4.64	4.64	5.00	5.09	0.82	3.79	0.82	9.84	37.28	0.013	48.9	36		7.069	9.424777961	0.0100	9.44	66.69	5.27	0.0031	1	0.4320	711.10	707.51	0	708.00	0.49	711.00	713.96
	MH1	MH2	0.00	5.53	5.11	5.21	0.00	4.47	0.81	9.80	43.79	0.013	67.5	36		7.069	9.424777961	0.0150	11.56	81.68	6.20	0.0043	0.25	0.1490	710.51	706.50	0.65	707.51	1.01	710.51	714.02
	MH2	MH3	0.00	5.53	5.21	5.38	0.00	4.47	0.81	9.77	43.64	0.013	106.9	36		7.069	9.424777961	0.0124	10.51	74.27	6.17	0.0043	0.25	0.1480	708.85	704.53	0	705.85	0.00	708.85	713.64
	MH3	MH4	0.00	5.53	5.38	5.45	0.00	4.47	0.81	9.71	43.39	0.013	59.8	36		7.069	9.424777961	0.0230	14.31	101.15	6.14	0.0042	0.25	0.1463	707.53	703.15	0.5	704.53	1.37	707.53	711.72
6	A6	MH4	4.69	4.69	5.00	5.07	0.77	3.61	0.77	9.84	35.50	0.013	32.0	36		7.069	9.424777961	0.0070	7.89	55.80	5.02	0.0028	1	0.3916	707.13	703.15	0.5	703.38	0.00	706.38	711.91
	MH4	MH5	0.00	10.22	5.45	5.54	0.00	8.08	0.79	9.69	78.23		59.6	42			10.99557429	0.0128	11.83	113.82	8.13	0.0060	0.25	0.2567	706.65	701.89	0.34	702.65	0.00	706.65	709.75
4	A4	MH5	0.47	0.47	5.00	5.03	0.76	0.36	0.76	9.84	3.53	0.013	14.5	24			6.283185307	0.0100	7.20	22.62	1.12	0.0002	1	0.0196	705.57	702.97	1.42	703.11	0.15	705.11	709.37
5	A5	MH5	0.30	0.30	5.00	5.03	0.76	0.23	0.76	9.84	2.25	0.013	14.5	24			6.283185307	0.0100	7.20	22.62	0.72	0.0001	1	0.0080	705.56	703.39	1.84	703.53	0.15	705.53	709.37
	MH5	MH6	0.00	10.99	5.54	5.94	0.00	8.66	0.79	9.66	83.68	0.013	177.1	48			12.56637061	0.0041	7.32	91.97	6.66	0.0034	0.25	0.1721	705.55	700.82	5.05	701.55	0.73	705.55	709.66
	MH6	Outfall 1	0.00	10.99	5.94	6.07	0.00	8.66	0.79	9.53	82.54	0.013	87.3	48		12.57	12.56637061	0.0100	11.43	143.63	6.57	0.0033	0.55	0.3684	703.45	694.90	0	695.77	0.00	699.77	711.63
_																															
7	A7	MH11	1.02	1.02	5.00	5.03	0.76	0.78	0.76	9.84	7.65		14.5	24			6.283185307	0.0100	7.20	22.62	2.43		0.25	0.0230	703.22	697.26	0.51	699.26	0.00	0.00	705.36
8	A8	MH11	0.67	0.67	5.00	5.03	0.76	0.51	0.76	9.84	5.02		14.5	24			6.283185307	0.0100	7.20	22.62	1.60		0.01	0.0004	703.19	700.40	3.65	702.40	0.00	0.00	705.12
	MH11	MH12	0.00	1.69	5.03	5.07	0.00	1.29	0.76	9.83	12.66	0.013	15.1	24		+	6.283185307	0.0080	6.44	20.23	4.03		0.25	0.0630	703.18	696.61	1.26	698.61	0.00	0.00	705.36
9	A9	MH12	2.98	2.98	5.00	5.09	0.77	2.29	0.77	9.84	22.50	0.013	34.6	30			7.853981634	0.0060	6.47	31.77	4.58	0.0030	0.25	0.0815	703.26	695.82	0.39	698.32	0.00	0.00	706.77
	MH12	Outfall 2	0.00	4.67	5.09	5.25	0.00	3.57	0.77	9.81	35.06	0.013	65.0	36		/.069	9.424777961	0.0050	6.67	47.16	4.96	0.0027	0.25	0.0955	703.07	695.23	0	698.23	0.00	0.00	705.39
12	A12	Outfall 3	3.09	3.09	8.22	8.84	0.97	3.00	0.97	8.85	26.53	0.013	156.2	36		7.069	9.424777961	0.0020	4.22	29.83	3.75	0.0016	0.25	0.0547	703.10	699.88	0	702.88	0.00	0.00	705.82
14	A14	Outfall 4		15.10	5.00	5.14	0.81	12.29	0.81	9.84	120.94		82.8	48		+	12.56637061	0.0080	10.22	128.47	9.62		0	0.0000	703.38	694.52	0	698.52	0.00	0.00	705.41

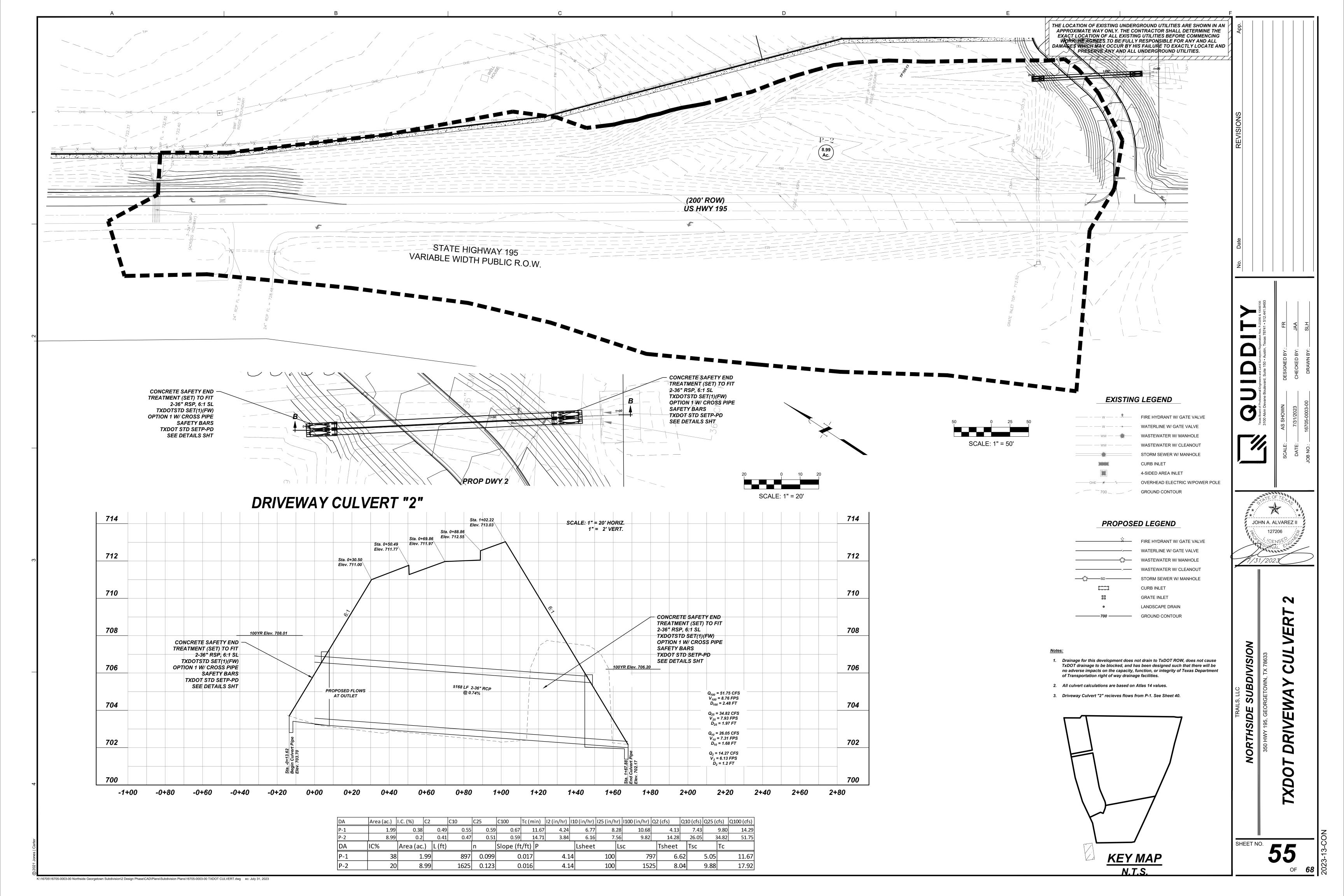
STORM SEWER 100 vr

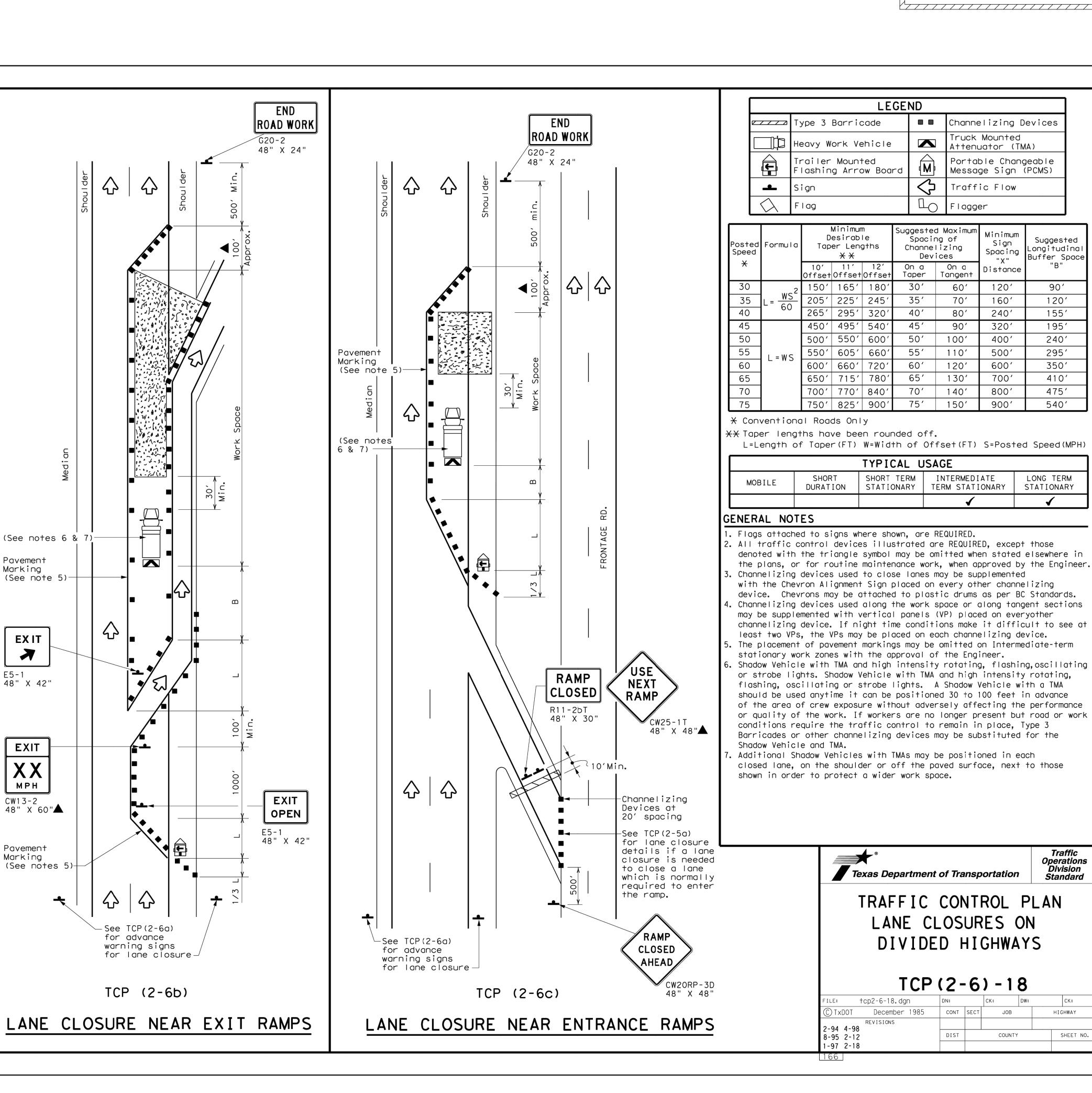
	2.00 =																												
	a ₁₀₀ =			129.03								ı										7							
<u> </u>	b ₁₀₀ =			17.83																									
	c ₁₀₀ =			0.7625													Trunk Line	Design					"*" Indicate	s an inlet late	ral connection	with unique form	nula for junctio	n loss.	
																Full Flow	Full Flow						Junction/	Hydraulic					Тор
	Inlet /	Inlet /		Total	Time	Time		Total Area		Intensity				Pipe Diam.	Box	Area	Perimeter		Full Flow	Full Flow	Actual Hydrauli		MH	Grade	Dwnstm	Vert	Upstrm	Rise in	Pipe MH/
inage	MH	MH	Area	Area	Conc.	Conc. + Pipe	Runoff	x "C"	С	" "	\mathbf{Q}_{100}	Mannings	Length	or Box Rise	Span			Grade	Velocity	Capacity	Velocity Gradien	: K	Loss	Elevation	Flowline	Adj	Flowline	Pipe	Crown Eleva
Area	From	То	(acres)	(acres)	(min)	(min)	"C"		(Weighted)	(in/hr)	(cfs)	"n"	(ft.)	(in.)	(in.)			(ft./ft.)	(fps)	(cfs)	(out) (ft/ft)	(Constant)	(feet)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft) (f
			ı																									T	
1	A1	Bend 1	0.33	0.33	0.00	0.07	0.79	0.26	0.79	14.34	3.76		21.4	24			6.28318531	0.0050	5.09	16.00	1.20 0.0003	0.25	0.0056	711.66	708.92		709.03	0.11	711.03 714
0	Bend 1	Wye 1	0.00	0.33	0.07	0.09	0.00	0.26	0.79	14.30	3.75		7.6	24		+	6.28318531	0.0050	5.09	16.00	1.19 0.0003	0.25	0.0055	711.65	708.88		708.92	0.04	710.92 714
2	A2	Wye 1	0.56	0.56	0.00	0.06	0.80	0.45	0.80	14.34	6.39		17.9	24			6.28318531	0.0050	5.09	16.00	2.04 0.0008	0.25	0.0161	711.67	708.88	0.05	708.97	0.09	710.97 714
0	Wye 1	MH1	0.00	0.89	0.09	0.11	0.00	0.71	0.80	14.29	10.11		6.0	24		+	6.28318531	0.0050	5.09	16.00	3.22 0.0020	0.25	0.0402	711.64	708.85	0.85	708.88	0.03	710.88 713
0	A3 MH1	MH1 MH2	4.64 0.00	4.64 5.53	0.00 0.11	0.09	0.84	3.90 4.61	0.84 0.83	14.34 14.27	55.93 65.76	0.013 0.013	48.9 67.5	36 36			9.42477796 9.42477796	0.0100 0.0150	9.44 11.56	66.69 81.68	7.91 0.0070 9.30 0.0097	0.25	0.9720 0.3359	712.90 711.59	707.51 706.50	0.65	708.00 707.51	0.49 1.01	711.00 713 710.51 714
0	MH2	MH3	0.00	5.53	0.11	0.21	0.00	4.61	0.83	14.22	65.49	0.013	106.9	36		_	9.42477796	0.0130	10.51	74.27	9.26 0.0096	0.25	0.3333	710.60	704.53	0.03	705.85	1.33	708.85 713
0	MH3	MH4	0.00	5.53	0.38	0.45	0.00	4.61	0.83	14.11	65.02	0.013	59.8	36			9.42477796		14.31	101.15	9.20 0.0094	0.25	0.3285	709.24	703.15	0.50	704.53	1.37	707.53 711
6	A6	MH4	4.69	4.69	0.00	0.07	0.80	3.75	0.80	14.34	53.83	0.013	32.0	36			9.42477796		7.89	55.80	7.62 0.0065	1	0.9006	709.46	703.15	0.50	703.38	0.22	706.38 711
0	MH4	MH5	0.00	10.22	0.45	0.53	0.00	8.36	0.82	14.07	117.65		59.6	48			12.5663706		12.93	162.50	9.36 0.0067	0.25	0.3403	708.35	701.89	0.34	702.65	0.76	706.65 709
4	Α4	MH5	0.47	0.47	0.00	0.03	0.80	0.37	0.80	14.34	5.36	0.013	14.5	24		3.14159265	6.28318531	0.0100	7.20	22.62	1.71 0.0006	1	0.0452	707.67	702.97	1.42	703.11	0.15	705.11 70
5	A5	MH5	0.30	0.30	0.00	0.03	0.79	0.24	0.79	14.34	3.42	0.013	14.5	24		3.14159265	6.28318531	0.0100	7.20	22.62	1.09 0.0002	1	0.0184	707.64	703.39	1.84	703.53	0.15	705.53 709
0	MH5	MH6	0.00	10.99	0.53	0.93	0.00	8.97	0.82	14.03	125.86	0.013	177.1	48		12.5663706	12.5663706	0.0041	7.32	91.97	10.02 0.0076	0.25	0.3894	707.61	700.82	5.05	701.55	0.73	705.55 709
0	MH6	Outfall 1	0.00	10.99	0.93	1.06	0.00	8.97	0.82	13.80	123.79	0.013	87.3	48		12.5663706	12.5663706	0.0100	11.43	143.63	9.85 0.0074	0.55	0.8287	705.87	694.90		695.77	0.87	699.77 711
7	A7	MH11	1.02	1.02	0.00	0.03	0.79	0.81	0.79	14.34		0.013	14.5	24			6.28318531		7.20	22.62	3.70 0.0026	0.25	0.0531	705.37	697.12	0.51	697.26	0.15	
8	A8	MH11	0.67	0.67	0.00	0.03	0.79	0.53	0.79	14.34	7.63		14.5	24			6.28318531		7.20	22.62	2.43 0.0011	0.01	0.0009	705.30	700.26	3.65	700.40	0.15	+
0	MH11	MH12	0.00	1.69	0.03	0.07	0.00	1.34	0.79	14.32	19.22		15.1	24			6.28318531		6.44	20.23	6.12 0.0072	0.25	0.1453	705.28	696.49	1.26	696.61	0.12	
9	A9	MH12	2.98	2.98	0.00	0.09	0.80	2.38	0.80	14.34	34.13		34.6	30			7.85398163		6.47	31.77	6.95 0.0069	0.25	0.1877	705.46	695.62	0.39	695.82	0.21	
0	MH12	Outfall 2	0.00	4.67	0.09	0.25	0.00	3.72	0.80	14.29	53.18	0.013	65.0	36		7.06858347	9.42477796	0.0050	6.67	47.16	7.52 0.0063	0.25	0.2197	705.03	694.90		695.23	0.33	698.23 705
12	1.12	0 16 11 2	2.00	2.00	0.00	0.52	0.07	1 2 22	0.67	44.24	40.00	0.010	4500	1 20		7.00050045	0.40477766	0.0000	4.33	20.00	6.00	0.05	0.4406	705.40	600.50		600.00	0.24	702.62
12 14	A12 A14	Outfall 3 Outfall 4	3.09 15.10	3.09 15.10	0.00	0.62 0.14	0.97 0.84	3.00 12.65	0.97 0.84	14.34 14.34	43.00	0.013 0.013	156.2 82.8	36 48			9.42477796 12.5663706		4.22 10.22	29.83 128.47	6.08 0.0041 14.44 0.0159	0.25	0.1436	705.19 705.71	699.59 693.86		699.88 694.52	0.31 0.66	702.88 70 698.52 70

NORTHSIDE SUBDIVISION
350 HWY 195, GEORGETOWN, TX 78633









ROAD WORK

Pavement

Marking

X

E5-1 48" X 42"

XX

MPH

Pavement

Marking

CW13-2 48" X 60"

CLOSED/

CW16-3aP 30" X 12"

CLOSED

30" X 12"

WORK 1 MILE

TCP (2-6a)

ONE LANE CLOSURE

48" X 48" (Flags-

See note 1)

G20-2 48" X 24"

Pavement Marking |

(See note 5)

(See notes-

 \Diamond

JOHN A. ALVAREZ I

NORTHSIDE SUBDIVISION

SHEET NO.

56_{OF 68}

GUIDELINES FOR DESIGN AND INSTALLATION OF TEMPORARY EROSION AND SEDIMENTATION CONTROLS

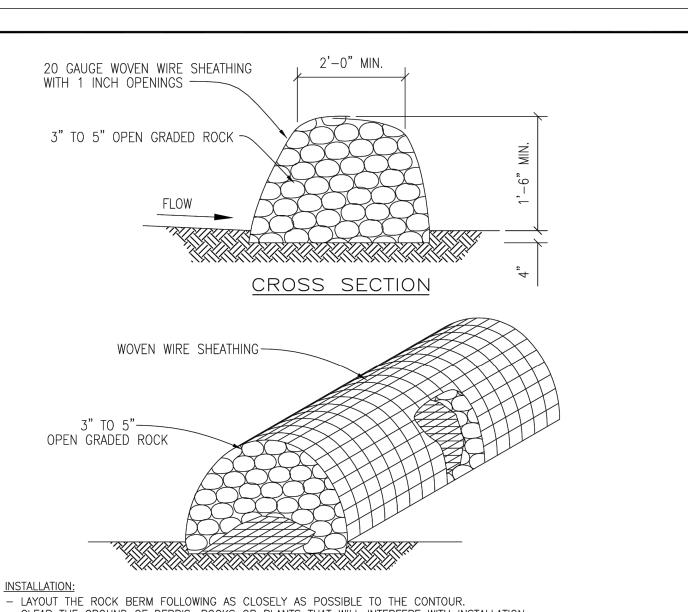
TYPE OF STRUCTURE	REACH LENGTH	MAXIMUM DRAINAGE AREA	SLOPE
SILT FENCE	N/A	2 ACRES	0 - 10%
	200 FEET	2 ACRES	10 - 20%
	100 FEET	1 ACRE	20 - 30%
	50 FEET	1/2 ACRE	> 30%
TRIANGLE FILTER DIKE	100 FEET	1/2 ACRE	< 30% SLOPE
	50 FEET	1/4 ACRE	> 30% SLOPE
ROCK BERM *, **	500 FEET	< 5 ACRES	0 - 10%

* 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.

use of this stantaara.				
, , , , ,		REVISION NOTE:	ADOPTE	D 6/21/2006
	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS TEMPORARY EROSION AND	DRAWING NAME:		EC01
GEORGETOWN	SEDIMENTATION CONTROL GUIDELINES	SCALE: NTS	1/2003	
Coorgetown Htility Systems		DRAWN BY:	APPROVED BY:	



- 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 - 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
- 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
- MANAGRANY 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

iis standard.		REVISION NOTE:	ADOPTE	6/21/200
7	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS ROCK BERM DETAIL	DRAWING NAME:		EC03
George town	ROOK BEKW BETAIL	SCALE: NTS	DATE: 1/2003	
TEXAS		DRAWN BY:	APPROVED BY:	
getown Utility Systems		MRS	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

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 1001b/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 LÓSS

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 O 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.

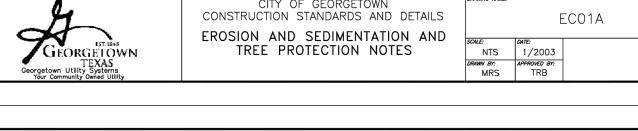
18. NO ABOVE AND/OR BELOW GROUND TEMPORARY FUEL STORAGE FACILITIES TO BE STORED ON THE PROJECT SITE. 19. IF EROSION AND SEDIMENTATION CONTROL SYSTEMS ARE EXISTING FROM PRIOR CONTRACTS, OWNER'S REPRESENTATIVE AND THE CONTRACTOR TO EXAMINE THE EXISTING EROSION AND SEDIMENTATION CONTROL SYSTEMS FOR DAMAGE PRIOR TO CONSTRUCTION. ANY DAMAGE TO PREEXISTING EROSION AND SEDIMENTATION CONTROLS NOTED

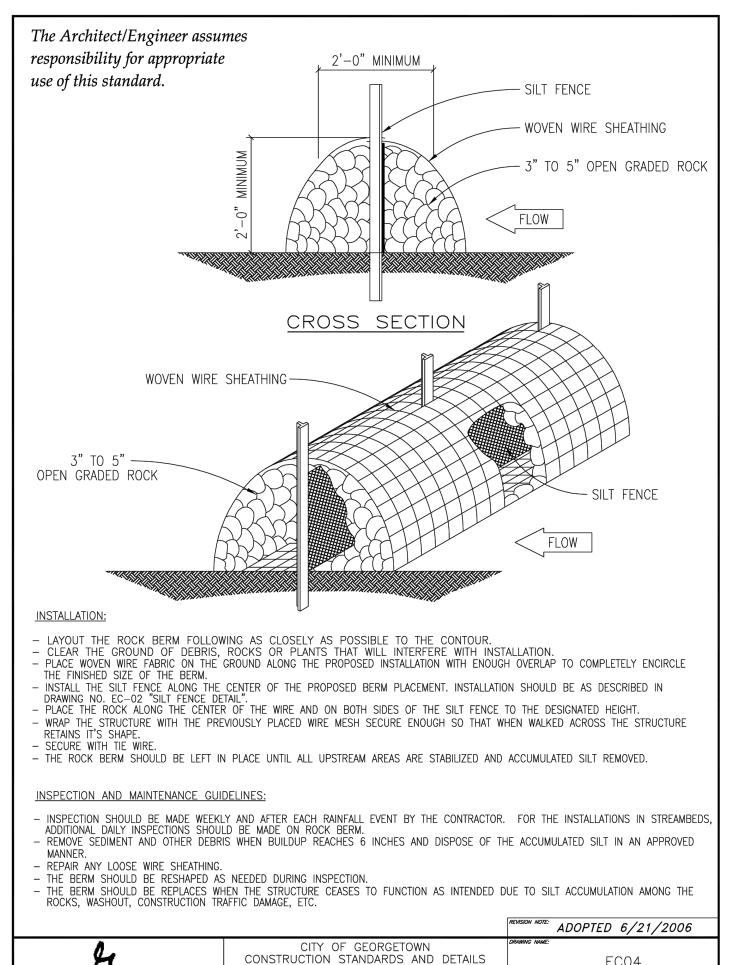
TO BE REPAIRED AT OWNERS EXPENSE. 20. INTENTIONAL RELEASE OF VEHICLE OR EQUIPMENT FLUIDS ONTO THE GROUND IS NOT ALLOWED. CONTAMINATED SOIL

RESULTING FROM ACCIDENTAL SPILL TO BE REMOVED AND DISPOSED OF PROPERLY.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

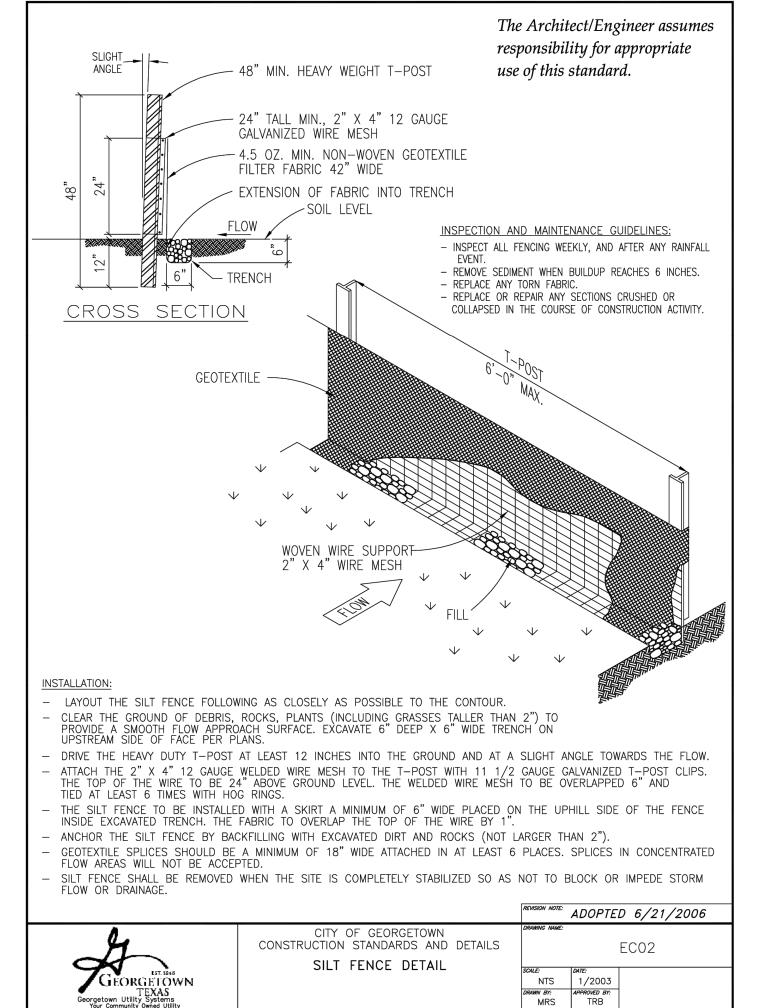
REVISION NOTE: ADOPTED 6/21/2006 CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS EROSION AND SEDIMENTATION AND TREE PROTECTION NOTES NTS 1/2003 DRAWN BY: APPROVED BY:

