Berry Creek Highlands
Phase 8B & 9
Georgetown, Williamson County, TX

August 2025

Prepared for:

Berry Creek ASLI IX, LLC 923 N. PENNSYLVANIA AVENUE Winter Park, FL 32789

Prepared by:

Kimley» Horn

10184 Jollyville Road Building 4, Suite 200 Austin, Texas 78759

Job No. 065029700 © Kimley-Horn and Associates, Inc. 2025 TBPE Firm #928



08/08/2025

Organized Sewage Collection System Plan Checklist

Edwards Aquifer Application Cover Page (TCEQ-20705)

General Information Form (TCEQ-0587)

Attachment A - Road Map

Attachment B - USGS / Edwards Recharge Zone Map

Attachment C - Project Description

Geologic Assessment Form (TCEQ-0585)

Attachment A - Geologic Assessment Table (TCEQ-0585-Table)

Comments to the Geologic Assessment Table

Attachment B - Soil Profile and Narrative of Soil Units

Attachment C - Stratigraphic Column

Attachment D - Narrative of Site Specific Geology

Site Geologic Map(s)

Table or list for the position of features' latitude/longitude (if mapped using GPS)

Organized Sewage Collection System Plan (TCEQ-0582)

Attachment A - Engineering Design Report

Attachment B - Justification and Calculations for Deviation in Straight Alignment

Without Manholes

Attachment C - Justification for Variance from Manhole Spacing

Attachment D - Explanation of Slopes for Flows Greater Than 10.0 Feet Per Second Site

Plan

Final Plan and Profile Sheets

Lift Station / Force Main System Application (TCEQ-0624) if applicable

Attachment A - Engineering Design Report

Site Plan

Final Plan and Profile Sheets

Temporary Stormwater Section (TCEQ-0602)

Attachment A - Spill Response Actions

Attachment B - Potential Sources of Contamination

Attachment C - Sequence of Major Activities

Attachment D - Temporary Best Management Practices and Measures

Attachment E - Request to Temporarily Seal a Feature, if sealing a feature

Attachment F - Structural Practices

Attachment G - Drainage Area Map

Attachment H - Temporary Sediment Pond(s) Plans and Calculations

Attachment I - Inspection and Maintenance for BMPs

Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

Agent Authorization Form (TCEQ-0599), if application submitted by agent Application Fee Form (TCEQ-0574)

Check Payable to the "Texas Commission on Environmental Quality"

Core Data Form (TCEQ-10400)

Water Pollution Abatement Plan Checklist

Edwards Aquifer Application Cover Page (TCEQ-20705)

General Information Form (TCEQ-0587)

Attachment A - Road Map

Attachment B - USGS / Edwards Recharge Zone Map

Attachment C - Project Description

Geologic Assessment Form (TCEQ-0585)

Attachment A - Geologic Assessment Table (TCEQ-0585-Table)

Comments to the Geologic Assessment Table

Attachment B - Soil Profile and Narrative of Soil Units

Attachment C - Stratigraphic Column

Attachment D - Narrative of Site Specific Geology

Site Geologic Map(s)

Table or list for the position of features' latitude/longitude (if mapped using GPS)

Water Pollution Abatement Plan Application Form (TCEQ-0584)

Attachment A - Factors Affecting Water Quality

Attachment B - Volume and Character of Stormwater

Attachment C - Suitability Letter from Authorized Agent (if OSSF is proposed) Attachment

D - Exception to the Required Geologic Assessment (if requesting an exception) Site Plan

Temporary Stormwater Section (TCEQ-0602)

Attachment A - Spill Response Actions

Attachment B - Potential Sources of Contamination

Attachment C - Sequence of Major Activities

Attachment D - Temporary Best Management Practices and Measures

Attachment E - Request to Temporarily Seal a Feature, if sealing a feature

Attachment F - Structural Practices

Attachment G - Drainage Area Map

Attachment H - Temporary Sediment Pond(s) Plans and Calculations

Attachment I - Inspection and Maintenance for BMPs

Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

Permanent Stormwater Section (TCEQ-0600)

Attachment A - 20% or Less Impervious Cover Waiver, if project is multi-family residential, a school, or a small business and 20% or less impervious cover is proposed for the site

Attachment B - BMPs for Upgradient Stormwater

Attachment C - BMPs for On-site Stormwater

Attachment D - BMPs for Surface Streams

Attachment E - Request to Seal Features (if sealing a feature)

Attachment F - Construction Plans

Attachment G - Inspection, Maintenance, Repair and Retrofit Plan
Attachment H - Pilot-Scale Field Testing Plan, if BMPs not based on Complying with the
Edwards Aquifer Rules: Technical Guidance for BMPs
Attachment I - Measures for Minimizing Surface Stream Contamination

Agent Authorization Form (TCEQ-0599), if application submitted by agent Application Fee Form (TCEQ-0574)
Check Payable to the "Texas Commission on Environmental Quality"
Core Data Form (TCEQ-10400)

SECTION 1: EDWARDS AQUIFER APPLICATION COVER PAGE

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 "MidReview 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: Berry Creek Highlands Phase 8B & 9				2. Regulated Entity No.:					
3. Customer Name: BERRY CREEK ASLI IX, LLC					4. Customer No.: 605720523				
5. Project Type: (Please circle/check one)	New X		Modification		Extension		Exception		
6. Plan Type: (Please circle/check one)	WPAP X	CZP	SCS X	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Residential X		Non-residential			8. Site (acres):		34.38	
9. Application Fee:	\$8,754		10. Permanent BMP(MP(s	лР(s): 1 Existing WQ I		Detention Pond	
11. SCS (Linear Ft.):	9,508 12			12. AST/UST (No. Tanks		ıks):	N/A		
13. County:	WILLIAMSC	N	14. Watershed:		Berry Creek				

Application Distribution

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

http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf For more detailed boundaries, please contact the conservation district directly.

Austin Region			
County:	Hays	Travis	Williamson
Original (1 req.)	_	_	_1_
Region (1 req.)		_	_1_
County(ies)			_1_
Groundwater Conservation District(s)	Edwards Aquifer Authority Barton Springs/ Edwards Aquifer Hays Trinity Plum Creek	Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	AustinBudaDripping SpringsKyleMountain CitySan MarcosWimberleyWoodcreek	AustinBee CavePflugervilleRollingwoodRound RockSunset ValleyWest Lake Hills	AustinCedar ParkFlorence _1_GeorgetownJerrellLeanderLiberty HillPflugervilleRound Rock

	Sa	an 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	Bulverde Fair Oaks Ranch Garden Ridge New Braunfels Schertz	NA	San Antonio ETJ (SAWS)	NA
---------------------------	----------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------	----	------------------------------	----

I certify that to the best of my knowledge, that the application is comple application is hereby submitted to TCEQ for administrative review and t	
AC Steadman - Kimley-Horn	
Print Name of Customer/Authorized Agent	
Atzen Stendun	
Signature of Customer/Authorized Agent Date 08/18/20	025

FOR TCEQ INTERNAL USE ONLY				
Date(s)Reviewed:		Date Adn	ninistratively Comple	ete:
Received From:		Correct N	lumber of Copies:	•
Received By:		Distribut	ion Date:	
EAPP File Number:		Complex	:	
Admin. Review(s) (No.):		No. AR R	ounds:	
Delinquent Fees (Y/N):		Review T	ime Spent:	
Lat./Long. Verified:		SOS Cust	omer Verification:	
Agent Authorization Complete/Notarized (Y/N):		Fee Check:	Payable to TCEQ (Y	/N):
Core Data Form Complete (Y/N):			Signed (Y/N):	
Core Data Form Incomplete Nos.:			Less than 90 days o	Id (Y/N):

SECTION 2: GENERAL INFORMATION

General Information Form

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: AC Steadman

Date: 08/18/2025

Signature of Customer/Agent:

Atexas Stender

Project Information

1. Regulated Entity Name: <u>Berry Creek Highlands Phase 8B & 9</u>

2. County: Williamson

3. Stream Basin: <u>Brazos River</u>

4. Groundwater Conservation District (If applicable): N/A

5. Edwards Aquifer Zone:

	Recharge Zone Transition Zone
	6.Plan Type: WPAP SCS AST UST Modification Exception Request
7.	Customer (Applicant): Contact Person: Marvin Shapiro Entity: BERRY CREEK ASLI IX, LLC Mailing Address: 923 N. Pennsylvania Avenue City, State: Winter Park, Florida Zip: 32789 Telephone: (407) 628-8488 FAX: Email Address: mshapiro@avantiprop.com
8.	Agent/Representative (If any): Contact Person: AC Steadman Entity: Kimley-Horn & Associates, Inc. Mailing Address: 10814 Jollyville Road, Building IV, Suite 200 City, State: Austin, Texas Zip: 78759 Telephone: 512-418-4508 FAX: Email Address: AC.Steadman@kimley-horn.com
9.	Project Location: The project site is located inside the city limits of Georgetown. The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of The project site is not located within any city's limits or ETJ. 10. The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.
11.	 The project site is located on the West side of State Highway Cowboy 195 at the intersection with Shell Road. Attachment A – Road Map. A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

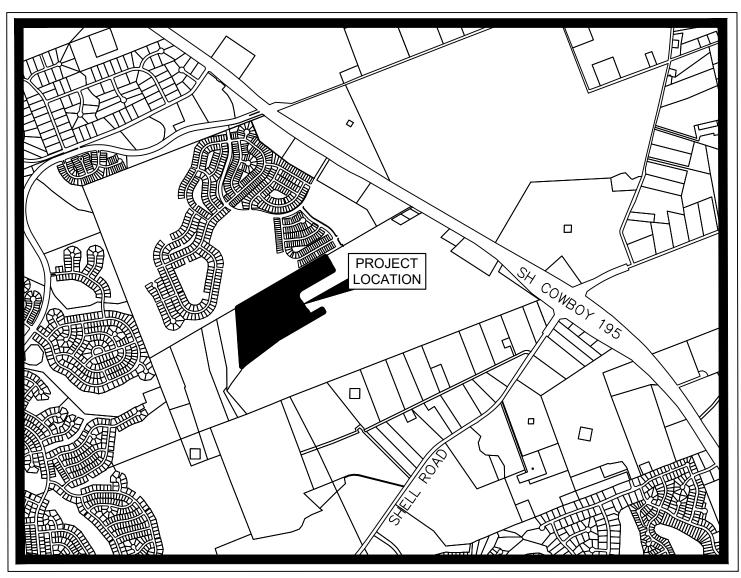
12.	Attachment B - USGS / Edwards Recharge Zone Map. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:
	Project site boundaries. USGS Quadrangle Name(s). Boundaries of the Recharge Zone (and Transition Zone, if applicable). Drainage path from the project site to the boundary of the Recharge Zone.
	13. The TCEQ must be able to inspect the project site or the application will be returned. Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic
	or manmade features noted in the Geologic Assessment. Survey staking will be completed by this date: 09/15/2025
	14. Att achment C – Project Description. Attached at the end of this form is a detailed narrative description of the proposed project. The project description is consistent throughout the application and contains, at a minimum, the following details:
	Area of the site Offsite areas Impervious cover Permanent BMP(s) Proposed site use Site history Previous development Area(s) to be demolished
	15. Existing project site conditions are noted below: Existing commercial site Existing industrial site Existing residential site Existing paved and/or unpaved roads Undeveloped (Cleared) Undeveloped (Undisturbed/Uncleared) Other:
	OHEL.

Prohibited Activities

16.	\boxtimes I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:
	(1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
	(2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
	(3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;
	(4) The use of sewage holding tanks as parts of organized collection systems; and
	(5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).
17.	 (6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading. I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:
	(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and
	(3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.
Adm	ninistrative Information
18	The fee for the plan(s) is based on:
	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.

a. ATTACHMENT A—ROAD	a.	IACHMEN I A—	-ROAD MAP
----------------------	----	--------------	-----------



VICINITY MAP

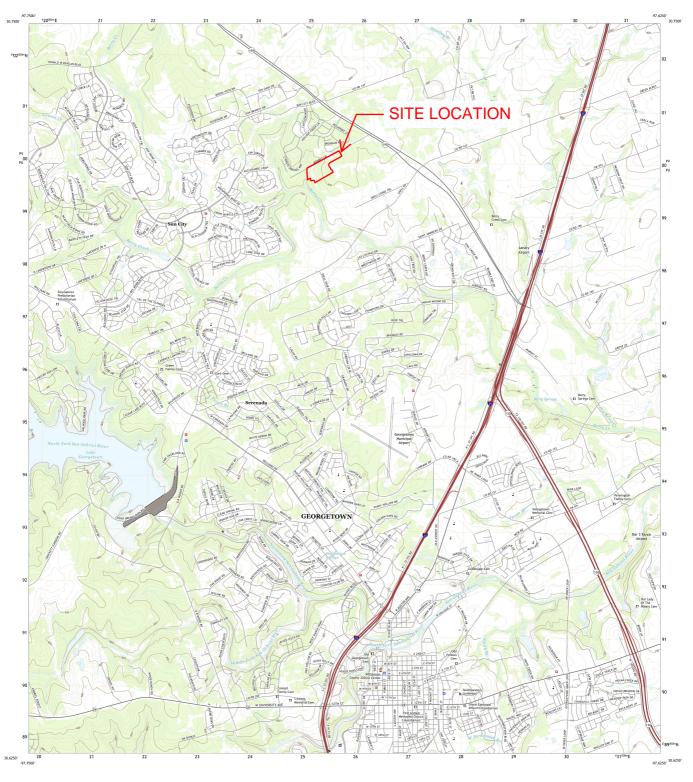
SCALE: 1" = 2,000'

Berry Creek Highlands Phase 8B & 9

Georgetown, Texas March 2025



b. <u>ATTACHMENT B—USGS QUADRANGLE MAP</u>











c. ATTACHMENT C—PROJECT DESCRIPTION

The development is located on the west side of State Highway Cowboy 195 at the intersection with Shell Road in Georgetown Texas, Williamson County. This Water Pollution Abatement Plan (WPAP) application and Organized Sewage Collection System (SCS) application covers Berry Creek Highlands Phase 8B & 9, a 34.38-acre single family subdivision development section out of the Berry Creek Master Plan.

This section includes the development of 165 single-family lots and is located in the Edwards Aquifer Recharge Zone. The project includes the construction of ± 6121 linear feet of public roadway, $\pm 5,345$ linear feet of 18" to 6'X4' RCB storm sewer, $\pm 6,021$ linear feet of 8" water line, and $\pm 5,731$ linear feet of 8" gravity wastewater within the Phase 8B & 9 boundary. The limits of construction for this phase is 34.38 acres. This section is a part of the proposed larger Berry Creek Master Planned Community.

The SCS covers the wastewater for Berry Creek Highlands Phase 8B & 9 that will gravity flow and connect to an existing 8" wastewater stub located in the floodplain on the southwestern portion of the site. The existing 8" wastewater line is located within a wastewater easement, and ultimately is treated at the City of Georgetown San Gabriel Wastewater Treatment Plant.

This WPAP covers the storm water generated by Berry Creek Highlands Phase 8B & 9. The storm water from this Phase will be treated in only one location. The site will be treated by a batch detention water quality pond that is existing with Berry Creek Highlands Phase 6A. The existing batch detention water quality pond is designed to accommodate the respective impervious cover and serve as the Permanent Best Management Practice (BMP) for the remainder of the site.

A SWPPP will also be filed with TCEQ per the requirements of the TPDES program for Berry Creek Highlands Phase 8B & 9.

This site may possibly utilize imported fill material. That material shall consist of crushed limestone, select fill, and topsoil. The fill material will be used to facilitate drainage, roadway construction, and re-vegetation of the property and to elevate the building foundations.

All sensitive features and buffers are shown and labeled on the construction plans as per the Geological Assessment.

SECTION 3: GEOLOGIC ASSESSMENT

GEOLOGIC ASSESSMENT

For

314-AC JOHNSON/SCHNEIDER TRACTS HIGHWAY 195 GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Prepared for

KIMLEY-HORN 10814 JOLLYVILLE RD, AVALLON IV, STE 300 AUSTIN, TEXAS 78759

Prepared by

Professional Service Industries, Inc.
Three Burwood Lane
San Antonio, Texas 78216
Telephone (210) 342-9377

PSI PROJECT NO.: 0435-2660

March 31, 2016









March 31, 2016

KIMLEY-HORN

10814 Jollyville Road, Avallon IV, Suite 300 Austin, Texas 78759

Attn: Mr. Brian Parker, P.E., Senior Associate

Via email: brian.parker@kimley-horn.com

Re: Geologic Assessment

314-Acre Johnson/Schneider Tracts

Highway 195 & Bonnet Lane

Georgetown, Texas

PSI Project No.: 435-2660

Dear Mr. Parker:

Professional Service Industries, Inc. (PSI) has completed a geologic recharge assessment for the above referenced project in compliance with the Texas Commission on Environmental Quality (TCEQ) requirements for regulated developments located on the Edwards Aquifer Recharge Zone (EARZ). The purpose of this report is to describe surficial geologic units and identify the locations and extent of significant recharge features present in the development area.

AUTHORIZATION

Authorization to perform this assessment was given by a signed copy of PSI Proposal No. 171837 between Kimley-Horn and PSI dated March 2, 2016.

PROJECT DESCRIPTION

The subject site is an irregular shaped tract of land, approximately 314-acres in size, located on the west side of Highway 195, at the southwest corner of Bonnet Lane and Hwy 195 in Georgetown, Williamson County, Texas. The site is covered with grassy vegetation, and varying thicknesses of soil, with rock outcrops scattered throughout. The online Edwards Aquifer Map provided by the TCEQ was reviewed for this assessment. According to the contour lines on the maps, the elevation of the property ranges from approximately 825 feet above mean sea level (MSL) in the northern portion of the tract, to approximately 735 feet MSL on the southwest corner of the tract, by Berry Creek. The contour lines in the area of the property indicate variable slopes; but generally to the south-southwest towards the Berry Creek drainage; while some middle portions slope to the southeast, towards a tributary drainage of Berry Creek.

REGIONAL GEOLOGY

Physiography

From west to east, the two physiographic provinces in Williamson County are: the Edwards Plateau and the Blackland Prairie. The Edwards Plateau terrain is rugged and hilly, with elevations ranging from 800 feet to 1,400 feet above sea level.

This area is underlain by beds of limestone that dip gently to the southeast. Southeast of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends north-south across Williamson County and is composed of fault blocks of limestone, chalk, shale and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 400 feet to 800 feet above sea level. The faults are predominantly normal, down thrown-to-the Gulf Coast, with near vertical throws.

The subject property lies on the Edwards Plateau. According to the 1974 Austin Sheet of the Geologic Atlas of Texas, published by the Bureau of Economic Geology in cooperation with the University of Texas at Austin, no faults are mapped in proximity to the subject site.

Stratigraphy and Structure

The site is predominantly clay covered, with few rock outcrops of note. According to the Austin Sheet of the Geologic Atlas of Texas, the underlying rocks at the site are mapped as the Edwards Limestone, undivided, which includes the overlying Georgetown Formation (Ked); is fine to coarse-grained, with abundant chert, medium gray to grayish brown; fossils in the formation are rudistids as reefs and individuals, miliolid (microfossils), and shell fragments; solution zones and collapse breccia common; thickness 300-500 feet.

No features scoring more than 40 points on the F-0585 form were observed on the subject tract. Feature S-1 is a small solution cavity on the western portion of the site, and Features S-2 to S-5 were small closed depressions on hillsides that appeared to have limited subsurface interconnection. Features S-6 and S-12 were water wells, and Feature S-7 was a linear outcrop feature in a drainage on the southeast portion of the site. Features S-8, 10 and 11 were small closed depressions on the western portion of the site, and S-11 may have been excavated as an attempt to make a stock tank/pond. Feature S-9 is a small solution cavity on the northwest portion of the site that had a lateral extent of about 4 feet in the subsurface.

SITE INVESTIGATION

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

SUMMARY

No sensitive recharge features were noted on the subject site. While not observed, septic systems may have been used in the past on the site. If encountered during development activities, septic systems should be properly removed or decommissioned in accordance with state and local regulations. If future use of the on-site water wells is not planned, they should be properly plugged and abandoned in accordance with state and local regulations. It is possible that clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.

We appreciate this opportunity to be of service to you. If you have any questions, please do not hesitate to contact our office.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

John Langan, P.G.

Environmental Services

WARRANTY

The field observations and research reported herein are considered sufficient in detail and scope to form a reasonable basis for a general geological recharge assessment of this site. PSI warrants that the findings and conclusions contained herein have been promulgated in accordance with generally accepted geologic methods, only for the site described in this report. These methods have been developed to provide the client with information regarding apparent indications of existing or potential conditions relating to the subject site and are necessarily limited to the conditions observed at the time of the site visit and research. This report is also limited to the information available at the time it was prepared. In the event additional information is provided to PSI following the report, it will be forwarded to the client in the form received for evaluation by the client. There is a possibility that conditions may exist which could not be identified within the scope of the assessment or which were not apparent during the site visit. PSI believes that the information obtained from others during the review of public information is reliable; however, PSI cannot warrant or guarantee that the information provided by others is complete or accurate.

This report has been prepared for the exclusive use of Kimley-Horn for the site discussed herein. Reproductions of this report cannot be made without the expressed approval Kimley-Horn. The general terms and conditions under which this assessment was prepared apply solely to Kimley-Horn. No other warranties are implied or expressed.

Geologic Assessment

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Geologist: John Langan	Telephone: <u>210/342-9377</u>
Date: March 31, 2016	Fax: <u>210/342-9401</u>
Representing: PSI TBPG No. 50128 (Name of Co	mpany and TBPG or TBPE registration number)
Signature of Geologist:	E OF TEX
Regulated Entity Name: 314-Ac Johnson/Schne	eider Tracts John Langan Geology 4871
Date(s) Geologic Assessment was performe	d: 3/24-28/16
2. Type of Project:	3,2423,10
WPAPSCSLocation of Project:	AST UST
Recharge Zone Transition Zone Contributing Zone within the Transition	Zone

- 4. Attachment A Geologic Assessment Table. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.
- 5. Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Eckrant cobbly	•	
clay ,1-8% slopes	В	0-2'
Eckrant Extremely stony clay 0- 3% slopes	В	0-2'
Eckrant Rock outcrop complex, rolling	В	0-1'
Georgetown stony clay loam 1-3% slopes	В	0-2

Soil Name	Group*	Thickness(feet)
Oakalla soils 0-1% slopes, channeled,		
freq flooded	С	1-3

- * Soil Group Definitions (Abbreviated)
 - A. Soils having a high infiltration rate when thoroughly wetted.
 - B. Soils having a moderate infiltration rate when thoroughly wetted.
 - C. Soils having a slow infiltration rate when thoroughly wetted.
 - D. Soils having a very slow infiltration rate when thoroughly wetted.
- 6. Attachment B Stratigraphic Column. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.
- 7. Attachment C Site Geology. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.
- 8. Attachment D Site Geologic Map(s). The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

Applicant's Site Plan Scale: 1'' = 400'Site Geologic Map Scale: 1'' = 400'

Site Soils Map Scale (if more than 1 soil type): 1" = 400' 9. Method of collecting positional data: Global Positioning System (GPS) technology. Other method(s). Please describe method of data collection: _____ 10. The project site and boundaries are clearly shown and labeled on the Site Geologic Map. 11. Surface geologic units are shown and labeled on the Site Geologic Map. 12. A Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table. Geologic or manmade features were not discovered on the project site during the field investigation. 13. The Recharge Zone boundary is shown and labeled, if appropriate. 14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section. There are 2 (#) 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. \boxtimes 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.

STRATIGRAPHIC COLUMN

314-Ac. Johnson/Schneider Tracts Highway 195 Georgetown, Texas

FORMATION	THICKNESS	LITHOLOGIC DESCRIPTION
Del Rio Clay	40-70	Calcareous and gypsiferous, with pyrite common, with a blocky structure that weathers to light gray or yellowish gray. The characteristic marine mega fossil, <i>Ilmatogyra arietina</i> (formerly exogyra arietina) is widespread throughout the formation.
Georgetown Formation	2-20'	Light tan limestone identified by proximity to Del Rio clay and diagnostic marker fossil: waconella wacoensis brachiopod; low porosity and permeability development.
Edwards Limestone	60-350'	Limestones and dolomites, extensive porosity development in "honeycomb sections, interbedded with massive recrystallized limestones with more limited permeabilities

SOILS NARRATIVE

According to the Soil Survey of Williamson County, published by the United States Department of Agriculture, Soil Conservation Service, in cooperation with the Texas Agricultural Extension Service, issued in 1983, indicated the soils at the subject property include Eckrant cobbly clay, 1 to 8 percent slopes, (EaD), Eckrant extremely stony clay 0-3% slopes (EeB), Eckrant-Rock outcrop complex, rolling (ErE), Georgetown stony clay loam, 1-3% slopes (GsB) and Oakalla soils, channeled (Oc).

Eckrant soils are nearly level to gently sloping soils on broad ridges and shallow valleys in uplands that develop over limestone. Due to the large amount of rock fragments and shallowness, these soils are not suited to crops or pasturelands, but are used as rangeland. The soil is well drained, with moderately slow permeability, very low water capacity and rapid surface runoff. The shallow depth to limestone is suitable for home sites, as the rock offers stable footings for foundations, but considerable cutting and blasting is required for underground utility lines.

Georgetown stony clay loam occurs mostly on higher parts of uplands, and has an approximate 7" thick surface layer of slightly acid, brown stony clay loam which overlies a reddish-brown clay subsoil to a depth of approximately 35". The parent material is an indurated, fractured limestone. The soil is well drained, with slow permeability, medium surface runoff and low available water capacity. The soil is used as rangeland, and is suitable for home sites.

Oakalla soils occur on bottom lands in narrow stream valleys. The surface layer is a dark brown loam approximately 7" thick, which overlies a dark brown clay loam roughly 16" thick, which in turn overlies a dark brown sandy clay loam to a depth of 66". These soils are generally used as rangeland, as the channeled topography is not suited for farm equipment.

SITE GEOLOGIC NARRATIVE

Physiography

From west to east, the two physiographic provinces in Williamson County are: the Edwards Plateau and the Blackland Prairie. The Edwards Plateau terrain is rugged and hilly, with elevations ranging from 800 feet to 1,400 feet above sea level.

This area is underlain by beds of limestone that dip gently to the southeast. Southeast of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends north-south across Williamson County and is composed of fault blocks of limestone, chalk, shale and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 400 feet to 800 feet above sea level. The faults are predominantly normal, down thrown-to-the Gulf Coast, with near vertical throws.

The subject property lies on the Edwards Plateau. According to the 1974 Austin Sheet of the Geologic Atlas of Texas, published by the Bureau of Economic Geology in cooperation with the University of Texas at Austin, no faults are mapped in proximity to the subject site.

Stratigraphy and Structure

The site is predominantly clay covered, with few rock outcrops of note. According to the Austin Sheet of the Geologic Atlas of Texas, the underlying rocks at the site are mapped as the Edwards Limestone, undivided, which includes the overlying Georgetown Formation (Ked); is fine to coarse-grained, with abundant chert, medium gray to grayish brown; fossils in the formation are rudistids as reefs and individuals, miliolid (microfossils), and shell fragments; solution zones and collapse breccia common; thickness 300-500 feet.

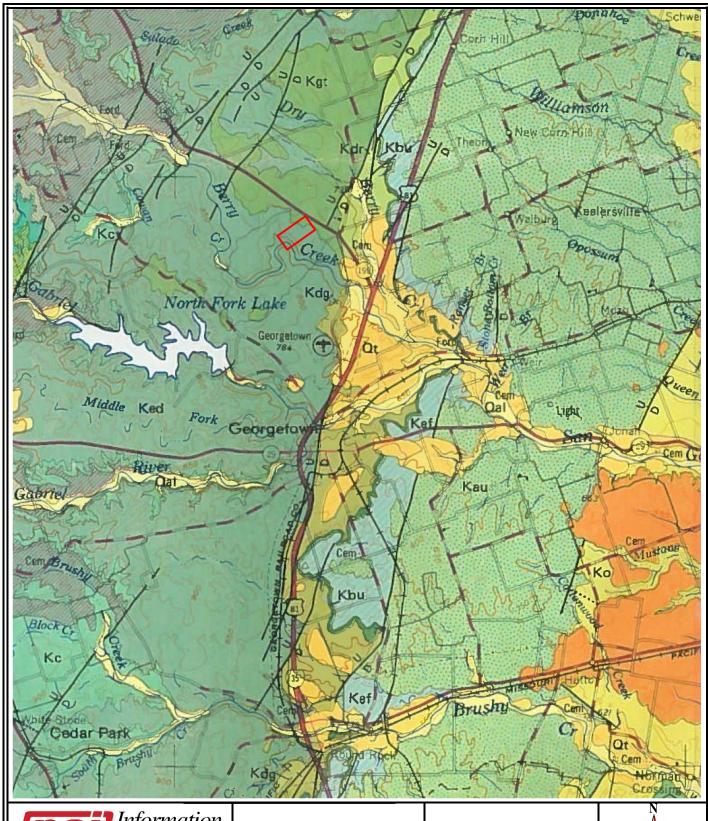
No features scoring more than 40 points on the F-0585 form were observed on the subject tract. Feature S-1 is a small solution cavity on the western portion of the site, and Features S-2 to S-5 were small closed depressions on hillsides that appeared to have limited subsurface interconnection. Features S-6 and S-12 were water wells, and Feature S-7 was a linear outcrop feature in a drainage on the southeast portion of the site. Features S-8, 10 and 11 were small closed depressions on the western portion of the site, and S-11 may have been excavated as an attempt to make a stock tank/pond. Feature S-9 is a small solution cavity on the northwest portion of the site that had a lateral extent of about 4 feet in the subsurface.

SITE INVESTIGATION

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

SUMMARY

No sensitive recharge features were noted on the subject site. While not observed, septic systems may have been used in the past on the site. If encountered during development activities, septic systems should be properly removed or decommissioned in accordance with state and local regulations. If future use of the on-site water wells is not planned, they should be properly plugged and abandoned in accordance with state and local regulations. It is possible that clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.





PSI, Inc.

3 Burwood Lane San Antonio, Texas 78216

PROJECT NAME:

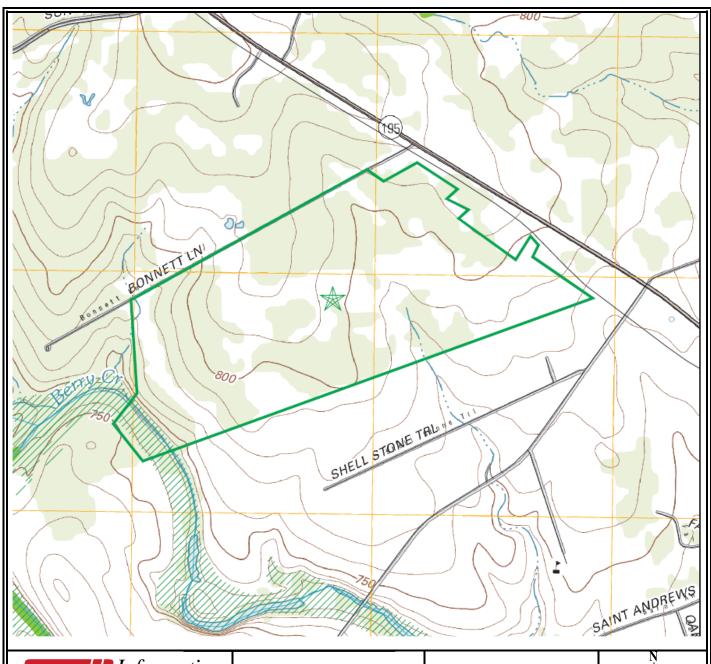
314-Ac Johnson/Schneider Tracts Highway 195 Georgetown,Texas

PROJECT NO.:435-2660

Geologic Atlas of Texas, Austin Sheet

(Bureau of Economic Geology, UT-Austin1981)







PSI, Inc.

3 Burwood Lane San Antonio, Texas 78216

PROJECT NAME:

314-Ac Johnson/Schneider Tracts Highway 195 Georgetown, Texas

PROJECT NO.:435-2660

Topographic Map USGS "Georgetown, Texas"

2013





GEC	GEOLOGIC ASSESSIV	SSESSIV	ENT	TABLE	Ш		PRC	ZIE	ST NAR	ME:	314-,	Ac. Jol	osut	PROJECT NAME: 314-Ac. Johnson/Schneider Tracts	der T	ract	ွ			
	LOCATION	NO				FEA	TURI	E CH	FEATURE CHARACTERISTICS	ERIS	SOLL				EVALUATION	.UAT	NO!	PHYSICAL	ICAL	SETTING
1A	18*	.D.	2A	2B	3		4		. 2	5A	9	7	BA	88	6		10	1		12
FEATURE	E LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIME	DIMENSIONS (FEET)		TREND U		DENSITY A (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSI	SENSITIVITY	CATCHMENT AREA (ACRES)	NT AREA	TOPOGRAPHY
						×	>	Z		10						<40	>40	<1.6	>1,6	
S F	30-43-17.6	97-41-37.2	SC	20	Ked	0.4	0.4	0.5		H				10	30	×		×		hiliside
S-2	30-43-15,6	97-41-34.9	CD	5	Ked	4	4	0.5		\vdash				8	13	×		×		hillside
S-3	30-43-15,3	97-41-34.1	CD	5	Ked	4	3	0.05		H				8	13	×		×		hillside
S-4	30-43-31,9	97-40-54	CD	5	Ked	9	9	0.5		H				8	13	×		×		hillside
S-5	30-43-31.4	97-40-53.9	CD	5	Ked	7	9	0.5		-				8	13	×		×		hillside
9-S	30-43-33	97-41-19.2	MB	30	Ked	9.0	9.0	>100		-				4	34	×		×	Г	hillside
S-7	30-43-28.7	97-40-57.3	0	5	Ked	275	35	7		H				22	27	×			×	hillside
S-8	30-43-19.9	97-41-27.4	CD	5	Ked	1.5	1.5	-		\vdash				80	13	×		×	П	hillside
6-S	30-43-27	97-41-32.8	SC	20	Ked	က	e	4						18	38	×		×		hillside
S-10	S-10 30-43-29.1	97-41-33.5	CD	5	Ked	5	2	-	_	\vdash				8	13	×		×		hillside
S-11	30-43-27.6	97-41-26,9	CD	5	Ked	25	20	3		_	_			8	13	×		×		hillside
S-12	30-43-29.9	97-41-16,2	MB	30	Ked	9.0	9.0	>100		Н	Н			4	34	×		×		hillside
										\dashv										
										_										
* DATUM:	UM:						П	П		Н	Н									
2A TYP	_	TYPE		26	2B POINTS	L'														
O	Cave				30						8A I	BA INFILLING	<i>(</i> 2							
SC	Solution cavity	t y			20		z	None,	None, exposed bedrock	edroc	×									
RS	Solution-enla	Solution-enlarged fracture(s)	(5)		20		O	Coarse	Coarse - cobbles, breakdown, sand, gravel	, brea	ıkdown,	sand, gra	avel							
比	Fault				20		0	coose	or soft muc	d or s	oil, orga	ınics, leav	/es, stic	Loose or soft mud or soil, organics, leaves, sticks, dark colors	ors					
0	Other natura	Other natural bedrock features	Ires		S			Fines,	compacted	d clay-	-rich se	diment, s	oil profi	Fines, compacted clay-rich sediment, soil profile, gray or red colors	d colors	10				
MB	Manmade fe	Manmade feature in bedrock	×		30		-	Vegeta	Vegetation. Give details in narrative description	detail	ls in nar	rative de	scriptio	_						
SW	Swallow hole	77			30		ES.	Flowst	Flowstone, cements, cave deposits	nts, c	ave dep	osits								
SH	Sinkhole				20		×	Other	Other materials											
8	Non-karst clc	Non-karst closed depression	'n		S															
Z	Zone, cluster	Zone, clustered or aligned features	eatures		30				-	12 TO	12 TOPOGRAPHY	APHY								

I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

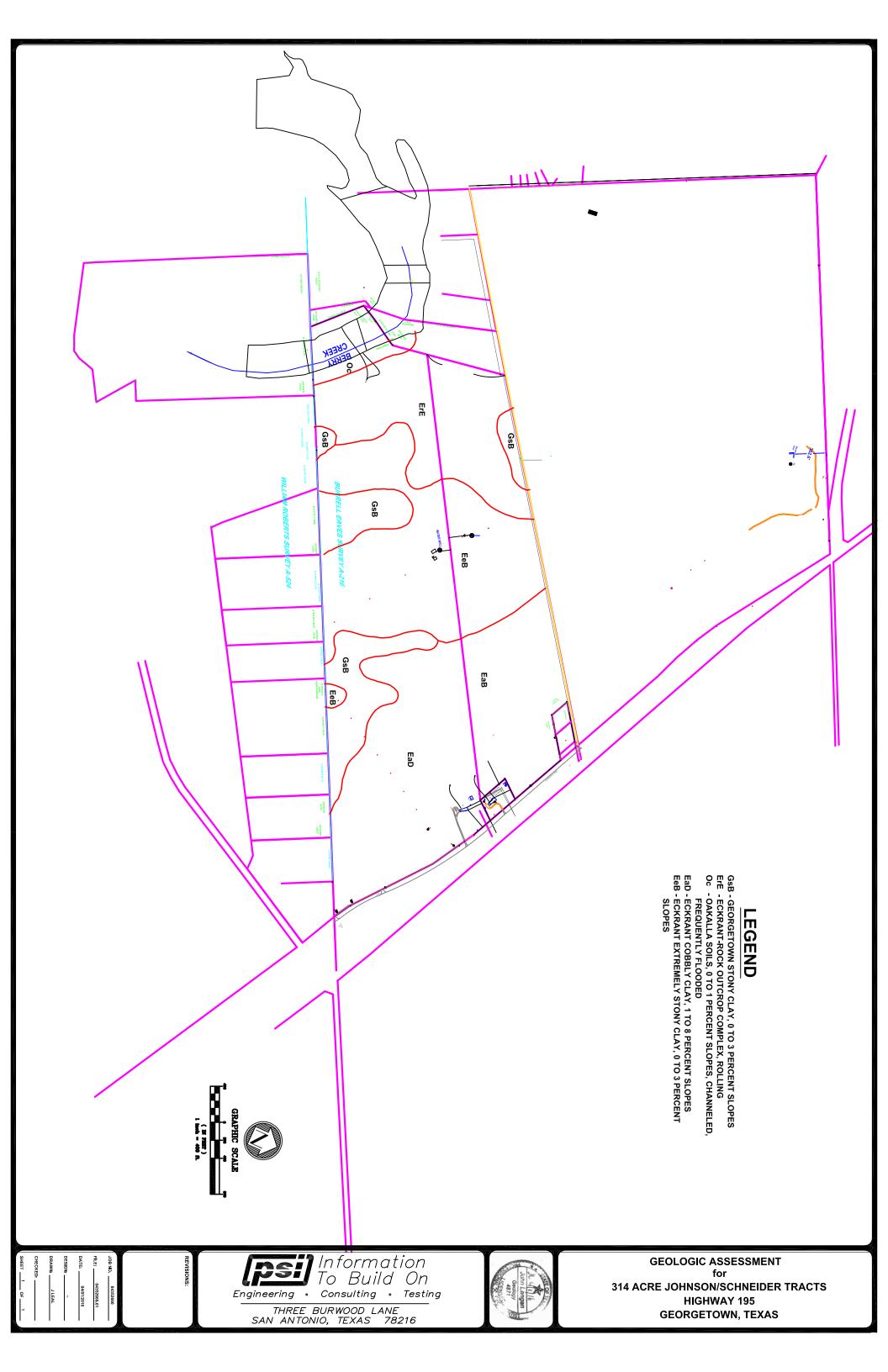
information presented here complies with that document and is a true representation of the conditions observed in the field. that I am qualified as a geologist as defined by 30 TAC Chapter 213.

My signature of

Sheet 1 of 1

Date: March 31, 2016

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



Project No. 435-2660 314-Ac. Johnson/Schneider Tract-Geologic Assessment Georgetown, TX March 2016



1. View northwest of Berry Creek on the western property line of the 314-Ac. Johnson/Schneider Tract on Highway 195 in Georgetown, Texas.



2. View of cut bank cliff outcrop of Edwards limestone along Berry Creek, showing thick vegetation masking visibility significantly.

Project No. 435-2660 314-Ac. Johnson/Schneider Tract-Geologic Assessment Georgetown, TX March 2016



3. View of closed depression feature S-2 located on the southwest portion of the 314-Ac. Johnson/Schneider Tract on Highway 195 in Georgetown, Texas.



4. View of closed depression feature S-3 located on the southwest portion of the site, southeast of S-2.



5. View of closed depression feature S-4 located on the eastern portion of the 314-Ac. Johnson/Schneider Tract on Highway 195 in Georgetown, Texas.



6. View of closed depression feature S-5, located south of feature S-4.



7. View of outcrop feature S-7, located in a drainage on the southeast portion of the site.



8. View of water well feature S-6, on the north-central portion of the site.

Project No. 435-2660 314-Ac. Johnson/Schneider Tract-Geologic Assessment Georgetown, TX March 2016



9. Close-up view of well feature S-6.



10. View of solution cavity feature S-9 located on the western portion of the site, at 30-43-27; 97-41-32.8.

Project No. 435-2660 314-Ac. Johnson/Schneider Tract-Geologic Assessment Georgetown, TX March 2016



11. View of water well feature S-12, in the central portion of the site at 30-43-29.9; 97-41-16.2.



12. View of closed depression feature S-11, which appeared to possibly have been excavated for an attempted stock tank, on the west central portion of the site at 30-43-27.6; 97-41-26.9.



March 31, 2016 (Revised July 30, 2020)

KIMLEY-HORN

10814 Jollyville Road, Avallon IV, Suite 300 Austin, Texas 78759

Attn: Mr. Brian Parker, P.E., Senior Associate

Via email: <u>brian.parker@kimley-horn.com</u>

Re: Geologic Assessment

314-Acre Johnson/Schneider Tracts

Highway 195 & Bonnet Lane

Georgetown, Texas

PSI Project No.: 435-2660

Dear Mr. Parker:

Professional Service Industries, Inc. (PSI) has completed a geologic recharge assessment for the above referenced project in compliance with the Texas Commission on Environmental Quality (TCEQ) requirements for regulated developments located on the Edwards Aquifer Recharge Zone (EARZ). The purpose of this report is to describe surficial geologic units and identify the locations and extent of significant recharge features present in the development area.

AUTHORIZATION

Authorization to perform this assessment was given by a signed copy of PSI Proposal No. 171837 between Kimley-Horn and PSI dated March 2, 2016.

PROJECT DESCRIPTION

The subject site is an irregular shaped tract of land, approximately 314-acres in size, located on the west side of Highway 195, at the southwest corner of Bonnet Lane and Hwy 195 in Georgetown, Williamson County, Texas. The site is covered with grassy vegetation, and varying thicknesses of soil, with rock outcrops scattered throughout. The online Edwards Aquifer Map provided by the TCEQ was reviewed for this assessment. According to the contour lines on the maps, the elevation of the property ranges from approximately 825 feet above mean sea level (MSL) in the northern portion of the tract, to approximately 735 feet MSL on the southwest corner of the tract, by Berry Creek. The contour lines in the area of the property indicate variable slopes; but generally to the south-southwest towards the Berry Creek drainage; while some middle portions slope to the southeast, towards a tributary drainage of Berry Creek.

REGIONAL GEOLOGY

Physiography

From west to east, the two physiographic provinces in Williamson County are: the Edwards Plateau and the Blackland Prairie. The Edwards Plateau terrain is rugged and hilly, with elevations ranging from 800 feet to 1,400 feet above sea level.

This area is underlain by beds of limestone that dip gently to the southeast. Southeast of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends north-south across Williamson County and is composed of fault blocks of limestone, chalk, shale and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 400 feet to 800 feet above sea level. The faults are predominantly normal, down thrown-to-the Gulf Coast, with near vertical throws.

The subject property lies on the Edwards Plateau. According to the 1974 Austin Sheet of the Geologic Atlas of Texas, published by the Bureau of Economic Geology in cooperation with the University of Texas at Austin, no faults are mapped in proximity to the subject site.

Stratigraphy and Structure

The site is predominantly clay covered, with few rock outcrops of note. According to the Austin Sheet of the Geologic Atlas of Texas, the underlying rocks at the site are mapped as the Edwards Limestone, undivided, which includes the overlying Georgetown Formation (Ked); is fine to coarse-grained, with abundant chert, medium gray to grayish brown; fossils in the formation are rudistids as reefs and individuals, miliolid (microfossils), and shell fragments; solution zones and collapse breccia common; thickness 300-500 feet.

No features scoring more than 40 points on the F-0585 form were observed on the subject tract. Feature S-1 is a small solution cavity on the western portion of the site, and Features S-2 to S-5 were small closed depressions on hillsides that appeared to have limited subsurface interconnection. Features S-6 and S-12 were water wells, and Feature S-7 was a linear outcrop feature in a drainage on the southeast portion of the site. Features S-8, 10 and 11 were small closed depressions on the western portion of the site, and S-11 may have been excavated as an attempt to make a stock tank/pond. Feature S-9 is a small solution cavity on the northwest portion of the site that had a lateral extent of about 4 feet in the subsurface.

SITE INVESTIGATION

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

SUMMARY

No sensitive recharge features were noted on the subject site. While not observed, septic systems may have been used in the past on the site. If encountered during development activities, septic systems should be properly removed or decommissioned in accordance with state and local regulations. If future use of the on-site water wells is not planned, they should be properly plugged and abandoned in accordance with state and local regulations. No streams or springs exist on Phase 3, 4 or 5 of the subject tract. It is possible that clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.

We appreciate this opportunity to be of service to you. If you have any questions, please do not hesitate to contact our office.

John Langan Geology

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

John Langan, P.G.

Environmental Services

WARRANTY

The field observations and research reported herein are considered sufficient in detail and scope to form a reasonable basis for a general geological recharge assessment of this site. PSI warrants that the findings and conclusions contained herein have been promulgated in accordance with generally accepted geologic methods, only for the site described in this report. These methods have been developed to provide the client with information regarding apparent indications of existing or potential conditions relating to the subject site and are necessarily limited to the conditions observed at the time of the site visit and research. This report is also limited to the information available at the time it was prepared. In the event additional information is provided to PSI following the report, it will be forwarded to the client in the form received for evaluation by the client. There is a possibility that conditions may exist which could not be identified within the scope of the assessment or which were not apparent during the site visit. PSI believes that the information obtained from others during the review of public information is reliable; however, PSI cannot warrant or guarantee that the information provided by others is complete or accurate.

This report has been prepared for the exclusive use of Kimley-Horn for the site discussed herein. Reproductions of this report cannot be made without the expressed approval Kimley-Horn. The general terms and conditions under which this assessment was prepared apply solely to Kimley-Horn. No other warranties are implied or expressed.

STRATIGRAPHIC COLUMN

314-Ac. Johnson/Schneider Tracts Highway 195 Georgetown, Texas

FORMATION	THICKNESS	LITHOLOGIC DESCRIPTION
Del Rio Clay	40-70	Calcareous and gypsiferous, with pyrite common, with a blocky structure that weathers to light gray or yellowish gray. The characteristic marine mega fossil, <i>Ilmatogyra arietina</i> (formerly exogyra arietina) is widespread throughout the formation.
Georgetown Formation	2-20'	Light tan limestone identified by proximity to Del Rio clay and diagnostic marker fossil: waconella wacoensis brachiopod; low porosity and permeability development.
Edwards Limestone	60-350'	Limestones and dolomites, extensive porosity development in "honeycomb sections, interbedded with massive recrystallized limestones with more limited permeabilities

SOILS NARRATIVE

According to the Soil Survey of Williamson County, published by the United States Department of Agriculture, Soil Conservation Service, in cooperation with the Texas Agricultural Extension Service, issued in 1983, indicated the soils at the subject property include Eckrant cobbly clay, 1 to 8 percent slopes, (EaD), Eckrant extremely stony clay 0-3% slopes (EeB), Eckrant-Rock outcrop complex, rolling (ErE), Georgetown stony clay loam, 1-3% slopes (GsB) and Oakalla soils, channeled (Oc).

Eckrant soils are nearly level to gently sloping soils on broad ridges and shallow valleys in uplands that develop over limestone. Due to the large amount of rock fragments and shallowness, these soils are not suited to crops or pasturelands, but are used as rangeland. The soil is well drained, with moderately slow permeability, very low water capacity and rapid surface runoff. The shallow depth to limestone is suitable for home sites, as the rock offers stable footings for foundations, but considerable cutting and blasting is required for underground utility lines.

Georgetown stony clay loam occurs mostly on higher parts of uplands, and has an approximate 7" thick surface layer of slightly acid, brown stony clay loam which overlies a reddish-brown clay subsoil to a depth of approximately 35". The parent material is an indurated, fractured limestone. The soil is well drained, with slow permeability, medium surface runoff and low available water capacity. The soil is used as rangeland, and is suitable for home sites.

Oakalla soils occur on bottom lands in narrow stream valleys. The surface layer is a dark brown loam approximately 7" thick, which overlies a dark brown clay loam roughly 16" thick, which in turn overlies a dark brown sandy clay loam to a depth of 66". These soils are generally used as rangeland, as the channeled topography is not suited for farm equipment.

SITE GEOLOGIC NARRATIVE

Physiography

From west to east, the two physiographic provinces in Williamson County are: the Edwards Plateau and the Blackland Prairie. The Edwards Plateau terrain is rugged and hilly, with elevations ranging from 800 feet to 1,400 feet above sea level.

This area is underlain by beds of limestone that dip gently to the southeast. Southeast of the Edwards Plateau is the Balcones Fault Zone, which is also the northernmost limit of the Blackland Prairie. The Balcones Fault Zone extends north-south across Williamson County and is composed of fault blocks of limestone, chalk, shale and marl. The undulating, hilly topography of the Blackland Prairie ranges in elevation from about 400 feet to 800 feet above sea level. The faults are predominantly normal, down thrown-to-the Gulf Coast, with near vertical throws.

The subject property lies on the Edwards Plateau. According to the 1974 Austin Sheet of the Geologic Atlas of Texas, published by the Bureau of Economic Geology in cooperation with the University of Texas at Austin, no faults are mapped in proximity to the subject site.

Stratigraphy and Structure

The site is predominantly clay covered, with few rock outcrops of note. According to the Austin Sheet of the Geologic Atlas of Texas, the underlying rocks at the site are mapped as the Edwards Limestone, undivided, which includes the overlying Georgetown Formation (Ked); is fine to coarse-grained, with abundant chert, medium gray to grayish brown; fossils in the formation are rudistids as reefs and individuals, miliolid (microfossils), and shell fragments; solution zones and collapse breccia common; thickness 300-500 feet.

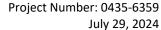
No features scoring more than 40 points on the F-0585 form were observed on the subject tract. Feature S-1 is a small solution cavity on the western portion of the site, and Features S-2 to S-5 were small closed depressions on hillsides that appeared to have limited subsurface interconnection. Features S-6 and S-12 were water wells, and Feature S-7 was a linear outcrop feature in a drainage on the southeast portion of the site. Features S-8, 10 and 11 were small closed depressions on the western portion of the site, and S-11 may have been excavated as an attempt to make a stock tank/pond. Feature S-9 is a small solution cavity on the northwest portion of the site that had a lateral extent of about 4 feet in the subsurface.

SITE INVESTIGATION

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

SUMMARY

No sensitive recharge features were noted on the subject site. While not observed, septic systems may have been used in the past on the site. If encountered during development activities, septic systems should be properly removed or decommissioned in accordance with state and local regulations. If future use of the on-site water wells is not planned, they should be properly plugged and abandoned in accordance with state and local regulations. No streams or springs exist on Phase 3, 4 or 5 of the subject tract. It is possible that clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.





Professional Service Industries, Inc.

3 Burwood Lane, San Antonio, TX 78216 Phone: (210) 342-9377

Fax: (512) 491-0221

July 29, 2024

Berry Creek (Georgetown) ASLI IX

923 N. Pennsylvania Avenue Winter Park, FL 32789

Attn: Mr. Danny Burnett

email: <u>bsquare@dwyerrealty.com</u>

Re: TCEQ Geologic Assessment – Supplemental Assessment at Feature S-9

Berry Creek Highlands - 314-Acre Johnson/Schneider Tracts

Hwy 195 and Bch Way Georgetown, Texas 78628 PSI Project No. 0435-6359

Dear Mr. Burnett:

Professional Service Industries, Inc. (PSI) has completed a supplemental assessment of the "S-9" feature identified in the March 31, 2016, TCEQ Geologic Assessment for the above referenced property. This supplemental assessment was performed to further assess the S-9 feature for the purpose of confirming its sensitivity rating per TCEQ comments on the original assessment.

AUTHORIZATION

Authorization to perform this supplemental assessment was given by a signed copy of the *PSI Scope and Cost Agreement* dated July 18, 2024, and authorized by Mr. Marvin Shapiro on July 22, 2024.

PROJECT DESCRIPTION

The subject site is located at Hwy 195 and Bch Way, Georgetown, Texas and consists of approximately 314 acres of partially developed land in a primarily residential area. The area of investigation is located on the western undeveloped portion of the property as shown on the attached site plan map. The area where S-9 is located is generally level and mostly covered in small to medium sized trees and native grasses and weeds.



SUPPLEMENTAL SITE INVESTIGATION

The purpose of the supplemental site investigation was to assess the S-9 feature with respect to recharge potential that may warrant special protection or consideration. This supplemental site investigation was performed by excavating the surface soils at and around the S-9 feature to determine if it extends at depth and would be capable of rapid recharge into the aquifer.

The findings of the S-9 feature inspection after excavation indicate that the feature appears to be a limited extent bedding plane-oriented feature approximately 24 inches below grade. Upon removing the surficial soil (approximately 18 inches) and weathered limestone, the exposed cavity measured approximately 30 inches long by 12 inches wide and 16 inches deep from the top of the bedrock. At the base of the cavity, a weathered bedding plane (approximately four inches thick at this depth) appeared to be laterally filled with soil and broken limestone. No indications of specific surface water flow paths were observed in the area and the partially filled cavity did not exhibit any signs of water or air movement. Vegetation growth in the area was not altered by the existence of the cavity. Surface water entering the cavity likely discharges along the bedding plane to the southwest. The attached geologic map shows the location of the feature and the surface slope direction towards Berry Creek. The attached Edwards Aquifer Map also shows the topographic relief in the area.

The results of the supplemental site investigation are presented in the supplemental TCEQ 0585 Geologic Assessment Table (Attachment A). Photos are included as an attachment.

SUMMARY

This supplemental geologic assessment of the S-9 feature at Berry Creek indicated that the feature is considered non-sensitive per TCEQ rules. The potential for hydraulic interconnectedness between the surface and the Edwards Aquifer likely does not exist, and rapid infiltration to the subsurface likely does not occur at this location.

It is possible that future clearing/construction activities will reveal the presence of features currently hidden by thick vegetation and/or soil cover. If caves, sinkholes, or solution cavities are encountered during future clearing/construction activities, please contact our office for additional assistance.

We appreciate this opportunity to be of service to you. If you have any questions, please do not hesitate to contact our office.

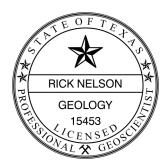
Respectfully Submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Tiex Nelson

Rick Nelson, P.G.

Senior Scientist, Environmental Services



Project Number: 0435-6359 Berry Creek Highlands, Georgetown, TX.

Page 3

July 29, 2024

WARRANTY

The field observations and research reported herein are considered sufficient in detail and scope to form a reasonable basis for a general geological recharge assessment of this site. PSI warrants that the findings and conclusions contained herein have been promulgated in accordance with generally accepted geologic methods, only for the site described in this report. These methods have been developed to provide the client with information regarding apparent indications of existing or potential conditions relating to the subject site and are necessarily limited to the conditions observed at the time of the site visit and research. This report is also limited to the information available at the time it was prepared. In the event additional information is provided to PSI following the report, it will be forwarded to the client in the form received for evaluation by the client. There is a possibility that conditions may exist which could not be identified within the scope of the assessment or which were not apparent during the site visit. PSI believes that the information obtained from others during the review of public information is reliable; however, PSI cannot warrant or guarantee that the information provided by others is complete or accurate.

This report has been prepared for the exclusive use of the client for the site discussed herein. Reproductions of this report cannot be made without the expressed approval the client. The general terms and conditions under which this assessment was prepared apply solely to the client for this site. No other warranties are implied or expressed.

GEOLOGIC	ASSESSMENT	TABLE		PSI 04	135-6359)	PRO	JECT	NAME	:	Berry	Creek I	Highla	nds - Hwy	195 aı	nd B	ch W	ay, G	eorge	town, Texas
	LOCATION					FEA	TURE	CHARA	CTERIS	STIC	S				EVAL	.UA1	ION	Pl	HYSIC	AL SETTING
1A	1B *	1C*	2A	2B	3		4		5	5A	6	7	8A	8B	9	·	0	Ť	11	12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIN	MENSIONS (F	EET)	TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENS	ПІЛІТА		ENT AREA RES)	TOPOGRAPHY
						X	Υ	Z		10						<40	<u>>40</u>	<1.6	<u>>1.6</u>	
S-9	N30 ⁰ 43' 26.87"	W97 ⁰ 41' 32.96"	SC	20	Ked	3	1	3					0	19	39	Χ		Х		Hilltop
										<u> </u>										
			<u> </u>																	
			 				-			<u> </u>										
										 										
		†	†																	
			İ																	

DA	Tι	J١	Л:_	

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
X	Other materials (Pump in well)

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

> RICK NELSON GEOLOGY

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

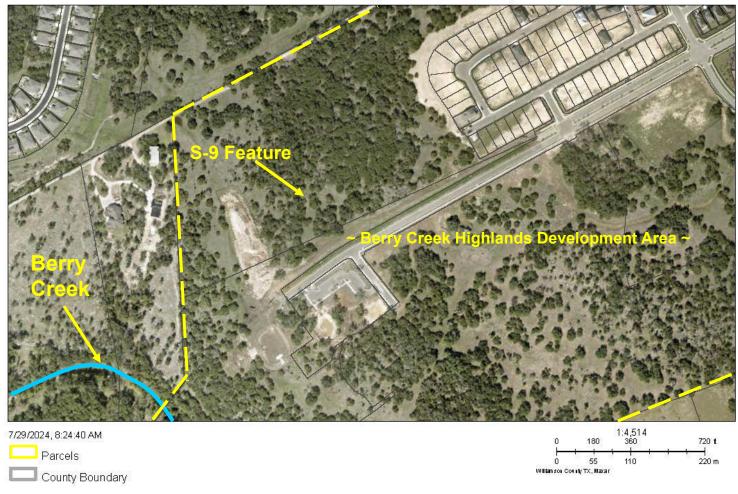
Plick Nelson

Date 7/19/2024

Sheet __1__ of __1___

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

Williamson Central Appraisal District Map



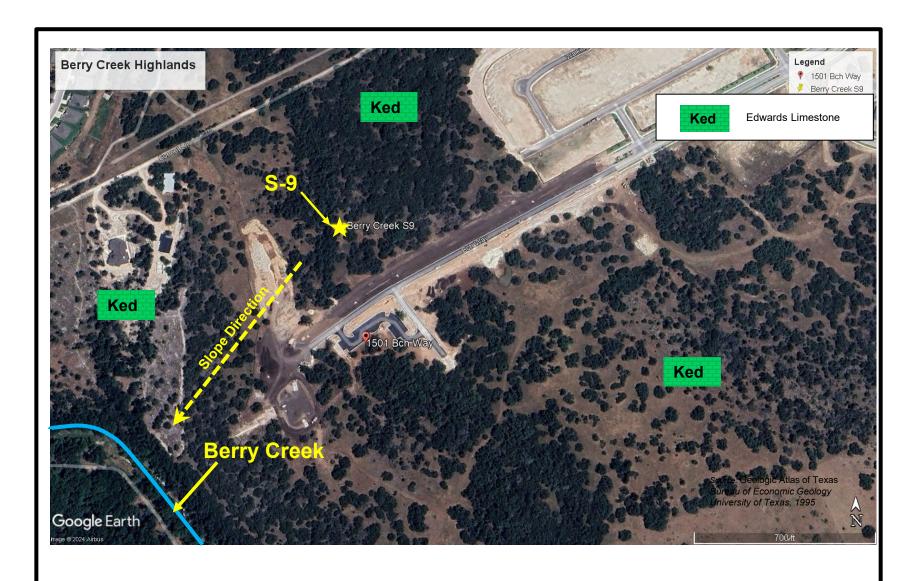
William son Centra IApp ra Isal District City of Round Rock GiS/IT Department [William son County TX, Maxar]



3 Burwood Lane San Antonio, Texas 782156 Berry Creek Highlands Tract Hwy 195 and Bch Way. Georgetown, TX 78628 PSI Project No. 0435-6359

ATTACHMENT Site Plan





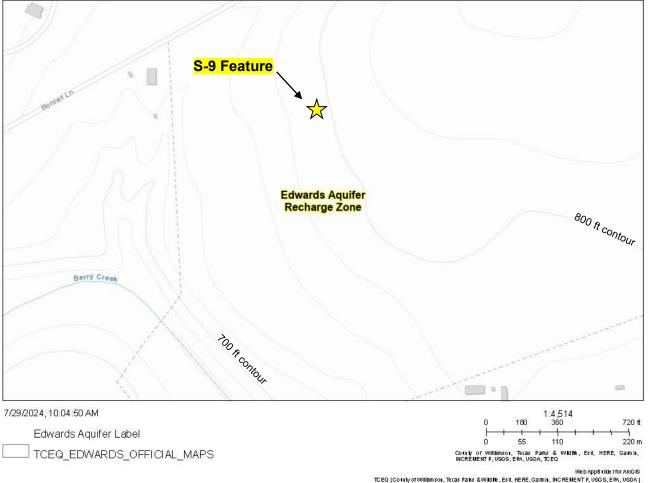


3 Burwood Lane San Antonio, Texas 782156 Berry Creek Highlands Tract Hwy 195 and Bch Way. Georgetown, TX 78628 PSI Project No. 0435-6359

ATTACHMENT
Site Geologic Map



Berry Creek Highlands





Berry Creek Highlands Tract Hwy 195 and Bch Way. Georgetown, TX 78628 PSI Project No. 0435-6359

ATTACHMENT Edwards Aquifer and Topo Map



PHOTOGRAPHS



1. Photo of the S-9 feature and surrounding area prior to excavation.



2. Photo of the S-9 feature prior to excavation.



3. Initial soil removal around the S-9 feature.



4. Initial exposure of the S-9 feature.



5. S-9 feature cavity



6. S-9 feature cavity.



7. S-9 feature cavity (a weathered bedding plane underlies the bedrock overburden)



8. Location photo of the S-9 feature.

SECTION 4: ORGANIZED SEWAGE COLLECTION SYSTEM

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: Berry Creek Highlands Phase 8B & 9

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>Marvin Shapiro</u> Entity: Berry Creek ASLI IX, LLC

Mailing Address: 923 N. Pennsylvania Avenue IX, LLC

City, State: Winter Park, Florrida Zip: 32789
Telephone: (407) 628-8488 Fax: N/A

Email Address: mshapiro@avantiprop.com

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

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

Contact Person: AC Steadman, P.E.