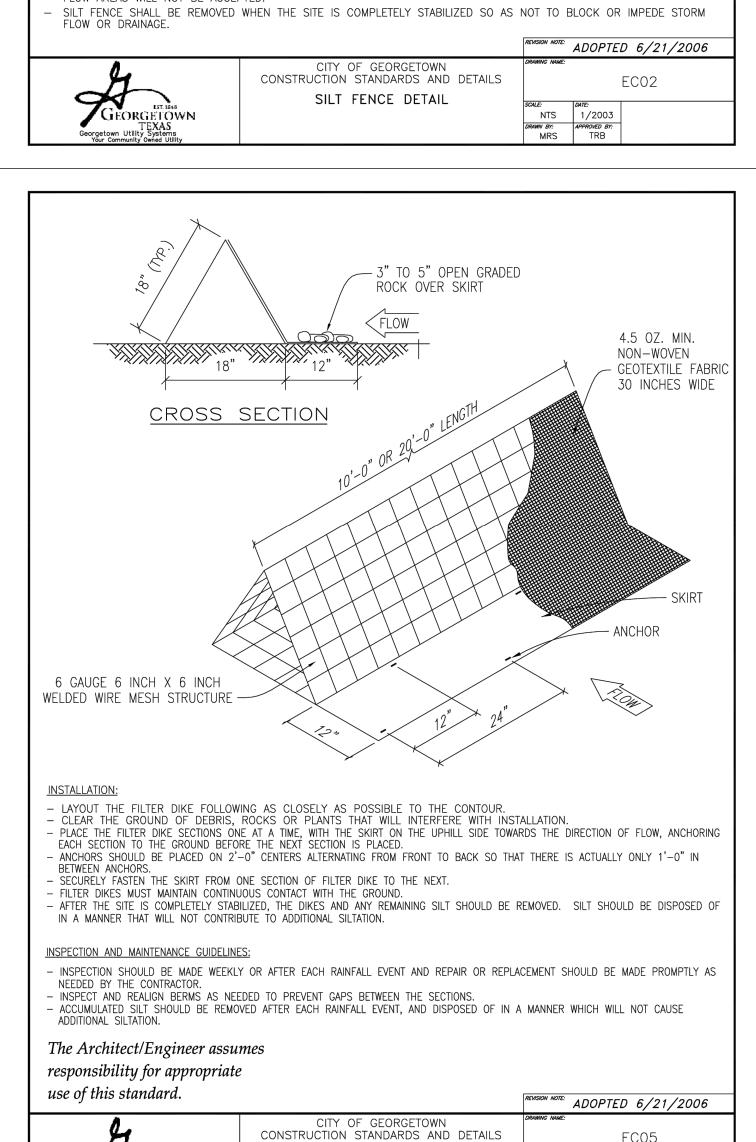




HIGH SERVICE ROCK BERM DETAIL

NTS 1/2003

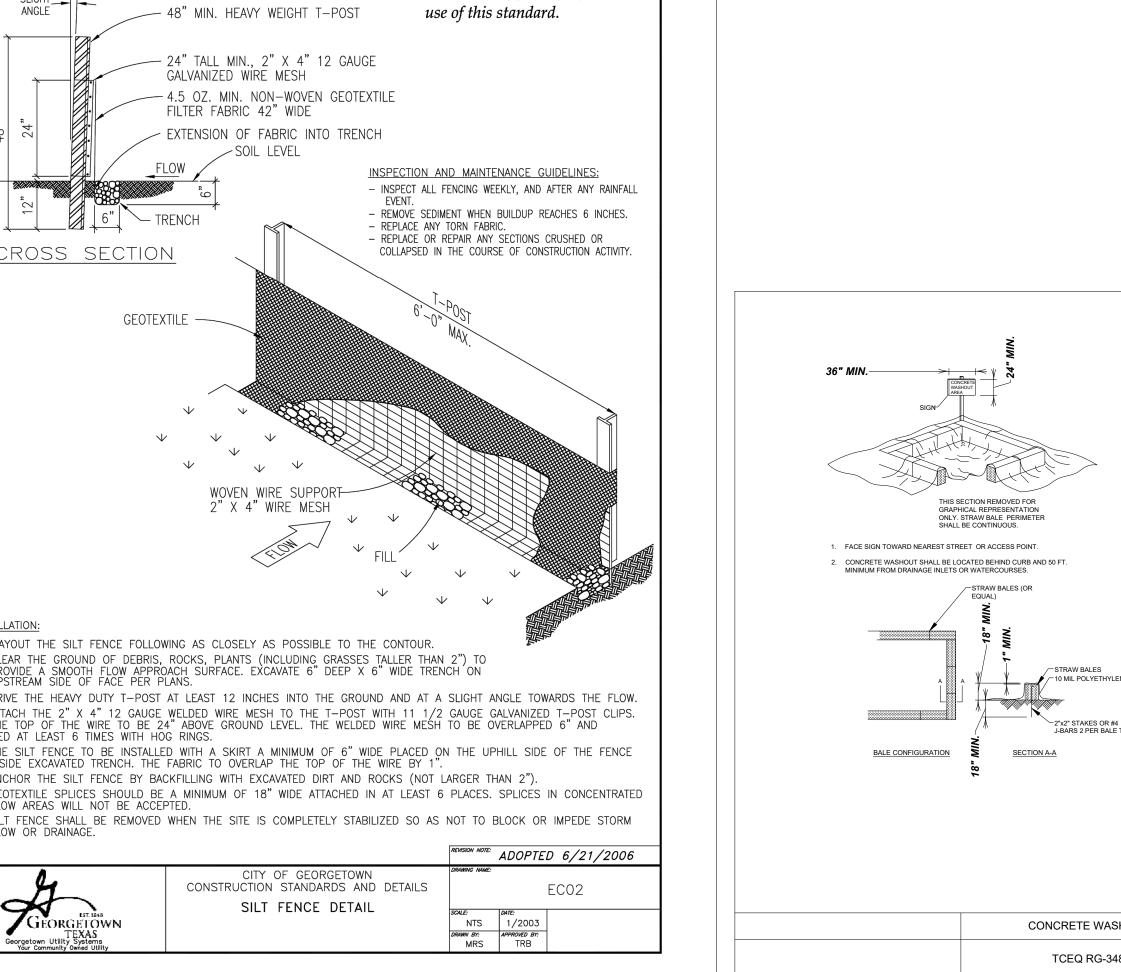


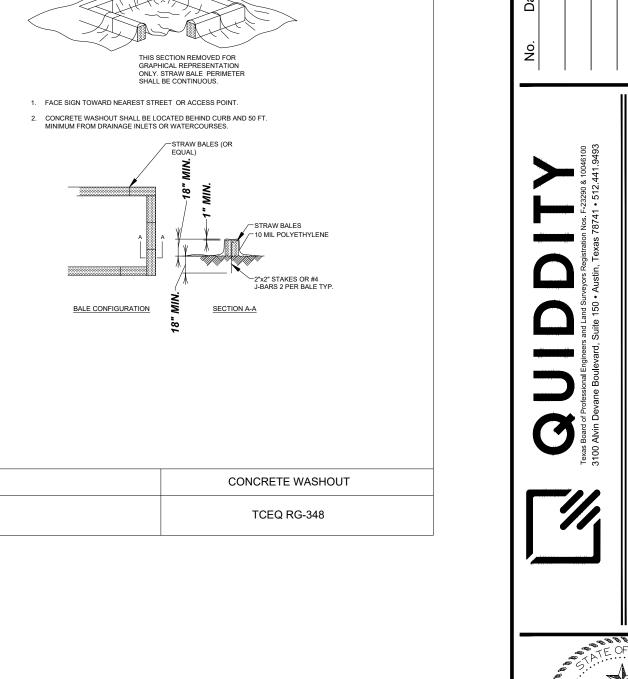


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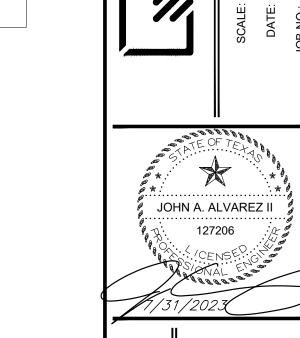
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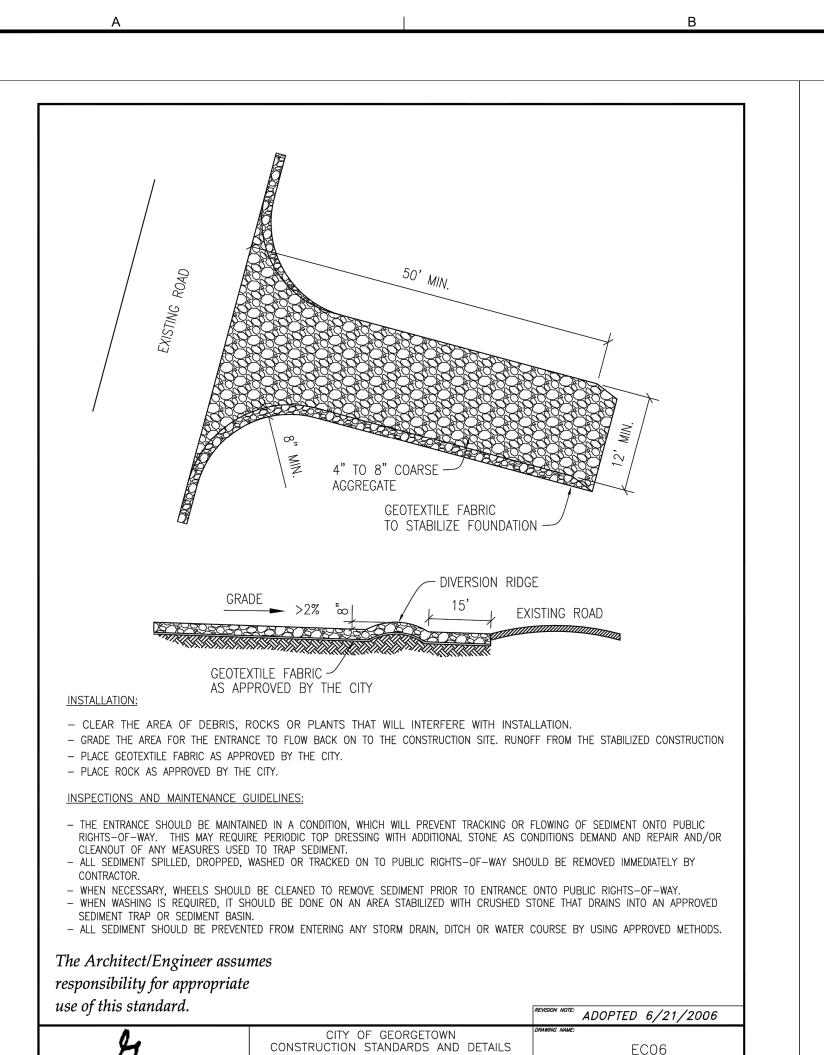


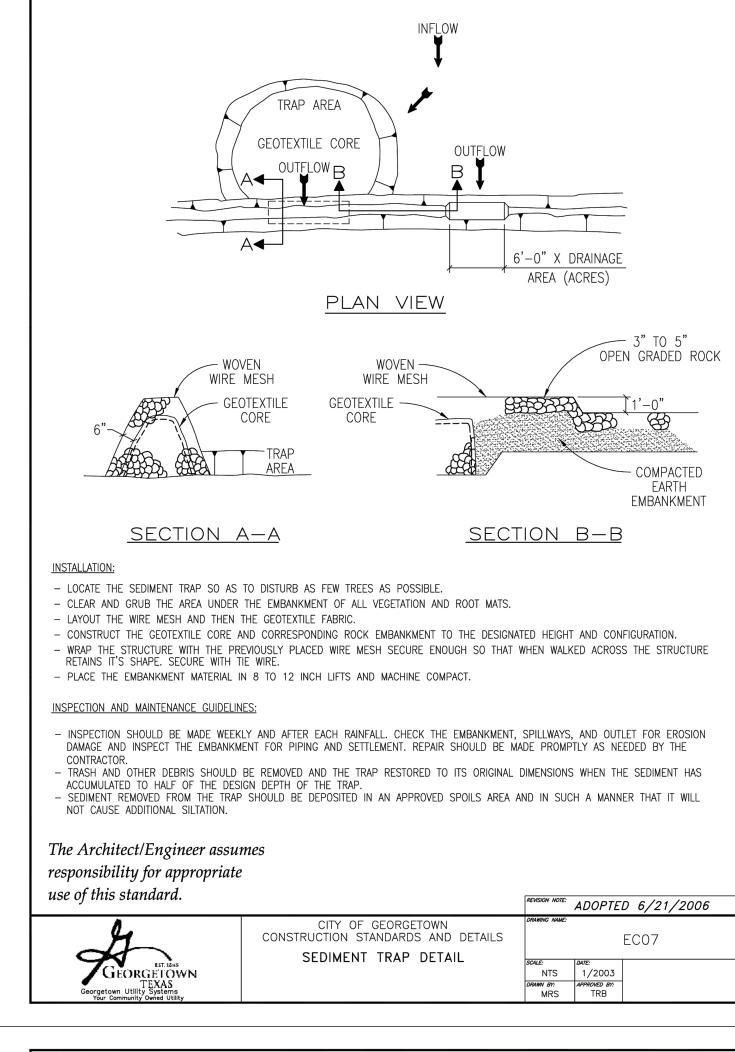
THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE **EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING** WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

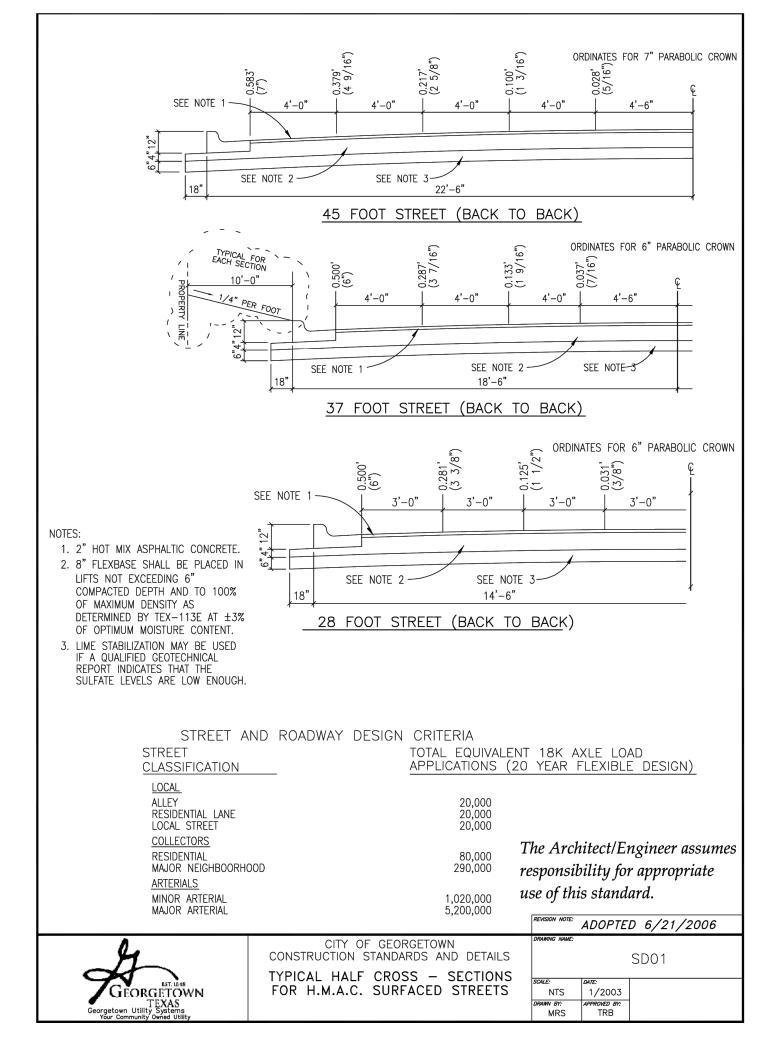


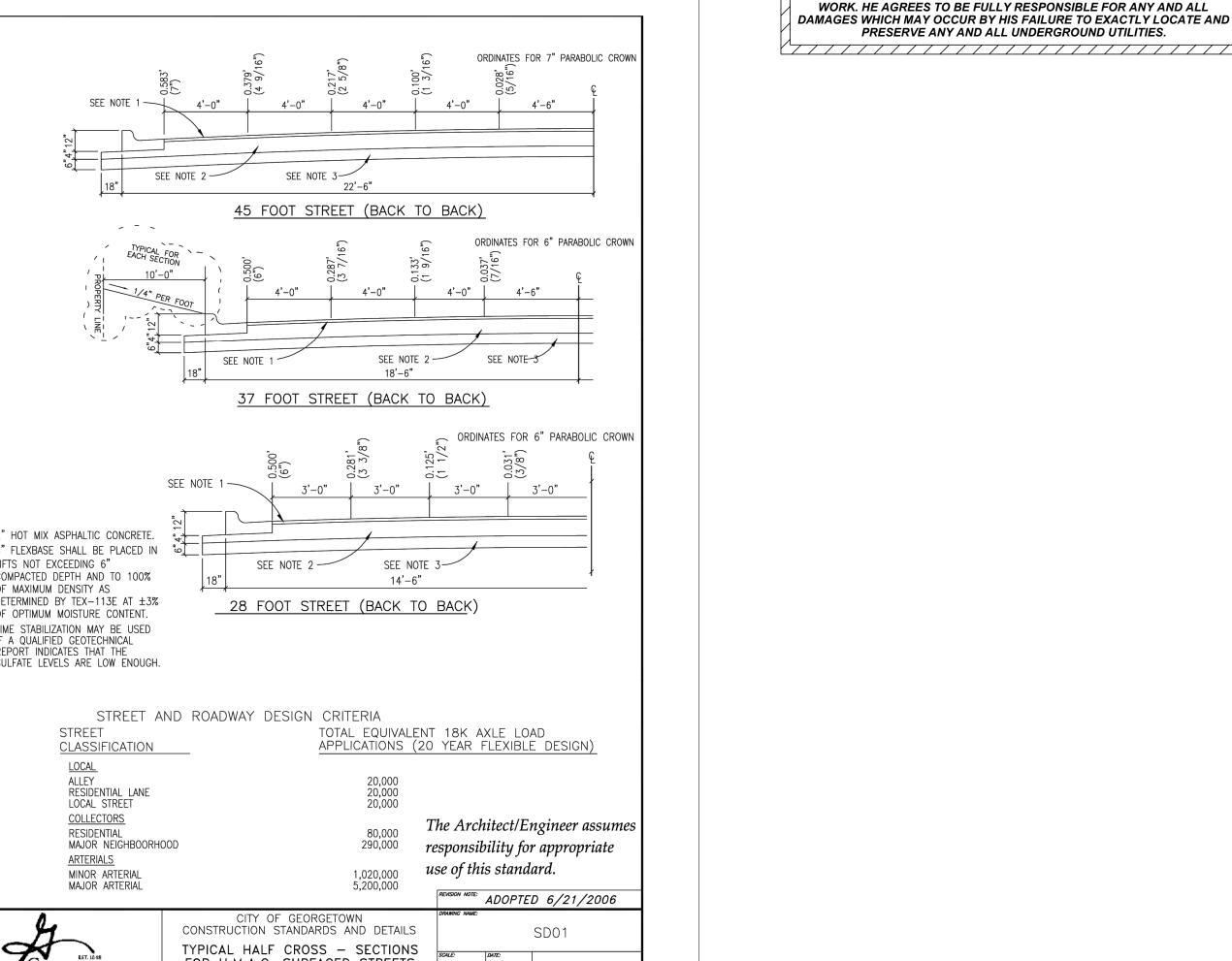
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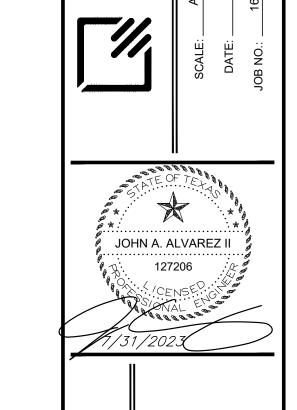








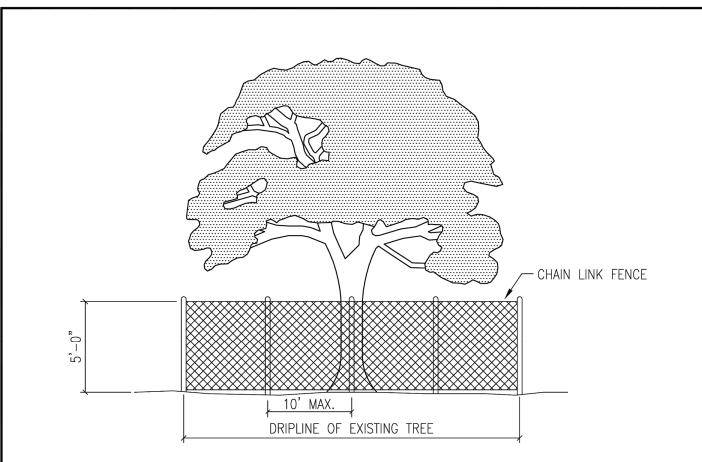
THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE **EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING**



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STABILIZED CONSTRUCTION ENTRANCE

NTS 1/2003

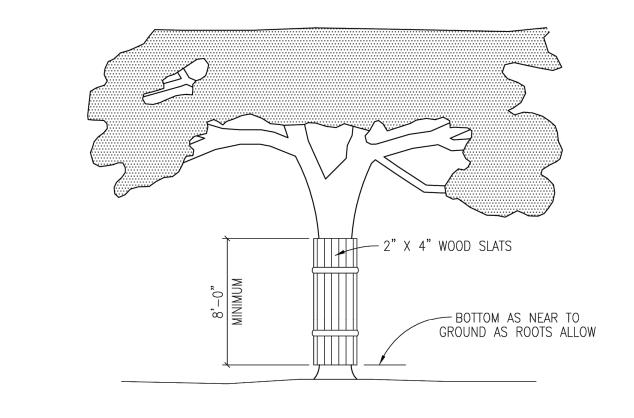
| DRAWN BY: APPROVED BY: TRB

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
- 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

se of this standard.				
		REVISION NOTE:	ADOPTE	D 6/21/2006
4	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS TREE PROTECTION —	DRAWING NAME:		EC09
GEORGETOWN	CHAIN LINK FENCE	scale: NTS	DATE: 1/2003	
TEXAS Georgetown Utility Systems Your Community Owned Utility		DRAWN BY: MRS	APPROVED BY:	

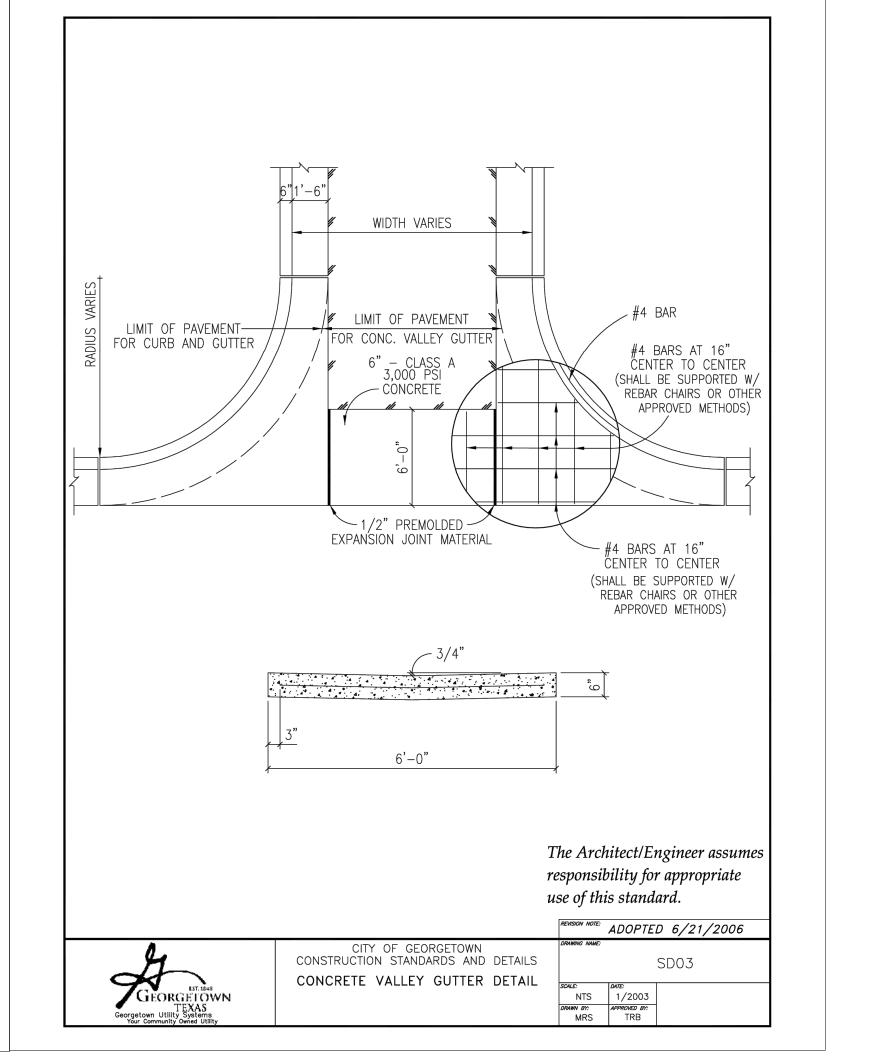


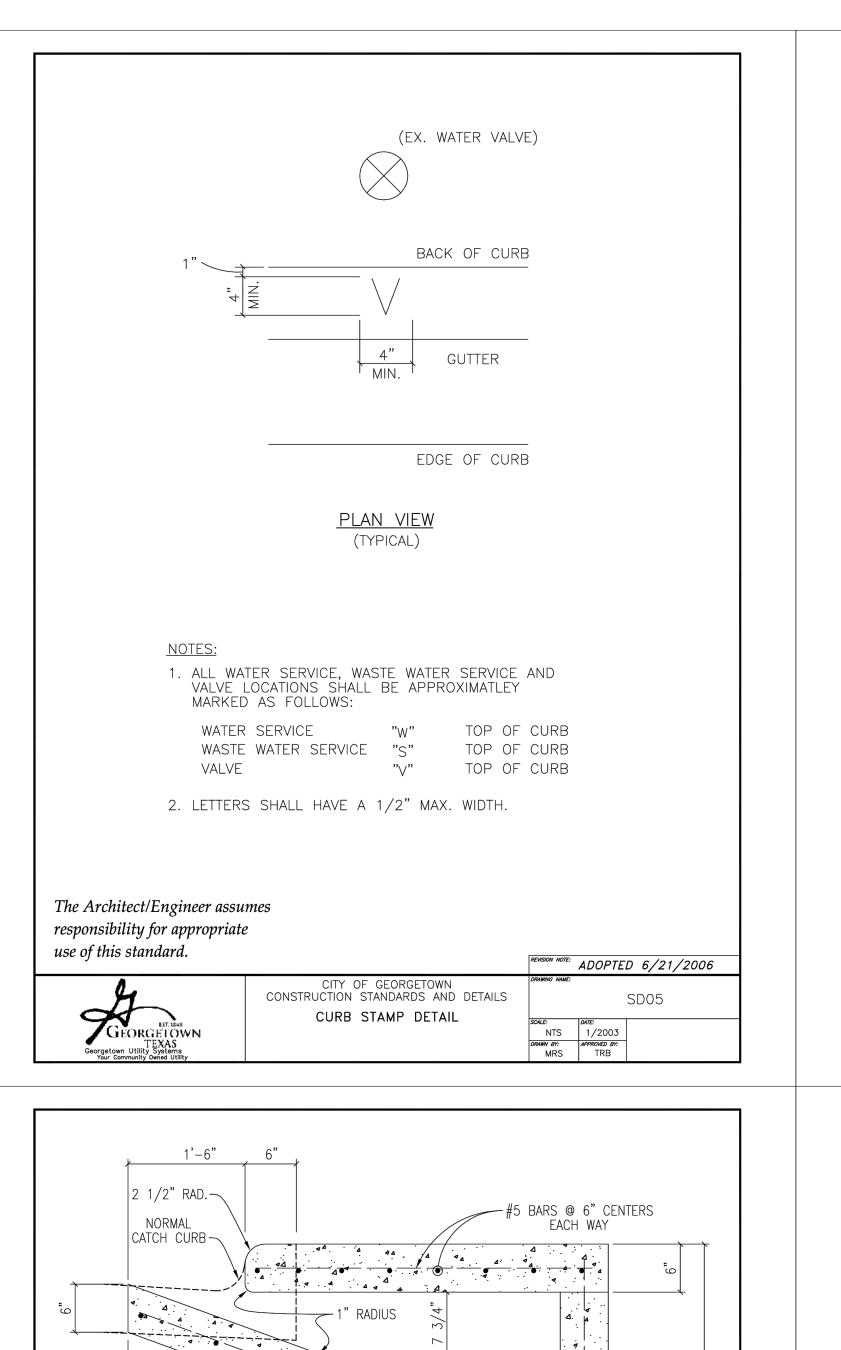
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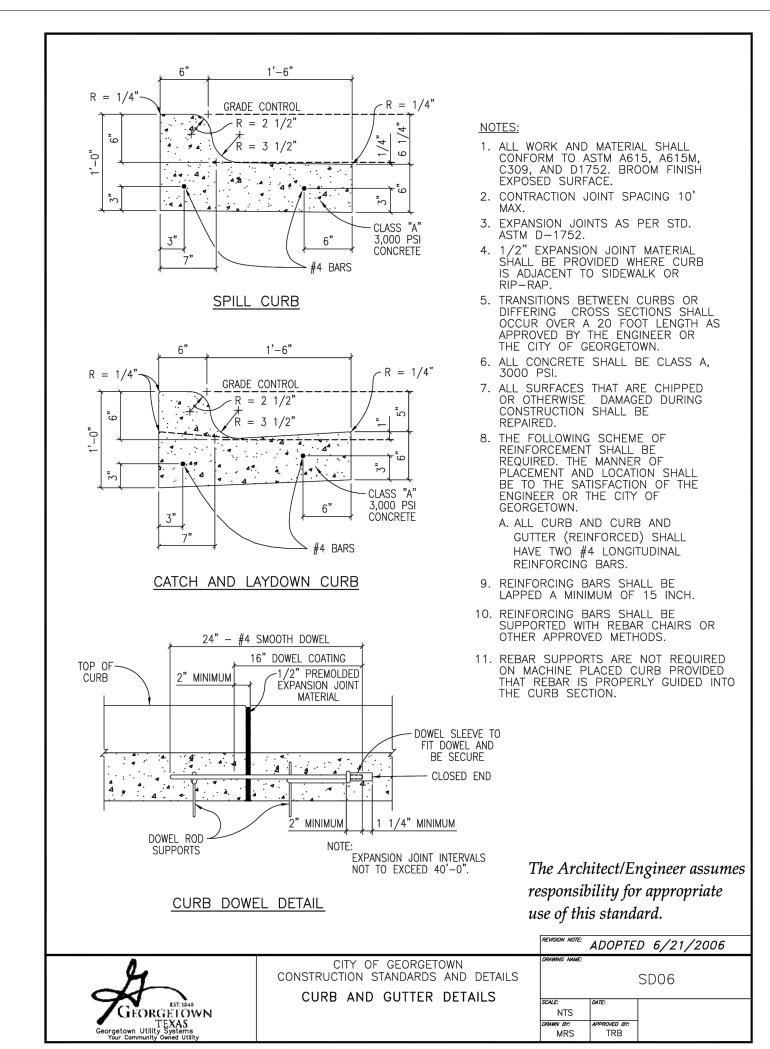
- . WHERE ANY EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN FOUR FEET (4'-0") TO A TREE TRUNK; PROTECT THE TRUNK WITH STRAPPED-ON-PLANKING TO A HEIGHT OF EIGHT FEÈT (8'-0"), OR TO THE LIMITS OF LOWER BRANCHING IN ADDITION TO THE REDUCED FENCING PROVIDED.
- 2. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY 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.
- . 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
- 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.
- . PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC AND EQUIPMENT SHALL TAKE PLACE
- BEFORE CONSTRUCTION BEGINS.

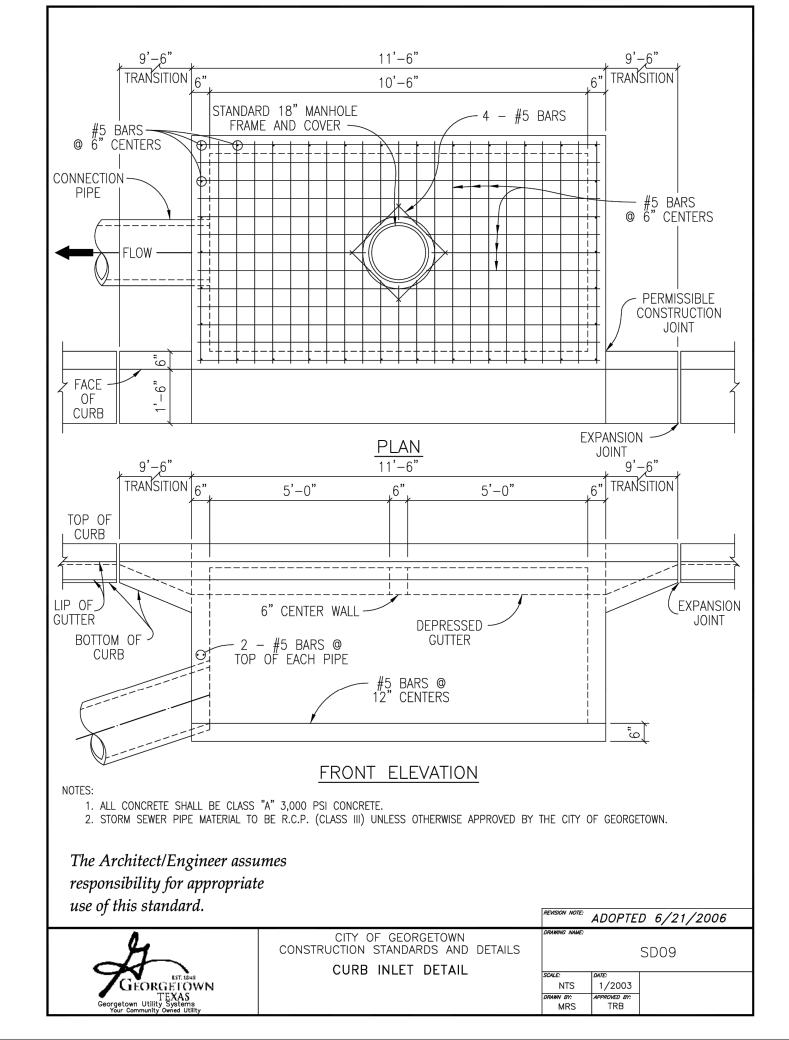
The Architect/Engineer assumes responsibility for appropriate use of this standard.