Texas Licensed Professional Engineer's Number: 138792

Entity: Kimley-Horn

Mailing Address: 10814 Jollyville Road, Building 4, Suite 200 City, State: Austin, Texas Zip: 78759 Telephone: (512) 418-4508 Fax: N/A

Email Address: ac.steadman@kimley-horn.com

Project Information

4.	1 71	levelopment to be serve ance for institutional and	ed (estimated future pop d commercial flows):	oulation to be served,
	☐ Multi-family: ☐ Commercial ☐ Industrial	lumber of single-family Number of residential u m (not associated with a	ınits:	
5.		olume of wastewater is s	shown below:	
۷	% Domestic% Industrial% Commingled Total gallons/day	v: <u>40,425</u>	40,425 gallons/gallons/gallons/	'day 'day
7.	A Water Pollution Ab	oatement Plan (WPAP) is	<u>0</u> gallons/day. This will s required for construction located on the Recharge	on of any associated
	copy of the ap The WPAP ap 18th, 2025, b A WPAP appli submitted.	pproval letter is attache plication for this develo ut has not been approve ication is required for ar ssociated project requiri	pment was submitted to ed. n associated project, but	o the TCEQ on August
	Pipe Peseripii	Linear Feet (1)	Pipe Material (2)	Specifications (3)
	Diameter(Inches)	. ,	, , ,	
	8 (Gravity)	5,371	PVC SDR-26 PVC-SDR 26	ASTM D-3034
9.	service laterals Pipe Material - If P Specifications - AST The sewage collection	clude stub-outs and dou VC, state SDR value. FM / ANSI / AWWA spec on system will convey the	ble service connections.	
10.	Existing Proposed All components of the	is sewage collection sys	tem will comply with:	a caument racinty is.

11. No force main(s	n(s) and/or lift station(s Station/Force Main Sy	are associated with this sewants) is associated with this sewants stem Application form (TCE	age collection system
Alignment			
	eviations from uniform q with open cut construct	grade in this sewage collecti ion.	on system without
13. X There are no de without manho	_	alignment in this sewage coll	lection system
without Ma sewage coll manufactur For curved s	nholes. A justification f ection system without r er allowing pipe curvate	ewer line notes (TCEQ-0596	alignment in this on from pipe
Manholes and	Cleanouts		
	attach additional sheet	d of each sewer line(s). The if necessary)	se locations are listed
Line	Shown on Sheet	Station	Manhole or Clean- out?
SEE ATTACHED WWMH SUMMARY			out.
15. Manholes are in line.	nstalled at all Points of (Curvature and Points of Terr	nination of a sewer
16. The maximum s greater than:	spacing between manho	oles on this project for each	pipe diameter is no
Pipe Dia	meter (inches)		
	6 - 15		
	16 - 30		
	36 - 48		
May Manh	≥54		
iviax. ividi ii	ole Spacing (feet) 500		
	800		

1000 2000

	BERRY CREEK F	PHASE 8B & 9 W\	N MANHOLE SUMMARY
LINE	SHOWN ON SHEET	STATION	MANHOLE OR CLEANOUT?
А	57 OF 70	2+19.66	4' MANHOLE A0
Α	57 OF 70	4+28.09	4' MANHOLE A1
Α	57 OF 70	6+01.13	4' MANHOLE A2
Α	57 OF 70	8+52.25	4' MANHOLE A3
Α	57 OF 70	10+06.76	4' MANHOLE A5
Α	58 OF 70	11+33.30	4' MANHOLE A6
Α	58 OF 70	13+68.52	4' MANHOLE A7
Α	58 OF 70	18+08.10	4' MANHOLE A8
А	58 OF 70	19+04.09	4' MANHOLE A9
Α	58 OF 70	20+27.72	4' MANHOLE A10
Α	59 OF 70	21+35.06	4' MANHOLE A11
Α	59 OF 70	22+34.17	4' MANHOLE A12
Α	59 OF 70	26+23.22	4' MANHOLE A13
Α	59 OF 70	30+12.27	4' MANHOLE A14
В	60 OF 70	1+94.57	4' MANHOLE B0
В	60 OF 70	3+28.45	4' MANHOLE B1
В	60 OF 70	4+48.20	4' MANHOLE B2
В	60 OF 70	6+15.76	4' MANHOLE B3
В	60 OF 70	7+07.92	4' MANHOLE B4
В	60 OF 70	8+77.92	4' MANHOLE B5
В	61 OF 70	13+45.29	4' MANHOLE B6
С	62 OF 70	2+39.37	4' MANHOLE CO
С	62 OF 70	5+64.09	4' MANHOLE C1
С	62 OF 70	9+05.09	4' MANHOLE C2
С	62 OF 70	10+23.06	4' MANHOLE C3
D	63 OF 70	3+57.88	4' MANHOLE D0
E	63 OF 70	1+76.74	4' MANHOLE E0
E	63 OF 70	2+56.82	4' MANHOLE E1
F	64 OF 70	2+24.46	4' MANHOLE FO
F	64 OF 70	2+79.16	4' MANHOLE F1
G	64 OF 70	1+56.85	4' MANHOLE G0

 ☐ 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
I tems 18 - 25 must be included on the Site Plan.
18. \boxtimes The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = 60'. The Site Plan must include the sewage collection system general layout, including manholes with station numbers, and sewer pipe stub outs (if any). Site plan must be overlain by topographic contour lines, using a contour interval of not greater than ten feet and showing the area within both the five-year floodplain and the 100-year floodplain of any drainage way.
20. Lateral stub-outs:
The location of all lateral stub-outs are shown and labeled.No lateral stub-outs will be installed during the construction of this sewer collection system.
21. Location of existing and proposed water lines:
 ☑ The entire water distribution system for this project is shown and labeled. ☑ If not shown on the Site Plan, a Utility Plan is provided showing the entire water and sewer systems.
There will be no water lines associated with this project. 22. 100-year floodplain:
After construction is complete, no part of this project will be in or cross a 100-year floodplain, either naturally occurring or manmade. (Do not include streets or concrete-lined channels constructed above of sewer lines.) After construction is complete, all sections located within the 100-year floodplain will have water-tight manholes. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 3 - 100-Year Floodplain

Line	Sheet	Station
n/a	n/a	n/a

23. 5-year floodplain:

After construction is complete, no part of this project will be in or cross a 5-year
floodplain, either naturally occurring or man-made. (Do not include streets or
concrete-lined channels constructed above sewer lines.)

After construction is complete, all sections located within the 5-year floodplain will be encased in concrete or capped with concrete. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Table 4 - 5-Year Floodplain

Line	Sheet	Station
n/a	n/a	n/a

- 24. \times Legal boundaries of the site are shown.
- 25. The *final plans and technical specifications* are submitted for the TCEQ's review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.

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

26. $igtherightarrow$ 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 pres	sure
rated pipe to be installed shown on the plan and profile sheets. Any request for	а
variance from the required pressure rated piping at crossings must include a var	iance
approval from 30 TAC Chapter 290.	

There will be no water line crossings.

There will be no water lines within 9 feet of proposed sewer lines.

Table 5 - Water Line Crossings

Line	Station or Closest Point	Crossing or Parallel	Horizontal Separation Distance	Vertical Separation Distance
SEE ATTACHED SUMMARY				

27. Vented Manholes:

No part of this sewer line is within the 100-year floodplain and vented manholes are not required by 30 TAC Chapter 217.

BERRY CREEK PHASE 8B & 9 WATER LINE CROSSINGS				
LINE	STATION OR CLOSEST POINT	CROSSING OR PARALLEL	HORIZONTAL SEPERATION DISTANCE	VERTICAL SEPERATION DISTANCE
WWL-A	10+39.63	CROSSING	N/A	5.6'
WWL-B	4+77.24	CROSSING	N/A	7.3'
WWL-B	7+36.92	CROSSING	N/A	5.1'
WWL-C	1+29.11	CROSSING	N/A	7.0'
WWL-C	9+34.09	CROSSING	N/A	4.8'
WWL-D	1+29.00	CROSSING	N/A	5.7'
WWL-E	1+29.01	CROSSING	N/A	4.6'

will be provided listed in the table listed in the table listed in the table listed in the alternation of the listed list	this sewer line is within to ded at less than 1500 foo table below and labeled of this sewer line is within to nting shall be provided at we means is described on this sewer line is within to the than 1500 feet located	of intervals. These water on the appropriate profit the 100-year floodplain less than 1500 feet inter the following page. The 100-year floodplain;	r-tight manholes are ile sheets. and an alternative ervals. A description of however, there is no
Table 6 - Vented Mar		Chattan	Charat
Line	Manhole	Station	Sheet
n/a	n/a	n/a	n/a
than 24 inche	` '	vert are listed in the tab	le below and labeled on
Line	Manhole	Station	Sheet
The placement of the pl	or proposed private serviont and markings of all lat ab-outs are to be installed stem.	wer line stub-outs are slalled during the construce connections): eral stub-outs are show	nction of this sewage on and labeled.
Assuming pip	pes are flowing full; all slo 2.0 feet per second for the		oduce flows equal to or

	⊠ Ass of I	suming pipes are ess than or equal	pes (From Appendix A) flowing full, all slopes a I to 10 feet per second	are desigi for this s	ystem/line.	
			culations for Slopes for			•
		σ.	pipes are flowing full, so per second. These loo	•	•	
	•	culations are atta	•			
	Table 8 - Flo	ws Greater Tha	an 10 Feet per Seco	nd		
	Line	Profile Sheet	Station to Station	FPS	% SIope	Erosion/Shock Protection
	n/a	n/a	n/a	n/a	n/a	n/a
	below hav		full, where flows are ≥ protect against pipe dis			•
			nt shown on appropria	te Plan a	nd Profile sheet	s for the locations
		ed in the table ab		c/rotordo	placed every F	O foot shown on
			chored concrete baffles d Profile sheets for the			
	appropriate Plan and Profile sheets for the locations listed in the table above. \bowtie 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 - Sta	andard Details				
	Standard De	etails				Shown on Sheet
	Lateral stub-out marking [Required] n/a					
Manhole, showing inverts comply with 30 TAC §217.55(I)(2) [Required] 70			70			
	Alternate method of joining lateral to existing SCS line for potential future connections [Required]					
	Typical trench cross-sections [Required] 70			70		
	Bolted manho	les [Required]				n/a
	Sewer Service	lateral standard de	tails [Required]			70

Clean-out at end of line [Required, if used]

Baffles or concrete encasement for shock/erosion protection [Required, if flow velocity of any section of pipe $>10~{\rm fps}$]

n/a

n/a

Standard Details	Shown on Sheet
Detail showing Wastewater Line/Water Line Crossing [Required, if crossings are proposed]	69
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) [Required, if Flexible Pipe is used]	70
Drop manholes [Required, if a pipe entering a manhole is more than 24 inches above manhole invert]	70

36. $igotimes$ All organized sewage collection system general construction notes (TCEC	2-0596) are
included on the construction plans for this sewage collection system.	

- 37. All proposed sewer lines will be sufficiently surveyed/staked to allow an assessment prior to TCEQ executive director approval. If the alignments of the proposed sewer lines are not walkable on that date, the application will be deemed incomplete and returned.
 - Survey staking was completed on this date: 08/30/2025
- 38. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
- 39. Any modification of this SCS application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This Organized Sewage Collection System Application is hereby submitted for TCEQ review and executive director approval. The system was designed in accordance with the requirements of 30 TAC §213.5(c) and 30 TAC §217 and prepared by:

Atexan Stendar

Print Name of Licensed Professional Engineer: <u>AC Steadman, P.E.</u>

Date: <u>08/08/2025</u>

Place engineer's seal here:

Signature of Licensed Professional Engineer

11 of 13 TCEQ-0582 (Rev. 02-11-15)

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 fl ow velocity of 2.0 fps	% Slope which produces fl ow velocity of 10.0 fps
6	0.50	12.35
8	0.33	8.40
10	0.25	6.23
12	0.20	4.88
15	0.15	3.62
18	0.11	2.83
21	0.09	2.30
24	0.08	1.93
27	0.06	1.65
30	0.055	1.43
33	0.05	1.26
36	0.045	1.12
39	0.04	1.01
>39	*	*

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

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

Figure 1 - Manning's Formula

Where:

```
v = velocity (ft/sec) n = Manning's
roughness coefficient
(0.013)
Rh = hydraulic radius (ft)
S = slope (ft/ft)
```

Engineering Design Report

For

Berry Creek Highlands Phase 8B & 9

Organized Sewage Collection System

AUGUST 2025

Prepared By:
Kimley-Horn & Assocates, Inc.
10814 Jollyville Road, Building IV, Suite 200
Austin, Texas 78759
TBPE Registration Number F928

TABLE OF CONTENTS

Table of Contents	2
PVC Pipe Standards	3
Proposed Type of Pipe	4
Flow Capacity Analysis	4
Minimum and Maximum Grades for Pipes	5
Minimum and Maximum Velocities for the Proposed System	5
Average Values for Modulus of Soil Reaction, E'	6
Pipe Bedding Class	7
Pipe Bedding Angle	8
Live Load Determination	8
Prism Load Determination	9
Buckling Pressure (Allowable)	10
Buckling Pressure (Installed Condition)	11
Wall Crushing Calculation	12
Deflection Analysis: Leonhardt's Zeta Factor	14
Pipe Stiffness	15
Pipe Stiffness to Soil Stiffness Factor	16
Predicted Pipe Deflection	17
Pipe Strain	18
TCEQ Pipe Bedding and Trenching Requirements	20
Manhole Specifications	22
<u>ATTACHMENTS</u>	
Attachment A: Wastewater/Sewage Calculations	29
Attachment B: Wastewater Utility Service Agreement	30
Attachment C: Local Sanitary Sewer Construction Notes	31

b) PVC PIPE STANDARDS

The American Society for Testing and Materials (ASTM) also known as ASTM International (Reference: www.astm.org) governs the manufacturing specifications for Polyvinyl Chloride (PVC) pipes, including the dimension ratio and water pressure allowable for use of each pipe, through its D-3034 standard. ASTM D-3034 lists its pipe dimensions and pipe classes using the "SDR" mark up, such as SDR-13.5, SDR-21, SDR-26 and SDR-41. The SDR refers to the standard dimension ratio (SDR) of the outside pipe diameter and the wall thickness. This project specifies the use of SDR-26 PVC pipe, which are to meet the ASTM pressure rating of 160 psi and fall in the size category listed below. ASTM D-3034 standards must be meticulously adhered to by all PVC pipe manufacturers and is recognized as the standard during PVC pressure pipe testing and quality checks. Other in-depth information can be found published in Thermoplastic Pressure Pipe Design and Selection UNI-TR-7, by the Uni-Bell PVC Pipe Association.

SDR 26 Pipe Size Matrix (Per ASTM D-3034)							
Size (in)	Thickness (in)						
4	4.215	3.891	0.162				
6	6.275	5.793	0.241				
8	8.4	7.754	0.323				
10	10.5	9.692	0.404				
12	12.5	11.538	0.481				
15	15.3	14.124	0.588				

c) PROPOSED TYPE OF PIPE (8")

(8")

Type I, Grade I, Polyvinyl Chloride (PVC) Specifications: Size of Pipe: 8.00 in.

ASTM D-3034

SDR 26 Properties

Pipe Compliance:

Joint Compliance:	ASTM D-3139
Cell Classification:	12454
Minimum Tensile Strength (psi):	7,000
Minimum Modulus of Elasticity (psi):	400,000
Average Inner Diameter (inch):	7.754
Average Outer Diameter inch):	8.4
Wall Thickness (inch):	0.323
$\frac{2}{3}$	
Approximate Trenching Width (feet):	2.70
Minimum Pipe Depth (Cover) used (feet):	6.50
Maximum Pipe Depth (Cover) used (feet):	19.30

FLOW/CAPACITY ANALYSIS

For the Proposed Project:

Proposed Waste Water Usage: <u>202,623</u> GPD (max)

$$Q_{max}$$
 (As determined in Attachment A) = 0.314 CFS
1.486
$$Q_{full} = \frac{1}{2} AR S$$

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

$$Q_{full} = 0.832$$
 CFS

0.314 < 0.832 Design meets TCEQ Guidelines MINIMUM AND MAXIMUM GRADES FOR PIPES (30 TAC §217.53(l)(2)(A)) (8")

Minimum and Maximum Pipe Slopes								
	Size of Pipe	Minimum Slope (%)	Maximum Slope (%)					
	6	0.5	12.35					
	8	0.33	8.4					

10	0.25	6.23
12	0.2	4.88
15	0.15	3.62
18	0.11	2.83
21	0.09	2.3
24	0.08	1.93
27	0.06	1.65
30	0.055	1.43
33	0.05	1.26
36	0.045	1.12
39	0.04	1.01
>39	*	*

^{*} For pipes larger than 39 inches in diameter, the slope is determined by Manning's formula to maintain a velocity greater than **2.0 feet per second and less than 10.0 feet per second** when flowing full.

d) MINIMUM AND MAXIMUM VELOCITY FOR THE PROPOSED SYSTEM: (8")

So, using inch PVC Pipe: 8.00 V = velocity (ft/sec) (solve) 0.013 $\sqrt{0.67}$ n = Manning's coefficient 1.49 $R_h = hydraulic radius$ 0.165 n S = slope (ft/ft)Minimum Slope Used (%): 0.50 Maximum Slope Used (%): **3.66**

 $V_{min} = \frac{2.44 \text{ ft/sec}}{V_{max}} = \frac{6.59 \text{ ft/sec}}{V_{max}}$

2.44 > 2.00 ft/sec 6.59 < 10.00 ft/sec

Design meets TCEQ Guidelines

Design meets TCEQ Guidelines

V= $R_h S$

AVERAGE VALUES OF MODULUS OF SOIL REACTION, E'

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

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

Modulus of Soil Reaction for the in-situ soil is determined to be = 1000 psi PIPE BEDDING CLASS

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

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

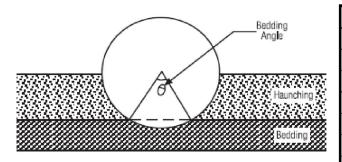
NOTE:

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

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

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





Bedding Angle, degrees	Bedding Constant
0	0.110
30	0.108
45	0.105
60	0.102
90	0.096
120	0.090
180	0.083

LIVE LOAD DETERMINATION

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

Height of	Live Load Ti	ransferred to	Pipe, lb/in²	Height	Live Load Transferred to Pipe, Ib		
Cover (ft)	Highway H20¹	Railway E80 ²	Airport	of Cover (ft)	Highway H20¹	Railway E80 ²	Airport
1	12.50			14	*	4.17	3.06
2	5.56	26.39	13.14	16	*	3.47	2.29
3	4.17	23.61	12.28	18	*	2.78	1.91
4	2.78	18.40	11.27	20	*	2.08	1.53
5	1.74	16.67	10.09	22	*	1.91	1.14
6	1.39	15.63	8.79	24	*	1.74	1.05
7	1.22	12.15	7.85	26	*	1.39	*
8	0.69	11.11	6.93	28	*	1.04	*
10	*	7.64	6.09	30	*	0.69	*
12	*	5.56	4.76	35	*	*	*
				40	*	*	*

¹ Simulates 20 ton truck + impact

PRISM LOAD DETERMINATION

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

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

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

^{*} Negligible live load influence

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

a.
$$P = \underline{\qquad}$$

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

BUCKLING PRESSURE (ALLOWABLE)

(8")

Where: $q_a = Allowable$ buckling pressure (psi) h = Height of soil surface above top of pipe (in) H = Depth of burial, feet, from ground surface to top of pipe

B' = Empirical coefficient of elastic support

 E_b = Modulus of soil reaction for the bedding material (psi)

E = Modulus of elasticity of the pipe material (psi)

I = Moment of inertia of the pipe, per linear inch of pipe (in³) t = Pipe wall thickness (in)

D = Mean pipe diameter, outer (in) D = 8.4

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

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

$$B' = \frac{2138.44}{3313.5} = 0.645$$

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

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

$$q_a = \frac{1}{2.5} \sqrt{\left[\begin{array}{c} 32 \end{array}\right] \left[\begin{array}{c} 1 \end{array}\right] \left[\begin{array}{c} 0.645 \end{array}\right] \left[\begin{array}{c} 1000 \end{array}\right] \left[\begin{array}{c} 400000 \\ \hline \end{array}\right] \frac{0.003}{592.70}}$$

$$q_a = 79.13$$
 psi

BUCKLING PRESSURE (INSTALLED CONDITION)

(8")

Where: q_P = Pressure applied to pipe under installed conditions (psi) γ_W = Specific Weight of Water = 0.0361 (pci)

 γ_S = Specific Weight of Soil (pcf)

W_c = Vertical Soil Load on the pipe per unit length (lb/in)

 L_L = Live load as determined from chart

Standard industry vertical soil load (W_c) calculation (lb/in) developed from empirical data:

$$W_{c} = s * H * D+t$$
144

Where: $\gamma_{S} = 120$ D = 8.4 t = 0.323

 $W_{C} = \begin{bmatrix} 120 \end{bmatrix} \begin{bmatrix} 19.30 \end{bmatrix} \underbrace{ 8.4 \xrightarrow{-1} 0.323 }_{144}$
 $W_{C} = 140.29$ lb/in

Using the Equation on Pg 114 of Moser, A.P., <u>Buried Pipe Design</u>. 2nd Ed., McGraw-Hill, Pressure Applied to Pipe under installed conditions at its deepest installed depth (Note, hw = 0, therefore Rw = 1) is calculated to be:

$$q_P = {}_{w}h_{w} + R_{w}W_{c} + L_{L}$$

$$D$$

$$q_P = 62.4 \times 0 + 1 \times \begin{bmatrix} 156.12 \\ 8.4 \end{bmatrix}$$

$$q_P = 35.29 \quad \text{psi}$$

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

e) <u>WALL CRUSHING CALCULATION</u>

(8'')

Where: D_o = outside pipe diameter, in. = 8.4 in P_c = Compressive stress or hydrostatic design basis (HDB). For typical PVC pipe assume 4,000 psi. For any other pipe material the HDB must be supplied by the pipe manufacturer. A = surface area of the pipe wall, in. 2 /ft = 0.323 in. 2 /ft γ_S = specific weight of soil, pcf, = 120 pcf H = Depth of burial (ft) from ground surface to crown of pipe

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

$$T$$
 $P^{y}D$ $P_{c} =$ where T, Thrust, is calculated as $T =$ 2

Substituting the Thrust equation into the Wall Crushing equation:

$$P_{c} = \underbrace{\frac{P_{y}D}{A}}_{2A}$$

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

And simplifies to: $288AP_c = {}_{s}HD$

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

$$24AP_c = HD$$

Solving for H, the equation becomes:

$$24*P_c*A$$

$$H=\underline{\hspace{1cm}}$$

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

$$H = \frac{24 \left[4000 \right] \left[0.323 \times 12 \right]}{120 \times 8.4} = 369.14$$

$$H = 369.14 \text{ feet}$$

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

f) DEFLECTION ANALYSIS: LEONHARDT'S ZETA FACTOR

(8")

The Leonhardt's Zeta Factor Equation can be calculated using Equation 9 of Buczala and Cassady in <u>Buried Plastic Pipe Technology</u>, Pgs 196-197

Where: D = Pipe Outer Diameter, in = 8.4
B = Trench Width, in, =
$$2.7' = 32.4$$
E_b = Modulus of soil reaction for the bedding material (psi)
$$E_n = Modulus of soil reaction for the in-situ soil (psi)$$

$$1.662 + 0.639$$

$$DB-1 + 1.662 + 0.361 DB$$

-1

 EE_{bn}

The Leonhardt Zeta factor is then determined as:

Leonhardt's zeta factor = 0.693

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

(8")

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

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

Where: PS = Pipe Stiffness in pounds per square inch (psi)

C = Conversion factor = 0.8 RSC = Ring Stiffness Constant

D = Mean Pipe Diameter, Outer = 8.400 in

The RSC can be supplied by the manufacturer or otherwise calculated using Equation 4 of Resistance to Ring Bending – Pipe Stiffness (PS), Ring Stiffness Constant (RSC) and Flexibility Factor (FF) for Buried Gravity Flow Pipes TN-19/2005, Pg 6 published by the Plastics Pipe Institute:

$$EI$$

$$RSC = 6.44 \qquad {}_{2}D$$

And E = 400,000 psi Solving for the Moment of Inertia:

$$I = 12 * inlinear 0.003$$

=

$$RSC = 6.44 \frac{1123.276}{70.560} = 102.521$$

8.400

PS = 81.40 psi

g) PIPE STIFFNESS TO SOIL STIFFNESS FACTOR

(8")

Where: PS = Pipe Stiffness (psi) = 81.40 psi

 E_b = Modulus of soil reaction for the bedding material (psi)

 $\begin{array}{lll} zeta & = & Leonhardt's \ Zeta \ factor = & 0.693 \\ SSF & = & Soil \ stiffness \ factor \ (0.061 \times zeta \times E_b) \\ \end{array}$

The Soil Stiffness Factor is calculated using Equation 10 referenced by Buczala and Cassady, Buried Plastic Pipe Technology, Pg 198, where:

$$SSF = 0.6* zeta*E_b$$

Therefore,

PS PS

$$SSF = \frac{}{0.6* zeta*E_b}$$

$$PS = \frac{}{81.40} = \frac{}{15.97} = 0.20$$

h) PREDICTED PIPE DEFLECTION

(8")

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

 $\%\Lambda Y/D =$ Predicted % vertical deflection under load Where: Р Prism Load, psi K Bedding angle constant, Assumed to = 0.110 W' Live Load, psi, = 0 26 DR Dimension Ratio= Е Modulus of tensile elasticity of the pipe material, psi Ε' Modulus of Soil Reaction, psi D_L Deflection Lag Factor = 1.5

And using the Modified Iowa Equation:

(%)
$$Y = (D_L KP + KW_3)]') + 0100.061E'$$

$$D \qquad [2E/(3(DR-1))]''$$

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

and/or from previous chart, prism load = 15.83

The Predicted Deflection is determined as: psi

NOTE: 3.35% < 5%, therefore pipe design is acceptable

PIPE STRAIN

(8")

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

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

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

$$h =$$
 [0.00 \rightarrow 15.83 \times 8.4 2 400,000 \longrightarrow = 5.146E-04 in

(Continued on following page)

Where:
$$f$$
 = Maximum Pipe Strain due to Ring Deflection, in/in
 ΔY = Change in vertical pipe diameter under load, in,

(numerator in the deflection equation, but in decimal form)

t = Pipe Wall thickness, in D = Pipe Diameter, Average Outer, in

DR = Dimension Ratio= 26

$$t 3Y/D$$
 1 3Y

b. f = D 1 - 2Y/D = DR D - 2Y

$$7.836$$
 in $= 0.038$ 8.4 5.224 = 0.0949 in

 $\frac{\text{in}}{---}$ $total = 9.5404E-02 \qquad \text{in}$

TCEQ PIPE BEDDING AND TRENCHING REQUIREMENTS (30 TAC 217.54)

These notes are provided in the Construction Documents on General Notes Sheet

a. Pipe Embedment

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

b. Compaction.

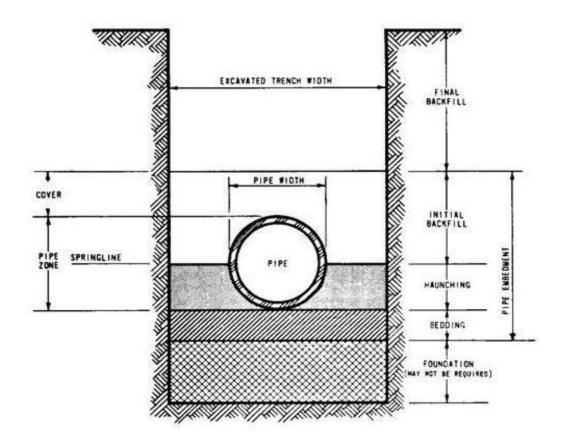
- 1. Compaction of an embedment envelope must meet the manufacturer's recommendations for the collection system pipe used in a project.
- 2. Compaction of an embedment envelope must provide the modulus of soil reaction for the bedding material necessary to ensure a wastewater collection system pipe's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

c. Envelope Size.

- 1. A minimum clearance of 6.0 inches below and on each side of the bell of all pipes to the trench walls and floor is required.
- 2. The embedment material used for haunching and initial backfill must be installed to a minimum depth of 12 inches above the crown of a pipe. d. Trench Width.
- 1. The width of a trench must allow a pipe to be laid and jointed properly and must allow the backfill to be placed and compacted as needed.

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

TRENCH CROSS-SECTION (30 TAC 217.54)



NOTE:

Trenching Details along with 30 TAC 217.54 are annotated in the Construction Documents/Plan Sheets on <u>Wastewater Details Sheet</u>.

<u>MANHOLE SPECIFICATIONS</u>

30 TAC 217.55 Requirements with design comments:

- a. An owner must include manholes in a wastewater collection system at:
 - 1. All points of change in alignment, grade, or size;
 - 2. At the intersection of all pipes; and
 - 3. At the end of all pipes that may be extended at a future date.
- b. Manholes placed at the end of a wastewater collection system pipe that may be extended in the future must include pipe stub outs with plugs. (pipe stub-outs with plugs are proposed at the end of each line that will be extended with Phase 2 of Section 19.)
- c. A clean-out with watertight plugs may be installed in lieu of a manhole at the end of a wastewater collection system pipe if no extensions are anticipated. (**Self explanatory, clean outs not used in-lieu of manholes**)
- d. Cleanout installations must pass all applicable testing requirements outlined for gravity collection pipes in §217.57 of this title (relating to Testing Requirements for Installation of Gravity Collection System Pipes). (Self explanatory, see Item c above)
- e. A manhole must be made of monolithic, cast-in-place concrete, fiberglass, pre-cast concrete, high-density polyethylene, or equivalent material that provides adequate structural integrity. See the Pre-Cast Manhole Details following these construction notes)
- f. The use of bricks to adjust a manhole cover to grade or construct a manhole is prohibited. (Self explanatory, See Details following these notes) g.

 Manholes may be spaced no further apart than the distances specified in the following table for a wastewater collection system with straight alignment and uniform grades, unless a variance based on the availability of cleaning equipment that is capable of servicing greater distances is granted by the executive director. (Self explanatory and maintained throughout the design of the SCS)

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

- h. Tunnels are exempt from manhole spacing requirements because of construction constraints. (Self explanatory and not applicable)
- i. An intersection of three or more collection pipes must have a manhole. (Self explanatory and maintained throughout the design of the SCS)
- j. A manhole must not be located in the flow path of a watercourse, or in an area where ponding of surface water is probable. (Self explanatory and maintained throughout the design of the SCS)
- k. The inside diameter of a manhole must be no less than 48 inches. A manhole diameter must be sufficient to allow personnel and equipment to enter, exit, and work in the manhole and to allow proper joining of the collection system pipes in the manhole wall. (See Manhole Details following these notes)
- 1. Manholes must meet the following requirements for covers, inlets, and bases. 1. Manhole Covers A.

A manhole where personnel entry is anticipated requires at least a 30 inch diameter clear opening. (Covers to have 32" Openings see Manhole Details)

- B. A manhole located within a 100-year flood plain must have a means of preventing inflow. (Self explanatory and maintained throughout the design of the SCS)
- C. A manhole cover construction must be constructed of impervious material. (Self explanatory, See Manhole Details following these construction notes)
- D. A manhole cover that is located in a roadway must meet or exceed the American Association of State Highways and Transportation Officials standard M-306 for load bearing. (Self explanatory, See Manhole Details)

2. Manhole Inverts

A. The bottom of a manhole must contain a U-shaped channel that is a smooth continuation of the inlet and outlet pipes. (**Self explanatory, see Manhole Details**) B.

A manhole connected to a pipe less than 15 inches in diameter must have a channel depth equal to at least half the largest pipe's diameter (**Self explanatory**, see Manhole Details) C.

A manhole connected to a pipe at least 15 inches in diameter but not more than 24 inches in diameter must have a channel depth equal to at least three-fourths of the largest pipe's diameter (**Self explanatory**, but not applicable for this project)

D. A manhole connected to a pipe greater than 24 inches in diameter must have a channel depth equal to at least the largest

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

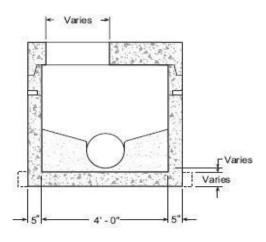
Precast Manhole Information:

Hanson Pipe and Precast

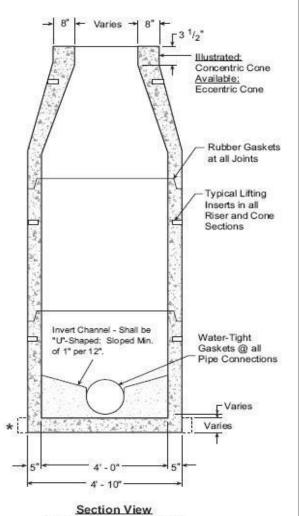
Hanson Building Products West 300 E John Carpenter Freeway 11th floor Irving, TX 75062

San Antonio Metro Area Contact: 210.661.2351

Precast Manholes



Flattop Illustration for Shallow Manhole



4' I.D. Manhole - Regular Base with Reducing Cone

Materials & Features

HOLES AS SPECIFIED: Max diameter = 32"
CONCRETE: 5,000 PSI, 28 day strength.
REINFORCING: Meets or exceeds ASTM C478 requirements.
Average weight of 24" depth base w/8" invert = 4,500 lbs.
Estimated weight of riser and cone sections = 870 lbs. / vt. ft.

* - Extended base is available to meet local requirements.

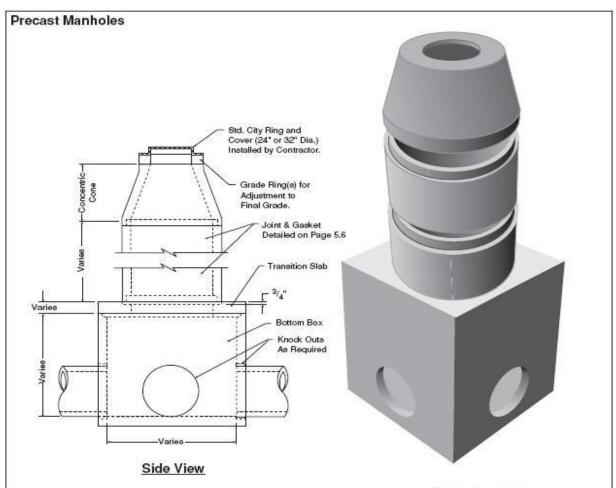
In the event a boot is loose contact your Hanson representative to resolve.

"Manufactured to your specifications."

-No Scale-All dimensions subject to allowable specification tolerances.

TITLE	PLANT	STATE	SECTION, PAGE	DATE
4' I.D. Manhole	All Plants	TX	5.5	07-01-06
Regular Base w/Reducing Cone		100	201000	





Isometric View

Materials & Features

CONCRETE: 5,000 PSI in 28 days.

REINFORCING STEEL: per ASTM A-615 / A-185

REINFORCING to meet AASHTO HS 20-44 Loading.

BASE DESIGN EQUAL TO OR EXCEEDS ASTM C-357

RISER DESIGN EQUAL TO OR EXCEEDS ASTM C-478

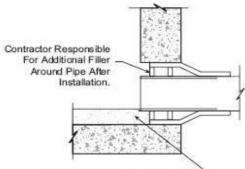
In the event a boot is loose contact your Hanson representative to resolve.

-No Scale-All dimensions subject to allowable specification tolerances.

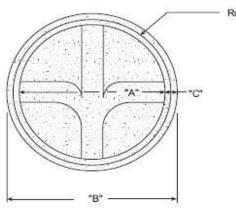
TITLE	PLANT	STATE	SECTION, PAGE	DATE		
Type "C" Manhole	Houston San Antonio	TX	5.11	07-01-06		

Precast Manholes

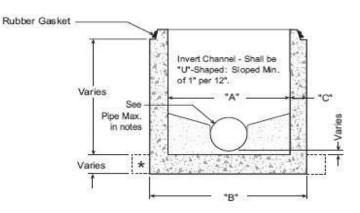
For Pipe Entering the Manhole at Excessive Depths Above the Flow Line Out, the Contractor May be Responsible for Grout Work Necessary to Bring Channel up to Flow Line on Inlet Pipe.



Grouted Invert w/ Offset to Match Flowline of Pipe. Slight Field Adjustments May Be Necessary.



Plan View



Section View

Materials & Features

HOLES AS SPECIFIED:

For 4' I.D. max. diameter = 32"

For 5' I.D. max. diameter = 40" For 6' I.D. max. diameter = 54"

CONCRETE: 5,000 PSI, 28 day strength.

REINFORCING: Meets or exceeds ASTM C478 requirements.

Average weight of 24" depth base w/8" invert = 4,500 lbs.

Water-tight gaskets at all pipe connections.

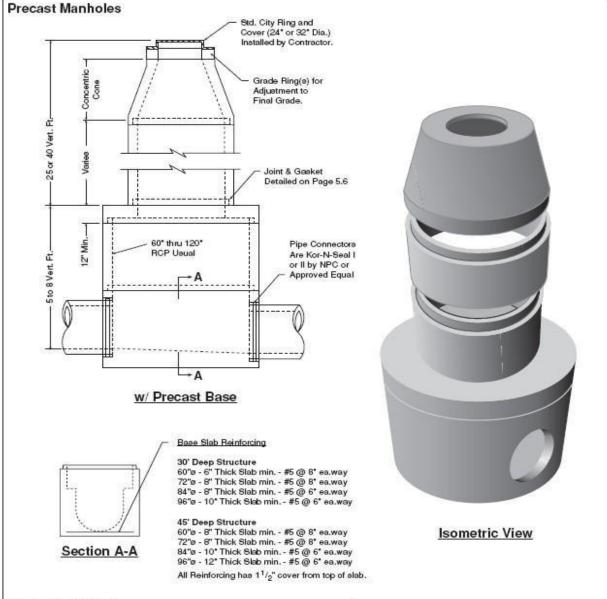
* - Regular base shown: Extended base also available.

In the event a boot is loose contact your Hanson representative to resolve.

Pipe I.D. Size "A"		O.D. "B"	Wall Thk. "C"	
4'	4' - 0"	4' - 10"	5"	
5'	5" - 0"	6' - 0"	6"	
6'	6'-0"	7'-2"	7*	

 No Scale All dimensions subject to allowable specification tolerances.

TITLE	PLANT	STATE	SECTION, PAGE			
Details: 4', 5' & 6' I.D. Precast Regular Manhole Base	All Plants	TX	5.7	07-01-06	Hanson	



Materials & Features

CONCRETE: 5,000 PSI in 28 days.

REINFORCING STEEL: per ASTM A-615, Grade 60.

REINFORCING to meet AASHTO HS 20-44 Loading.

DESIGN EQUAL TO OR EXCEEDS ASTM C-478

In the event a boot is loose contact your Hanson representative to resolve.

Note:

 Inverts shall be specifically sized for connecting pipes; and shall be U-Shaped with the min. depth 3/4 of the largest pipe diameter.

> -No Scale All dimensions subject to allowable specification tolerances.

TITLE	PLANT	STATE	SECTION, PAGE	DATE	
30 & 45 Ft. Depth 60" thru 96"Large Base Manhole	Houston San Antonio	TX	5.10	07-01-06	***Hanson

ATTACHMENT A WASTEWATER / SEWAGE CALCULATIONS

SF Residents per Unit= 2.5
MF Residents per Unit= 2.5

WASTEWATER FLOWS

Project Name: Berry Creek Highlands Phase 8B & 9

Project Number: 2025-XX-CON

Proj	ect Number: 2025-XX ate Prepared:08/13/20	(-CON	1																																		
	rate Prepared:08/13/20		Wastewater Line																100			ES)	DW)	<u>S</u>	(W	TE	FS	ω	_ E								
Line Number	from	to	MF UNITS	SF UNITS CUMULATIVE SF UNITS	Cumulative Population	Cumulative Population	We F	eather W low	/g. Dry leather Flow Pe	eak Flow	Maximum Flo Max Dry Weather Flow Q _{max} (gpd)	Max Dry Weather Flor Q _{max} (gpm)	w Factor		Min Dry	W Area Served	Cumul. Area Server A (ac)	Inflow/Infiltration (1000 d gal/acre/day) I/I (gpd)	Inflow/Infiltration (1000 gal/acre/day)	Weather Flov	Peak Wet Weather Flow Qpw (gpm)	MAX DRY WEATHER (GPN	MAX DRY WEATHER (CFS	MAX WET WEATHER (GPN	MAX WET WEATHER (CFS	PIPE SIZE (IN)	PIPE SLOPE FT.	(CFS) (n=0.013) 85% CAPACITY (CFS) (n=0.013)	LENGTH (FT)	PEAK DRY Q (C	PEAK DRY Q (G	PEAK DRY Q (C	PEAK DRY Q (G	VELOCITY (FFG) FROM FLOWMASTER PEAK DRY DEP	(IN.) PROWN FLOWMASTER FLOWMASTER	PEAK WET Q (G	PEAK WET VELOCITY (FPS FROM FLOWMASTER PEAK WET DEP (IN.) FROM FLOWMASTER
A14 A13 A12 A11 A10 A9 A8 A7 A6 A5	A14 A13 A12 A11 A10 A9 A8 A7 A6 A5 A3	A13 A12 A11 A10 A9 A8 A7 A6 A5 A3 A2	0 0 0 0 0 0 0 0	16 16 15 31 5 36 2 38 1 44 2 46 20 66 8 74 3 77 4 81 10 91 1 165	95 110 115 165 185 192.5 202.5 227.5	78 90 95 111 111 163 183 193 193 203	3 7,7 0 9,0 5 9,5 0 11,6 5 11,5 5 16,5 18,3 3 19,2 8 22,7	50.00 00.00 00.00 00.00 00.00 500.00 500.00 1500.00 1250.00 1750.00	5.38 6.25 6.60 7.64 7.99 11.46 12.85 13.37 14.06	4.23 4.21 4.20 4.18 4.18 4.12 4.10 4.09 4.08	17,210.00 32,790.57 37,906.92 39,944.19 46,026.37 48,044.37 67,995.36 75,871.40 78,811.06 82,719.34 92,436.28		0.11 0.12 0.12 0.13 0.13 0.13 0.14 0.14 0.15 0.15	1,117.41 1,192.18 1,421.08 1,498.81 2,309.81 2,649.12 2,779.72 2,953.52	0.29 0.65 0.78 0.83 0.99 1.04 1.60 1.84 1.93 2.05 2.36 4.81	0.31 2.70 2.86 1.24 2.24 3.27 3.60 3.93 4.27 4.60 4.94	0.31 3.01 5.86 7.10 9.34 12.59 15.85 19.45 23.39 27.65 32.25	5,862.20 7,103.30 9,344.40 12,585.50 15,851.63 19,451.64 23,385.51 27,653.26 32,254.88	0.21 2.09 4.07 4.93 6.49 8.74 11.01 13.51 16.24 19.20 22.40	17,515.00 35,796.67 43,769.12 47,047.49 55,370.77 60,6228 102,196.57 110,372.60 124,691.16 199,555.71	24.86 30.40 32.67 38.45 42.10 58.23 66.20 70.97 76.65 86.59	11.95 22.77 26.32 27.74 31.96 33.36 47.22 52.69 54.73 57.44 64.19	0.0577 0.0608 0.0700 0.0731 0.1035 0.1154 0.1199 0.1259	12.16 24.86 30.40 32.67 38.45 42.10 58.23 66.20 70.97 76.65 86.59	0.0267 0.0545 0.0666 0.0716 0.0842 0.0923 0.1276 0.1450 0.1555 0.1679 0.1897	8 8 6 8 6 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8 0.8 8	0.005 0.0 0.03 0.1 0.0135 0.0 0.0075 0.0 0.0075 0.0 0.0075 0.0 0.0075 0.0 0.0075 0.0 0.00399 0.0 002248 0.0 000505 0.0 0.00505 0.0	4 0.18 9 0.12 7 0.09 7 0.09 7 0.09 6 0.08 5 0.06 4 0.05 2 0.02 M! #NUM!	409.36 409.01 147.28 147.28 147.28 166.59 152.42 138.25	0.0262 0.0499 0.0577 0.0608 0.0700 0.0731 0.1035 0.1154 0.1199 0.1259 0.1406	22.77 26.32	0.0499 0.0577 0.0608 0.0700 0.0731 0.1035 0.1154 0.1199		2.59 0.0 2.27 0.1 1.96 1.1 1.96 1.2 2.16 1.2 2.21 1.2 2.27 1.2	.70 0.0267 .60 0.0545 .90 0.0666 .10 0.0716 .10 0.0842 .10 0.0823 .29 0.1276 .39 0.1450 .50 0.1679 .71 0.1897 .82 0.3036	24.86 30.40 32.67 38.45 42.10 58.23 66.20 70.97 76.65 86.59	
A1 B6 B5 B4 B3 B2 B1 B0	B6 B5 B4 B3 B2 B1 B0		0 0 0 0 0	0 165 18 18 6 24 2 28	412.5 45 60 70 75 172.5 177.5	41: 45 60 70 75 17:	3 41,2 5 4,5 0 6,0 0 7,0	250.00 2 00.00 00.00 00.00 00.00 00.00 1750.00 11	28.65 3.13 4.17 4.86 5.21 11.98 12.33	3.94 4.29 4.26 4.24 4.24 4.11 4.11		112.75 13.41 17.75 20.63 22.06 49.27 50.64		487.06 687.47 826.91 898.16 2,437.54 2,522.39		5.27 0.00 0.46 0.93 1.39 1.85 2.32 3.32	7.10 7.57 13.51 14.90 21.31 23.62 26.94	42,459.73 7,103.30 7,566.90 13,512.70 14,903.50 21,306.04 23,624.04 26,942.04	29.49 4.93 5.25 9.38 10.35 14.80 16.41 18.71	26,413.86 33,133.76 43,216.56 46,666.63 92,261.37 96,548.34 101,831.91	18.34 23.01 30.01 32.41 64.07 67.05		0.2470 0.2470 0.0294 0.0389 0.0452 0.0483 0.1080 0.1110 0.1139		0.3117 0.0402 0.0504 0.0658 0.0710 0.1404 0.1469	8 8 8 8 8	.00472 #NL 0.005 0.0 0.035 0.1 0.065 0.2 0.095 0.2 0.125 0.2 0.155 0.3 0.155 0.3	M! #NUM! 6 0.07 5 0.19 0 0.26 4 0.32 8 0.36 1 0.40	81.58 153.17 88.68 24.19 -40.30 -104.79 -169.28	0.2470 0.0294 0.0389 0.0452 0.0483	112.75 112.75 13.41 17.75 20.63 22.06 49.27 50.64 52.01	0.0294 0.0389 0.0452 0.0483 0.1080 0.1110	20.63 22.06 49.27 50.64	1.70 1.3 3.35 0.3 5.00 0.3 6.65 -0.8 8.30 -0.9.95 -1.	.92 0.3117 .30 0.0402 .80 0.0504 .30 0.0658 .20 0.0710 0.70 0.1404 .20 0.1549	18.34 23.01 30.01 32.41 64.07 67.05	
C3 C2 C1 C0 D0	C3 C2 C1 C0 D0		0 0	4 4 12 20 12 32 3 35 4 4 4 1 5	80 87.5 10	50 80 88 10	5,0 5,0 8,0 8 8,7 0 1,0	00.00 50.00 00.00	3.47 5.56 6.08 0.69	4.28 4.23 4.22 4.40	4,398.38 21,403.25 33,816.59 36,886.35 4,398.38 4,398.38 5,483.47	3.05	0.08 0.11 0.12 0.12 0.08	80.36	0.06 0.38 0.67 0.75 0.06		20.01	9,368.40 10,649.90	5.25 6.51 7.40 15.41 12.91 13.90 14.23	11,965.28 30,771.65 44,466.49 59,069.75 22,992.67 24,409.07 25,970.95	21.37 30.88 41.02 15.97	3.05		1	0.0182 0.0468 0.0677 0.0899 0.0350 0.0371	8 (8 -(•	8 0.11 8 0.11 M! #NUM! 4 0.18	198.33 149.81 577.00 223.57	0.0326 0.0515 0.0561 0.0067	14.86 23.48 25.62 3.05	0.0326 0.0515 0.0561	23.48 25.62 3.05	2.34 1. 2.40 1. -1.10 2. 4.18 1.	•	30.88 41.02 15.97	3.76 0.90 2.43 1.20 2.55 1.30 -1.32 2.53 4.42 1.40 4.11 1.60 4.11 1.60
F1 F0 G0	FT FU	F0 B2 B4	0 0	2 2 0 2		5 5	50	00.00	0.35	4.43	2,213.76 2,213.76 2,213.76	1.54 1.54 1.54	0.07	35.03 35.03 35.03	0.02	2.88 3.88		23,867.38 3,880.40 25,379.28	14.23 16.57 2.69 17.62	26,081.15 6,094.16 27,593.05		1.54 1.54 1.54	0.0034 0.0034 0.0034	18.11 4.23 19.16	0.0395 0.0397 0.0093 0.0420	8 8	0.03 0.1 0.03 0.1 0.03 0.1	4 0.18				0.0034 0.0034 0.0034	1.54	0.00 0.	.00 0.0397 .00 0.0093 .40 0.0420	18.11	0.00 0.00 0.00 0.00 4.74 1.60

ATTACHMENT B WASTEWATER UTILITY SERVICE AGREEMENT



December 12, 2023

Re: Water and Wastewater Service Availability at the proposed site located within Berry Creek Highlands Phase 6B, 7, 8, & 9

The property is located within Berry Creek Highlands Phase 6B, 7, 8, & 9. Pursuant to your request, this letter confirms that the aforementioned site is located within the service area for the City of Georgetown (the "City") water and wastewater services and that the City can provide retail service to the development in accordance with the City's standard terms and conditions to provide these services. Note: Any upgrades or new main line connections required to provide adequate service to the property would be at the cost of the developer or owner. Water will be provided per the terms of your utility evaluation, upon approval of engineering plans developed in compliance with the City codes and payment of all fees. Wastewater will be provided per the terms of the existing Settlement Agreement.

Future On-site and Off-site Improvements

Any utility system and public infrastructure improvements or upgrades required by any potential development at this site are not identified or addressed as part of this letter. All future on-site and off-site improvements needed to serve any future development at this site will be determined by a utility evaluation during the site plan review or platting process. In general, the follow provisions apply to secure capacity for future projects:

- 1) Extension of utilities to the property is the responsibility of the developer.
- 2) Platting Requirements
- 3) Required to tie to existing stubs
- 4) Exclusive Easements
- 5) Extend along the ROW to all property boundaries.
- 6) Additional off-site improvements may be necessary based upon the timing of the City's Capital Improvement Plan (CIP) and developer need.
- 7) Design and Construction of the facility and utilities must be inspected and approved in accordance with the appropriate City codes and ordinances.
- 8) Any applicable payment of fees

You may contact me or the Systems Engineering Director at (512)-930-3558, if you have any further questions, regarding the information provided in this letter.

Regards,

Tom Pursley (512) 930-6765 Tom.Pursley@georgetown.org

Cc: David Munk, City of Georgetown Wesley Wright, City of Georgetown Ashley Hanson, City of Georgetown

SECTION 5: WATER POLLUTION ABATEMENT PLAN

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:

Teview and Executive Birector approval. The form was propar
Print Name of Customer/Agent: <u>AC Steadman</u>
Date: <u>August 14, 2025</u>
Signature of Customer/Agent:
Atraw Stendar
Regulated Entity Name: <u>Berry Creek Highlands Phase 8B & 9</u>
i) Regulated Entity Information
40. The type of project is:
Residential: Number of Lots: 165 Residential: Number of Living Unit Equivalents: Commercial Industrial Other:

Total site acreage (size of property): 34.38

Estimated projected population: <u>578</u>

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

Table 10 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	577,170	÷ 43,560 =	13.25
Other paved surfaces	253,519	÷ 43,560 =	5.82
Total Impervious Cover	830,689	÷ 43,560 =	19.07

Total Impervious Cover 19.07 ÷ Total Acreage 34.38 X 100 = 55.47 % Impervious Cover 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.

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

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

For Road Projects Only

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. Type of pavement or road surface to be used:
Concrete Asphaltic concrete pavement Other: Length of Right of Way (R.O.W.): feet.
Width of R.O.W.: feet. L x W = $Ft^2 \div 43,560 Ft^2/Acre = acres.$ Length of pavement area: feet.
Width of pavement area: feet. L x W = Ft 2 ÷ 43,560 Ft 2 /Acre = acres. Pavement area acres ÷ R.O.W. area acres x 100 =% impervious cover A rest stop will be included in this project.
A rest stop will not be included in this project.Maintenance and repair of existing roadways that do not require approval from the TCEC

Executive Director. Modifications to existing roadways such as widening roads/adding

shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

Stormwater to I	be generated	by the	Proposed	Project
-----------------	--------------	--------	----------	---------

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

Wastewater to be generated by the Proposed Project

The character and volume of wastewater is shown below:

_100 % Domestic	_40,425 _	Gallons/day
% Industrial		Gallons/day
% Commingled		Gallons/day
TOTAL	gallons/day_	40,425
Wastewater will be disposed of by:		
 □ On-Site Sewage Facility (OSSF/Septic Tank): j) □ Attachment C - Suitability Letter from Authoriz facility will be used to treat and dispose of the wastew appropriate licensing authority's (authorized agent) wr states that the land is suitable for the use of private set or exceed the requirements for on-site sewage facilities. k) □ Each lot in this project/development is at least of feet) in size. The system will be designed by a licensed registered sanitarian and installed by a licensed installed Chapter 285. ☑ Sewage Collection System (Sewer Lines):	ater from this itten approva wage facilities as specified one (1) acre (4) professional er in complian nerating facilities aware that the	site. The I is attached. It is and will meet under 30 TAC I3,560 square engineer or ce with 30 TAC ties will be ties will be

All private service laterals will be inspected as required in 30 TAC §213.5.
Site Plan Requirements
Items 17 – 28 must be included on the Site Plan. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = <u>60</u> '. 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): 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. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):
 ☐ There are zero (0) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply) n) ☐ The wells are not in use and have been properly abandoned. o) ☐ The wells are not in use and will be properly abandoned. p) ☐ 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. Geologic or manmade features which are on the site:
 q) All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled. r) No sensitive geologic or manmade features were identified in the Geologic Assessment. s) Attachment D - Exception to the Required Geologic Assessment. A request and justification for an exception to a portion of the Geologic Assessment is attached.
The drainage patterns and approximate slopes anticipated after major grading activities.
Areas of soil disturbance and areas which will not be disturbed.
Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.
□ Locations where soil stabilization practices are expected to occur.

Surface waters (including wetlands).
N/ALocations where stormwater discharges to surface water or sensitive features are to occur.

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

ATTACHMENT A -- FACTORS AFFECTING WATER QUALITY

Possible factors that could affect surface water and ground water quality are:

- Petroleum drippings from vehicle movement
- Integrated Pest Management
- Landscape Maintenance
- Asphalt and/or Concrete Products
- Soil/Stock Pile
- Paint
- Oils
- Sediment and soil from disturbed areas

ATTACHMENT B -- VOLUME AND CHARACTER OF STORMWATER

EXISTING DRAINAGE CONDITIONS

The entire site drains southwest towards Berry Creek, which ultimately discharges into the San Gabriel River.

STORM WATER DETENTION AND WATER QUALITY

Detention and water quality were analyzed for this project.

Water Quality for the site is provided in a batch detention water quality pond located in the southwest corner of Berry Creek (Water Quality Pond 1). This pond was approved and built with Berry Creek Highlands Phase 6A. Onsite batch detention Water Quality Pond 1 is designed to treat the impervious cover generated onsite for Phase 8B & 9.

For water Quality Pond 1, the proposed bottom and top elevations of the pond are 762.0 and 771.0, respectively. The proposed water quality elevation is 767.0. The following table is a detention routing summary for conveyance of the 2 through 100- year storms.

WQ POND 1													
ROUTING TABLE													
DESIGN SCENARIO	PEAK INFLOW (FT³/S)	COMPUTED PEAK OUTFLOW (FT³/S)	MAXIMUM WATER SURFACE ELEVATION (FT)	MAXIMUM STORAGE (FT³)									
2 YR	136.77	110.07	768.31	82360.00									
10 YR	220.95	187.01	768.87	119521.00									
25 YR	277.02	230.71	769.25	144969.00									
100 YR	369.93	288.57	770.00	197143.00									

Table 2 is the Water Quality Pond 1 water quality volume summary.

WQ POND 1													
STAGE STORAGE TABLE													
STAGE (FT MSL)	AREA (SF)	STORAGE (CF)	CUMULATIVE STORAGE (CF)	DISCHARGE (CFS)	CONTRIBUTING STRUCTURES								
762.00	200.00	N/A	0.00	0.00	NONE								
763.00	14710.00	7455.00	7455.00	0.00	NONE								
764.00	39966.00	27338.00	34793.00	0.00	NONE								
765.00	55089.00	47527.50	82320.50	0.00	NONE								
766.00	58049.00	56569.00	138889.50	0.00	NONE								
767.00	61067.00	59558.00	198447.50	0.00	WEIR	WQV							
768.00	64141.00	62604.00	261051.50	72.80	WEIR								
769.00	67271.00	65706.00	326757.50	205.89	WEIR								
770.00	70458.00	68864.50	395622.00	288.58	WEIR								
771.00	73701.00	72079.50	467701.50	334.55	WEIR								

Required water quality volume for WQ Pond 1 is 180310 CF and the provided water quality volume provided is 198,447.50 CF.

Berry Creek Highlands 8B & 9 proposes 19.07 acres of impervious cover over the 34.38 boundary for Phase 8B & 9. The existing WQ Pond 1 will treat for all 34.38 Phase 8B & 9 as well as 10.77 acres of offsite area with a total imperious cover of 3.1 acres. The total drainage area to be treated by WQ Pond 1 is 45.15 acres and the total TSS removal area to be treated will be 21,500 lbs. Calculations can be found on the Water Quality Sheets and in Attachment I of the Permanent Stormwater Section.

<u>ATTACHMENT C – SUITABILITY LETTER FROM AUTHORIZED AGENT</u>

Attachment C is not applicable for this project. An on-site sewage facility will not be implemented for this development. Proposed private service laterals will be connected to a sewage collection system.

<u>ATTACHMENT **D** – EXEMPTION TO THE REQUIRED GEOLOGIC ASSESSMENT</u>

Attachment D is not applicable for this project. A geological assessment exemption will not be requested. A copy of the site Geological Assessment performed by Horizon Environmental Services, Inc. has been provided, see Geologic Assessment Form and Attachments.

SECTION 6: TEMPORARY STORMWATER SECTION

Temporary Stormwater Section

Texas Commission on Environmental Quality for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

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

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

Signature

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

Print Name of Customer/Agent: AC Steadman, P.E. -Kimley-Horn

Date: <u>08/08/25</u>

Signature of Customer/Agent:

Atraw Stendur

Regulated Entity Name: Berry Creek Highlands Phase 8B & 9

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 dur	ing
construction:	
\Box 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. Att achment 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.
Sε 5.	Attachment C - Sequence of Major Activities. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached. For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given. For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.
6.	Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: San Gabriel River
Erc sta	emporary Best Management Practices (TBMPs) osion control examples: tree protection, interceptor swales, level spreaders, outlet abilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized onstruction 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. Attachment D – Temporary Best Management Practices and Measures. TBMPs and 7. 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. The temporary sealing of a naturally-occurring sensitive feature which accepts 8. 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 \boxtimes 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.

\boxtimes	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 acros within a common drainage area.
	For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not
	attainable, but other TBMPs and measures will be used in combination to protect
	down slope and side slope boundaries of the construction area.
	There are no areas greater than 10 acres within a common drainage area that will be
	disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be
	used in combination with other erosion and sediment controls within each disturbed
	drainage area.
	There are no areas greater than 10 acres within a common drainage area that will be
	disturbed at one time. Erosion and sediment controls other than sediment basins or
	sediment traps within each disturbed drainage area will be used.
11.	Attachment H - Temporary Sediment Pond(s) Plans and Calculations. Temporary
	sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a
	Texas Licensed Professional Engineer. All construction plans and design information
	must be signed, sealed, and dated by the Texas Licensed Professional Engineer.
	Construction plans for the proposed temporary BMPs and measures are attached. N/A
	12. Att achment I - Inspection and Maintenance for BMPs. A plan for the inspection
\boxtimes	of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs,
	and, if necessary, retrofit is attached. A description of the documentation procedures,
	recordkeeping practices, and inspection frequency are included in the plan and are
	specific to the site and/or BMP.
13.	All control measures must be properly selected, installed, and maintained in
	accordance with the manufacturer's specifications and good engineering practices. If
	periodic inspections by the applicant or the executive director, or other information
	indicate a control has been used inappropriately, or incorrectly, the applicant must
	replace or modify the control for site situations.
14.	If sediment escapes the construction site, off-site accumulations of sediment must be
	removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by
	the next rain).
	,

- 15. Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.
- 16. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

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

- 17. Attachment J Schedule of Interim and Permanent Soil Stabilization Practices. A schedule of the interim and permanent soil stabilization practices for the site is attached.
- 18. Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
- 19. Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

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

ATTACHMENT A - SPILL RESPONSE ACTIONS

Good Housekeeping and Material Management Practices shall include, but are not limited to the following:

- Neat and orderly storage of any chemicals, pesticides, fertilizers, fuels, etc., that are being stored on site. All storage tanks will be above ground, have a maximum storage capacity of 250 gallons and be stored on site for less than one (1) year. Aboveground Storage Tanks (ASTs) shall comply with Title 30 Texas Administrative Code, Chapter 334, Subchapter F and will be located within the respective phase's Stockpiling Area as illustrated on the Erosion and Sedimentation Control Plans included with this submittal.
- Regular garbage, rubbish, construction waste and sanitary waste disposal.
- Prompt cleanup of any spills that have occurred of liquid or dry materials.
- Cleanup of sediments that have been tracked by vehicles or have been transported by wind or storm water about the site or onto nearby roadways.