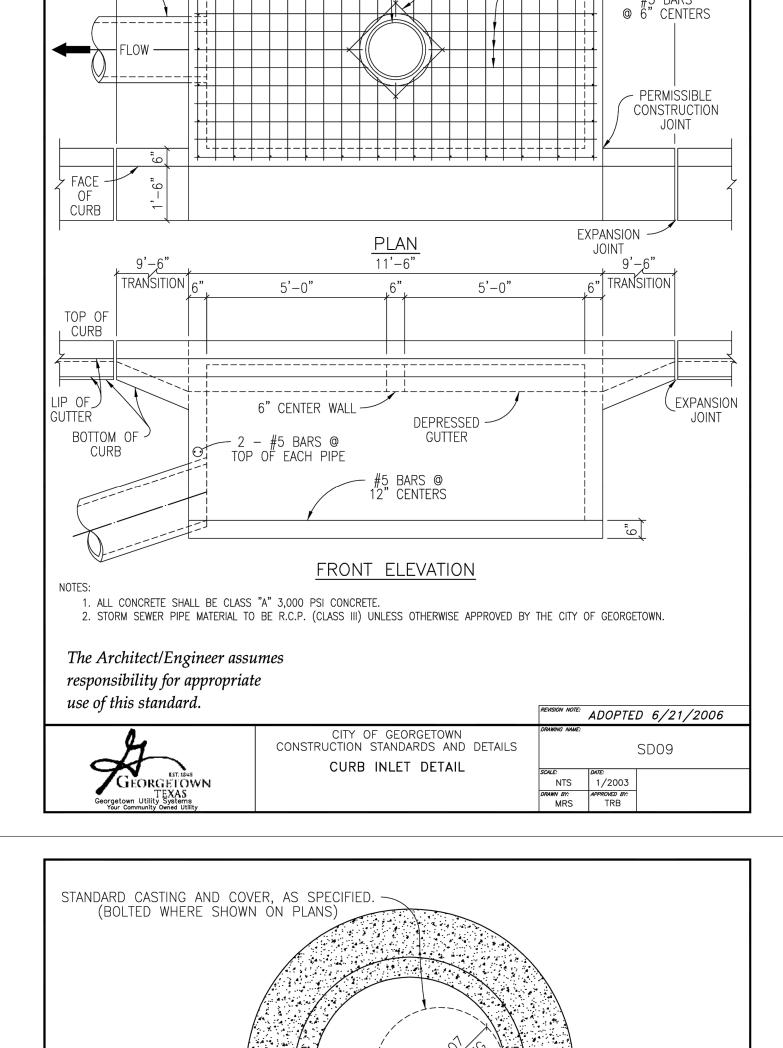
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		REVISION NOTE:	ADOPTE	D 6/21/2006	
4	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS TREE PROTECTION — WOOD SLATS	DRAWING NAME:		EC10	
GEORGETOWN TEXAS rgetown Utility Systems Your Community Owned Utility	TREE TROTECTION - WOOD SEATS	SCALE: NTS DRAWN BY: MRS	DATE: 1/2003 APPROVED BY: TRB		_

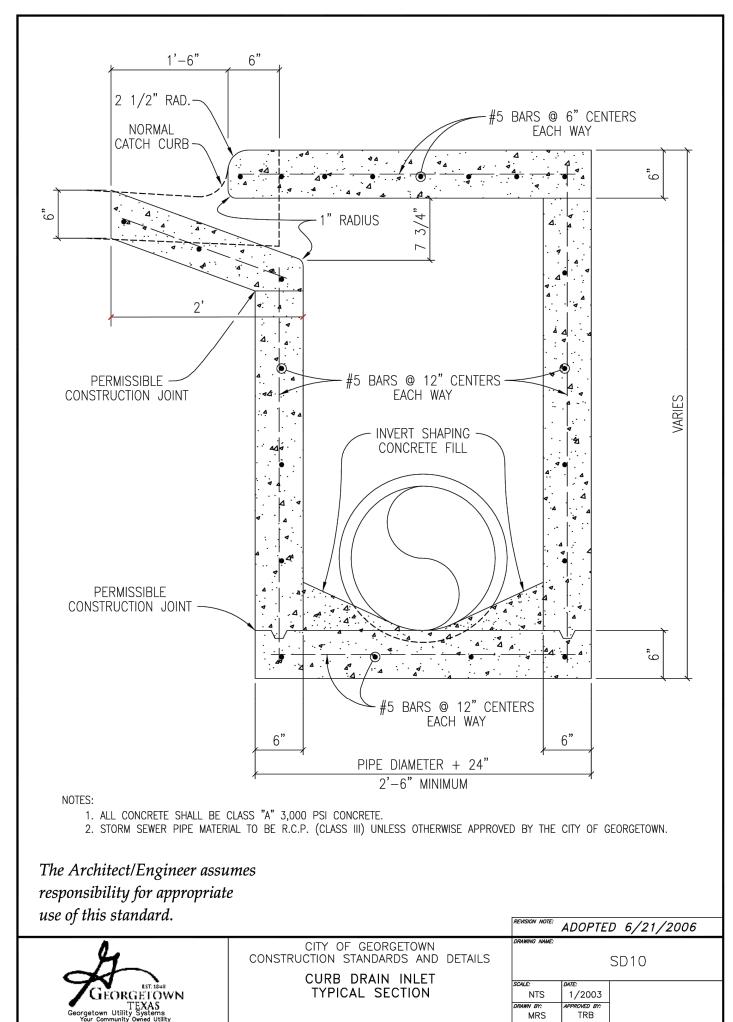




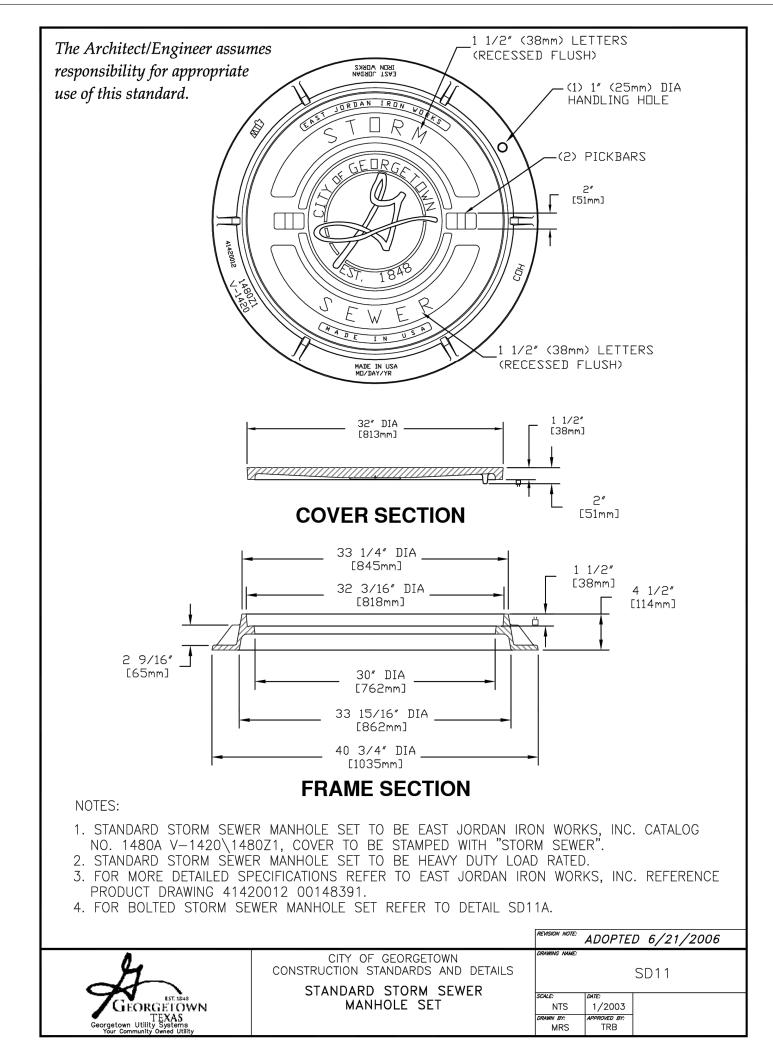


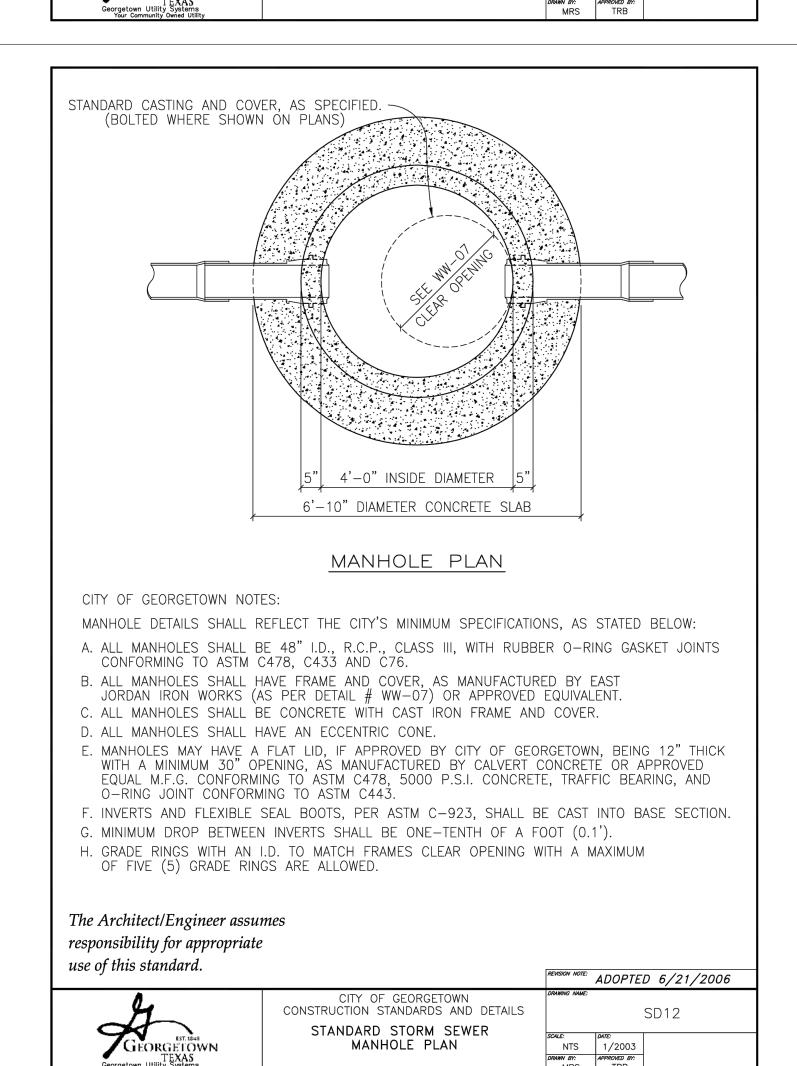


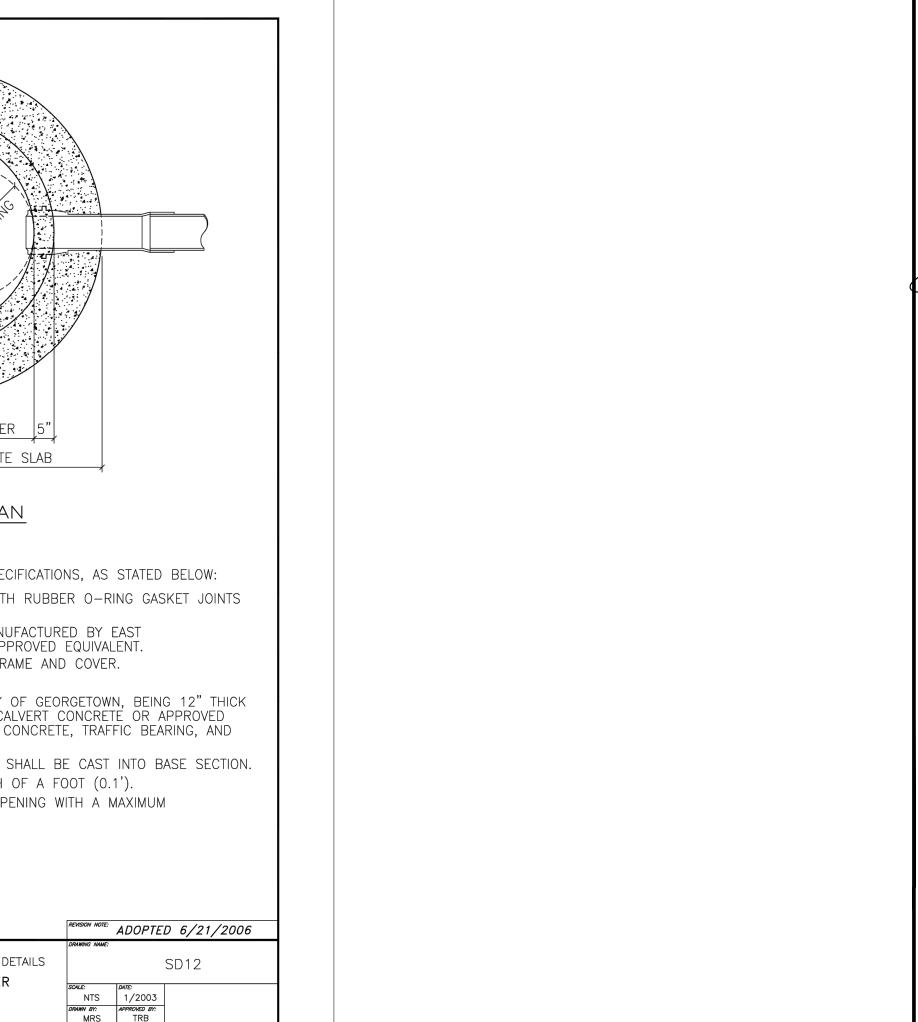




K:\16705\16705-0003-00 Northside Georgetown Subdivision\2 Design Phase\CAD\Plans\Subdivision Plans\16705-0003-00 DETAILS.dwg ec: July 31, 2023

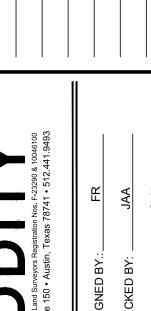






PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE **EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING** WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND



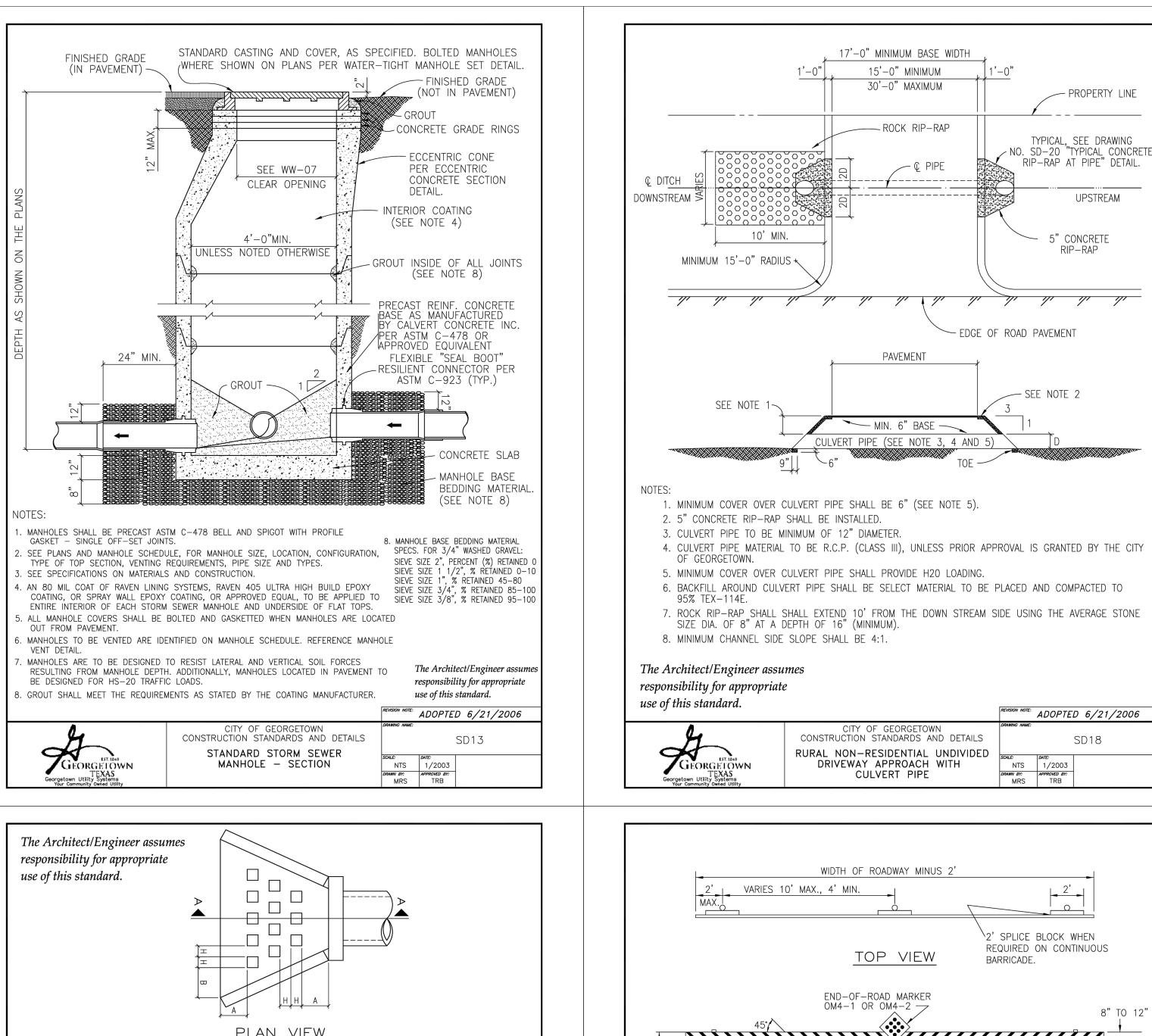
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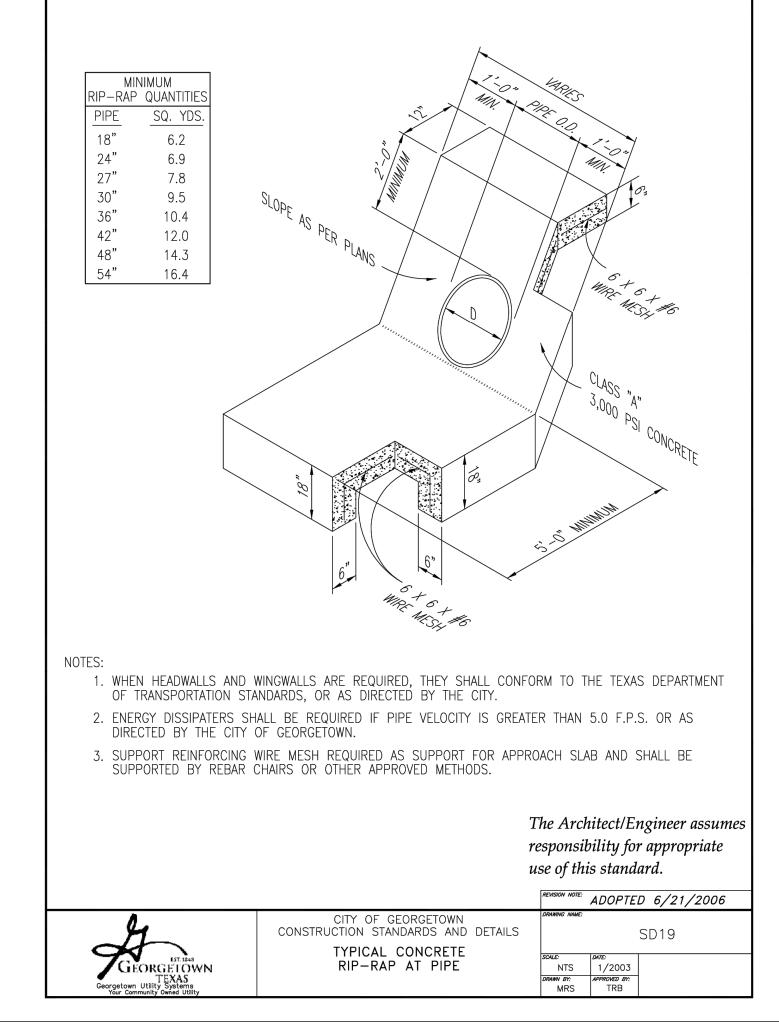
JOHN A. ALVAREZ II 127206

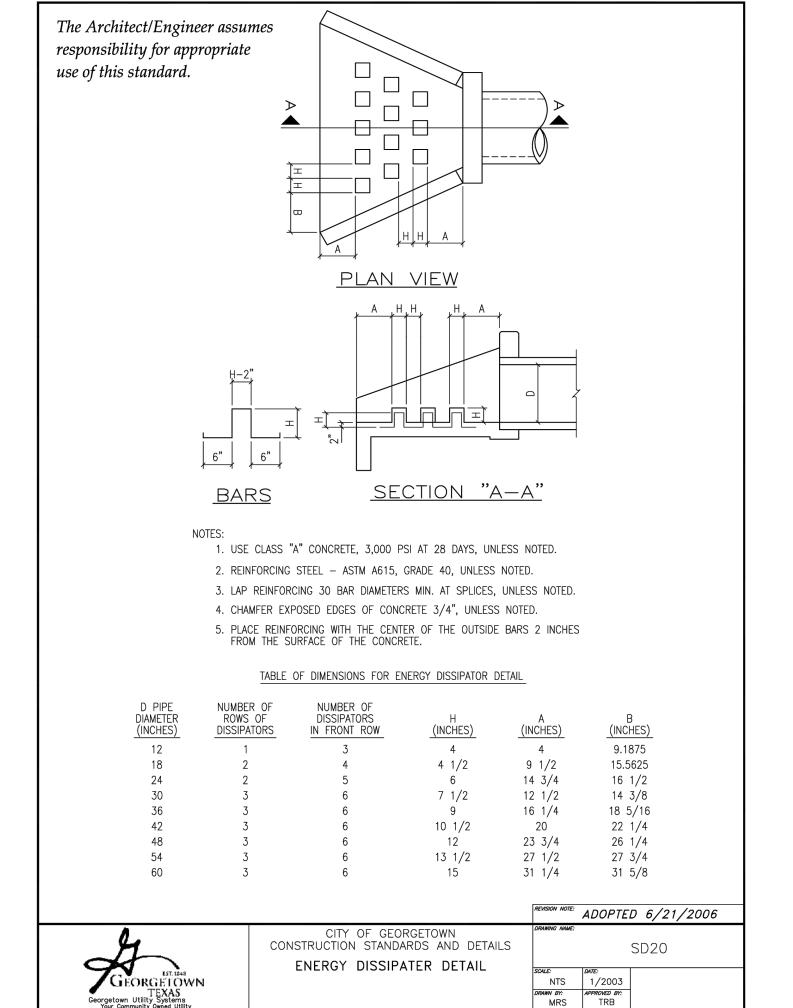
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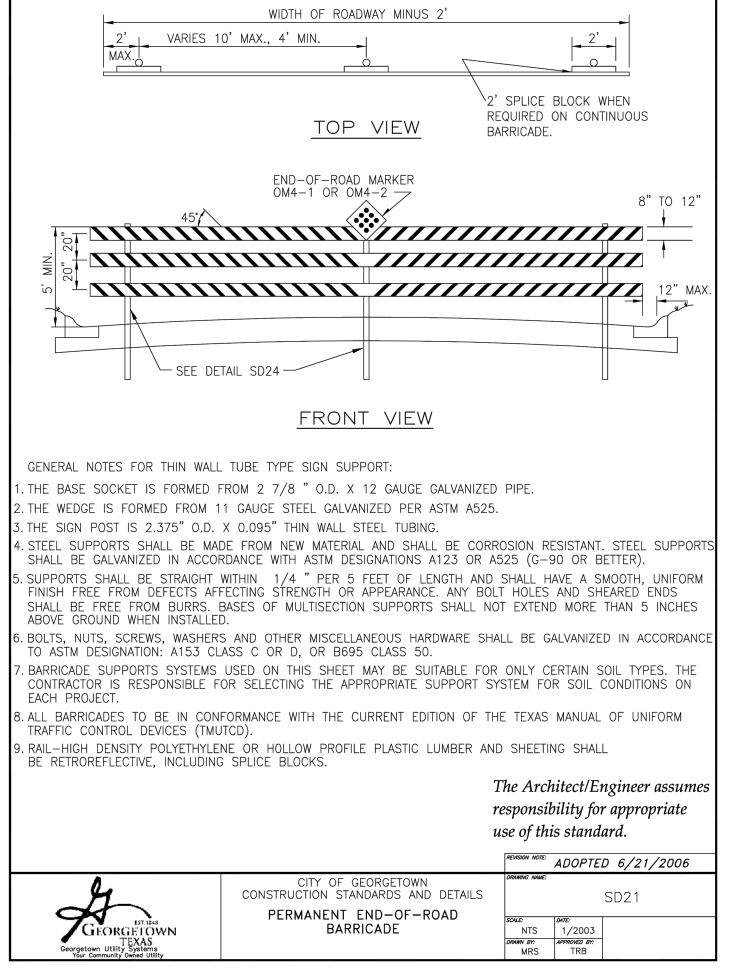
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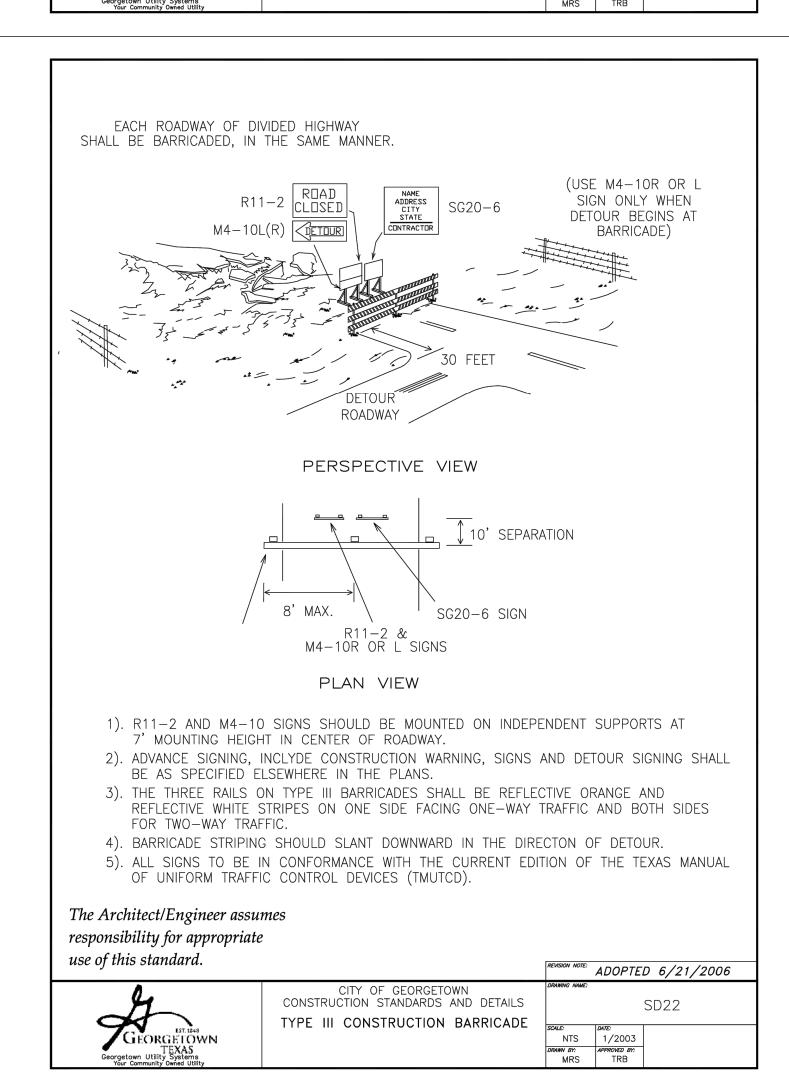
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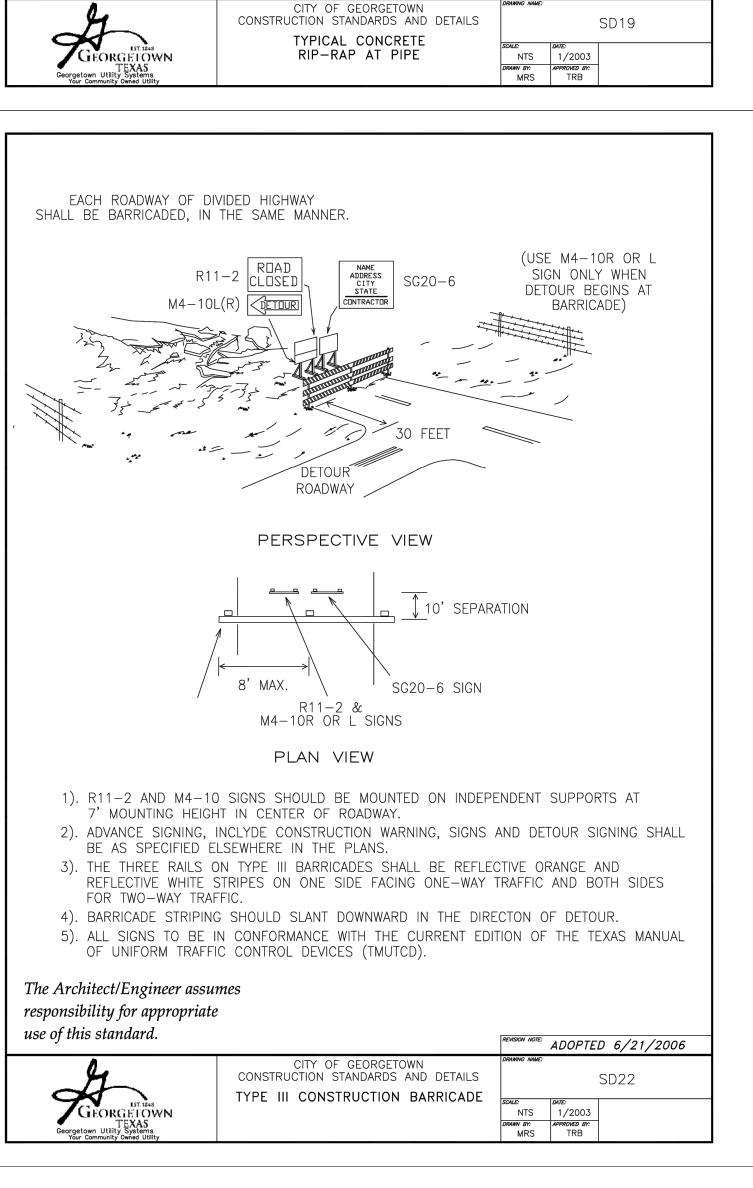




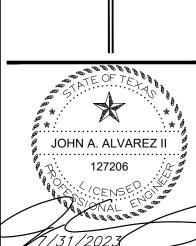








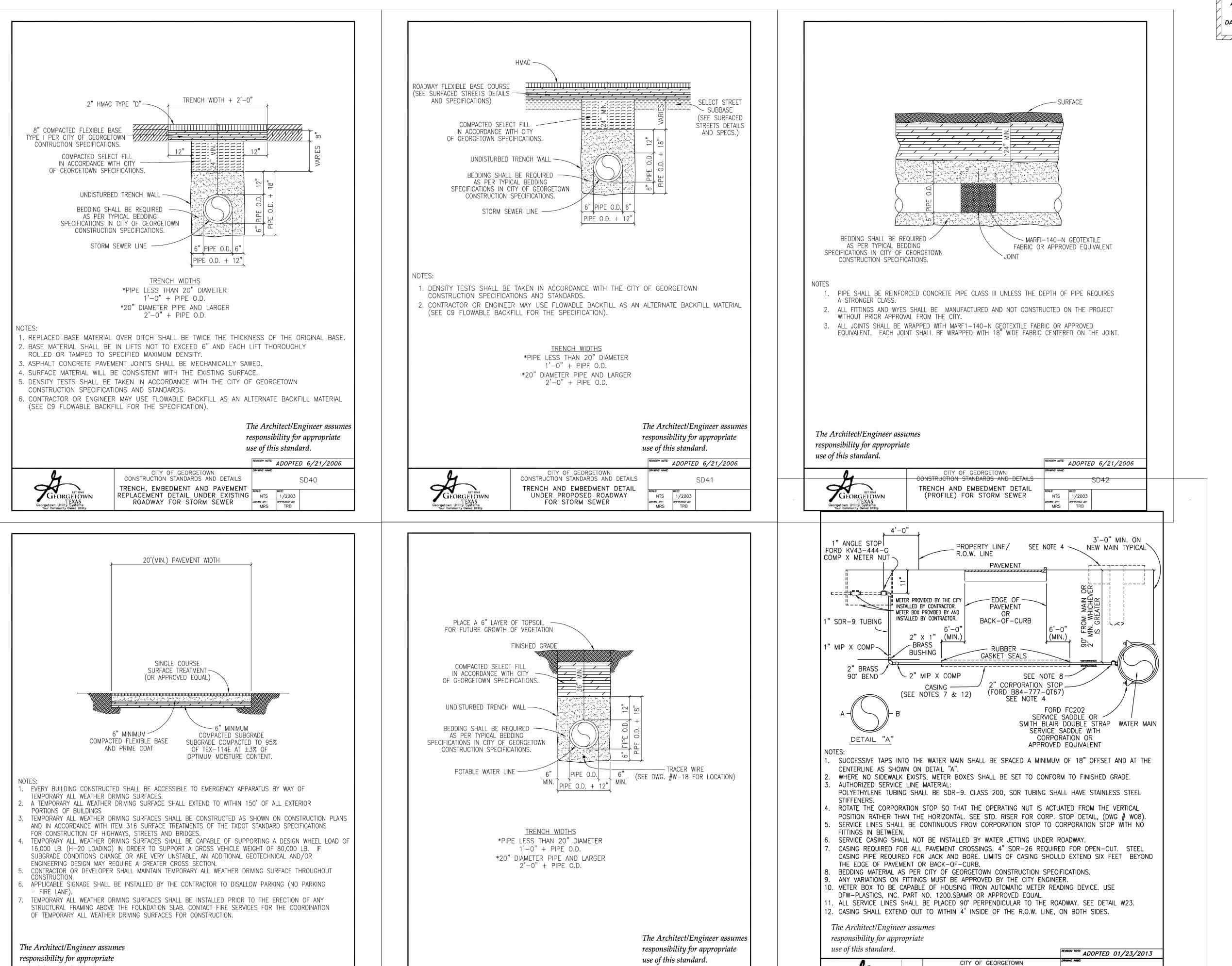
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NORTHSIDE

SHEET NO.



REVISION NOTE: ADOPTED 6/21/2006

NTS 1/2003

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS

TRENCH AND EMBEDMENT DETAIL

UNDER NON-PAVED AREAS

GEORGETOWN
TEXAS

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE **EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING** WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

JOHN A. ALVAREZ II 127206

SUBDIVISIO NORTHSIDE

SHEET NO.