In addition to the Good Housekeeping and Material Management Practices, discussed in the previous sections of this plan, the following practices will be followed for spill prevention and clean up.

- Manufacturer's recommended methods of spill cleanup will be clearly posted and site
 personnel will be made aware of the procedures and the location of the information
 and the clean up supplies.
- Materials and equipment necessary for spill cleanup will be kept in the materials storage area onsite. Equipment and materials will include but are not limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate State, or Local Government Agency, regardless of the size.
- The spill prevention plan will be adjusted to include measures to prevent this type of spill from recurring and how to cleanup the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
- The site superintendent responsible for the day-to-day site operations will be the spill prevention and cleanup coordinator. He will designate at least three (3) other

site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and in the office trailer onsite.

- Reportable quantities of hydrocarbon or hazardous material spills should be reported to the Texas Commissions on Environmental Quality (TCEQ) at the following 24-hour toll free number 1-800-832-8224. The reportable quantity depends on the substance released and where released. Reference the "Spill Reporting" section on the external TCEQ website for a table to use to determine whether the spill should be reported and under what rule.
- For spills larger than the reportable quantities the National Response Center at 1800424-8802 will also be contacted.

The Contractor shall notify the agency as soon as possible whenever necessary to provide information that would trigger a change in the response to the spill or discharge. If the discharge or spill creates an imminent health threat, the Contractor shall immediately notify and cooperate with local emergency authorities.

The Contractor will cooperate with the local emergency authority in providing support to implement appropriate notification and response actions. The local emergency authority, as necessary, will implement its emergency management plan, which may include notifying and evacuating affected personnel. In the absence of a local emergency authority, the Contractor shall take reasonable measure to notify potentially affected persons of the imminent health threat.

As soon as possible, but no later than two (2) weeks after discovery of the spill or discharge, the Contractor shall reasonably attempt to notify the Owner (if identifiable) or Occupant of the property upon which the discharge or spill occurred as well as the occupants of any property that the Contractor believes is adversely affected.

ATTACHMENT **B** – POTENTIAL SOURCES OF CONTAMINATION

Asphalt products will be used on this project. After placement of asphalt, emulsion, or coatings, the applicant will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt curing time, the applicant should maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur.

Sediment and soil from disturbed areas are another potential source of contamination. During activities causing soil disturbance, temporary best management practices outlined in *Attachment D*, shall be followed to prevent discharge of sediment to Berry Creek.

Other potential sources of contamination include hydraulic fluid and diesel fuel from mechanical equipment, as well as paints and chemicals used on site. Any spills shall be handled according to the Spill Response Actions in *Attachment A*.

ATTACHMENT C - SEQUENCE OF MAJOR ACTIVITIES

Berry Creek Highlands Phase 8B & 9 limits of construction includes a total of approximately 34.38 acres of disturbed area in the Recharge Zone. The location of the temporary erosion control measures is shown on the Erosion Control Sheets.

- 1. Install temporary erosion control measures, stabilized construction entrance, and tree protection according to the plans and specifications prior to any clearing and grubbing, grading, excavating, etc. Notify Construction Inspection Division, when installed. (±34 acres)
- 2. Prior to beginning construction, the Owner or his authorized representative shall convene a Pre-Construction Conference between the Texas Commission on Environmental Quality (TCEQ), City of Georgetown, Williamson County, Consulting Engineer, Contractor, and any other affected parties. Notify the TCEQ at least 48 hours prior to the time of the conference and 48 hours prior to the beginning of construction. On-site Pre-Construction meeting should be held with Contractor, TCEQ, Engineer, and Owner.
- 3. Set up all erosion control devices and temporary Best Management Practices measures. (±34 acres)
- 4. Clear and Grub for the streets, utilities, and lot grading. (±34 acres)
- 5. Rough Cut Roadway and perform lot grading. (±34 acres)
- 6. Begin construction including water, wastewater, paving, dry utilities, drainage, and other related site improvements. Install all utilities to be located under proposed pavement. (±34 acres)
- 7. Upon completion, restore as much disturbed areas as possible, particularly large open area. (±34 acres)
- 8. Clean site and re-vegetate all disturbed areas according to the plans and specifications. Disturbed areas of the construction site that will not be re-disturbed for 21 days or more must be stabilized by the 14th day after the last disturbance. Stabilization measures should include seeding and/or mulching. (±34 acres)
- 9. Complete permanent erosion control and restoration of site vegetation. (±34 acres)
- 10. Remove and dispose of temporary erosion/sedimentation control measures.

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

ATTACHMENT **D** – TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

Temporary Best Management Practices (BMPs) and measures will be used during construction to prevent pollution of groundwater, surface water and naturally occurring environmental features. Silt fence, inlet protection, stabilized construction entrance, and construction stockpiling areas will be installed prior to beginning construction and prior to commencement of any of the activities defined in the sequence of construction as *Attachment C*. Inspection and maintenance of the onsite controls shall be performed during the site clearing and rough grading process. The perimeter fence shall be regularly monitored to ensure that the buffers remain no-construction zones until the site work has been completed and authorization has been granted by the Engineer. Please reference attached copy of the Erosion and Sedimentation Control Plans for specific controls and details.

Best Management Practices 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, through the use of silt fences placed immediately downstream of disturbed areas. To minimize destruction to any portion of the Recharge Zone, on-site perimeter silt fence will also be implemented for pertinent areas throughout the entirety of construction. The Contractor is expected to inspect the controls weekly and after significant rainfalls to ensure proper function. When silt accumulates six (6) inches in depth the Contractor shall promptly remove the silt from the controls. As noted earlier, the proposed water quality ponds will be used to treat storm water from the construction of the site. The water quality facility shall be properly inspected throughout construction and restored upon completion of the respective phase.

BMPs and measures will prevent pollutants from entering surface streams or the aquifer by intercepting stormwater potentially carrying sediment and other pollutants. BMPs and measures will implement two (2) stabilized construction entrances and a construction stockpiling/staging area to help minimize pollutant run-off and erosion generated during construction. Paved streets and driveways adjacent to these sites will be cleaned regularly to remove excess mud, dirt or rock tracked from the site. Sedimentation will be concentrated only in these areas for efficient maintenance. Water trucks will be on-site as necessary to aid in controlling dust. No setbacks were proposed for the site; however, BMPs will be implemented to limit/prevent contaminated inflow from entering surface streams or the aquifer. These practices are to include the following measures: the use of silt fence, triangular filter dikes and vegetative buffer zones. The fabricated silt fence barricade, triangular filter dikes and natural living filter vegetative buffer will provide help to reduce the likelihood of contaminated runoff from entering the aquifer. If any sensitive features are identified by TCEQ inspections, or during excavation or construction, measures appropriate to the sensitivity of the discovered feature will be enacted. No blasting is proposed.

A concrete washout area will be installed to prevent or reduce the discharge of pollutants to stormwater from concrete waste by conducting washout offsite, performing onsite washout in a designated area, and training employees and subcontractors.

Temporary Erosion and Sedimentation Notes:

- 1. The Contractor shall maintain, install erosion/sedimentation controls and tree/natural protective fencing prior to any site preparation work (clearing, grubbing or excavation).
- 2. The placement of erosion/sedimentation controls and tree/natural protective fencing shall be in accordance with Williamson County's current Environmental Protection rules and the approved Erosion and Sedimentation Control Plan. No erosion controls shall be placed beyond the property lines of the site unless written permission has been obtained from adjacent property Owners.
- 3. A pre-construction conference shall be held on-site with the Contractor, Design Engineer/permit applicant and Environmental Inspector after installation of the erosion/sedimentation and tree/natural area protection measures and prior to beginning any site preparation work. The Contractor shall notify the Environmental Inspector at least three (3) days prior to the meeting date.
- 4. Any major variation in materials or locations of controls or fences from those shown on the approved plans will require a revision and must be approved by the Reviewing Engineer, Environmental Specialist or City Arborist as appropriate. Minor changes to be made as field revisions to the Erosion and Sedimentation Control Plan may be required by the Environmental Inspector during the course of construction to correct control inadequacies.
- 5. The Contractor is required to inspect the controls at weekly intervals and after significant rainfall events to ensure that they are functioning properly. The person(s) responsible for maintenance of controls shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six (6) inches.
- 6. Prior to final acceptance by the City of Georgetown and Williamson County, haul roads and waterway crossing constructed for temporary Contractor access must be removed, accumulated sediment removed from the waterway and the area restored to the original grade and revegetated. All land clearing debris shall be disposed of in approved spoil disposal sites.
- 7. All work must stop if a void in the rock substrate is discovered, which is one (1) square foot in total area, blows air from within the substrate, and/or consistently received water during any rain event. At this time it is the responsibility of the Project Manager to immediately contact an Environmental Inspector for further investigation.
- 8. Erosion control measures, site work and restoration work shall be in accordance with the Williamson County Storm Water Management System Requirements.
- 9. All slopes shall be sodded or seeded with approved grass, grass mixtures or ground cover suitable to the area and season in which they are applied.

- 10. Silt fences, rock berms, sedimentation basins and similarly recognized techniques and materials shall be employed during construction to prevent point source sedimentation loading of downstream facilities, such installation shall be regularly inspected by Williamson County for effectiveness. Additional measures may be required if, in the opinion of the County Engineer, they are warranted.
- 11. All temporary erosion control measures shall not be removed until final inspection and approval of the project by the Engineer. It shall be the responsibility of the Contractor to maintain all temporary erosion control structures and to remove each structure as approved by the Engineer.
- 12. Any dirt, mud, rocks, debris, etc., that is spilled, tracked, or otherwise deposited on any existing paved street shall by cleaned up immediately.

ATTACHMENT E REQUEST TO SEAL FEATURES

No environmental features are	being temporar	ly sealed. Therefore, this	section is not applicable.

ATTACHMENT F STRUCTURAL PRACTICES

Silt fencing will be placed on the down gradient side of any exposed soils in order to limit the discharge of silt and pollutant form exposed areas of the site. Additionally, triangular filter dikes will be placed down gradient of areas that may require dewatering. Dewatering shall be directed toward the water quality pond and/or filter dikes to limit the discharge of silt and pollutants from exposed areas of the site. Also included are stabilized construction entrances to reduce the amount of mud tracked onto surrounding streets by construction vehicles. Inspection and maintenance of the onsite controls shall be performed during the site clearing and rough grading process.

Additionally, the use of the proposed pond will also protect against contaminated runoff leaving the site. The Contractor will be responsible for proper inlet protection in addition to cleaning out all structures adversely affected by sediment after heavy rainfalls.

ATTACHMENT **G** DRAINAGE AREA MAPS

(SEE CONSTRUCTION PLANS)

ATTACHMENT H TEMPORARY SEDIMENT POND PLANS AND CALCULATIONS

The existing water quality pond will be used as a sediment basin during construction. Developed Water Quality Area to Water Quality Pond 1 is approximately 34.38-acres with no offsite drainage. A surface skimmer will be utilized for dewatering during construction if warranted. Any excess sediment generated during construction will be spoiled in the location outlined in the construction plans. The entire system shall be protected from erosion and maintained throughout the course of construction until final site restoration is complete. The construction plans and design calculations will identify that adequate storage volume will be provided for construction.

ATTACHMENT I INSPECTION AND MAINTENANCE FOR BEST MANAGEMENT PRACTICES

The following sections address inspection and maintenance taken from the TNRCC Manual, "Complying with Edward Aquifer Rules: Technical Guidance on Best Management Practices." inspections of the temporary BMPs will be documented in an inspection report. Inspections reports will document maintenance actives, sediment removal and modifications to the sediment and erosion controls.

Silt Fence:

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

Inlet Protection:

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

Stabilized Construction Entrance:

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

Concrete Washout Area:

1. Routine inspection in accordance with Section 1.4.18 of RG-348 of the area to insure that sufficient quantity and volume remain to contain all liquid and concrete waste generated by washout operations.

- 2. Plastic lining material should be a minimum of 10 millimeters in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.
- 3. When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and disposed of. Materials used to construct temporary concrete washout facilities should be removed from the site of the work and disposed of. Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

Sediment Basins

- 1. Inspection should be made weekly and after each rainfall in accordance to Section 1.4.13 of RG348.
- 2. To prevent clogging of the outlet structure of proposed water quality facilities implemented as temporary sediment basins, trash and other debris shall be removed promptly after each rainfall event.
- 3. Silt accumulation should be removed as well as basin re-graded to original dimensions once the capability of the facility has been reduced to 75% of original storage capacity.
- 4. Removed sediment should be redistributed in the respective phases' stockpiling area.

Rock Berm

- 1. Inspection should be made weekly and after each rainfall in accordance to Section 1.4.5 of RG348. If placed in streambeds, inspection should occur on a daily basis.
- 2. Accumulated silt shall be removed when it reaches a depth of six (6) inches. The silt shall be disposed of on an approved site and in such a manner that will not contribute to additional siltation.
- 3. Loose wire sheathing shall be repaired immediately when necessary and the berm shall be reshaped as needed during inspection.
- 4. Berm shall be replaced if the structure ceases to function as initially intended due to factors such as silt accumulation, washout, construction traffic damage, etc.
- 5. When all upstream areas are stabilized and the accumulated silt has been removed, the rock berm should be removed and disposed of.

ATTACHMENT I - SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION PRACTICES

Prior to commencing construction, all temporary erosion and sedimentation control measures must be properly selected, installed, and maintained in accordance with the Manufacturer's Specifications and Good Engineering Practices. Controls specified in the Storm Water Pollution Prevention Plan section of the approved Edwards Aquifer Contributing Zone Plan are required during construction. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. The controls must remain in place until disturbed areas are revegetated and the areas have become permanently stabilized.*

Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.*

Temporary Vegetation will be used to stabilize the soil. Please see TCEQ RG-348 Chapter 1, Section 1.3.8 Temporary Vegetation for materials, installation, irrigation and inspection specifications.

(*see General Notes for Edwards Aquifer Recharge Zone Plan)

Section 7: Permanent Stormwater

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 Sec**ti**on is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: <u>AC Steadman, P.E. -Kimley-Horn</u>

Date: <u>08/08/2025</u>

Signature of Customer/Agent

Atexan Stender

Regulated Entity Name: Berry Creek Highlands Phase 8B & 9

Permanent Best Management Practices (BMPs)

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

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

	A technical guidance other than the TCEQ TGM was used to design permanent BMPs d measures for this site. The complete citation for the technical guidance that was used
is:	n N/A
	□N/A
1.	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.
ō.	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 multifamily residential developments, schools, or small business sites and has 20%
	martinaring residential developments, sensons, or small basiness sites and has 20%

or less impervious cover. A request to waive to BMPs and measures is attached. The site will be used for multi-family resident business sites but has more than 20% impervious. The site will not be used for multi-family res	tial developments, schools, or small vious cover.
small business sites.	
6. Attachment B - BMPs for Upgradient Stor A description of the BMPs and measures that surface water, groundwater, or stormwater the and flows across the site is attached. No surface water, groundwater or stormwater and flows across the site, and an explanation Permanent BMPs or measures are not requivater, groundwater, or stormwater that originate across the site, and an explanation is attached.	will be used to prevent pollution of at originates upgradient from the site er originates upgradient from the site is attached. uired to prevent pollution of surface
Attachment C - BMPs for On-site Stormwater. A description of the BMPs and measures that a surface water or groundwater that originates pollution caused by contaminated stormwater. Permanent BMPs or measures are not require or groundwater that originates on-site or flow caused by contaminated stormwater runoff, a	s on-site or flows off the site, including er runoff from the site is attached. d to prevent pollution of surface water as off the site, including pollution
8. Attachment D - BMPs for Surface Streams. A measures that prevent pollutants from entering the aquifer is attached. Each feature identified sensitive has been addressed.	surface streams, sensitive features, or
□ N/A	
9. The applicant understands that to the extermust maintain flow to naturally occurring sensitive geologic assessment, executive director review, construction.	ive features identified in either the or during excavation, blasting, or
The permanent sealing of or diversion of flow feature that accepts recharge to the Edwards abatement measure has not been proposed.	

	Attachment E - Request to Seal Features. A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.
10.	 Attachment F - Construction Plans. All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include: □ Design calculations (TSS removal calculations) □ TCEQ construction notes □ All geologic features □ All proposed structural BMP(s) plans and specifications
	N/A 11. Attachment G - Inspection, Maintenance, Repair and Retrofit Plan. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following: Prepared and certified by the engineer designing the permanent BMPs and measures Signed by the owner or responsible party Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit A discussion of record keeping procedures N/A
12.	Attachment H - Pilot-Scale Field Testing Plan. Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached. N/A 13. Attachment I - Measures for Minimizing Surface Stream Contamination. A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that results in water quality degradation. N/A

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

□n/a

Responsibility for Maintenance of Permanent BMP(s) Responsibility for maintenance of best management practices and measures after

ATTACHMENT A -- 20% OR LESS IMPERVIOUS COVER WAIVER

No waiver is being requested because this site will be more than 20% impervious cover. Therefore this section is not applicable to our submittal.

ATTACHMENT B -- BMPs FOR UPGRADIENT STORM WATER

There is no upgradient storm water for Berry Creek Highlands Phase 8B & 9. All the storm water that originates onsite is captured in the proposed storm sewer system and routed to the proposed Batch Detention Pond constructed with Berry Creek Highlands, Phase 8B & 9. The storm water in the batch detention pond will be regulated using the smartBATCH automated detention system.

ATTACHMENT C -- BMPs FOR ONSITE STORMWATER

Storm water runoff arising from this development will be conveyed through a combination of sheet flow and storm sewer flow to the Batch Detention Pond constructed with Berry Creek Highlands Phase 8B & 9, Ultimately the ponds will discharge into Berry Creek, then to the San Gabriel River. See attached plans for the proposed expansion to the water quality pond included with the construction plans under *Attachment F*. See TSS removal calculations under *Attachment I*.

Permanent Erosion and Sedimentation Notes:

All disturbed areas shall be restored as noted below.

- a. A minimum of four inches of topsoil shall be placed in all drainage channels (except rock) and between the curb and right-of-way line.
- b. The seeding for permanent erosion control shall be applied over areas disturbed by construction as follows:

Broadcast seeding:

- i. From September 15 to March 1, seeding shall be with a combination of two (2) pounds per 1,000 square feet of unhulled Bermuda and seven (7) pounds per 1,000 square feet of Winter Rye with a purity of 95% with 90% germination.
- ii. From March 2 to September 14, seeding shall be with hulled Bermuda at a rate of two (2) pounds per 1,000 square feet with a purity of 95% with 85% germination. iii. Fertilizer shall be a pelleted or granular slow release with an analysis of 15-15-15 to be applied once at planting and once during the period of establishment at a rate of one (1) pounds per 1,000 square feet.
- iv. Mulch type used shall be hay, straw or mulch applied at a rate of 45 pounds per 1,000 square feet.

Hydraulic seeding:

- i. From September 15 to March 1, seeding shall be with a combination of one (1) pounds per 1,000 square feet of unhulled Bermuda and seven (7) pounds per 1,000 square feet of Winter Rye with a purity of 95% with 90% germination.
- ii. From March 2 to September 14, seeding shall be with hulled Bermuda at a rate of one (1) pounds per 1,000 square feet with a purity of 95% with 85% germination.
- iii. Fertilizer shall be a water soluble fertilizer with an analysis of 15-15-15 at a rate of 1.5 pounds per 1,000 square feet.
- iv. Mulch type used shall be hay, straw or mulch applied at a rate of 45 pounds per 1,000 square feet, with soil tackifier at a rate of 1.4 pounds per 1,000 square feet.
- c. The planted area shall be irrigated or sprinkled in a manner that will not erode the topsoil, but will sufficiently soak the soil to a depth of six (6) inches. The irrigation shall occur at ten (10)day intervals during the first two (2) months. Rainfall occurrences of half (½) inch or more shall postpone the watering schedule for one (1) week.
- d. Restoration shall be acceptable when the grass has grown at least one and a half (1½) inches high with 95% coverage, provided no bare spots larger than 16 square feet exist.
- e. When required, native grass seeding shall comply with the requirements of the City of Georgetown.

ATTACHMENT **D** -- BMPs FOR SURFACE STREAMS

As described in *Attachments B* and *C*, storm water runoff will be treated and contained within the existing Batch Detention Pond constructed with Berry Creek Highlands Phase 6A. The permanent water quality pond is a batch detention pond with a TSS reduction efficiency of 91%. Please refer to *Attachment I* of this section for the TSS removal calculations.

ATTACHMENT **E** – REQUEST TO SEAL FEATURES

No environmental features are being sealed. Therefore, this section is not applicable.

ATTACHMENT F – CONSTRUCTION PLANS

See attached construction plans.

	RE	VISIONS/COF	RECTION	NS	
NO.	DESCRIPTION	REVISE (R) VOID (V) ADD (A) SHEET NO.'S	TOTAL NO. SHEETS IN PLAN SET	CITY OF GEORGETOWN APPROVAL DATE	CITY OF GEORGETOWN SIGNATURE

CIVIL CONSTRUCTION PLANS PAVING, GRADING & UTILITIES FOR

BERRY CREEK HIGHLANDS PHASE 8B & 9

PLAN SUBMITTAL/REVIEW LOG

1ST SUBMITTAL TO CITY

08/15/2025

CITY OF GEORGETOWN, WILLIAMSON COUNTY, TEXAS

SUBDIVISION CONSTRUCTION PLANS NOTES:

- 1. THESE PLANS WERE PREPARED, SEALED, SIGNED, AND DATED BY A TEXAS LICENSED PROFESSIONAL ENGINEER. THEREFORE, BASED ON THE 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.
- THIS PROJECT IS SUBJECT TO ALL CITY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF SUBMITTAL OF THE PROJECT TO THE CITY.
 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 UNDERGROUN
 INTERASTRUCTURE (ONLY ARRICARLE FOR RESIDENTIAL PROPERTY)
- 4. 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 DEVELOPMENT).
- THE PROPERTY SUBJECT TO THIS APPLICATION IS SUBJECT TO THE WATER QUALITY REGULATIONS OF THE CITY OF GEORGETOWN.
- A GEOLOGIC ASSESSMENT, IN ACCORDANCE WITH THE CITY OF GEORGETOWN WATER QUALITY REGULATIONS, WAS COMPLETED ON (MARCH 31, 2016). ANY SPRINGS AND STREAMS AS IDENTIFIED IN THE GEOLOGIC ASSESSMENT ARE SHOWN HEREIN.
- 8. THIS SUBDIVISION IS SUBJECT TO THE CITY OF GEORGETOWN ORDINANCE NUMBER 2018-36 AMENDING THE OFFICIAL ZONING MAP TO BE REZONED FROM AGRICULTURE (AG) DISTRICT TO PLANNED UNIT DEVELOPMENT (PUD) KNOWN AS BERRY CREEK HIGHLANDS PUD DEVELOPMENT PLAN.

LEGAL DESCRIPTION:

BEING A 34.38 ACRES (1,497,610 SQ. FT.) TRACT OF LAND SITUATED IN THE B. EAVES SURVEY, ABSTRACT NO. 216 CITY OF GEORGETOWN, WILLIAMSON COUNTY, TEXAS; AND BEING A PORTION OF A CALLED 314.54 ACRES TRACT OF LAND DESCRIBED TO BERRY CREEK (GEORGETOWN), ASLI IX, LLC, AS SHOWN ON INSTRUMENT RECORDED IN DOCUMENT NO. 2018106295 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS (O.P.R.W.C.T.);

ENGINEER

Kimley» Horn

CAMPUS IV, SUITE 200 REGISTRATION NO. F-928
AUSTIN, TEXAS 78759
PH. (512) 418-1771
CONTACT: ALEXANDER C. STEADMAN, P.E.
EMAIL: AC.STEADMAN@KIMLEY-HORN.COM

OWNER/DEVELOPER

BERRY CREEK ASLI IX, LLC 923 PENNSYLVANIA AVENUE WINTER PARK, FLORIDA 32789 TEL: (407) 628-8488 EMAIL: MSHAPIRO@AVANTIPROP.COM

SURVEYOR

KIMLEY-HORN AND ASSOCIATES, INC. 10814 JOLLYVILLE ROAD, UNIT 200 AUSTIN, TEXAS 78759 FIRM NO. 10193973 PH: (5120 886-4146 CONTACT: MIKE MONTGOMERY

GAS SERVICE

ATMOS ENERGY CORPORATION 3110 N INTERSTATE 35 ROUND ROCK, TEXAS 78681 PH: (512) 310-3855 CONTACT: MICHAEL ANDREWS WEBSITE: www.atmosenergy.com

ELECTRIC SERVICE

PEDERNALES ELECTRIC COOPERATIVE INC.
10625 WEST HIGHWAY 29
LIBERTY HILL, TX 78642
TELEPHONE: (800) 868-4791
CONTACT: DAVID PAGOAGA
WEBSITE: HTTPS://WWW.PEC.COOP

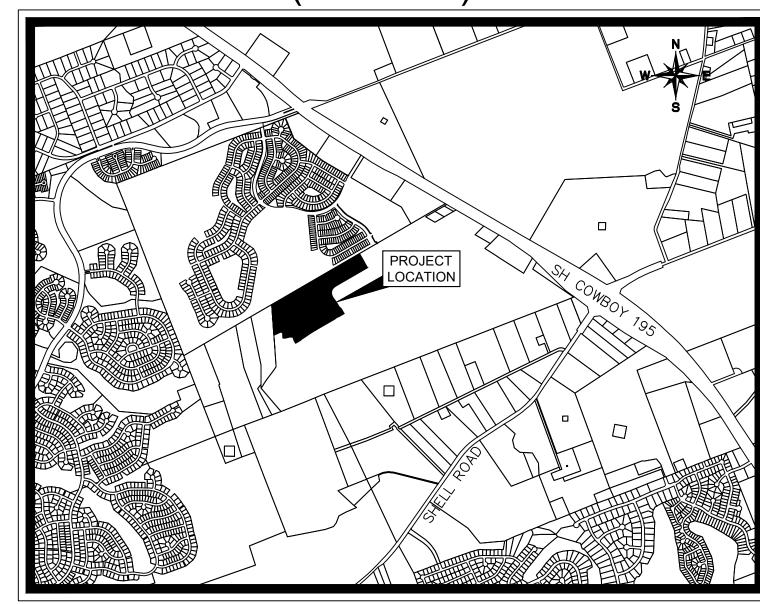
WATER SERVICE

CITY OF GEORGETOWN
300 INDUSTRIAL AVE #1
GEORGETOWN, TEXAS 78626
TELEPHONE: (512) 930-3640
CONTACT: DAVID MUNK
WEBSITE: https://gus.georgetown.org/

WASTEWATER SERVICE

CITY OF GEORGETOWN
GEORGETOWN UTILITY SYSTEMS
300-1 INDUSTRIAL AVENUE
GEORGETOWN, TEXAS 78626
TELEPHONE: (512)930-3555
CONTACT: DAVID MUNK
WEBSITE: https://gus.georgetown.org/

BERRY CREEK HIGHLANDS MUNICIPAL UTILITY DISTRICT (1264000)



VICINITY MAP

SCALE: 1" = 2 000'

AUGUST 2025

CITY OF GEORGETOWN	DATE
DISTRICT ENGINEER	DATE

REVIEW OF THE PLANS BY THE DISTRICT IS LIMITED TO WATER, WASTEWATER AND DRAINAGE AND DOES NOT INDICATE A REVIEW OF THE ADEQUACY OF THE DESIGN FOR THE FACILITIES. IN APPROVING THESE PLANS, THE DISTRICT MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

SHEET INDEX

Sheet No.	Sheet Title
1	COVER SHEET
2	PRELIMINARY PLAT (1 OF 4)
3	PRELIMINARY PLAT (2 OF 4)
4	PRELIMINARY PLAT (3 OF 4)
5	PRELIMINARY PLAT (4 OF 4)
6	GENERAL NOTES
7	KH GENERAL NOTES
8	TCEQ NOTES
9	EXISTING CONDITIONS & DEMOLITION PLAN
10 11	EROSION CONTROL PLAN TREE PRESERVATION PLAN - HERITAGE TREES
12	TREE PRESERVATION PLAN - CALCULCATIONS
13	GRADING PLAN (1 OF 2)
14	GRADING PLAN (2 OF 2)
15	PAVING PLAN AND PROFILE - LITTLE SNAKE WAY (1 OF 2)
16	PAVING PLAN AND PROFILE - LITTLE SNAKE WAY (2 OF 2)
17	PAVING PLAN AND PROFILE - DOG IRON COURT (1 OF 3)
18	PAVING PLAN AND PROFILE - DOG IRON COURT (2 OF 3)
19	PAVING PLAN AND PROFILE - DOG IRON COURT (3 OF 3)
20	PAVING PLAN & PROFILE - KOKERNOT STREET
21	PAVING PLAN AND PROFILE - WAGGONER WAY
22	PAVING PLAN AND PROFILE - FOUR SIXES STREET
23	INTERSECTION & KNUCKLE PLAN (1 OF 2) INTERSECTION & KNUCKLE PLAN (2 OF 2)
24 25	STREET LIGHT, SIGNAGE, & STRIPING PLAN
26	CONCRETE FENCING PLAN & DETAILS
27	EXISTING DRAINAGE AREA MAP
28	OFFSITE DRAINAGE AREA MAP
29	ULTIMATE PROPOSED DRAINAGE AREA MAP
30	INLET DRAINAGE AREA MAP
31	INLET DRAINAGE CALCULATIONS
32	WATER QUALITY DRAINAGE AREA MAP
33	COG WATER QUALITY CALCULATIONS
34	TCEQ WATER QUALITY CALCULATIONS
35 36	OVERALL STORM PLAN (1 OF 2) OVERALL STORM PLAN (2 OF 2)
37	STORM PLAN AND PROFILE- SD-A (1 OF 3)
38	STORM PLAN AND PROFILE - SD-A (2 OF 3)
39	STORM PLAN AND PROFILE - SD-A (3 OF 3) & CULV-A
40	STORM PLAN AND PROFILE - SD-B
41	STORM PLAN AND PROFILE - SD-C (1 OF 2)
42	STORM PLAN AND PROFILE - SD-C (2 OF 2)
43	STORM LATERALS (SHEET 1 OF 4)
44	STORM LATERALS (SHEET 2 OF 4)
45	STORM LATERALS (SHEET 3 OF 4) STORM LATERALS (SHEET 4 OF 4)
46 47	OVERALL WATER PLAN
48	WATER PLAN AND PROFILE - WL-A (1 OF 3)
49	WATER PLAN AND PROFILE - WL-A (2 OF 3)
50	WATER PLAN AND PROFILE - WL-A (3 OF 3)
51	WATER PLAN AND PROFILE - WL-B (1 OF 2)
52	WATER PLAN AND PROFILE - WL-B (2 OF 2)
53	WATER PLAN AND PROFILE - WL-C
54	WATER PLAN AND PROFILE - WL-D
55	WATER PLAN AND PROFILE - WL-E
56	OVERALL WASTEWATER PLAN
57	WASTEWATER PLAN AND PROFILE - WWL-A (1 OF 3) WASTEWATER PLAN AND PROFILE - WWL-A (2 OF 3)
58	WASTEWATER PLAN AND PROFILE - WWL-A (2 OF 3) WASTEWATER PLAN AND PROFILE - WWL-A (3 OF 3)
59 60	WASTEWATER PLAN AND PROFILE - WWL-A (3 OF 3) WASTEWATER PLAN AND PROFILE - WWL-B (1 OF 2)
60 61	WASTEWATER PLAN AND PROFILE - WWL-B (1 OF 2) WASTEWATER PLAN AND PROFILE - WWL-B (2 OF 2)
62	WASTEWATER PLAN AND PROFILE - WWL-C
63	WASTEWATER PLAN AND PROFILE - WWL-D & WWL-E
64	WASTEWATER PLAN AND PROFILE - WWL-F & WWL-G
65	EROSION CONTROL DETAILS
66	PAVING DETAILS (1 OF 2)
67	PAVING DETAILS (2 OF 2)
68	STORM DRAIN DETAILS
69 70	WATER DETAILS WASTEWATER DETAILS

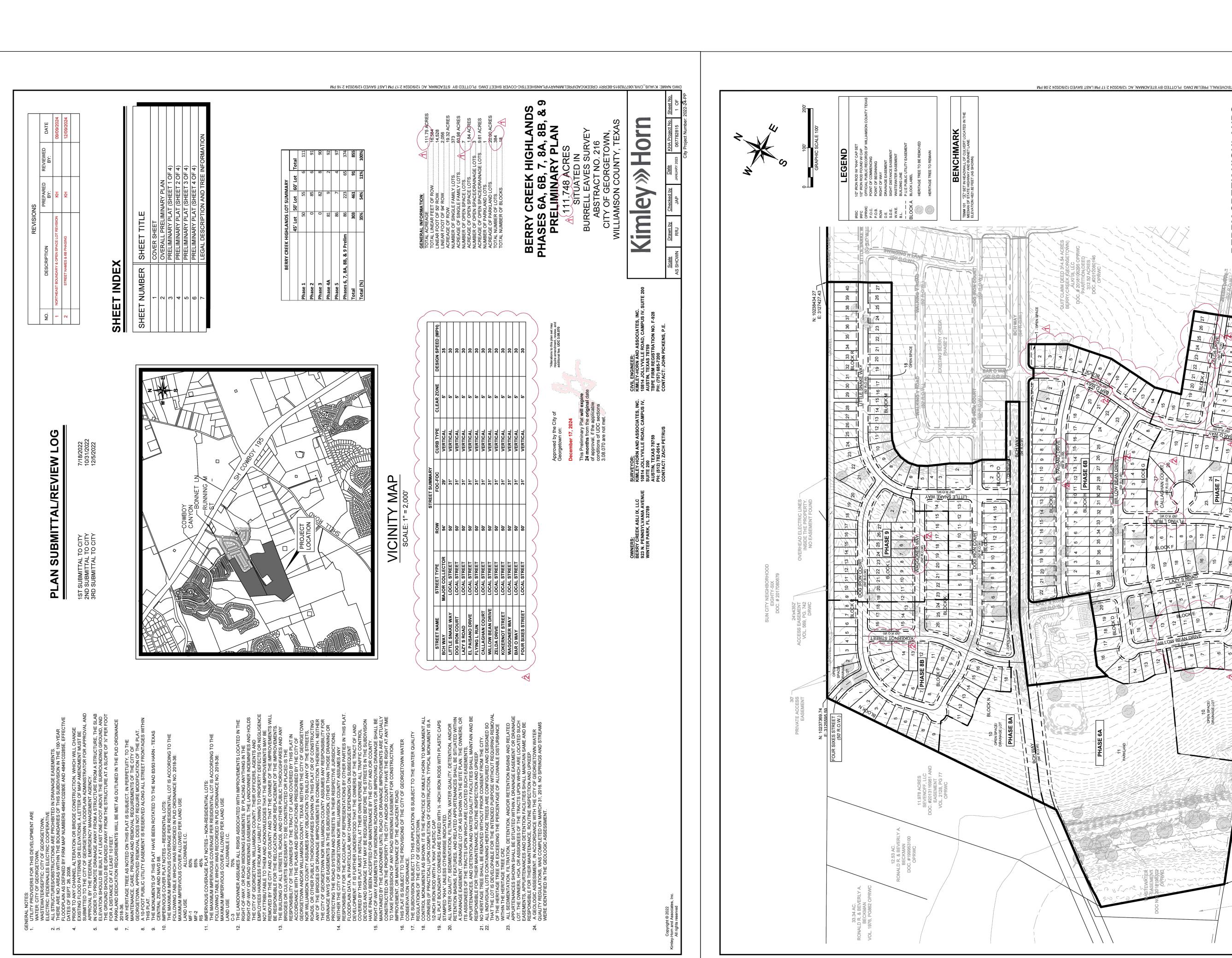


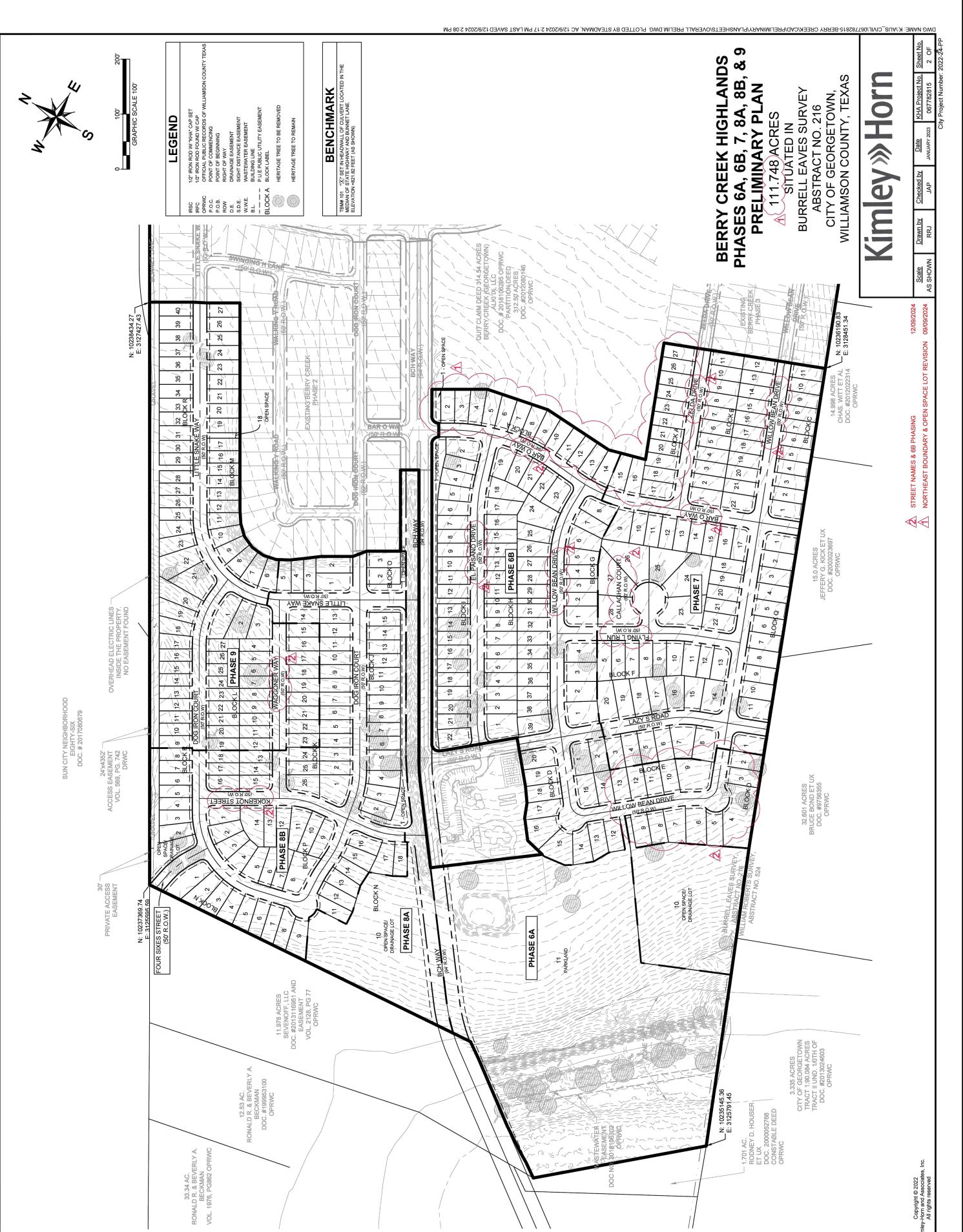
ELEVATION =821.82 FEET (AS SHOWN)

BERRY CREEK
HIGHLANDS

2025-XX-CON

SHEET NUMBER

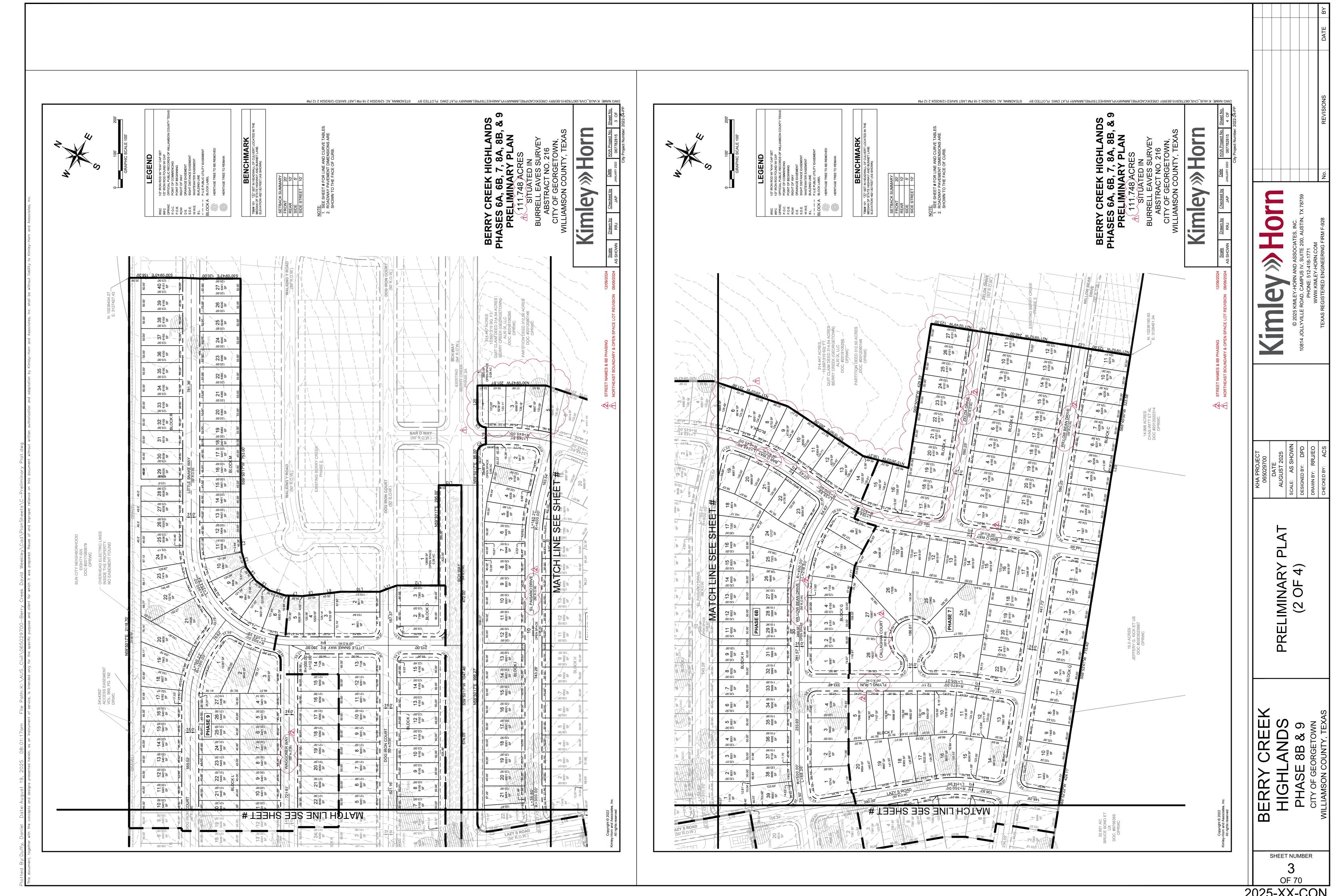


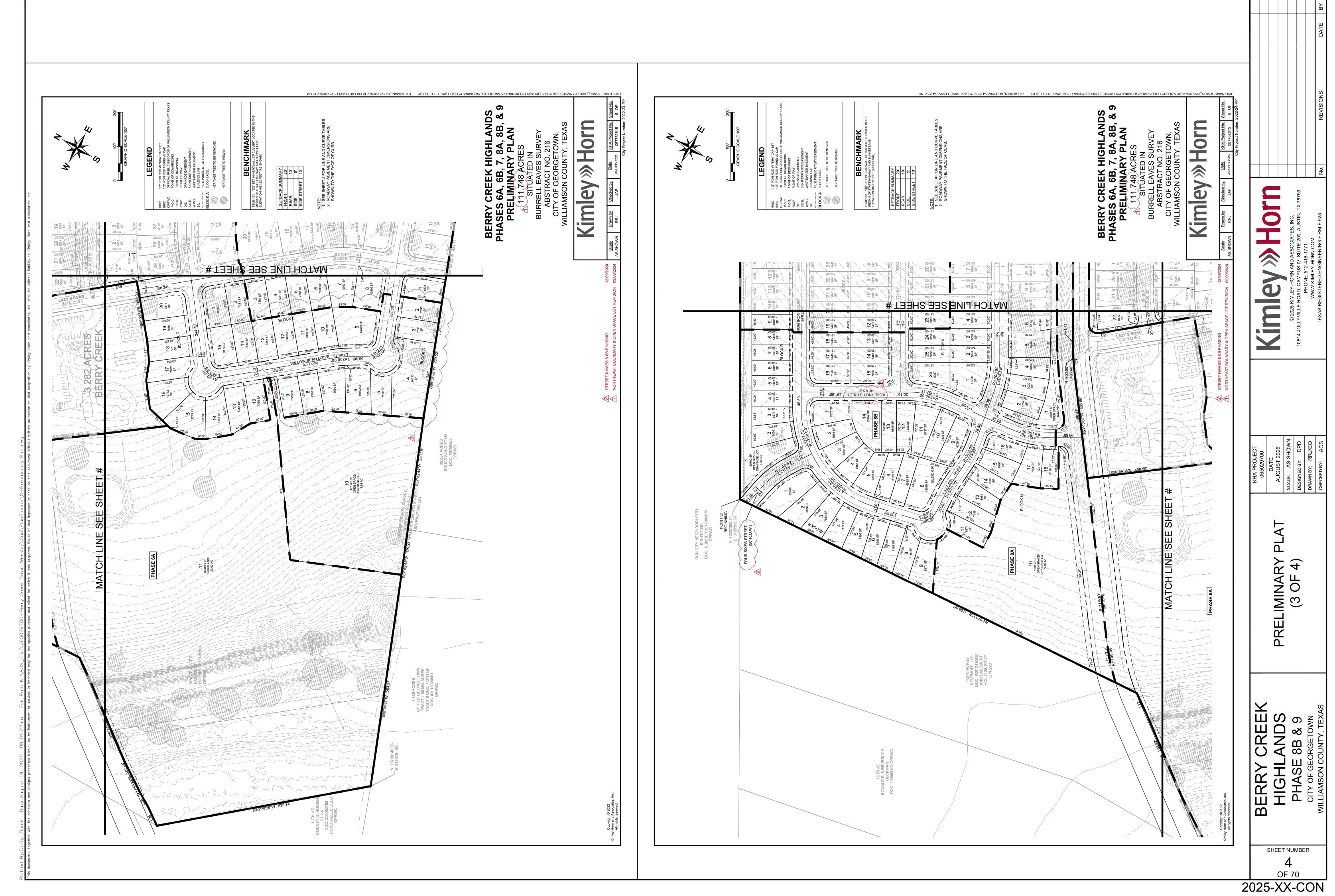


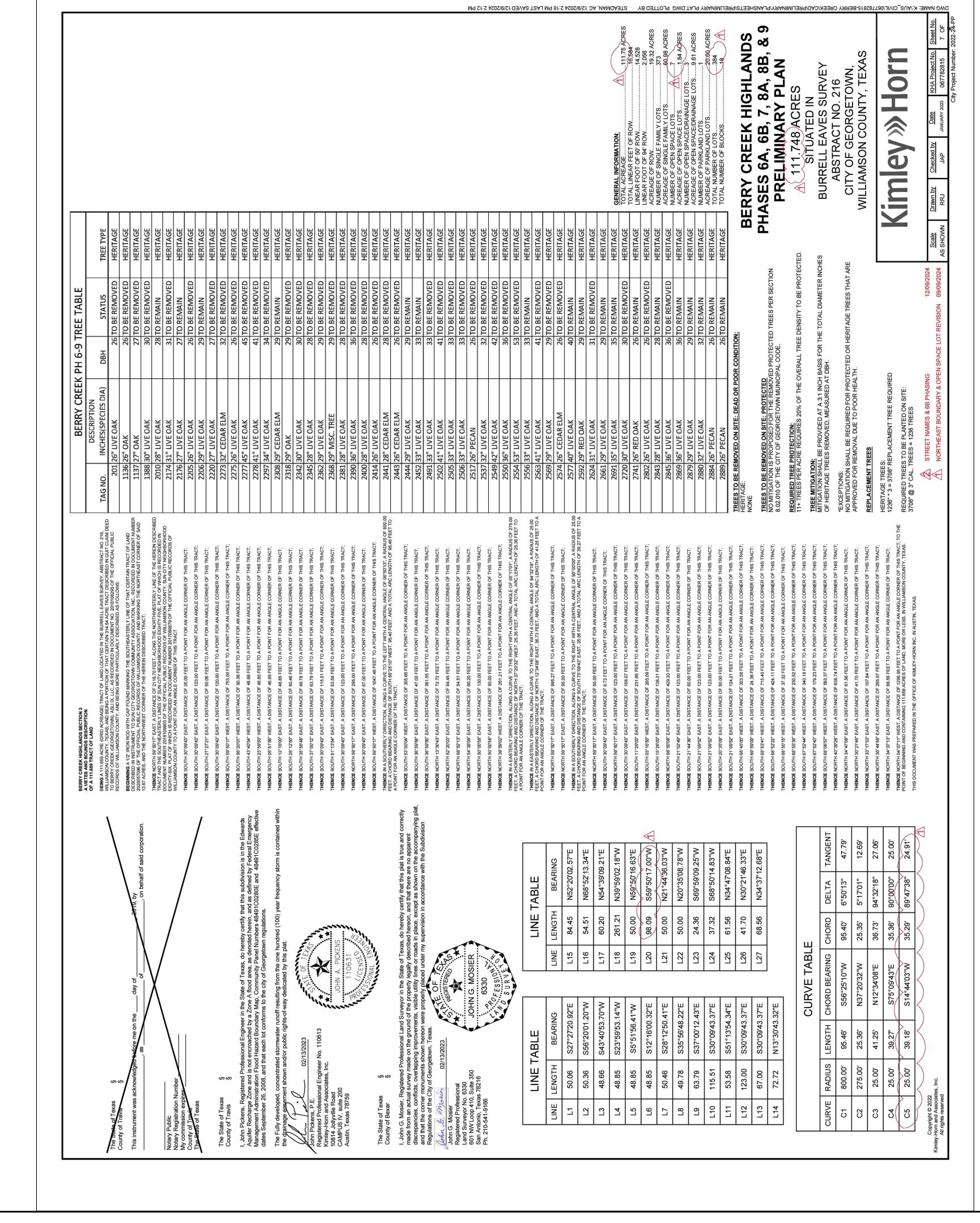
2 OF 70 2025-XX-CON

SHEET NUMBER

PRELIMINARY PL (1 OF 4)







(P)

Д

PRELIMINARY F (4 OF 4)

OF 70

2025-XX-CON

5

SHEET NUMBER

BERRY CREEK
HIGHLANDS
PHASE 8B & 9
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

GENERAL NOTES

- 1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THESE PLANS, THE CITY OF GEORGETOWN "UNIFIED DEVELOPMENT CODE" AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL AND LABOR TO CONSTRUCT THE FACILITY AS SHOWN AND DESCRIBED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE APPROPRIATE APPROVING AUTHORITIES, SPECIFICATIONS AND REQUIREMENTS.
- 3. CONTRACTOR SHALL CONTACT ALL FRANCHISE UTILITY COMPANIES TO HAVE THEM LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION AND DEPTH OF ALL FRANCHISE UTILITY SERVICES AND ANY REQUIRED RELOCATION AND/OR EXTENSIONS. SERVICES SHOWN ON THE PLANS ARE CONCEPTUAL.
- 4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING RELOCATION AND INSTALLATION OF FRANCHISE UTILITIES NECESSARY FOR ON AND OFF SITE CONSTRUCTION.
- 5. BRACING OF UTILITY POLES MAY BE REQUIRED BY UTILITY COMPANIES WHEN TRENCHING OR EXCAVATION IS IN CLOSE PROXIMITY TO THE POLES. THE COST OF BRACING POLES WILL BE BORNE BY THE CONTRACTOR. THERE IS NO SEPARATE PAY ITEM FOR THIS WORK. THE COST IS INCIDENTAL TO THE VARIOUS PAY ITEMS FOR INSTALLATION OF PIPE
- 6. THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES SHOWN ON THE PLANS WERE OBTAINED FROM AVAILABLE UTILITY COMPANY RECORDS AND PLANS AND ARE CONSIDERED APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ADJACENT AND/OR CONFLICTING UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION IN ORDER THAT ADJUSTMENTS CAN BE MADE TO PROVIDE ADEQUATE CLEARANCES. THE CONTRACTOR SHALL PRESERVE AND PROTECT PUBLIC AND PRIVATE UTILITIES AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO UTILITIES RESULTING FROM CONTRACTOR'S OPERATIONS SHALL BE RESTORED AT THEIR EXPENSE. THE ENGINEER SHALL BE NOTIFIED WHEN PROPOSED FACILITY GRADES CONFLICT WITH EXISTING UTILITY GRADES.
- 7. CONTRACTOR SHALL USE ALL NECESSARY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND POWER LINES.
- 8. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS SHOWN ON THE PLANS AND REVIEW ALL FIELD CONDITIONS, INCLUDING EXISTING GRADES AND UTILITY FLOW LINES, AND SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH
- 9. THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY PHYSICAL DAMAGE TO PRIVATE PROPERTY, INCLUDING, BUT NOT LIMITED TO FENCES, WALLS, PAVEMENT, GRASS, TREES, LAWN SPRINKLER AND IRRIGATION SYSTEMS AT NO COST TO THE OWNER. THIS WORK SHALL BE SUBSIDIARY TO THE CONTRACT (UNLESS OTHERWISE NOTED) AND IS NOT A SEPARATE PAY ITEM.
- 10. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS PRIOR TO CONSTRUCTION
- 11. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES ONE COPY OF THE APPROVED CONTRACT DOCUMENTS INCLUDING PLANS, SPECIFICATIONS, AND SPECIAL CONDITIONS, COPIES OF ANY REQUIRED CONSTRUCTION PERMITS, EROSION CONTROL PLANS, SWPPP AND INSPECTION REPORTS.
- 12. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN NEAT AND ACCURATE CONSTRUCTION RECORD PLANS.
- 13. CONNECTIONS TO EXISTING FACILITIES SHALL BE ACCOMPLISHED IN A NEAT AND PROFESSIONAL MANNER. WHEN FIELD CONDITIONS INDICATE ANY VARIANCE FROM DETAILED METHODS, THE CONTRACTOR SHALL PROVIDE COMPREHENSIVE AND DETAILED DRAWINGS (FOR APPROVAL) OF METHODS PROPOSED.
- 14. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND NOTIFICATION TO THE ENGINEER. NO CONSIDERATION WILL BE GIVEN TO CHANGE ORDERS FOR WHICH THE OWNER AND ENGINEER WERE NOT CONTACTED PRIOR TO
- 15. ALL COPIES OF COMPACTION, CONCRETE AND OTHER REQUIRED TEST RESULTS ARE TO BE SENT TO THE OWNER AND DESIGN ENGINEER OF RECORD DIRECTLY FROM THE TESTING AGENCY.

CONSTRUCTION OF THE AFFECTED ITEM.

- 16. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES, JURISDICTIONAL AGENCIES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO THE FINAL CONNECTION OF SERVICES.
- 17. CONTRACTOR SHALL VERIFY BENCHMARKS AND DATUM PRIOR TO COMMENCING CONSTRUCTION OR STAKING OF
- 18. ALL HORIZONTAL DIMENSIONS GIVEN ARE TO FACE OF CURB AND TO PIPE CENTERLINES, UNLESS OTHERWISE NOTED ON PLANS
- 19. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING. CONSTRUCTION STAKING SHALL BE PERFORMED BY A REGISTERED PUBLIC SURVEYOR IN THE STATE OF TEXAS.
- 20. THE CONTRACTOR SHALL TOPSOIL, SEED AND FERTILIZE ALL AREAS DISTURBED BY CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE WHATEVER MEASURES ARE NEEDED INCLUDING TEMPORARY IRRIGATION TO ENSURE FULL COVERAGE OF GRASSING. UNLESS OTHERWISE NOTED, PRIVATE LAWN AREAS AND PARKWAYS IN FRONT OF PRIVATE LAWN AREAS DISTURBED BY CONSTRUCTION SHALL BE REPLACED WITH BLOCK SOD OF A SIMILAR GRASS TO THAT EXISTING. ALL SEEDED OR SODDED AREAS SHALL RECEIVE SIX(6) INCHES OF TOPSOIL. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- 21. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH. THE AREAS SHALL THEN BE SEEDED, IRRIGATED, AND STABILIZED AS SPECIFIED IN THE PLANS, AND MAINTAINED UNTIL SOIL IS STABILIZED IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL EARTHEN AREAS WILL BE STABILIZED AND MULCHED AS SHOWN ON THE LANDSCAPE, GRADING, AND EROSION CONTROL PLANS.
- 22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
- 23. SOD MUST BE INSTALLED AND MAINTAINED ON EXPOSED SLOPES WITHIN TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGES.
- 24. CONTRACTOR IS TO CONSTRUCT A STABILIZED CONSTRUCTION EXIT AT ALL PRIMARY POINTS OF ACCESS. THIS

STABILIZED EXIT SHALL BE CONSTRUCTED PER CITY DETAILS.

- 25. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE CONTRACTOR MUST REVIEW AND MAINTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN WITH ALL CONDITIONS, ATTACHMENTS, EXHIBITS, AND PERMIT MODIFICATIONS IN GOOD CONDITION AT THE CONSTRUCTION SITE. THE COMPLETE SWPPP MUST BE MADE READILY AVAILABLE AT THE TIME OF AN ON-SITE INSPECTION TO: THE EXECUTIVE DIRECTOR; A FEDERAL, STATE, OR LOCAL AGENCY APPROVING SEDIMENT AND EROSION PLANS, GRADING PLANS, OR STORMWATER MANAGEMENT PLANS; LOCAL GOVERNMENT OFFICIALS; AND THE OPERATOR OF A MUNICIPAL SEPARATE STORM SEWER (MS4) RECEIVING DISCHARGES FROM THE SITE.
- 26. ANY ENTITY THAT MEETS THE DEFINITION OF A "PRIMARY OPERATOR" FOR A LARGE CONSTRUCTION ACTIVITY (FIVE OR MORE ACRES) SHALL BE RESPONSIBLE FOR COMPLETING AND SUBMITTING A NOTICE OF INTENT (NOI) AND A NOTICE OF TERMINATION (NOT) WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ).
- 27. THE CONTRACTOR MUST CONSTRUCT AND MAINTAIN A PERMANENT STABLE PROTECTIVE COVER (GRASS) FOR EROSION AND SEDIMENT CONTROL ON ALL LAND SURFACES EXPOSED OR DISTURBED BY CONSTRUCTION OF THE PERMITTED PROJECT. THE PROTECTIVE COVER MUST BE INSTALLED WITHIN FOURTEEN DAYS AFTER FINAL GRADING OF THE AFFECTED LAND SURFACE. A PERMANENT STABLE COVER MUST BE ESTABLISHED WITHIN 60 DAYS OF IT'S INSTALLATION.
- 28. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL PROVIDE AS-BUILT PLANS IDENTIFYING ALL DEVIATIONS OR VARIATIONS OF ORIGINAL PLANS. AS-BUILT PLANS ARE SUBSIDIARY TO ALL OTHER BID ITEMS AND SHALL NOT BE PAID FOR AS A SEPARATE LINE ITEM.
- 29. DURING CONSTRUCTION, ALL MATERIAL TESTING SHALL BE COORDINATED WITH THE CITY OF GEORGETOWN CONSTRUCTION INSPECTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE CITY STANDARD SPECIFICATIONS. ALL SOILS TESTING IS THE RESPONSIBILITY OF AND WILL BE PAID FOR BY THE CONTRACTOR. MATERIAL TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
- 30. ALL EXISTING TRAFFIC AND STREET SIGNS DISTURBED SHALL BE REINSTALLED WHERE APPLICABLE BY THE
- 31. ALL EXISTING SHRUBS, TREES, PLANTING, AND OTHER VEGETATION, OUTSIDE OF PROPERTY LIMITS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED WITH EQUIVALENT MATERIAL BY THE CONTRACTOR AT NO ADDITIONAL COST
- 32. THE CONTRACTOR SHALL SALVAGE AND PROTECT ALL EXISTING POWER POLES, SIGNS, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC. DURING ALL CONSTRUCTION PHASES.
- 33. CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL SILT AND DEBRIS OFFSITE FROM THE EXISTING ROADWAYS AND PROJECT SITE THAT ARE A RESULT OF THE PROPOSED CONSTRUCTION AS REQUESTED BY THE CITY OF GEORGETOWN. AT A MINIMUM, THIS TASK SHOULD OCCUR ONCE A WEEK.
- 34. CONNECTIONS TO EXISTING FACILITIES SHALL BE ACCOMPLISHED IN A NEAT AND PROFESSIONAL MANNER. WHEN FIELD CONDITIONS INDICATE ANY VARIANCE FROM DETAILED METHODS, THE CONTRACTOR SHALL PROVIDE COMPREHENSIVE AND DETAILED DRAWINGS (FOR APPROVAL) OF METHODS PROPOSED.
- 35. WATER SHALL NOT BE PERMITTED IN OPEN TRENCHES DURING CONSTRUCTION.
- 36. CONTRACTOR SHALL CONTACT THE DESIGNATED CONSTRUCTION INSPECTOR ASSIGNED TO THIS PROJECT AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION.
- 37. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A TRENCH SAFETY PLAN TO THE CITY OF GEORGETOWN PUBLIC WORKS DEPARTMENT AT THE TIME OF THE PRECONSTRUCTION MEETING, OR PRIOR TO BEGINNING CONSTRUCTION OF THESE IMPROVEMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY STANDARDS, TEXAS STATE LAW, AND O.S.H.A. STANDARDS FOR ALL EXCAVATION IN EXCESS OF FIVE FEET IN DEPTH. NO OPEN TRENCHES WILL BE ALLOWED OVERNIGHT WITHOUT THE PRIOR SPECIFIC WRITTEN APPROVAL OF THE CITY OF GEORGETOWN PUBLIC WORKS DEPARTMENT, OR DESIGNATED REPRESENTATIVE. ONSITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 38. CONTRACTOR TO REVIEW DESIGN INTENT OF THESE PLANS AND SUBMIT REQUESTS-FOR-INFORMATION IN A TIMELY MANNER PRIOR TO COMMENCING THAT WORK.
- 39. ALL APPURTENANCES INSTALLED IN PAVEMENT AREAS SHALL BE ADJUSTED AS REQUIRED TO BE FLUSH WITH FINISHED PAVEMENT.
- 40. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR COMPLETING AND IMPLEMENTING TRAFFIC CONTROL PLAN.

PAVING & STRIPING NOTES

- ALL CONSTRUCTION SHALL BE IN GENERAL ACCORDANCE WITH THESE PLANS, CITY OF GEORGETOWN, TX STANDARD SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT AND COMMONLY ACCEPTED CONSTRUCTION STANDARDS.
- TESTING OF MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE PAVING IMPROVEMENTS SHALL BE PERFORMED BY AN APPROVED AGENCY FOR TESTING MATERIALS. THE NOMINATION OF THE TESTING LABORATORY AND THE PAVEMENT OF SUCH TESTING SERVICES SHALL BE MADE BY THE CONTRACTOR. THE OWNER SHALL APPROVE THE LABORATORY NOMINATED TO DO THE TESTING OF MATERIALS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SHOW BY STANDARD TESTING PROCEDURES THAT THE WORK CONSTRUCTED DOES MEET THE REQUIREMENTS OF THE CITY'S SPECIFICATIONS AND THESE PLANS.
- BARRIER FREE RAMPS SHALL BE CONSTRUCTED AT ALL DRIVEWAY APPROACHES PER CITY
- 4. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
- CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS FOR FIRE LANES, PARKING STALLS, HANDICAPPED PARKING SYMBOLS, AND MISCELLANEOUS STRIPING WITHIN PARKING LOT AND AROUND BUILDING AS SHOWN ON THE PLANS. ALL PAINT FOR PAVEMENT MARKINGS SHALL ADHERE TO CITY OF GEORGETOWN STANDARD DETAILS AND SPECIFICATIONS.
- 6. REFER TO GEOTECHNICAL REPORT FOR PAVING JOINT LAYOUT PLAN.
- 7. REFER TO GEOTECHNICAL REPORT FOR REINFORCEMENT STEEL.
- 8. REFER TO GEOTECHNICAL REPORT FOR SOIL COMPACTION SPECIFICATION.
- 9. FIRE LANES SHALL BE DESIGNATED BY CONTINUOUS PAINTED LINES FOUR (4) INCHES IN WIDTH ON EACH SIDE OF THE FIRE LANE STARTING AT THE ENTRANCE FROM THE STREET AND TO BE CONTINUED TO THE EXIT. SUCH LINES SHALL BE BRIGHT RED IN COLOR.
- 10. FIRE LANES ADJACENT TO CURBS SHALL BE OUTLINED BY A FOUR (4) INCH WIDE STRIP PAINTED BRIGHT RED IN COLOR ALONG THE CURB'S GUTTER LINE.
- 11. THE WORDS "FIRE LANE" AND "NO PARKING" SHALL BE STENCILED IN FOUR (4) INCH HIGH WHITE LETTERS ALTERNATELY EVERY FIFTEEN (15) FEET ALONG THE RED FIRE LANE STRIPES.
- 12. ALL HANDICAP RAMPING, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO THE AMERICANS WITH DISABILITIES ACT THAT IS MOST CURRENT.
- 13. REFERENCE CITY OF GEORGETOWN, TX STANDARD CONSTRUCTION DETAILS FOR HANDICAP RAMP AND OTHER PAVING DETAILS.
- 14. CONTRACTOR RESPONSIBLE FOR PREPARATION, SUBMITTAL, AND APPROVAL BY CITY OF GEORGETOWN, TX OF TRAFFIC CONTROL PLAN PRIOR TO START OF CONSTRUCTION.
- SIDEWALKS ADJACENT TO CURB SHALL BE CONNECTED TO BACK OF CURB USING LONGITUDINAL BUTT JOINT.
- 16. UNLESS THE PLANS SPECIFICALLY DICTATE TO THE CONTRARY, ON-SITE AND OTHER DIRECTIONAL SIGNS SHALL BE LOCATED OUT OF THE PEDESTRIAN AND AUTOMOBILE ROUTES AND SHALL BE LOCATED BETWEEN THREE TO FIVE FEET BEHIND THE NEAREST BACK OF CURB. SIGN HEIGHT, LOCATION, AND STRUCTURE SHALL BE SUCH THAT THE SIGNS POSE NO THREAT TO PUBLIC SAFETY.
- 17. UNLESS THE PLANS SPECIFICALLY DICTATE TO THE CONTRARY, ON-SITE AND OTHER DIRECTIONAL SIGNS SHALL BE ORIENTED SO THEY ARE READILY VISIBLE TO THE ONCOMING TRAFFIC FOR WHICH THEY ARE INTENDED, FIELD ADJUSTMENTS OF LOCATION AND ORIENTATION OF THE SIGNS ARE TO BE MADE TO ACCOMPLISH THIS.
- 18. THE CONTRACTOR FOR THE PROJECT SHALL NOT PLACE ANY PERMANENT PAVEMENT UNTIL ALL SLEEVING FOR ELECTRIC, GAS, TELEPHONE, CABLE TV, SITE IRRIGATION, OR ANY OTHER UNDERGROUND UTILITY HAS BEEN INSTALLED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THAT ALL SLEEVING IS IN PLACE PRIOR TO PLACEMENT OF PERMANENT PAVEMENT.
- 19. BEFORE PLACING PAVEMENT, CONTRACTOR SHALL VERIFY THAT SUITABLE HANDICAPPED ROUTES (PER A.D.A. & T.A.S.) EXIST TO AND FROM EVERY DOOR. IN NO CASE SHALL HANDICAP RAMP SLOPES EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWALK CROSS SLOPES EXCEED 2.0 PERCENT. IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPES EXCEED 5.0 PERCENT. CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO PAVING IF ANY EXCESSIVE SLOPES ARE ENCOUNTERED. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR A.D.A. AND T.A.S. COMPLIANCE ISSUES.
- 20. STREETS, SIDEWALKS, DRIVEWAYS, AND STORM DRAINAGE FACILITIES IN THE PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE CITY OF GEORGETOWN INFRASTRUCTURE DESIGN & DEVELOPMENT STANDARDS MANUAL, LATEST EDITION.
- FIRE LANES SHALL REMAIN OPEN/ACCESSIBLE AT ALL TIMES DURING CONSTRUCTION; FIRE LANE SHALL BE INSTALLED & ACCEPTED BY THE CITY PRIOR TO ANY CONSTRUCTION ABOVE THE FOUNDATION

GRADING NOTES

- ALL CONSTRUCTION SHALL BE IN GENERAL ACCORDANCE WITH THESE PLANS, CITY OF GEORGETOWN, TX STANDARD SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT, AND COMMONLY ACCEPTED CONSTRUCTION STANDARDS.
- 2. UNLESS OTHERWISE NOTED, PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN IN PAVED AREAS REFLECT TOP OF PAVEMENT SURFACE. ADD .50' TO PAVING GRADE FOR TOP OF CURB GRADE. THE LIMITS OF EARTHWORK IN PAVED AREAS IS THE BOTTOM OF PAVEMENT.
- 3. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL USE SILT FENCES (OR OTHER METHODS APPROVED BY THE ENGINEER AND CITY) AS REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, OR LOCAL EROSION, CONSERVATION, AND SILTATION REQUIREMENTS. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS OR OTHER GROWTH TO PREVENT EROSION. CONTRACTOR IS RESPONSIBLE FOR FILING N.O.I. AND N.O.T. WITH THE TCEQ. CONTRACTOR SOLELY RESPONSIBLE FOR ALL MANDATED SWPPP RECORD KEEPING AND REPORTING.
- I. ALL EXCAVATING IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED. UNUSABLE EXCAVATED MATERIAL AND ALL WASTE RESULTING FROM SITE CLEARING AND GRUBBING SHALL BE DISPOSED OF OFF SITE BY THE GRADING CONTRACTOR AT HIS EXPENSE.
- 5. BEFORE ANY EARTHWORK IS PERFORMED, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF PAVEMENT AND OTHER ITEMS ESTABLISHED BY THE PLANS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK.
- 6. REFERENCE STRUCTURAL DRAWINGS AND SPECIFICATIONS AND GEOTECHNICAL REPORT FOR STRUCTURAL SCOPE AND PAVING SUBGRADE INFORMATION.
- THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND MOISTURE CONDITION ALL FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
- GRADING CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS.
- 9. TESTING OF MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE PAVING IMPROVEMENTS SHALL BE PERFORMED BY AN APPROVED AGENCY FOR TESTING MATERIALS. THE NOMINATION OF THE TESTING LABORATORY AND THE PAYMENTS FOR SUCH TESTING SERVICES SHALL BE MADE BY THE CONTRACTOR. THE OWNER SHALL APPROVE THE LABORATORY NOMINATED TO DO THE TESTING OF MATERIALS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SHOW BY STANDARD TESTING PROCEDURES THAT THE WORK CONSTRUCTED DOES MEET THE REQUIREMENTS OF THE CITY'S SPECIFICATIONS AND THESE PLANS.
- PROPOSED CONTOURS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND DESIGNATED GRADIENT ARE TO BE USED IN CASE OF DISCREPANCY.
- 11. REFER TO SITE PLAN AND/OR DIMENSION CONTROL PLAN AND FINAL PLAT FOR HORIZONTAL DIMENSIONS
- PRIOR TO COMMENCING CONSTRUCTION.

 13. NO TREE SHALL BE REMOVED OR DAMAGED WITHOUT PRIOR AUTHORIZATION OF THE OWNER OR OWNER'S REPRESENTATIVE. EXISTING TREES SHALL BE PRESERVED WHENEVER

12. REFER TO EROSION CONTROL PLAN FOR EROSION CONTROL DEVICES TO BE INSTALLED

- 14. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL CONTROL PRIOR TO COMMENCING CONSTRUCTION AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES BEFORE CONSTRUCTION COMMENCES.
- 15. AFTER PLACEMENT OF SUBGRADE AND PRIOR TO PLACEMENT OF PAVEMENT, CONTRACTOR SHALL TEST AND OBSERVE PAVEMENT AREAS FOR EVIDENCE OF PONDING. ALL AREAS SHALL ADEQUATELY DRAIN TOWARDS THE INTENDED STRUCTURE TO CONVEY STORM RUNOFF. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER AND ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED.

STORM SEWER NOTES

- 1. THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND SHALL NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN) WITHIN SCOPE OF CONSTRUCTION. IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE.
- 2. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF CURB INLETS AND GRATE INLETS AND ALL UTILITIES CROSSING THE STORM SEWER.
- 3. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE STORM SEWER
- 4. THE INSPECTOR SHALL INSPECT ALL "PUBLIC" CONSTRUCTION. THE CONTRACTOR'S BID PRICE SHALL INCLUDE ALL INSPECTION FEES.
- 5. ALL PVC TO RCP CONNECTIONS SHALL BE CONSTRUCTED WITH CONCRETE
- 6. ALL ONSITE STORM SEWER LINES SHALL BE HDPE, ALL PRIVATE STORM SHALL BE NOTED AS ON PLANS. CONTRACTOR TO CONTACT ENGINEER WITH QUESTIONS ABOUT PIPE MATERIAL PRIOR TO ORDERING. CONTRACTOR SHALL SUBMIT TECHNICAL DATA TO PROJECT ENGINEER AND CITY ENGINEER FOR APPROVAL PRIOR TO ORDERING MATERIAL.
- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION FOR NORTH CENTRAL TEXAS, LATEST EDITION, AND ANY SPECIAL PROVISION AS APPROVED BY THE CITY OF GEORGETOWN. TX.
- 8. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION STAKING FOR ALL STORM
- SEWER LINES AND OTHER UTILITIES.9. EMBEDMENT FOR ALL ONSITE SEWER LINES, PUBLIC OR PRIVATE, SHALL BE
- PER CITY OF GEORGETOWN, TX STANDARD DETAILS.
- 11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND IMPLEMENTING A TRENCH PROTECTION PLAN FOR ALL OPEN TRENCH

10. REFER TO TCEQ DESIGN GUIDELINES (CHAPTER 290) FOR ALL UTILITY

- 12. USE 4 FOOT JOINTS WITH BEVELED ENDS IF RADIUS OF STORM SEWER IS LESS
- 13. ALL PRIVATE LANDSCAPE AREA DRAINS SHALL BE OF MATERIAL APPROVED BY

WATER AND SANITARY SEWER NOTES

BOTH ENGINEER AND LANDSCAPE ARCHITECT.

CROSSINGS.

THAN 100 FEET

- ALL MATERIALS AND WORKMANSHIP TO CONFORM TO THE REQUIREMENTS SET FORTH IN THE CITY OF GEORGETOWN WATER AND WASTEWATER CONSTRUCTION STANDARDS AND DETAILS, LATEST EDITION.
- 2. WATER PIPE SHALL BE PVC C-900 DR 18, EXCEPT WHEN OTHERWISE NOTED.
- 3. SEWER PIPE SHALL BE MINIMUM SDR 35 PVC OR ULTRA RIB PVC SDR 26.
- 4. WATER MAINS SHALL HAVE THE FOLLOWING MINIMUM COVER BELOW STREET GRADES:

 SIZE
 6"
 COVER
 3 5'
- 6" 3.5' 8" 4.0' 10" 4.0' 12" 5.0' LARGER AS SHOWN ON PLANS
- 5. PLASTIC TAPE FOR UTILITY SERVICES SHALL BE ATTACHED TO THE ENDS OF ALL WATER AND SEWER SERVICE LINES AND EXTEND ABOVE GROUND LEVEL THE TAPE SHALL MEET THE FOLLOWING SPECIFICATION:
- A. "GEORGETOWN MARKING TAPE" OR APPROVED EQUAL.
 B. ROLL MARKED CONTINUOUSLY, "CAUTION WATER LINE" OR "CAUTION SEWER LINE"
- C. SIX (6) INCHES IN WIDTH.
 D. RED TAPE FOR SEWER SERVICES.
 E. BLUE TAPE FOR WATER SERVICES.
- 6. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY EXACT LOCATIONS OF EXISTING PUBLIC AND PRIVATE UTILITIES AND SERVICES PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL CALL 811 FOR FIELD LOCATION OF EXISTING UTILITIES. CALL AT LEAST 48 HOURS BEFORE LOCATIONS ARE NEEDED. NOTE THAT THE DIG TESS SERVICE DOES NOT
- LOCATE ALL UTILITIES, ONLY THOSE REGISTERED WITH THE SERVICE.
 REFER TO SITE GRADING PLANS, PAVING PLANS, AND LANDSCAPE PLANS FOR FINAL GRADES FOR DETERMINING PROPOSED MANHOLE RIM ELEVATIONS.
- 8. LOCATIONS AND SIZES OF EXISTING PUBLIC AND PRIVATE UTILITIES SHOWN ON THESE PLANS ARE FROM CITY AND UTILITY COMPANY RECORDS ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR LOCATING ALL UTILITIES AND FOR DAMAGES RESULTING FROM FAILURE TO DO SO.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING "RECORD" PLANS TO THE ENGINEER SHOWING THE LOCATION OF WATER AND SEWER SERVICES AND ANY DEVIATIONS FROM PLANS MADE DURING CONSTRUCTION.
- 10. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN, COORDINATING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITY SERVICES ENTERING THE BUILDING AND/OR CROSSING OTHER UTILITIES.
- 11. ALL WATER AND SANITARY SEWER SERVICES SHALL TERMINATE FIVE (5) FEET OUTSIDE THE BUILDING, UNLESS NOTED OTHERWISE.
- 12. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE UTILITIES. ALL PUBLIC PIPE, STRUCTURES, AND FITTINGS SHALL BE INSPECTED BY THE CITY INSPECTOR PRIOR TO BEING COVERED. THE INSPECTOR MUST ALSO BE PRESENT DURING DISINFECTION AND PRESSURE TESTING OF ALL MAINS. THE CONTRACTOR'S BID PRICE SHALL INCLUDE ALL INSPECTION FEES.
- 13. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE TRENCH SAFETY DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A TRENCH EXCAVATION PROTECTION PLAN, SEALED BY A GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF TEXAS, FOR ALL TRENCHES DEEPER THAN FIVE (5) FEET
- 14. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION STAKING FOR ALL WATER AND SANITARY SEWER LINES AND OTHER UTILITIES.
- 15. REFER TO TCEQ DESIGN GUIDELINES (CHAPTER 290) FOR ALL UTILITY CROSSINGS.
- 16. CONTRACTOR TO SEQUENCE CONSTRUCTION AS TO AVOID INTERRUPTION OF WATER OR SANITARY SEWER SERVICE TO SURROUNDING AREAS.
- 17. EXISTING MANHOLE TOPS, VALVE BOXES, ETC. ARE TO BE ADJUSTED AS REQUIRED TO MATCH PROPOSED GRADES.
- FIRE HYDRANTS SHALL BE LOCATED A MINIMUM OF TWO (2) FEET AND A MAXIMUM OF SIX (6) FEET BEHIND THE CURB LINE OF FIRE LANE AND STREET.
- 19. ANY WATER OR SANITARY SEWER SERVICE LOCATED OUTSIDE OF A STREET, ALLEY OR EASEMENT SHALL BE INSTALLED BY A PLUMBER AND BE INSPECTED BY CODE ENFORCEMENT.

CITY OF GEORGETOWN NOTES:

REQUIREMENTS AND CODES.

- 1. THE CONSTRUCTION PORTION OF THESE PLANS WERE PREPARED, SEALED, SIGNED AND DATED BY A TEXAS LICENSED PROFESSIONAL ENGINEER. THEREFORE BASED ON THE ENGINEER'S CONCURRENCE OF COMPLIANCE, THE CONSTRUCTION PLANS FOR CONSTRUCTION OF THE PROPOSED PROJECT ARE HEREBY APPROVED SUBJECT TO THE STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS MANUAL AND ALL OTHER APPLICABLE CITY, STATE AND FEDERAL
- 2. THIS PROJECT IS SUBJECT TO ALL CITY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF SUBMITTAL OF THE PROJECT TO THE CITY.
- 3. THE SITE CONSTRUCTION PLANS SHALL MEET ALL REQUIREMENTS OF THE APPROVED SITE PLAN.
- 4. WASTEWATER MAINS AND SERVICE LINES SHALL BE SDR 26 PVC.
- E WASTEWATER MAINS SHALL RE INSTALLER WITHOUT HORIZONTAL OR VERTICAL RENDS
- 5. WASTEWATER MAINS SHALL BE INSTALLED WITHOUT HORIZONTAL OR VERTICAL BENDS.
- 6. MAXIMUM DISTANCE BETWEEN WASTEWATER MANHOLES IS 500 FEET.
- CONTRACTOR ACCORDING TO CITY OF GEORGETOWN AND TCEQ REQUIREMENTS.

 8. WASTEWATER MANHOLES SHALL BE VACUUM TESTED AND COATED BY THE CONTRACTOR
- ACCORDING TO CITY OF GEORGETOWN AND TCEQ REQUIREMENTS.

 9. WASTEWATER MAINS SHALL BE CAMERA TESTED BY THE CONTRACTOR AND SUBMITTED TO THE CITY ON DVD FORMAT PRIOR TO PAVING THE STREETS.

WASTEWATER MAINS SHALL BE LOW PRESSURE AIR TESTED AND MANDREL TESTED BY THE

- 10. PRIVATE WATER SYSTEM FIRE LINES SHALL BE TESTED BY THE CONTRACTOR TO 200 PSI FOR 2
- 11. PRIVATE WATER SYSTEM FIRE LINES SHALL BE DUCTILE IRON PIPING FROM THE WATER MAIN TO THE BUILDING SPRINKLER SYSTEM, AND 200 PSI C900 PVC FOR ALL OTHERS.
- 12. PUBLIC WATER SYSTEM MAINS SHALL BE 150 PSI C900 PVC AND TESTED BY THE CONTRACTOR AT 200 PSI FOR 15 MINUTES AND 150 PSI FOR 2 HOURS.
 13. ALL BENDS AND CHANGES IN DIRECTION ON WATER MAINS SHALL BE RESTRAINED AND THRUST
- 14. LONG FIRE HYDRANT LEADS SHALL BE RESTRAINED.
- 15. ALL WATER LINES ARE TO BE BACTERIA TESTED BY THE CONTRACTOR ACCORDING TO CITY OF GEORGETOWN STANDARDS AND SPECIFICATIONS.
- 16. WATER AND SEWER MAIN CROSSINGS SHALL MEET ALL REQUIREMENTS OF THE TCEQ AND THE
- 17. FLEXIBLE BASE MATERIAL FOR PUBLIC STREETS SHALL BE TXDOT TYPE A GRADE 1.
- 18. HOT MIX ASPHALTIC CONCRETE PAVEMENT SHALL BE TYPE D UNLESS OTHERWISE SPECIFIED AND SHALL BE A MINIMUM OF 2 INCHES THICK ON PUBLIC STREETS AND ROADWAYS.
- 19. ALL SIDEWALK RAMPS AND SIDEWALK ALONG PARKLAND, OPEN SPACE, OR OTHER NON-RESIDENTIAL LOTS ARE TO BE INSTALLED WITH THE PUBLIC INFRASTRUCTURE.
- 20. A MAINTENANCE BOND IS REQUIRED TO BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF THE PUBLIC IMPROVEMENTS. THIS BOND SHALL BE ESTABLISHED FOR 2 YEARS IN THE AMOUNT OF 10% OF THE COST OF THE PUBLIC IMPROVEMENTS AND SHALL FOLLOW THE CITY FORMAT.
- 21. RECORD DRAWINGS OF PUBLIC IMPROVEMENTS SHALL BE SUBMITTED TO THE CITY BY THE DESIGN ENGINEER PRIOR TO ACCEPTANCE OF THE PROJECT. THESE DRAWINGS SHALL BE A PDF EMAILED TO THE CITY DEVELOPMENT ENGINEER.

DISTRICT ENGINEER NOTES:

THE DISTRICT ENGINEER, JONES-HEROY & ASSOCIATES, INC. (KEN HEROY, PE. 512-989-2200) SHALL BE CONTACTED 48 HOURS PRIOR TO:

- I) PRE-CONSTRUCTION MEETINGS
- II) BEGINNING EACH PHASE OF CONSTRUCTION

III) TESTING OF WATER AND/OR WASTEWATER LINES; AND,

IV) FINAL WALK-THROUGH OF FACILITIES

© 2025 KIMLEY-HORN AND A 10814 JOLLYVILLE ROAD, CAMPUS IV, S PHONE: 512-418.

ALEXANDER C. STEADMAN

138792

108/19/2025

DATE
AUGUST 202
SCALE: AS SHC
DESIGNED BY: [

GENERA! NO

SHLANDS ASE 8B & 9

BENCHMARKS

TBM# 101 " X " SET IN HEADWALL OF CULVERT LOCATED IN THE MEDIAN OF STATE HIGHWAY AND BUNNET

ELEVATION =821.82 FEET (AS SHOWN)

SHEET NUMBER

6

OF 70

 \mathbf{m}

25-XX-CON

Know what's below. Call before you dig. WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. BENCHMARKS

STANDARDS. THE CITY SPECIFICATIONS SHALL GOVERN WHERE OTHER SPECIFICATIONS DO NOT EXIST. IN CASE OF CONFLICTING SPECIFICATIONS OR DETAILS, THE MORE RESTRICTIVE SPECIFICATION AND DETAIL SHALL BE FOLLOWED. 2. THE CONTRACTOR SHALL COMPLY WITH CITY (OR TOWN) "GENERAL NOTES" FOR CONSTRUCTION, IF EXISTING AND REQUIRED BY THE CITY. FOR INSTANCES WHERE THEY CONFLICT WITH THESE KH GENERAL NOTES, THEN THE MORE RESTRICTIVE SHALL APPLY. 3. THE CONTRACTOR SHALL FURNISH ALL MATERIAL AND LABOR TO CONSTRUCT THE FACILITY AS SHOWN AND DESCRIBED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE APPROPRIATE AUTHORITIES' SPECIFICATIONS AND REQUIREMENTS.

4. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO DETERMINE EXISTING CONDITIONS. 5. THE EXISTING CONDITIONS SHOWN ON THESE PLANS WERE PROVIDED BY THE TOPOGRAPHIC SURVEY PREPARED BY THE PROJECT SURVEYOR, AND ARE BASED ON THE BENCHMARKS SHOWN. THE CONTRACTOR SHALL REFERENCE THE SAME BENCHMARKS. 6. THE CONTRACTOR SHALL REVIEW AND VERIFY THE EXISTING TOPOGRAPHIC SURVEY SHOWN ON THE PLANS REPRESENTS EXISTING

FIELD CONDITIONS PRIOR TO CONSTRUCTION, AND SHALL REPORT ANY DISCREPANCIES FOUND TO THE OWNER AND ENGINEER 7. IF THE CONTRACTOR DOES NOT ACCEPT THE EXISTING TOPOGRAPHIC SURVEY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY AT THEIR OWN EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED PROFESSIONAL LAND SURVEYOR TO THE OWNER AND ENGINEER FOR REVIEW.

8. CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION SURVEYING AND STAKING.

9. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL CONTROL. INCLUDING BENCHMARKS PRIOR TO COMMENCING CONSTRUCTION OR STAKING OF IMPROVEMENTS. PROPERTY LINES AND CORNERS SHALL BE HELD AS THE HORIZONTAL CONTROL. 10. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS, ELEVATIONS, AND FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE ARCHITECT, ENGINEER, AND IF APPLICABLE THE CITY AND OWNER. NO CONSIDERATION WILL BE GIVEN TO CHANGE ORDERS FOR WHICH THE CITY, ENGINEER, AND OWNER WERE NOT CONTACTED PRIOR TO CONSTRUCTION OF THE AFFECTED ITEM. 11. CONTRACTOR SHALL THOROUGHLY CHECK COORDINATION OF CIVIL, LANDSCAPE, MEP, ARCHITECTURAL, AND OTHER PLANS PRIOR TO

12.IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE BURIED OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA BEFORE COMMENCING WORK TO HAVE THEM LOCATE THEIR EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION.

COMMENCING CONSTRUCTION. OWNER/ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY PRIOR TO COMMENCING WITH

13. CONTRACTOR SHALL CALL TEXAS 811 AN ADEQUATE AMOUNT OF TIME PRIOR TO COMMENCING CONSTRUCTION OR ANY EXCAVATION. 14. CONTRACTOR SHALL USE EXTREME CAUTION AS THE SITE CONTAINS VARIOUS KNOWN AND UNKNOWN PUBLIC AND PRIVATE UTILITIES. 15 THE LOCATIONS FLEVATIONS DEPTH AND DIMENSIONS OF EXISTING UTILITIES SHOWN ON THE PLANS WERE OBTAINED FROM AVAILABLE UTILITY COMPANY MAPS AND PLANS, AND ARE CONSIDERED APPROXIMATE AND INCOMPLETE. IT SHALL BE THE CONTRACTORS' RESPONSIBILITY TO VERIFY THE PRESENCE, LOCATION, ELEVATION, DEPTH, AND DIMENSION OF EXISTING UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION SO THAT ADJUSTMENTS CAN BE MADE TO PROVIDE ADEQUATE CLEARANCES. THE ENGINEER SHALL BE NOTIFIED WHEN A PROPOSED IMPROVEMENT CONFLICTS WITH AN EXISTING UTILITY

16. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ANY ADJUSTMENTS AND RELOCATIONS OF EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO, ADJUSTING EXISTING MANHOLES TO MATCH PROPOSED GRADE, RELOCATING EXISTING POLES AND GUY WIRES THAT ARE LOCATED IN PROPOSED DRIVEWAYS, ADJUSTING THE HORIZONTAL OR VERTICAL ALIGNMENT OF EXISTING UNDERGROUND UTILITIES TO ACCOMMODATE PROPOSED GRADE OR CROSSING WITH A PROPOSED UTILITY, AND ANY OTHERS THAT MAY BE ENCOUNTERED THAT ARE UNKNOWN AT THIS TIME AND NOT SHOWN ON THESE PLANS 17. CONTRACTOR SHALL ARRANGE FOR OR PROVIDE, AT ITS EXPENSE, ALL GAS, TELECOMMUNICATIONS, CABLE, OVERHEAD AND

UNDERGROUND POWER LINE, AND UTILITY POLE ADJUSTMENTS NEEDED. 18. CONTRACTOR IS RESPONSIBLE FOR COORDINATING INSTALLATION OF FRANCHISE UTILITIES THAT ARE NECESSARY FOR ON-SITE AND OFF-SITE CONSTRUCTION, AND SERVICE TO THE PROPOSED DEVELOPMENT.

19. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGES DUE TO THE CONTRACTORS' FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UTILITIES. THE OWNER OR ENGINEER WILL ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES. IF IT IS NECESSARY TO SHORE, BRACE, SWING OR RELOCATE A UTILITY, THE UTILITY COMPANY OR DEPARTMENT AFFECTED SHALL BE CONTACTED BY THE CONTRACTOR AND THEIR PERMISSION OBTAINED REGARDING THE METHOD TO USE FOR SUCH WORK. 20.BRACING OF UTILITY POLES MAY BE REQUIRED BY THE UTILITY COMPANIES WHEN TRENCHING OR EXCAVATING IN CLOSE PROXIMITY

TO THE POLES. THE COST OF BRACING POLES WILL BE BORNE BY THE CONTRACTOR, WITH NO SEPARATE PAY ITEM FOR THIS WORK. THE COST IS INCIDENTAL TO THE PAY ITEM. 21.CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND POWER

LINES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, FEDERAL AND UTILITY OWNER REGULATIONS PERTAINING TO WORK SETBACKS FROM POWER LINES 22.THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL REQUIRED CONSTRUCTION PERMITS, APPROVALS, AND BONDS PRIOR TO CONSTRUCTION.

23. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES A COPY OF THE CONTRACT DOCUMENTS INCLUDING PLANS, GEOTECHNICAL REPORT AND ADDENDA, PROJECT AND CITY SPECIFICATIONS, AND SPECIAL CONDITIONS, COPIES OF ANY REQUIRED CONSTRUCTION PERMITS FROSION CONTROL PLANS SWPPP AND INSPECTION REPORTS 24.ALL SHOP DRAWINGS AND OTHER DOCUMENTS THAT REQUIRE ENGINEER REVIEW SHALL BE SUBMITTED BY THE CONTRACTOR SUFFICIENTLY IN ADVANCE OF CONSTRUCTION OF THAT ITEM, SO THAT NO LESS THAN 10 BUSINESS DAYS FOR REVIEW AND RESPONSE

25.ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES, JURISDICTIONAL AGENCIES, AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO USE OF THE FACILITY AND THE FINAL CONNECTION OF SERVICES. 26.CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS. 27. CONTRACTOR'S BID PRICE SHALL INCLUDE ALL INSPECTION FEES

28.ALL SYMBOLS SHOWN ON THESE PLANS (E.G. FIRE HYDRANT, METERS, VALVES, INLETS, ETC....) ARE FOR PRESENTATION PURPOSES ONLY AND ARE NOT TO SCALE. CONTRACTOR SHALL COORDINATE FINAL SIZES AND LOCATIONS WITH APPROPRIATE CITY INSPECTOR. 29. THE SCOPE OF WORK FOR THE CIVIL IMPROVEMENTS SHOWN ON THESE PLANS TERMINATES 5-FEET FROM THE BUILDING. REFERENCE THE BUILDING PLANS (E.G. ARCHITECTURAL, STRUCTURAL, MEP) FOR AREAS WITHIN 5-FEET OF THE BUILDING AND WITHIN THE BUILDING FOOTPRINT.

30.REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR ALL FINAL BUILDING DIMENSIONS 31. THE PROPOSED BUILDING FOOTPRINT(S) SHOWN IN THESE PLANS WAS PROVIDED TO KIMLEY-HORN AND ASSOCIATES. INC. (KH) BY THE PROJECT ARCHITECT AT THE TIME THESE PLANS WERE PREPARED. IT MAY NOT BE THE FINAL CORRECT VERSION BECAUSE THE BUILDING DESIGN WAS ONGOING. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFIRMING THE FINAL CORRECT VERSION OF THE BUILDING FOOTPRINT WITH THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO LAYOUT. DIMENSIONS AND/OR COORDINATES SHOWN ON THESE PLANS WERE BASED ON THE ABOVE STATED ARCHITECTURAL FOOTPRINT. AND ARE THEREFORE A PRELIMINARY LOCATION OF THE BUILDING. THE CONTRACTOR IS SOLELY RESPONSIBLE TO VERIFY WHAT PART OF THE BUILDING THE ARCHITECT'S FOOTPRINT REPRESENTS (E.G. SLAB. OUTSIDE WALL, MASONRY LEDGE, ETC.....) AND TO CONFIRM ITS FINAL POSITION ON THE SITE

BASED ON THE FINAL ARCHITECTURAL FOOTPRINT, CIVIL DIMENSION CONTROL PLAN, SURVEY BOUNDARY AND/OR PLAT. ANY DIFFERENCES FOUND SHALL BE REPORTED TO KH IMMEDIATELY. 32.ALL CONSTRUCTION SHALL COMPLY WITH THE PROJECT'S FINAL GEOTECHNICAL REPORT (OR LATEST EDITION), INCLUDING

SUBSEQUENT ADDENDA 33.CONTRACTOR IS RESPONSIBLE FOR ALL MATERIALS TESTING AND CERTIFICATION, UNLESS SPECIFIED OTHERWISE BY OWNER. ALL MATERIALS TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR AND COMPLY WITH CITY STANDARD SPECIFICATIONS AND GEOTECHNICAL REPORT. TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING MATERIALS. OWNER SHALL APPROVE THE AGENCY NOMINATED BY THE CONTRACTOR FOR MATERIALS TESTING.

34.ALL COPIES OF MATERIALS TEST RESULTS SHALL BE SENT TO THE OWNER, ENGINEER AND ARCHITECT DIRECTLY FROM THE TESTING 35.IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SHOW, BY THE STANDARD TESTING PROCEDURES OF THE MATERIALS, THAT THE WORK CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS 36.DUE TO THE POTENTIAL FOR DIFFERENTIAL SOIL MOVEMENT ADJACENT TO THE BUILDING, THE CONTRACTOR SHALL ADHERE TO

GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PROPOSED BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC TO FLATWORK ADJACENT TO THE BUILDING, IF NONE IS CURRENTLY EXISTING. 37.ALL CONTRACTORS MUST CONFINE THEIR ACTIVITIES TO THE WORK AREA. NO ENCROACHMENTS OUTSIDE OF THE WORK AREA WILL BE ALLOWED. ANY DAMAGE RESULTING THEREFROM SHALL BE CONTRACTOR'S SOLE RESPONSIBILITY TO REPAIR. 38. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES. UTILITIES. MANHOLES. POLES. GUY WIRES. VALVE COVERS. VAULT

LIDS, FIRE HYDRANTS, COMMUNICATION BOXES/PEDESTALS, AND OTHER FACILITIES TO REMAIN AND SHALL REPAIR ANY DAMAGES AT NO COST TO THE OWNER. 39. THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY PHYSICAL DAMAGE TO PRIVATE PROPERTY OR PUBLIC IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO: FENCES, WALLS, SIGNS, PAVEMENT, CURBS, UTILITIES, SIDEWALKS, GRASS, TREES, LANDSCAPING, AND IRRIGATION SYSTEMS, ETC.... TO ORIGINAL CONDITION OR BETTER AT NO COST TO THE OWNER.

40.ALL AREAS IN EXISTING RIGHT-OF-WAY DISTURBED BY SITE CONSTRUCTION SHALL BE REPAIRED TO ORIGINAL CONDITION OR BETTER, INCLUDING AS NECESSARY GRADING, LANDSCAPING, CULVERTS, AND PAVEMENT. 41.THE CONTRACTOR SHALL SALVAGE ALL EXISTING POWER POLES, SIGNS, WATER VALVES, FIRE HYDRANTS, METERS, ETC... THAT ARE TO BE RELOCATED DURING CONSTRUCTION. 42.CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION, INCLUDING MAINTAINING EXISTING

DITCHES OR CULVERTS FREE OF OBSTRUCTIONS AT ALL TIMES. 43.THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND SUBMITTING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRENCH OPEN TRENCHES SHALL BE ALLOWED OVERNIGHT WITHOUT PRIOR WRITTEN APPROVAL OF THE CITY. 44.THE CONTRACTOR SHALL KEEP TRENCHES FREE FROM WATER.

45.SITE SAFETY IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR 46.THESE PLANS DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE ENGINEER'S SEAL HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF ALL REQUIRED SAFETY

PROCEDURES AND PROGRAMS 47.SIGNS RELATED TO SITE OPERATION OR SAFETY ARE NOT INCLUDED IN THESE PLANS. 48.CONTRACTOR OFFICE AND STAGING AREA SHALL BE AGREED ON BY THE OWNER AND CONTRACTOR PRIOR TO BEGINNING OF CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITTING REQUIREMENTS FOR THE CONSTRUCTION OFFICE, TRAILER,

STORAGE, AND STAGING OPERATIONS AND LOCATIONS 49.LIGHT POLES, SIGNS, AND OTHER OBSTRUCTIONS SHALL NOT BE PLACED IN ACCESSIBLE ROUTES. 50.ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE "TEXAS MANUAL ON UNIFORM

ACTUAL FINISHED GRADES AT THE TIME OF PAVING.

51.TOP RIM ELEVATIONS OF ALL EXISTING AND PROPOSED MANHOLES SHALL BE COORDINATED WITH TOP OF PAVEMENT OR FINISHED GRADE AND SHALL BE ADJUSTED TO BE FLUSH WITH THE ACTUAL FINISHED GRADE AT THE TIME OF PAVING. 52.CONTRACTOR SHALL ADJUST ALL EXISTING AND PROPOSED VALVES, FIRE HYDRANTS, AND OTHER UTILITY APPURTENANCES TO MATCH

53.THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION SEQUENCING AND PHASING, AND SHALL CONTACT THE APPROPRIATE CITY OFFICIALS, INCLUDING BUILDING OFFICIAL, ENGINEERING INSPECTOR, AND FIRE MARSHALL TO LEARN OF ANY REQUIREMENTS. 54.CONTRACTOR IS RESPONSIBLE FOR PREPARATION, SUBMITTAL, AND APPROVAL BY THE CITY OF A TRAFFIC CONTROL PLAN PRIOR TO

THE START OF CONSTRUCTION. AND THEN THE IMPLEMENTATION OF THE PLAN. 55.CONTRACTOR SHALL KEEP A NEAT AND ACCURATE RECORD OF CONSTRUCTION, INCLUDING ANY DEVIATIONS OR VARIANCES FROM

56.THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AS-BUILT PLANS TO THE ENGINEER AND CITY IDENTIFYING ALL DEVIATIONS AND VARIATIONS FROM THESE PLANS MADE DURING CONSTRUCTION.

THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL EROSION CONTROL AND WATER QUALITY REQUIREMENTS, LAWS, AND ORDINANCES THAT APPLY TO THE CONSTRUCTION SITE LAND DISTURBANCE.

2. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE "TCEQ GENERAL PERMIT TO DISCHARGE UNDER THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM TXR 150000".

3. EROSION CONTROL DEVICES SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START 4. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE

5. CONTRACTOR IS SOLELY RESPONSIBLE FOR INSTALLATION, IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL EROSION CONTROL DEVICES, BEST MANAGEMENT PRACTICES (BMPS), AND FOR UPDATING THE EROSION CONTROL PLAN DURING CONSTRUCTION AS FIELD CONDITIONS CHANGE. 6. CONTRACTOR SHALL DOCUMENT THE DATES OF INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL FOR EACH BMP

EMPLOYED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IF APPLICABLE. 7. AS STORM SEWER INLETS ARE INSTALLED ON-SITE, TEMPORARY EROSION CONTROL DEVICES SHALL BE INSTALLED AT EACH INLET PER APPROVED DETAILS.

8. THE EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL THE AREA IT PROTECTS HAS BEEN PERMANENTLY STABILIZED. 9. CONTRACTOR SHALL PROVIDE ADEQUATE EROSION CONTROL DEVICES NEEDED DUE TO PROJECT PHASING. 10. CONTRACTOR SHALL OBSERVE THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES AND MAKE FIELD ADJUSTMENTS AND MODIFICATIONS AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE SITE. IF THE EROSION CONTROL DEVICES DO NOT

EFFECTIVELY CONTROL EROSION AND PREVENT SEDIMENTATION FROM WASHING OFF THE SITE, THEN THE CONTRACTOR SHALL

11. OFF-SITE SOIL BORROW. SPOIL. AND STORAGE AREAS (IF APPLICABLE) ARE CONSIDERED AS PART OF THE PROJECT SITE AND MUST ALSO COMPLY WITH THE EROSION CONTROL REQUIREMENTS FOR THIS PROJECT. THIS INCLUDES THE INSTALLATION OF BMP'S TO CONTROL EROSION AND SEDIMENTATION AND THE ESTABLISHMENT OF PERMANENT GROUND COVER ON DISTURBED AREAS PRIOR TO FINAL APPROVAL OF THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR MODIFYING THE SWPPP AND EROSION CONTROL PLAN TO

INCLUDE BMPS FOR ANY OFF-SITE THAT ARE NOT ANTICIPATED OR SHOWN ON THE EROSION CONTROL PLAN. 12. ALL STAGING, STOCKPILES, SPOIL, AND STORAGE SHALL BE LOCATED SUCH THAT THEY WILL NOT ADVERSELY AFFECT STORM WATER QUALITY. PROTECTIVE MEASURES SHALL BE PROVIDED IF NEEDED TO ACCOMPLISH THIS REQUIREMENT, SUCH AS COVERING OR

ENCIRCLING THE AREA WITH AN APPROPRIATE BARRIER. 13. CONTRACTORS SHALL INSPECT ALL EROSION CONTROL DEVICES, BMPS, DISTURBED AREAS, AND VEHICLE ENTRY AND EXIT AREAS WEEKLY AND WITHIN 24 HOURS OF ALL RAINFALL EVENTS OF 0.5 INCHES OR GREATER, AND KEEP A RECORD OF THIS INSPECTION IN THE SWPPP BOOKLET IF APPLICABLE. TO VERIFY THAT THE DEVICES AND EROSION CONTROL PLAN ARE FUNCTIONING PROPERLY.

14. CONTRACTOR SHALL CONSTRUCT A STABILIZED CONSTRUCTION ENTRANCE AT ALL PRIMARY POINTS OF ACCESS IN ACCORDANCE WITH CITY SPECIFICATIONS. CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION TRAFFIC USES THE STABILIZED ENTRANCE AT ALL TIMES FOR ALL INGRESS/EGRESS 15. SITE ENTRY AND EXITS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING AND FLOWING OF SEDIMENT AND

DIRT ONTO OFF-SITE ROADWAYS. ALL SEDIMENT AND DIRT FROM THE SITE THAT IS DEPOSITED ONTO AN OFF-SITE ROADWAY SHALL BE REMOVED IMMEDIATELY 16. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL SILT AND DEBRIS FROM THE AFFECTED OFF-SITE ROADWAYS THAT ARE A RESULT OF THE CONSTRUCTION, AS REQUESTED BY OWNER AND CITY. AT A MINIMUM, THIS SHOULD OCCUR ONCE PER DAY FOR THE

OFF-SITE ROADWAYS 17. WHEN WASHING OF VEHICLES IS REQUIRED TO REMOVE SEDIMENT PRIOR TO EXITING THE SITE, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP BMP 18. CONTRACTOR SHALL INSTALL A TEMPORARY SEDIMENT BASIN FOR ANY ON-SITE DRAINAGE AREAS THAT ARE GREATER THAN 10

ACRES, PER TCEQ AND CITY STANDARDS. IF NO ENGINEERING DESIGN HAS BEEN PROVIDED FOR A SEDIMENTATION BASIN ON THESE PLANS, THEN THE CONTRACTOR SHALL ARRANGE FOR AN APPROPRIATE DESIGN TO BE PROVIDED. 19 ALL FINES IMPOSED FOR SEDIMENT OR DIRT DISCHARGED FROM THE SITE SHALL BE PAID BY THE RESPONSIBLE CONTRACTOR 20. WHEN SEDIMENT OR DIRT HAS CLOGGED THE CONSTRUCTION ENTRANCE VOID SPACES BETWEEN STONES OR DIRT IS BEING TRACKED ONTO A ROADWAY, THE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASH-DOWN OPERATION SHALL 5. RETAINING WALL ENGINEER SHALL CONSULT THESE PLANS AND THE GEOTECHNICAL REPORT FOR POTENTIAL CONFLICTS. NOT BE ALLOWED TO DRAIN DIRECTLY OFF SITE WITHOUT FIRST FLOWING THROUGH ANOTHER BMP TO CONTROL SEDIMENTATION.

PERIODIC RE-GRADING OR NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFECTIVENESS OF THE CONSTRUCTION ENTRANCE. 21. TEMPORARY SEEDING OR OTHER APPROVED STABILIZATION SHALL BE INITIATED WITHIN 14 DAYS OF THE LAST DISTURBANCE OF ANY AREA, UNLESS ADDITIONAL CONSTRUCTION IN THE AREA IS EXPECTED WITHIN 21 DAYS OF THE LAST DISTURBANCE. 22.CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING CONSTRUCTION, ALWAYS CLEANING UP DIRT, LOOSE MATERIAL, AND TRASH AS CONSTRUCTION PROGRESSES.

23.UPON COMPLETION OF FINE GRADING, ALL SURFACES OF DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED. STABILIZATION IS ACHIEVED WHEN THE AREA IS EITHER COVERED BY PERMANENT IMPERVIOUS STRUCTURES, SUCH AS BUILDINGS, SIDEWALK, PAVEMENT, OR A UNIFORM PERENNIAL VEGETATIVE COVER. 24.AT THE CONCLUSION OF THE PROJECT, ALL INLETS, DRAIN PIPE, CHANNELS, DRAINAGEWAYS AND BORROW DITCHES AFFECTED BY THE

ACCORDANCE WITH APPLICABLE REGULATIONS. 25.ANY SEQUENCE OF CONSTRUCTION SHOWN HEREON IS A GENERAL OVERVIEW AND IS INTENDED TO CONVEY THE GENERAL CONCEPTS OF THE EROSION CONTROL DESIGN AND SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETAILED PHASING AND CONSTRUCTION SEQUENCING NECESSARY TO CONSTRUCT THE PROPOSED IMPROVEMENTS INCLUDED IN THESE PLANS. THE CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING IMMEDIATELY, PRIOR TO AND/OR DURING CONSTRUCTION IF ANY ADDITIONAL INFORMATION ON THE CONSTRUCTION SEQUENCE IS NECESSARY, CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLYING WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION AND ALL OTHER

CONSTRUCTION SHALL BE DREDGED, AND THE SEDIMENT GENERATED BY THE PROJECT SHALL BE REMOVED AND DISPOSED IN

ORM WATER DISCHARGE AUTHORIZATION CONTRACTOR SHALL COMPLY WITH ALL TCEQ AND EPA STORM WATER POLLUTION PREVENTION REQUIREMENTS. 2. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE TCEQ GENERAL PERMIT TO DISCHARGE UNDER THE TEXAS

POLLUTANT DISCHARGE ELIMINATION SYSTEM TXR 150000. 3. THE CONTRACTOR SHALL ENSURE THAT ALL PRIMARY OPERATORS SUBMIT A NOI TO TCEQ AT LEAST SEVEN DAYS PRIOR TO COMMENCING CONSTRUCTION (IF APPLICABLE), OR IF UTILIZING ELECTRONIC SUBMITTAL, PRIOR TO COMMENCING CONSTRUCTION. ALL PRIMARY OPERATORS SHALL PROVIDE A COPY OF THE SIGNED NOI TO THE OPERATOR OF ANY MS4 (TYPICALLY THE CITY) RECEIVING DISCHARGE FROM THE SITE

4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IF APPLICABLE, INCLUDING POSTING SITE NOTICE, INSPECTIONS, DOCUMENTATION, AND SUBMISSION OF ANY INFORMATION REQUIRED BY THE TCEQ AND EPA (E.G. NOI). ALL CONTRACTORS AND SUBCONTRACTORS PROVIDING SERVICES RELATED TO THE SWPPP SHALL SIGN THE REQUIRED CONTRACTOR

CERTIFICATION STATEMENT ACKNOWLEDGING THEIR RESPONSIBILITIES AS SPECIFIED IN THE SWPPP 6. A COPY OF THE SWPPP, INCLUDING NOI, SITE NOTICE, CONTRACTOR CERTIFICATIONS, AND ANY REVISIONS, SHALL BE SUBMITTED TO THE CITY BY THE CONTRACTOR AND SHALL BE RETAINED ON-SITE DURING CONSTRUCTION. . A NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO TCEQ BY ANY PRIMARY OPERATOR WITHIN 30 DAYS AFTER ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND A UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED ON ALL UNPAVED AREAS AND AREAS NOT COVERED BY STRUCTURES, A TRANSFER OF OPERATIONAL CONTROL HAS OCCURRED, OR THE

OPERATOR HAS OBTAINED ALTERNATIVE AUTHORIZATION UNDER A DIFFERENT PERMIT. A COPY OF THE NOT SHALL BE PROVIDED TO

REQUIREMENTS

APPLICABLE LAWS.

KH IS NOT RESPONSIBLE FOR THE MEANS AND METHODS EMPLOYED BY THE CONTRACTOR TO IMPLEMENT THIS DEMOLITION PLAN. THIS PRELIMINARY DEMOLITION PLAN SIMPLY INDICATES THE KNOWN OBJECTS ON THE SUBJECT TRACT THAT ARE TO BE DEMOLISHED AND REMOVED FROM THE SITE.

2. KH DOES NOT WARRANT OR REPRESENT THAT THE PLAN. WHICH WAS PREPARED BASED ON SURVEY AND UTILITY INFORMATION PROVIDED BY OTHERS, SHOWS ALL IMPROVEMENTS AND UTILITIES, THAT THE IMPROVEMENTS AND UTILITIES ARE SHOWN ACCURATELY, OR THAT THE UTILITIES SHOWN CAN BE REMOVED. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ITS OWN SITE RECONNAISSANCE TO SCOPE ITS WORK AND TO CONFIRM WITH THE OWNERS OF IMPROVEMENTS AND UTILITIES THE ABILITY AND PROCESS FOR THE REMOVAL OF THEIR FACILITIES.

3. THIS PLAN IS INTENDED TO GIVE A GENERAL GUIDE TO THE CONTRACTOR, NOTHING MORE, THE GOAL OF THE DEMOLITION IS TO LEAVE THE SITE IN A STATE SUITABLE FOR THE CONSTRUCTION OF THE PROPOSED DEVELOPMENT. REMOVAL OR PRESERVATION OF IMPROVEMENTS, UTILITIES, ETC. TO ACCOMPLISH THIS GOAL ARE THE RESPONSIBILITY OF THE CONTRACTOR. 4. CONTRACTOR IS STRONGLY CAUTIONED TO REVIEW THE FOLLOWING REPORTS DESCRIBING SITE CONDITIONS PRIOR TO BIDDING AND IMPLEMENTING THE DEMOLITION PLAN:

a ENVIRONMENTAL SITE ASSESSMENT PROVIDED BY THE OWNER b. ASBESTOS BUILDING INSPECTION REPORT(S) PROVIDED BY THE OWNER. c. GEOTECHNICAL REPORT PROVIDED BY THE OWNER.

THE OPERATOR OF ANY MS4 RECEIVING DISCHARGE FROM THE SITE.

OTHER REPORTS THAT ARE APPLICABLE AND AVAILABLE

5. CONTRACTOR SHALL CONTACT THE OWNER TO VERIFY WHETHER ADDITIONAL REPORTS OR AMENDMENTS TO THE ABOVE CITED REPORTS HAVE BEEN PREPARED AND TO OBTAIN/REVIEW/AND COMPLY WITH THE RECOMMENDATION OF SUCH STUDIES PRIOR TO STARTING ANY WORK ON THE SITE 6. CONTRACTOR SHALL COMPLY WITH ALL LOCAL. STATE. AND FEDERAL REGULATIONS REGARDING THE DEMOLITION OF OBJECTS ON

THE SITE AND THE DISPOSAL OF THE DEMOLISHED MATERIALS OFF-SITE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO REVIEW THE SITE, DETERMINE THE APPLICABLE REGULATIONS, RECEIVE THE REQUIRED PERMITS AND AUTHORIZATIONS, AND COMPLY. 7. KH DOES NOT REPRESENT THAT THE REPORTS AND SURVEYS REFERENCED ABOVE ARE ACCURATE, COMPLETE, OR COMPREHENSIVE SHOWING ALL ITEMS THAT WILL NEED TO BE DEMOLISHED AND REMOVED.

8. SURFACE PAVEMENT INDICATED MAY OVERLAY OTHER HIDDEN STRUCTURES, SUCH AS ADDITIONAL LAYERS OF PAVEMENT, FOUNDATIONS OR WALLS, THAT ARE ALSO TO BE REMOVED.

. THE CONTRACTOR AND GRADING SUBCONTRACTOR SHALL VERIFY THE SUITABILITY OF EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE START OF CONSTRUCTION. THE CIVIL ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.

. CONTRACTOR SHALL OBTAIN ANY REQUIRED GRADING PERMITS FROM THE CITY 3. UNLESS OTHERWISE NOTED, PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN IN PAVED AREA REFLECT TOP OF PAVEMENT SURFACE. IN LOCATIONS ALONG A CURB LINE, ADD 6-INCHES (OR THE HEIGHT OF THE CURB) TO THE PAVING GRADE FOR TOP OF CURB 10. WHERE COVER EXCEEDS 20-FEET OR IS LESS THAN 2-FEET, CLASS IV RCP SHALL BE USED.

 PROPOSED SPOT ELEVATIONS AND CONTOURS OUTSIDE THE PAVEMENT ARE TO TOP OF FINISHED GRADE. 5. PROPOSED CONTOURS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND DESIGNATED GRADIENT ARE TO BE USED IN CASE OF

6. ALL FINISHED GRADES SHALL TRANSITION UNIFORMLY BETWEEN THE FINISHED ELEVATIONS SHOWN 7. CONTOURS AND SPOT GRADES SHOWN ARE ELEVATIONS OF TOP OF THE FINISHED SURFACE. WHEN PERFORMING THE GRADING OPERATIONS, THE CONTRACTOR SHALL PROVIDE AN APPROPRIATE ELEVATION HOLD-DOWN ALLOWANCE FOR THE THICKNESS OF PAVEMENT, SIDEWALK, TOPSOIL, MULCH, STONE, LANDSCAPING, RIP-RAP AND ALL OTHER SURFACE MATERIALS THAT WILL CONTRIBUTE TO THE TOP OF FINISHED GRADE. FOR EXAMPLE, THE LIMITS OF EARTHWORK IN PAVED AREAS IS THE BOTTOM OF THE PAVEMENT SECTION

8. NO REPRESENTATIONS OF EARTHWORK QUANTITIES OR SITE BALANCE ARE MADE BY THESE PLANS. THE CONTRACTOR SHALL PROVIDE THEIR OWN EARTHWORK CALCULATION TO DETERMINE THEIR CONTRACT QUANTITIES AND COST. ANY SIGNIFICANT VARIANCE FROM A BALANCED SITE SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CIVIL ENGINEER. SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENCHES. NO 9. ALL GRADING AND EARTHWORK SHALL COMPLY WITH THE PROJECT'S FINAL GEOTECHNICAL REPORT (OR LATEST EDITION), INCLUDING

SUBSEQUENT ADDENDA. 10. ALL EXCAVATION IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED. UNUSABLE EXCAVATED MATERIAL AND ALL WASTE RESULTING FROM SITE CLEARING AND GRUBBING SHALL BE REMOVED FROM THE SITE AND APPROPRIATELY DISPOSED BY THE 11. EROSION CONTROL DEVICES SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF GRADING. REFERENCE EROSION CONTROL PLAN, DETAILS, GENERAL NOTES, AND SWPPP FOR ADDITIONAL INFORMATION AND

12.BEFORE ANY EARTHWORK IS PERFORMED, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF THE PROJECT'S PROPERTY LINE AND SITE IMPROVEMENTS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK 13. CONTRACTOR TO DISPOSE OF ALL EXCESS EXCAVATION MATERIALS IN A MANNER THAT ADHERES TO LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS. THE CONTRACTOR SHALL KEEP A RECORD OF WHERE EXCESS EXCAVATION WAS DISPOSED, ALONG WITH

THE RECEIVING LANDOWNER'S APPROVAL TO DO SO. 14. CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF TOPSOIL AT THE COMPLETION OF FINE GRADING. CONTRACTOR SHALL REFER TO LANDSCAPE ARCHITECTURE PLANS FOR SPECIFICATIONS AND REQUIREMENTS FOR TOPSOIL. 15. CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION, INCLUDING MAINTAINING EXISTING DITCHES OR CULVERTS FREE OF OBSTRUCTIONS AT ALL TIMES.

16.NO EARTHWORK FILL SHALL BE PLACED IN ANY EXISTING DRAINAGE WAY, SWALE, CHANNEL, DITCH, CREEK, OR FLOODPLAIN FOR ANY REASON OR ANY LENGTH OF TIME, UNLESS THESE PLANS SPECIFICALLY INDICATE THIS IS REQUIRED. 17. TEMPORARY CULVERTS MAY BE REQUIRED IN SOME LOCATIONS TO CONVEY RUN-OFF. 18. REFER TO DIMENSION CONTROL PLAN, AND PLAT FOR HORIZONTAL DIMENSIONS.

19. THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND CONDITION FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO 20.CONTRACTOR IS RESPONSIBLE FOR ALL SOILS TESTING AND CERTIFICATION, UNLESS SPECIFIED OTHERWISE BY OWNER. ALL SOILS TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR AND SHALL COMPLY WITH CITY STANDARD SPECIFICATIONS AND THE GEOTECHNICAL REPORT. SOILS TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY

FOR TESTING SOILS. THE OWNER SHALL APPROVE THE AGENCY NOMINATED BY THE CONTRACTOR FOR SOILS TESTING.

21.ALL COPIES OF SOILS TEST RESULTS SHALL BE SENT TO THE OWNER, ENGINEER AND ARCHITECT DIRECTLY FROM THE TESTING

22.IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SHOW, BY THE STANDARD TESTING PROCEDURES OF THE SOILS, THAT THE WORK CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS 23.THE SCOPE OF WORK FOR CIVIL IMPROVEMENT SHOWN ON THESE PLANS TERMINATES 5-FEET FROM THE BUILDING. CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND STRUCTURAL PLANS AND SPECIFICATIONS FILL, CONDITIONING, AND PREPARATION

24.DUE TO THE POTENTIAL FOR DIFFERENTIAL SOIL MOVEMENT ADJACENT TO THE BUILDING, THE CONTRACTOR SHALL ADHERE TO GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PROPOSED BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC TO FLATWORK ADJACENT TO THE BUILDING, IF NONE IS CURRENTLY EXISTING 25.CONTRACTOR SHALL ENSURE THAT SUFFICIENT POSITIVE SLOPE AWAY FROM THE BUILDING PAD IS ACHIEVED FOR ENTIRE PERIMETER OF THE PROPOSED BUILDING(S) DURING GRADING OPERATIONS AND IN THE FINAL CONDITION. IF THE CONTRACTOR OBSERVES THAT

THIS WILL NOT BE ACHIEVED. THE CONTRACTOR SHALL CONTACT THE ENGINEER TO REVIEW THE LOCATION 26.THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. CONTRACTOR SHALL CONTROL DUST BY SPRINKLING WATER, OR BY OTHER MEANS APPROVED BY THE CITY, AT NO ADDITIONAL COST TO THE OWNER. 27. CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS

NEEDED FOR GRADING OPERATIONS AND TO ACCOMMODATE PROPOSED GRADE, INCLUDING THE UNKNOWN UTILITIES NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL REFER TO THE GENERAL NOTES "OVERALL" SECTION THESE PLANS FOR ADDITIONAL

17 ALL JOINTS SHALL EXTEND THROUGH THE CURB

17. THE CONTRACTOR SHALL KEEP TRENCHES FREE FROM WATER.

28.EXISTING TREE LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE. CONTRACTOR SHALL REPORT ANY DISCREPANCIES FOUND IN THE FIELD THAT AFFECT THE GRADING PLAN TO THE CIVIL ENGINEER. 29.CONTRACTOR SHALL FIELD VERIFY ALL PROTECTED TREE LOCATIONS, INDIVIDUAL PROTECTED TREE CRITICAL ROOT ZONES, AND PROPOSED SITE GRADING, AND NOTIFY THE CIVIL ENGINEER AND LANDSCAPE ARCHITECT OF ANY CONFLICTS WITH THE TREE PRESERVATION PLAN BY THE LANDSCAPE ARCHITECT PRIOR TO COMMENCING THE WORK.

APPROVED TREE PRESERVATION PLANS BY THE LANDSCAPE ARCHITECT. 31.CONTRACTOR SHALL REFER TO THE LANDSCAPING AND TREE PRESERVATIONS PLANS FOR ALL INFORMATION AND DETAILS REGARDING EXISTING TREES TO BE REMOVED AND PRESERVED.

30.TREE PROTECTION MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY STANDARD TREE PROTECTION DETAILS AND THE

32.NO TREE SHALL BE REMOVED UNLESS A TREE REMOVAL PERMIT HAS BEEN ISSUED BY THE CITY, OR CITY HAS OTHERWISE CONFIRMED IN WRITING THAT ONE IS NOT NEEDED FOR THE TREE(S) 33.NO TREE SHALL BE REMOVED OR DAMAGED WITHOUT PRIOR AUTHORIZATION OF THE OWNER OR OWNER'S REPRESENTATIVE. EXISTING TREES SHALL BE PRESERVED WHENEVER POSSIBLE AND GRADING IMPACT TO THEM HELD TO A MINIMUM. 34.AFTER PLACEMENT OF SUBGRADE AND PRIOR TO PLACEMENT OF PAVEMENT, CONTRACTOR SHALL TEST AND OBSERVE PAVEMENT

AREAS FOR EVIDENCE OF PONDING AND INADEQUATE SLOPE FOR DRAINAGE. ALL AREAS SHALL ADEQUATELY DRAIN TOWARDS THE INTENDED STRUCTURE TO CONVEY STORMWATER RUNOFF. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER AND ENGINEER IF ANY AREAS OF POOR DRAINAGE ARE DISCOVERED 35.CONTRACTOR FIELD ADJUSTMENT OF PROPOSED SPOT GRADES IS ALLOWED, IF THE APPROVAL OF THE CIVIL ENGINEER IS OBTAINED.