CONSTRUCTION STANDARDS AND DETAILS

TYPICAL WATER SERVICE-ELEVATION

NTS 1/2013

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CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS

TEMPORARY ALL WEATHER

DRIVING SURFACE

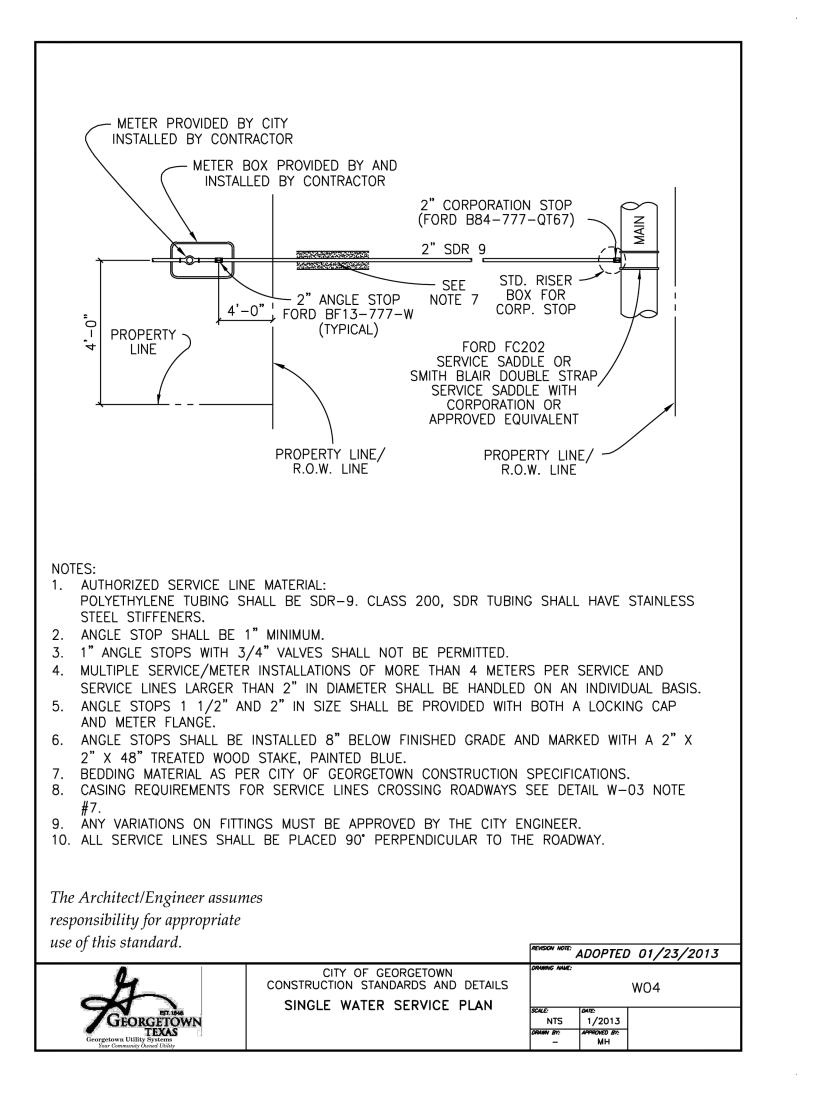
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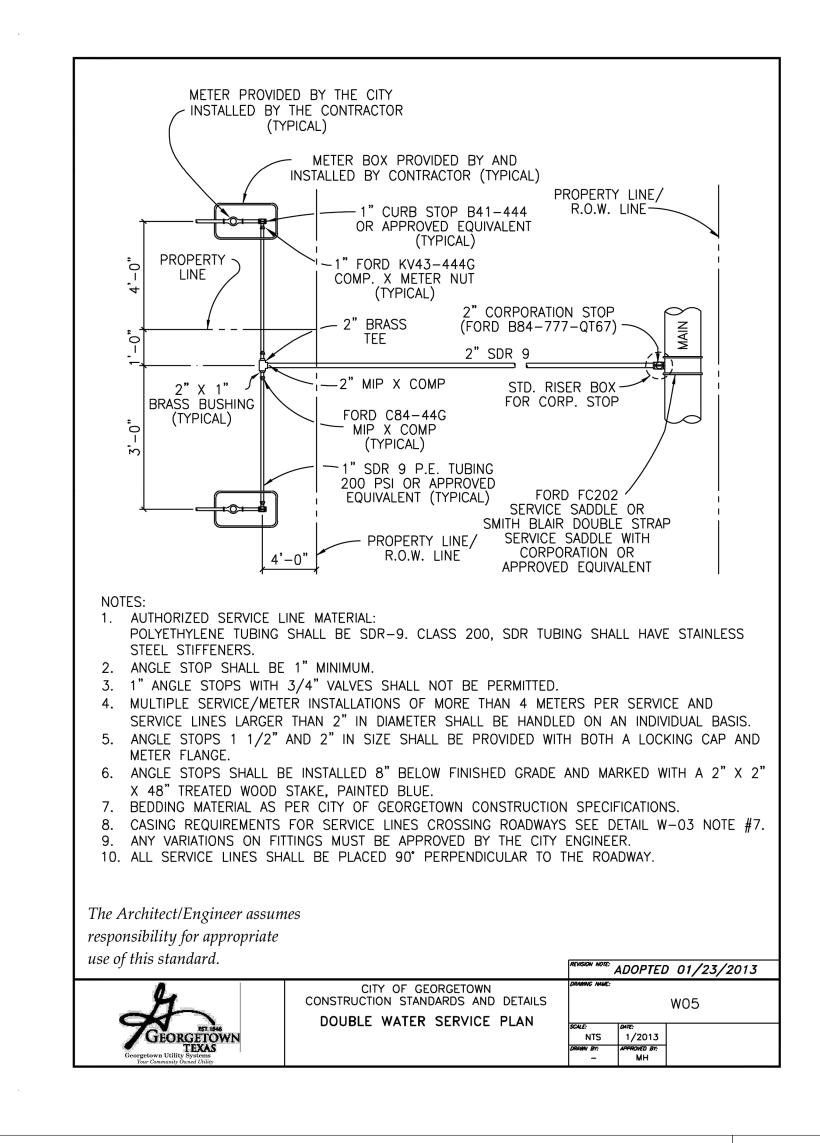
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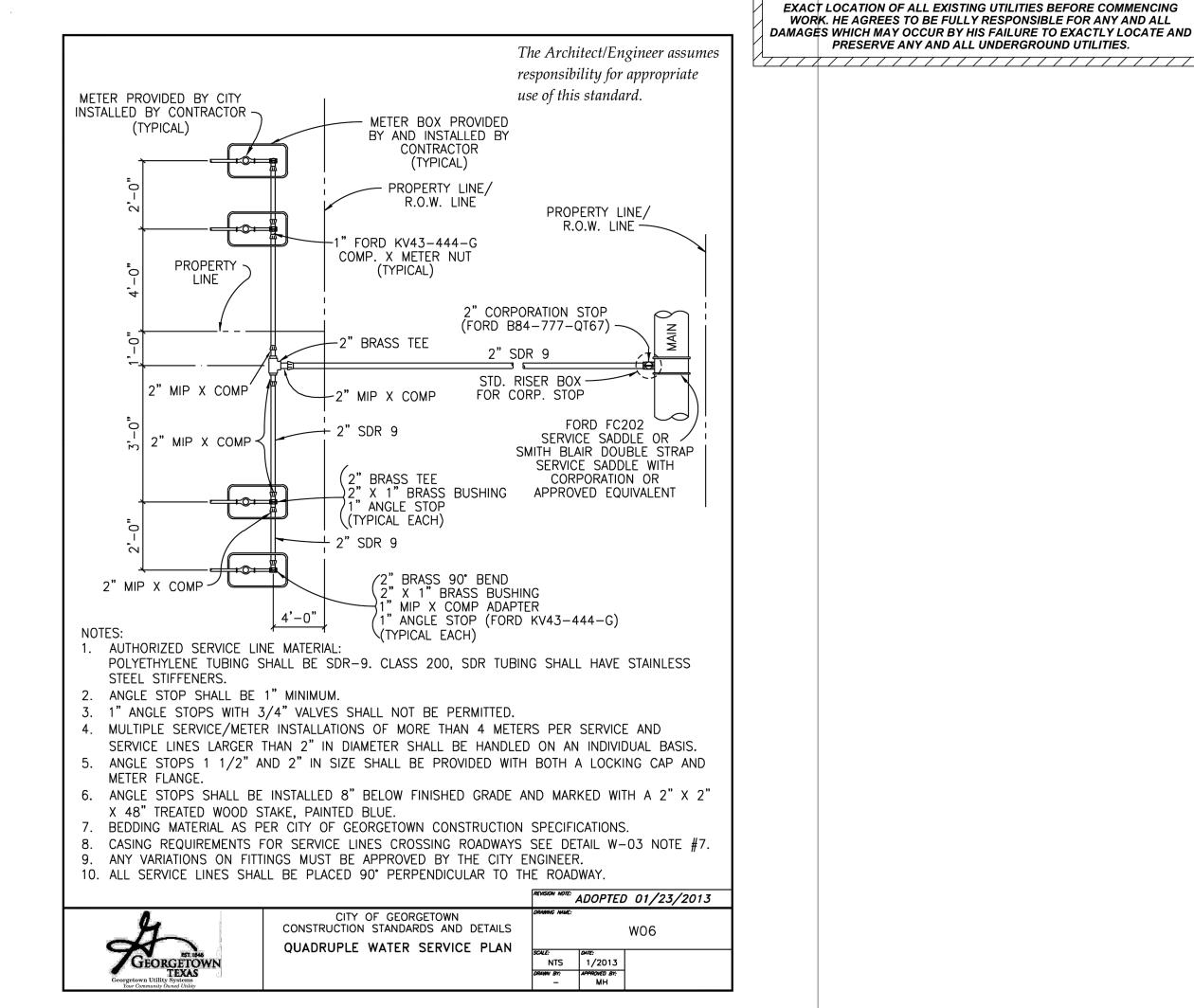
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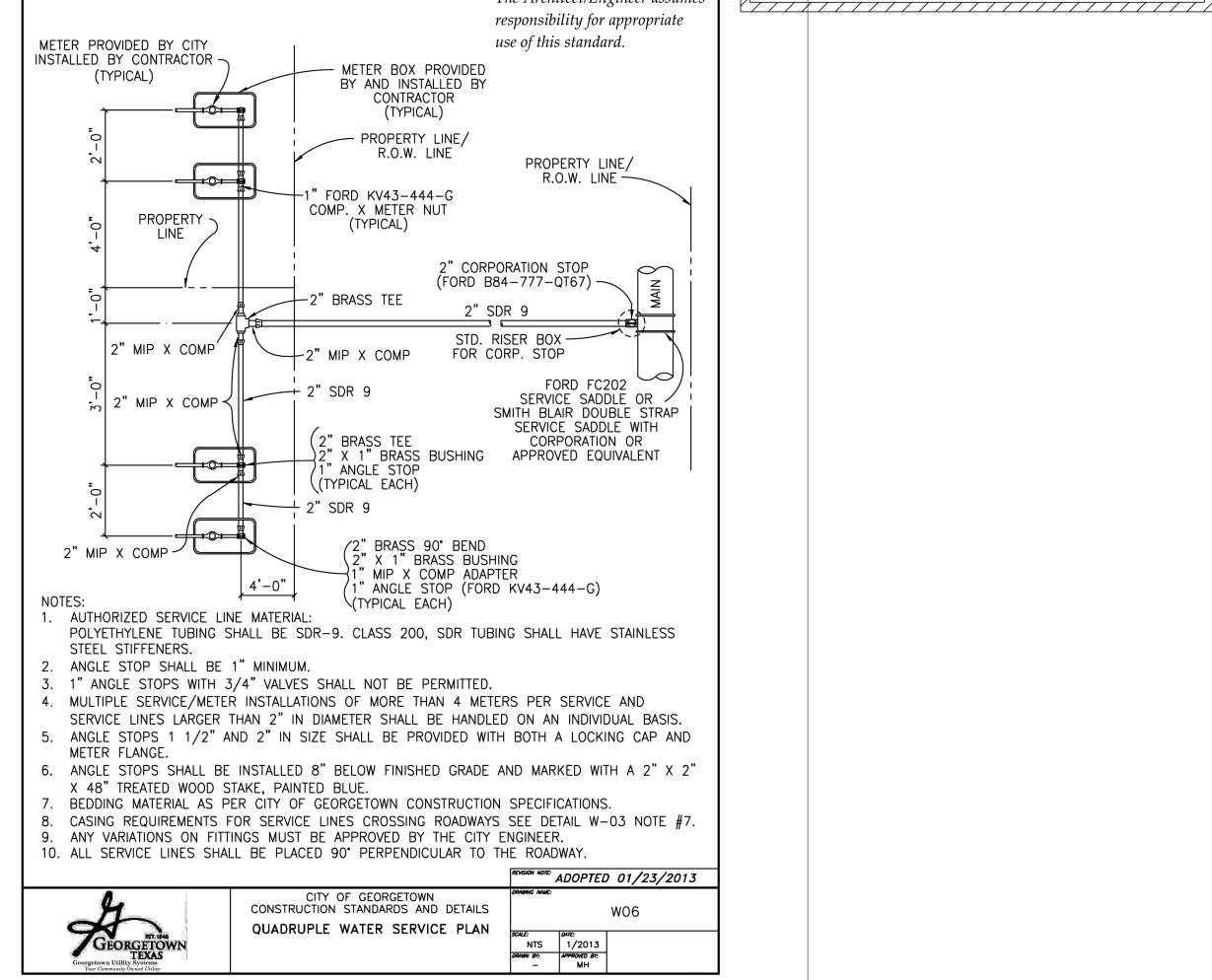
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use of this standard.



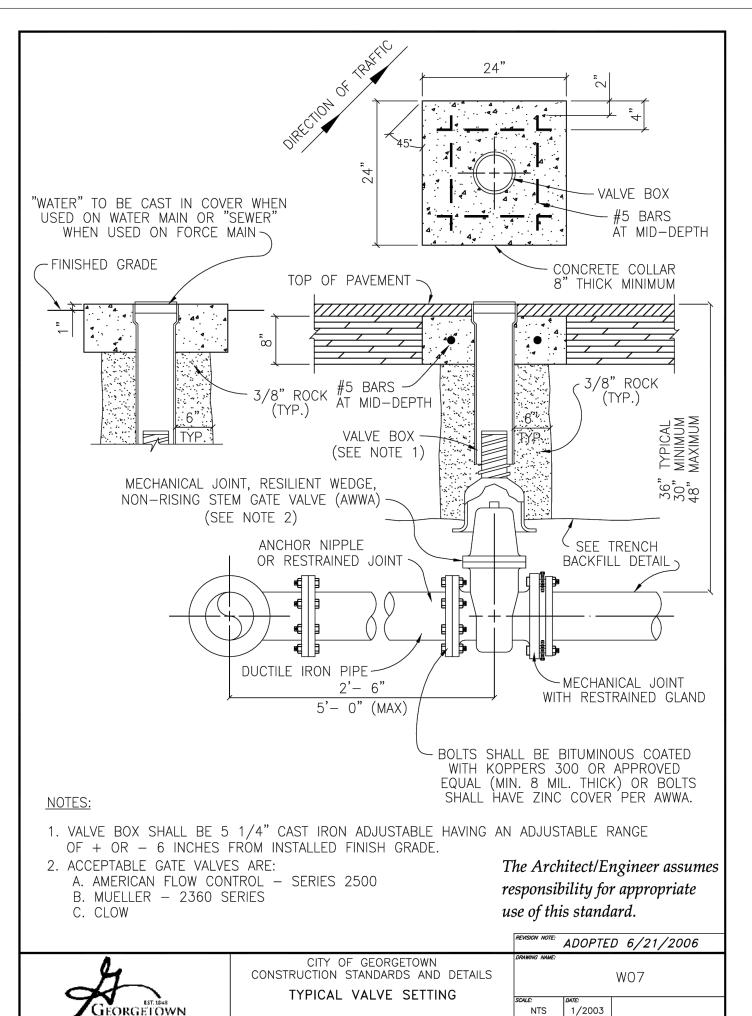


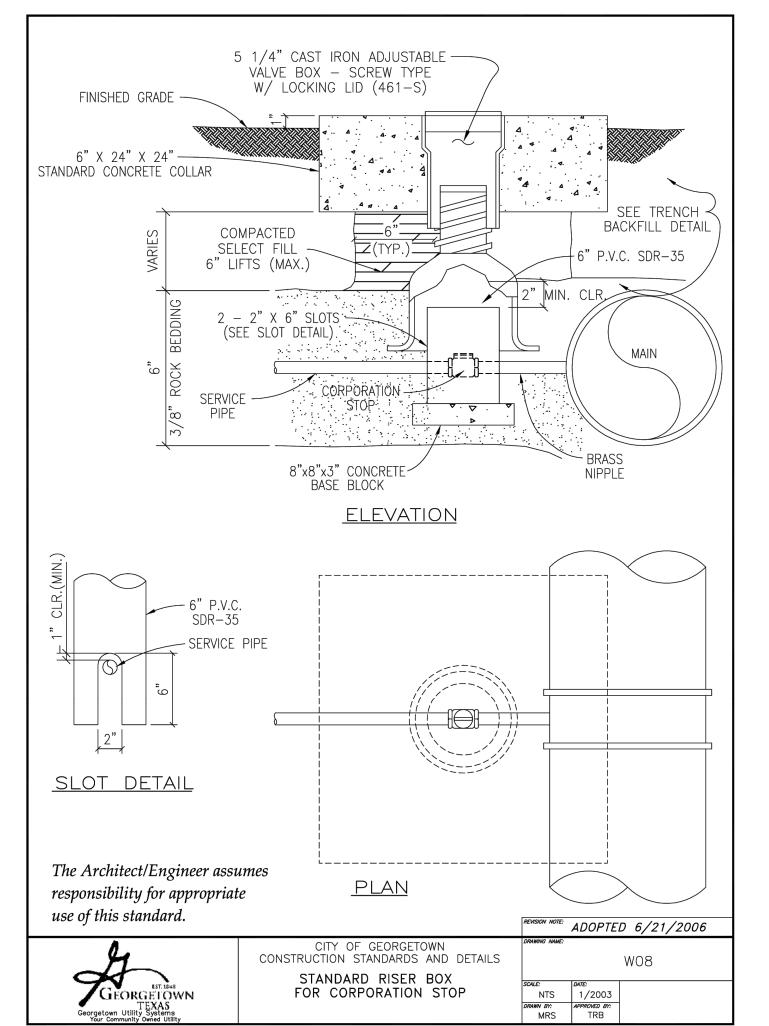


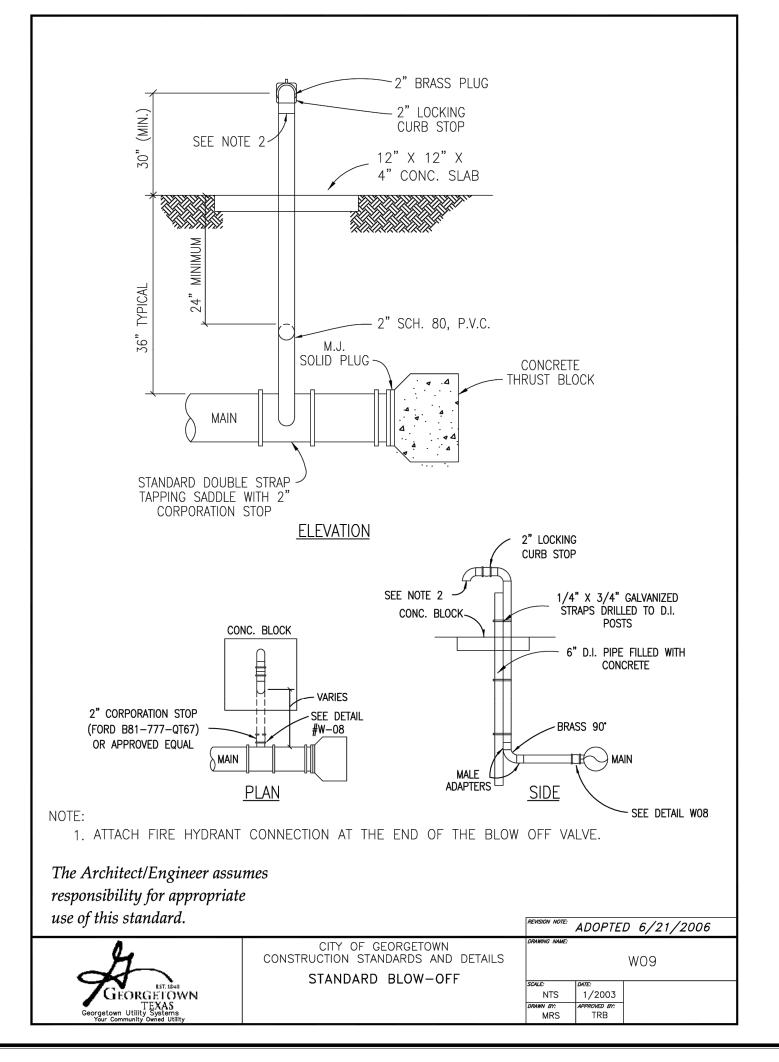


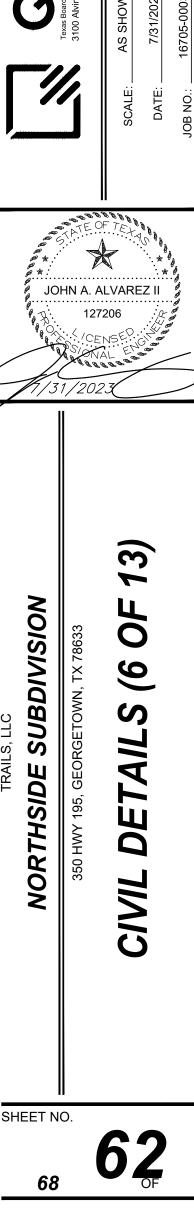
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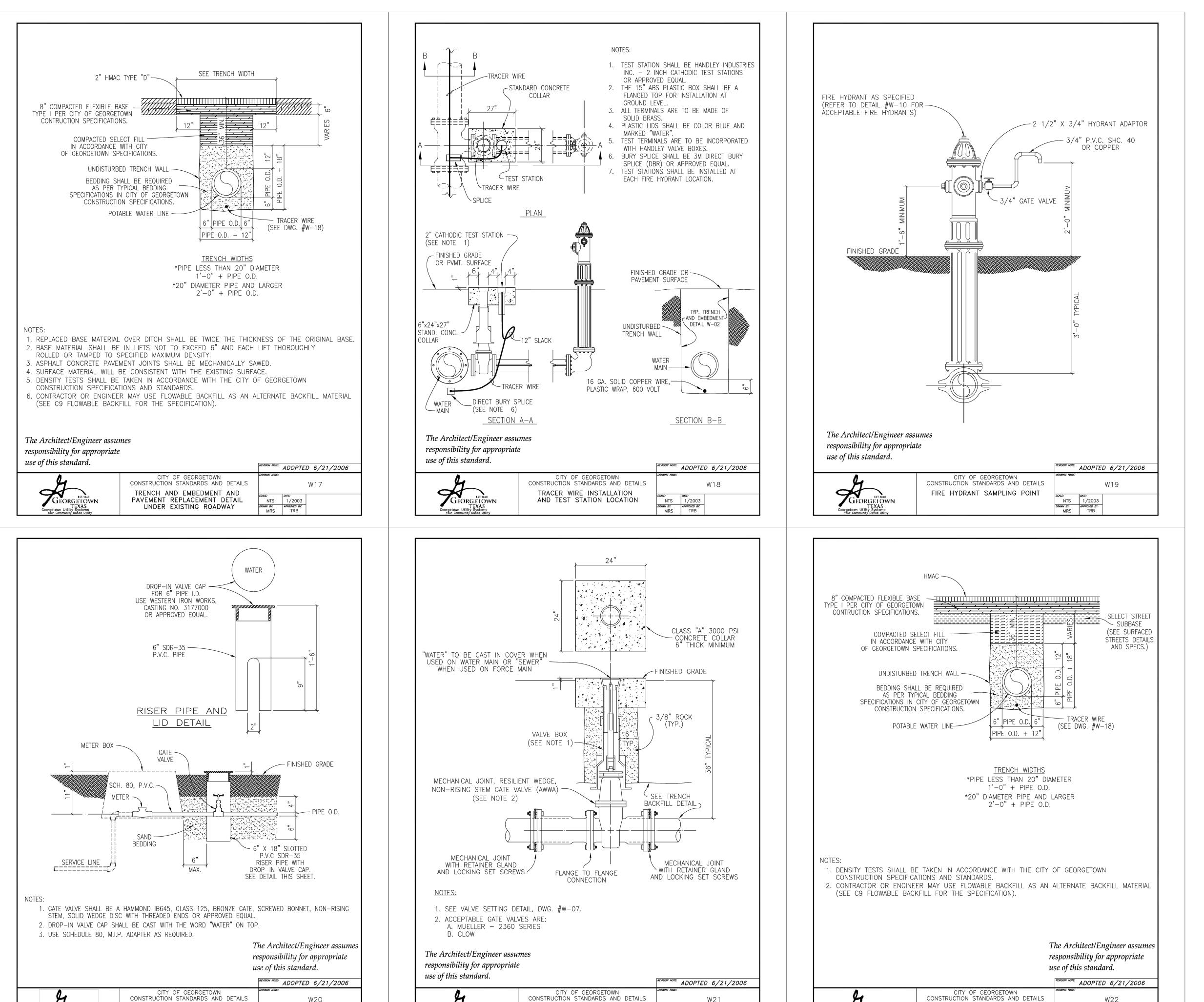
PRESERVE ANY AND ALL UNDERGROUND UTILITIES.











INLINE VALVE INSTALLATION

NTS 1/2003

DRAWN BY: APPROVED BY:
MRS TRB

TRENCH AND EMBEDMENT DETAIL UNDER PROPOSED ROADWAY

✓ Georgetown

NTS 1/2003

DRAWN BY: APPROVED BY:

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No. Date REVISIONS

DESIGNED BY:

CHECKED BY:

DRAWN BY:

SLH

SCALE: AS SHOWN
DATE: 7/31/2023

JOHN A. ALVAREZ II

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AILS (8 OF 13)

NORTHSIDE SUBDIVISION
350 HWY 195, GEORGETOWN, TX 78633

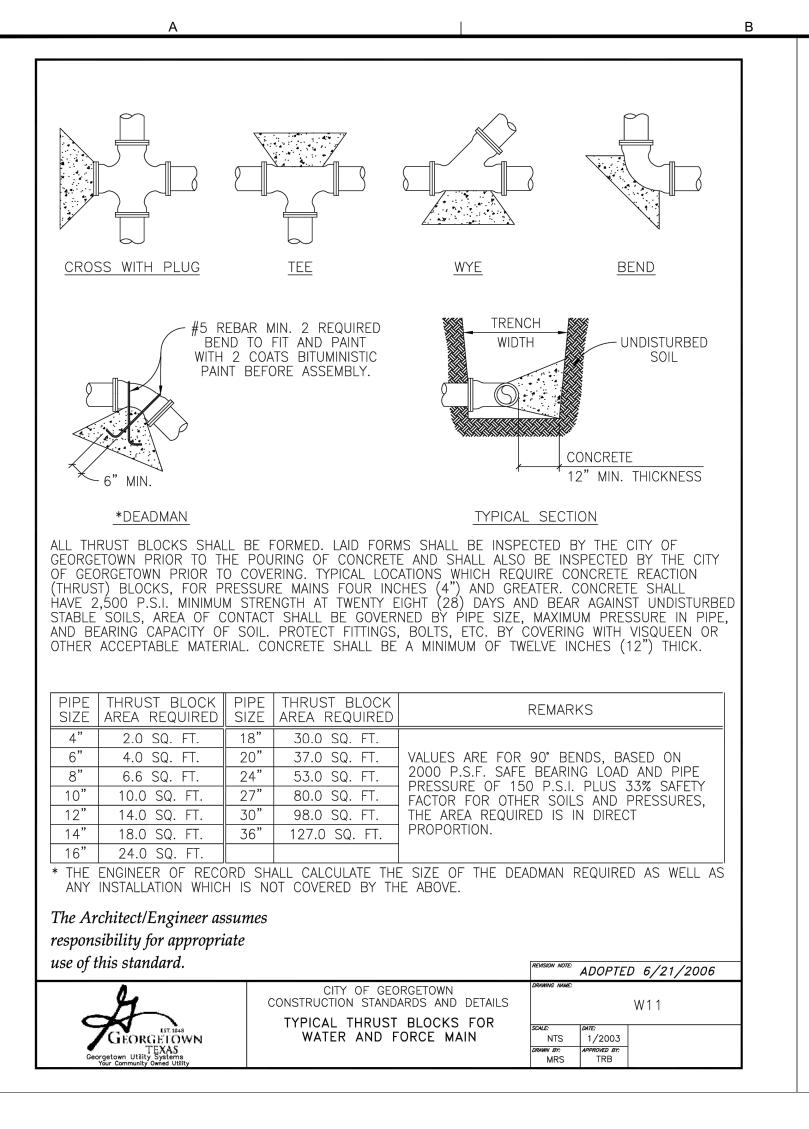
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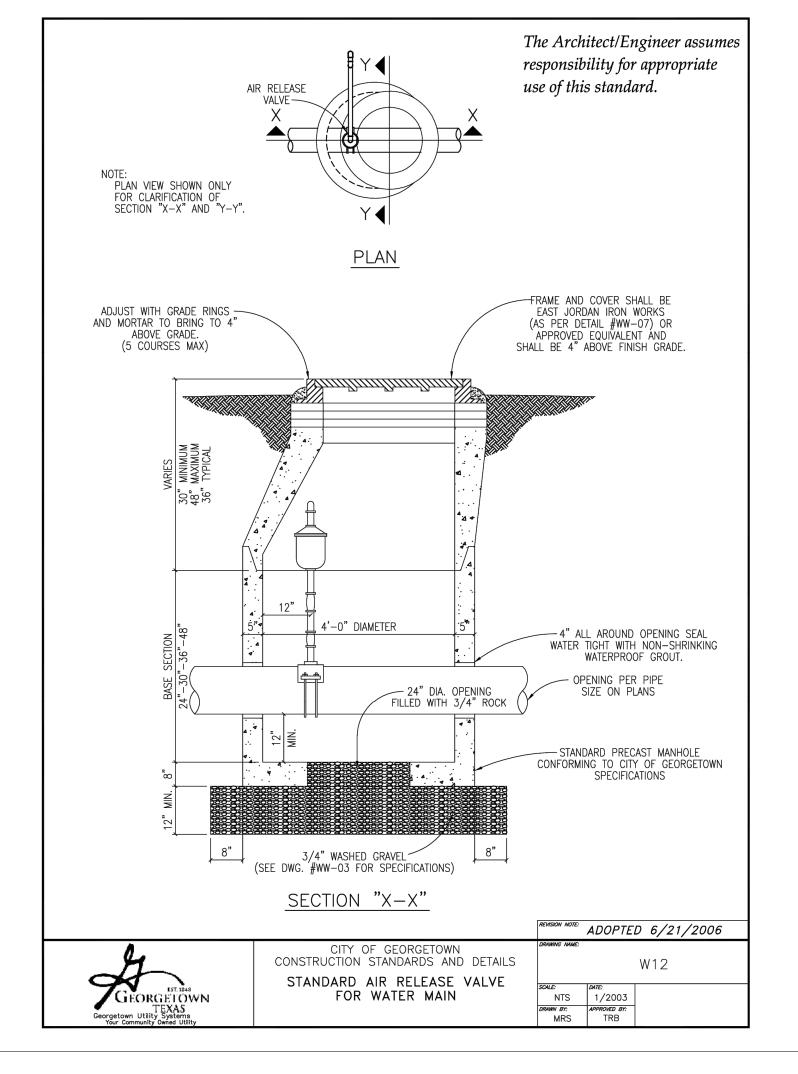
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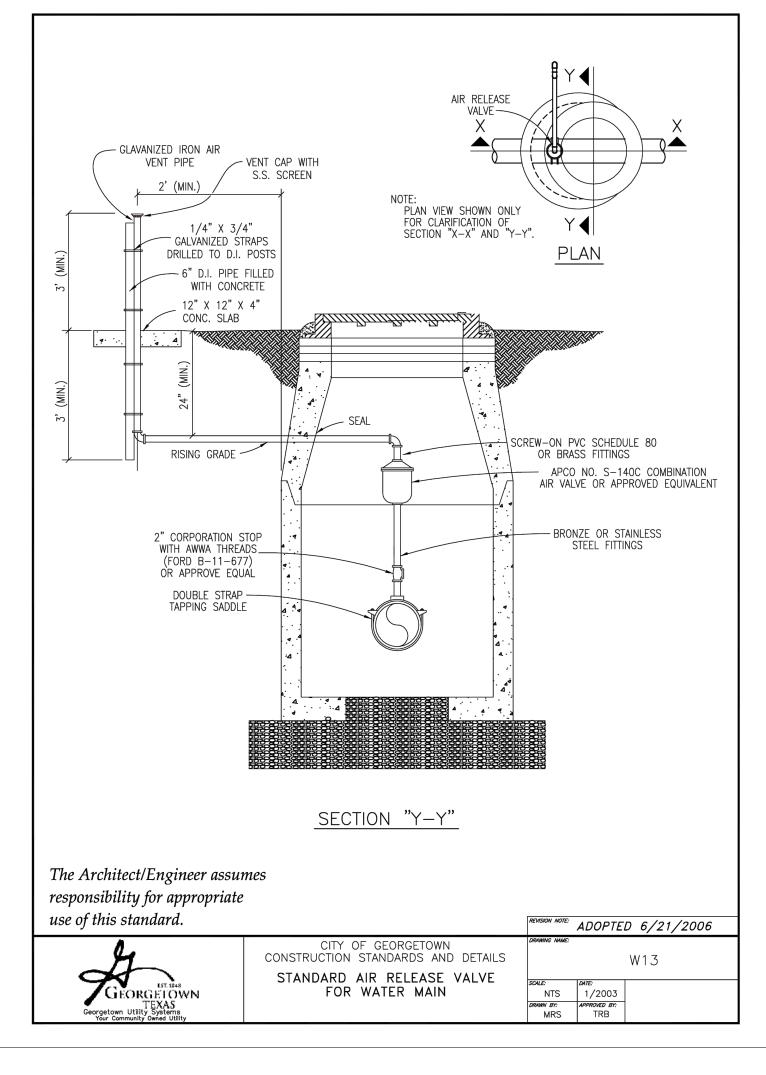
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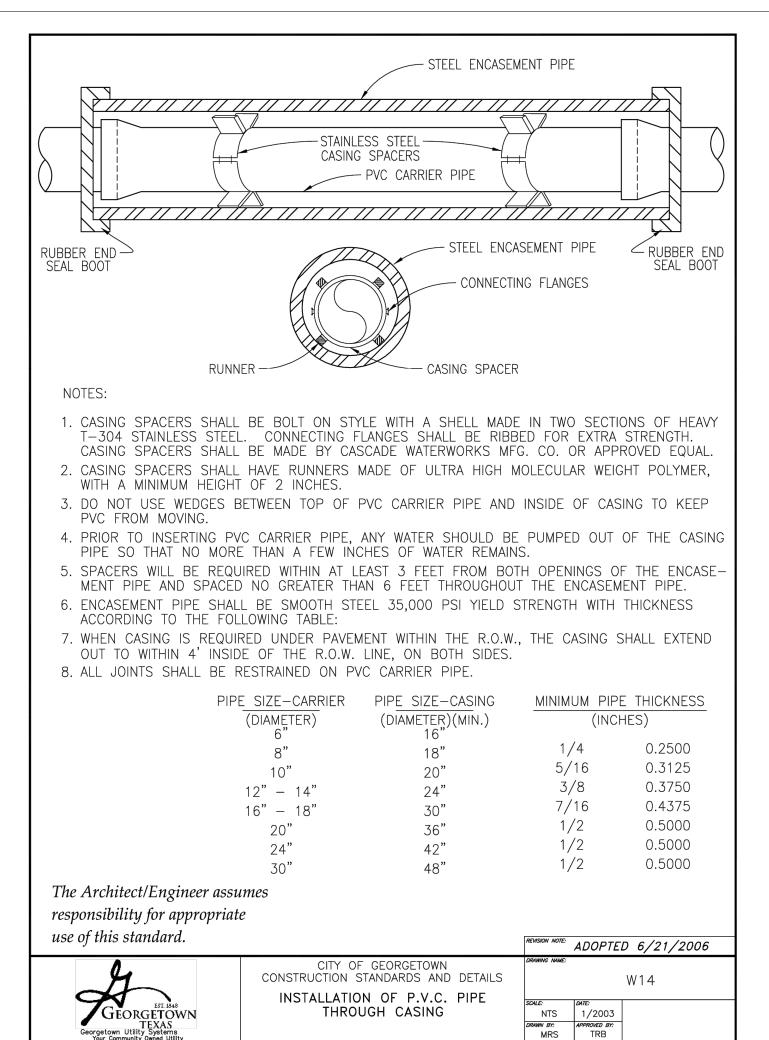
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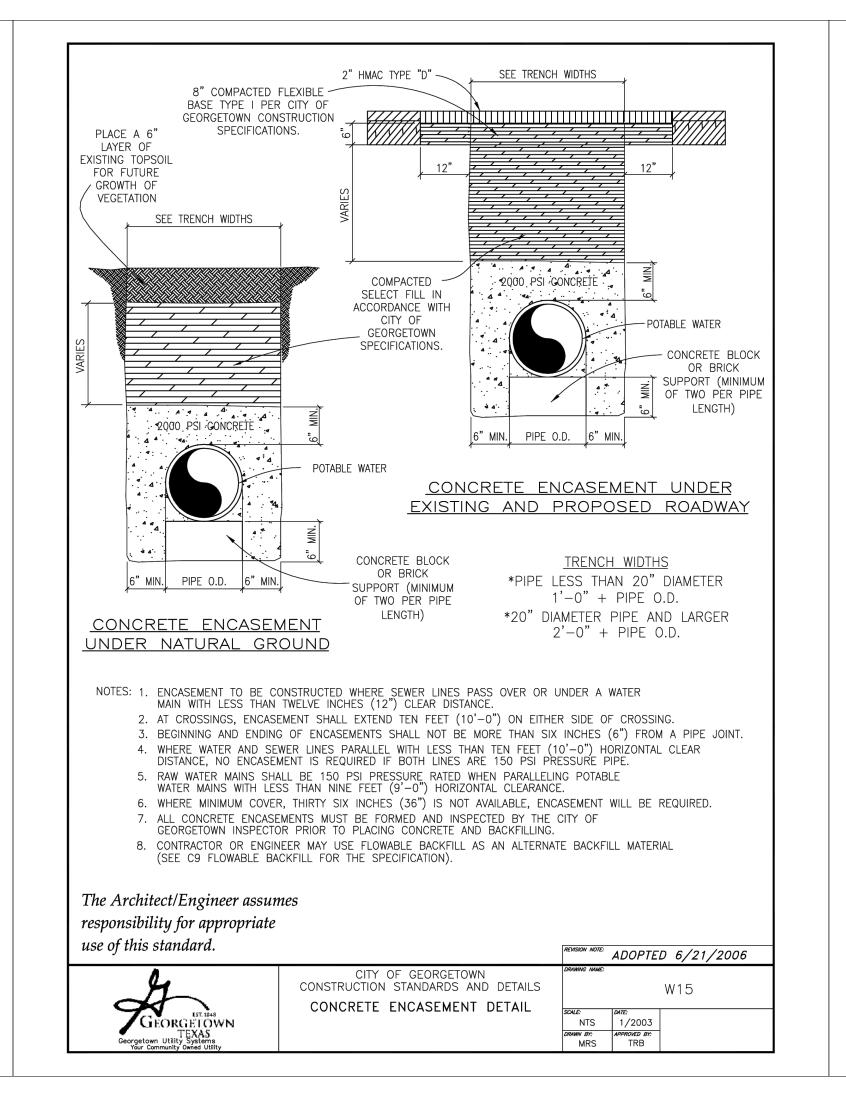
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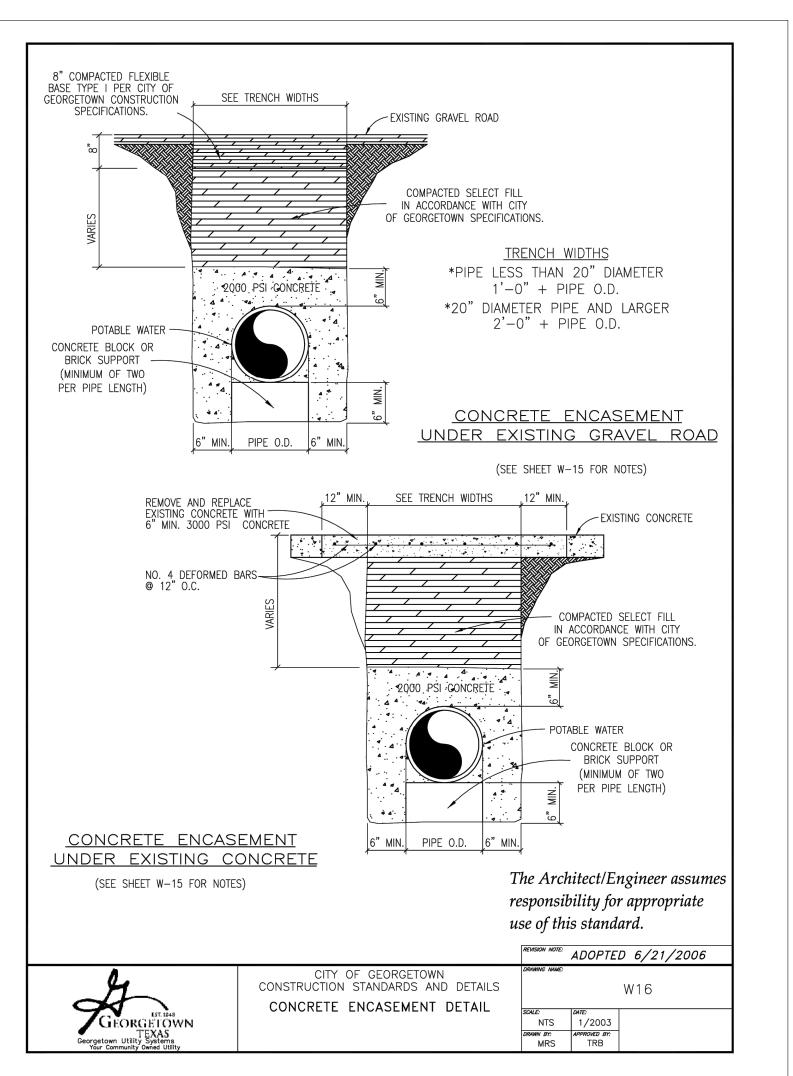