RETAINING WALLS SHOWN ARE FOR SITE GRADING PURPOSES ONLY, AND INCLUDE ONLY LOCATION AND SURFACE SPOT ELEVATIONS AT THE TOP AND BOTTOM OF THE WALL

2. RETAINING WALL TYPE OR SYSTEM SHALL BE SELECTED BY THE OWNER. 3. RETAINING WALL DESIGN SHALL BE PROVIDED BY OTHERS AND SHALL FIT IN THE WALL ZONE OR LOCATION SHOWN ON THESE PLANS. STRUCTURAL DESIGN AND PERMITTING OF RETAINING WALLS, RAILINGS, AND OTHER WALL SAFETY DEVICES SHALL BE PERFORMED BY A LICENSED ENGINEER AND ARE NOT PART OF THIS PLAN SET. 4. RETAINING WALL DESIGN SHALL MEET THE INTENT OF THE GRADING PLAN AND SHALL ACCOUNT FOR ANY INFLUENCE ON ADJACENT

BUILDING FOUNDATIONS, UTILITIES, PROPERTY LINES AND OTHER CONSTRUCTABILITY NOTES.

1. ALL PAVING MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS. THE CITY STANDARD DETAILS AND SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT AND ALL ISSUED ADDENDA, AND COMMONLY ACCEPTED CONSTRUCTION STANDARDS. THE CITY SPECIFICATIONS SHALL GOVERN WHERE OTHER SPECIFICATIONS DO NOT EXIST. IN CASE OF CONFLICTING SPECIFICATIONS OR DETAILS, THE MORE RESTRICTIVE SPECIFICATION/DETAIL SHALL BE FOLLOWED. 2. ALL PRIVATE ON-SITE PAVING AND PAVING SUBGRADE SHALL COMPLY WITH THE PROJECT'S FINAL GEOTECHNICAL REPORT (OR LATEST FDITION) INCLUDING ALL ADDENDA 3. ALL FIRÉLANE PAVING AND PAVING SUBGRADE SHALL COMPLY WITH CITY STANDARDS AND DETAILS. IF THESE ARE DIFFERENT THAN

THOSE IN THE GEOTECHNICAL REPORT, THEN THE MORE RESTRICTIVE SHALL BE FOLLOWED. 4. ALL PUBLIC PAVING AND PAVING SUBGRADE SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS 5. CONTRACTOR IS RESPONSIBLE FOR ALL PAVING AND PAVING SUBGRADE TESTING AND CERTIFICATION. UNLESS SPECIFIED OTHERWISE BY OWNER ALL PAVING AND PAVING SUBGRADE TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING PAVING AND SUBGRADE. OWNER SHALL APPROVE THE AGENCY NOMINATED BY THE CONTRACTOR FOR PAVING AND PAVING SUBGRADE TESTING 6. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SHOW, BY THE STANDARD TESTING PROCEDURES OF THE PAVING AND PAVING

SUBGRADE, THAT THE WORK CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS. 7 DUE TO THE POTENTIAL FOR DIFFERENTIAL SOIL MOVEMENT ADJACENT TO THE BUILDING. THE CONTRACTOR SHALL ADHERE TO GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PROPOSED BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC TO FLATWORK ADJACENT TO THE BUILDING, IF NONE IS CURRENTLY EXISTING. 8. CURB RAMPS ALONG PUBLIC STREETS AND IN THE PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED BASED ON THE CITY STANDARD CONSTRUCTION DETAIL AND SPECIFICATIONS

SHALL HAVE A DETECTABLE WARNING SURFACE THAT IS FULL WIDTH AND FULL DEPTH OF THE CURB RAMP, NOT INCLUDING FLARES. 10. ALL ACCESSIBLE RAMPS, CURB RAMPS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA AND TAS STANDARDS, LATEST 11. ANY COMPONENTS OF THE PROJECT SUBJECT TO RESIDENTIAL USE SHALL ALSO CONFORM TO THE FAIR HOUSING ACT, AND COMPLY WITH THE FAIR HOUSING ACT DESIGN MANUAL BY THE US DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT. 12. CONTRACTOR SHALL CONSTRUCT PROPOSED PAVEMENT TO MATCH EXISTING PAVEMENT WITH A SMOOTH, FLUSH, CONNECTION. 13. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS FOR FIRE LANES, PARKING STALLS, HANDICAPPED PARKING

9. PRIVATE CURB RAMPS ON THE SITE (I.E. OUTSIDE PUBLIC STREET RIGHT-OF-WAY) SHALL CONFORM TO ADA AND TAS STANDARDS AND

SYMBOLS, AND MISCELLANEOUS STRIPING WITHIN PARKING LOT AND AROUND BUILDING AS SHOWN ON THE PLANS. ALL PAINT AND PAVEMENT MARKINGS SHALL ADHERE TO CITY AND OWNER STANDARDS. 14 REFER TO GEOTECHNICAL REPORT FOR PAVING JOINT LAYOUT PLAN REQUIREMENTS FOR PRIVATE PAVEMENT. 15. REFER TO CITY STANDARD DETAILS AND SPECIFICATIONS FOR JOINT LAYOUT PLAN REQUIREMENTS FOR PUBLIC PAVEMENT. 16. ALL REINFORCING STEEL SHALL CONFORM TO THE GEOTECHNICAL REPORT, CITY STANDARDS, AND ASTM A-615, GRADE 60, AND SHALL BE SUPPORTED BY BAR CHAIRS. CONTRACTOR SHALL USE THE MORE STRINGENT OF THE CITY AND GEOTECHNICAL STANDARDS.

18. THE MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS SHALL BE 2 FEET. 19. CONTRACTOR SHALL SUBMIT A JOINTING PLAN TO THE ENGINEER AND OWNER PRIOR TO BEGINNING ANY OF THE PAVING WORK. 20.ALL SAWCUTS SHALL BE FULL DEPTH FOR PAVEMENT REMOVAL AND CONNECTION TO EXISTING PAVEMENT.

21.FIRE LANES SHALL BE MARKED AND LABELED AS A FIRELANE PER CITY STANDARDS. 22.UNLESS THE PLANS SPECIFICALLY DICTATE TO THE CONTRARY, ON-SITE AND OTHER DIRECTIONAL SIGNS SHALL BE ORIENTED SO THEY ARE READILY VISIBLE TO THE ONCOMING TRAFFIC FOR WHICH THEY ARE INTENDED 23.CONTRACTOR IS RESPONSIBLE FOR INSTALLING NECESSARY CONDUIT FOR LIGHTING, IRRIGATION, ETC. PRIOR TO PLACEMENT OF PAVEMENT. ALL CONSTRUCTION DOCUMENTS (CIVIL, MEP, LANDSCAPE, IRRIGATION, AND ARCHITECT) SHALL BE CONSULTED. 24.BEFORE PLACING PAVEMENT, CONTRACTOR SHALL VERIFY THAT SUITABLE ACCESSIBLE PEDESTRIAN ROUTES (PER ADA, TAS, AND FHA) EXIST TO AND FROM EVERY DOOR AND ALONG SIDEWALKS. ACCESSIBLE PARKING SPACES. ACCESS AISLES. AND ACCESSIBLE

ROUTES. IN NO CASE SHALL AN ACCESSIBLE RAMP SLOPE EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWALK CROSS SLOPE EXCEED 2.0 PERCENT. IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPE EXCEED 5.0 PERCENT. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL NOT EXCEED 2.0 PERCENT SLOPE IN ANY DIRECTION. 25.CONTRACTOR SHALL TAKE FIELD SLOPE MEASUREMENTS ON FINISHED SUBGRADE AND FORM BOARDS PRIOR TO PLACING PAVEMENT TO VERIFY THAT ADA/TAS SLOPE REQUIREMENTS ARE PROVIDED. CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO PAVING IF ANY FOC EXCESSIVE SLOPES ARE ENCOUNTERED. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR ADA AND TAS SLOPE COMPLIANCE ISSUES.

ALL STORM SEWER MATERIALS AND CONSTRUCTION SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS

2. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE STORM SEWER. 3. THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, CONDITION, HORIZONTAL, AND VERTICAL LOCATIONS OF ALL EXISTING STORM

SEWER FACILITIES THAT ARE TO BE CONNECTED TO, PRIOR TO START OF CONSTRUCTION OF ANY STORM SEWER, AND SHALL NOTIFY

THE ENGINEER OF ANY CONFLICTS DISCOVERED. 4. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF CURB INLETS AND GRATE INLETS AND ALL UTILITIES CROSSING THE STORM SEWER. 5. FLOW LINE, TOP-OF-CURB, RIM, THROAT, AND GRATE ELEVATIONS OF PROPOSED INLETS SHALL BE VERIFIED WITH THE GRADING PLAN AND FIELD CONDITIONS PRIOR TO THEIR INSTALLATION. 6. ALL PUBLIC STORM SEWER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO CITY PUBLIC WORKS STANDARD

DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS. 7. ALL PRIVATE STORM SEWER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO THE APPLICABLE PLUMBING CODE. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS. 8. ALL PVC TO RCP CONNECTIONS AND ALL STORM PIPE CONNECTIONS ENTERING STRUCTURES OR OTHER STORM PIPES SHALL HAVE A CONCRETE COLLAR AND BE GROUTED TO ASSURE THE CONNECTION IS WATERTIGHT.

9. ALL PUBLIC STORM SEWER LINES SHALL BE MINIMUM CLASS III RCP. PRIVATE STORM SEWER LINES 18-INCHES AND GREATER SHALL BE CLASS III RCP OR OTHER APPROVED MATERIAL

11.IF CONTRACTOR PROPOSES TO USE HDPE OR PVC IN LIEU OF RCP FOR PRIVATE STORM SEWER, CONTRACTOR SHALL SUBMIT TECHNICAL DATA TO THE OWNER, ENGINEER AND CITY ENGINEER/INSPECTOR FOR APPROVAL PRIOR TO ORDERING THE MATERIAL ANY PROPOSED HDPE AND PVC SHALL BE WATERTIGHT. 12. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION SURVEYING FOR ALL STORM SEWER LINES. 13. EMBEDMENT FOR ALL STORM SEWER LINES, PUBLIC OR PRIVATE, SHALL BE PER CITY STANDARD DETAILS.

14. ALL WYE CONNECTIONS AND PIPE BENDS ARE TO BE PREFABRICATED AND INSTALLED PER MANUFACTURERS SPECIFICATIONS. 15.USE 4 FOOT JOINTS WITH BEVELED ENDS IF RADIUS OF STORM SEWER IS LESS THAN 100 FEET 16. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND SUBMITTING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRENCH RCP SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENCHES. NO ROW OPEN TRENCHES SHALL BE ALLOWED OVERNIGHT WITHOUT PRIOR WRITTEN APPROVAL OF THE CITY.

ANY PONDS THAT ARE INTENDED TO HOLD WATER INDEFINITELY SHALL BE CONSTRUCTED WATERTIGHT

2. FOR ANY PONDS INTENDED TO HOLD WATER INDEFINITELY: THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR POND LINER SPECIFICATIONS. 3. A GEOTECHNICAL ENGINEER SHALL REVIEW AND APPROVE ALL POND LINER MATERIAL, PLACEMENT PROCEDURES, AND PROVIDE TESTING TO ENSURE THE POND LINER MATERIAL PLACED IS WATERTIGHT.

4. STORM SEWER PIPES AND HEADWALLS THAT CONNECT TO A POND INTENDED TO HOLD WATER INDEFINITELY SHALL BE INSTALLED WITH WATERTIGHT JOINTS TO AT LEAST 1-FOOT ABOVE THE NORMAL POOL WATER SURFACE ELEVATION. 5. ANY GRAVEL OR OTHER PERVIOUS EMBEDMENT AROUND PIPES OR OUTFALL STRUCTURES NEAR THE POND SHALL BE ELIMINATED FOR TEMP AT LEAST 20-FEET FROM THE POND SO NO ROUTE FOR WATER TO LEAK THROUGH THE EMBEDMENT MATERIAL IS PROVIDED. BACKFILL IN THESE AREAS SHALL BE OF IMPERVIOUS MATERIAL

6. FOR ANY PONDS INTENDED TO HOLD WATER INDEFINITELY: THE WATER LEVEL FOLLOWING COMPLETION AND FILLING OF THE POND SHALL BE MONITORED BY THE CONTRACTOR FOR AT LEAST 60 DAYS TO OBSERVE WATER INFLOW, OUTFLOW, AND CALCULATE EVAPORATION TO VERIFY THAT THE POND IS WATERTIGHT. 7. FOR ANY PONDS INTENDED TO HOLD WATER INDEFINITELY: THE POND WATER LEVEL SHALL ALSO BE MAINTAINED BY THE

CONTRACTOR FOR THE DURATION OF CONSTRUCTION SO THAT IT REMAINS FULL TO ITS DESIGN WATER LEVEL, AND IS NOT LOWERED, AS THIS MAY DRY-OUT THE POND LINER AND RISK ITS WATERTIGHT PROPERTIES.

WATER AND WASTEWATER ALL WATER AND WASTEWATER MATERIALS AND CONSTRUCTION SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAILS AND 2. CONTRACTOR SHALL FIELD VERIFY THE SIZE, CONDITION, HORIZONTAL, AND VERTICAL LOCATIONS OF ALL EXISTING WATER AND WASTEWATER FACILITIES THAT ARE TO BE CONNECTED TO, PRIOR TO START OF CONSTRUCTION OF ANY WATER OR WASTEWATER CONSTRUCTION, AND SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED.

3. CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITY SERVICES ENTERING THE BUILDING. 4. THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATION OF ALL UTILITY CROSSINGS PRIOR TO THE INSTALLATION OF ANY PIPE. 5. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE WATER AND WASTEWATER IMPROVEMENTS. 6. ALL PUBLIC WATER AND WASTEWATER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO CITY PUBLIC WORKS STANDARD DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS

7. ALL PRIVATE WATER AND WASTEWATER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO THE APPLICABLE PLUMBING CODE. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS. 8. FIRE SPRINKLER LINES SHALL BE DESIGNED AND INSTALLED BY A LICENSED FIRE SPRINKLER CONTRACTOR, AND COMPLY TO THE APPLICABLE CODES AND INSPECTIONS REQUIRED. THESE PLANS WERE PREPARED WITHOUT THE BENEFIT OF THE FIRE SPRINKLER DESIGN. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES. 9. EMBEDMENT FOR ALL WATER AND WASTEWATER LINES, PUBLIC OR PRIVATE, SHALL BE PER CITY STANDARD DETAILS.

10. CONTRACTOR SHALL TAKE REQUIRED SANITARY PRECAUTIONS, FOLLOWING ANY CITY, TCEQ, AND AWWA STANDARDS, TO KEEP WATER PIPE AND FITTINGS CLEAN AND CAPPED AT TIMES WHEN INSTALLATION IS NOT IN PROGRESS. 11.CONTRACTOR SHALL PROVIDE CONSTRUCTION SURVEYING FOR ALL WATER AND WASTEWATER LINES 12. ALL WATER AND WASTEWATER SERVICES SHALL TERMINATE 5-FEET OUTSIDE THE BUILDING, UNLESS NOTED OTHERWISE. 13. CONTRACTOR SHALL COMPLY WITH CITY REQUIREMENTS FOR WATER AND WASTEWATER SERVICE DISRUPTIONS AND THE AMOUNT OF PRIOR NOTICE THAT IS REQUIRED, AND SHALL COORDINATE DIRECTLY WITH THE APPROPRIATE CITY DEPARTMENT. 14. CONTRACTOR SHALL SEQUENCE WATER AND WASTEWATER CONSTRUCTION TO AVOID INTERRUPTION OF SERVICE TO SURROUNDING

15. CONTRACTOR SHALL MAINTAIN WATER SERVICE AND WASTEWATER SERVICE TO ALL CUSTOMERS THROUGHOUT CONSTRUCTION (IF NECESSARY, BY USE OF TEMPORARY METHODS APPROVED BY THE CITY AND OWNER). THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

16. THE CONTRACTOR IS RESPONSIBLE TO PROTECT ALL WATER AND WASTEWATER LINES CROSSING THE PROJECT. THE CONTRACTOR SHALL REPAIR ALL DAMAGED LINES IMMEDIATELY. ALL REPAIRS OF EXISTING WATER MAINS, WATER SERVICES, SEWER MAINS, AND SANITARY SEWER SERVICES ARE SUBSIDIARY TO THE WORK. AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. 17. VALVE ADJUSTMENTS SHALL BE CONSTRUCTED SUCH THAT THE COVERS ARE AT FINISHED SURFACE GRADE OF THE PROPOSED

18. THE ENDS OF ALL EXISTING WATER MAINS THAT ARE CUT. BUT NOT REMOVED. SHALL BE PLUGGED AND ABANDONED IN PLACE. THIS WORK SHALL BE CONSIDERED AS A SUBSIDIARY COST TO THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. 19. ALL FIRE HYDRANTS, VALVES, TEES, BENDS, WYES, REDUCERS, FITTINGS, AND ENDS SHALL BE MECHANICALLY RESTRAINED AND/OR THRUST BLOCKED TO CITY STANDARDS.

20. CONTRACTOR SHALL INSTALL A FULL SEGMENT OF WATER OR WASTEWATER PIPE CENTERED AT ALL UTILITY CROSSINGS SO THAT THE JOINTS ARE GREATER THAN 9-FEET FROM THE CROSSING 21.ALL CROSSINGS AND LOCATIONS WHERE WASTEWATER IS LESS THAN 9-FEET FROM WATER, WASTEWATER CONSTRUCTION AND

MATERIALS SHALL COMPLY WITH TCEQ CHAPTER 217.53. 22.ALL CROSSING AND LOCATIONS WHERE WATER IS LESS THAN 9-FEET FROM WASTEWATER, WATER CONSTRUCTION AND MATERIALS SHALL COMPLY WITH TCEQ CHAPTER 290.44. 23.ALL WATER AND WASTEWATER SHALL BE TESTED IN ACCORDANCE WITH THE CITY, AWWA, AND TCEQ STANDARDS AND SPECIFICATIONS. AT A MINIMUM, THIS SHALL CONSIST OF THE FOLLOWING

a. ALL WATERLINES SHALL BE HYDROSTATICALLY TESTED AND CHLORINATED BEFORE BEING PLACED INTO SERVICE. CONTRACTOR SHALL COORDINATE WITH THE CITY FOR THEIR REQUIRED PROCEDURES AND SHALL ALSO COMPLY WITH TCEQ REGULATIONS. b. WASTEWATER LINES AND MANHOLES SHALL BE PRESSURE TESTED. CONTRACTOR SHALL COORDINATE WITH THE CITY FOR THEIR REQUIRED PROCEDURES AND SHALL ALSO COMPLY WITH TCEQ REGULATIONS. AFTER COMPLETION OF THESE TESTS, A TELEVISION

INSPECTION SHALL BE PERFORMED AND PROVIDED TO THE CITY AND OWNER ON A DVD. 24. CONTRACTOR SHALL INSTALL DETECTABLE WIRING OR MARKING TAPE A MINIMUM OF 12" ABOVE WATER AND WASTEWATER LINES. MARKER DECALS SHALL BE LABELED "CAUTION - WATER LINE", OR "CAUTION - SEWER LINE". DETECTABLE WIRING AND MARKING TAPE SHALL COMPLY WITH CITY STANDARDS, AND SHALL BE INCLUDED IN THE COST OF THE WATER AND WASTEWATER PIPE. 25.DUCTILE IRON PIPE SHALL BE PROTECTED FROM CORROSION BY A LOW-DENSITY POLYETHYLENE LINER WRAP THAT IS AT LEAST A

SINGLE LAYER OF 8-MIL. ALL DUCTILE IRON JOINTS SHALL BE BONDED. 26 WATERLINES SHALL BE INSTALLED AT NO LESS THAN THE MINIMUM COVER REQUIRED BY THE CITY 27.CONTRACTOR SHALL PROVIDE CLEAN-OUTS FOR PRIVATE SANITARY SEWER LINES AT ALL CHANGES IN DIRECTION AND 100-FOOT INTERVALS, OR AS REQUIRED BY THE APPLICABLE PLUMBING CODE. CLEAN-OUTS REQUIRED IN PAVEMENT OR SIDEWALKS SHALL HAVE CAST IRON COVERS FLUSH WITH FINISHED GRADE.

28. CONTRACTOR SHALL PROVIDE BACKWATER VALVES FOR PLUMBING FIXTURES AS REQUIRED BY THE APPLICABLE PLUMBING CODE (E.G. FLOOR ELEVATION OF FIXTURE UNIT IS BELOW THE ELEVATION OF THE MANHOLE COVER OF THE NEXT UPSTREAM MANHOLE IN THE PUBLIC SEWER). CONTRACTOR SHALL REVIEW BOTH MEP AND CIVIL PLANS TO CONFIRM WHERE THESE ARE REQUIRED 29.THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND SUBMITTING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRENCH

30. THE CONTRACTOR SHALL KEEP TRENCHES FREE FROM WATER.

SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENCHES. NO OPEN TRENCHES SHALL BE ALLOWED OVERNIGHT WITHOUT PRIOR WRITTEN APPROVAL OF THE CITY. ABBREVIATIONS AND DEFINITIONS: AMERICANS WITH DISABILITIES ACT AMERICAN WATER WORKS ASSOCIATION AWWA BACK TO BACK BEGIN CURVE BACK OF CURB BCR BEGIN CURB RETURN BMP BEST MANAGEMENT PRACTICE BACK OF CURB BEGIN VERTICAL CURVE ELEVATION **BVCE** BEGIN VERTICAL CURVE STATION BVCS BW **BOTTOM OF WALI** CUBIC FEET PER SECOND CFS CITY, TOWN, OR OTHER APPLICABLE LOCAL GOVERNMENT JURISDICTION CENTERLINE CENTERLINE CONC CONCRETE CUBIC YARD DEMO DEMOLITION DECOMPOSED GRANITE DETAIL DTL EACH **END CURVE** END CURB RETURN **EXISTING GROUND** ELEVATION ELECTRICAL / ELECTRICITY ELEC ELEVATION EPA UNITES STATES ENVIRONMENTAL PROTECTION AGENCY EASEMENT ESMT **EVCE** END VERTICAL CURVE ELEVATION END VERTICAL CURVE STATION EX. EXISTING FACE TO FACE FINISHED GROUND FIRE HYDRANT

FLOW LINE FACE OF CURB FFFT HYDRAULIC GRADE LINE KIMLEY-HORN AND ASSOCIATES, INC KIMLEY-HORN AND ASSOCIATES, INC. KHA LINEAR FEET MAXIMUM

MATCH EXISTING ELEVATION MANHOLE MINUTE / MINIMUM NUMBER NOTICE OF INTENT, REF. TCEQ GENERAL PERMIT

NOTICE OF TERMINATION, REF. TCEQ GENERAL PERMIT NOT TO SCALE ON CENTER

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION POINT OF CURVATURE PORTLAND CEMENT CONCRETE / POINT OF COMPOUND CURVATURE PROPOSED GRADE LINE

POINT OF INFLECTION POINT OF REVERSE CURVATURE POUNDS PER SQUARE INCH POINT OF TANGENCY POLYVINYL CHLORIDE

POINT OF VERTICAL INFLECTION PAVEMENT REINFORCED CONCRETE PIPE RIGHT OF WAY RIGHT SQUARE FEET

SANITARY SEWER

SANITARY SEWER MANHOLE STATION STANDARD SQUARE YARD ARCHITECTURAL BARRIERS TEXAS ACCESSIBILITY STANDARDS TOP OF CURB

TEXAS COMMISSION OF ENVIRONMENTAL QUALITY TEMPORARY TEXAS DEPARTMENT OF TRANSPORTATION TXDOT TXMUTCD TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES

TOP OF WALL TW TYP TYPICAL VERTICAL CURVE WATER WASTEWATER

. TELECOM COMPANY, CONTACT NAME, PHONE NUMBER, EMAIL,

2. CABLE COMPANY, CONTACT NAME, PHONE NUMBER, EMAIL,

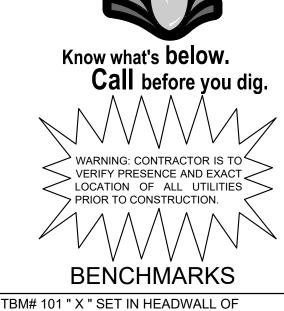
. <u>ELECTRIC COMPANY</u>, **CONTACT NAME, PHONE NUMBER, EMAIL**, 4. GAS COMPANY, CONTACT NAME, PHONE NUMBER, EMAIL,

5. <u>UTILITY DISTRICT</u>, **CONTACT NAME, PHONE NUMBER, EMAIL,**

© COPYRIGHT 2025 KIMLEY-HORN AND ASSOCIATES, INC., ALL RIGHTS RESERVED

6. <u>CITY WATER/UTILITIES DEPARTMENT</u>, **CONTACT NAME, PHONE NUMBER, EMAIL**

THESE PLAN AND GENERAL NOTES REFER TO: GEOTECHNICAL ENGINEERING REPORT (FIRM) MLA GEOTECHNICAL BERRY CREEK HIGHLANDS PHASE 8B&9 INCLUDING ALL REVISIONS AND ADDENDA TO THIS REPORT THAT MAY HAVE BEEN RELEASED AFTER THE NOTED DATE



MEDIAN OF STATE HIGHWAY AND BUNNET

ELEVATION =821.82 FEET (AS SHOWN)

CULVERT LOCATED IN THE

, **ග** ත NND ND Se 発 \Box

SHEET NUMBER

 ∞

Texas Commission on Environmental Quality Water Pollution Abatement Plan General Construction Notes

Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer

The following/listed "construction notes" are intended to be advisory in nature only and do not constitute an approval or conditional approval by the Executive Director (ED), nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further actions may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code (TAC), Chapters 213 and 217, as well as local ordinances and regulations providing for the protection of water quality. Additionally, nothing contained in the following/listed "construction notes" restricts the powers of the ED, the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected surface waters. The holder of any Edwards Aquifer Protection Plan containing "construction notes" is still responsible for compliance with Title 30, TAC, Chapters 213 or any other applicable TCEQ regulation, as well as all conditions of an Edwards Aquifer Protection Plan through all phases of plan implementation. Failure to comply with any condition of the ED's approval, whether or not in contradiction of any "construction notes." is a violation of TCEO regulations and any violation is subject to administrative rules, orders, and penalties as provided under Title 30, TAC § 213.10 (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. The following/listed "construction notes" in no way represent an approved exception by the ED to any part of Title 30 TAC, Chapters 213 and 217, or any other TCEQ applicable regulation

- A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any regulated activities. This notice must include: the name of the approved project;
 - the activity start date; and - the contact information of the prime contractor.

permanently stabilized.

- All contractors conducting regulated activities associated with this project must be provided with complete copies of the approved Water Pollution Abatement Plan (WPAP) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and
- If any sensitive feature(s) (caves, solution cavity, sink hole, etc.) is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. Construction activities may not be resumed until the TCEQ has reviewed and approved the appropriate protective measures in order to protect any sensitive feature and the Edwards Aquifer from potentially adverse impacts to water quality.
- No temporary or permanent hazardous substance storage tank shall be installed within 150 feet of a water supply source, distribution system, well, or sensitive feature.
- Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the approved plans and manufacturers specifications. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. These controls must remain in place until the disturbed areas have been
- Any sediment that escapes the construction site must be collected and properly disposed of before the next rain event to ensure it is not washed into surface streams, sensitive features,
- 7. Sediment must be removed from the sediment traps or sedimentation basins not later than

TCEQ-0592 (Rev. July 15, 2015)

when it occupies 50% of the basin's design capacity.

- Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from being discharged offsite.
- All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the
- If portions of the site will have a temporary or permanent cease in construction activity lasting longer than 14 days, soil stabilization in those areas shall be initiated as soon as possible prior to the 14th day of inactivity. If activity will resume prior to the 21st day, stabilization measures are not required. If drought conditions or inclement weather prevent action by the 14th day, stabilization measures shall be initiated as soon as possible.
- 11. The following records shall be maintained and made available to the TCEQ upon request: - the dates when major grading activities occur;

- the dates when stabilization measures are initiated.

- the dates when construction activities temporarily or permanently cease on a portion of the site: and
- The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any
- any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
- B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;
- any development of land previously identified as undeveloped in the original water pollution abatement plan.

Austin, Texas 78753-1808	San Antonio Regional Office 14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 490-3096
	Fax (210) 545-4329

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

TCEQ-0592 (Rev. July 15, 2015)

Texas Commission on Environmental Quality Organized Sewage Collection System **General Construction Notes**

Edwards Aguifer Protection Program Construction Notes - Legal Disclaimer

The following/listed "construction notes" are intended to be advisory in nature only and do not constitute an approval or conditional approval by the Executive Director, nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further actions may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code, Chapters 213 and 217, as well as local ordinances and regulations providing for the protection of water quality. Additionally, nothing contained in the following/listed "construction notes" restricts the powers of the Executive Director, the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected surface waters. The holder of any Edwards Aquifer Protection Plan containing "construction notes" is still responsible for compliance with Title 30, Texas Administrative Code, Chapters 213 or any other applicable TCEQ regulation, as well as all conditions of an Edwards Aquifer Protection Plan through all phases of plan implementation. Failure to comply with any condition of the Executive Director's approval, whether or not in contradiction of any "construction notes," is a violation of TCEQ regulations and any violation is subject to administrative rules, orders, and penalties as provided under Title 30, Texas Administrative Code § 213.10 (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. The following/listed "construction notes" in no way represent an approved exception by the Executive Director to any part of Title 30 Texas Administrative Code, Chapters 213 and 217, or any other TCEQ applicable regulation.

- This Organized Sewage Collection System (SCS) must be constructed in accordance with 30 Texas Administrative Code (TAC) §213.5(c), the Texas Commission on Environmental Quality's (TCEQ) Edwards Aquifer Rules and any local government standard specifications.
- All contractors conducting regulated activities associated with this proposed regulated project must be provided with copies of the SCS plan and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors must be required to keep on-site copies of the plan and the approval letter.
- A written notice of construction must be submitted to the presiding TCEQ regional office at least 48 hours prior to the start of any regulated activities. This notice must include: - the name of the approved project; - the activity start date; and
 - the contact information of the prime contractor.
- Any modification to the activities described in the referenced SCS application following the date of approval may require the submittal of an SCS application to modify this approval, including the payment of appropriate fees and all information necessary for its review and
- Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the manufacturers specifications. These controls must remain in place until the disturbed areas have been permanently stabilized.
- If any sensitive features are discovered during the wastewater line trenching activities, all regulated activities near the sensitive feature must be suspended immediately. The applicant must immediately notify the appropriate regional office of the TCEQ of the feature discovered. A geologist's assessment of the location and extent of the feature discovered must be reported to that regional office in writing and the applicant must submit a plan for ensuring the structural integrity of the sewer line or for modifying the proposed collection system alignment around the feature. The regulated activities near the sensitive feature may not proceed until the

TCEQ-0596 (Rev. July 15, 2015) Page 1 of 6 executive director has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from any potentially adverse impacts to water quality while maintaining the structural integrity of the line.

- Sewer lines located within or crossing the 5-year floodplain of a drainage way will be protected from inundation and stream velocities which could cause erosion and scouring of backfill. The trench must be capped with concrete to prevent scouring of backfill, or the sewer lines must be encased in concrete. All concrete shall have a minimum thickness of 6 inches.
- Blasting procedures for protection of existing sewer lines and other utilities will be in accordance with the National Fire Protection Association criteria. Sand is not allowed as bedding or backfill in trenches that have been blasted. If any existing sewer lines are damaged, the lines must be repaired and retested.
- All manholes constructed or rehabilitated on this project must have watertight size on size resilient connectors allowing for differential settlement. If manholes are constructed within the 100-year floodplain, the cover must have a gasket and be bolted to the ring. Where gasketed manhole covers are required for more than three manholes in sequence or for more than 1500 feet, alternate means of venting will be provided. Bricks are not an acceptable construction material for any portion of the manhole.

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

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

- Where water lines and new sewer line are installed with a separation distance closer than nine feet (i.e., water lines crossing wastewater lines, water lines paralleling wastewater lines, or water lines next to manholes) the installation must meet the requirements of 30 TAC §217.53(d) (Pipe Design) and 30 TAC §290.44(e) (Water Distribution).
- Where sewers lines deviate from straight alignment and uniform grade all curvature of sewer pipe must be achieved by the following procedure which is recommended by the pipe manufacturer:

If pipe flexure is proposed, the following method of preventing deflection of the joint must be

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

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

TCEQ-0596 (Rev. July 15, 2015) Page 2 of 6

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

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

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

Sewer lines must be tested from manhole to manhole. When a new sewer line is connected to

copies of all test results which must be made available to the executive director upon request.

- an existing stub or clean-out, it must be tested from existing manhole to new manhole. If a stub or clean-out is used at the end of the proposed sewer line, no private service attachments may be connected between the last manhole and the cleanout unless it can be certified as conforming with the provisions of 30 TAC §213.5(c)(3)(E). 15. All sewer lines must be tested in accordance with 30 TAC §217.57. The engineer must retain
- The engineer must certify in writing that all wastewater lines have passed all required testing to the appropriate regional office within 30 days of test completion and prior to use of the new collection system. Testing method will be: (a) For a collection system pipe that will transport wastewater by gravity flow, the design
 - must specify an infiltration and exfiltration test or a low-pressure air test. A test must conform to the following requirements:
 - (1) Low Pressure Air Test. (A) A low pressure air test must follow the procedures described in
 - American Society For Testing And Materials (ASTM) C-828. ASTM C-924, or ASTM F-1417 or other procedure approved by the executive director, except as to testing times as required in Table C.3 in subparagraph (C) of this paragraph or Equation C.3 in subparagraph
 - (B)(ii) of this paragraph. (B) For sections of collection system pipe less than 36 inch average inside diameter, the following procedure must apply, unless a pipe is to be tested as required by paragraph (2) of this subsection.
 - (i) A pipe must be pressurized to 3.5 pounds per square inch (psi) greater than the pressure exerted by groundwater above the
 - Once the pressure is stabilized, the minimum time allowable for the pressure to drop from 3.5 psi gauge to 2.5 psi gauge is computed from the following equation:

Equation C.3 $0.085 \times D \times K$

T = time for pressure to drop 1.0 pound per square inch gauge in

K = 0.000419 X D X L, but not less than 1.0 D = average inside pipe diameter in inches

TCEQ-0596 (Rev. July 15, 2015)

Page 3 of 6

L = length of line of same size being tested, in feet Q = rate of loss, 0.0015 cubic feet per minute per square foot internal

(C) Since a K value of less than 1.0 may not be used, the minimum testing

Page 2 of 2

time for each pipe diameter is shown in the following Table C.3: Pine Diameter (inches) | Minimum Time | Maximum Length for | Time for

Pipe Diameter (inches)	(seconds)	Minimum Time (feet)	Longer Length (seconds/foot)
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	100	13.676
27	1530	88	17.309
30	1700	80	21.369
33	1870	72	25.856

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

TCEQ-0596 (Rev. July 15, 2015) Page 4 of 6

the infiltration or exfiltration to an amount within the limits specified. An owner shall retest a pipe following a remediation action. (b) If a gravity collection pipe is composed of flexible pipe, deflection testing is also

required. The following procedures must be followed: (1) For a collection pipe with inside diameter less than 27 inches, deflection

measurement requires a rigid mandrel. (A) Mandrel Sizing. A rigid mandrel must have an outside diameter (OD) not less

- than 95% of the base inside diameter (ID) or average ID of a pipe, as specified in the appropriate standard by the ASTMs, American Water Works Association, UNI-BELL, or American National Standards Institute, or any related appendix.
- (ii) If a mandrel sizing diameter is not specified in the appropriate standard, the mandrel must have an OD equal to 95% of the ID of a pipe. In this case, the ID of the pipe, for the purpose of determining the OD of the mandrel, must equal be the average outside diameter minus two minimum wall thicknesses for OD controlled pipe and the average inside diameter for ID
- controlled pipe. (iii) All dimensions must meet the appropriate standard.
- Mandrel Design. A rigid mandrel must be constructed of a metal or a rigid plastic
- material that can withstand 200 psi without being deformed. A mandrel must have nine or more odd number of runners or
- (iii) A barrel section length must equal at least 75% of the inside diameter of a pipe.
- (iv) Each size mandrel must use a separate proving ring. Method Options
- An adjustable or flexible mandrel is prohibited. A test may not use television inspection as a substitute for a
- (iii) If requested, the executive director may approve the use of a deflectometer or a mandrel with removable legs or runners on a
- case-by-case basis. (2) For a gravity collection system pipe with an inside diameter 27 inches and greater, other test methods may be used to determine vertical deflection. A deflection test method must be accurate to within plus or minus 0.2%
- deflection An owner shall not conduct a deflection test until at least 30 days after the final
- Gravity collection system pipe deflection must not exceed five percent (5%). If a pipe section fails a deflection test, an owner shall correct the problem and conduct a second test after the final backfill has been in place at least 30 days.
- All manholes must be tested to meet or exceed the requirements of 30 TAC §217.58. (a) All manholes must pass a leakage test.

(1) Hydrostatic Testing.

An owner shall test each manhole (after assembly and backfilling) for leakage, separate and independent of the collection system pipes, by hydrostatic exfiltration testing, vacuum testing, or other method approved by the executive director.

TCEQ-0596 (Rev. July 15, 2015) Page 5 of 6 (A) The maximum leakage for hydrostatic testing or any alternative test methods is 0.025 gallons per foot diameter per foot of manhole depth

To perform a hydrostatic exfiltration test, an owner shall seal all wastewater pipes coming into a manhole with an internal pipe plug, fill the manhole with water, and maintain the test for at least one hour. (C) A test for concrete manholes may use a 24-hour wetting period before

testing to allow saturation of the concrete. (2) Vacuum Testing.

(A) To perform a vacuum test, an owner shall plug all lift holes and exterior joints with a non-shrink grout and plug all pipes entering a manhole. No grout must be placed in horizontal joints before testing.

- Stub-outs, manhole boots, and pipe plugs must be secured to prevent movement while a vacuum is drawn. An owner shall use a minimum 60 inch/lb torque wrench to tighten the
- external clamps that secure a test cover to the top of a manhole. (E) A test head must be placed at the inside of the top of a cone section, and the seal inflated in accordance with the manufacturer's
- (F) There must be a vacuum of 10 inches of mercury inside a manhole to perform a valid test.
- A test does not begin until after the vacuum pump is off. (H) A manhole passes the test if after 2.0 minutes and with all valves closed, the vacuum is at least 9.0 inches of mercury.
- All private service laterals must be inspected and certified in accordance with 30 TAC §213.5(c)(3)(I). After installation of and, prior to covering and connecting a private service lateral to an existing organized sewage collection system, a Texas Licensed Professional Engineer, Texas Registered Sanitarian, or appropriate city inspector must visually inspect the private service lateral and the connection to the sewage collection system, and certify that it is constructed in conformity with the applicable provisions of this section. The owner of the collection system must maintain such certifications for five years and forward copies to the appropriate regional office upon request. Connections may only be made to an approved sewage collection system.

Austin Regional Office San Antonio Regional Office 12100 Park 35 Circle, Building A 14250 Judson Road Austin, Texas 78753-1808 San Antonio, Texas 78233-4480 Phone (512) 339-2929 Phone (210) 490-3096 Fax (512) 339-3795 Fax (210) 545-4329

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

TCEQ-0596 (Rev. July 15, 2015) Page 6 of 6

Call before you dig. WARNING: CONTRACTOR IS TO 4 VERIFY PRESENCE AND EXACT _____ LOCATION OF ALL UTILITIES > PRIOR TO CONSTRUCTION. BENCHMARKS

TBM# 101 " X " SET IN HEADWALL OF CULVERT LOCATED IN THE MEDIAN OF STATE HIGHWAY AND BUNNET ELEVATION =821.82 FEET (AS SHOWN)

, **ග** ඉ ∞

O

Q

Ш

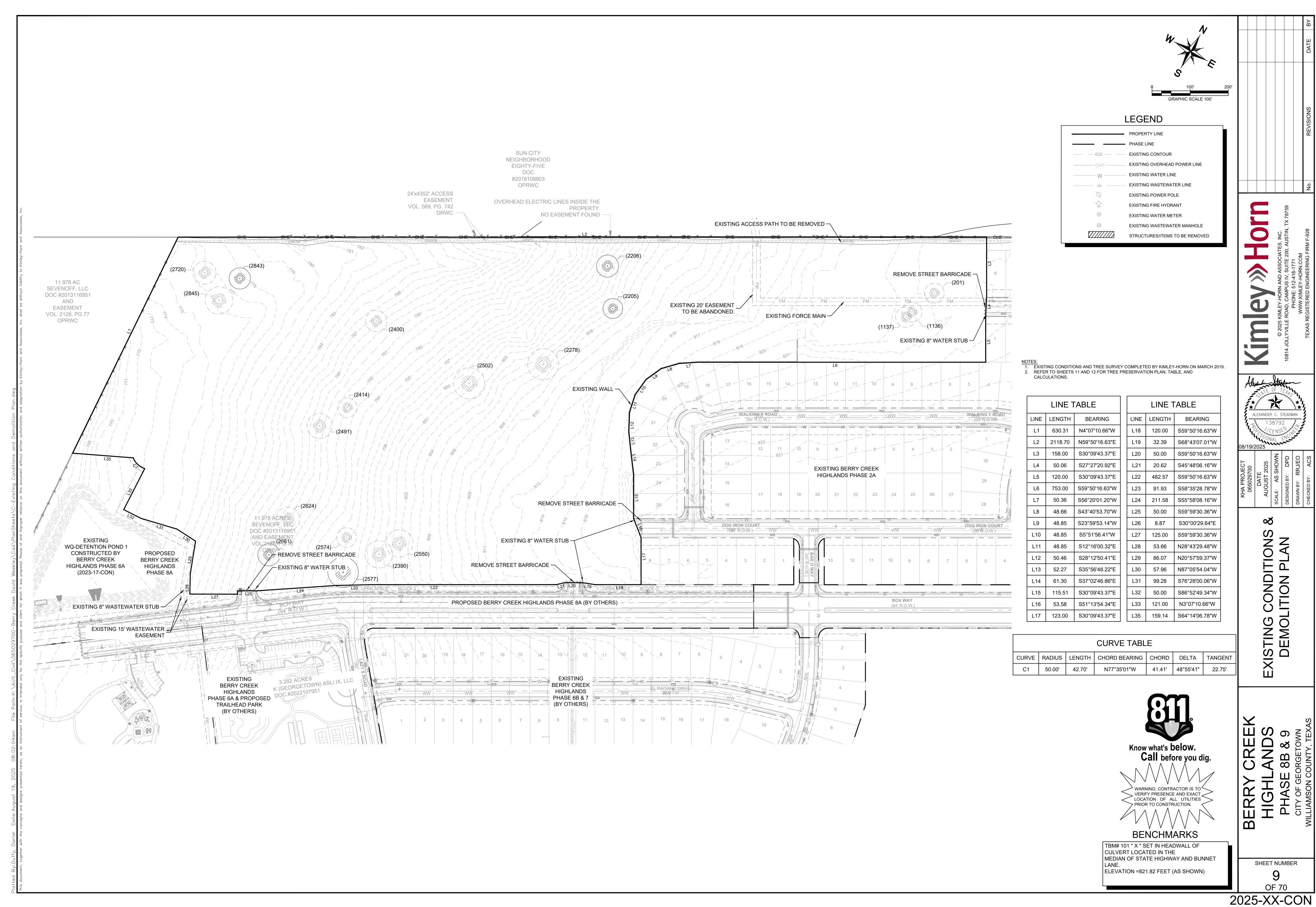
 \mathcal{O}

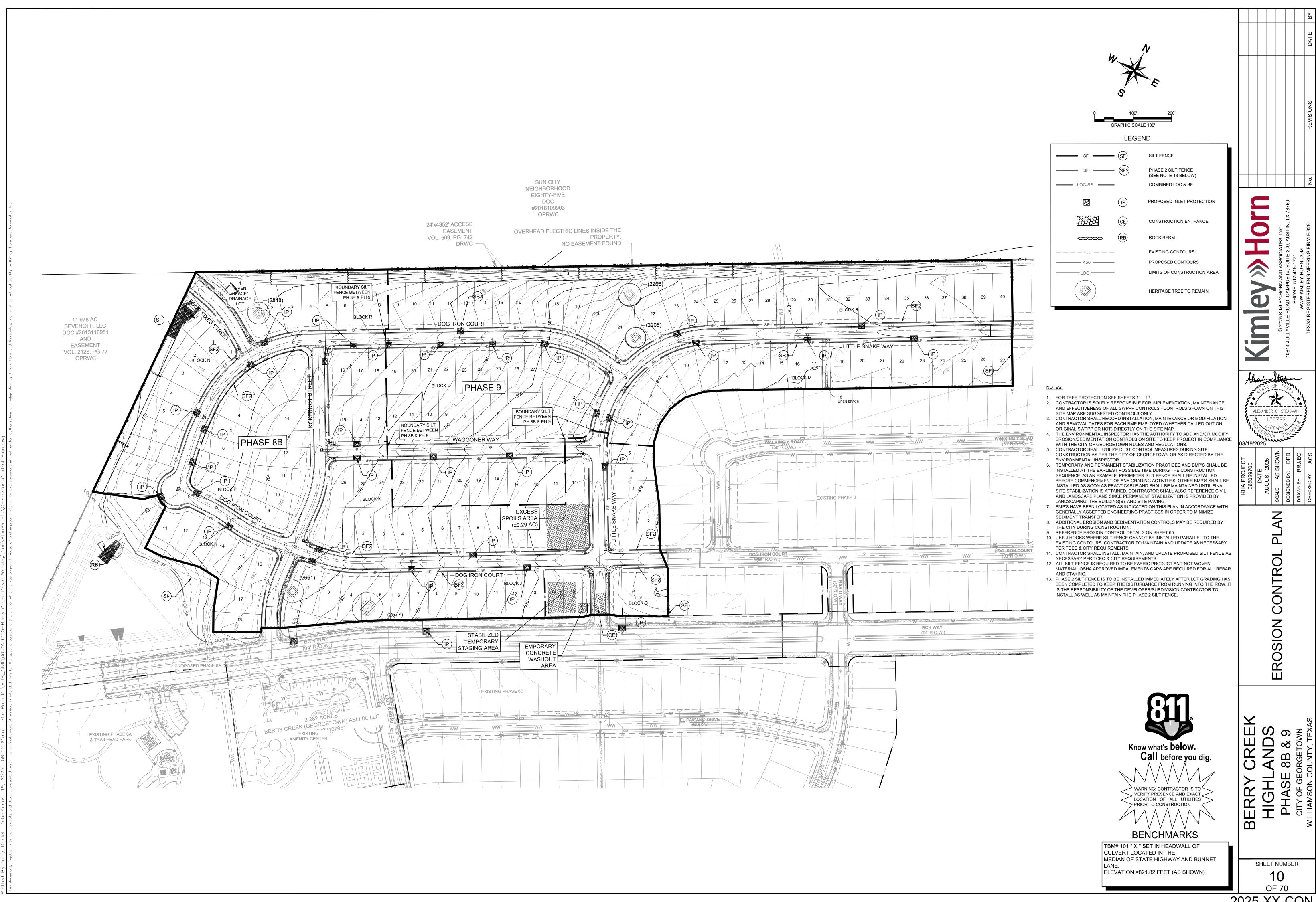
ALEXANDER C. STEADMA

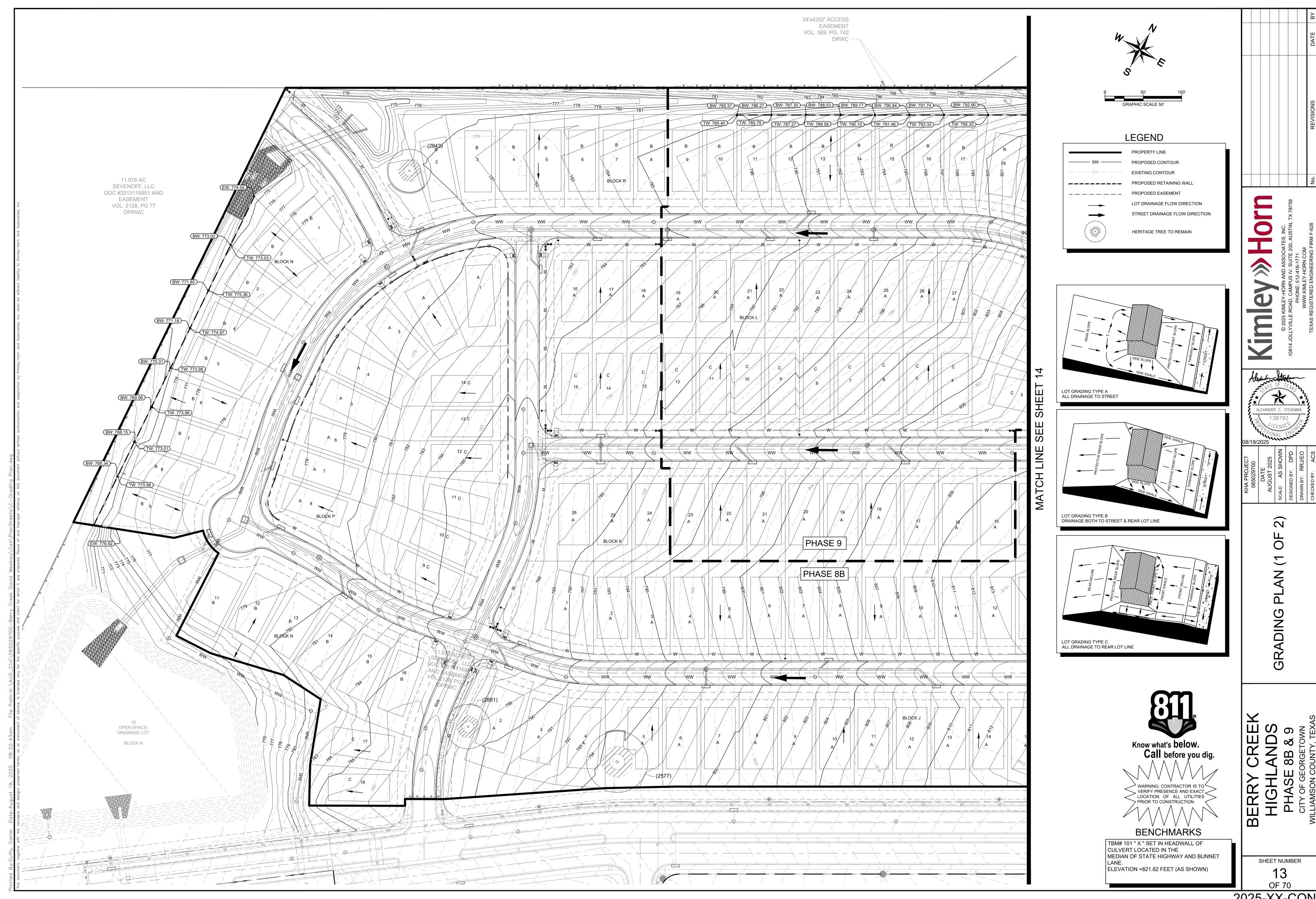
SHEET NUMBER

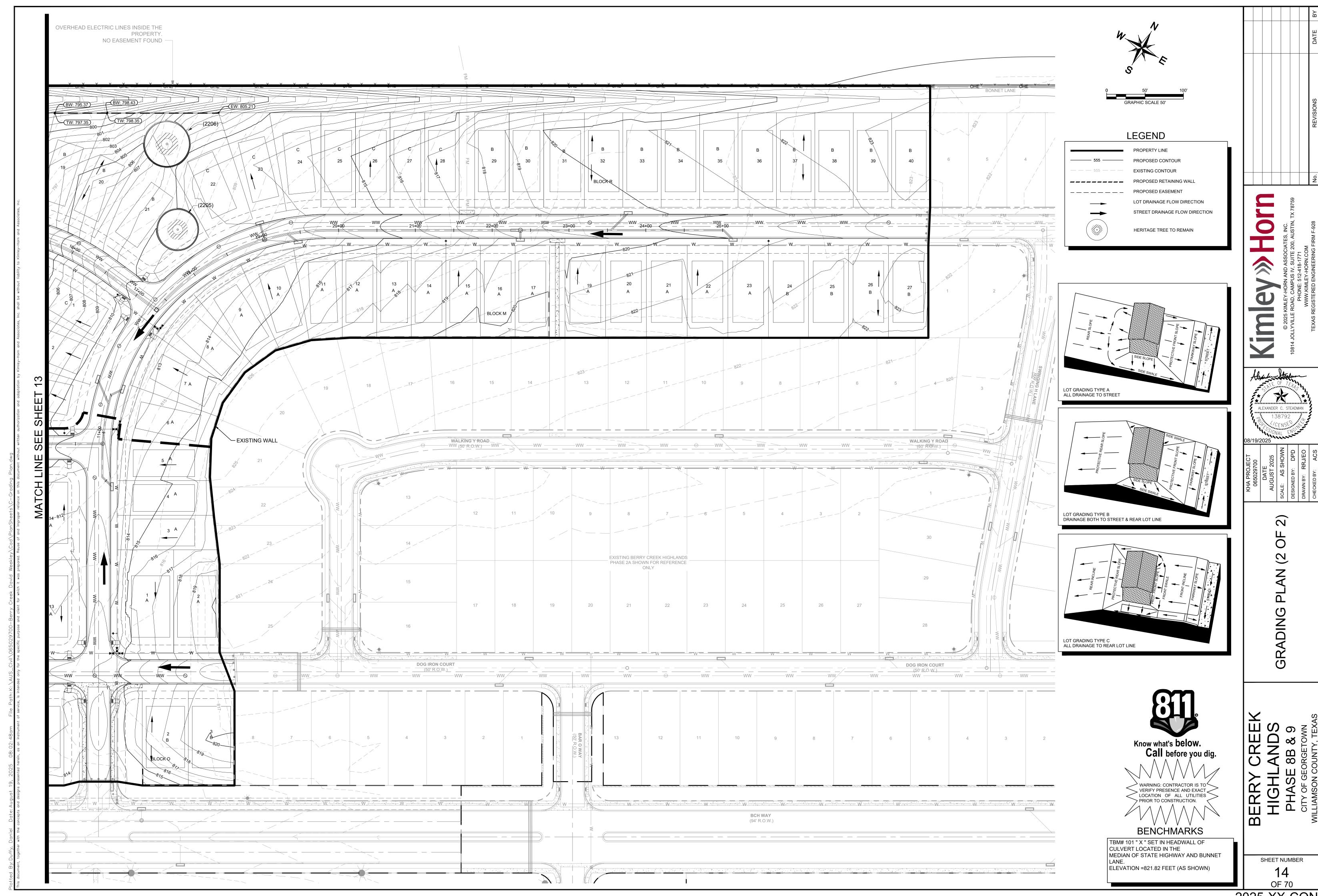
Ŋ

 \mathbf{m}

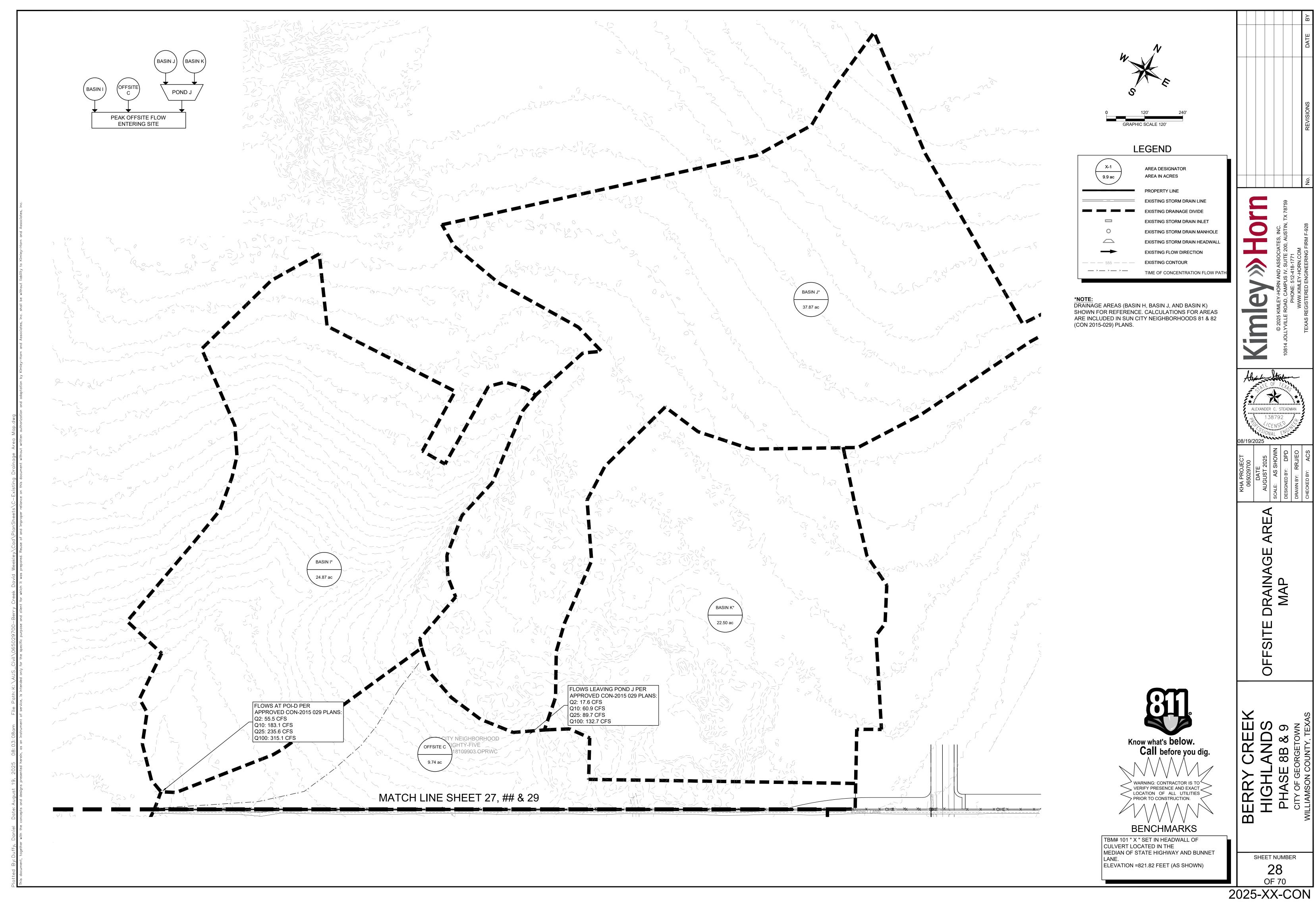


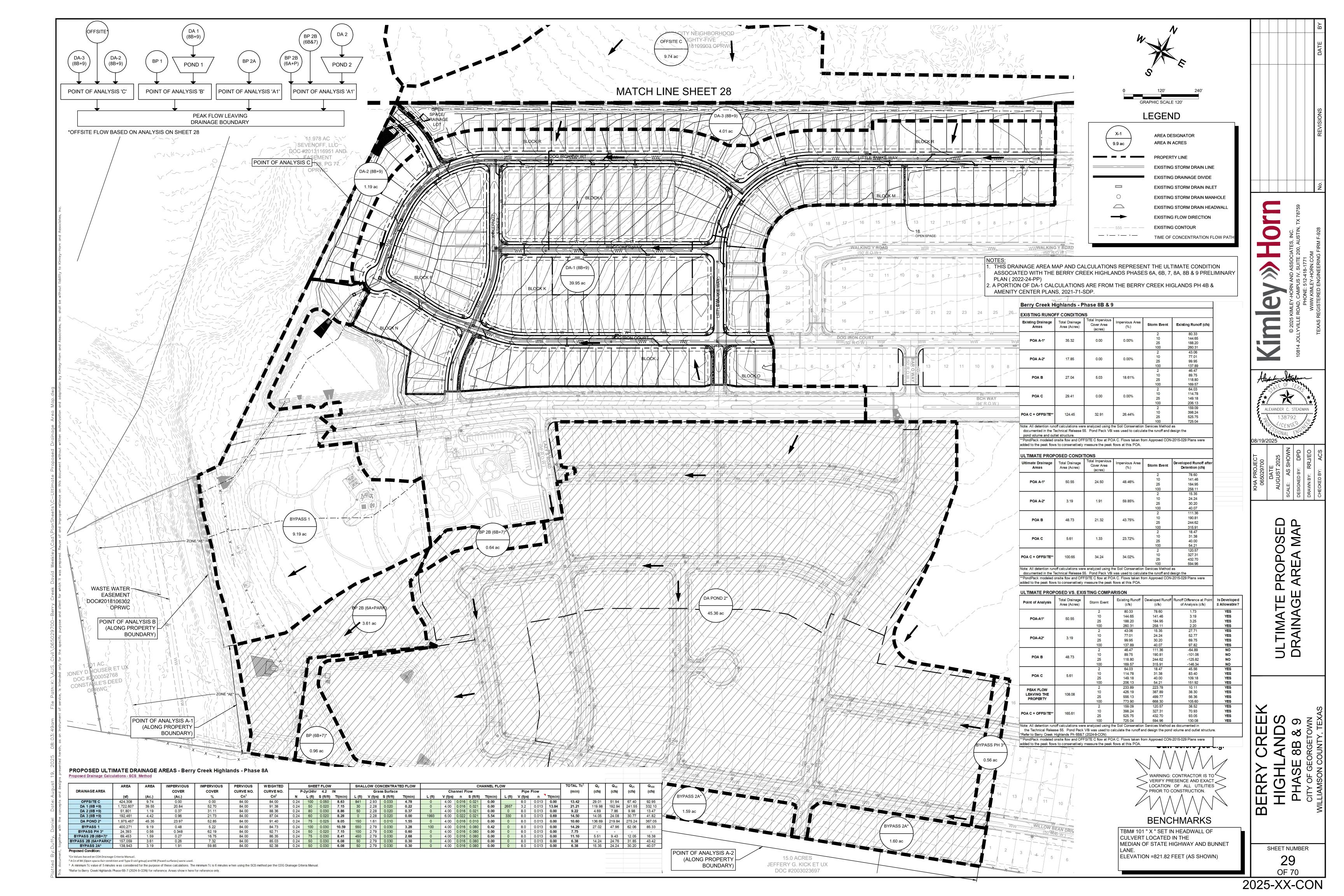


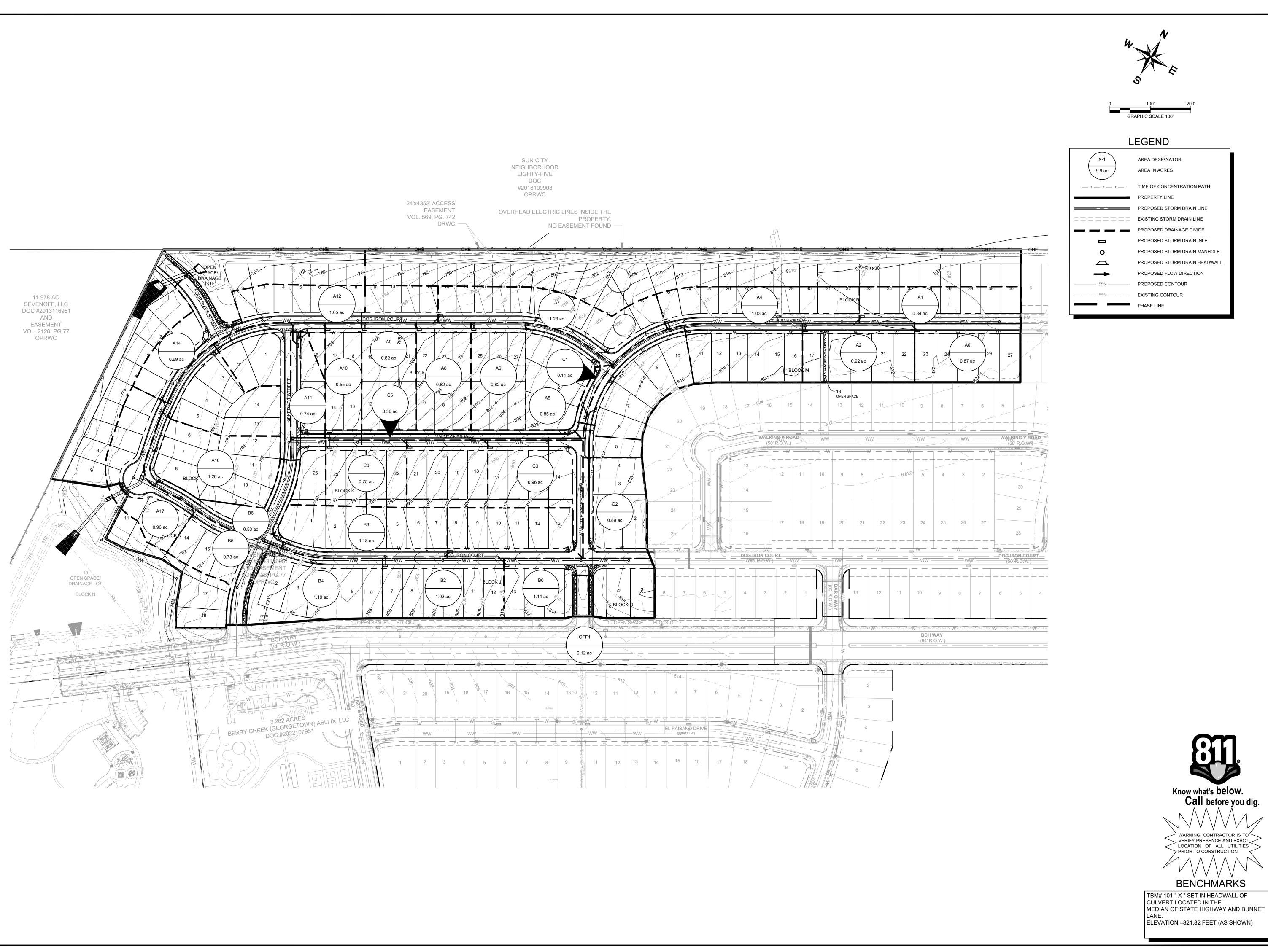


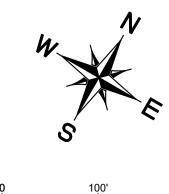




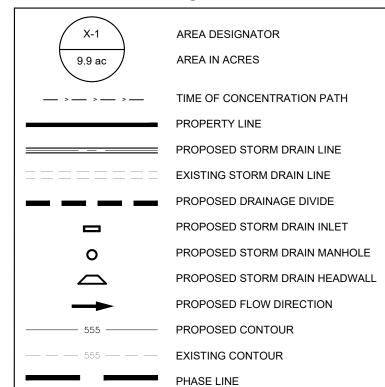








LEGEND



BERRY HIGHI PHASE

Know what's below.