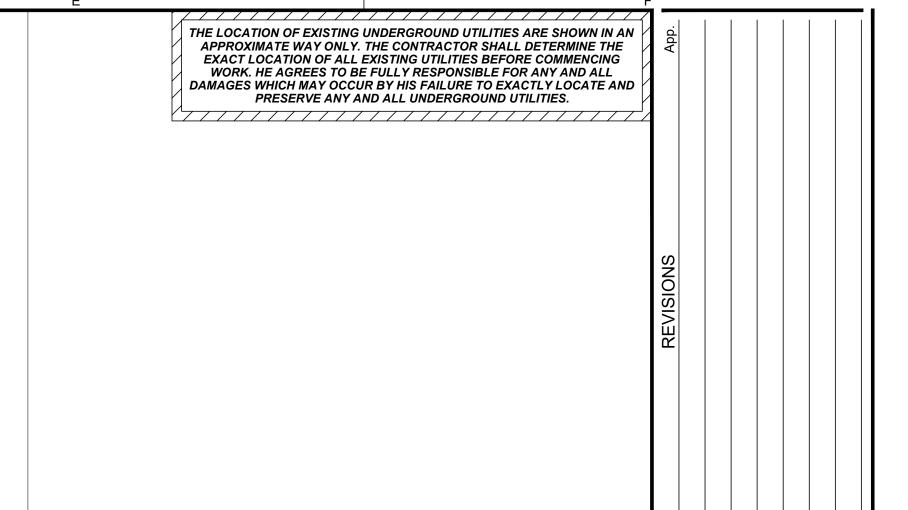


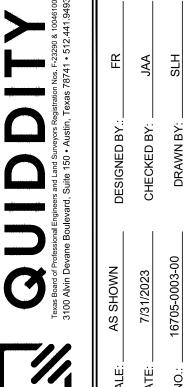


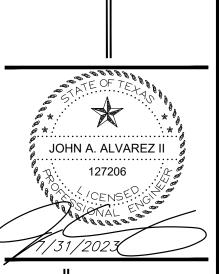












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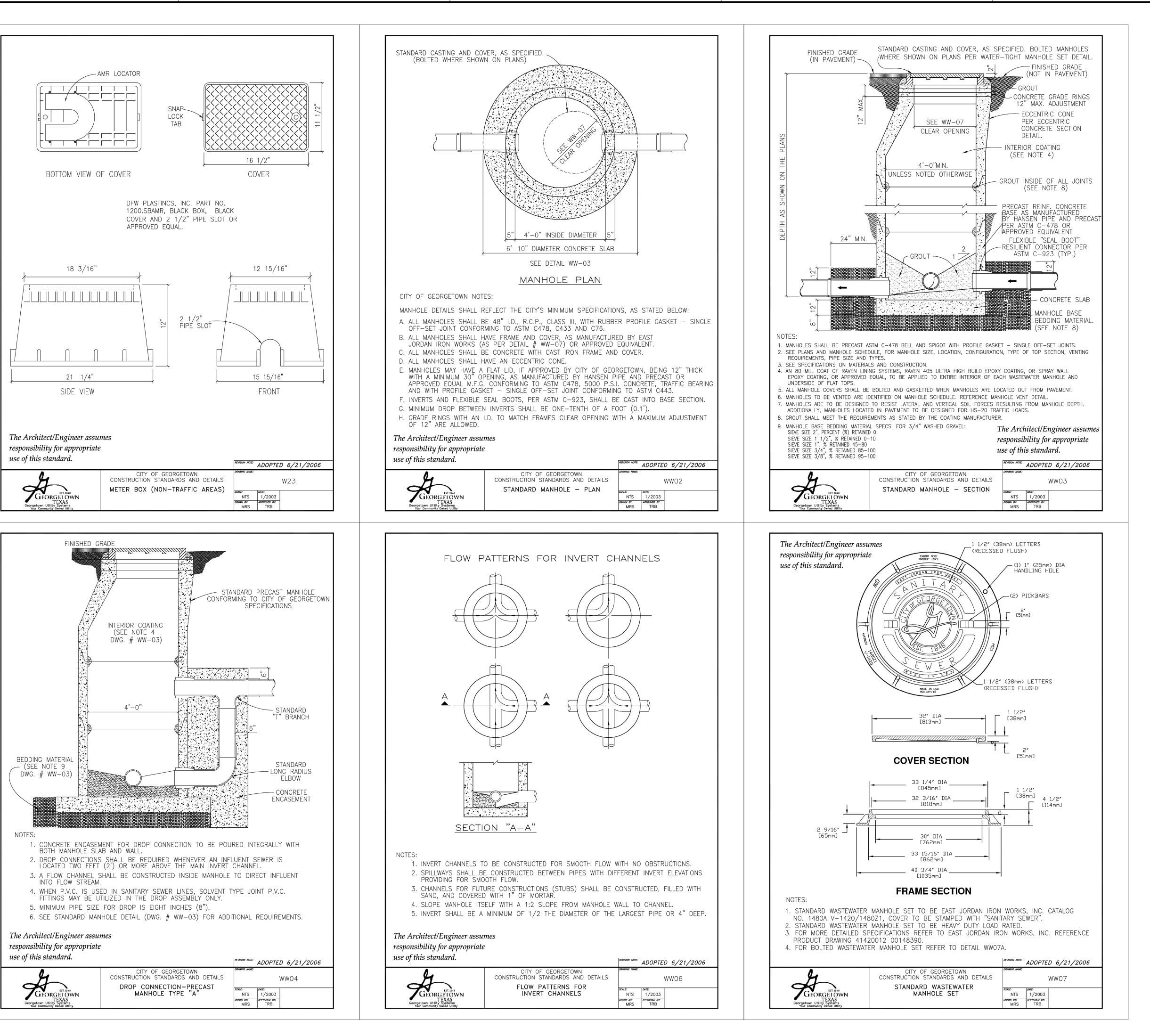
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350 HWY 195, GEORGETOWN, TX 78633

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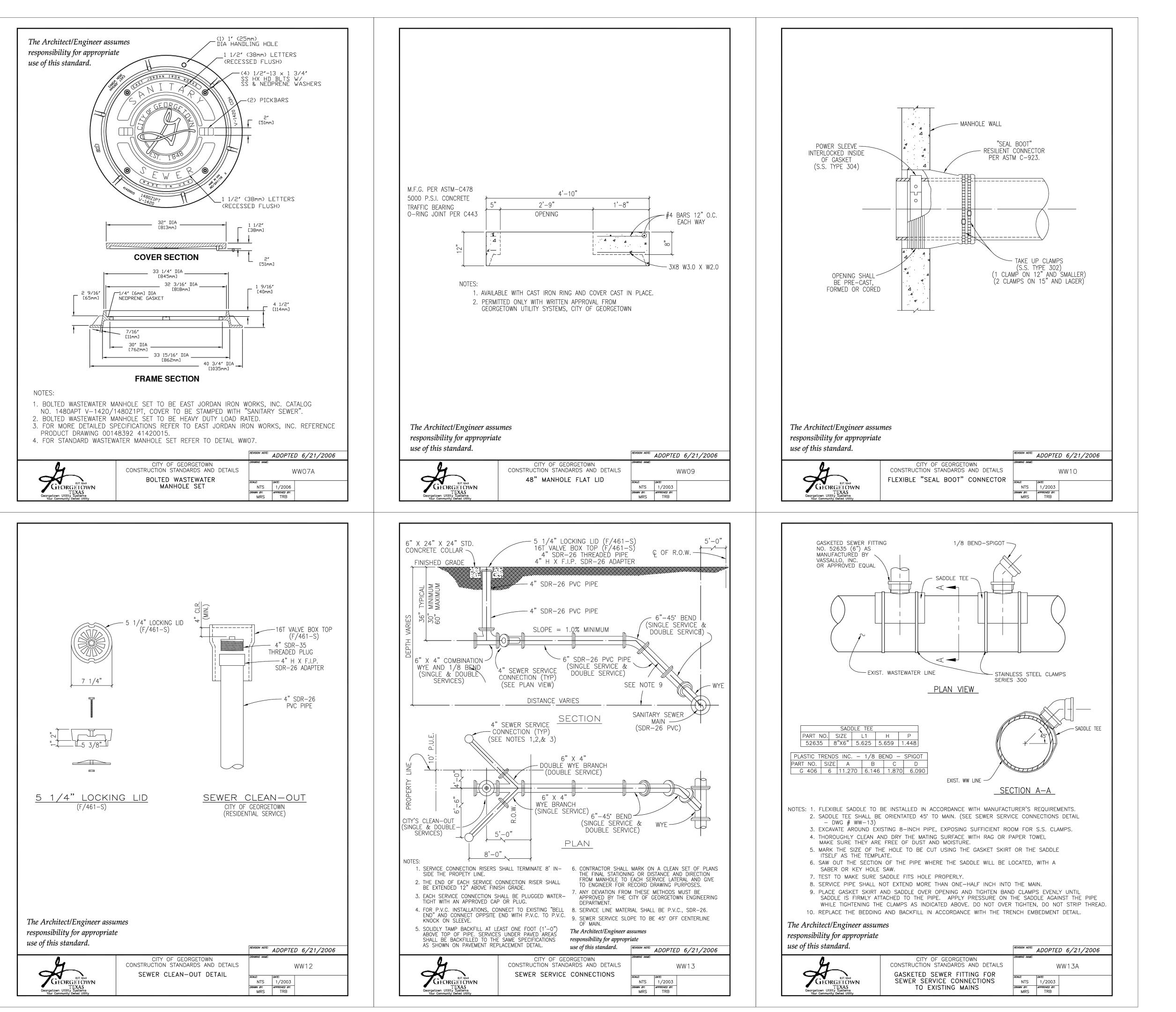
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JOHN A. ALVAREZ II

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NORTHSIDE

SHEET NO.



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No. Date REVISIONS

DESIGNED BY:

CHECKED BY:

DRAWN BY:

SLH

SCALE: AS SHOWN
DATE: 7/31/2023

JOHN A. ALVAREZ II

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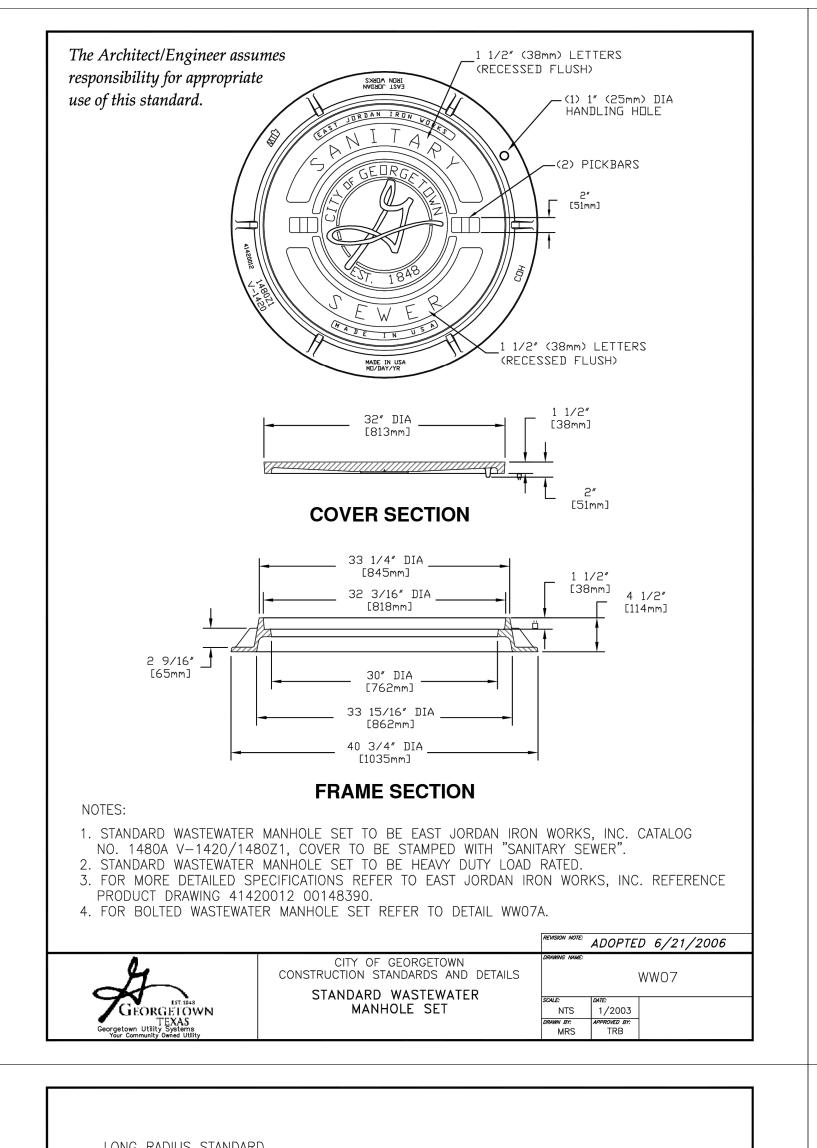
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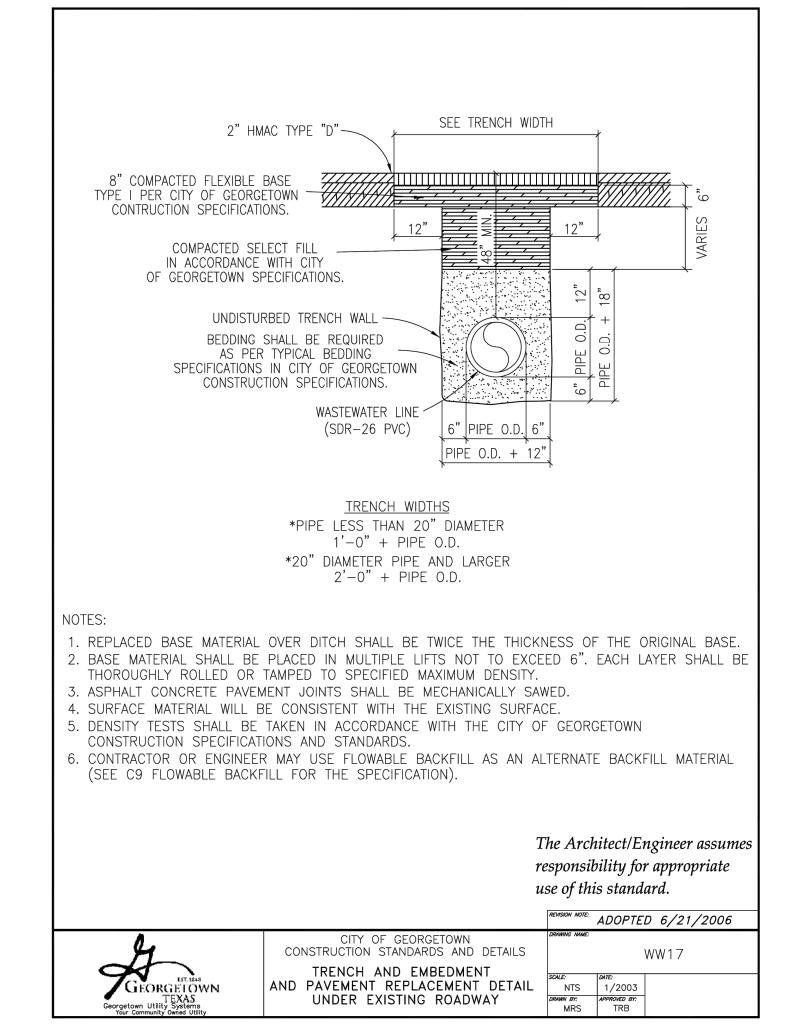
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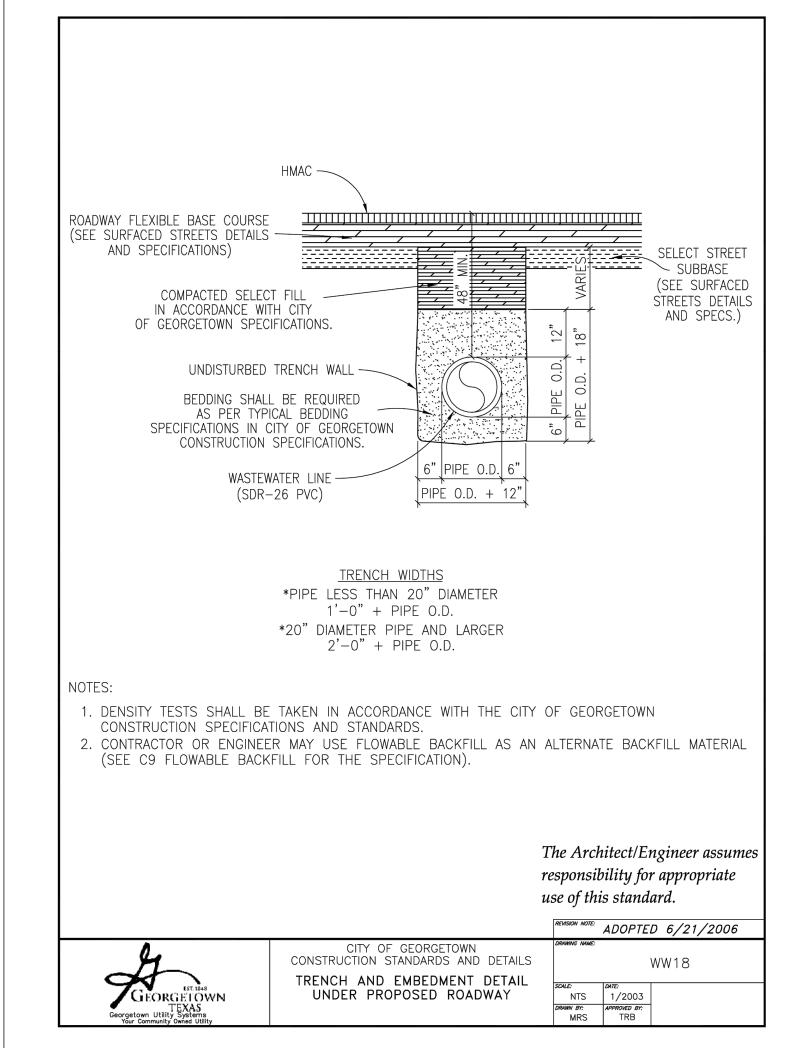
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350 HWY 195, GEORGETOWN, TX 78633

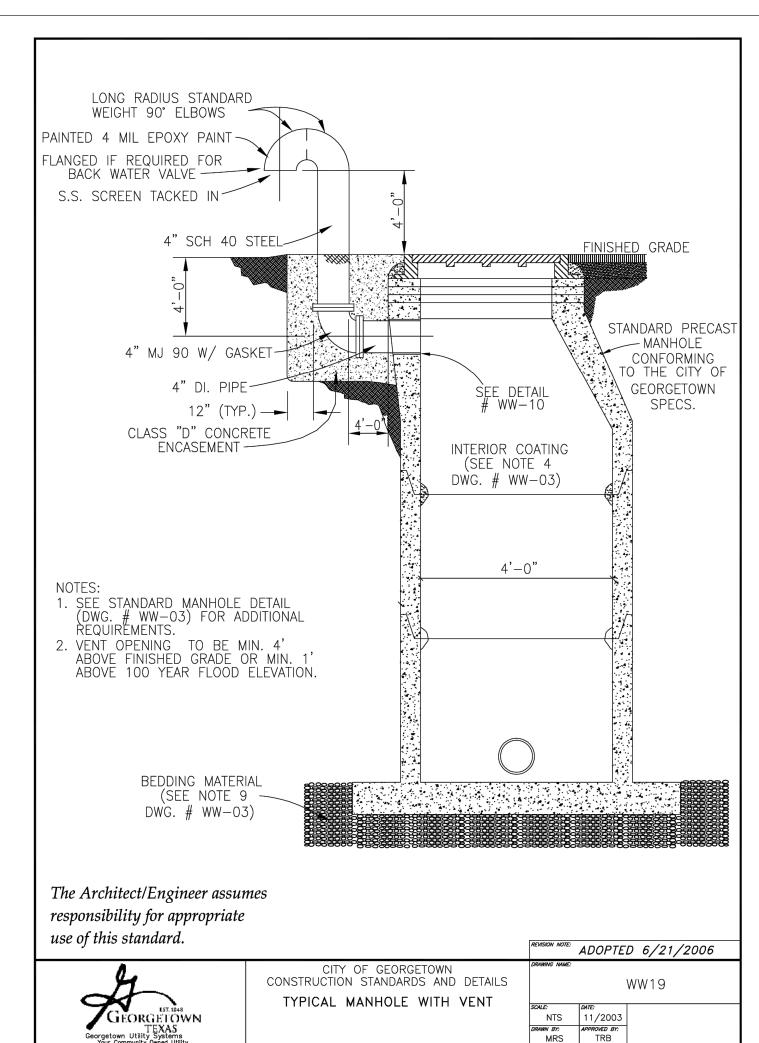
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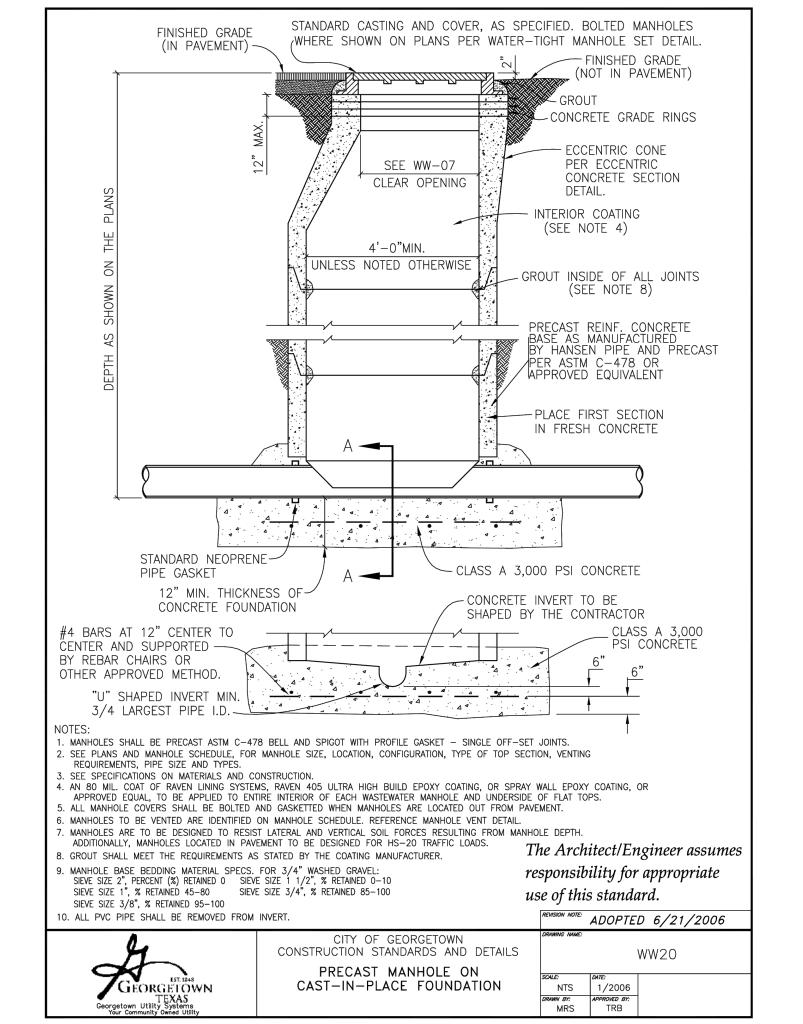
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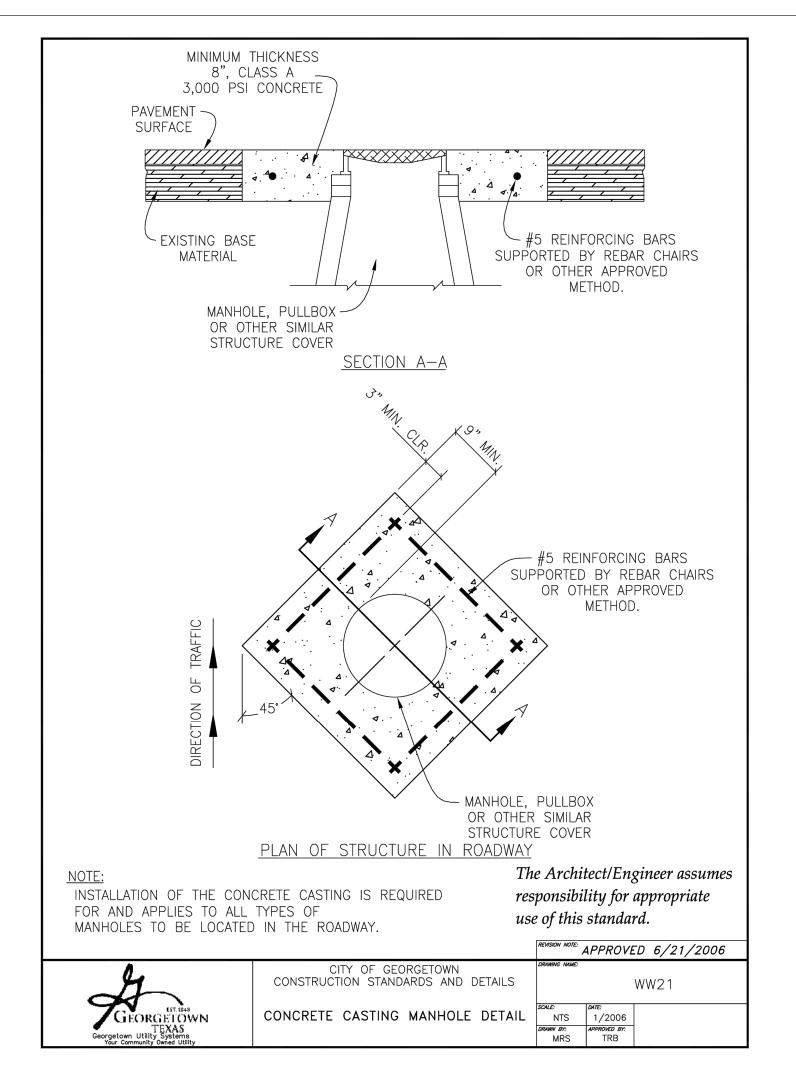