Call before you dig.

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

BENCHMARKS

TBM# 101 " X " SET IN HEADWALL OF

SHEET NUMBER

Berry Creek Highlands - Phase 8B & 9 - Inlet Drainage Calculations									
Proposed "C" Value Calculations									
-									
_									
INLET DRAINAGE									
AREA	AREA	AREA	IMPERVIOUS	IMPERVIOUS	IMPERVIOUS	Comp.	Comp.	Comp.	Comp.
			COVER	COVER	COVER	C ₂	C ₁₀	C ₂₅	C ₁₀₀
	(SF)	(AC)	(SF)	(Ac.)	%			23	- 100
A0	37859.77	0.87	22,371	0.51	59%	0.70	0.72	0.73	0.76
A1	36585.23	0.84	21,800	0.50	60%	0.70	0.72	0.74	0.76
A2	40165	0.92	22,254	0.51	55%	0.68	0.70	0.71	0.74
A3	40787.07	0.94	25,435	0.58	62%	0.72	0.74	0.75	0.78
A4	44822.06	1.03	22,168	0.51	49%	0.64	0.66	0.68	0.71
A5	37087.48	0.85	15,202	0.35	41%	0.58	0.61	0.63	0.67
A6	35901.34	0.82	20,618	0.47	57%	0.69	0.71	0.72	0.75
A7	53470.6	1.23	27,626	0.63	52%	0.65	0.68	0.69	0.72
A8	35907.6	0.82	20,618	0.47	57%	0.69	0.71	0.72	0.75
A9	35912.4	0.82	20,618	0.47	57%	0.69	0.71	0.72	0.75
A10	23940	0.55	13,745	0.32	57%	0.69	0.71	0.72	0.75
A11	32322.38	0.74	17,826	0.41	55%	0.67	0.70	0.71	0.74
A12	45727.09	1.05	26,203	0.60	57%	0.69	0.71	0.72	0.75
A13	33477.84	0.77	18,332	0.42	55%	0.67	0.69	0.71	0.74
A14	30105.76	0.69	18,526	0.43	62%	0.72	0.74	0.75	0.77
A15	40112.61	0.92	19,242	0.44	48%	0.63	0.65	0.67	0.70
A16	52465.71	1.20	23,458	0.54	45%	0.61	0.63	0.65	0.69
A17	41909.91	0.96	15,844	0.36	38%	0.56	0.59	0.61	0.65
B0	49487.71	1.14	26,121	0.60	53%	0.66	0.68	0.70	0.73
B1	39110.33	0.90	27,268	0.63	70%	0.77	0.79	0.79	0.82
B2 B3	44414.33	1.02	26,550	0.61	60%	0.70	0.72	0.74	0.76
вз В4	51254.01 51698.3	1.18 1.19	35,506 26,020	0.82 0.60	69% 50%	0.77 0.64	0.78 0.67	0.79 0.68	0.81 0.72
B5	31637.37	0.73	13,352	0.80	42%	0.64	0.67	0.63	0.72
B6	23261.4	0.73	11,629	0.31	50%	0.59	0.62	0.68	0.88
<u>C0</u>	51114.71	1.17	27,116	0.62	53%	0.66	0.68	0.70	0.73
C1	4783.71	0.11	4,190	0.10	88%	0.89	0.89	0.90	0.91
C2	38684.78	0.89	22,982	0.53	59%	0.70	0.72	0.73	0.76
C3	42019.81	0.96	24,404	0.56	58%	0.69	0.71	0.73	0.76
C4	33363.27	0.77	17,700	0.41	53%	0.66	0.68	0.70	0.73
C5	15674.4	0.36	13,058	0.30	83%	0.86	0.87	0.87	0.88
C6	32807.17	0.75	17,700	0.41	54%	0.67	0.69	0.70	0.74

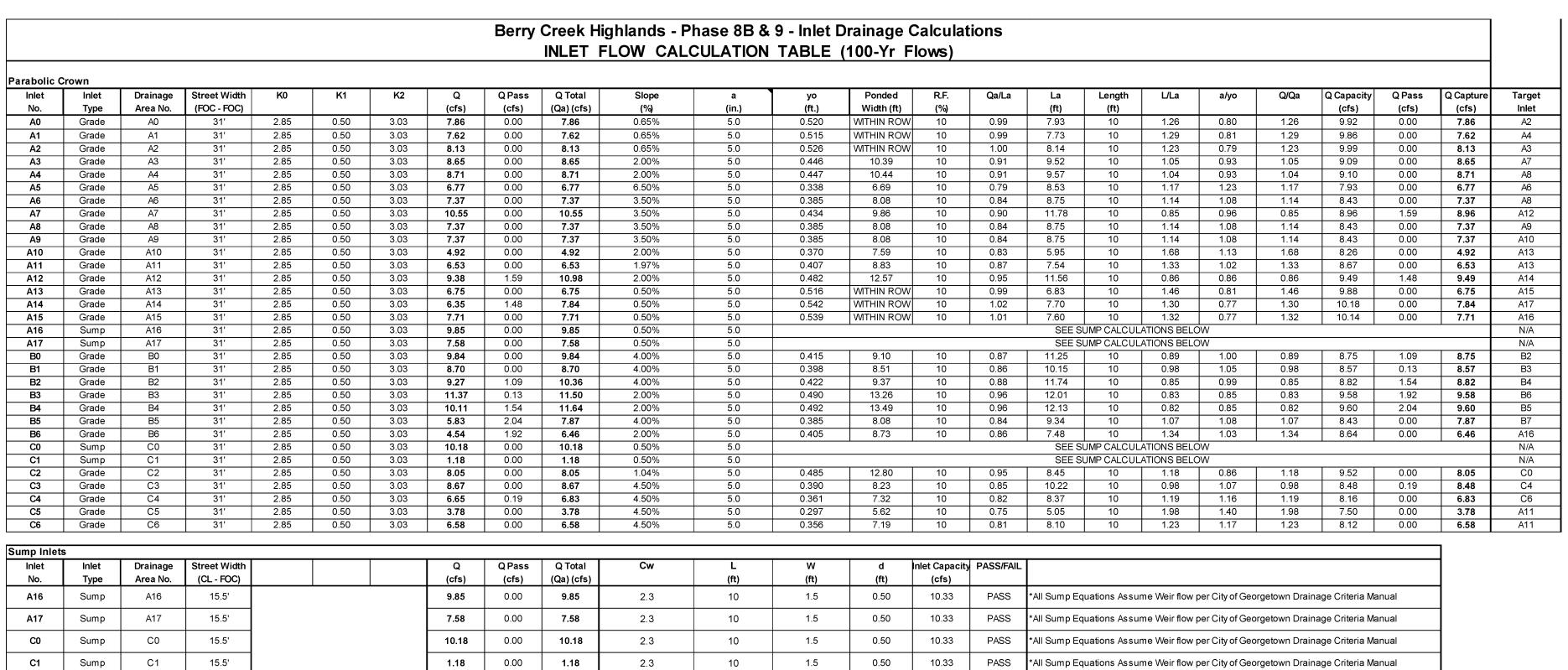
Calculations 'Tc" Value Calculation	16
TO VAIGO DATOGIAGO	
DRAINAGE AREA	TOTAL Tc**
	(min)
Α0	5.00
A1	5.00
A2	5.00
A3	5.00
A4	5.00
A5	5.00
A6	5.00
A7	5.00
A8	5.00
A9	5.00
A10	5.00
A11	5.00
A12	5.00
A13	5.00
A14	5.00
A15	5.00
A16	5.00
A17	5.00
B0	5.00
B1	5.00
B2	5.00
B3	5.00
B4	5.00
B5	5.00
B6	5.00
C0	5.00
C1	5.00
C2	5.00
C3	5.00
C4	5.00
C5	5.00
C6	5.00

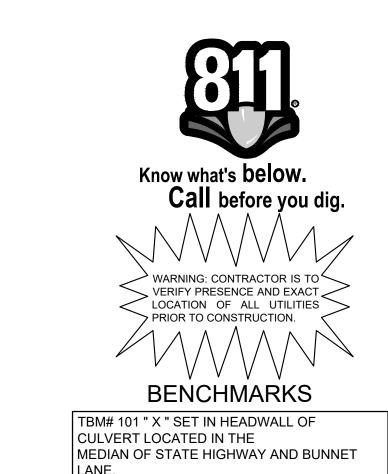
Storm Event	Good Condition	(Grass cover > 75% 2-7%
C'	Pervious	Impervious
C ₂	0.31	0.97
C ₂ C ₁₀ C ₂₅ C ₁₀₀	0.36	0.97
C ₂₅	0.39	0.97
C ₁₀₀	0.46	0.97

Storm Event	Good Condition (Grass cover > 75% 2-7%		
C'	Pervious	Impervious	
C_2	0.31	0.97	
C ₂ C ₁₀ C ₂₅ C ₁₀₀	0.36	0.97	
C ₂₅	0.39	0.97	
C ₁₀₀	0.46	0.97	

			D'	erry Cre	_		Inlet Run			_	aicuiatio	7113				
D.A.	Drainage	TOTAL I.C.	Comp.	Comp.	Comp.	Comp.	TOTAL	i ₂	i ₁₀	i ₂₅	i ₁₀₀	Q_2	Q ₁₀	Q ₂₅	Q ₁₀₀	Q ₁₀₀ -Pas
Number	Area (Ac)	(%)	C_2	C ₁₀	C ₂₅	C ₁₀₀	T _c (Min.)	(in/hr)	(in/hr)	(in/hr)	(in/hr)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
A0	0.87	59%	0.70	0.72	0.73	0.76	5.00	6.48	8.64	9.84	11.88	3.94	5.41	6.27	7.86	0.00
A1	0.84	60%	0.70	0.72	0.74	0.76	5.00	6.48	8.64	9.84	11.88	3.83	5.25	6.08	7.62	0.00
A2	0.92	55%	0.68	0.70	0.71	0.74	5.00	6.48	8.64	9.84	11.88	4.04	5.56	6.45	8.13	0.00
A3	0.94	62%	0.72	0.74	0.75	0.78	5.00	6.48	8.64	9.84	11.88	4.38	5.99	6.93	8.65	0.00
A4	1.03	49%	0.64	0.66	0.68	0.71	5.00	6.48	8.64	9.84	11.88	4.24	5.88	6.85	8.71	0.00
A5	0.85	41%	0.58	0.61	0.63	0.67	5.00	6.48	8.64	9.84	11.88	3.20	4.49	5.26	6.77	0.00
A6	0.82	57%	0.69	0.71	0.72	0.75	5.00	6.48	8.64	9.84	11.88	3.68	5.06	5.86	7.37	0.00
A7	1.23	52%	0.65	0.68	0.69	0.72	5.00	6.48	8.64	9.84	11.88	5.18	7.16	8.33	10.55	1.59
A8	0.82	57%	0.69	0.71	0.72	0.75	5.00	6.48	8.64	9.84	11.88	3.68	5.06	5.86	7.37	0.00
A9	0.82	57%	0.69	0.71	0.72	0.75	5.00	6.48	8.64	9.84	11.88	3.68	5.06	5.86	7.37	0.00
A10	0.55	57%	0.69	0.71	0.72	0.75	5.00	6.48	8.64	9.84	11.88	2.45	3.37	3.91	4.92	0.00
A11	0.74	55%	0.67	0.70	0.71	0.74	5.00	6.48	8.64	9.84	11.88	3.24	4.47	5.18	6.53	0.0
A12	1.05	57%	0.69	0.71	0.72	0.75	5.00	6.48	8.64	9.84	11.88	4.68	6.44	7.46	9.38	1.4
A13	0.77	55%	0.67	0.69	0.71	0.74	5.00	6.48	8.64	9.84	11.88	3.34	4.61	5.35	6.75	0.0
A14	0.69	62%	0.72	0.74	0.75	0.77	5.00	6.48	8.64	9.84	11.88	3.21	4.39	5.08	6.35	0.0
A15	0.92	48%	0.63	0.65	0.67	0.70	5.00	6.48	8.64	9.84	11.88	3.74	5.19	6.05	7.71	0.00
A16	1.20	45%	0.61	0.63	0.65	0.69	5.00	6.48	8.64	9.84	11.88	4.72	6.59	7.70	9.85	0.0
A17	0.96	38%	0.56	0.59	0.61	0.65	5.00	6.48	8.64	9.84	11.88	3.49	4.91	5.77	7.46	0.0
B0	1.14	53%	0.66	0.68	0.70	0.73	5.00	6.48	8.64	9.84	11.88	4.85	6.70	7.78	9.84	1.0
B1	0.90	70%	0.77	0.79	0.79	0.82	5.00	6.48	8.64	9.84	11.88	4.48	6.09	7.02	8.70	0.1
B2	1.02	60%	0.70	0.72	0.74	0.76	5.00	6.48	8.64	9.84	11.88	4.65	6.39	7.39	9.27	1.5
B3	1.18	69%	0.77	0.78	0.79	0.81	5.00	6.48	8.64	9.84	11.88	5.85	7.96	9.17	11.37	1.92
B4	1.19	50%	0.64	0.67	0.68	0.72	5.00	6.48	8.64	9.84	11.88	4.94	6.84	7.96	10.11	2.04
B5	0.73	42%	0.59	0.62	0.63	0.68	5.00	6.48	8.64	9.84	11.88	2.77	3.88	4.54	5.83	0.0
B6	0.53	50%	0.64	0.66	0.68	0.71	5.00	6.48	8.64	9.84	11.88	2.21	3.07	3.57	4.54	0.00
C0	1.17	53%	0.66	0.68	0.70	0.73	5.00	6.48	8.64	9.84	11.88	5.02	6.93	8.06	10.18	0.0
C1	0.11	88%	0.89	0.89	0.90	0.91	5.00	6.48	8.64	9.84	11.88	0.63	0.85	0.97	1.18	0.00
C2	0.89	59%	0.70	0.72	0.73	0.76	5.00	6.48	8.64	9.84	11.88	4.04	5.54	6.42	8.05	0.00
C3	0.96	58%	0.69	0.71	0.73	0.76	5.00	6.48	8.64	9.84	11.88	4.33	5.95	6.90	8.67	0.19
C4	0.77	53%	0.66	0.68	0.70	0.73	5.00	6.48	8.64	9.84	11.88	3.28	4.52	5.26	6.65	0.0
C5	0.36	83%	0.86	0.87	0.87	0.88	5.00	6.48	8.64	9.84	11.88	2.00	2.70	3.09	3.78	0.00
C6	0.75	54%	0.67	0.69	0.70	0.74	5.00	6.48	8.64	9.84	11.88	3.25	4.49	5.21	6.58	0.00

								Berry	`	ghlands - P FLOW CAL			_		tions									
arabolic (Crown																						l	l
Inlet	Inlet	Drainage	Street Width	K0	K1	K2	Q	Q Pass	Q Total	Slope	а	уо	Ponded	R.F.	Qa/La	La	Length	L/La	a/yo	Q/Qa	Q Capacity	Q Pass	Q Capture	<u> </u>
No.	Type	Area No.	(FOC - FOC)				(cfs)	(cfs)	(Qa) (cfs)	(%)	(in.)	(ft.)	Width (ft)	(%)	Qu/Lu	(ft)	(ft)		",,,,,	a au	(cfs)	(cfs)	(cfs)	i i
A0	Grade	AO	31'	2.85	0.50	3.03	6.27	0.00	6.27	0.65%	5.0	0.482	12.59	10	0.95	6.60	10	1.52	0.86	1.52	9.49	0.00	6.27	$\overline{}$
A1	Grade	A1	31'	2.85	0.50	3.03	6.08	0.00	6.08	0.65%	5.0	0.478	12.21	10	0.94	6.44	10	1.55	0.87	1.55	9.44	0.00	6.08	
A2	Grade	A2	31'	2.85	0.50	3.03	6.45	0.00	6.45	0.65%	5.0	0.487	13.01	10	0.95	6.76	10	1.48	0.86	1.48	9.55	0.00	6.45	
A3	Grade	A3	31'	2.85	0.50	3.03	6.93	0.00	6.93	2.00%	5.0	0.414	9.08	10	0.87	7.92	10	1.26	1.01	1.26	8.74	0.00	6.93	
A4	Grade	A4	31'	2.85	0.50	3.03	6.85	0.00	6.85	2.00%	5.0	0.413	9.02	10	0.87	7.85	10	1.27	1.01	1.27	8.72	0.00	6.85	$\overline{}$
A5	Grade	A5	31'	2.85	0.50	3.03	5.26	0.00	5.26	6.50%	5.0	0.311	5.98	10	0.76	6.88	10	1.45	1.34	1.45	7.65	0.00	5.26	$\overline{}$
A6	Grade	A6	31'	2.85	0.50	3.03	5.86	0.00	5.86	3.50%	5.0	0.357	7.22	10	0.81	7.21	10	1.39	1.17	1.39	8.13	0.00	5.86	
A7	Grade	A7	31'	2.85	0.50	3.03	8.33	0.00	8.33	3.50%	5.0	0.401	8.61	10	0.86	9.68	10	1.03	1.04	1.03	8.60	0.00	8.33	$\overline{}$
A8	Grade	A8	31'	2.85	0.50	3.03	5.86	0.00	5.86	3.50%	5.0	0.357	7.22	10	0.81	7.21	10	1.39	1.17	1.39	8.13	0.00	5.86	
A9	Grade	A9	31'	2.85	0.50	3.03	5.86	0.00	5.86	3.50%	5.0	0.357	7.22	10	0.81	7.21	10	1.39	1.17	1.39	8.13	0.00	5.86	_
A10	Grade	A10	31'	2.85	0.50	3.03	3.91	0.00	3.91	2.00%	5.0	0.343	6.81	10	0.80	4.90	10	2.04	1.22	2.04	7.98	0.00	3.91	
A11	Grade	A11	31'	2.85	0.50	3.03	5.18	0.00	5.18	1.97%	5.0	0.377	7.82	10	0.83	6.21	10	1.61	1.10	1.61	8.34	0.00	5.18	
A12	Grade	A12	31'	2.85	0.50	3.03	7.46	0.00	7.46	2.00%	5.0	0.424	9.47	10	0.89	8.43	10	1.19	0.98	1.19	8.85	0.00	7.46	$\overline{}$
A13	Grade	A13	31'	2.85	0.50	3.03	5.35	0.00	5.35	0.50%	5.0	0.478	12.26	10	0.94	5.66	10	1.77	0.87	1.77	9.45	0.00	5.35	$\overline{}$
A14	Grade	A14	31'	2.85	0.50	3.03	5.08	0.00	5.08	0.50%	5.0	0.470	11.70	10	0.94	5.43	10	1.84	0.89	1.84	9.36	0.00	5.08	<u> </u>
A15	Grade	A15	31'	2.85	0.50	3.03	6.05	0.00	6.05	0.50%	5.0	0.498	14.52	10	0.97	6.26	10	1.60	0.84	1.60	9.67	0.00	6.05	$\overline{}$
A16	Sump	A16	31'	2.85	0.50	3.03	7.70	0.00	7.70	0.50%	5.0		•					ATIONS BELO						1
A17	Sump	A17	31'	2.85	0.50	3.03	5.88	0.00	5.88	0.50%	5.0					SEE S	UMP CALCUI	_ATIONS BEL	OW				•	(
B0	Grade	B0	31'	2.85	0.50	3.03	7.78	0.00	7.78	4.00%	5.0	0.384	8.03	10	0.84	9.25	10	1.08	1.09	1.08	8.41	0.00	7.78	1
B1	Grade	B1	31'	2.85	0.50	3.03	7.02	0.00	7.02	4.00%	5.0	0.371	7.63	10	0.83	8.48	10	1.18	1.12	1.18	8.27	0.00	7.02	Ĺ
B2	Grade	B2	31'	2.85	0.50	3.03	7.39	0.00	7.39	4.00%	5.0	0.377	7.82	10	0.83	8.86	10	1.13	1.10	1.13	8.34	0.00	7.39	
B3	Grade	B3	31'	2.85	0.50	3.03	9.17	0.00	9.17	2.00%	5.0	0.454	10.81	10	0.92	9.98	10	1.00	0.92	1.00	9.18	0.00	9.17	
B4	Grade	B4	31'	2.85	0.50	3.03	7.96	0.00	7.96	2.00%	5.0	0.434	9.85	10	0.90	8.89	10	1.12	0.96	1.12	8.95	0.00	7.96	
B5	Grade	B5	31'	2.85	0.50	3.03	4.54	0.00	4.54	4.00%	5.0	0.321	6.23	10	0.78	5.85	10	1.71	1.30	1.71	7.75	0.00	4.54	<u> </u>
B6	Grade	B6	31'	2.85	0.50	3.03	3.57	0.00	3.57	2.00%	5.0	0.333	6.54	10	0.79	4.54	10	2.20	1.25	2.20	7.87	0.00	3.57	
C0	Sump	C0	31'	2.85	0.50	3.03	8.06	0.00	8.06	0.50%	5.0							LATIONS BEL						<u> </u>
C1	Sump	C1	31'	2.85	0.50	3.03	0.97	0.00	0.97	0.50%	5.0							_ATIONS BELC						<u> </u>
C2	Grade	C2	31'	2.85	0.50	3.03	6.42	0.00	6.42	1.04%	5.0	0.450	10.59	10	0.91	7.03	10	1.42	0.93	1.42	9.13	0.00	6.42	<u> </u>
C3	Grade	C3	31'	2.85	0.50	3.03	6.90	0.00	6.90	4.50%	5.0	0.362	7.35	10	0.82	8.44	10	1.19	1.15	1.19	8.18	0.00	6.90	<u> </u>
C4	Grade	C4	31'	2.85	0.50	3.03	5.26	0.00	5.26	4.50%	5.0	0.331	6.48	10	0.78	6.70	10	1.49	1.26	1.49	7.85	0.00	5.26	<u> </u>
C5	Grade	C5	31'	2.85	0.50	3.03	3.09	0.00	3.09	4.50%	5.0	0.278	5.16	10	0.73	4.23	10	2.36	1.50	2.36	7.30	0.00	3.09	<u> </u>
C6	Grade	C6	31'	2.85	0.50	3.03	5.21	0.00	5.21	4.50%	5.0	0.330	6.46	10	0.78	6.64	10	1.50	1.26	1.50	7.84	0.00	5.21	
ump Inle	s																						٦	
Inlet	Inlet	Drainage	Street Width				Q	Q Pass	Q Total	Cw	L	W	d	Inlet Capacity	PASS/FAIL									
No.	Туре	Area No.	(CL - FOC)				(cfs)	(cfs)	(Qa) (cfs)		(ft)	(ft)	(ft)	(cfs)										
A16	Sump	A16	15.5'			•	7.70	0.00	7.70	2.3	10	1.5	0.50	10.33	PASS	*All Sump Ed	uations Assu	ıme Weir flow	per City of Ged	orgetown Draii	nage Criteria Ma	nual	7	
A17	Sump	A17	15.5'				5.88	0.00	5.88	2.3	10	1.5	0.50	10.33	PASS	*All Sump Ed	uations Assu	ıme Weir flow	per City of Geo	orgetown Draii	nage Criteria Ma	nual		
C0	Sump	C0	15.5'				8.06	0.00	8.06	2.3	10	1.5	0.50	10.33	PASS						nage Criteria Ma		\dashv	
														-		· ·	•		•				\dashv	
C1	Sump	C1	15.5'				0.97	0.00	0.97	2.3	10	1.5	0.50	10.33	PASS	All Sump Ed	uations Assu	ime vveir flow	per City of Geo	orgetown Draii	nage Criteria Ma	nual		





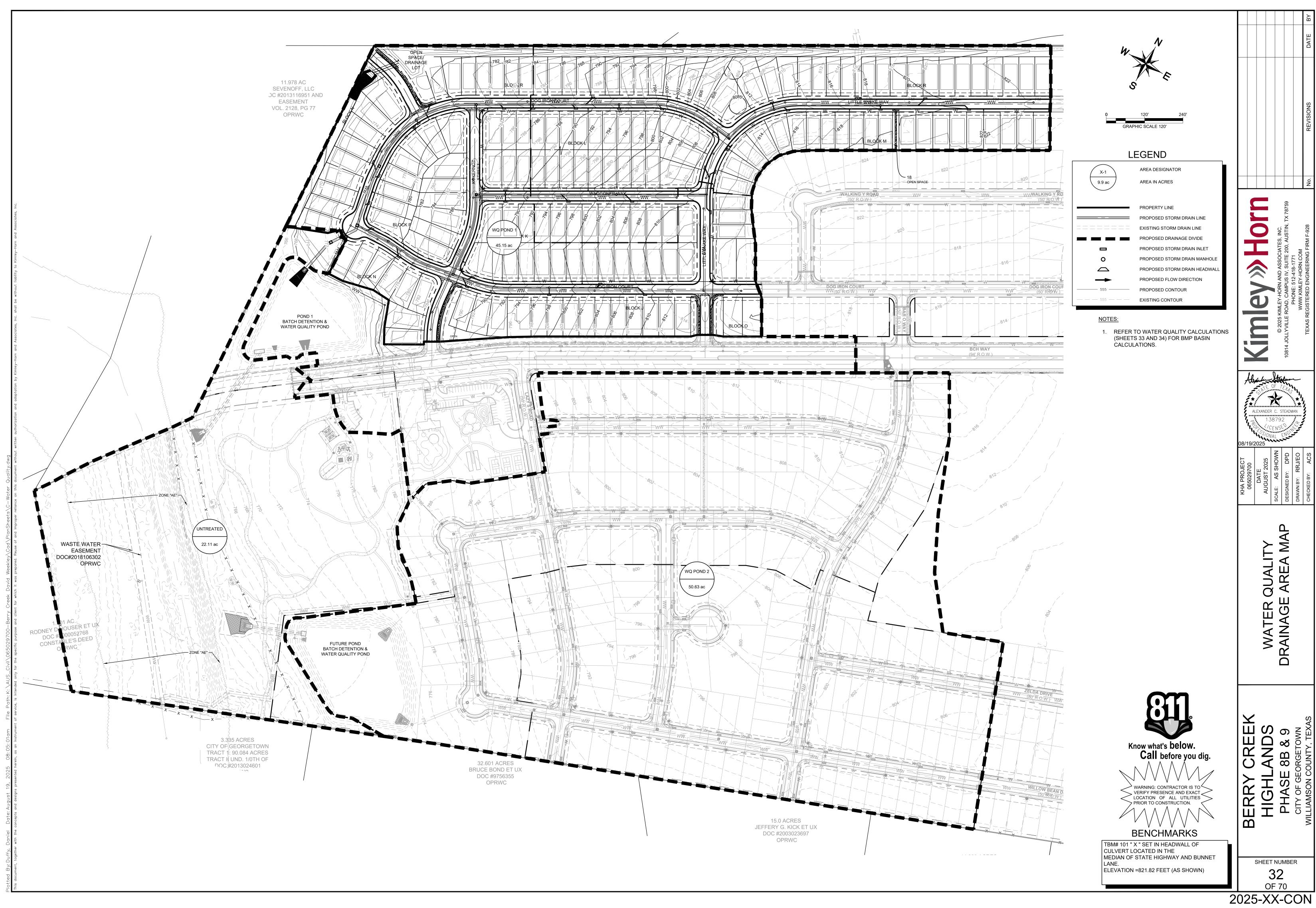
ELEVATION =821.82 FEET (AS SHOWN)

BERRY (
HIGHL/
PHASE SHEET NUMBER 31

CREEK
ANDS
8 8 9
ORGETOWN

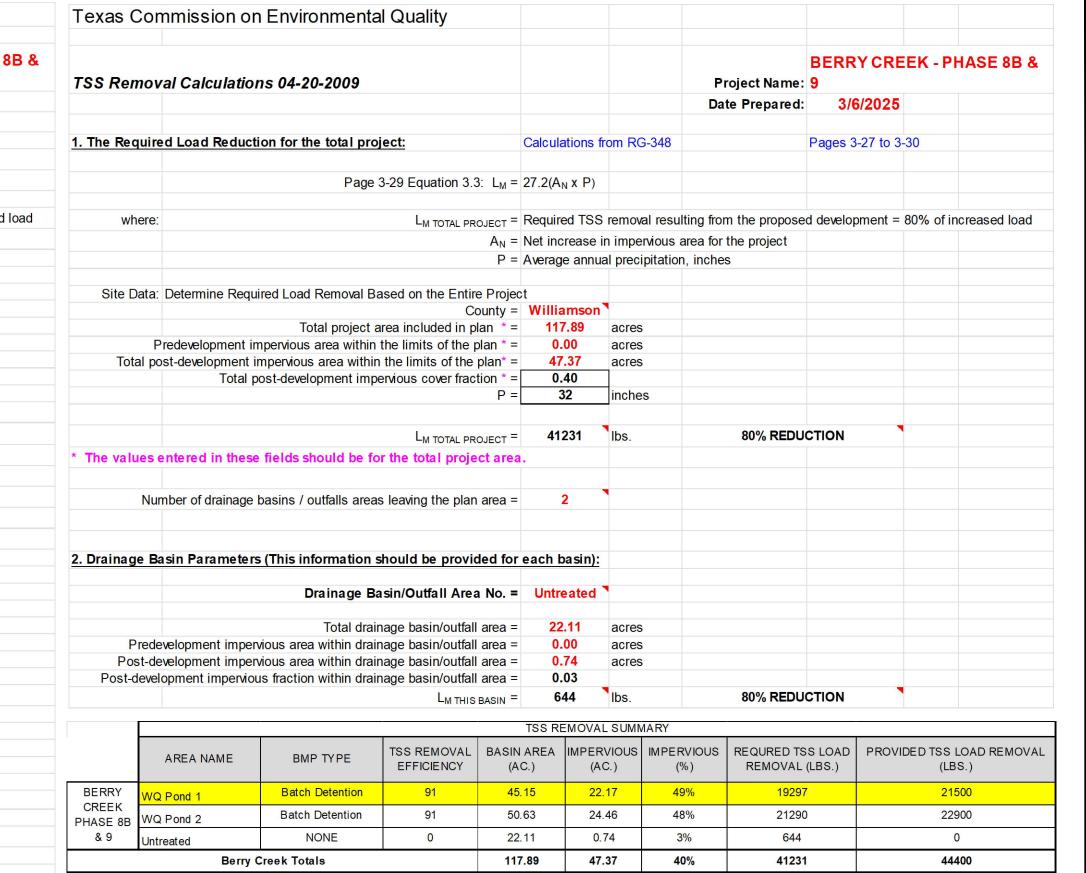
ALEXANDER C. STEADMAN

INLET DRAINAGE CALCULATIONS

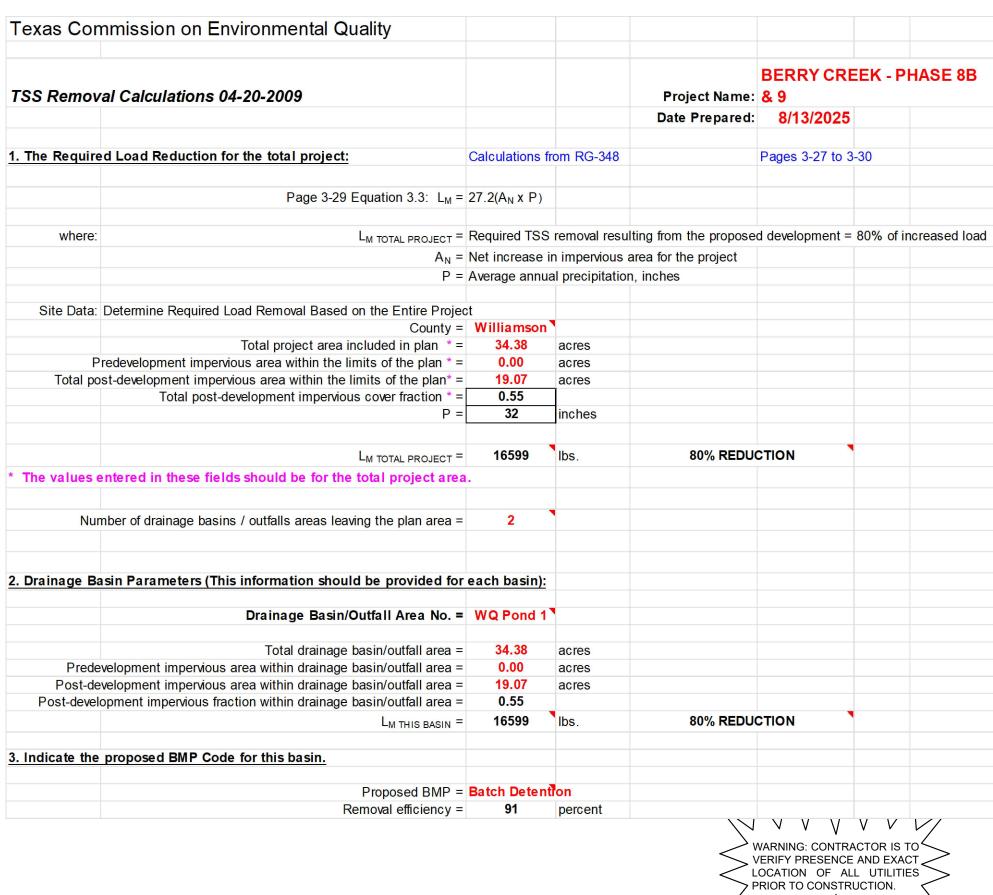


					BERRYCRE	EEK - P	HASE 8B
SS Remova	al Calculations 04-20-2009			Project Name:	& 9		INOL OB
				Date Prepared:	3/6/2025		
The Require	d Load Reduction for the total project:	Calculations fr	om RG-348		Pages 3-27 to 3	3-30	
	Page 3-29 Equation 3.3: L _M =	27.2(A _N x P)					
where:	[U TOTU PRO ITOT =	Required TSS	removal resu	llting from the propose	d develonment =	80% of in	ocreased load
WICIC.				area for the project	a acveropment –	0070 0111	lorcasca load
		Average annua	•				
Cita Data:	Determine Described Load Democral Deced on the Entire Ducies	4					
Site Data:	Determine Required Load Removal Based on the Entire Project County =	ा Williamson					
	Total project area included in plan *=	117.89	acres				
	redevelopment impervious area within the limits of the plan * = st-development impervious area within the limits of the plan* =		acres acres				
Total pos	Total post-development impervious cover fraction * =		acres				
	P =	32	inches				
		14004		OOM DEDITION	OTION!		
The welves a	LM TOTAL PROJECT =		lbs.	80% REDU	CHON		
ine values e	ntered in these fields should be for the total project area	l.					
Num	nber of drainage basins / outfalls areas leaving the plan area =	2					
Drainage Ba	sin Parameters (This information should be provided for	each basin):					
	Drainage Basin/Outfall Area No. =	WQ Pond 1					
Drode	Total drainage basin/outfall area = elopment impervious area within drainage basin/outfall area =		acres acres				
	velopment impervious area within drainage basin/outfall area = velopment impervious area within drainage basin/outfall area =		acres				
	ppment impervious fraction within drainage basin/outfall area =	0.49					
	L _M THIS BASIN =	19297	lbs.	80% REDU	CTION		
ndicate the	proposed BMP Code for this basin.						
	Proposed BMP = Removal efficiency =		on percent				
Calculate Ma	aximum TSS Load Removed (L _R) for this Drainage Basin			e.			
	RG-348 Page 3-33 Equation 3.7: L _R =	(BMP efficience	y) x P x (A ₁ :	x 34.6 + A _P x 0.54)			
where:	A _C =	Total On-Site	drainage area	in the BMP catchme	nt area		
0.000 (0.000)				n the BMP catchment			
	A _P =	Pervious area	remaining in	the BMP catchment a	rea		
	L _R =	TSS Load rem	oved from thi	is catchment area by t	he proposed BM	IP	
	A _C =	45.15	acres				
	$A_{c} = A_{c}$		acres				
	$A_{P} =$		acres				
	L _R =		lbs				
Calculate Fr	action of Annual Runoff to Treat the drainage basin / out	fall area					
	acinchi critimiani manchi ic manta inc anamage sacini i can						
	Desired L _{M THIS BASIN} =	21500	lbs.				
	F =	0.95					
	F =	บ.ชอ					
Calculate Ca	pture Volume required by the BMP Type for this drainag	ge basin / outfa	all area.	Calculations from RG	i-348	Pages 3-	-34 to 3-36
	Rainfall Depth =		inches				
	Post Development Runoff Coefficient = On-site Water Quality Volume =	0.35 150258	cubic feet				
	On-site vvater Quality volume =	130236	ouble leet				
		0-1-1-7	De si	D			
		Calculations fr	om KG-348	Pages 3-36 to 3-37			
			acres				
	Off-site area draining to BMP =						
	Off-site Impervious cover draining to BMP =	0.00	acres				
		0.00					
	Off-site Impervious cover draining to BMP = Impervious fraction of off-site area =	0.00 0 0.00					
	Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient = Off-site Water Quality Volume =	0.00 0 0.00 0	acres				
Total Car	Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient = Off-site Water Quality Volume = Storage for Sediment =	0.00 0 0.00 0	acres				
e following	Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient = Off-site Water Quality Volume = Storage for Sediment = oture Volume (required water quality volume(s) x 1.20) = sections are used to calculate the required water quality	0.00 0 0.00 0 30052 180310	cubic feet	d BMP.			
e following	Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient = Off-site Water Quality Volume = Storage for Sediment = Otture Volume (required water quality volume(s) x 1.20) =	0.00 0 0.00 0 30052 180310	cubic feet	d BMP.			
e following	Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient = Off-site Water Quality Volume = Storage for Sediment = oture Volume (required water quality volume(s) x 1.20) = sections are used to calculate the required water quality	0.00 0 0.00 0 30052 180310	cubic feet	d BMP.			
e following s	Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient = Off-site Water Quality Volume = Storage for Sediment = oture Volume (required water quality volume(s) x 1.20) = sections are used to calculate the required water quality	0.00 0 0.00 0 30052 180310	cubic feet	d BMP.			

exas Com	mission on Environmental Quality								
SS Pomovs	al Calculations 04-20-2009			Project Name:	BERRY CREEK - PHASE 8B				
os Relliova	ii Calculations 04-20-2009			Date Prepared:					
				B ate Frepared	0/0/2020				
The Required	d Load Reduction for the total project:	Calculations f	om RG-348		Pages 3-27 to 3	3-30			
	Page 3-29 Equation 3.3: $L_M =$	27 2(A _N x P)							
	. адо о до дашно поло. ди								
where:				ulting from the propose	d development =	80% of inc	reased load		
				area for the project					
	Ρ=	Average annua	ai precipitatio	on, inches					
Site Data: [Determine Required Load Removal Based on the Entire Project								
		Williamson							
Dr	Total project area included in plan * = edevelopment impervious area within the limits of the plan * =		acres						
	t-development impervious area within the limits of the plan* =		acres						
	Total post-development impervious cover fraction * =								
	P =	32	inches						
					,				
PL	L _M TOTAL PROJECT =		lbs.	80% REDU	CTION				
ine values ei	ntered in these fields should be for the total project area	l .							
Num	ber of drainage basins / outfalls areas leaving the plan area =	2							
Drainage Bas	sin Parameters (This information should be provided for	each basin):							
Diamage Da.	sin'i didineters (inis inionnation should be provided for	each basinj.							
	Drainage Basin/Outfall Area No. =	WQ Pond 2	•						
	Total dusingers basin/sutfall and a	E0 62							
Predev	Total drainage basin/outfall area = elopment impervious area within drainage basin/outfall area =		acres						
	elopment impervious area within drainage basin/outfall area =		acres						
Post-develo	pment impervious fraction within drainage basin/outfall area =								
	L _M THIS BASIN =	21290	lbs.	80% REDU	CTION				
Indicate the	proposed BMP Code for this basin.								
illuicate the	proposed BMF Code for this basin.								
	Proposed BMP =	Batch Detent	lon						
	Removal efficiency =		percent						
Calculate Ma	ximum TSS Load Removed (L _R) for this Drainage Basin	by the select	ed BMP Typ	<u>e.</u>					
	RG-348 Page 3-33 Equation 3.7: L _R =	(BMP efficience	:v) x P x (A	x 34 6 + A _D x 0 54)					
	, to 0.0 ; ago 0.00 I quanto IX	(2	77/ 1. 1. (1.1	, , , , , , , , , , , , , , , , , , ,					
where:	A _C =	Total On-Site	drainage are	a in the BMP catchme	nt area				
	$A_1 =$	Impervious are	a proposed	n the BMP catchment	area				
	A _P =	Pervious area	remaining in	the BMP catchment a	irea				
	L _R =	TSS Load rem	oved from th	is catchment area by t	he proposed BM	IP			
	A _C =		acres						
	A ₁ =		acres						
	A _P =		acres						
	L _R =	25056	Ibs						
Calculate Fra	ection of Annual Runoff to Treat the drainage basin / out	fall area	•						
	Desired L _{M THIS BASIN} =	22900	lbs.						
	F =	0.91							
Calculate Ca	pture Volume required by the BMP Type for this drainag	ge basin / out	all area.	Calculations from RG	6-348	Pages 3-3	4 to 3-36		
	2:412	4 00	inoher						
	11	1.80 0.35	inches						
	Rainfall Depth = Post Development Runoff Coefficient =		cubic feet						
	Rainfall Depth = Post Development Runoff Coefficient = On-site Water Quality Volume =	115249							
	Post Development Runoff Coefficient =	115249							
	Post Development Runoff Coefficient =		om RG-349	Pages 3-36 to 3 37					
	Post Development Runoff Coefficient =		rom RG-348	Pages 3-36 to 3-37					
	Post Development Runoff Coefficient = On-site Water Quality Volume = Off-site area draining to BMP =	Calculations f	acres	Pages 3-36 to 3-37					
	Post Development Runoff Coefficient = On-site Water Quality Volume = Off-site area draining to BMP = Off-site Impervious cover draining to BMP =	Calculations f		Pages 3-36 to 3-37					
	Post Development Runoff Coefficient = On-site Water Quality Volume = Off-site area draining to BMP = Off-site Impervious cover draining to BMP = Impervious fraction of off-site area =	0.00 0.00 0.00	acres	Pages 3-36 to 3-37					
	Post Development Runoff Coefficient = On-site Water Quality Volume = Off-site area draining to BMP = Off-site Impervious cover draining to BMP =	0.00 0.00 0.00 0	acres	Pages 3-36 to 3-37					
	Post Development Runoff Coefficient = On-site Water Quality Volume = Off-site area draining to BMP = Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient =	0.00 0.00 0.00 0	acres acres	Pages 3-36 to 3-37					
	Post Development Runoff Coefficient = On-site Water Quality Volume = Off-site area draining to BMP = Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient = Off-site Water Quality Volume = Storage for Sediment =	0.00 0.00 0 0 0 0 0 0 0 23050	acres acres cubic feet	Pages 3-36 to 3-37					
	Post Development Runoff Coefficient = On-site Water Quality Volume = Off-site area draining to BMP = Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient = Off-site Water Quality Volume = Storage for Sediment = Offuse Volume (required water quality volume(s) x 1.20) =	0.00 0.00 0.00 0 0.00 0	acres acres cubic feet						
e following s	Post Development Runoff Coefficient = On-site Water Quality Volume = Off-site area draining to BMP = Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient = Off-site Water Quality Volume = Storage for Sediment =	0.00 0.00 0.00 0 0.00 0	acres acres cubic feet						



BERRY CREEK PH 8B& 9 ONLY



BERRY CREEK
HIGHLANDS
PHASE 8B & 9
CITY OF GEORGETOWN

BENCHMARKS

TBM# 101 " X " SET IN HEADWALL OF

ELEVATION =821.82 FEET (AS SHOWN)