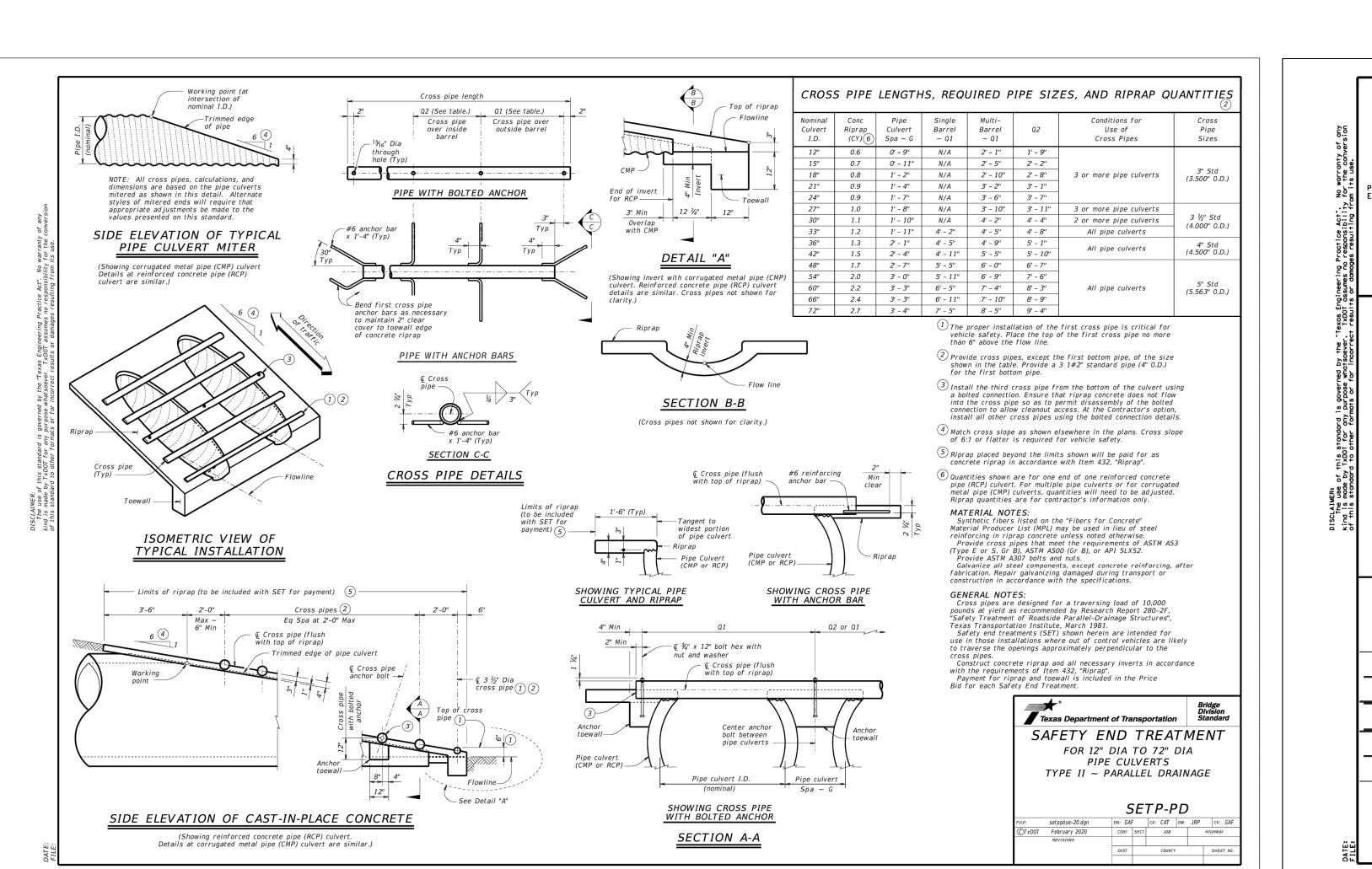
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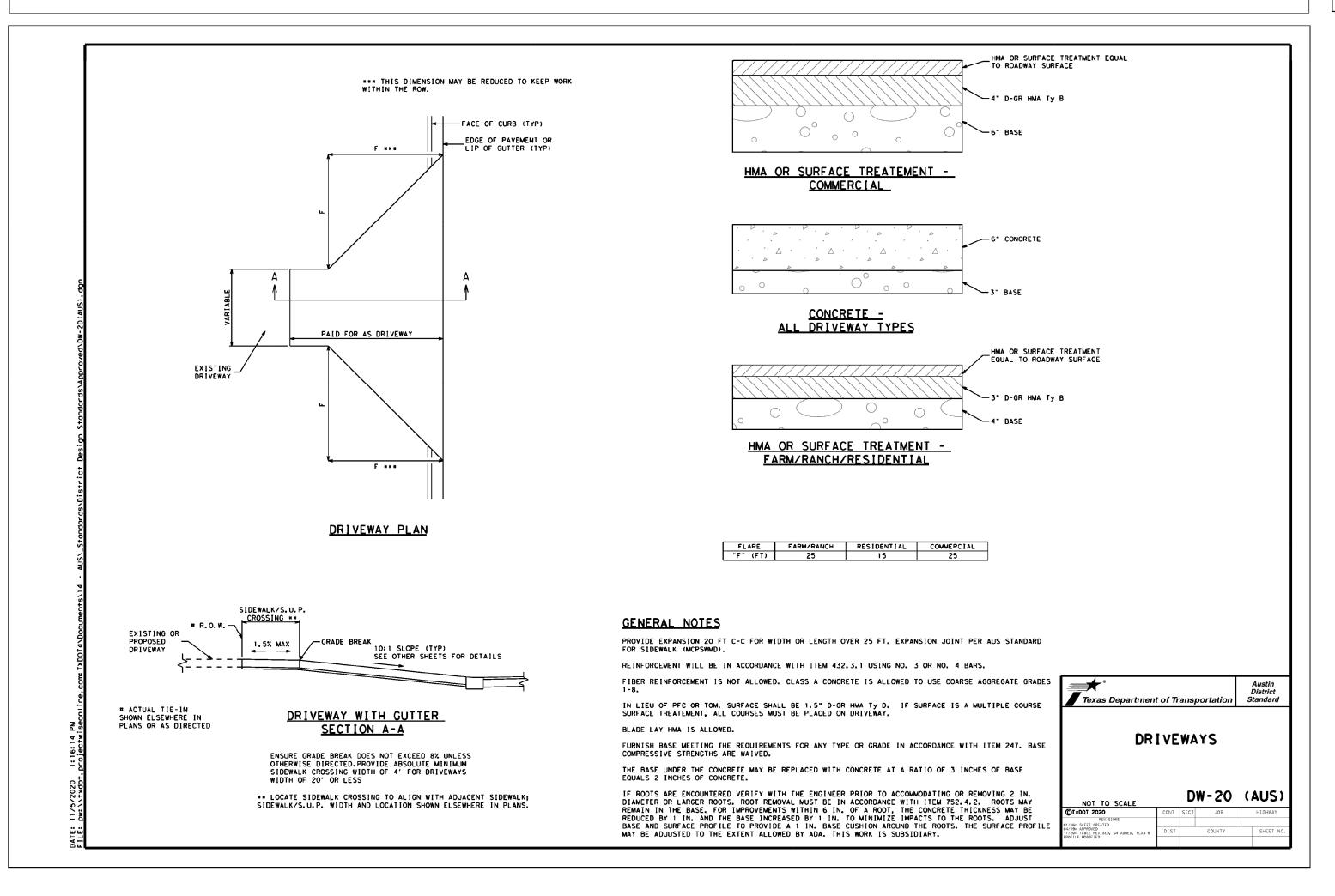
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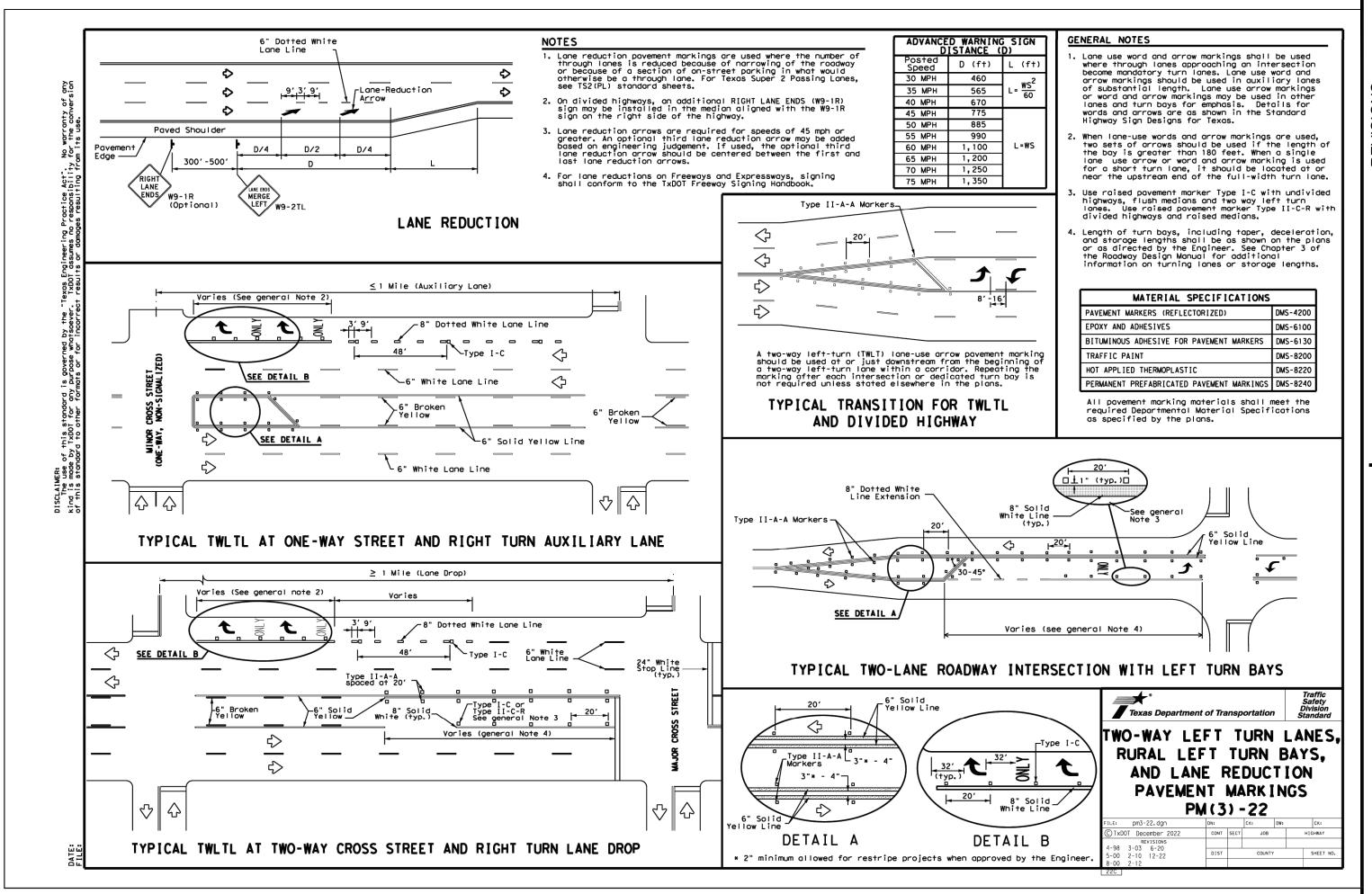
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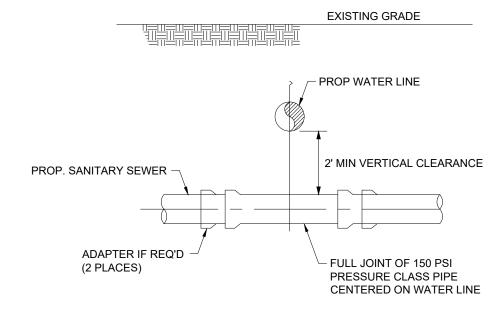
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SANITARY SEWER CROSSING WATER LINE

- IF A COLLECTION PIPE CROSSES BELOW A WATER SUPPLY PIPE, EACH PORTION OF THE COLLECTION SYSTEM PIPE WITHIN 9 FEET OF THE WATER SUPPLY PIPE MUST BE CONSTRUCTED USING AT LEAST 150 PSI PRESSURE CLASS PIPE.
- A COLLECTION SYSTEM THAT CROSSES BELOW A WATER SUPPLY PIPE AND IS CONSTRUCTED OF AT LEAST 150 PSI PRESSURE CLASS, CORROSION -RESISTANT, NON - BRITTLE PIPE MUST: - HAVE AT LEAST 2 FEET OF VERTICAL CLEARANCE BETWEEN THE
- OUTSIDE PIPES BE CENTERED ON THE CROSSING
- BE AT LEAST 18 FEET LONG TERMINATE AT JOINTS THAT ARE DESIGNED TO SEAL AT ATMOSPHERIC PRESSURE.
- 1. Minimum clearance is 2 feet for non-pressure rated 2. Required if existing SS is disturbed and/or there is 3. Not required for augered WL unless there is evidence

sanitary sewers and force mains

- of leakage; completely fill augered hold with bentonite/clay mixture 4. Not required for augered SS, completely fill augered hole with bentonite/clay mixture
- a. Both water lines and wastewater main or lateral must pass a pressure and leakage test as specified in AWWA b. Sanitary Sewers (SS) is applicable to both gravity

PROTECTION REQUIREMENTS AT MATER LINE CANITARY SEWER CROSSINGS

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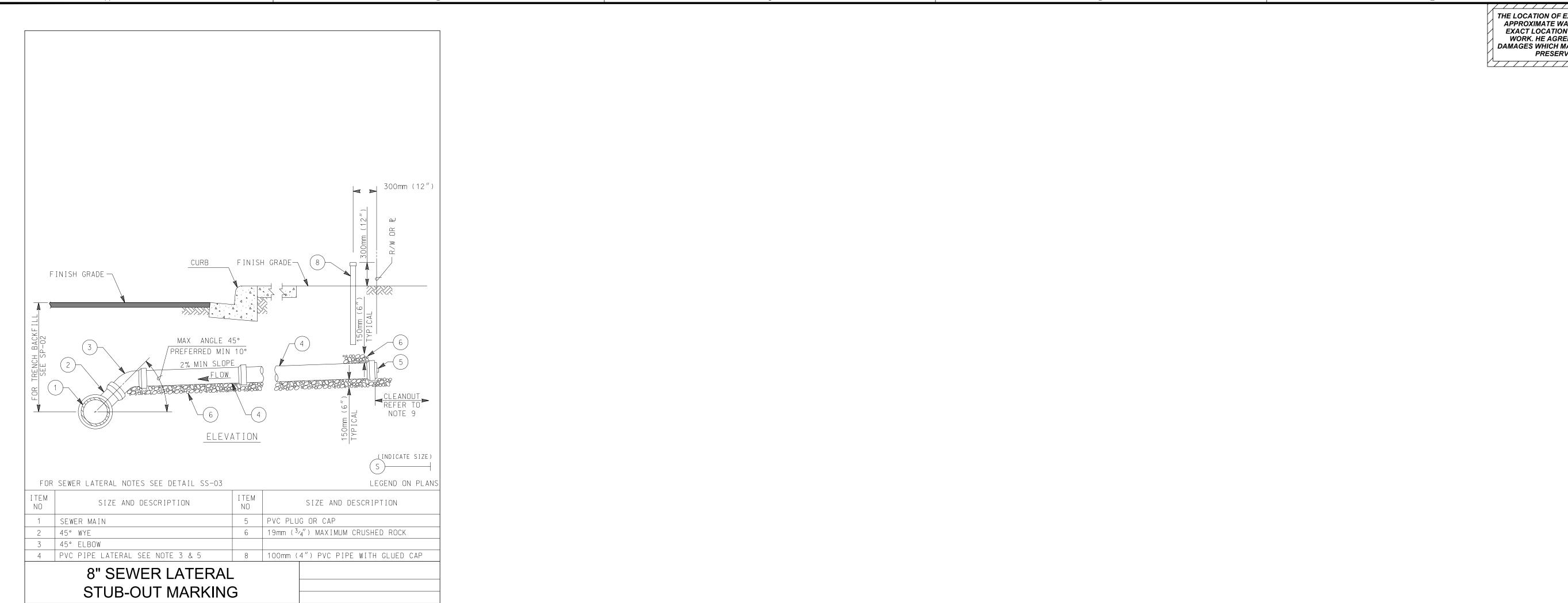
WATER	R LINE —	SANIT	ARY SEW	ER CR	OSSINGS			
	F	ROPOSED	WATER LINE			PROPOSE) SANITARY SE	EWER
	OVER	?	UND	ER	OVER	?	UNDE	R
	EXISTING SS	PROP SS	EXISTING SS	PROP SS	EXISTING WL	PROP WL	EXISTING WL	PROP WL
Minimum 2 feet vertical clearance	√ 1	√1	✓	✓		✓	√1	√1
Place 1 full section (min 18ft) of WL centered at SS crossing. Provide restrained joints on WL, spaced at least 9 ft. horizontally from centerline of SS	✓	/	✓	/		/		✓
Place 1 full section (min 18ft) of SS centered at WL crossing. Provide restrained joints on SS, spaced at least 9 ft. horizontally from centerline of WL		<u> </u>					✓	✓
Replace 1 full section of existing SS with pressure—rated DIP or pressure rated PVC pipe with adapters and restrained joints centered at WL crossing	2,3		__ 3		ALLOWED			
Provide DIP for small diameter WL (less than 24 inches), PVC pipe is only allowed if encased per TAC § 290.44, and use restrained joints for both DIP and PVC pipe			✓	/	NOT A	/		
Embed SS with CSS for the total length of 1 pipe segment plus 1 foot beyond the joints on each end	√2,3	√ ⁴	√ ³	√ ⁴		√ ⁴	√ ⁴	√ ⁴
Place 1 full section (min 18 ft) of min 150 psi SS centered at WL crossing, Provide restrained joints on SS, Spaced at least 9 ft horizontally from centerline of WL or encase in a joint of 150 psi pressure pipe (18 ft) two nominal sizes larger with spacers at 5 ft interval.				✓		✓		

SUBDIVISIO

ORTHSIDE

JOHN A. ALVAREZ II 127206

SHEET NO.



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d of Professional Engineers and Land Surveyors Registration Nos. F-23290 & 10046100

n Devane Boulevard, Suite 150 • Austin, Texas 78741 • 512.441.9493

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DESIGNED BY:: FR

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SCALE: AS SHC
DATE: 7/31/2

JOHN A. ALVAREZ II

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ILS (13 OF 13)

NORTHSIDE SUBDIVISION
350 HWY 195, GEORGETOWN, TX 78633

SHEET NO.

69

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: John A. Alvarez I
Date: <u>8/1/20</u> 23
Signature of Customer/Agent:
96

Regulated Entity Name: Northside Subdivision

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.
Se	equence 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

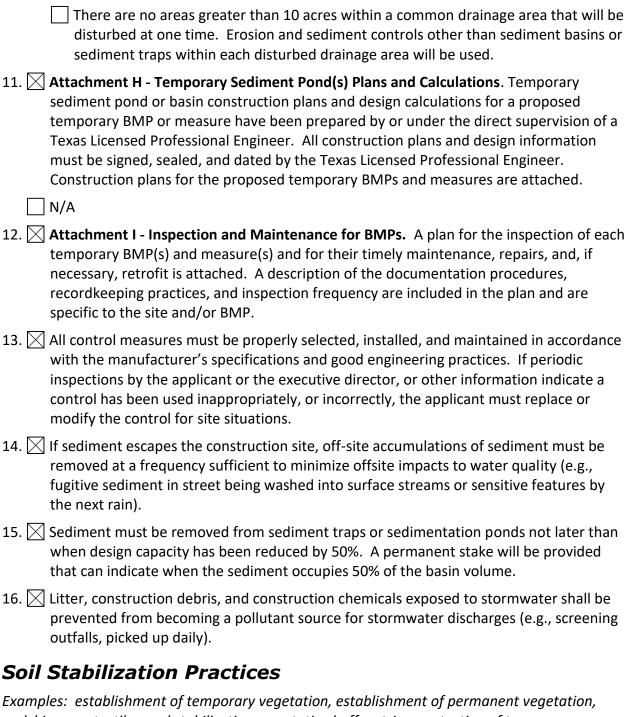
Temporary Best Management Practices (TBMPs)

receive discharges from disturbed areas of the project: Dry Berry Creek

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.



mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

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

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

Administrative Information

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

TEMPORARY STORMWATER SECTION - ATTACHMENT A

Spill Response Actions

Spills of toxic or hazardous material shall be reported to the Owner and to the appropriate State or local government agency, regardless of the size. The following practices shall be followed for spill prevention and cleanup:

General Measures

- To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances
 listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes shall be contained and
 cleaned up immediately. The spill area shall be kept well ventilated and personnel will wear
 appropriate protective clothing to prevent injury from contact with a hazardous substance.
- 2. The spill prevention plan shall be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures shall also be included.
- 3. Hazardous materials and wastes shall be stored in covered containers and protected from vandalism.
- 4. Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site shall be located in an open, conspicuous, and accessible location. Manufacturers' recommended methods for spill cleanup shall be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- 5. Materials and equipment necessary for spill cleanup shall be kept in the material storage area onsite. Equipment and materials will include but not be limited to brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- 6. The site superintendent responsible for the day-to-day site operations shall be the spill prevention and cleanup coordinator. He/She shall designate at least three other site personnel who will receive spill prevention and cleanup training. These individuals shall each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel shall be posted in the material storage area and in the office trailer onsite.
- 7. Spills shall be covered and protected from stormwater run-on during rainfall to the extent that it doesn't compromise cleanup activities. Spills shall not be buried or washed with water.
- 8. Used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose shall be stored and disposed of properly.

- Water used for cleaning and decontamination shall not be allowed to enter storm drains or watercourses. Contaminated water shall be collected and disposed of in accordance with applicable regulations.
- 10. Water overflow or minor water spillage shall be contained, and not be allowed to discharge into drainage facilities or watercourses.
- 11. Waste storage areas shall be kept clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners shall be repaired or replaced as needed to maintain proper function.

Cleanup

- 1. Leaks and spills shall be cleaned up immediately.
- 2. Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and shall be disposed of as hazardous waste.
- 3. Dry material spills shall never be hosed down or buried. The material shall be cleaned up as quickly as possible and disposed of properly.

Minor Spills

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

Semi-Significant Spills

- Semi-significant spills still shall be controlled by the first responder along with the aid of other
 personnel such as laborers and the foreman, etc. This response shall require the cessation of all
 other activities.
- 2. The practice below shall immediately be followed for a semi-significant spill:
 - a. Contain spread of the spill.
 - b. Notify the project foreman immediately.

- c. 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.
- d. If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
- e. If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

- 1. The contractor shall 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, the contractor shall contact the Environmental Release Hotline at 1-800-832-8224. It shall be the contractor's responsibility to have all emergency phone numbers at the construction site.
- 2. For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor shall notify the National Response Center at (800) 424-8802.
- 3. Notification should first be made by telephone and followed up with a written report.
- 4. The services of a spills contractor or a Hazardous-Material team shall be obtained immediately. Construction personnel shall not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
- 5. Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

Vehicle and Equipment Fueling/Maintenance

- 1. If maintenance must take place onsite, the contractor shall use a designated area and a secondary containment, located away from drainage courses, to prevent the run-on of stormwater and the runoff of spills.
- The contractor shall regularly inspect onsite vehicles and equipment for leaks and repair immediately.
- 3. The contractor shall check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids, and shall not allow leaking vehicles or equipment onsite.
- 4. The contractor shall always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- 5. The contractor shall place drip pans or absorbent materials under paving equipment when not in use.

- 6. The contractor shall use absorbent materials on small spills rather than hosing down or burying the spill, and will then remove the absorbent materials promptly and dispose of properly.
- 7. The contractor shall promptly transfer used fluids to the proper waste or recycling drums, and shall not leave full drip pans or other open containers lying around.
- 8. Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. The contractor shall place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal.
- 9. The contractor shall store cracked batteries in a non-leaking secondary container.
- 10. If fueling must occur on site, the contractor shall use designated areas, located away from drainage courses, to prevent the run-on of stormwater and the runoff of spills.
- 11. The contractor shall discourage "topping off" of fuel tanks, and always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

TEMPORARY STORMWATER SECTION - ATTACHMENT B

Potential Sources of Contamination

Once grading activities begin, erosion of bare soil during rainfall events is the most common source of contamination. Silt fences and mulch socks will be installed at the beginning of the grading operation to minimize the potential for transport of the soil offsite. Inlet protection will be installed at existing and proposed inlets to minimize sediment buildup in the storm system.

During construction activities, potential sources of contamination would include petroleum products leaking from construction equipment. The contractor will be advised to keep the equipment in working order and report any spills per the spill response plan.

TEMPORARY STORMWATER SECTION - ATTACHMENT C

Sequence of Major Activities

This project shall be fully completed within 180 days from the date of the Notice to Proceed. The sequence of major activities will be as follows:

- Install all temporary erosion, sedimentation controls and tree protection fencing (71.997 total acres disturbed).
- ii. Maintain and inspect erosion controls (71.997 total acres disturbed).
- iii. Demolish on site (71.997 acres).
- iv. Clear and grub limits of construction (71.997 total acres disturbed).
- v. Install underground utilities, including storm sewers, water and wastewater lines with all related appurtenances, and any related site work (0.307 total acres disturbed).
- vi. Regrade streets to subgrade (1.93 total acres disturbed)
- vii. Install curb and gutter and lay base material and asphalt for paving (1.93 total acres disturbed).
- viii. Complete all underground installations within the right-of-way (2.237 total acres disturbed)
- ix. Complete installation of pond (1.80 total acres disturbed)
- x. Complete permanent erosion control and stabilize all disturbed areas through the restoration of site vegetation (3.73 total acres).
- xi. Perform final site cleanup (71.997 total acres).
- xii. Remove all temporary erosion controls (71.997 total acres).

TEMPORARY STORMWATER SECTION - ATTACHMENT D

Temporary Best Management Practices and Measures

Temporary BMP practices and measures will include installing silt fencing, inlet protection, rock berm, stabilized construction entrance, spoils area and concrete washout location prior to beginning mass grading operations on the site. These temporary BMP practices can be found on the construction erosion and sedimentation control plan on the Northside Subdivision Construction Plans (sheet 10). As the construction progresses, disturbed areas will be vegetated after the grading operations. Inlet protection measures will be installed on the new inlets throughout the site to minimize sediment buildup in the storm drain system. Dust control measures will be used to minimize airborne transmission of soil from the site. There is no offsite drainage flowing onto the site, and there are no environmentally sensitive features on the site.

The Erosion and Sedimentation control plan can be found on the attached Northside Subdivision Construction Plans, and it can be found on sheet 10. The Erosion and Sedimentation and Tree protection notes can be found in 54 in the construction plans.

TEMPORARY STORMWATER SECTION - ATTACHMENT E

Request to Temporarily Seal a Feature

Attachment E is not applicable to this project. There is no temporary sealing of naturally-occuring sensitive features on the site proposed.

TEMPORARY STORMWATER SECTION - ATTACHMENT F

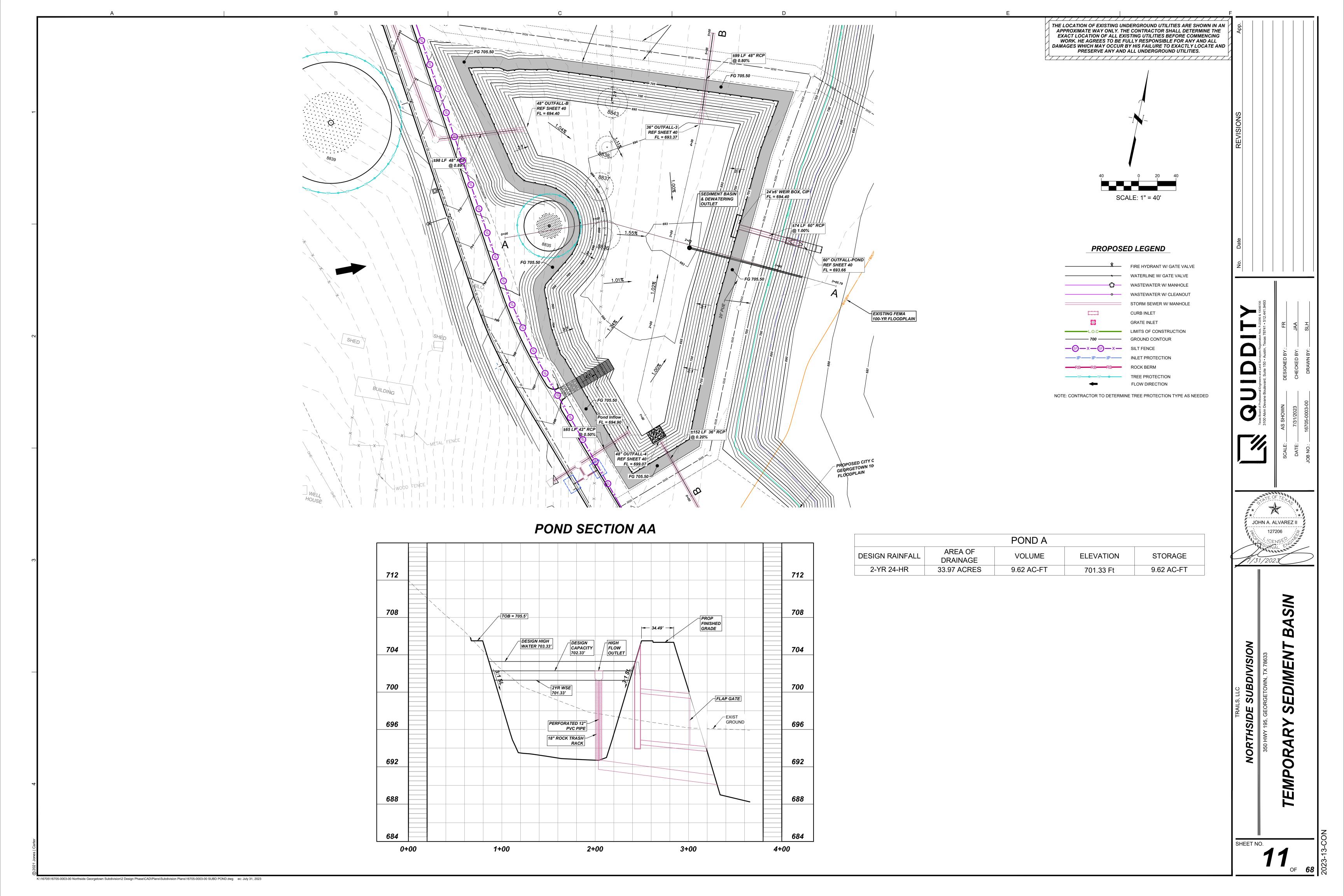
Structural Practices

No flows toward exposed soils are anticipated. All runoff from the site will either encounter a silt fence or mulch sock before exiting the property, or will be diverted to the batch detention pond located South center of the property. No structural practices are proposed to be placed in the floodplain.

TEMPORARY STORMWATER SECTION - ATTACHMENT G

Drainage Area Map

See the attached the Northside Subdivision Construction Plans, sheets 47 and 48, for Development Plans existing drainage and proposed drainage area maps.



TEMPORARY STORMWATER SECTION - ATTACHMENT I

Inspection and Maintenance for Temporary BMP's

The following guidelines will be followed for inspection and maintenance of temporary BMP's:

Stabilized Construction Entrance/Exit

- 1. The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
- 2. All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
- 3. When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
- 4. When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
- 5. All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

Concrete Washout Area

- 1. A 24" x 36" minimum sign with the text, "Concrete Washout Area" shall face toward the nearest street or access point and indicate the location of the concrete washout.
- 2. Concrete washout shall be located behind curb and 50 feet minimum from drainage inlets or watercourses.

Silt Fence

- 1. Inspect all fencing weekly, and after any rainfall.
- 2. Remove sediment when buildup reaches 6 inches.
- 3. Replace any torn fabric or install a second line of fencing parallel to the torn section.
- 4. Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will

- provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.
- 5. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

Inlet Protection

- 1. Inspection should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.
- 2. Remove sediment when buildup reaches a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.
- 3. Check placement of device to prevent gaps between device and curb.
- 4. Inspect filter fabric and patch or replace if torn or missing.
- 5. Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized.

Sediment Basin Inspection and Maintenance Guidelines

- 1. 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.
- 2. Trash and other debris should be removed after each rainfall to prevent clogging of the outlet structure.
- Accumulated silt should be removed, and basin should be re-graded to its original dimensions at such point that the capacity of the impoundment has been reduced to 75% of its original storage capacity.
- 4. The removed sediment should be stockpiled or redistributed in areas that are protected from erosion.

TEMPORARY STORMWATER SECTION - ATTACHMENT J

Schedule of Interim and Permanent Soil Stabilization Practices

For the Northside Subdivision Construction Plans Schedule of Interim and Permanent Soil Stabilization Practices is provided in Table 1

Table 1 – Schedule of Soil Stabilization Practices

Soil Stabilization Practice	Duration
Temporary erosion and sedimentation controls are to be installed as indicated on the approved site plan or subdivision construction plan and in accordance with the stormwater pollution prevention plan (SWPPP) that is required to be posted on the site. Install tree protection and initiate tree mitigation measures	120 days
The environmental project manager, and/or site supervisor, and/or designated responsible party, and the general contractor will follow the storm water pollution prevention plan (SWPPP) posted on the site. Temporary erosion and sedimentation controls will be revised, if needed, to comply with city inspectors' directives, and revised construction schedule relative to the water quality plan requirements and the erosion plan.	180 days
Complete construction and start revegetation of the site and installation of landscaping.	30 days
Upon completion of the site construction and revegetation of a project site, the design engineer shall submit an engineer's letter of concurrence to the appropriate City department indicating that construction, including revegetation, is complete and in substantial conformity with the approved plans. After receiving this letter, a final inspection will be scheduled by the appropriate city inspector.	10 days
Upon completion of landscape installation of a project site, the landscape architect shall submit a letter of concurrence to the appropriate City department indicating that the required landscaping is complete and in substantial conformity with the approved plans. After receiving this letter, a final inspection will be scheduled by the appropriate city inspector.	5 days
After a final inspection has been conducted by the city inspector and with approval from the city inspector, remove the temporary erosion and sedimentation controls and complete any necessary final revegetation resulting from removal of the controls. Conduct any maintenance and rehabilitation of the water quality ponds or controls.	5 days

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:

executive director approval. The application was prepared by:

Print Name of Customer/Agent: John A. Alvarez II

Date: 8/1/2023

Signature of Customer/Agent

Regulated Entity Name: Northside Subdivision

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: <u>City of Georgetown Drainage Criteria Manual</u>
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 multifamily 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 Ungradient 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.		
		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

insp	achment G - Inspection, Maintenance, Repair and Retrofit Plan . A plan for the pection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and asures 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	
reco	achment H - Pilot-Scale Field Testing Plan. Pilot studies for BMPs that are not ognized by the Executive Director require prior approval from the TCEQ. A plan for t-scale field testing is attached.
⊠ N/A	
of tl and and crea by t	he measures that will be used to avoid or minimize surface stream contamination changes in the way in which water enters a stream as a result of the construction development is attached. The measures address increased stream flashing, the ation of stronger flows and in-stream velocities, and other in-stream effects caused the regulated activity, which increase erosion that results in water quality radation.
☐ N/A	
Respon	sibility for Maintenance of Permanent BMP(s)
=	lity for maintenance of best management practices and measures after on is complete.
unti enti owr owr resp	applicant is responsible for maintaining the permanent BMPs after construction il such time as the maintenance obligation is either assumed in writing by another ity having ownership or control of the property (such as without limitation, an ner's association, a new property owner or lessee, a district, or municipality) or the nership of the property is transferred to the entity. Such entity shall then be consible for maintenance until another entity assumes such obligations in writing or nership is transferred.
□ N/A	
app mul or a	opy of the transfer of responsibility must be filed with the executive director at the ropriate regional office within 30 days of the transfer if the site is for use as a tiple single-family residential development, a multi-family residential development, non-residential development such as commercial, industrial, institutional, schools, other sites where regulated activities occur.
☐ N/A	

PERMANENT STORMWATER SECTION - Attachment B

BMPs for upgradient Stormwater

This site is broken up into seven (7) proposed drainage areas. Drainage areas P1, P2, P3 & P7 are upgradient of the permanent BMP (batch detention pond). P1 flows from west to east and enters the BMP via storm sewer piping. P2 flows from North to south and enters the BMP via storm sewer piping. P3 is the area around the pond and sheet flows into the pond from all sides. P7 flows from South to North and enters the BMP via storm sewer piping. Once these four (4) drainage areas have entered the pond, the flow is treated for TSS removal then discharged into P5. P5 & P4 have no proposed impervious cover, but will have grading done within them to allow for additional detention. P5 & P4 discharges directly into Berry Creek. P6 has no proposed impervious cover or grading and discharges directly into Berry Creek.

PERMANENT STORMWATER SECTION – Attachment C

BMPs for On-site Stormwater

The Northside Subdivision project of 71.997 acres is to entail the construction of one (1) multi-family lot, three (3) commercial lots, one (1) detention pond. Project will include the public and private infrastructure to accommodate these lots. This includes roadways, utilities, water quality, and detention. The project is located within the Dry Berry Creek Watershed. The Northside Subdivision Construction plans show the center line for Dry Berry Creek on sheet 4 and the drainage area in sheet 42. The site is developed mostly as agricultural land with four existing structures onsite (one house, a shed, a silo, and a pump house). Site currently drains to the Dry Berry Creek that run north to south through the eastern side of the site

Sub-basins were identified based on the proposed development layout (P-1, P-2, P-3 DET, P-4, P-5, P-6, and P7). The drainage areas were broken into the future proposed lots and their expected drainage designs. Impervious cover was calculated for each individual drainage area using the maximum allowable impervious cover for the lots (50% for multi-family residential, 70% for the first five (5) acres of non-residential lots, and 55% for the remaining acreage). The proposed pond on site will accommodate drainage areas P-1 and P-2 and be located on the central southern part of the site. The proposed pond has been sized according to the maximum impervious cover. Impervious cover in the development will be asphalt and concrete and is calculated depending on the area of roadways and shoulders, along with the impervious cover assumptions for the two (2) drainage areas previously mentioned. A majority of the runoff will be controlled and detained with the use of the onsite proposed detention pond before being released into Dry Berry Creek. Table 1 Shows a summary of the permanent BMP for the future plan development.

Table 1 BMP Coverage

lable 1 BMP Coverage						
Drainage Area	Permanent BMP	Area (Acre)	Areas to be Controlled By permanent BMPs (Acre)	Are Not Covered by permanent BMPs (Acre)	Allowed Max Impervious cover percent (%)	Allowed Max Impervious cover Area Controlled by Permanente BMPs (Acre)
P-1	Batch Detention Pond	14.57	14.57	0.00	60.15	8.76
P-2	Batch Detention Pond	15.00	15.00	0.00	50.00	7.5
P-3 DET	Batch Detention Pond	3.18	3.18	0.00	0.00	0.00
P-4	N/A	13.37	0.00	13.37	0.00	0.00
P-5	N/A	10.75	0.00	10.75	0.00	0.00
P-6	N/A	10.69	0.00	10.69	0.00	0.00
P-7	Batch Detention Pond	4.40	4.40	0.00	70.00	3.08

The runoff of the 71.997 acers of drainage area within the Dry Berry Creek Watershed of the Northside subdivision project site will be capture and conveyed through a combination of water quality facility located the south-central of the project site. The impervious cover of the future development of 33.97 acres of the drainage are with the Northside Subdivision will increase from 0% to 47.18% om average which created the need for water quality treatment through the use of BMPs.

The proposed water quality facility will be a detention pond and will be design in accordance with TCEQ design standards, the City of Georgetown environmental Criterial Manual, and the requirements of TCEQ RG-348, Technical guidance manual for complying with the Edwards Aquifer Rules.

Table 2 shows the detail summary of the quantities.

Table 2 BMP Summary

Watershed	Dry Berry Creek
Total Project Area Included in Plans (ac)	33.97
Overall Onsite Impervious Cover (ac)	19.32
BMP Name	Batch Detention Pond
Drainage Area (ac)	33.97
Impervious Cover Treated By BMP (ac)	19.32
Required TSS Removal (lb)	16,816
Provided TSS Removal (lb)	19,696
Required Water Quality Volume (ft^3)	196,679
Provided Water Quality Volume (ft^3)	236,015

PERMANENT STORMWATER SECTION - Attachment D

BMPs for Surface Streams

The project site will discharge directly into the batch detention pond then it will eventually drain to Dry Berry Creek.

Temporary BMP's

During construction, the following methods will be used to prevent pollutants from entering surface streams. See the Erosion Control plan in the Northside Subdivision construction plans for greater detail (Sheets 4). The erosion control details can be found

- o Stabilized Construction Entrance/Exit
- Silt Fencing
- Inlet protection
- o Temporary Spoils Area
- Temporary Sediment Basin
- o Construction Staging Area with Silt Fence Boundaries
- Sediment basin

Permanent BMP's

Runoff from the impervious areas of the site will be treated by a proposed batch detention pond prior to being discharged into the Dry Berry Creek.

PERMANENT STORMWATER SECTION – Attachment F

Construction Plans

Full size drawings of the Construction Plans (24"X36") are attached with this submittal. These drawings include the following:

Sheet No.

- 1. COVER
- 2. GENERAL NOTES
- 3. APPROVED PRELIMINARY PLAT (1 OF 3)
- 4. APPROVED PRELIMINARY PLAT (2 OF 3)
- 5. APPROVED PRELIMINARY PLAT (3 OF 3)
- 6. FINAL PLAT (1 OF 3)
- 7. FINAL PLAT (2 OF 3)
- 8. FINAL PLAT (3 OF 3)
- 9. EXISTING CONDITIONS AND DEMOLITION
- 10. EROSION CONTROL PLAN
- 11. TREE PRESERVATION PLAN
- 12. TREE TABLES (1 OF 2)
- 13. TREE TABLES (2 OF 2)
- 14. OVERALL STREET
- 15. DRIVEWAY 1
- 16. ACCESS ROAD STA 0+00 TO 8+00
- 17. ACCESS ROAD STA 8+00 TO 16+00
- 18. ACCESS ROAD STA 16+00 TO END
- 19. DRIVEWAY 2
- 20. DECEL LANE 1
- 21. DECEL LANE 2
- 22. OVERALL WASTEWATER PLAN
- 23. WASTEWATER LINE A
- 24. WASTEWATER LINE B 0+00 TO 8+00
- 25. WASTEWATER LINE B STA 8+00 TO 15+92
- 26. WASTEWATER LINE C
- 27. OVERALL WATER PLAN
- 28. WATERLINE A 0+00 TO 9+00
- 29. WATERLINE A STA 9+00 TO 17+45
- 30. WATERLINE B
- 31. OVERALL STORM
- 32. STORMLINE A
- 33. STORMLINE B
- 34. INLET SHEET
- 35. OVERALL GRADING PLAN
- 36. GRADING PLAN A
- 37. GRADING PLAN B

- 38. GRADING PLAN C
- 39. GRADING PLAN D
- 40. GRADING PLAN E
- 41. GRADING CROSS-SECTION 1
- 42. GRADING CROSS-SECTIONS 2 & 3
- 43. GRADING CROSS-SECTION 4
- 44. POND PLAN
- 45. POND CROSS SECTION
- 46. EXISTING DRAINAGE AREA MAP
- 47. PROPOSED DRAINAGE AREA MAP
- 48. SUB-DRAINAGE AREA MAP
- 49. DRAINAGE CALCS
- 50. TxDOT Driveway Culvert 1
- 51. TxDOT Driveway Culvert 2
- 52. TRAFFIC CONTROL DETAILS
- 53. CIVIL DETAILS (1 OF 12)
- 54. CIVIL DETAILS (2 OF 12)
- 55. CIVIL DETAILS (3 OF 12)
- 56. CIVIL DETAILS (4 OF 12)
- 57. CIVIL DETAILS (5 OF 12)
- 58. CIVIL DETAILS (6 OF 12)
- 59. CIVIL DETAILS (8 OF 12)
- 60. 53 CIVIL DETAILS (8 OF 12)
- 61. 54 CIVIL DETAILS (7 OF 12)
- 62. 55 CIVIL DETAILS (9 OF 12)
- 63. 56 CIVIL DETAILS (10 OF 12)
- 64. 57 CIVIL DETAILS (11 OF 12)
- 65. 58 CIVIL DETAILS (12 OF 12)

The TCEQ's TSS Removal Calculations for the water quality basin are included as part of this attachment.

TSS Removal Calculations 04-20-2009

Project Name: Northside Date Prepared: 8/17/2022

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:

 $L_{\text{M TOTAL PROJECT}} = \text{Required TSS removal resulting from the proposed development} = 80\% \text{ of increased load}$

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

Williamson	County =
33.97 acres	Total project area included in plan * =
0.00 acres	Predevelopment impervious area within the limits of the plan* =
19.32 acres	Total post-development impervious area within the limits of the plant =
0.57	Total post-development impervious cover fraction * =
32 inche	P =

16816 L_{M TOTAL PROJECT} = lbs.

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

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

Drainage Basin/Outfall Area No. =

Total drainage basin/outfall area= 33.97 acres Predevelopment impervious area within drainage basin/outfall areæ 0.00 acres Post-development impervious area within drainage basin/outfall areæ 19.32 acres Post-development impervious fraction within drainage basin/outfall areæ 0.57 L_{M THIS BASIN} = 16816

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Batch Detention Basin Removal efficiency = 91

Aqualogic Cartridge Filter Bioretention Batch Detention Basin BaySeparator 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 (LR) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: $L_R = (BMP \text{ efficiency}) \times P \times (A_1 \times 34.6 + A_2 \times 0.54)$

A_C = Total On-Site drainage area in the BMP catchment area

A_I = Impervious area proposed in the BMP catchment area

A_P = Pervious area remaining in the BMP catchment area

 L_{R} = TSS Load removed from this catchment area by the proposed BMP

33.97 acres 19.32 A. = acres A_P = 14.65 acres 19696 lbs

where:

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

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

Desired $L_{M THIS BASIN} =$ 19697 lbs.

1.00

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348

Pages 3-34 to 3-36

Rainfall Depth =
Post Development Runoff Coefficient =
On-site Water Quality Volume = 4.00 inches 0.40 196679 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 = 39336

cubic feet Total Capture Volume (required water quality volume(s) x 1.20) = 236015

The following sections are used to calculate the required water quality volume(s) for the selected BMP.

The values for BMP Types not selected in cell C45 will show NA.

PERMANENT STORMWATER SECTION – Attachment G

Inspection, Maintenance, Repair, and Retrofit Plan

Project: Northside Subdivision Construction Plans_

Address: <u>350 HWY 195</u>

City, State, Zip: <u>Georgetown, Tx 78633</u>

General Site Maintenance

The following guidelines should be used as an inspection and maintenance plan that should be performed at least twice annually:

- (1) Identify, replant, and restore eroded areas. Add a level spreader, energy dissipation, or other repairs as required to ensure that erosion is not repeated.
- (2) Identify areas that do not have acceptable vegetated covers (80% or higher for most BMPs). Reseed, add soil, and irrigate as required to ensure that coverage requirements are met.
- (3) Mow sites twice annually and as required to keep grass height under 18 inches. Additional mowing may be performed for site aesthetics. Export clippings from site to prevent release of nutrients from decaying plant matter. Remove any woody growth, especially from embankments, berms, and swales. For swales, grass should not be regularly mowed below four inches.
- (4) Use non-chemical methods for maintaining health of vegetation. Pesticides, herbicides, or fertilizers should only be used as a last option, and then as minimally as possible. Fertilizer should rarely be required because runoff will typically contain sufficient nutrient loads.
- (5) Irrigation may be required in order to maintain acceptable levels of vegetated coverage, especially for engineered vegetated strips.
- (6) Never deposit grass clippings, brush, or other debris in BMPs or buffers.
- (7) Prevent over-compaction of BMP components that rely partially or wholly on infiltration (vegetation strips, bioretention bed, infiltration trenches and basins). Mowing and other maintenance should be performed with hand equipment or a light-weight lawn tractor.
- (8) Remove any built-up sediment and debris, especially along uphill edges, berms, swales, and level spreaders; and around BMP inlets and outlets
- (9) Identify any other problems. A detailed inspection may be required.

Wet Basins

A clear requirement for wet basins is that a firm commitment be made to carry out both routine and non-routine maintenance tasks. The nature of the maintenance requirements are outlined below, along with design tips that can help to reduce the maintenance burden (modified from Young et al., 1996).

Routine Maintenance.

- *Mowing.* The side-slopes, embankment, and emergency spillway of the basin should be mowed at least twice a year to prevent woody growth and control weeds.
- Inspections. Wet basins should be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. When possible, inspections should be conducted during wet weather to determine if the basin is functioning properly. There are many functions and characteristics of these BMPs that should be inspected. The embankment should be checked for subsidence, erosion, leakage, cracking, and tree growth. The condition of the emergency spillway should be checked. The inlet, barrel, and outlet should be inspected for clogging. The adequacy of upstream and downstream channel erosion protection measures should be checked. Stability of the side slopes should be checked. Modifications to the basin structure and contributing watershed should be evaluated. During semi-annual inspections, replace any dead or displaced vegetation. Replanting of various species of wetland vegetation may be required at first, until a viable mix of species is established. Cracks, voids and undermining should be patched/filled to prevent additional structural damage. Trees and root systems should be removed to prevent growth in cracks and joints that can cause structural damage. The inspections should be carried out with as-built pond plans in hand.
- Debris and Litter Removal. As part of 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 riser, and the outlet should be checked for possible clogging.
- Erosion Control. The basin side slopes, emergency spillway, and embankment all may periodically suffer from slumping and erosion. Corrective measures such as regrading and revegetation may be necessary. Similarly, the riprap protecting the channel near the outlet may need to be repaired or replaced.

• Nuisance Control. Most public agencies surveyed indicate that control of insects, weeds, odors, and algae may be needed in some ponds. Nuisance control is probably the most frequent maintenance item demanded by local residents. If the ponds are properly sized and vegetated, these problems should be rare in wet ponds except under extremely dry weather conditions. Twice a year, the facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.). Biological control of algae and mosquitoes using fish such as fathead minnows is preferable to chemical applications.

Non-routine maintenance.

- Structural Repairs and Replacement. Eventually, the various inlet/outlet and riser works in the wet basin will deteriorate and must be replaced. Some public works experts have estimated that corrugated metal pipe (CMP) has a useful life of about 25 yr, while concrete barrels and risers may last from 50 to 75 yr. The actual life depends on the type of soil, pH of runoff, and other factors. Polyvinyl chloride (PVC) pipe is a corrosion resistant alternative to metal and concrete pipes. Local experience typically determines which materials are best suited to the site conditions. Leakage or seepage of water through the embankment can be avoided if the embankment has been constructed of impermeable material, has been compacted, and if anti-seep collars are used around the barrel. Correction of any of these design flaws is difficult.
- Sediment Removal. Wet ponds will eventually accumulate enough sediment to significantly reduce storage capacity of the permanent pool. As might be expected, the accumulated sediment can reduce both the appearance and pollutant removal performance of the pond. Sediment accumulated in the sediment forebay area should be removed from the facility every two years to prevent accumulation in the permanent pool. Dredging of the permanent pool should occur at least every 20 years, or when accumulation of sediment impairs functioning of the outlet structure.
- Harvesting. If vegetation is present on the fringes or in the pond, it can be periodically harvested
 and the clippings removed to provide export of nutrients and to prevent the basin from filling with
 decaying organic matter.

BioRetention

The primary maintenance requirement for bioretention areas is that of inspection and repair or replacement of the treatment area's components. Generally, this involves nothing more than the routine periodic maintenance that is required of any landscaped area. Plants that are appropriate for the site, climatic, and watering conditions should be selected for use in the bioretention cell. Appropriately selected plants will aide in reducing fertilizer, pesticide, water, and overall maintenance requirements. Bioretention system components should blend over time through plant and root growth, organic decomposition, and the deve lopment of a natural soil horizon. These biologic and physical processes over time will lengthen the facility's life span and reduce the need for extensive maintenance.

Routine maintenance should include a semi-annual health evaluation of the trees and shrubs and subsequent removal of any dead or diseased vegetation. Diseased vegetation should be treated as needed using preventative and low-toxic measures to the extent possible. BMPs have the potential to

create very attractive habitats for mosquitoes and other vectors because of highly organic, often heavily vegetated areas mixed with shallow water. Routine inspections for areas of standing water within the BMP and corrective measures to restore proper infiltration rates are necessary to prevent creating mosquito and other vector habitat. In addition, bioretention BMPs are susceptible to invasion by aggressive plant species such as cattails, which increase the chances of standing water and subsequent vector production if not routinely maintained.

In order to maintain the treatment area's appearance it may be necessary to prune and weed. Furthermore, mulch replacement is suggested when erosion is evident or when the site begins to look unattractive. Specifically, the entire area may require mulch replacement every two to three years, although spot mulching may be sufficient when there are random void areas.

New Jersey's Department of Environmental Protection states in their bioretention systems standards that accumulated sediment and debris removal (especially at the inflow point) will normally be the primary maintenance function. Other potential tasks include replacement of dead vegetation, soil pH regulation, erosion repair at inflow points, mulch replenishment, unclogging the underdrain, and repairing overflow structures.

Other recommended maintenance guidelines include: ·

- <u>Inspections</u>. BMP facilities should be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. During each inspection, erosion areas inside and downstream of the BMP must be identified and repaired or revegetated immediately. 3-95 ·
- <u>Sediment Removal</u>. Remove sediment from the facility when sediment depth reaches 3 inches or when the sediment interferes with the health of vegetation or ability of the facility to meet required drawdown times. Sediment removal should be performed at least every 2 years.
- <u>Drain Time</u>. When the drain time exceeds 72 hours as observed in the observation well, the filter media should be removed and replaced with more permeable material.
- Vegetation. All dead and diseased vegetation considered beyond treatment shall be removed
 and replaced during semi-annual inspections. Diseased trees and shrubs should be treated
 during inspections. Remulch any bare areas by hand whenever needed. Replace mulch annually
 in the spring, or more frequently if needed, in landscaped areas of the basin where grass or
 groundcover is not planted. Grass areas in and around bioretention facilities must be mowed at
 least twice annually to limit vegetation height to 18 inches. More frequent mowing to maintain
 aesthetic appeal may be necessary in landscaped areas.
- <u>Debris and Litter Removal</u>. Debris and litter will accumulate in the facility and should be removed during regular mowing operations and inspections.
- <u>Filter Underdrain</u>. Clean underdrain piping network to remove any sediment buildup every 5 years, or as needed to maintain design drawdown time.

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

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

Responsible Party for Maintenance: Trails, LLC

Address: 1127 North Shorewood Granite Shoals, Texas 78654

Owner Contact: Charles Holbrook and Doug Moss

Telephone Number: 512-567-5003

Signature of Responsible Party:

PERMANENT STORMWATER SECTION – Attachment I

Measures for Minimizing Surface Stream Contamination

- 1. Measures such as a stabilize construction entrance/exit, slit fencing, inlet protection, rock berms, and other measures which will reduce the stream contamination.
- 2. The pond has been designed to release flow rates at or below pre-development flow rates. Because post-development flows will not be increased there should be no adverse impact on the adjacent properties.

Table 1 shows a comparison between the existing and proposed flows over time. A more details can be found in the Northside Subdivision construction plans on the proposed drainage map (sheet 42).

Table 1. Ultimate Analysis Point Flows

Drainage Flows	2-year (cfs)	10-year(cfs)	25-year(cfs)	100-year(cfs)
Existing	108	201	260	341
Proposed	57.1	103.2	132.3	250

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: Northside Subdivision

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: <u>John A. Alvarez II</u> Entity: <u>Quiddity Engineering, LLC</u>

Mailing Address: 3100 Alvin Devane Blvd, Suite 150

 City, State: Austin, Texas
 Zip: 78741

 Telephone: (512) 685-5163
 Fax: _____

Email Address: <u>Jalvarez@quiddity.com</u>

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: John A. Alvarez II

Texas Licensed Professional Engineer's Number: 127206

Entity: Quiddity Engineering, LLC

Mailing Address: 3100 Alvin Devane Blvd, Suite 150

City, State: Austin, Texas Zip: 78741
Telephone: (512) 685-5163 Fax:

Email Address:Jalvarez@quiddity.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: 1 Multi-family: Number of residential units: Commercial Industrial Off-site system (not associated with any development) Other:					
5.	The character and v	olume of wastewater is s	shown below:			
	100% Domestic% Industrial% Commingle Total gallons/da		<u>113075</u> gallons/d gallons/da gallons/da	У		
6.	Existing and anticipated infiltration/inflow is <u>54,000</u> gallons/day. This will be addressed by: <u>Specifying pipe that meeta all TCEQ and City Specifications and ensuring all new construction passes the required testing.</u>					
7.		· · · · ·	s required for construction located on the Recharge	•		
	 □ 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 _8/1/2023 , 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.	3. Pipe description:					
Ta	Table 1 - Pipe Description					
L	Pipe Diameter(Inches)	Linear Feet (1)	Pipe Material (2)	Specifications (3)		
	8"	2600	PVC SDR-26	ASTM D3034		

Total Linear Feet: 2600

- (1) Linear feet Include stub-outs and double service connections. Do not include private service laterals.
- (2) Pipe Material If PVC, state SDR value.

	2 ///C	2	3.00.000		
	Line	Shown on Sheet	Station	Manhole or Clean- out?	
Tab	ole 2 - Manholes	and Cleanouts			
14.	—	an-outs exist at the end of attach additional sheet if	` '	ese locations are listed	
Mā	anholes and	Cleanouts			
	without Manho collection syste allowing pipe co For curved sewo construction pla	Justification and Calcula bles. A justification for dem m without manholes with urvature is attached. er lines, all curved sewer ans for the wastewater co	viations from straight align n documentation from pi line notes (TCEQ-0596) a	gnment in this sewage pe manufacturer	
13.	There are no de without manho	viations from straight alig les.	gnment in this sewage co	llection system	
12.	. There are no deviations from uniform grade in this sewage collection system without manholes and with open cut construction.				
Αl	ignment				
		and/or lift station(s) is as 'Force Main System App	-		
11.	No force main(s) and/or lift station(s) are	e associated with this sew	vage collection system.	
		Georgetown standard spe	ecifications.		
10.	All components of	his sewage collection sys	tem will comply with:		
	∑ Existing ☐ Proposed				
	-	ollection system will convey the wastewater to the <u>San Gabriel</u> (name) ant. The treatment facility is:			
	(3) Specification	s - ASTM / ANSI / AWWA sp	ecification and class number	ers should be included.	

Table 2 - 1	Manholes	and Cleanouts
--------------------	----------	---------------

Line	Shown on Sheet	Station	Manhole or Clean- out?
Wastewater Line A	23 Of 65	0+00	Manhole A-1
Wastewater Line B	25 Of 65	15+91.74	Manhole B-11
Wastewater Line C	26 Of 65	0+00	Manhole C-1
	Of		
	Of		
	Of		

Line	Shown on Sheet	Station	Manhole or Clean- out?
	Of		

15. [$oxed{oxed}$ Manho	oles are inst	alled at all	Points of C	urvature ar	nd Points of	Termination	of a s	ewer
	line.								

16. The maximum spacing between manholes on this project for each pipe diameter is r	10
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. \square The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1'' = 40'.

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	ctuh-	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 pro	21. Location of existing and proposed water lines:				
If not shown on the Site sewer systems.	 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 Floodpla	in				
Table 3 - 100-Year Floodpla	in Sheet	Station			
_		Station 13+45 to 15+91.74			
Line	Sheet				
Line	Sheet 25 of 65	13+45 to 15+91.74			
Line	Sheet 25 of 65 of	13+45 to 15+91.74 to			
Line Wastewate Line B 23. 5-year floodplain: After construction is con	Sheet 25 of 65 of of of of	to to to to be in or cross a 5-year			
Line Wastewate Line B 23. 5-year floodplain: After construction is confloodplain, either natura	Sheet 25 of 65 of of of of liplete, no part of this project will occurring or man-made. (Do not be seen as a second occurring or man-made).	to to to to be in or cross a 5-year			
Line Wastewate Line B 23. 5-year floodplain: After construction is confloodplain, either natural lined channels construct After construction is con	Sheet 25 of 65 of of of of applete, no part of this project will ally occurring or man-made. (Do not be above sewer lines.) applete, all sections located within	to to to to be in or cross a 5-year not include streets or concrete- the 5-year floodplain will be			
Line Wastewate Line B 23. 5-year floodplain: After construction is confloodplain, either natural lined channels construct After construction is conencased in concrete or construction.	Sheet 25 of 65 of of of of nplete, no part of this project will ally occurring or man-made. (Do noted above sewer lines.) applete, all sections located within apped with concrete. These located	to to to to be in or cross a 5-year not include streets or concrete- the 5-year floodplain will be tions are listed in the table			
Line Wastewate Line B 23. 5-year floodplain: After construction is confloodplain, either natural lined channels construct After construction is conencased in concrete or construction and are shown and	Sheet 25 of 65 of of of of nplete, no part of this project will ally occurring or man-made. (Do not be above sewer lines.) nplete, all sections located within apped with concrete. These located labeled on the Site Plan. (Do not be above sewer lines.)	to to to to be in or cross a 5-year not include streets or concrete- the 5-year floodplain will be tions are listed in the table			
Line Wastewate Line B 23. 5-year floodplain: After construction is confloodplain, either natural lined channels construct After construction is conencased in concrete or construction.	Sheet 25 of 65 of of of of nplete, no part of this project will ally occurring or man-made. (Do not be above sewer lines.) nplete, all sections located within apped with concrete. These located labeled on the Site Plan. (Do not be above sewer lines.)	to to to to be in or cross a 5-year not include streets or concrete- the 5-year floodplain will be tions are listed in the table			

Table 4 - 5-Teal Tloodplain					
Line	Sheet	Station			
Wastewate Line B	25 of 65	13+25 to 15+91.74			
	of	to			
	of	to			
	of	to			

24. 🔀 Legal boundaries of the site are shown.

 25. The <i>final plans and technical specifications</i> 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. <i>Items 26 - 33 must be included on the Plan and Profile sheets.</i> 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. 				
	oe no water lines wit	thin 9 feet of propos	sed sewer lines.	
Table 5 - Water Line	Station or Closest Point	Crossing or Parallel	Horizontal Separation Distance	Vertical Separation Distance
Wastewater Line A	3+48.22	Crossing	N/A	2.0 ft
Wastewater Line	3140.22	Crossing	IV/A	2.010
В	1+55.56	Crossing	N/A	3.1 ft
27. Vented Manho	oles:			
required by A portion of the table by A portion of the venting shall alternative of the control	this sewer line is with y 30 TAC Chapter 21 of this sewer line is well at less than 1500 for elow and labeled or of this sewer line is well be provided at less means is described of this sewer line is well at less than 1500 feet less than 1500 feet less well as	7. vithin the 100-year foot intervals. These in the appropriate provided in the 100-year foot that the following partition the following partition the 100-year foot the following partition the following partition the following partition the foot foot the foot foot the foot foot foot foot foot foot foot foo	floodplain and vent e water-tight manh ofile sheets. floodplain and an a ervals. A description ge. floodplain; howeve	ed manholes will oles are listed in liternative means of on of the

Table 6 - Vented Manholes

Line	Manhole	Station	Sheet
N/A	N/A	N/A	N/A

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(I)(2)(H).

Table 7 - Drop Manholes

Line	Manhole	Station	Sheet
Wastewater Line A	4' WWMH B-1	3+68.58	23
Wastewater Line B	4' WWMH B-1	0+00	24
Wastewater Line B	5' WWMH B-1	13+00.77	25
Wastewater Line C	5' WWMH C-5	3+80.43	26
Wastewater Line C	5' WWMH B-9	6+42.65	26

29.	Sewer	line stub-outs	(For pro	oposed e	extensions)	۱:

X	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.
X	No lateral stub-outs are to be installed during the construction of this sewage collection
	system.

31. Minimum flow velocity (From Appendix A)

\sum_{i}	Assuming pipes are flo	wing full; all slopes	are designed t	to produce flows	equal to or
	greater than 2.0 feet p	per second for this s	ystem/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
N/A	N/A	N/A	N/A	N/A	N/A

33.	Assuming pipes are flowing full, where flows are \geq 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(I)(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 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]	65 of 65
Manhole, showing inverts comply with 30 TAC §217.55(I)(2) [Required]	62 of 65
Alternate method of joining lateral to existing SCS line for potential future connections [Required]	N/A of N/A
Typical trench cross-sections [Required]	61 of 65
Bolted manholes [Required]	63 of 65
Sewer Service lateral standard details [Required]	63 of 65
Clean-out at end of line [Required, if used]	63 of 65
Baffles or concrete encasement for shock/erosion protection [Required, if flow velocity of any section of pipe >10 fps]	63 of 65

Standard Details	Shown on Sheet
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
Drop manholes [Required, if a pipe entering a manhole is more than 24 inches above manhole invert]	62 of 65

36. 🔀	All organized sewage collection system general construction notes (TC included on the construction plans for this sewage collection system.	EQ-0596) are
37. 🔀	All proposed sewer lines will be sufficiently surveyed/staked to allow a prior to TCEQ executive director approval. If the alignments of the proare not walkable on that date, the application will be deemed incomplete.	oposed sewer lines
	Survey staking was completed on this date:	
38. 🔀	Submit one (1) original and one (1) copy of the application, plus addition needed for each affected incorporated city, groundwater conservation county in which the project will be located. The TCEQ will distribute the copies to these jurisdictions. The copies must be submitted to the approffice.	n district, and he additional
39. 🔀	Any modification of this SCS application will require TCEQ approval, pr construction, and may require submission of a revised application, wit 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: John A. Alvarez II

Date: <u>8/1/2</u>023

Place engineer's seal here:



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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)

ORGANIZED SEWEGE COLLECTION SYSTEM PLAN - Attachment A

SCS Engineering Report

ENGINEER'S REPORT

TO ACCOMPANY THE

SUBDIVISION CONSTRUCTION PLANS

FOR

NORTHSIDE GEORGETOWN SUBDIVISION

IN

WILLIMASON COUNTY

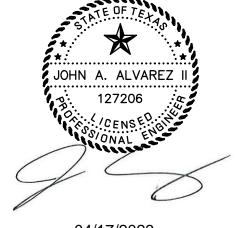
FOR

TRAILS, LLC 1127 NORTH SHOREWOOD GRANITE SHOALS, TEXAS 78654



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April 2023



04/17/2023

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PROJECT OVERVIEW

On behalf of Trails, LLC, Quiddity Engineering, LLC has prepared the Subdivision Construction Plans package for the Northside Georgetown Subdivision project. The 71.997-acre project is located at 350 Hwy 195, Georgetown, TX 78633. The site is currently developed as mostly agricultural land with four existing structures onsite (one house, shed, silo, and pump house). See **Exhibit 1** for the vicinity map for the site.

The project is proposing a subdivision of the 71.997-acre tract into 1 multi-family lot, 3 commercial lots, 1 dentition pond, and 1 open landscape/drainage lot. This project will include the public and private infrastructure to accommodate these lots. This includes roadways, utilities, water quality, and detention. The water-quality for each of these lots will be provided by an onsite batch storm water quality with stacked detention pond. The detention pond proposed with this plan set was sized by assuming the maximum impervious cover of 50% for multi-family residential and 70% for commercial.

Water service will be provided to the site via an existing City of Georgetown waterline that runs along the north boundary of the project site. Wastewater service will be provided to the site via the Georgetown Dry Berry Creek interceptor system proposed by others.

This site also has a portion of it within the FEMA 100-yr floodplain of the FEMA Zone "A". Additionally, the Atlas-14 100-yr Floodplain encroaches on the site. A conveyance analysis has been provided to the City of Georgetown to compensate for cut and fill within the Atlas-14 100-yr Floodplain to show no impacts to downstream users within the floodplain. That report has been provided with this submittal. Additionally, a CLOMR has been submitted to the City.

The entirety of the project site drains to the Dry Berry Creek that run north to south through the eastern side of the site, with slopes ranging from 1% to 15%. The high point of the site sits at an elevation of 735' in the northwest corner of the site and the low point is at an elevation of 682' located in the southeast corner of the site. The site is currently developed as agricultural land and vegetated with natural grass, brush, and trees. The property includes one highpoint that facilitates rainwaters offsite. The proposed development will increase the impervious cover from 0.0% to approximately 2.4%. Runoff will be controlled and detained with the use of an onsite stacked detention pond before being released at or below pre-development flow rates into the Dry Berry Creek. HEC-HMS 4.9 software was used to calculate pre- and post-development flows.

The site also lies within the Edwards Aquifer Recharge Zone. A Water Pollution Abatement Plan (WPAP) will be submitted to TCEQ to meet the requirement to outline best management practices to protect water quality.

EXISTING HYDROLOGIC CONDITIONS

Existing drainage conditions of the site were analyzed using HEC-HMS 4.9 software. Three distinct sub-basins labeled E-1, E-2, and E-3 identified. Runoff from area E-1 and E-2 flows east and runoff from area E-3 flows west.

Land cover was evaluated to be agricultural land. Drainage Area E-1 has an existing impervious cover of 0.0%. Drainage Area E-2 has an existing impervious cover of 0.0%. Drainage Area E-3 has an existing impervious cover of 0.0%. Times of concentration and rainfall intensities were calculated in accordance with city criteria. See **Exhibit 2** for a map showing the existing drainage areas and peak discharge calculations.

PROPOSED HYDROLOGIC CONDITIONS

Proposed drainage conditions were analyzed using HEC-HMS 4.9 software. Sub-basins were identified based on the proposed development layout (P-1, P-2, P-3 DET, P-4, P-5, P-6, and P7). The drainage areas were broken into the future proposed lots and their expected drainage design. These areas are labeled on the proposed drainage area map and calculations included as **Exhibit 3**. Impervious cover was calculated for each individual drainage area using the maximum allowable impervious cover for the lots (50% for Multi-family Residential and 70% for the first 5 acres of Non-Residential lots and 55% for the remaining acreage). The proposed pond on site will accommodate drainage areas P-1 and P-2 and has been sized according on the maximum impervious cover. Impervious cover in the development will be asphalt and concrete and is calculated depending on area of roadways and shoulders, along with the impervious cover assumptions for the 2 drainage areas previously mentioned. The portion of each drainage area not covered by impervious surface was assumed to be a combination of brush and grass in fair condition. Times of concentration and rainfall intensities were calculated per city criteria.

Additionally, any proposed cut within the Atlas 14 floodplain has been submitted as a conveyance study to the City of Georgetown. Please reference this study for questions relating to the cut and fill activities with these areas.

ANALYSIS AND DESIGN

Runoff from the multi-family lot and commercial lots will be controlled and detained with detention that is stacked on top of the water quality pond before being released at or below pre-development flow rates.

The Soil Conservation Service (SCS) method, available in HEC-HMS software, was used to determine and model runoff to be collected by the detention pond. The USGS Web Soil Survey was used to determine the hydrologic soil groups of the site. A soil report classification is included as **Exhibit 4**.