MEDIAN OF STATE HIGHWAY AND BUNNET

CULVERT LOCATED IN THE

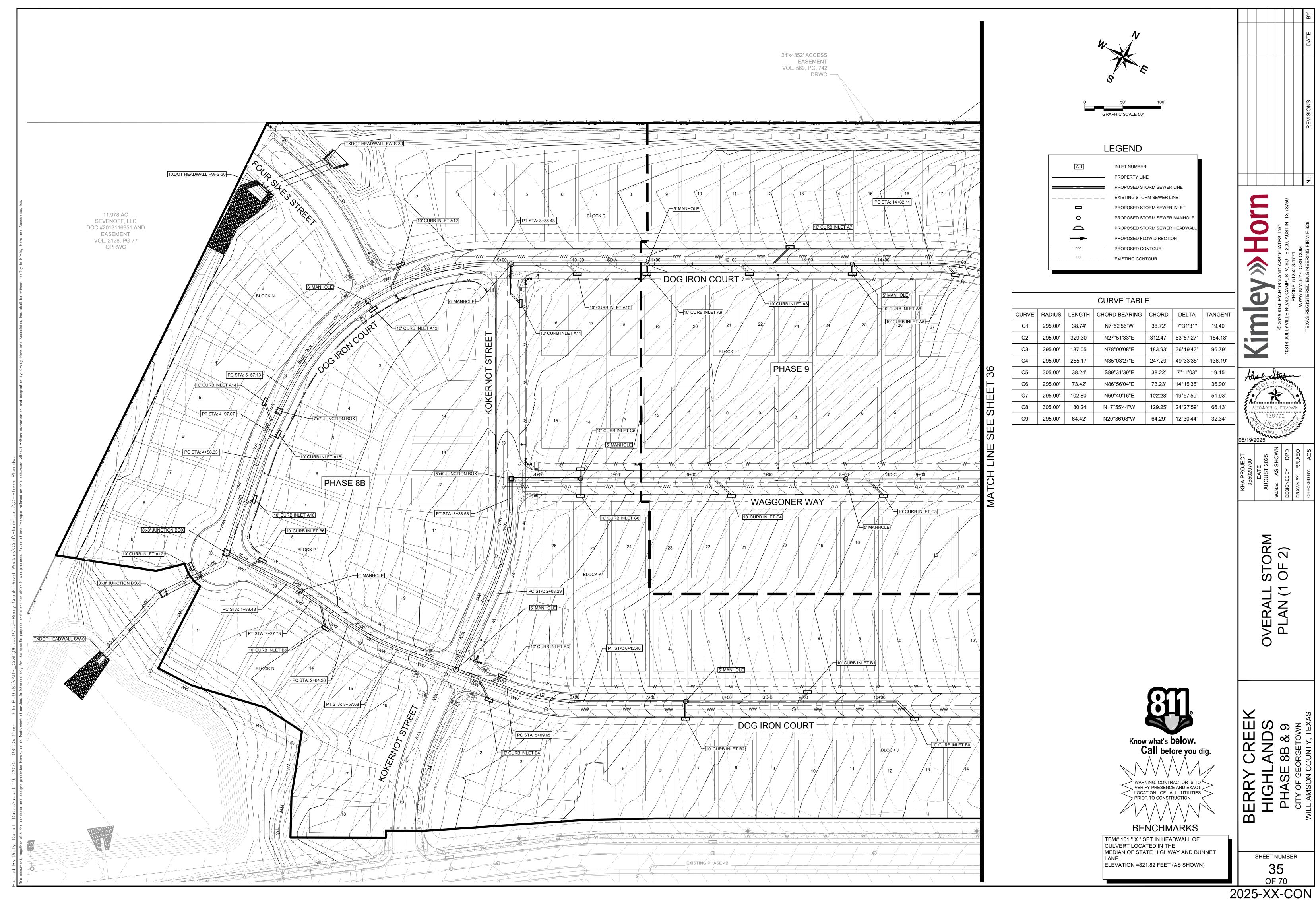
D

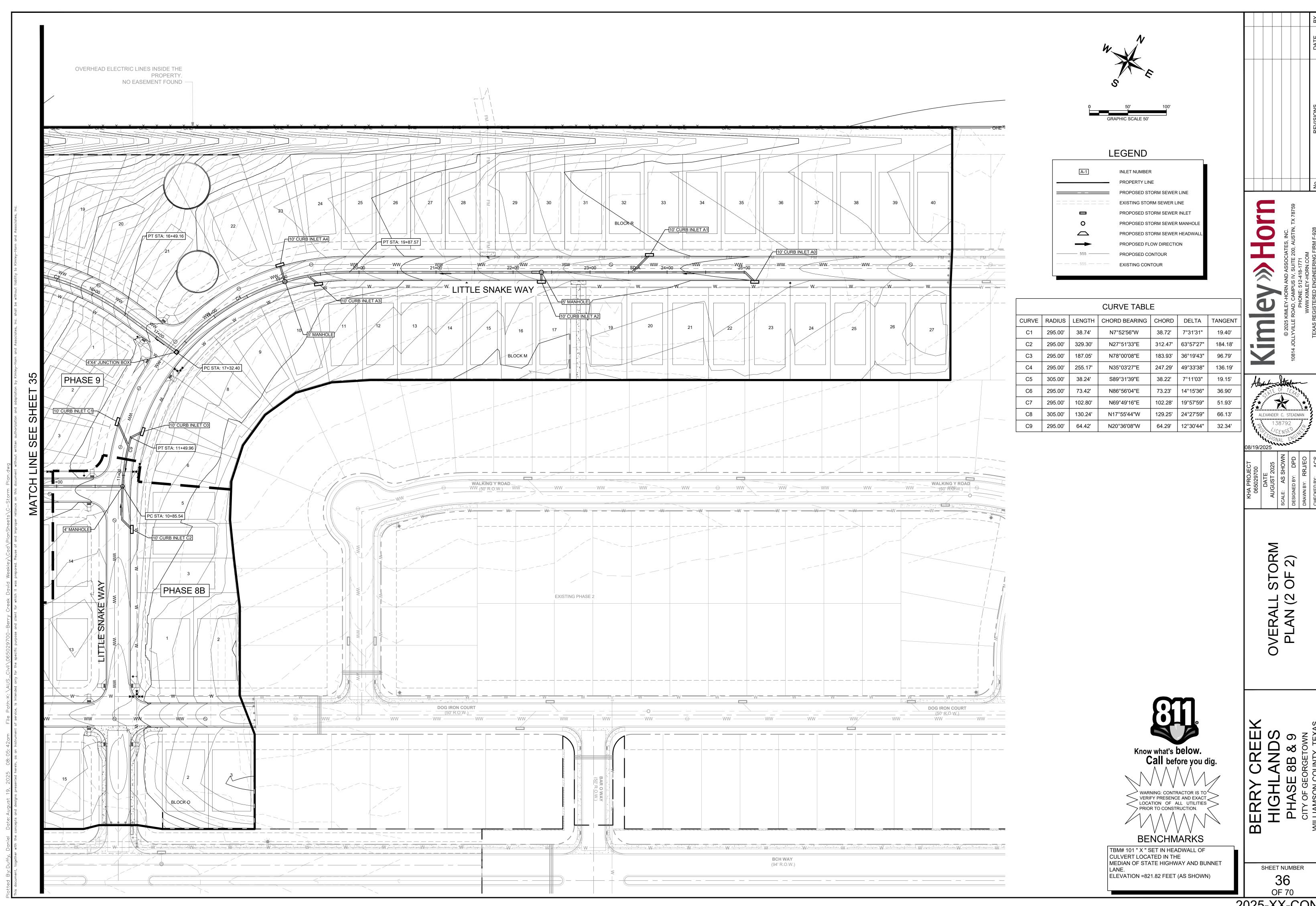
SHEET NUMBER

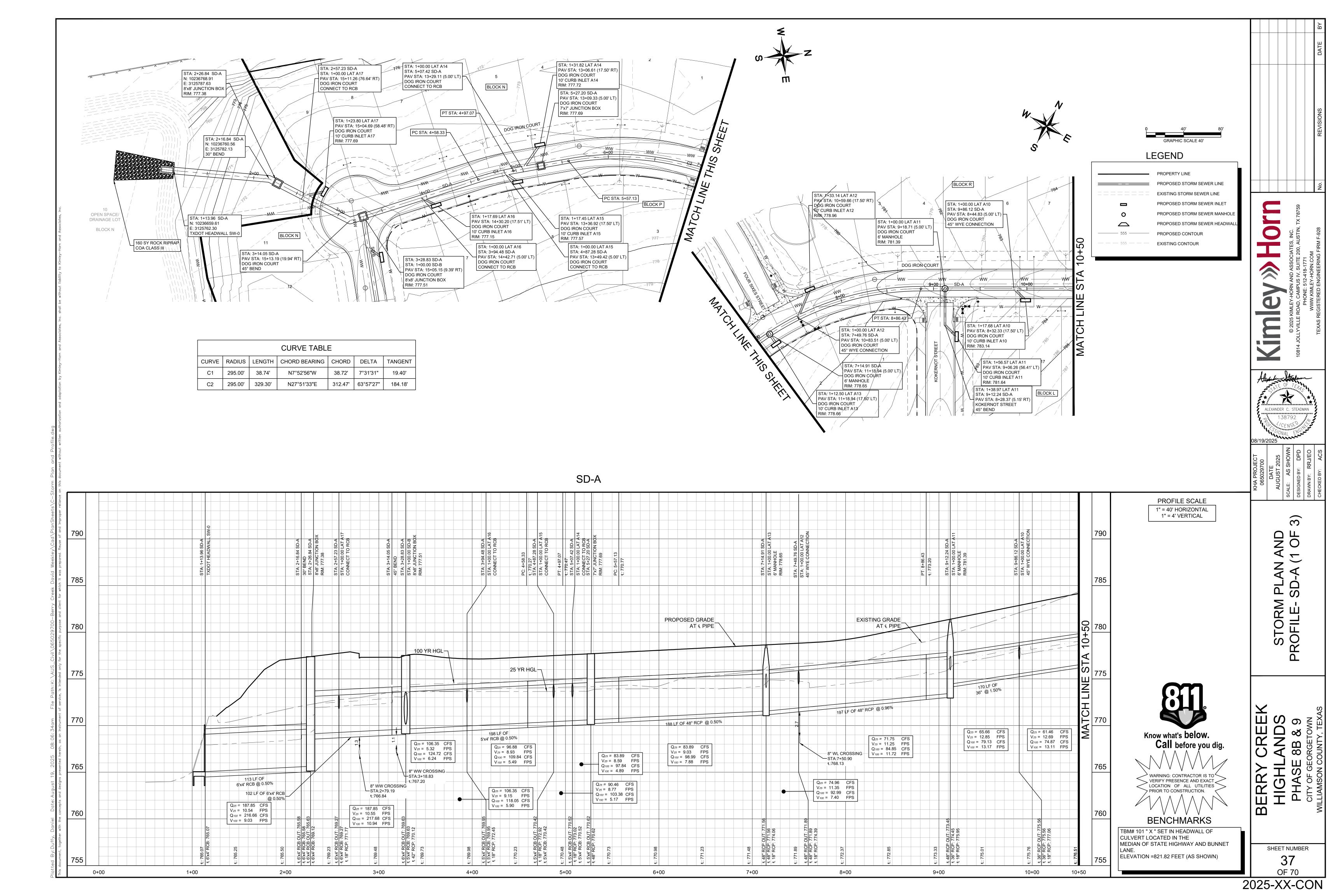
34

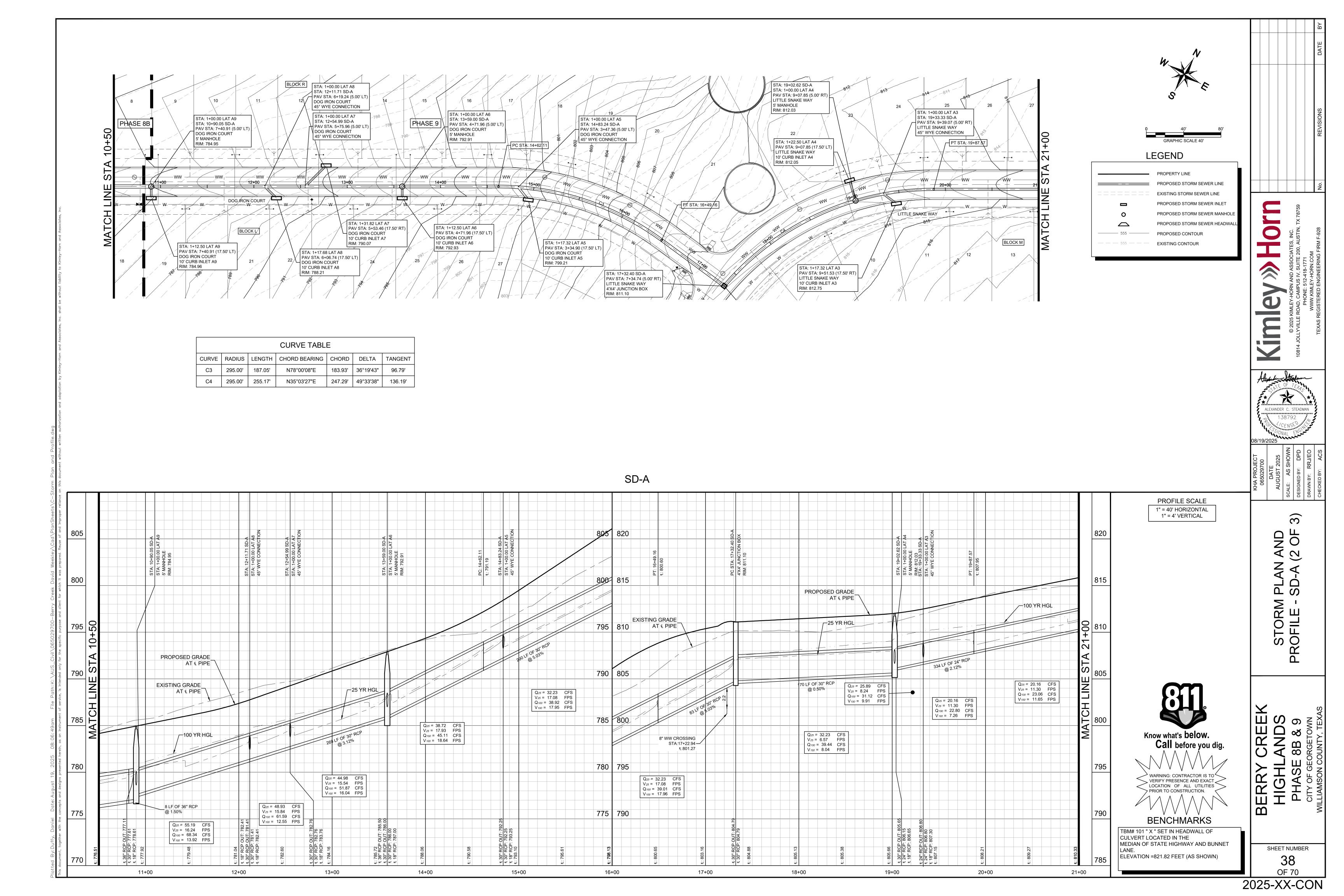
OF 70

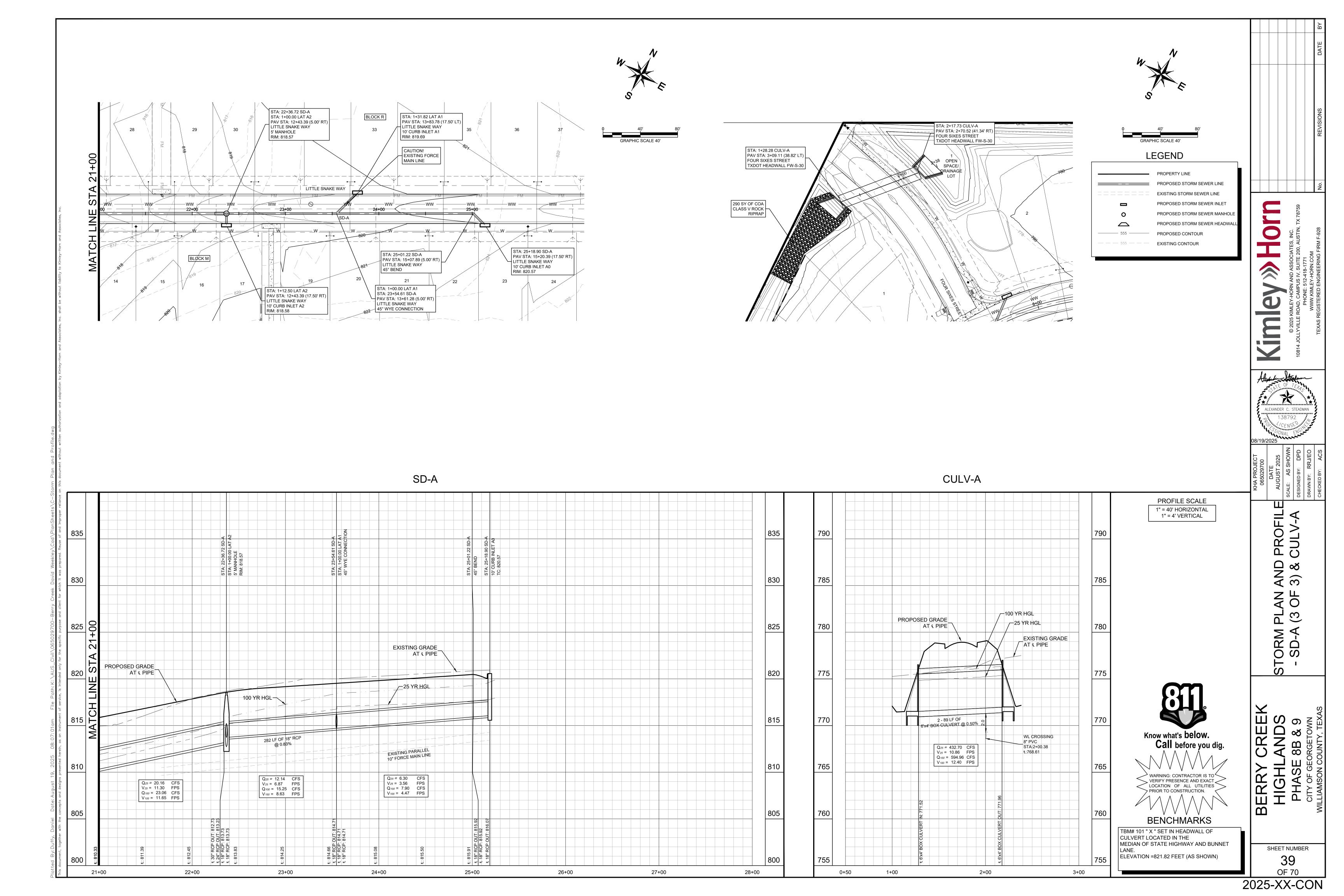
CEQ WATER QUALIT CALCULATIONS

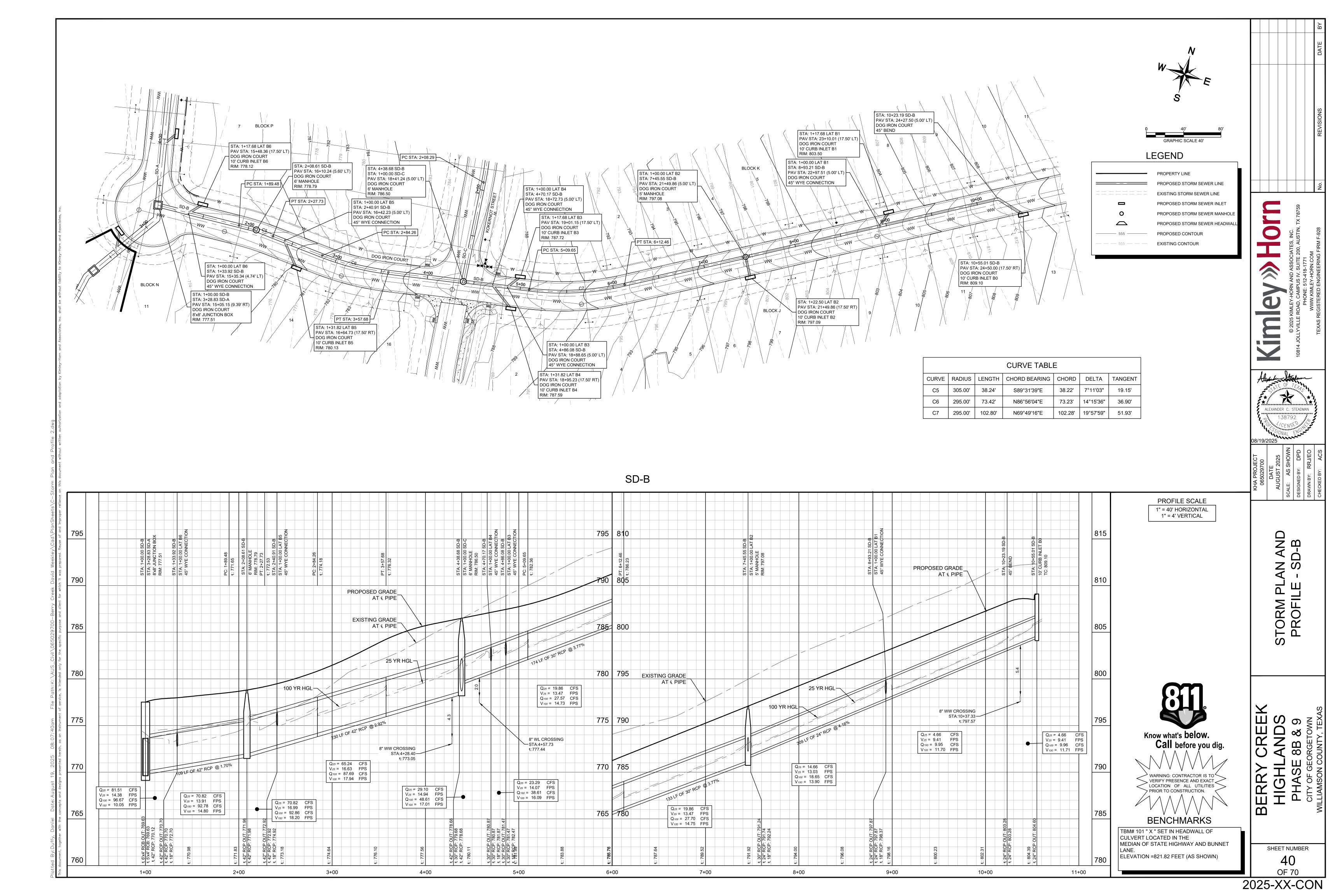


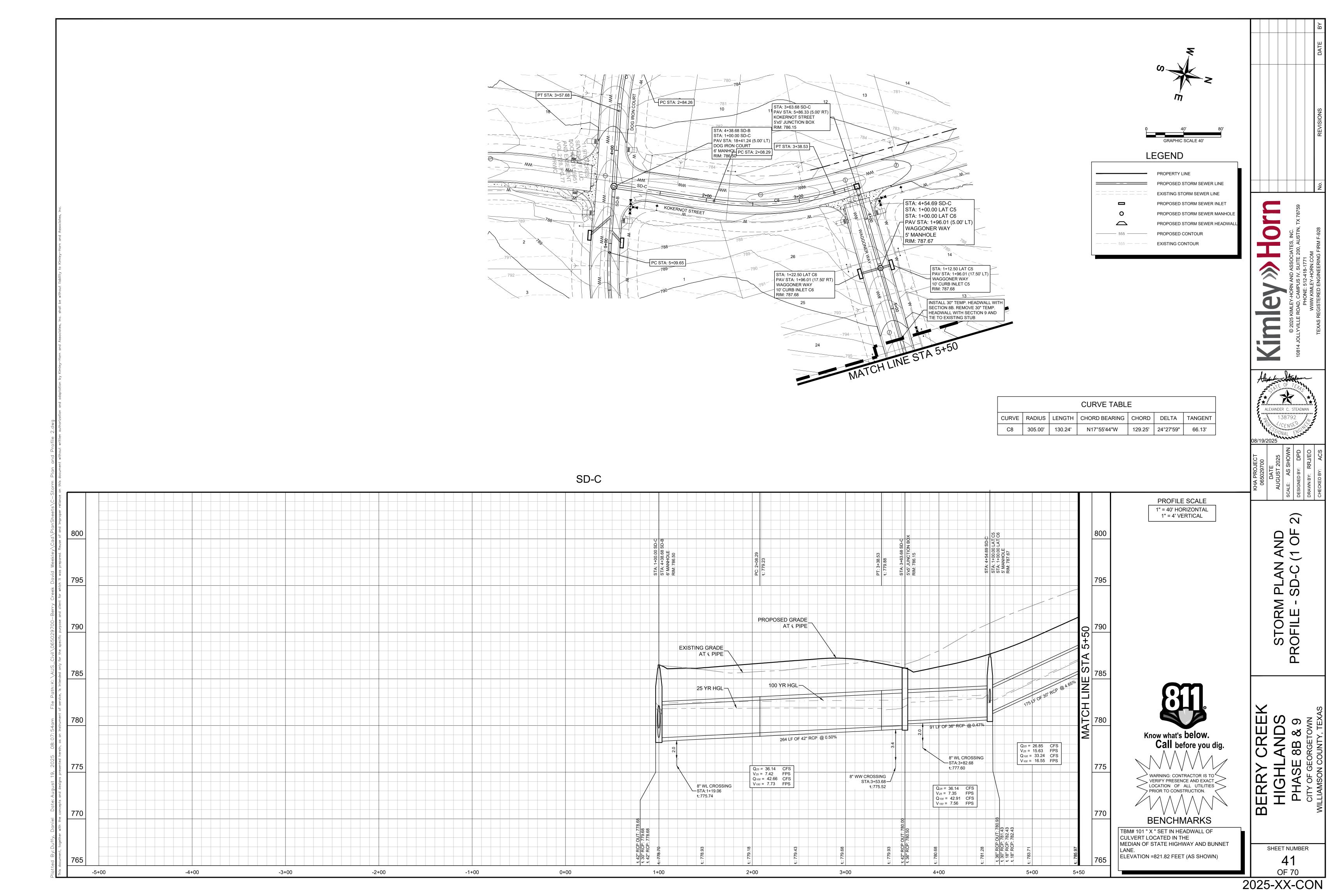


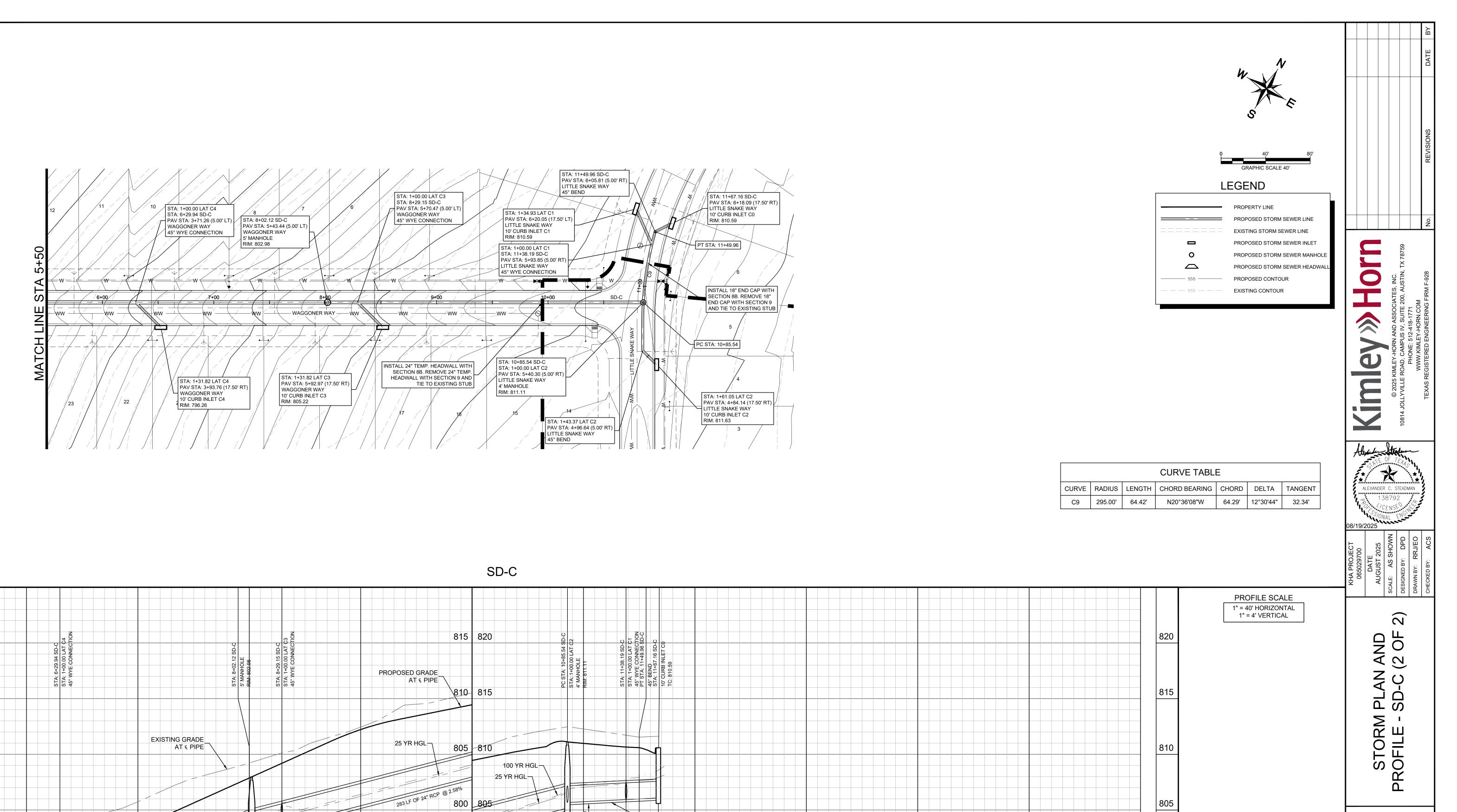












82 LF OF 18" RCP @ 0.50%

Q₂₅ = 5.88 CFS V₂₅ = 4.66 FPS

Q₁₀₀ = 10.22 CFS

 $V_{100} = 5.79$ FPS

12+00

13+00

14+00

15+00

WL CROSSING 8" PVC

Q₂₅ = 13.64 CFS

V₂₅ = 10.74 FPS Q₁₀₀ = 18.89 CFS

V₁₀₀ = 11.68 FPS

STA:11+04.62

£:802.90

795 800

790

785 790

10+00

Q₂₅ = 6.84 CFS V₂₅ = 4.77 FPS

Q₁₀₀ = 11.11 CFS

V₁₀₀ = 6.28 FPS

11+00

Q₂₅ = 13.64 CFS V₂₅ = 10.74 FPS Q₁₀₀ = 18.89 CFS V₁₀₀ = 11.68 FPS

9+00

Q₂₅ = 20.97 CFS V₂₅ = 11.98 FPS Q₁₀₀ = 27.03 CFS

V₁₀₀ = 12.67 FPS

98

8+00

£ 24" RCP (£ 24" RCP: ξ 18" RCP: ξ 18" RCP:

800

795

Q₂₅ = 26.85 CFS V₂₅ = 15.63 FPS Q₁₀₀ = 33.24 CFS

V₁₀₀ = 16.55 FPS

6+00

Q₂₅ = 20.97 CFS V₂₅ = 14.60 FPS

Q₁₀₀ = 27.00 CFS V₁₀₀ = 15.66 FPS

7+00

Know what's below.

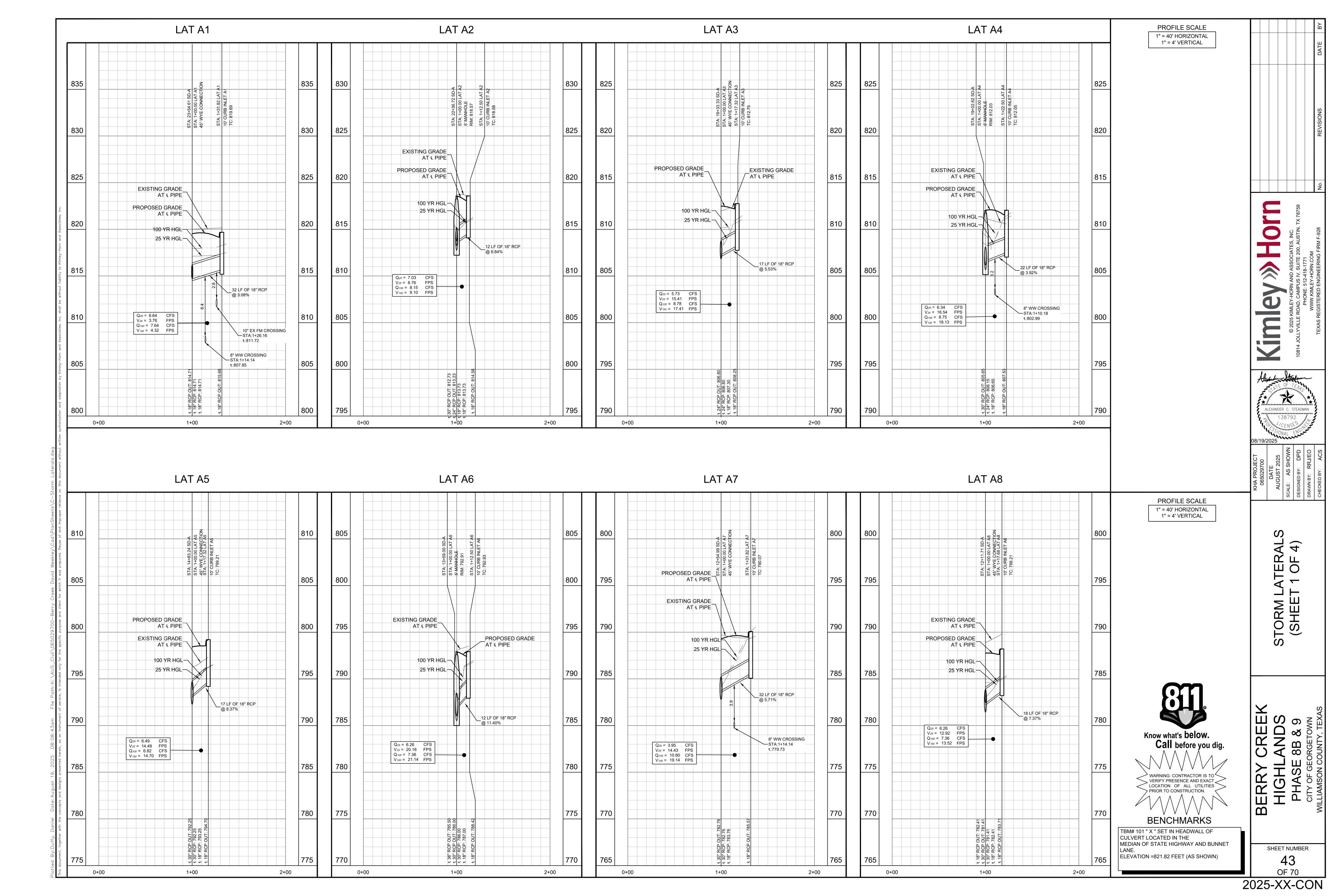
Call before you dig. WARNING: CONTRACTOR IS TO
VERIFY PRESENCE AND EXACT
LOCATION OF ALL UTILITIES
PRIOR TO CONSTRUCTION. 790 **BENCHMARKS** TBM# 101 " X " SET IN HEADWALL OF CULVERT LOCATED IN THE MEDIAN OF STATE HIGHWAY AND BUNNET ELEVATION =821.82 FEET (AS SHOWN)

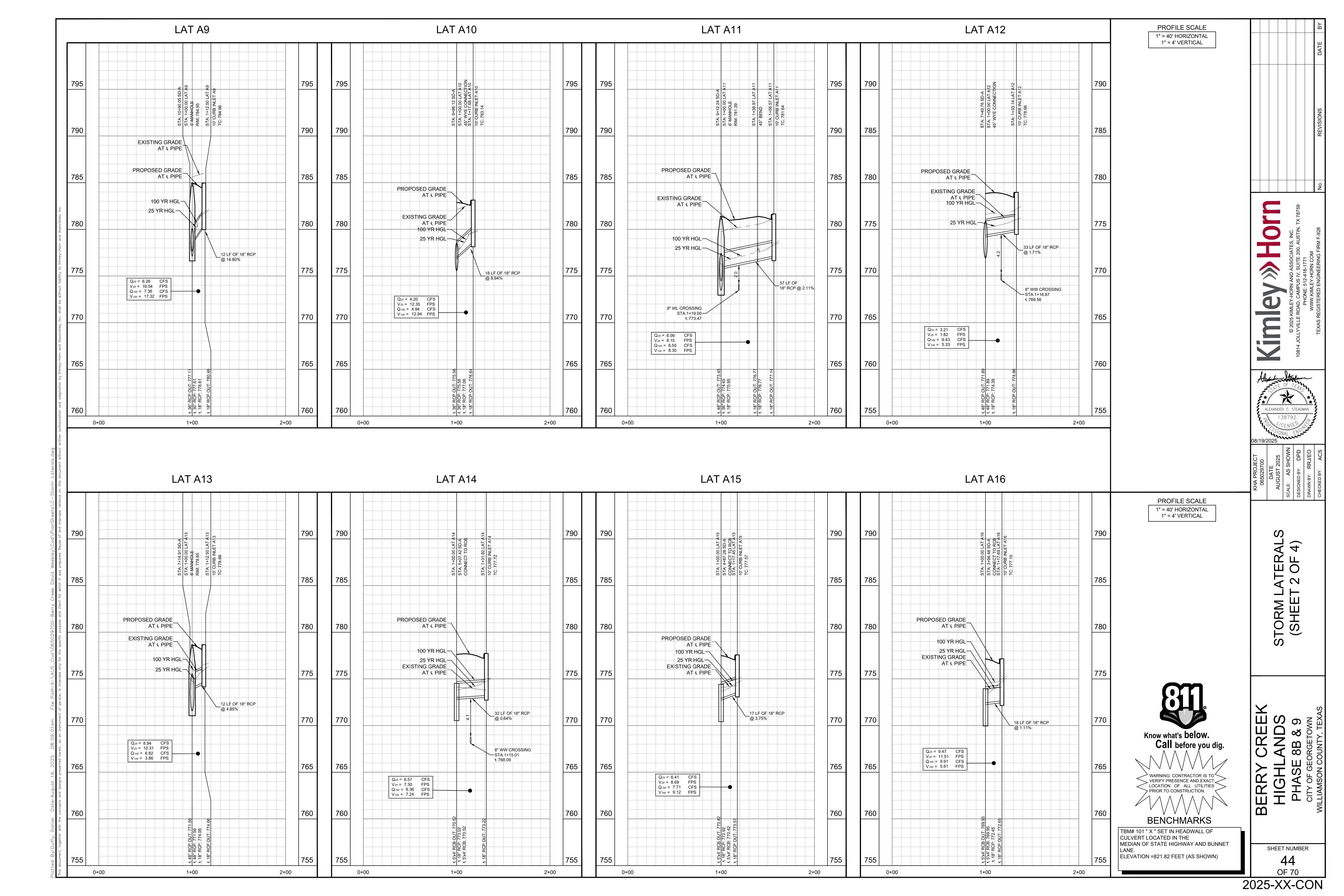
16+00

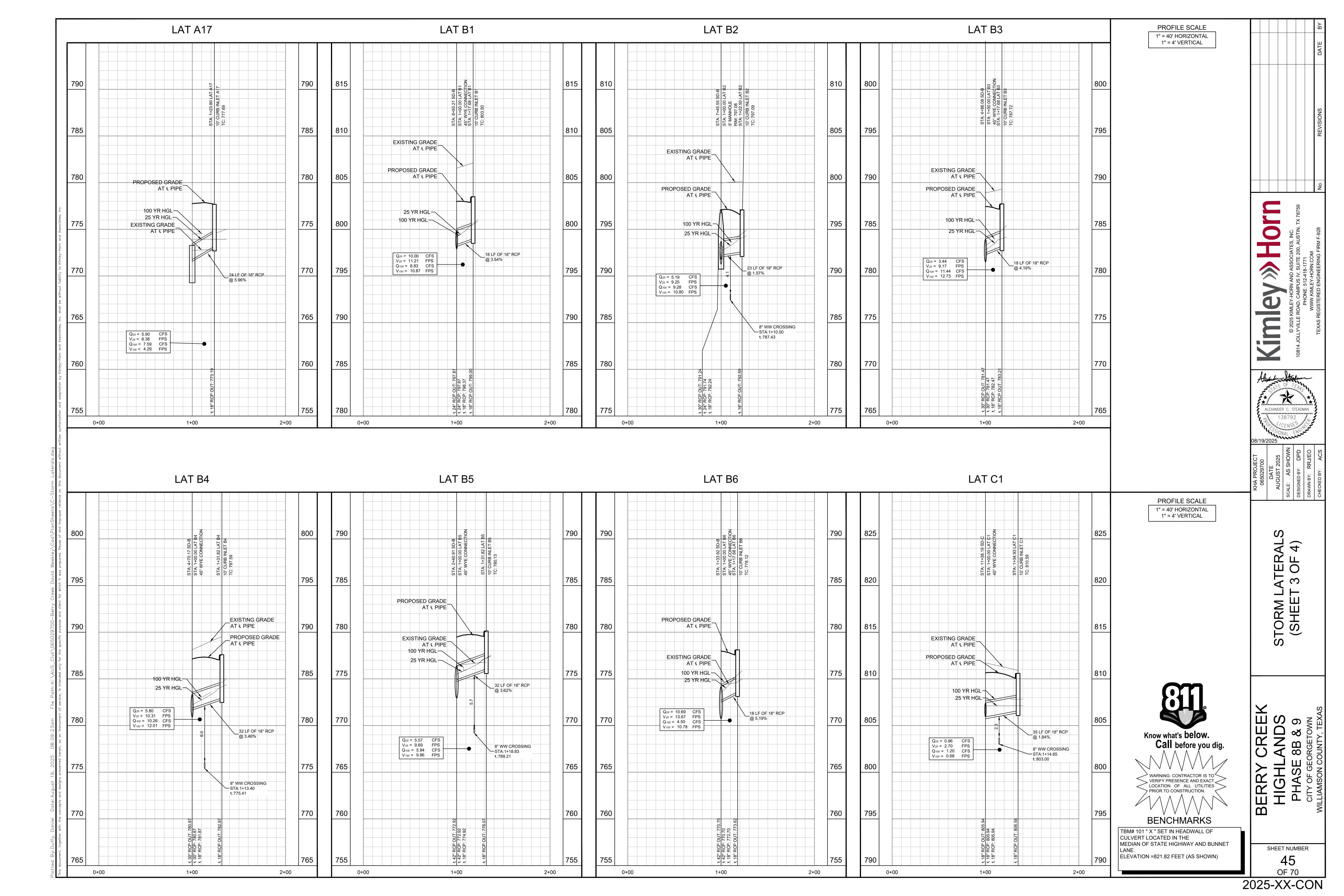
BERRY CREEK
HIGHLANDS
PHASE 8B & 9
CITY OF GEORGETOWN
WILLIAMSON COUNTY, TEXAS

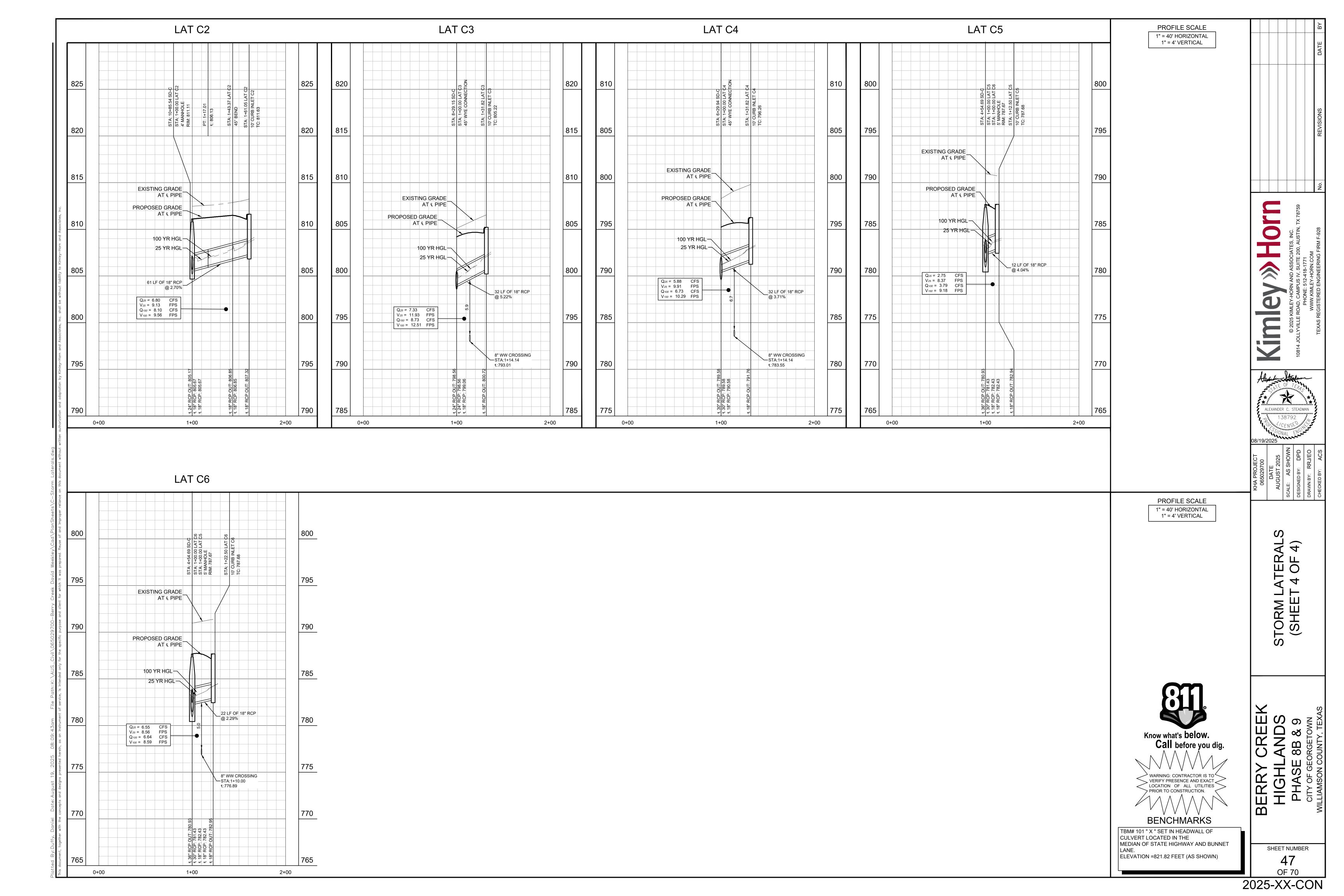
SHEET NUMBER 42

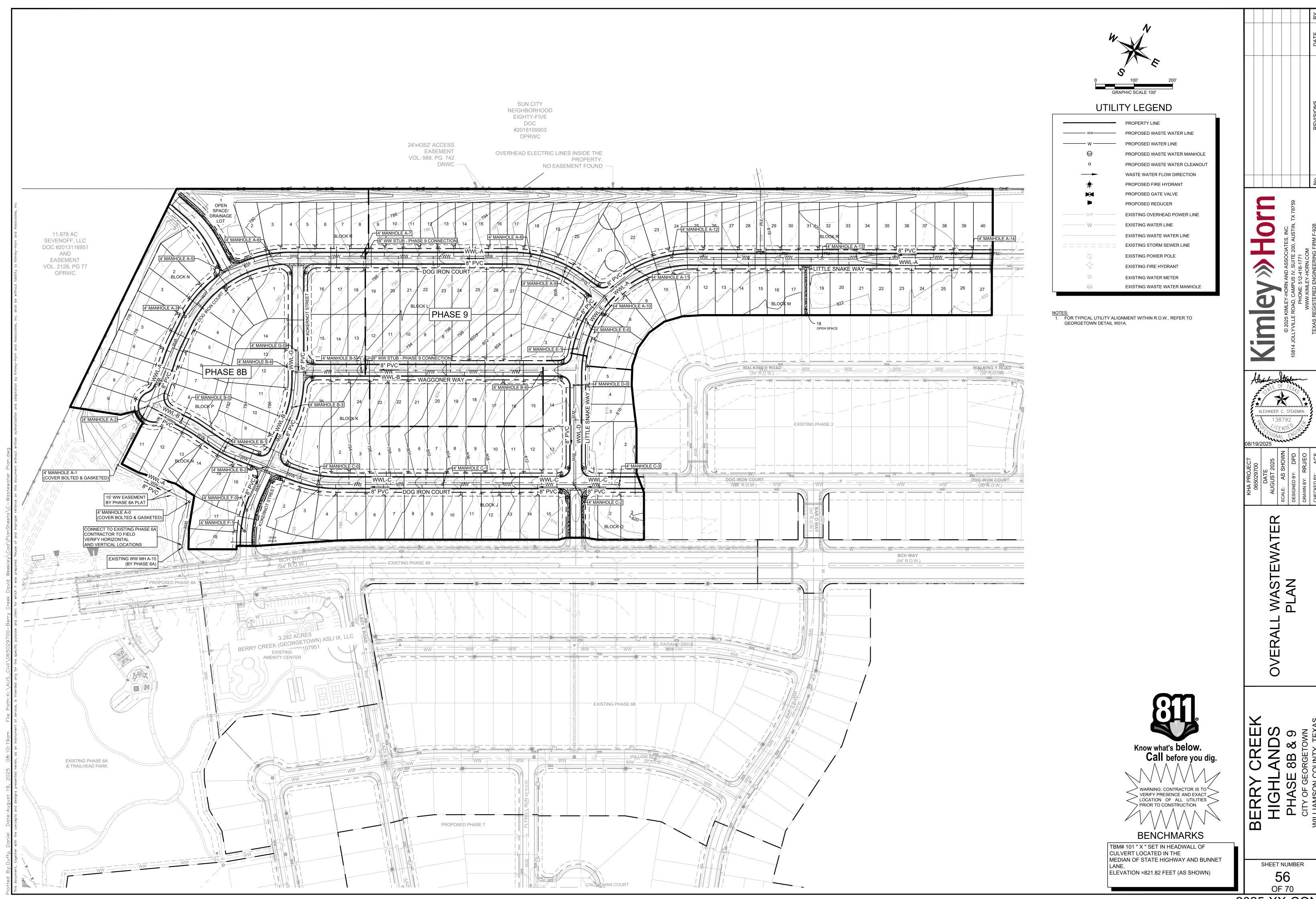
2025-XX-CON



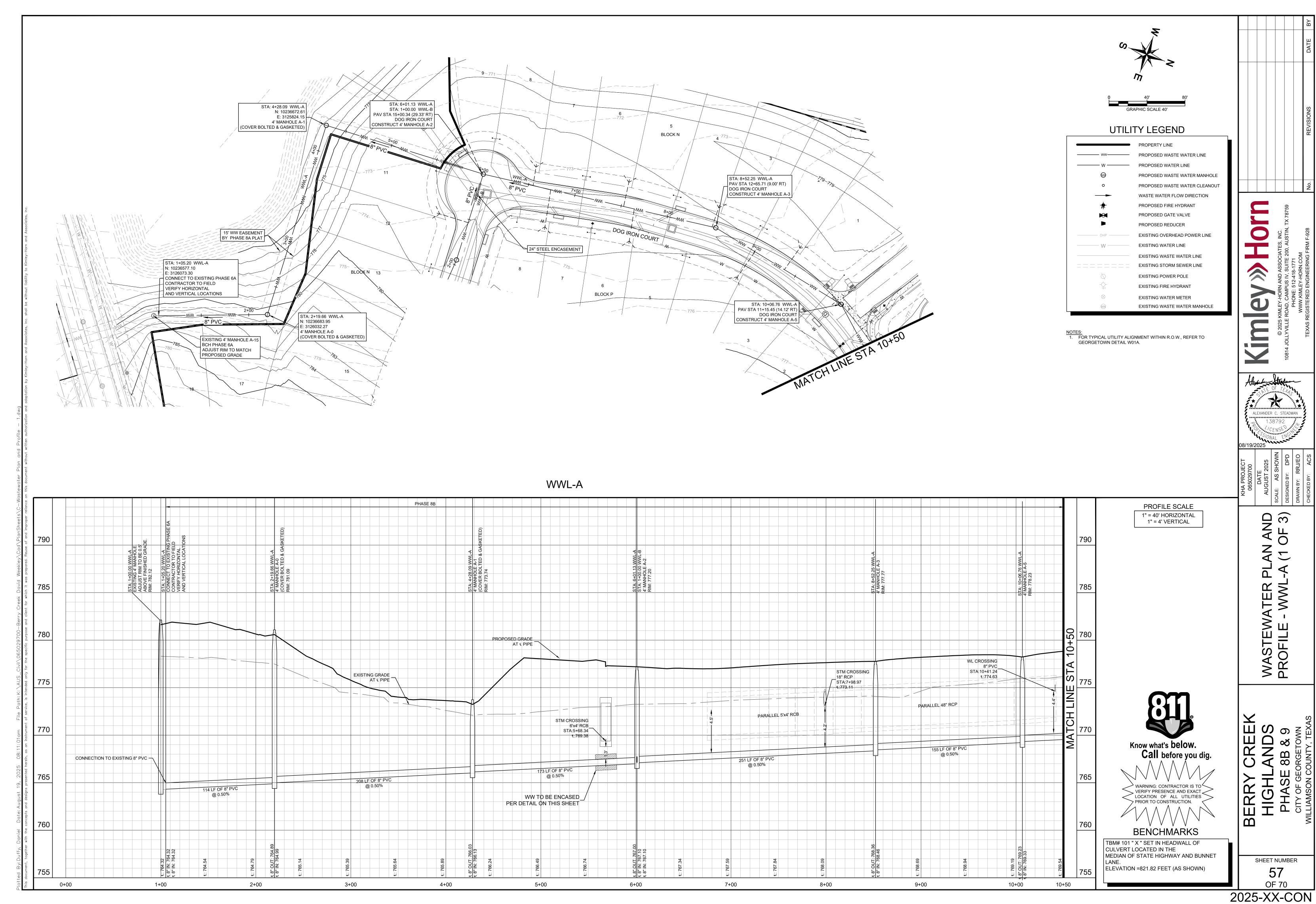


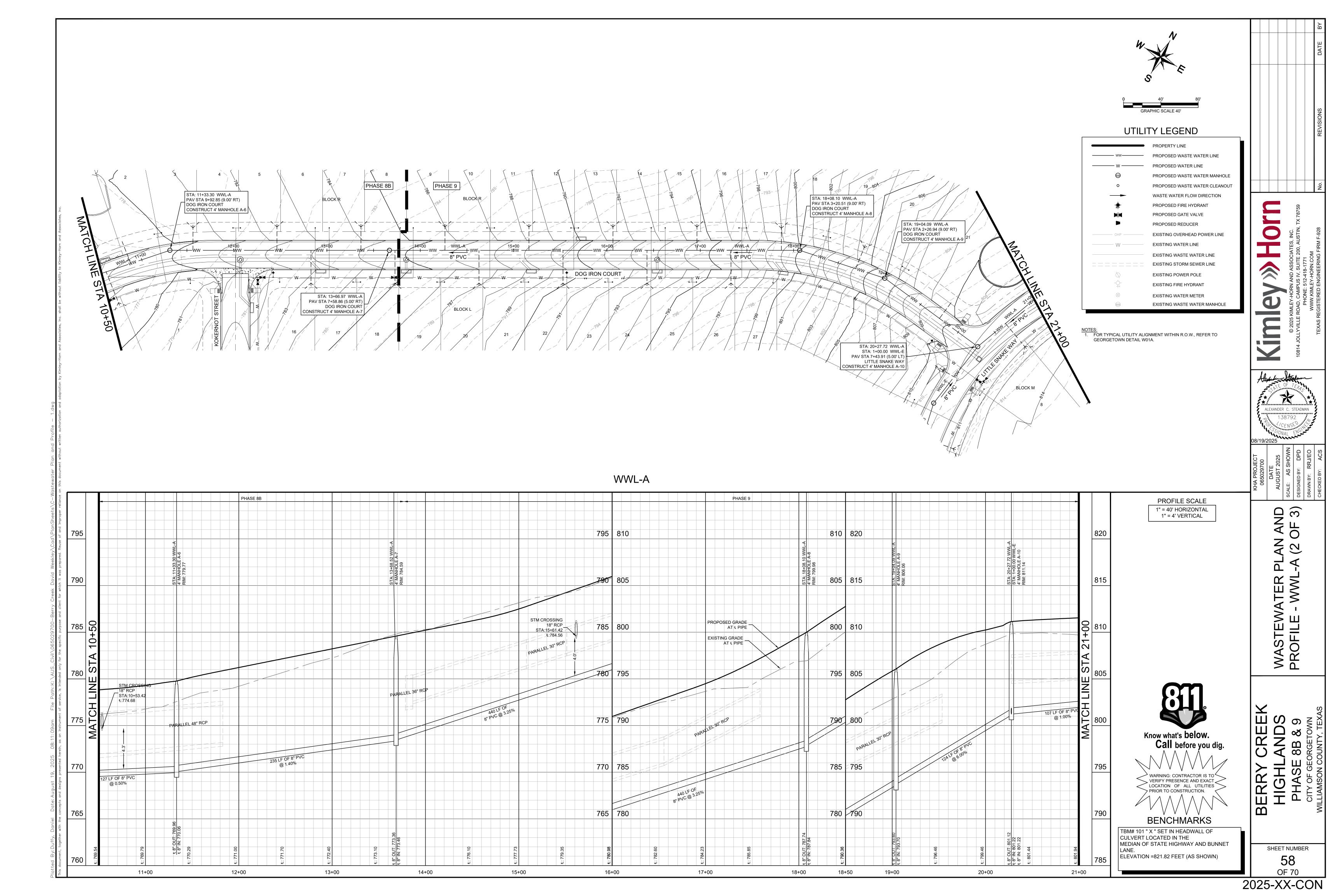


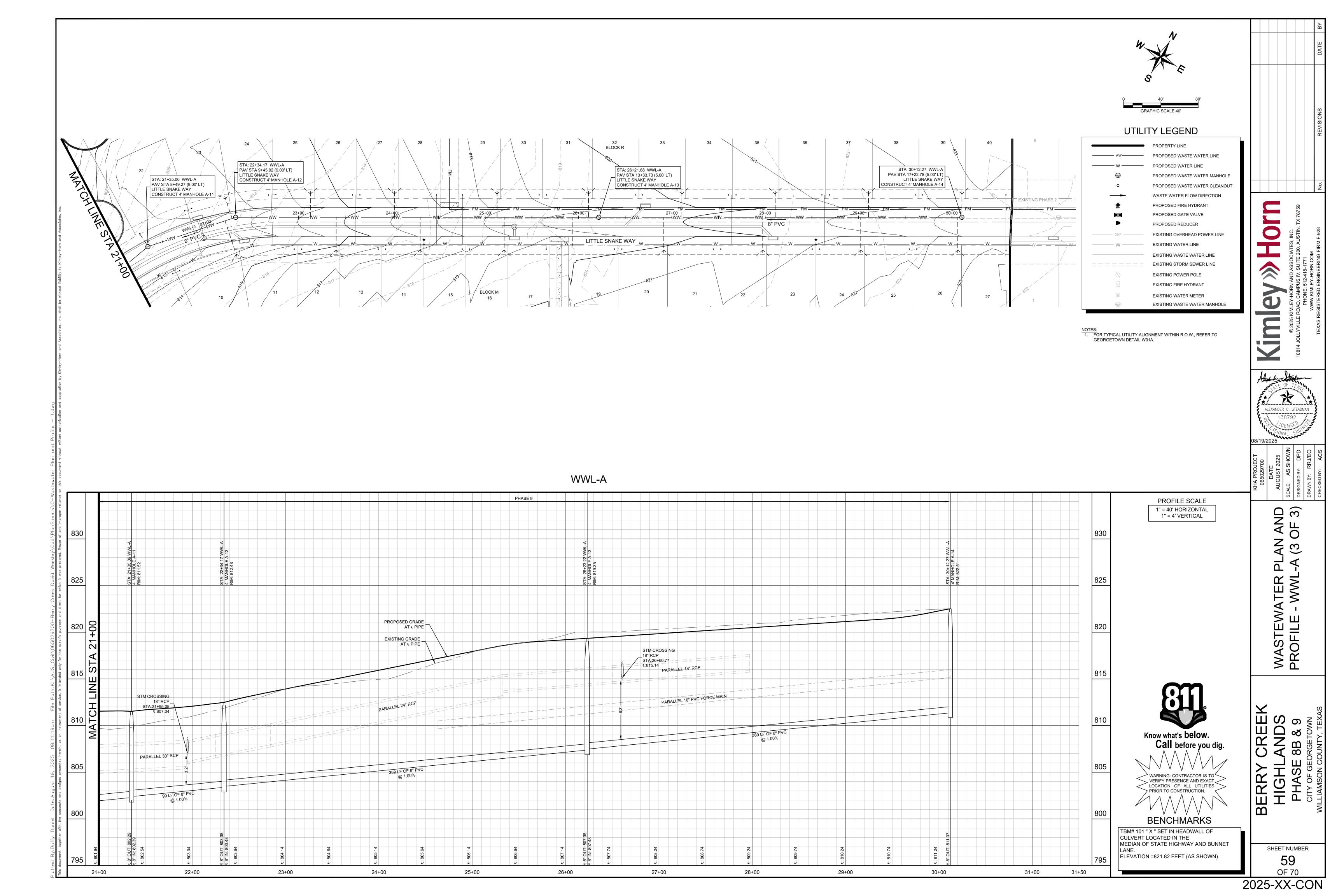


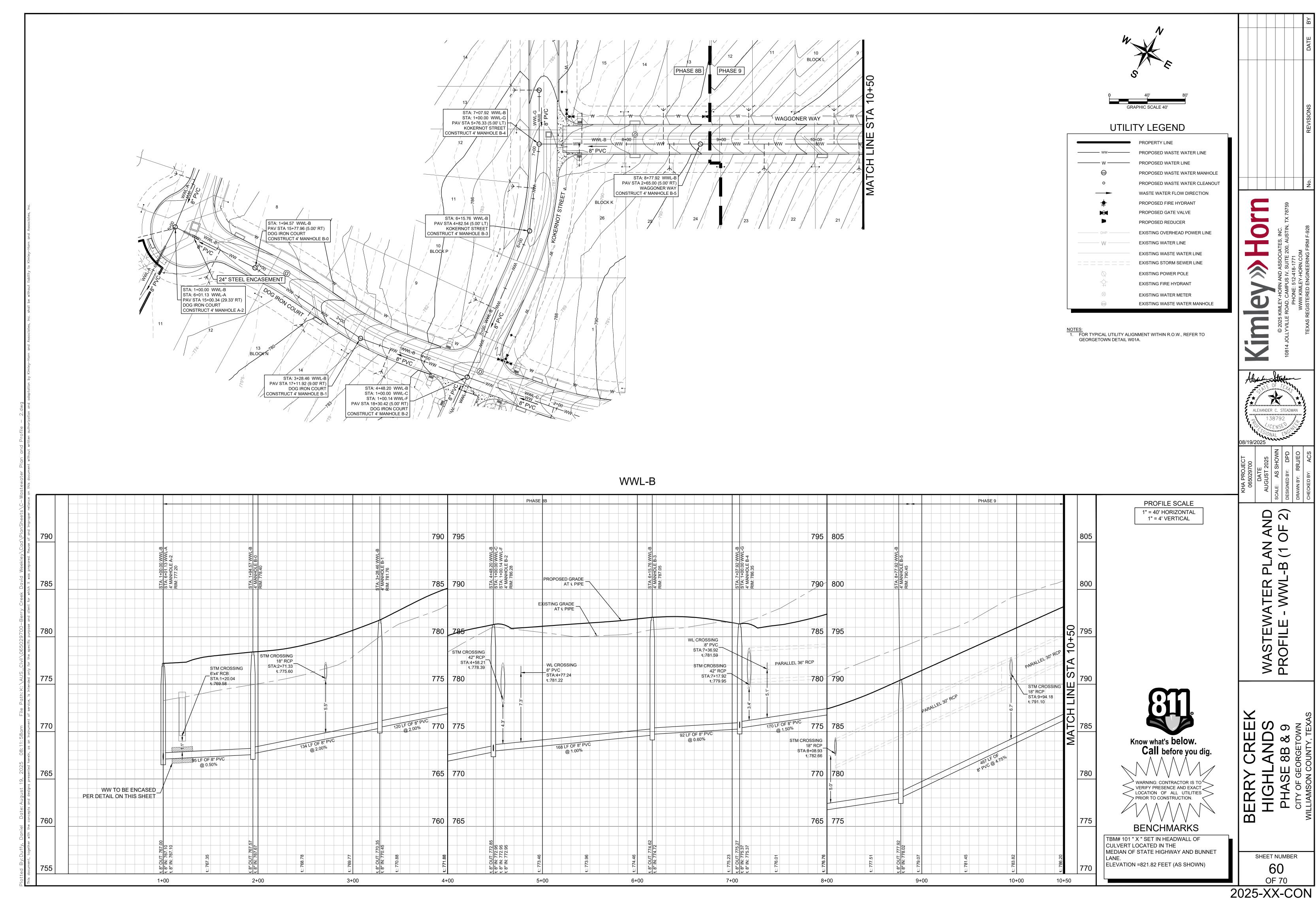


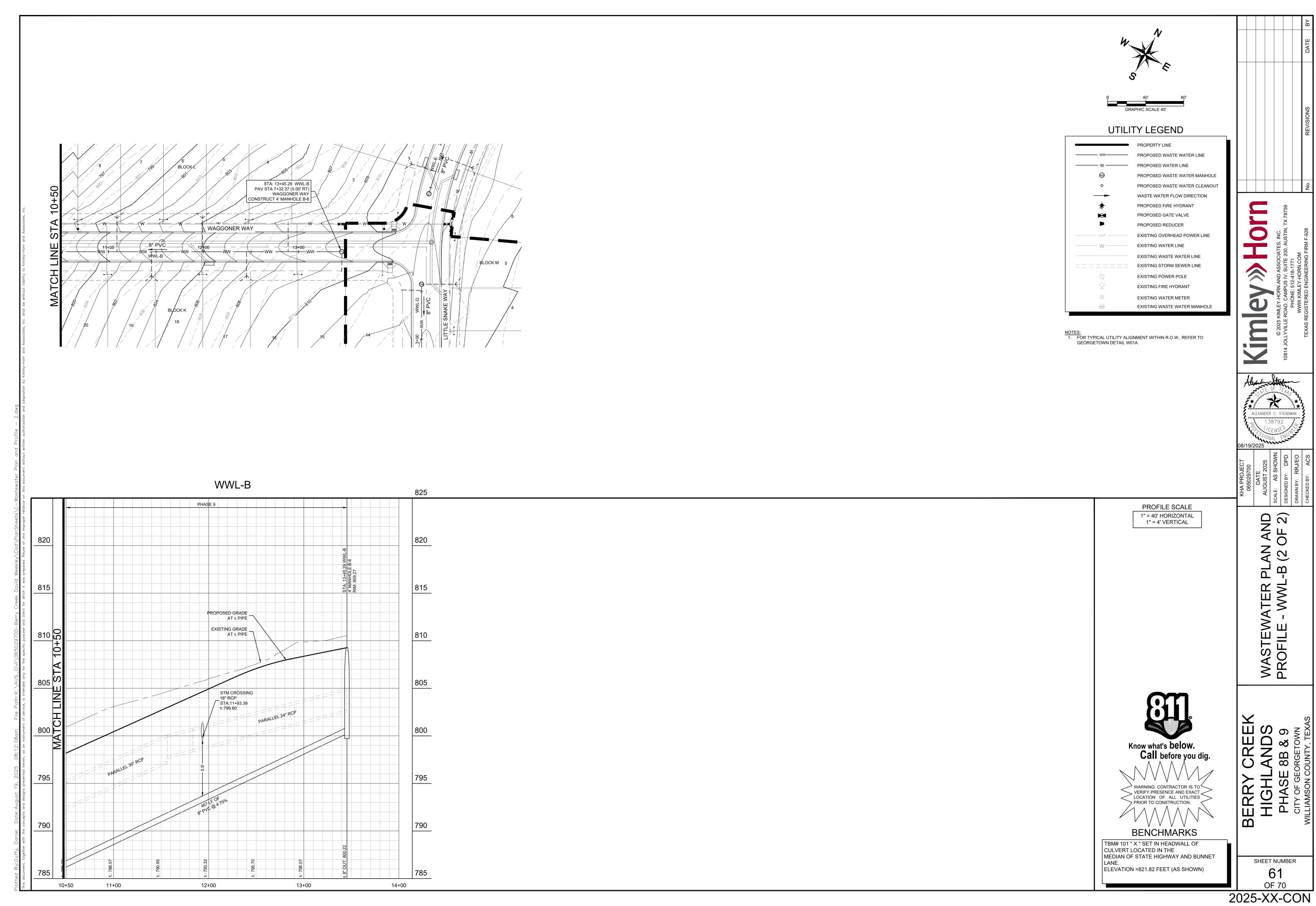
2025-XX-CON

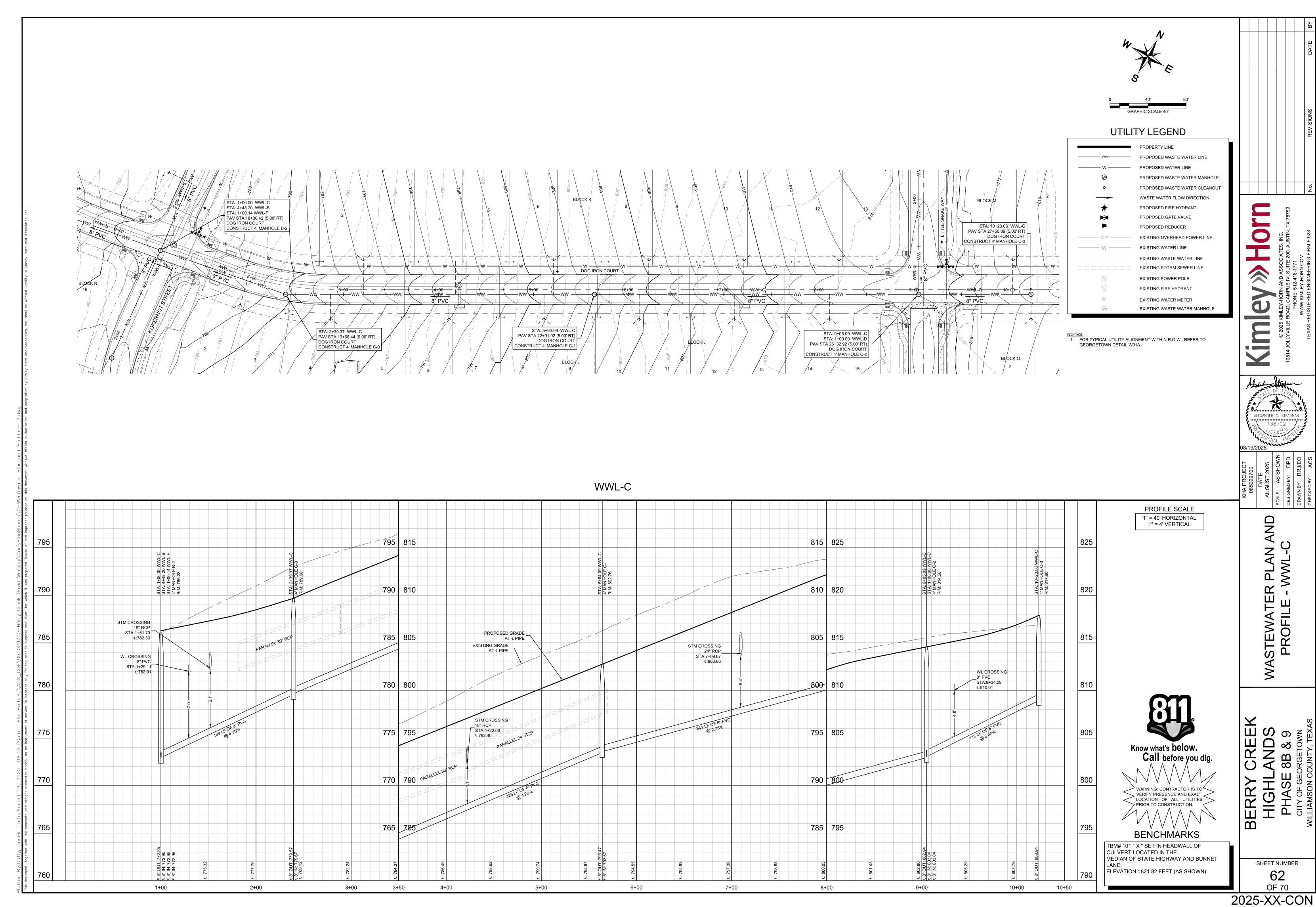


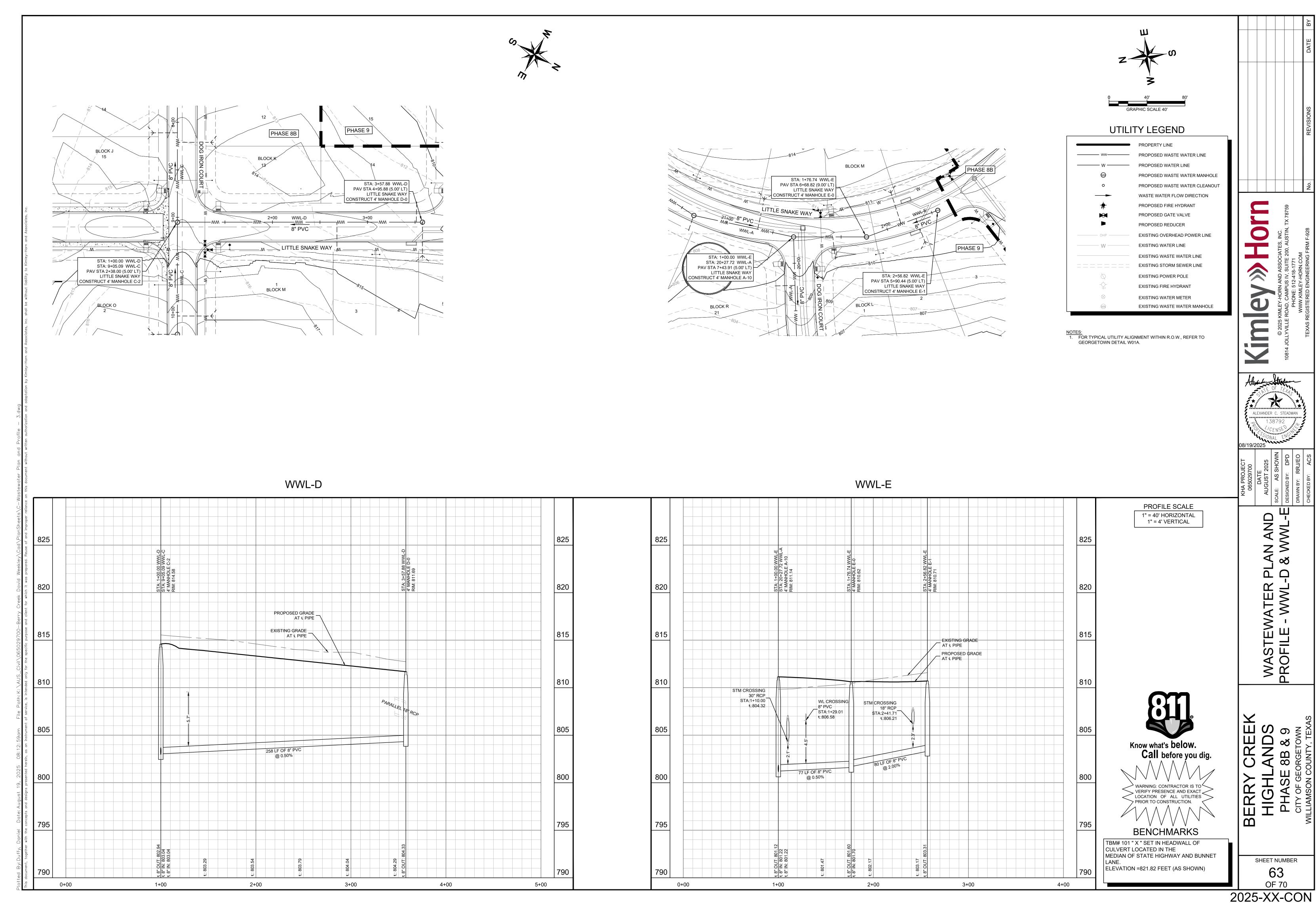


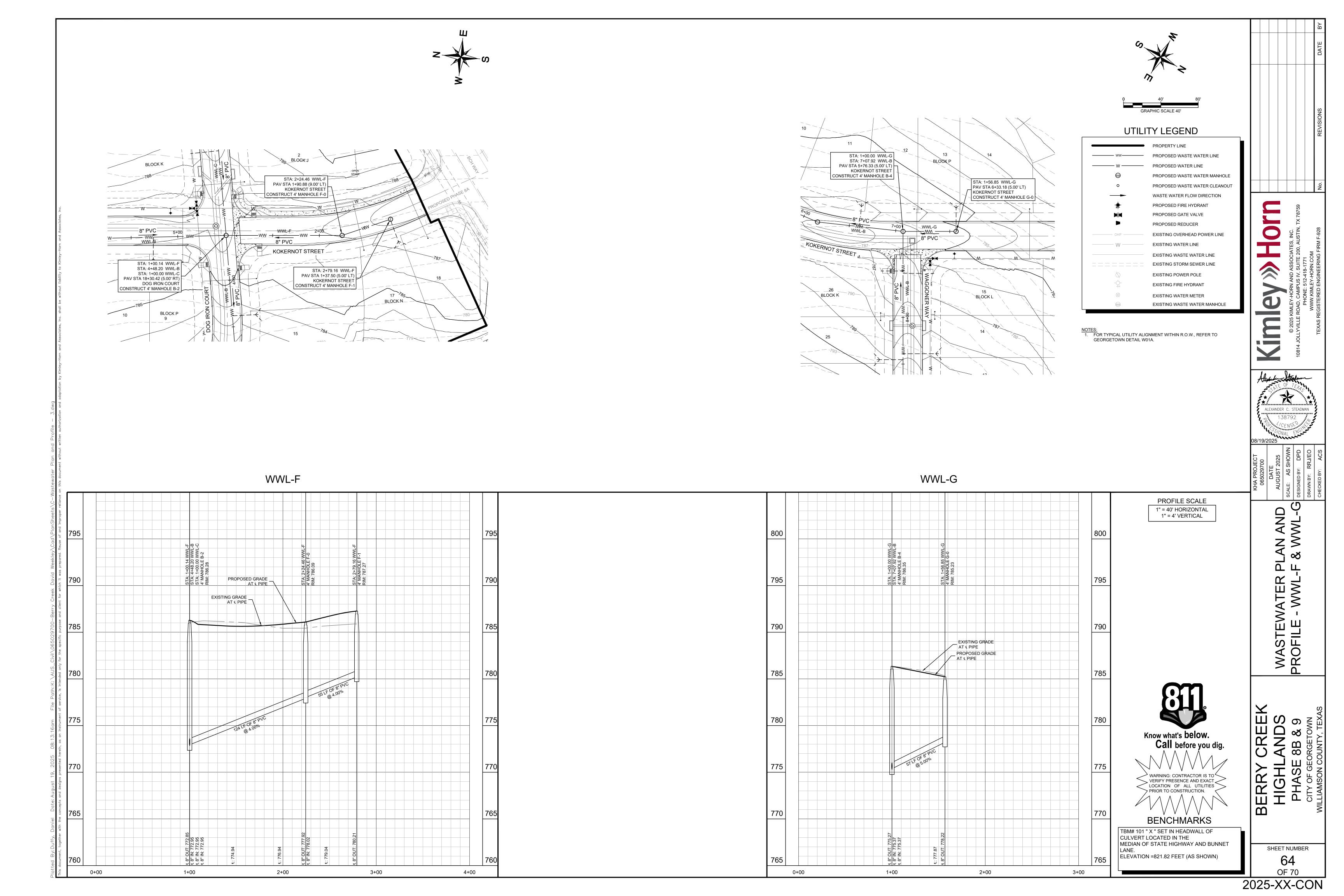










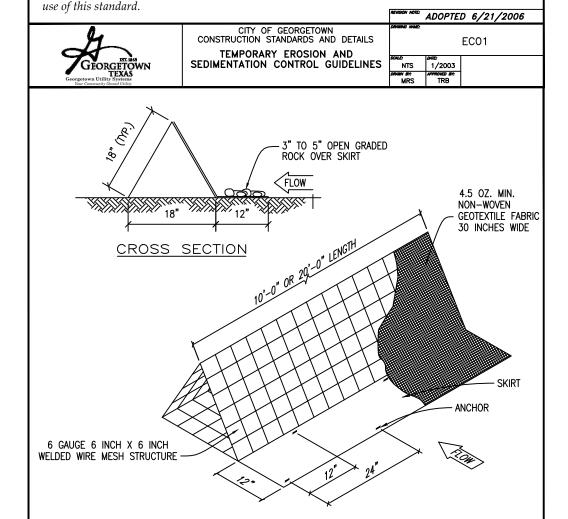


GUIDELINES FOR DESIGN AND INSTALLATION OF TEMPORARY EROSION AND SEDIMENTATION CONTROLS

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%

 $\boldsymbol{*}$ 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



INSTALLATION: - LAYOUT THE FILTER DIKE FOLLOWING AS CLOSELY AS POSSIBLE TO THE CONTOUR. - CLEAR THE GROUND OF DEBRIS, ROCKS OR PLANTS THAT WILL INTERFERE WITH INSTALLATION. - PLACE THE FILTER DIKE SECTIONS ONE AT A TIME, WITH THE SKIRT ON THE UPHILL SIDE TOWARDS THE DIRECTION OF FLOW, ANCHORING EACH SECTION TO THE GROUND BEFORE THE NEXT SECTION IS PLACED.