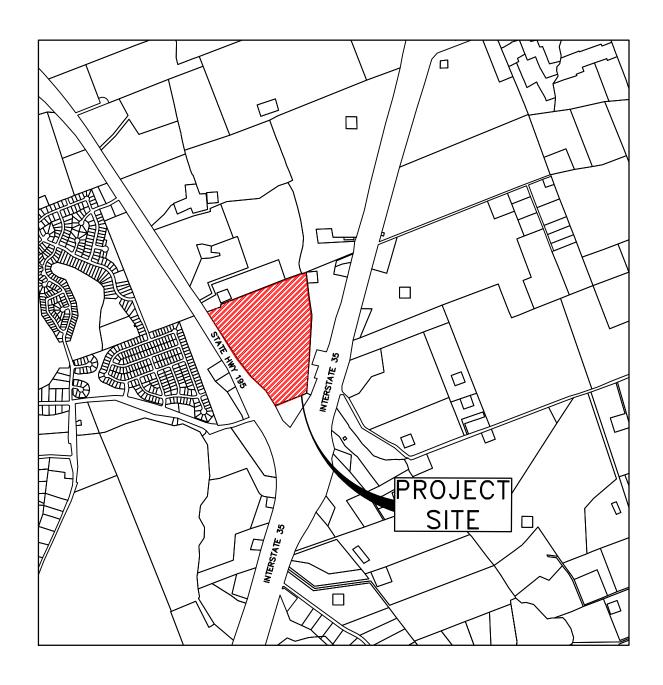
Once the hydrologic soil group was identified, the Runoff Curve Number (RCN) was determined in accordance with the City of Georgetown Drainage Criteria Manual. An RCN was calculated for each drainage area based on the soil group classification and proportion of each classification within each drainage area. The RCN was based off Table 3-6 Runoff Curve Numbers for Agricultural Land in the Georgetown DCM. The 24-hour SCS design storm was used to calculate rainfall depths for the 2, 10, 25, and 100-year storms. Cumulative precipitation values were taken from Chapter 3. Hydrology of the City of Georgetown Drainage Criteria Manual. The SCS time of concentration (TOC) was calculated in accordance with the City of Georgetown Drainage Criteria Manual. Lag times were estimated as 0.6*TOC. Proposed conditions can be found in **Exhibit 3**.

Analysis for the drainage areas that have stacked detention, HEC-HMS 4.9 software indicates total storage for the 100-year storm is 13.40 acre-feet (109.40 ft³ total) acre-feet for the stacked detention pond. The pond has been designed to release flow rates at or below pre-development flow rates. Because post-development flows will not be increased there should be no adverse impact on the adjacent properties.

WASTEWATER DESIGN

The sizing for the wastewater was based off assumed LUE's for different proposed uses for each lot. There are 452.3 assumed LUEs for this project. To achieve the desired velocity and flow depth, a 8" Wastewater trunkline is proposed throughout the site. The material will be PVC SDR-26 per City of Georgetown Specifications. All flows will be above two (2) ft/sec and below ten (10) ft/sec. There are two (2) manholes located within the 5-year & 100-yr Flood plain, B-10 & B-11. There will be five (5) Type A or Type B drop manholes per the City of Georgetown specs. No vented manholes are proposed on this project. We are proposing to use pre-cast manholes. TThere are two (2) stations where the proposed wastewater line crosses proposed water lines (3+48 & 1+55). There will be a minimum of two (2) feet of separation between the water and wastewater. The Wastewater design calculations can be found in **Exhibit 5**.

EXHIBIT 1 VICINITY MAP



SITE LOCATION MAP

NORTHSIDE GEORGETOWN SUBDIVISION

GEORGETOWN WILLIAMSON COUNTY, TX

 SCALE:
 NTS
 DGN. BY:
 JCM

 DATE:
 04/03/2023
 DWN. BY:
 JCM

 JOB NO.
 16705-0003-00
 DWG. NO.

 SUBMITTED:
 SURV. BY:

 F.B. NO.



EXHIBIT 2 EXISTING DRAINAGE AREA MAP AND CALCULATIONS

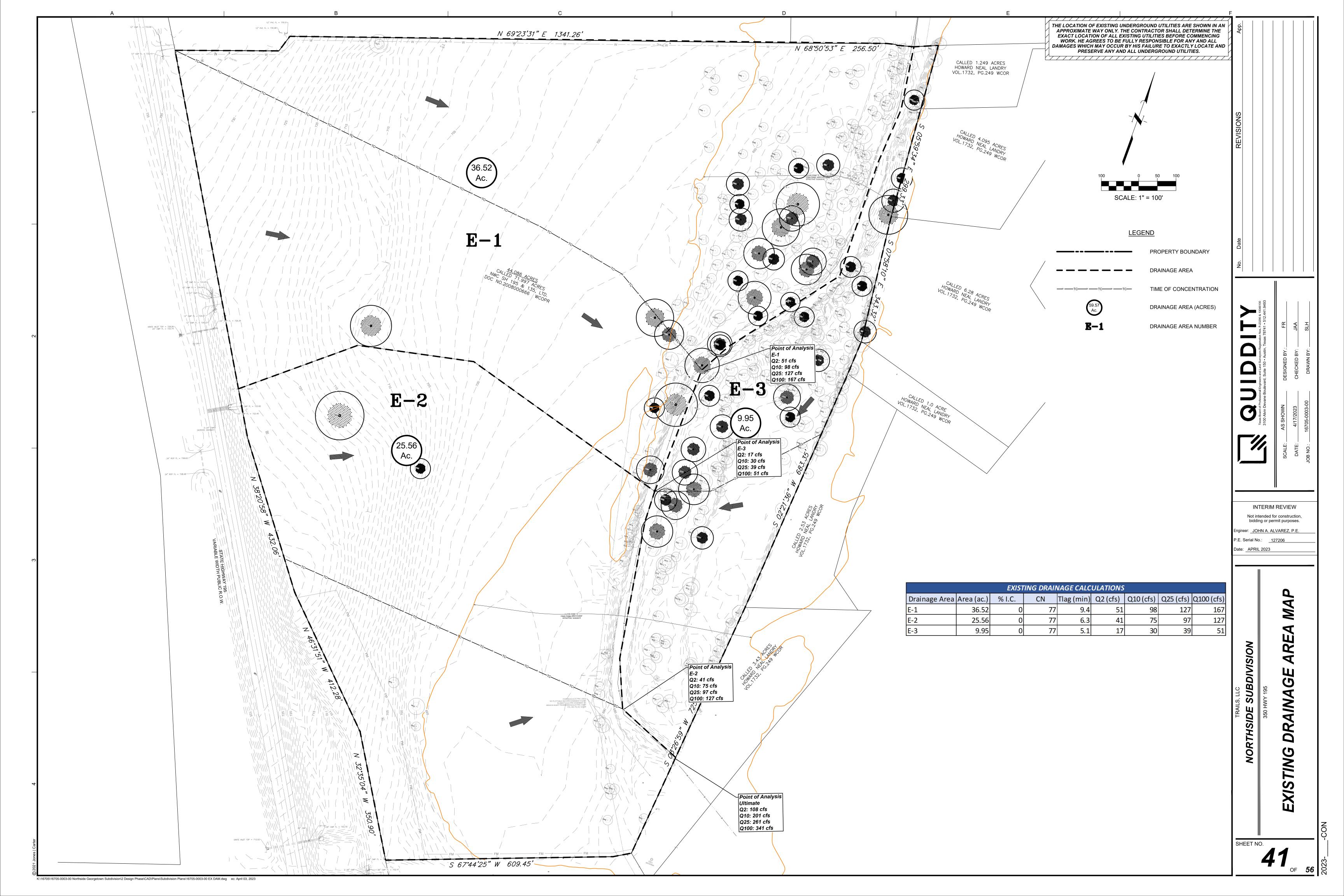


EXHIBIT 3 PROPOSED DRAINAGE AREA MAP AND CALCULATIONS

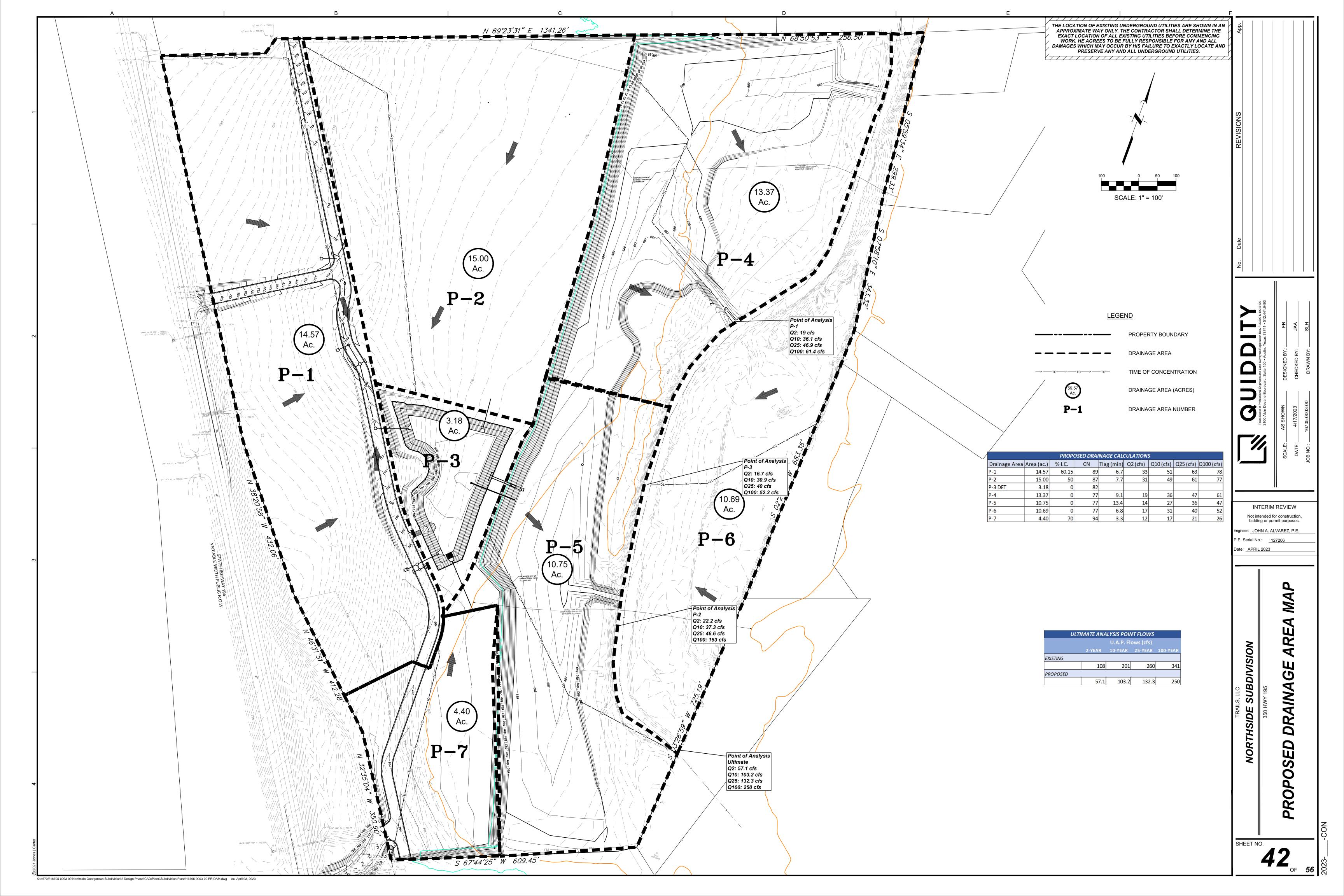


EXHIBIT 4HYDROLOGIC SOIL GROUP



Natural Passuress

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

Northside Georgetown Subdivision



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.

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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.

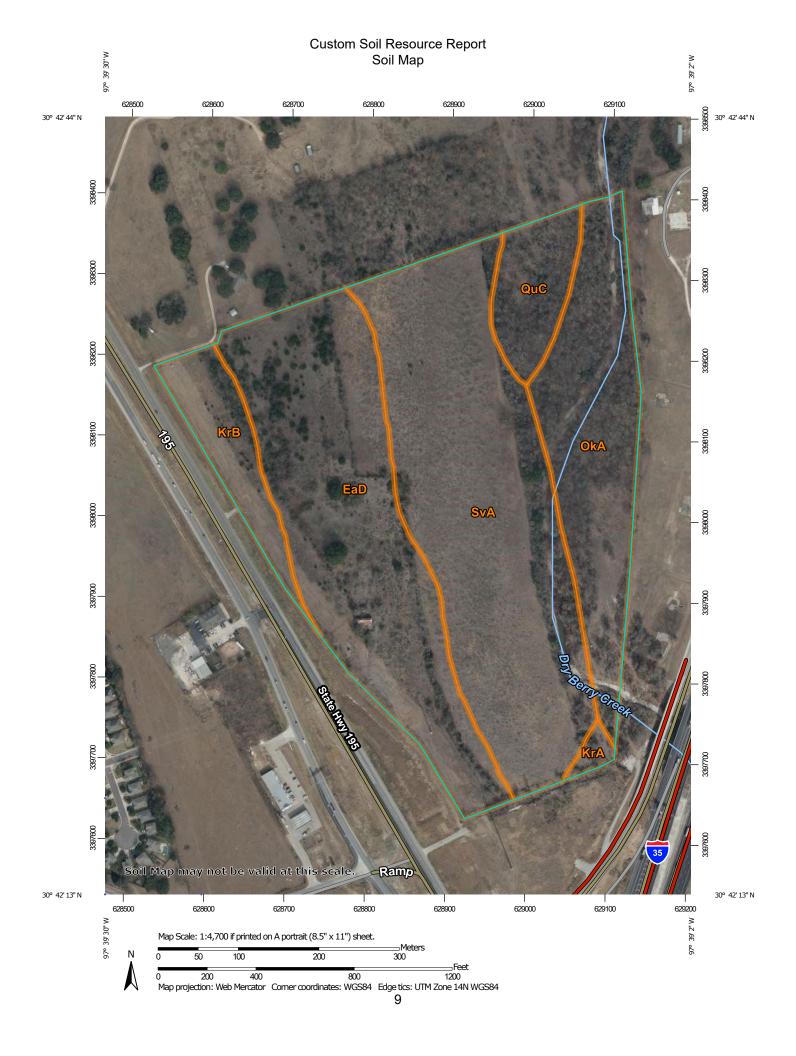
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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.



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

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Blowout

 \boxtimes

Borrow Pit

Ж

Clay Spot

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Closed Depression

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Gravel Pit

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Gravelly Spot

0

Landfill Lava Flow

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Marsh or swamp

@h

Mine or Quarry

W.

Miscellaneous Water

0

Perennial Water
Rock Outcrop

+

Saline Spot

. .

Sandy Spot

Slide or Slip

Severely Eroded Spot

^

Sinkhole

Ø

Sodic Spot

8

Spoil Area



Stony Spot
Very Stony Spot



Wet Spot Other

Δ

Special Line Features

Water Features

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Streams and Canals

Transportation

ransp

Rails

~

Interstate Highways

__

US Routes

 \sim

Major Roads

~

Local Roads

Background

100

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 22, Sep 10, 2021

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Nov 17, 2020—Dec 3, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EaD	Eckrant cobbly clay, 1 to 8 percent slopes	22.8	31.6%
KrA	Krum silty clay, 0 to 1 percent slopes	0.5	0.7%
KrB	Krum silty clay, 1 to 3 percent slopes	4.3	6.0%
OkA	Oakalla silty clay loam, 0 to 2 percent slopes, frequently flooded	13.1	18.2%
QuC	Queeny clay loam, 1 to 5 percent slopes	4.0	5.6%
SvA	Sunev silty clay loam, 0 to 1 percent slopes	27.3	37.9%
Totals for Area of Interest		72.0	100.0%

Map Unit Descriptions

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

EaD—Eckrant cobbly clay, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t0sg Elevation: 650 to 1,900 feet

Mean annual precipitation: 30 to 35 inches Mean annual air temperature: 65 to 69 degrees F

Frost-free period: 210 to 250 days

Farmland classification: Not prime farmland

Map Unit Composition

Eckrant and similar soils: 85 percent Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eckrant

Setting

Landform: Ridges

Landform position (two-dimensional): Summit, shoulder, backslope Landform position (three-dimensional): Interfluve, side slope

Down-slope shape: Convex Across-slope shape: Convex

Parent material: Residuum weathered from limestone

Typical profile

A1 - 0 to 4 inches: cobbly clay
A2 - 4 to 11 inches: very cobbly clay

R - 11 to 80 inches: bedrock

Properties and qualities

Slope: 1 to 8 percent

Surface area covered with cobbles, stones or boulders: 2.3 percent

Depth to restrictive feature: 4 to 20 inches to lithic bedrock

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: 10 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 1.0

Available water supply, 0 to 60 inches: Very low (about 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: D

Ecological site: R081CY360TX - Low Stony Hill 29-35 PZ

Hydric soil rating: No

Minor Components

Brackett

Percent of map unit: 7 percent

Landform: Ridges

Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope

Down-slope shape: Convex Across-slope shape: Convex

Ecological site: R081CY355TX - Adobe 29-35 PZ

Hydric soil rating: No

Bexar

Percent of map unit: 5 percent

Landform: Ridges

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear Across-slope shape: Linear

Ecological site: R081CY361TX - Redland 29-35 PZ

Hydric soil rating: No

Krum

Percent of map unit: 3 percent

Landform: Ridges

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear Across-slope shape: Linear

Ecological site: R081CY357TX - Clay Loam 29-35 PZ

Hydric soil rating: No

KrA—Krum silty clay, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: djqd 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, 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: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

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): 2s

Hydrologic Soil Group: C

Ecological site: R086AY007TX - Southern Clay Loam

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, 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

OkA—Oakalla silty clay loam, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2t26p Elevation: 370 to 1,450 feet

Mean annual precipitation: 24 to 35 inches Mean annual air temperature: 64 to 69 degrees F

Frost-free period: 210 to 250 days

Farmland classification: Not prime farmland

Map Unit Composition

Oakalla and similar soils: 90 percent Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oakalla

Setting

Landform: Flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Loamy alluvium derived from limestone

Typical profile

Ap - 0 to 8 inches: silty clay loam
Ak - 8 to 23 inches: silty clay loam
Bk1 - 23 to 53 inches: silty clay loam
Bk2 - 53 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.20 to 1.98 in/hr)

Depth to water table: More than 80 inches Frequency of flooding: FrequentNone

Frequency of ponding: None

Calcium carbonate, maximum content: 60 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm) Available water supply, 0 to 60 inches: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): 5w Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B

Ecological site: R081CY561TX - Loamy Bottomland 29-35 PZ

Hydric soil rating: No

Minor Components

Oakalla, occasionally flooded

Percent of map unit: 4 percent Landform: Flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear Across-slope shape: Linear

Ecological site: R081CY561TX - Loamy Bottomland 29-35 PZ

Hydric soil rating: No

Dev

Percent of map unit: 3 percent

Landform: Flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear Across-slope shape: Concave

Ecological site: R081CY561TX - Loamy Bottomland 29-35 PZ

Hydric soil rating: No

Krum

Percent of map unit: 2 percent

Landform: Flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear Across-slope shape: Concave

Ecological site: R081CY357TX - Clay Loam 29-35 PZ

Hydric soil rating: No

Unnamed, hydric

Percent of map unit: 1 percent

Landform: Flood-plain steps, depressions Landform position (three-dimensional): Tread

Down-slope shape: Linear, concave Across-slope shape: Concave

Hydric soil rating: Yes

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

SvA—Sunev silty clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2s1qh

Elevation: 510 to 640 feet

Mean annual precipitation: 34 to 37 inches
Mean annual air temperature: 67 to 69 degrees F

Frost-free period: 255 to 266 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Sunev and similar soils: 85 percent Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sunev

Setting

Landform: Stream terraces

Landform position (three-dimensional): Tread

Down-slope shape: Concave Across-slope shape: Linear

Parent material: Loamy alluvium derived from limestone

Typical profile

A - 0 to 12 inches: silty clay loam Bk - 12 to 42 inches: clay loam BCk - 42 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum content: 70 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm) Available water supply, 0 to 60 inches: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Ecological site: R086AY007TX - Southern Clay Loam

Hydric soil rating: No

Minor Components

Krum

Percent of map unit: 10 percent Landform: Stream terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear Across-slope shape: Convex

Ecological site: R086AY007TX - Southern Clay Loam

Hydric soil rating: No

Queeny

Percent of map unit: 5 percent Landform: Paleoterraces

Landform position (three-dimensional): Riser

Down-slope shape: Convex Across-slope shape: Convex

Ecological site: R086AY002TX - Southern Chalky Ridge

Hydric soil rating: No

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EXHIBIT 5WASTEWATER DESIGN CALCULATIONS

Projected Wastewater Flows

Northside Subdivision
July 2023

							Propos	ed Pipe							
MH to MH	LUE's	LUE's	F	Area	Area	Infiltration	Size	Grade	Manning	Peak Dry	Peak Wet	Full flow Velocity	Full Flow Capacity	Peak Dry:Full Flow	Peak Wet:Full Flow
		(Total)	(gpm)	(ac)	(Total)	(gpm)	(inches)	(%)		(gpm)	(gpm)	(fps)	(gpm)	(%)	(%)
A1 TO B1	0	0	0	0	0	0.00	8	2.80%	0.01	0.00	0.00	7.55	1183.01	0%	0%
B1 TO B2	0	0	0	0.43	0.43	0.22	8	1.00%	0.01	0.00	0.22	4.51	706.98	0%	0%
B2 TO B3	61	61	10	4.9	5.33	2.78	8	0.48%	0.01	42.94	45.72	3.13	489.81	9%	9%
B3 TO B4	175	236	40	15.2	20.53	10.69	8	0.32%	0.01	154.65	165.35	2.55	399.93	39%	41%
B4 TO B5	0	236	40	0.23	20.76	10.81	8	1.83%	0.01	154.65	165.47	6.10	956.39	16%	17%
B5 TO B6	100	336	57	7.77	28.53	14.86	8	2.67%	0.01	214.55	229.41	7.37	1155.22	19%	20%
B6 TO B7	0	336	57	0.05	28.58	14.89	8	2.67%	0.01	214.55	229.44	7.37	1155.22	19%	20%
B7 TO B8	0	336	57	0.18	28.76	14.98	8	2.00%	0.01	214.55	229.53	6.38	999.82	21%	23%
B8 TO B9	0	336	57	0.03	28.79	14.99	8	2.02%	0.01	214.55	229.55	6.41	1004.81	21%	23%
C1 TO C2	100	100	17	3.93	3.93	2.05	8	0.50%	0.01	68.89	70.93	3.19	499.91	14%	14%
C2 TO C3	0	100	17	0.026	3.956	2.06	8	0.50%	0.01	68.89	70.95	3.19	499.91	14%	14%
C3 TO C4	0	100	17	0.33	4.286	2.23	8	0.50%	0.01	68.89	71.12	3.19	499.91	14%	14%
C4 TO C5	0	100	17	0.051	4.337	2.26	8	0.63%	0.01	68.89	71.14	3.58	561.15	12%	13%
C5 TO C6	0	100	17	0.073	4.41	2.30	8	1.38%	0.01	68.89	71.18	5.30	830.52	8%	9%
C6 TO B9	0	100	17	1.451	5.861	3.05	8	3.15%	0.01	68.89	71.94	8.01	1254.77	5%	6%
B9 TO B10	0	436	74	0.265	34.916	18.19	8	1.82%	0.01	272.52	290.70	6.09	953.77	29%	30%
B10 TO B11	0	436	74	0.084	35	18.23	8	0.88%	0.01	272.52	290.75	4.23	663.21	41%	44%

ORGANIZED SEWEGE COLLECTION SYSTEM PLAN

See plan set included in WPAP attachments

Agent Authorization Form

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

David	GLAS G. MoSS Print Name	
1,000	Print Name	
	PARTHER	
	Title - Owner/President/Other	
of	TRAILS LLC	
¥1-	Corporation/Partnership/Entity Name	
have authorized	John Alvarez II, P.E. Print Name of Agent/Engineer	11
	Print Name of Agent/Engineer	
of Quiddity	/ Engineering	
All was a second with their law and a	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:

- 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.
- For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.
- 3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.
- 4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.
- 5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:	
Applicant's Signature	6/19/23 Date
THE STATE OF <u>Texas</u> § County of Traves §	
County of <u>Travià</u> §	
BEFORE ME, the undersigned authority, on this day p to me to be the person whose name is subscribed to me that (s)he executed same for the purpose and con	the foregoing instrument, and acknowledged to
GIVEN under my hand and seal of office on this 191 NOTARY PUBLIC Am 1 Par Typed or Printed	C Shr
MY COMMISSIO	ON EXPIRES: <u>Or . 8, 2023</u>
	AMIT PARASHER Notary Public, State Of Texas Expires December 8, 2024 1.D.# 130925640

Application Fee Form

Texas Commission on Environmental Quality					
Name of Proposed Regulated Entity: <u>Northside Subdivision</u>					
Regulated Entity Location:					
Name of Customer: <u>Trails, LLC</u>					
Contact Person: <u>Charles Holbrool</u> <u>Moss</u>	k and Doug Pho	ne: <u>512-567-5003</u>			
Customer Reference Number (if i	ssued):CN				
Regulated Entity Reference Num	·				
Austin Regional Office (3373)		_			
Hays	Travis	⊠w	illiamson		
San Antonio Regional Office (336	_		illiairi30ii		
_	_	Пи.	valda		
☐ Bexar	☐ Medina		/alde		
Comal	Kinney				
Application fees must be paid by					
Commission on Environmental C	<u> </u>	=	-		
form must be submitted with yo	ur fee payment . This p	payment is being subm	itted to:		
Austin Regional Office		San Antonio Regional C	Office		
Mailed to: TCEQ - Cashier		Overnight Delivery to: 1	ΓCEQ - Cashier		
Revenues Section		12100 Park 35 Circle			
Mail Code 214		Building A, 3rd Floor			
P.O. Box 13088		Austin, TX 78753			
Austin, TX 78711-3088		(512)239-0357			
Site Location (Check All That App	oly):				
Recharge Zone	Contributing Zone	e Transi	tion Zone		
Type of Pla	n	Size	Fee Due		
Water Pollution Abatement Plan,	Contributing Zone				
Plan: One Single Family Residenti		Acres	\$		
Water Pollution Abatement Plan,	Contributing Zone				
Plan: Multiple Single Family Resid	dential and Parks	Acres	\$		
Water Pollution Abatement Plan,	Contributing Zone				
Plan: Non-residential	40 < 100 Acres	\$ 8,000			
Sewage Collection System		2,600 L.F.	\$ 1,300		
Lift Stations without sewer lines	Acres	\$			
Underground or Aboveground St	orage Tank Facility	Tanks	\$		
Piping System(s)(only)		Each	\$		
Exception		Each	\$		
Extension of Time		Each	\$		

Date: 8/1/2023

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 Area in	
Project	Acres	Fee
One Single Family Residential Dwelling	< 5	\$650
Multiple Single Family Residential and Parks	< 5	\$1,500
	5 < 10	\$3,000
	10 < 40	\$4,000
	40 < 100	\$6,500
	100 < 500	\$8,000
	≥ 500	\$10,000
Non-residential (Commercial, industrial, institutional,	< 1	\$3,000
multi-family residential, schools, and other sites	1 < 5	\$4,000
where regulated activities will occur)	5 < 10	\$5,000
	10 < 40	\$6,500
	40 < 100	\$8,000
	≥ 100	\$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	Her	On	lv
1000	036	- 011	ny.



TCEQ Core Data Form

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

SECTION I: General Information

Renewal (Core Data Form should be submitted with the renewal form)				☐ Other			
Customer Reference Number (if issued) Follow this link to for CN or RN num Central Regist			3. Regulated Entity Reference Number (if issued)				
ECTION II: Custome	r Informat	<u>ion</u>					
4. General Customer Information	5. Effective Date	for Customer Info	rmation Update	es (mm/dd/yyyy)			
New Customer □ Change in Legal Name (Verifiable with the '	Update to Customer In Texas Secretary of State			gulated Entity Own nts)	ership		
The Customer Name submitted here ma (SOS) or Texas Comptroller of Public Acc		atically based on	what is current (and active with th	ne Texas Secretary of State		
6. Customer Legal Name (If an individual, p	orint last name first: eg:	Doe, John)	If new	Customer, enter pre	evious Customer below:		
TRAILS LL	C						
7. TX SOS/CPA Filing Number	8. TX State Tax II		(9 digi	leral Tax ID	10. DUNS Number (if applicable)		
	32062	17 6/00	37-	185 2369			
11. Type of Customer: Corpo	ration		Individual	Partne	rship: General Limited		
Government: City County Federal	Local State 00	ther	Sole Proprieto	rship Otl	ner:		
12. Number of Employees 0-20 21-100 101-250 25	51-500	gher	13. In		ned and Operated?		
14. Customer Role (Proposed or Actual) – a	ns it relates to the Regul	ated Entity listed on	this form. Please c	heck one of the follo	owing		
Owner Operator Occupational Licensee Responsible	Owner &	Operator SA Applicant		Other:			
TRAILS	LLC.	EWOOD	DR.	3			
15. Mailing IIA7 1		ate 7X	ZIP 76	654	ZIP+4		
15. Mailing 1127 N Address: City CRANITE	SITOALS ST	ate 7×	ZIP 7	654 (if applicable)	ZIP+4		
15. Mailing 1127 N Address: City CRANITE	SITOALS ST	ate 7 17.	E-Mail Address	1055 6	Q 9MAIL. CO		
15. Mailing 1127 N	de USA)	ate 7 17.	E-Mail Address		Q 9MAIL. CO		
15. Mailing Address: 1127 N City CPANITE 16. Country Mailing Information (If outsidents) 18. Telephone Number 15/2 567-6003	de USA) 19. EX	17. D tension or Code	E-Mail Address	1055 6	Q 9MAIL. CO		
15. Mailing Address: 127 N City CPANITE 16. Country Mailing Information (if outside) 18. Telephone Number 5/2 567-6003 ECTION III: Regulate 21. General Regulated Entity Information	de USA) 19. Ex ed Entity I on (If 'New Regulated En	ate 7 17. 17. tension or Code	E-Mail Address OOGN On	20. Fax Number	@ 9MAL. CO		
15. Mailing Address: City GPANITE 16. Country Mailing Information (if outside) 18. Telephone Number 5/2 567-6003 ECTION III: Regulate 21. General Regulated Entity Information New Regulated Entity Update to Regulate Regulated Entity Name submitted in	de USA) 19. Ex ed Entity I on (if 'New Regulated Entity Name	ate 7\(\) 17. tension or Code nformation tity" is selected, a n	E-Mail Address OOG-N On ew permit applicated Entity Inform	20. Fax Number () -	@ 9MALL. CO		
15. Mailing Address: I 27 N City CPANITE 16. Country Mailing Information (if outside) 18. Telephone Number	de USA) 19. Ex ed Entity I on (if 'New Regulated Entity Name gulated Entity Name may be updated, in o	ate 7 17. 17. tension or Code nformation Update to Regularder to meet TCEC	E-Mail Address OOG-N On ew permit applicated Entity Inform Core Data Stan	20. Fax Number () -	@ 9MALL. CO (if applicable)		

SECTION III: I	Regula	ated En	tity	Inform	nation	<u> </u>				
21. General Regulated En	tity Informa	ation (If 'New Re	gulated	d Entity" is selec	ted, a new	permit applic	ation is al	lso required.)		
☑ New Regulated Entity [Update to	Regulated Entity	y Name	Update t	o Regulated	l Entity Infor	mation			
The Regulated Entity Nan as Inc, LP, or LLC).	ne submitte	ed may be updo	ated, ii	n order to mee	et TCEQ Co	ore Data Sto	andards (removal of or	rganizatior	nal endings such
22. Regulated Entity Nam	e (Enter nam	ne of the site whe	ere the i	regulated action	n is taking p	lace.)				
Northside Subdivision										
23. Street Address of the Regulated Entity:	350 HWY 1	95								
(No PO Boxes)	City	Georgetown		State	TX	ZIP	78633	3	ZIP + 4	
24. County			L							
		If no Stre	eet Ad	dress is provid	led, fields	25-28 are r	equired.			
25. Description to	The project	is located on SH	-195 G	eorgetown Ty 7	78633 Near	the insterse	rtion of SH	1195 and IH-35	The project	is located directly
Physical Location:		-195 and directly		-				1133 and 111 33.	The project	13 located directly
26. Nearest City							State		Nea	arest ZIP Code
Geogetown							TX		7863	33
Latitude/Longitude are re used to supply coordinate	-	-	-			Data Stana	lards. (Ge	eocoding of th	ne Physical	Address may be
27. Latitude (N) In Decima	al:	30.70668889			28.	Longitude (W) In De	ecimal:	97.65506	667
Degrees	Minutes	1	Secor	nds	Degi	rees		Minutes		Seconds
30		42		24.08		97		39		18.24
29. Primary SIC Code	30.	Secondary SIC	Code		31. Prima	ary NAICS C	ode	32. Seco	ndary NAI	CS Code
(4 digits)	(4 c	ligits)			(5 or 6 dig	gits)		(5 or 6 dig	gits)	
6512	651	.3			531311			531312		
33. What is the Primary B	usiness of	this entity? ([Do not r	repeat the SIC or	r NAICS desi	cription.)				
Multi Family Residential and 0	Commercial									
34. Mailing										
Address:	1127 Nort	h ShoreWood				_				
	City	Granite Shoa	ls	State	TX	ZIP	78654	1	ZIP + 4	
35. E-Mail Address:			•							
36. Telephone Number			37.	Extension or	Code	38.	Fax Num	iber (if applicat	ole)	

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.

(512) 567-5003

TCEQ-10400 (11/22) Page 2 of 3

(

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

40. Name:	John A Alvarez	II, P.E.		41. Title:	Project Manager
42. Telephone	Number	43. Ext./Code	44. Fax Number	45. E-Mail Address	
(512)685-5163			() -	Jalvarez@qui	iddity.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:	Quiddity Engineering	ct Manager			
Name (In Print):	John Alvarez II			Phone:	(512)441-9193
Signature:	96			Date:	8/1/2023

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