- ANCHORS SHOULD BE PLACED ON 2'-0" CENTERS ALTERNATING FROM FRONT TO BACK SO THAT THERE IS ACTUALLY ONLY 1'-0" IN BETWEEN ANCHORS. SECURELY FASTEN THE SKIRT FROM ONE SECTION OF FILTER DIKE TO THE NEXT.

- SECURELY FASTER THE STRIT FROM ONE SECTION OF THE REAL.

FILTER DIKES MUST MAINTAIN CONTINUOUS CONTACT WITH THE GROUND.

- AFTER THE SITE IS COMPLETELY STABILIZED, THE DIKES AND ANY REMAINING SILT SHOULD BE REMOVED. SILT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

INSPECTION AND MAINTENANCE GUIDELINES: - INSPECTION SHOULD BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.

- INSPECT AND REALIGN BERMS AS NEEDED TO PREVENT GAPS BETWEEN THE SECTIONS.

- ACCUMULATED SILT SHOULD BE REMOVED AFTER EACH RAINFALL EVENT, AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.

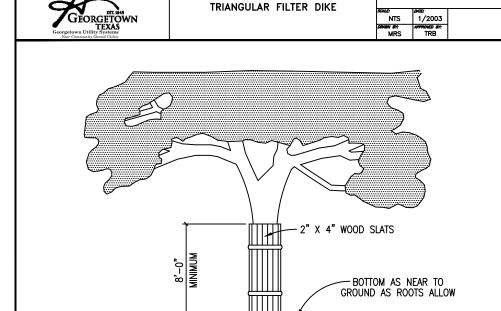
CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS

ADOPTED 6/21/2006

EC05

EC10

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



NOTES:

- 1. WHERE ANY EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN FOUR FEET (4'-0") TO A TREE TRUNK; PROTECT THE TRUNK WITH STRAPPED-ON-PLANKING TO A HEIGHT OF EIGHT FEET (8'-0"), OR TO THE LIMITS OF LOWER BRANCHING IN ADDITION TO THE REDUCED FENCING PROVIDED. 2. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOP SOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN TWO (2) DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE, AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
- . 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
- . 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.
- . ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR
- . NO LANDSCAPE TOPSOIL DRESSING GREATER THE FOUR INCHES (4") SHALL BE PERMITTED WITHIN THE DRIPLINE OF A TREE. NO SOIL IS PERMITTED ON THE ROOT FLARE OF ANY TREE.
- 7. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC AND EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS. The Architect/Engineer assumes

responsibility for appropriate use of this standard.

ADOPTED 6/21/2006 CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS TREE PROTECTION - WOOD SLATS

NOTE: THIS SECTION IS INTENDED TO ASSIST THOSE PERSONS PREPARING WATER POLLUTION ABATEMENT PLANS (WPAP) OR STORM WATER POLLUTION PREVENTION PLANS (SW3P) THAT COMPLY WITH FEDERAL, STATE AND/OR LOCAL STORM WATER REGULATIONS.

. 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.

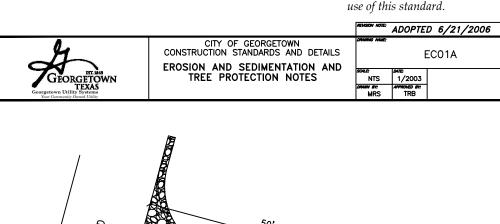
- 3. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS TO BE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN AND WATER POLLUTION ABATEMENT PLAN. DEVIATIONS FROM THE APPROVED PLAN MUST BE SUBMITTED TO AND APPROVED BY THE OWNER'S REPRESENTATIVE.
- 4. ALL PLANTING SHALL BE DONE BETWEEN MAY 1 AND SEPTEMBER 15 EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING.

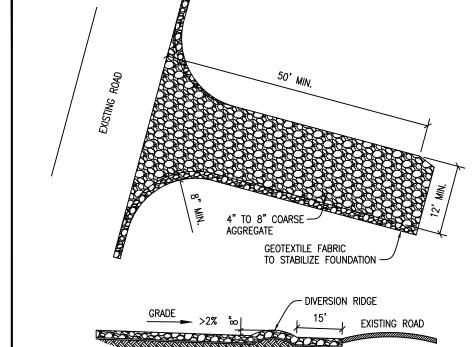
 IF PLANTING IS AUTHORIZED TO BE DONE OUTSIDE THE DATES SPECIFIED, THE SEED SHALL BE PLANTED WITH THE ADDITION
 OF WINTER FESCUE (KENTUCKY 31) AT A RATE OF 1001b/ACRE. GRASS SHALL BE COMMON BERMUDA GRASS, HULLED,
 MINIMUM 82% PURE LIVE SEED. ALL GRASS SEED SHALL BE FREE FROM NOXIOUS WEED, GRADE "A" RECENT 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.
- 14. ANY ROOT EXPOSED BY CONSTRUCTION ACTIVITY TO BE PRUNED FLUSH WITH THE SOIL BACKFILL ROOT AREAS WITH GOOD QUALITY TOPSOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN TWO DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION. 13. TREES TO BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.
- 15. CONTRACTOR TO PRUNE VEGETATION TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND EQUIPMENT BEFORE DAMAGE OCCURS (RIPPING OF BRANCHES, ETC.). ALL FINISHED PRUNING TO BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE "NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES"). 16. THE CONTRACTOR IS TO INSPECT THE CONTROLS AT WEEKLY INTERVALS AND AFTER EVERY RAINFALL EXCEEDING 1/4
 INCH TO VERIFY THAT THEY HAVE NOT BEEN SIGNIFICANTLY DISTURBED. ANY ACCUMULATED SEDIMENT AFTER A
 SIGNIFICANT RAINFALL TO BE REMOVED AND PLACED IN THE OWNER DESIGNATED SPOIL DISPOSAL SITE. THE CONTRACTOR
 TO CONDUCT PERIODIC INSPECTIONS OF ALL EROSION/SEDIMENTATION CONTROLS AND TO MAKE ANY REPAIRS OR
 MODIFICATIONS NECESSARY TO ASSURE CONTINUED EFFECTIVE OPERATION OF EACH DEVICE.
- 17. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, TREE WELL, OR OTHER SUCH SITE DEVELOPMENT IMMEDIATELY ADJACENT TO A PROTECTED TREE, ERECT THE FENCE APPROXIMATELY TWO TO FOUR FEET (2'-4') BEHIND THE AREA IN QUESTION.
- 18. NO ABOVE AND/OR BELOW GROUND TEMPORARY FUEL STORAGE FACILITIES TO BE STORED ON THE PROJECT SITE.

 19. IF EROSION AND SEDIMENTATION CONTROL SYSTEMS ARE EXISTING FROM PRIOR CONTRACTS, OWNER'S REPRESENTATIVE AND THE CONTRACTOR TO EXAMINE THE EXISTING EROSION AND SEDIMENTATION CONTROL SYSTEMS FOR DAMAGE PRIOR TO CONSTRUCTION. ANY DAMAGE TO PREEXISTING EROSION AND SEDIMENTATION CONTROLS NOTED TO BE REPAIRED AT OWNERS EXPENSE. 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 assume responsibility for appropriate





AS APPROVED BY THE CITY INSTALLATION: - CLEAR THE AREA OF DEBRIS, ROCKS OR PLANTS THAT WILL INTERFERE WITH INSTALLATION. - GRADE THE AREA FOR THE ENTRANCE TO FLOW BACK ON TO THE CONSTRUCTION SITE. RUNOFF FROM THE STABILIZED CONSTRUCTION

- PLACE GEOTEXTILE FABRIC AS APPROVED BY THE CITY.

- PLACE ROCK AS APPROVED BY THE CITY.

INSPECTIONS AND MAINTENANCE GUIDELINES: - THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RICHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
- ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ON TO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY

CUNTRACIUM.

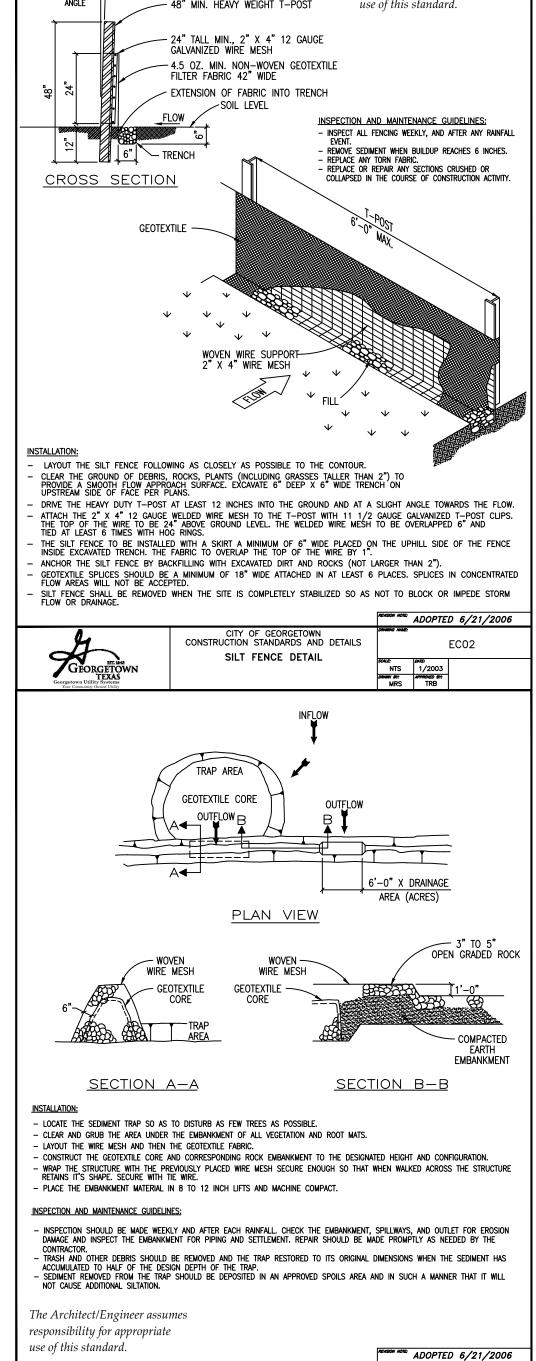
- WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY.

- WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

- ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS. The Architect/Engineer assumes

responsibility for appropriate

use of this standard.					
use of this standard.		REVISION NOTE:	ADOPTE	0 6/21/2006	
4	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS STABILIZED CONSTRUCTION ENTRANCE	DRAWING NAME:		EC06	
Georgetown	STABLEZED CONSTRUCTION ENTRANCE	NTS	<i>ите</i> 1/2003		
TEXAS Georgetown Utility Systems		DRUIN BY: MRS	APPROVED BY: TRB		

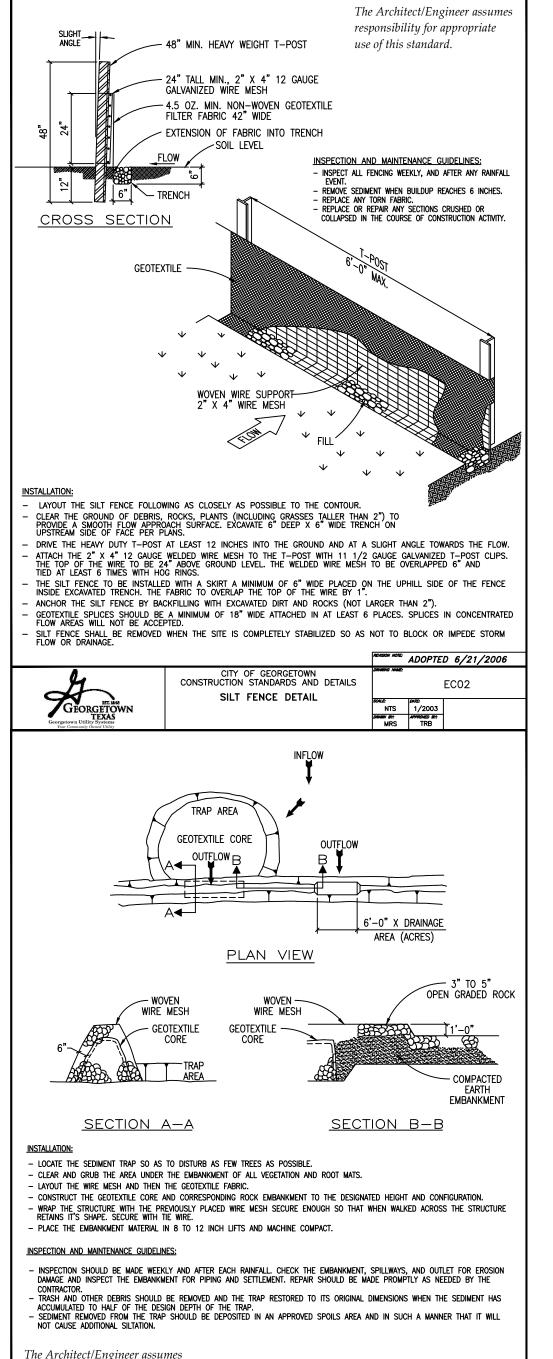


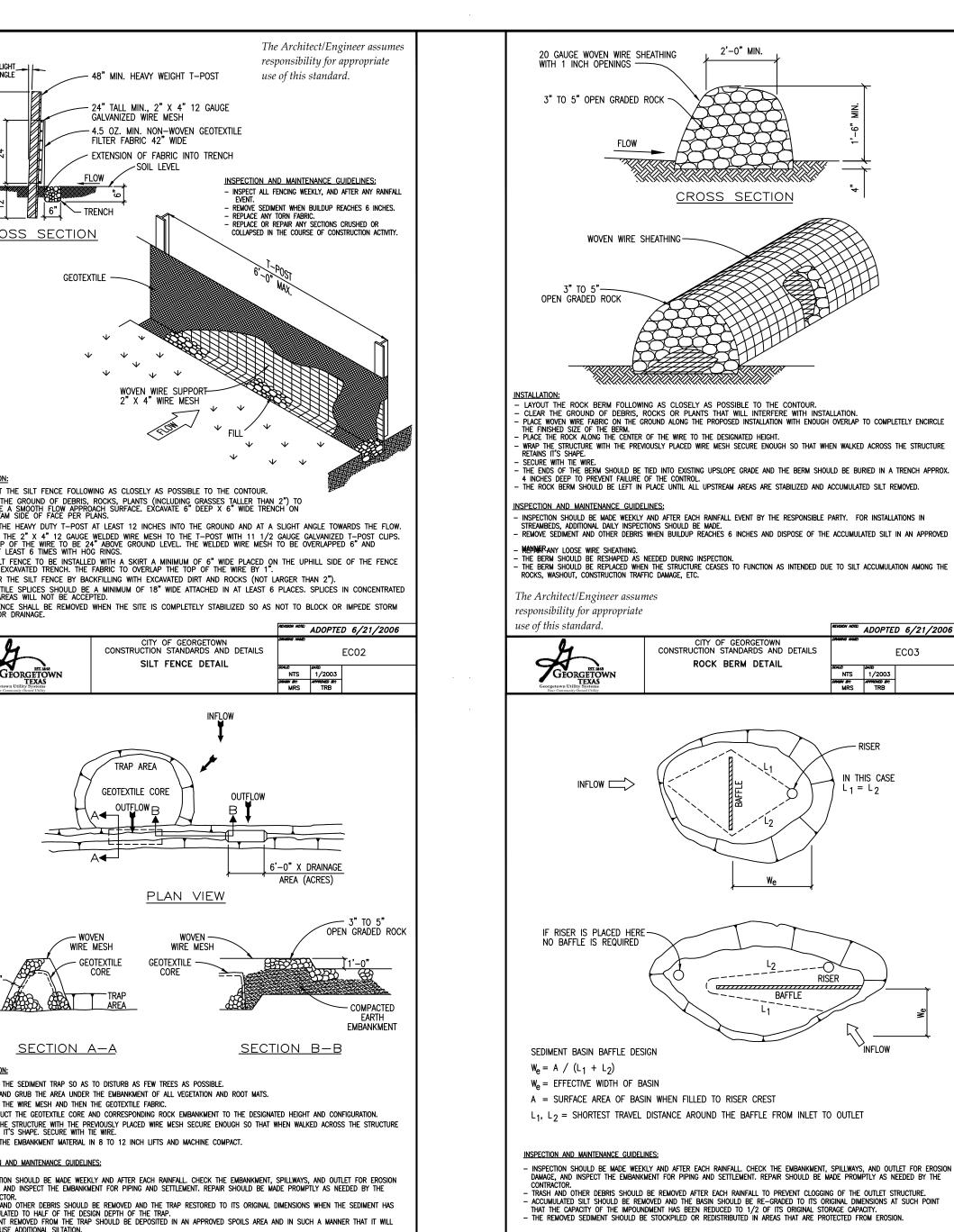
CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS

SEDIMENT TRAP DETAIL

FC07

GEORGETOWN TEXAS





The Architect/Engineer assumes

ADOPTED 6/21/2006

EC08

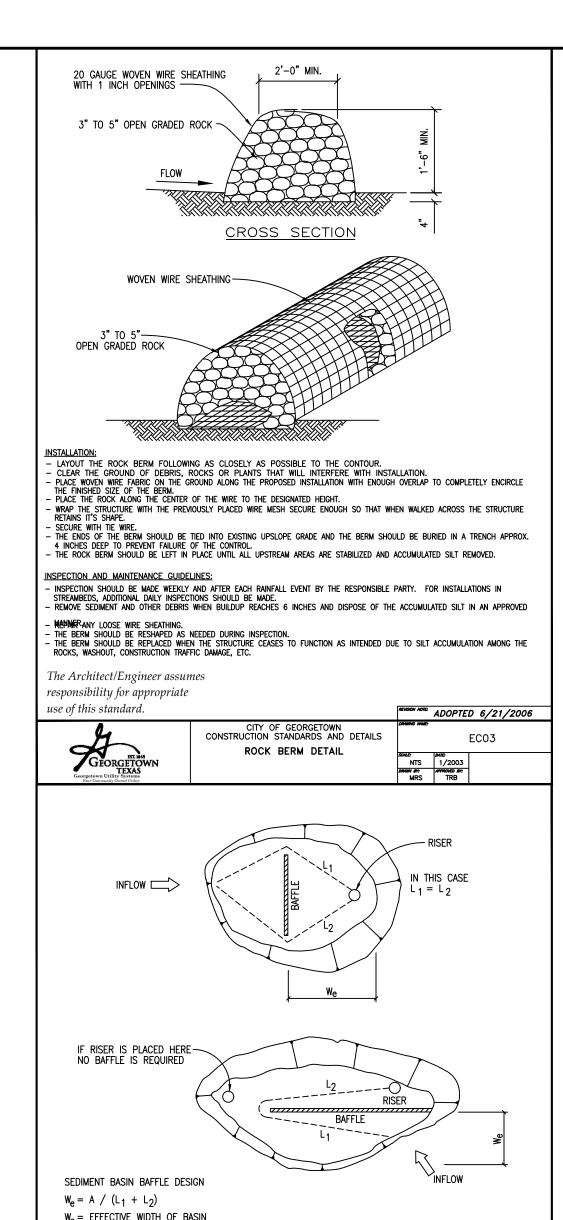
CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS

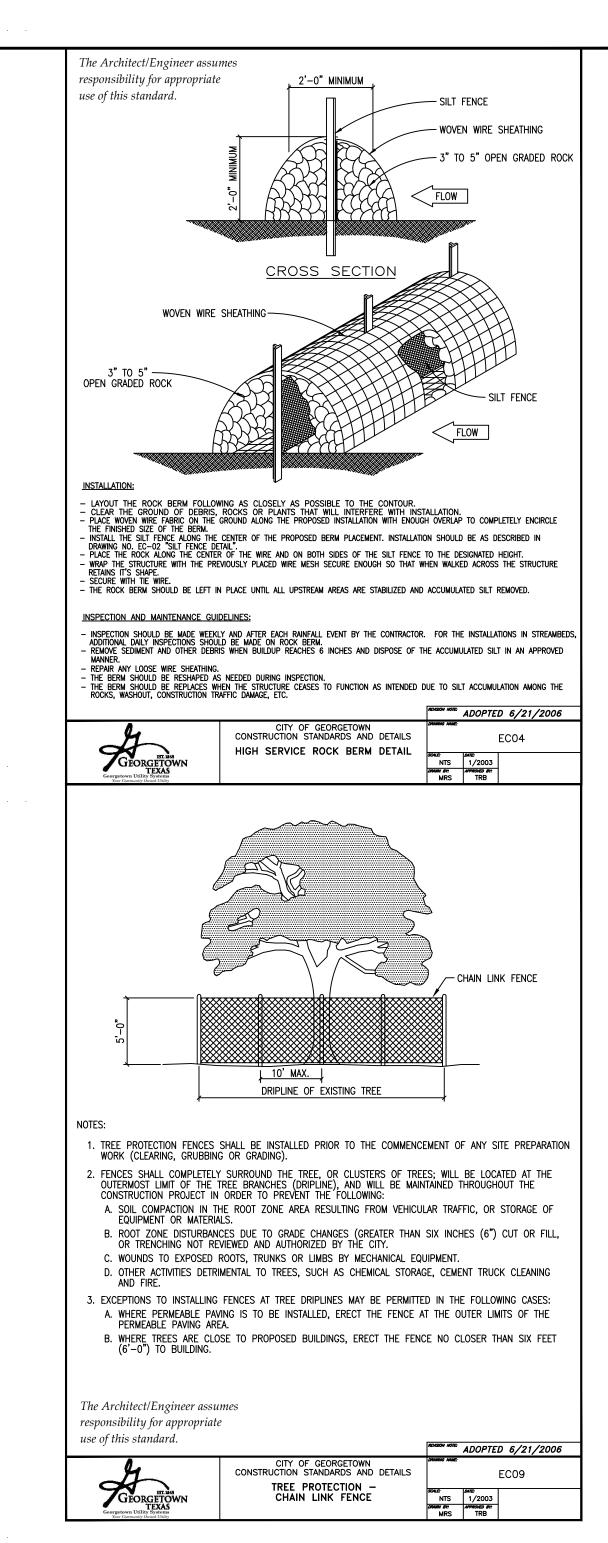
SEDIMENT BASIN BAFFLE DESIGN

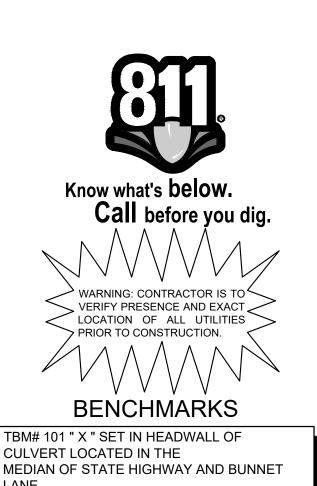
responsibility for appropriate

use of this standard.

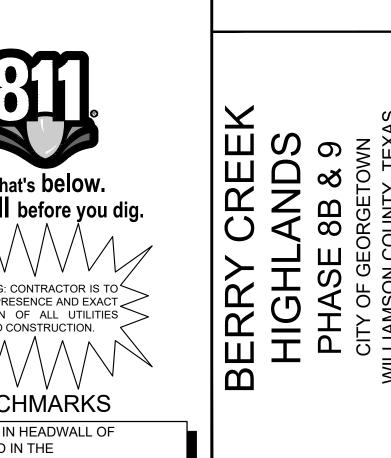
GEORGETOWN TEXAS







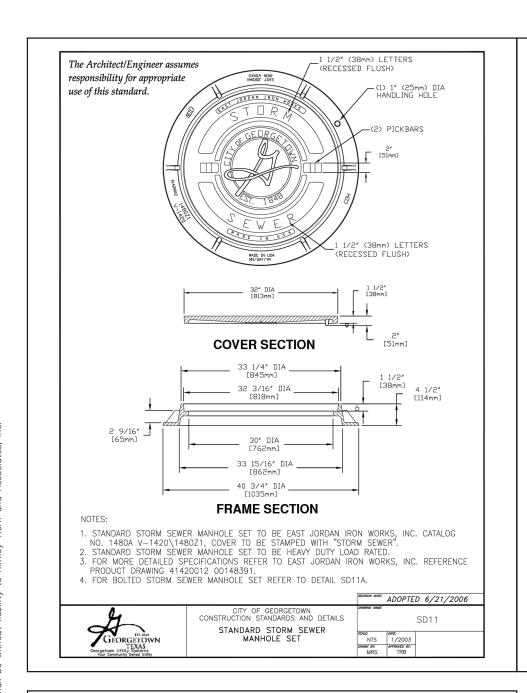
ELEVATION =821.82 FEET (AS SHOWN)

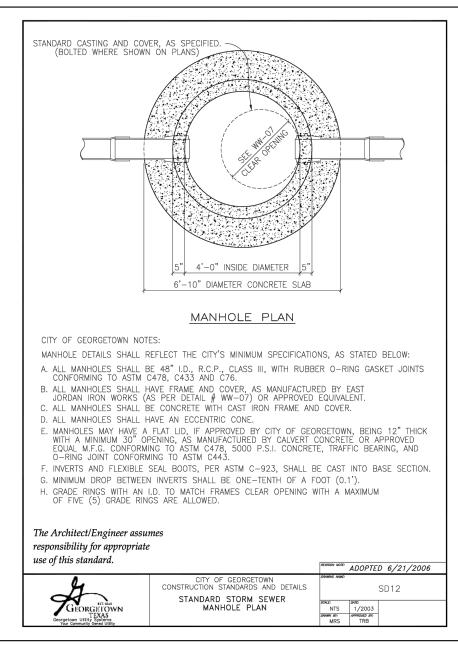


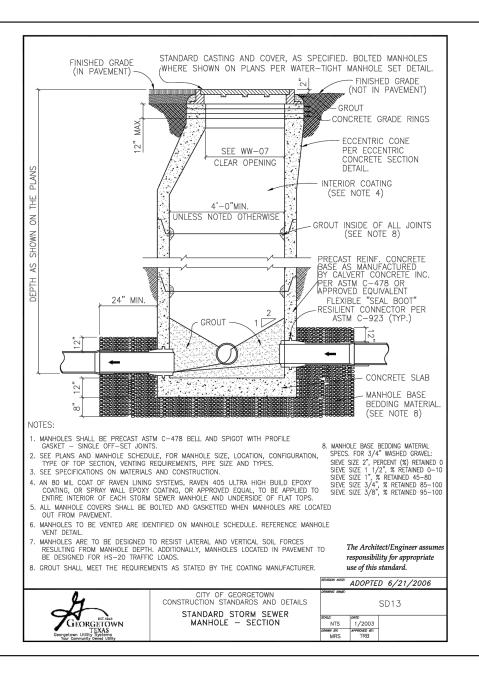
RRY IIGHI PHASE SHEET NUMBER

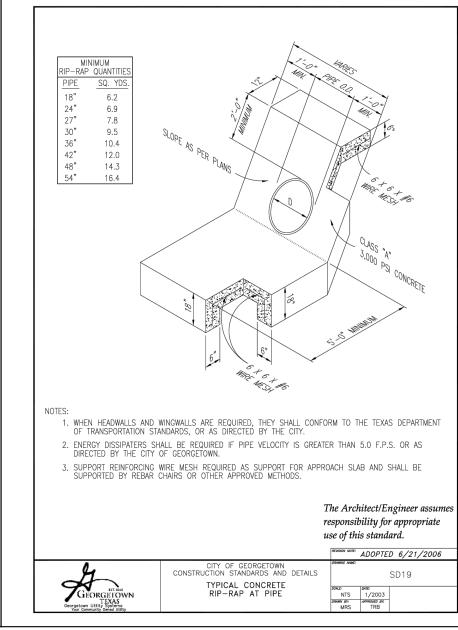
ALEXANDER C. STEADMAN

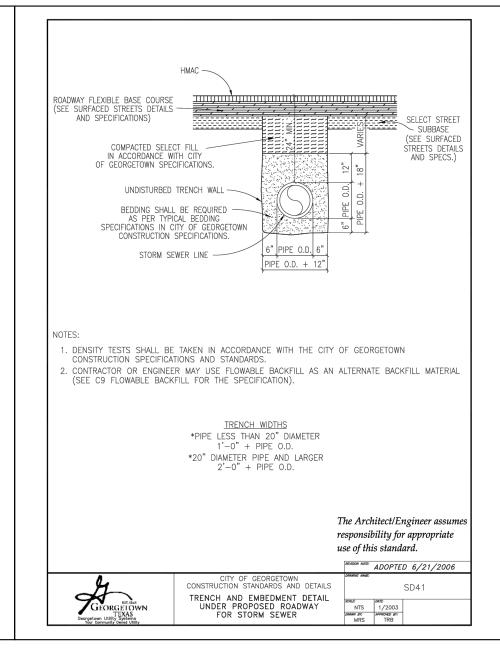
138792

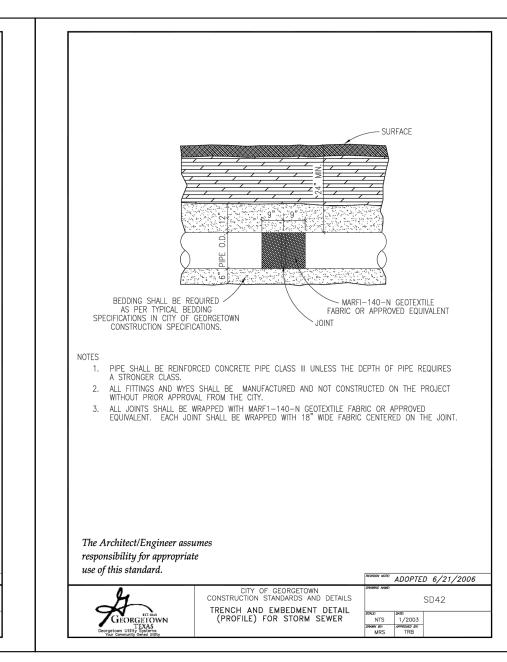


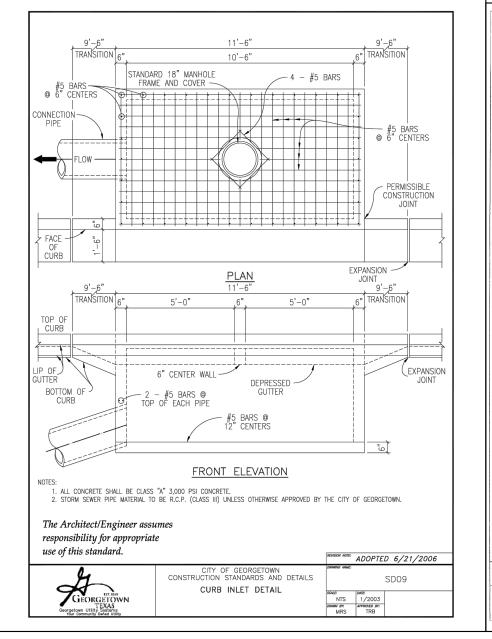


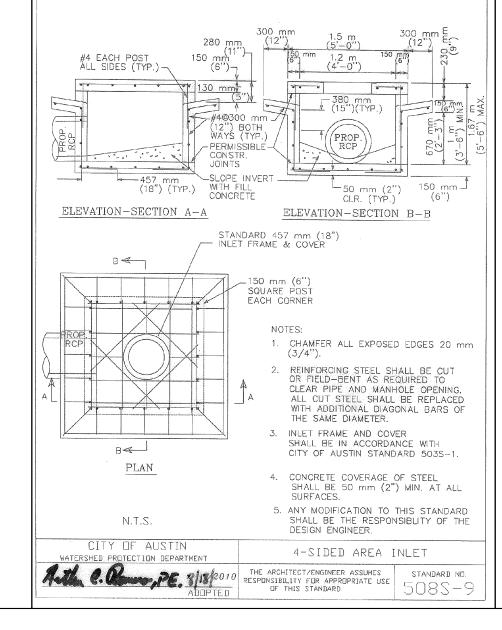


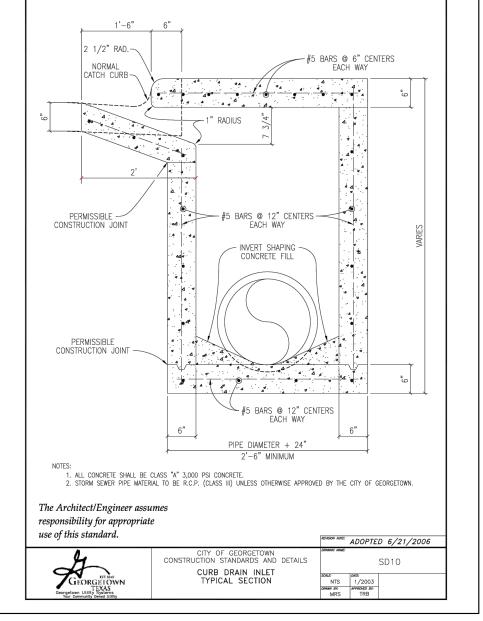


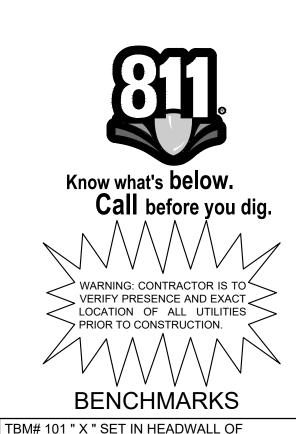












ELEVATION =821.82 FEET (AS SHOWN)

BERRY (
HIGHLA
PHASE (
CITY OF GEO

SHEET NUMBER 68 OF 70

CREEK
ANDS
E 8B & 9
EORGETOWN

U

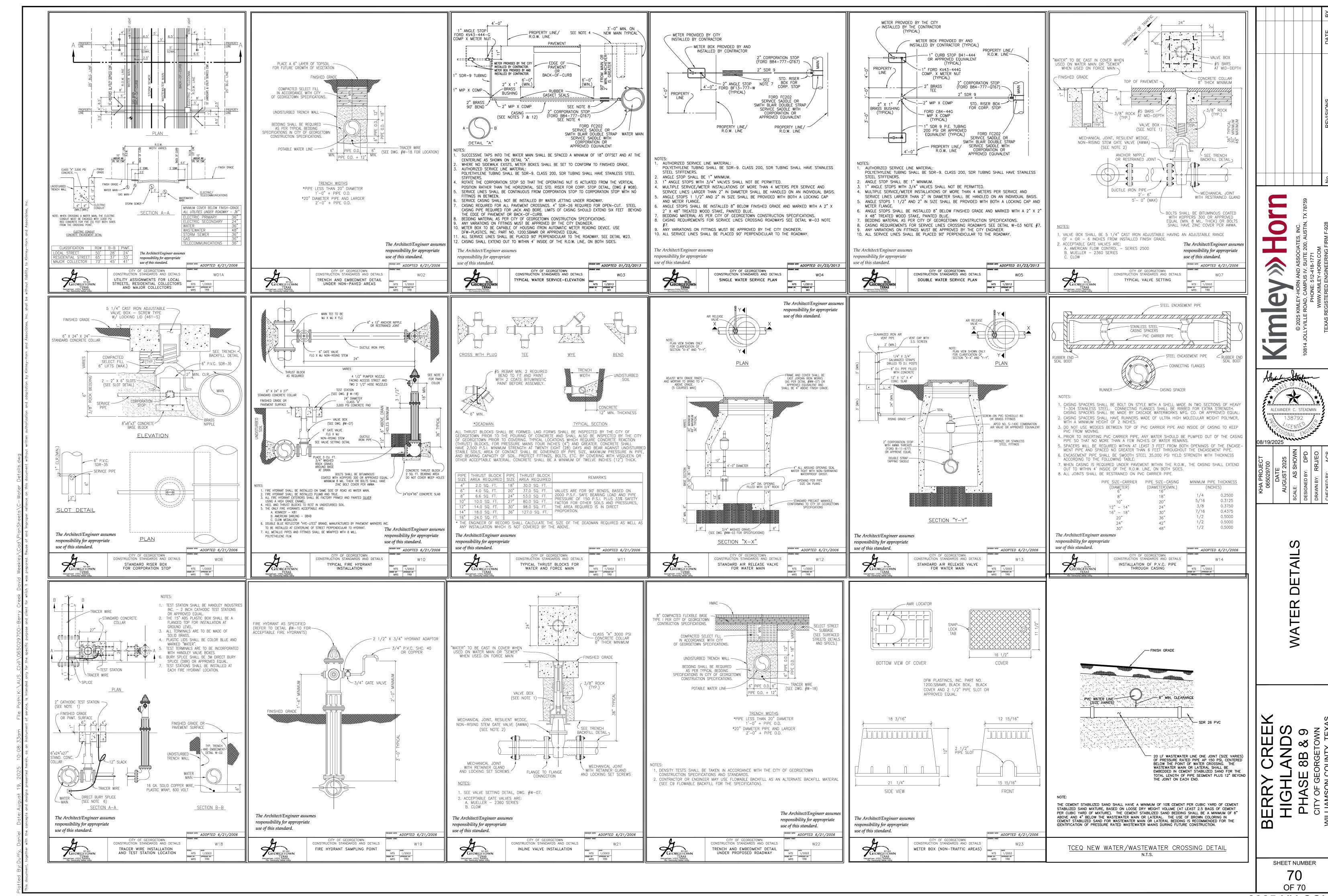
ALEXANDER C. STEADMAN

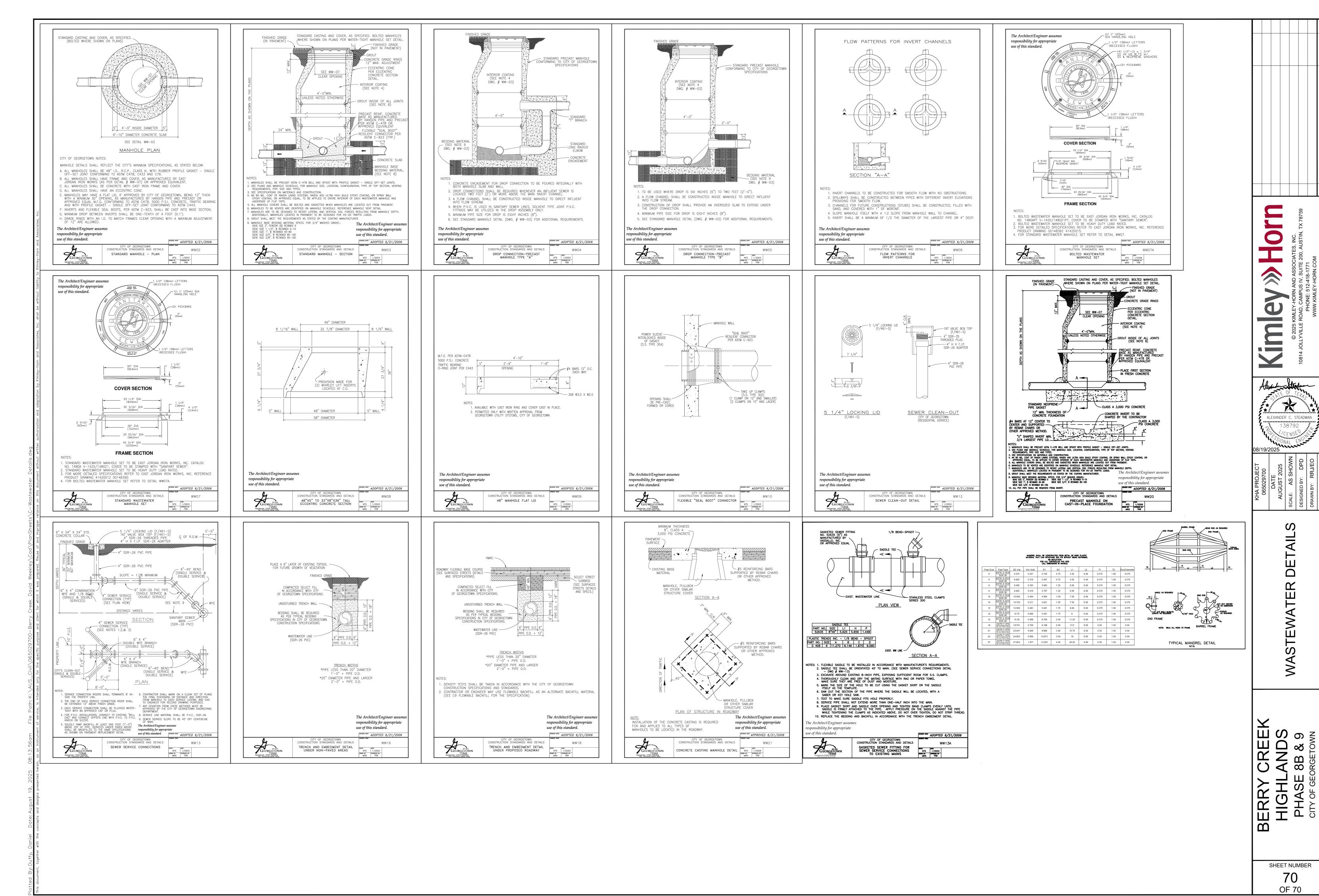
S

DETAIL

TORM DRAIN

2025-XX-CON





OF 70 2025-XX-CON

S

AL

WASTEWATER

ATTACHMENT **G** – INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN

Please see maintenance and pond plan that were approved with the Berry Creek 6A WPAP (EAPP ID: 11003729-11003730, Reg Entity No. RN110889862).

Inspection, Maintenance, Repair and Retrofit Plan, and Schedule for Batch Detention Water Quality Ponds

PROJECT NAME:Berry Creek Highlands Phase 6AADDRESS:2451 State Highway 195CITY, STATE ZIP:Georgetown, Texas 78633

BATCH DETENTION WATER QUALITY PONDS

Routine Maintenance:

Mowing. The upper stage, side slopes, embankment, and emergency spillway of an extended detention basin must be mowed regularly to discourage woody growth and control weeds. Grass areas in and around basins should 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. When mowing of grass is performed, a mulching mower should be used, or grass clippings should be caught and removed.

Inspections. 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 pond is meeting the target detention times. In particular, the extended detention control device should be regularly inspected for evidence of clogging, or conversely, for too rapid a release. If the design drawdown times are exceeded by more than 24 hours, then repairs should be scheduled immediately. The upper stage pilot channel, if any, and its flow path to the lower stage should be checked for erosion problems. During each inspection, erosion areas inside and downstream of the BMP should be identified and repaired or revegetated immediately. All inspection and testing reports should be kept on site and accessible to inspectors.

Debris and Litter Removal. Debris and litter will accumulate near the extended detention control device and should be removed during regular mowing operations and inspections. Particular attention should be paid to floating debris that can eventually clog the control device or riser..

Erosion Control. The pond side slopes, emergency spillway, and embankment all may periodically suffer from slumping and erosion, although this should not occur often if the soils are properly compacted during construction. Regrading and revegetation may be required to correct the problems. Similarly, the channel connecting an upper stage with a lower stage may periodically need to be replaced or repaired. g: Grass areas in and around sand filters 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 landscape areas. Vegetation on the pond embankments should be mowed as appropriate to prevent the establishment of woody vegetation

Nuisance Control. Standing water (not desired in a extended detention basin) or soggy conditions within the lower stage of the basin can create nuisance conditions for nearby residents. Odors, mosquitoes, weeds, and litter are all occasionally perceived to be problems. Most of these problems are generally a sign that regular inspections and maintenance are not being performed (e.g., mowing, debris removal, clearing the outlet control device).

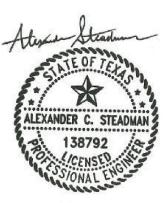
Non-routine maintenance.

Structural Repairs and Replacement. With each inspection, any damage to the structural elements of the system (pipes, concrete drainage structures, retaining walls, etc.) should be identified and repaired immediately. These repairs should include patching of cracked concrete, sealing of voids, and removal of vegetation from cracks and joints. The various inlet/outlet and riser works in a basin will eventually deteriorate and must be replaced. Public works experts have estimated that corrugated metal pipe (CMP) has a useful life of about 25 yr, whereas reinforced concrete barrels and risers may last from 50 to 75 yr.

Sediment Removal. When properly designed, dry extended detention basins will accumulate quantities of sediment over time. Sediment accumulation is a serious maintenance concern in extended detention dry ponds for several reasons. First, the sediment gradually reduces available stormwater management storage capacity within the basin. Second, unlike wet extended detention basins (which have a permanent pool to conceal deposited sediments), sediment accumulation can make dry extended detention basins very unsightly. Third, and perhaps most importantly, sediment tends to accumulate around the control device. Sediment deposition increases the risk that the orifice will become clogged, and gradually reduces storage capacity reserved for pollutant removal. Sediment can also be resuspended if allowed to accumulate over time and escape through the hydraulic control to downstream channels and streams. For these reasons, accumulated sediment needs to be removed from the lower stage when sediment buildup fills 20% of the volume of the basin or at least every 10 years.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.

Responsible Party for Maintenance: H4 Georgetown, LP	
Address: 129 Canyon View Road	
City, State, Zip: Georgetown, Texas 78626 Telephone Number: (662) 816-2787	
Signature of Responsible Party:	



Jon Niermann, *Chairman*Emily Lindley, *Commissioner*Bobby Janecka, *Commissioner*Kelly Keel, *Interim Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 8, 2023

Mr. Marvin Shapiro Berry Creek ASLI IX, LLC 923 N. Pennsylvania Avenue Winter Park, FL, 32789-2456

Re: Approval of a Water Pollution Abatement Plan (WPAP) and Approval of an Organized

Sewage Collection System (SCS) Plan

Berry Creek Highlands Phase 6A; Located South of Bonnet Lane, and SH 195;

Georgetown, Williamson County Texas

Edwards Aquifer Protection Program ID: 11003729 and 11003730, Regulated Entity No.

RN110889862

Dear Mr. Shapiro:

The Texas Commission on Environmental Quality (TCEQ) has completed its review on the applications for the above-referenced project submitted to the Edwards Aquifer Protection Program (EAPP) by Kimley-Horn and Associates, Inc. on behalf of the applicant, Berry Creek ASLI IX, LLC on September 14, 2023. Final review of the applications was completed after additional material was received on November 30, 2023.

As presented to the TCEQ, the application was prepared in general compliance with the requirements of 30 Texas Administrative Codes (TAC) Chapter §213 and Chapter §217. The permanent best management practices (BMPs), engineering design report, technical specifications and final design plans were prepared by a Texas licensed professional engineer (PE). All construction plans and design information were sealed, signed, and dated by a Texas licensed PE. Therefore, the application for the construction of the proposed project and methods to protect the Edwards Aquifer are hereby **approved**, subject to applicable state rules and the conditions in this letter.

This approval expires two years from the date of this letter, unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been officially requested. This approval or extension will expire, and no extension will be granted if more than 50 percent of the project has not been completed within ten years from the date of this letter.

The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer protection plan. A motion for reconsideration must be filed in accordance with 30 TAC §50.139.

PROJECT DESCRIPTION

WPAP DESCRIPTION

The proposed commercial project will have an area of approximately 20.67 acres. The project will include a recreational park and associated appurtenances that will serve the Berry Creek Highlands development. The impervious cover will be 0.27 acres (1.30 percent).

Mr. Marvin Shapiro Page 2 December 8, 2023

SCS DESCRIPTION

The proposed sewage collection system will provide disposal service for a residential development. The system includes gravity lines and other appurtenance necessary for conveying wastewater to a treatment plant.

The proposed SCS includes the lines listed in the table below:

Pipe Diameter (inches)	Linear Feet	Pipe Material	Specifications
8	2021	PVC SDR 26	ASTM D3034
8	20	PVC SDR 26	ASTM D2241
Total Linear Feet	2041		

TREATMENT FACILITY

The system will be connected to an existing City of Georgetown wastewater line for conveyance to the San Gabriel Wastewater Treatment Plant for treatment and disposal. **The proposed system shall be connected for conveyance prior to use of the development.** The project will conform to all applicable codes, ordinances, and requirements of the City of Liberty Hill.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a new batch detention basin (WQ Pond 1), designed using the TCEQ technical guidance, *RG-348*, *Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices*, will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 235 pounds of TSS generated from the 0.27 acres of impervious cover. The approved permanent BMPs and measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The permanent BMPS shall be operational prior to occupancy or use of the proposed project. Inspection, maintenance, repair, and retrofit of the permanent BMPs shall be in accordance with the approved application.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, the surficial unit of the site is the Edwards Limestone Formation (Ked). No sensitive geologic features were identified in the GA. The site assessment conducted on November 13, 2023 by TCEQ staff determined the site to be generally as described by the GA.

STANDARD CONDITIONS

- 1. The plan holder (applicant) must comply with all provisions of 30 TAC Chapter §213 and technical specifications contained in the approved plan. The plan holder should also acquire and comply with additional and separate approvals, permits, registrations or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, Dam Safety, Underground Injection Control, Water Quality) as required based on the specifics of the plan.
- 2. In addition to the rules of the Commission, the plan holder must also comply with state and local ordinances and regulations providing for the protection of water quality as applicable.

Mr. Marvin Shapiro Page 3 December 8, 2023

Prior to Commencement of Construction:

- 3. Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the plan holder must submit to the EAPP proof of recordation of notice in the county deed records, with the volume and page number(s) of the county record. A description of the property boundaries shall be included in the deed recordation in the county deed records. TCEQ form, Deed Recordation Affidavit (TCEQ-0625), may be used.
- 4. The plan holder of any approved Edwards Aquifer protection plan must notify the EAPP and obtain approval from the executive director prior to initiating any modification to the activities described in the referenced application following the date of the approval.
- 5. The plan holder must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the EAPP no later than 48 hours prior to commencement of the regulated activity. Notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person.
- 6. Temporary erosion and sedimentation (E&S) controls as described in the referenced application, must be installed prior to construction, and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
- 7. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring or gravel. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation.

During Construction:

- 8. This approval does not authorize the installation of temporary or permanent aboveground storage tanks on this project that will have a total storage capacity of 500 gallons or more of static hydrocarbons or hazardous substances without prior approval of an Aboveground Storage Tank facility application.
- 9. If any sensitive feature is encountered during construction, replacement, or rehabilitation on this project, all regulated activities must be **immediately** suspended near it and notification must be made to TCEQ EAPP staff. Temporary BMPs must be installed and maintained to protect the feature from pollution and contamination. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality.
- 10. All water wells, including injection, dewatering, and monitoring wells shall be identified in the geologic assessment and must be in compliance with the requirements of the Texas Department of Licensing and Regulation 16 TAC Chapter §76 and all other locally applicable rules, as appropriate.
- 11. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity

Mr. Marvin Shapiro Page 4 December 8, 2023

has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

- 12. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge must be filtered through appropriately selected BMPs.
- 13. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
- 14. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

- 15. Owners of permanent BMPs and temporary measures must ensure that the BMPs and measures are constructed and function as designed. A Texas licensed PE **must certify** in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the EAPP within 30 days of site completion.
- 16. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property or the ownership of the property is transferred to the entity. A copy of the transfer of responsibility must be filed with the executive director through the EAPP within 30 days of the transfer. TCEQ form, Change in Responsibility for Maintenance on Permanent BMPs and Measures (TCEQ-10263), may be used.
- 17. No part of the organized sewage collection system may be used as a sewage holding tank, as defined in 30 TAC §213.3 (excluding lift stations), over the Edwards Aquifer recharge zone.
- 18. A Texas licensed PE **must certify** in writing that the new sewage collection system (including force mains) has passed all required testing. The certification shall be submitted to the EAPP within 30 days of test completion and prior to the new sewage collection system being put into service.
- 19. A Texas licensed PE **must certify** subsequent testing required every five years of the existing sewage collection system after being put into use to determine types and locations of structural damage and defects such as offsets, open joints, or cracked or crushed lines that would allow exfiltration to occur. The test results must be retained by the plan holder for five years and made available to the executive director upon request.

The holder of the approved Edwards Aquifer protection plan is responsible for compliance with Chapter §213 and any condition of the approved plan through all phases of plan implementation. Failure to comply with any condition within this approval letter is a violation of Chapter §213 and is subject to administrative rule or orders and penalties as provided under §213.10 of this title (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. Upon legal transfer of this property, the new owner is required to comply with all terms of the approved Edwards Aquifer protection plan.

Mr. Marvin Shapiro Page 5 December 8, 2023

This action is taken as delegated by the executive director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Bob Castro, P.E. of the Edwards Aquifer Protection Program at 512-239-7045 or the regional office at 512-339-2929.

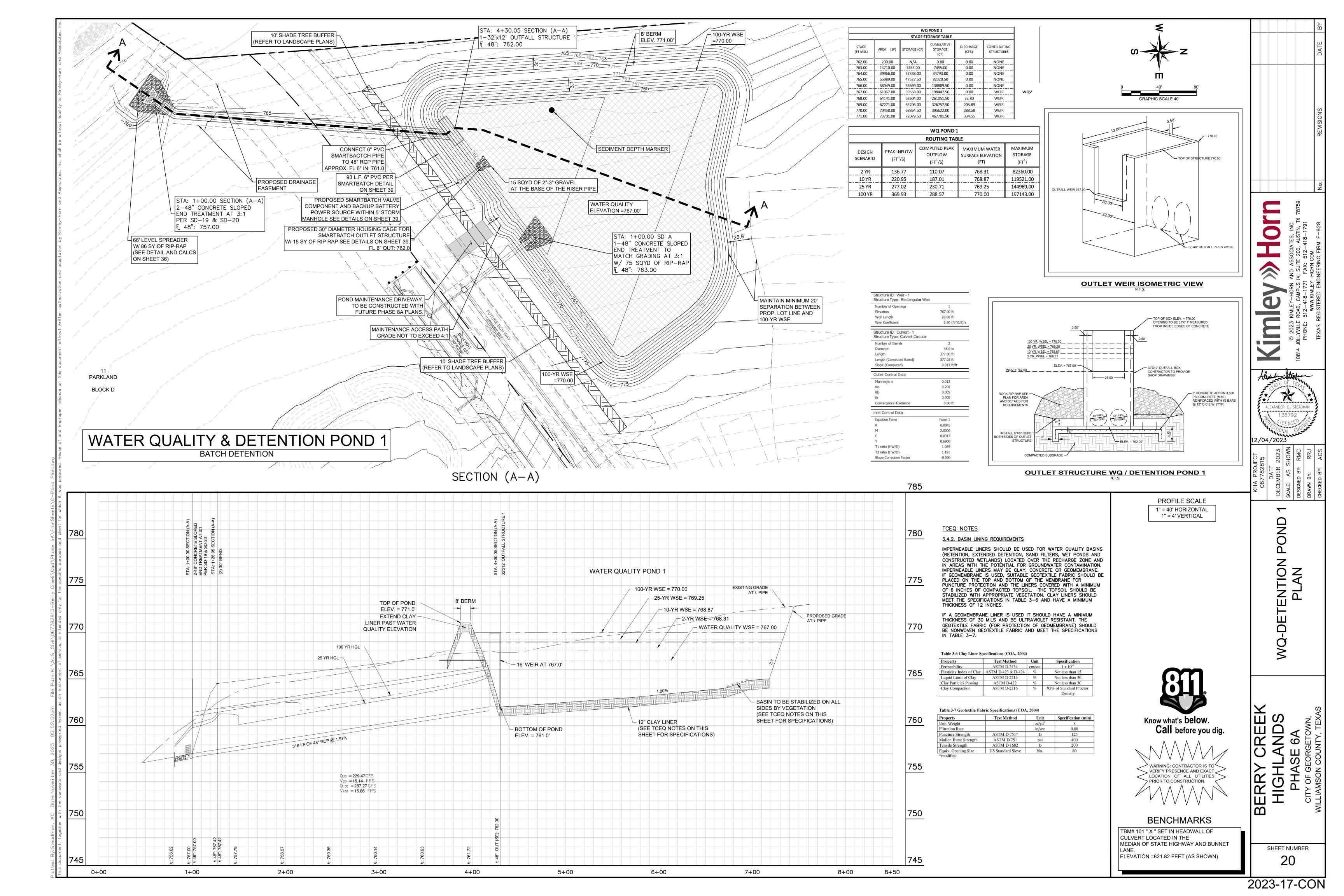
Sincerely, Lillian Butter

Lillian Butler, Section Manager

Edwards Aquifer Protection Program Texas Commission on Environmental Quality

LIB/rbc

cc: AC Steadman, P.E., Kimley-Horn and Associates, Inc.



ATTACHMENT **H** – PILOT-SCALE FIELD TESTING PLAN

A pilot-scale field testing plan is not applicable for this project.

<u>ATTACHMENT I – MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION</u>

All flows generated onsite due to this development are conveyed through a combination of sheet flow and storm sewer to the existing Batch Detention Pond constructed in Berry Creek Highlands Phase 6A. Ultimately the flows are conveyed to Berry Creek, then onto the San Gabriel River.

The TSS removal calculations for the proposed pond are attached.

SECTION 8: Additional Forms

Agent Authorization Form

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

1	Marvin Shapiro	,
	Print Name	·
	President	,
	Title - Owner/President/Other	
of	Berry Creek (Georgetown(ASLI IX, LLC	
,	Corporation/Partnership/Entity Name	
have authorized	AC Steadman, P.E. Print Name of Agent/Engineer	
of	Kimley-Horn and Associates Print Name of Firm	
	i ilit ivallie di i ilili	

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

I also understand that:

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

BERRY CREEK (GEORGETOWN) ASLI IX, LLC, a Delaware limited liability company

By: Avanti Strategic Land Investors IX, L.L.L.P.

By: APG ASLI IX GP, LLC

By: Avanti Properties Group III, L.L.L.P.

By: APG III GP, LLC

By: Avanti Management Corporation

By:

Name: Marvin Shapiro

Title: President

Berry Creek (Georgetown) ASLI IX, a Delaware limited liability company

Attn: Mt. Marvin Shapiro

923 N. Pennsylvania Avenue

Winter Park, FL 32789

THE STATE OF __Florida_ §

County of Orange §

BEFORE ME, the undersigned authority, on this day personally appeared <u>Marvin Shapiro</u> known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 15 day of August

MARGARET HILL
MY COMMISSION # HH 242771
EXPIRES: March 21, 2026

NOTARY PUBLIC

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: March 21,2026

Application Fee Form

Texas Commission on Environmental Quality Name of Proposed Regulated Entity: Berry Creek Highlands Phase 8B & 9 Regulated Entity Location: City of Georgetown, Williamson County, TX Name of Customer: Berry Creek ASLI IX, LLC Contact Person: Carter DeWalch Phone: 512-720-5466 Customer Reference Number (if issued): 605720523 Regulated Entity Reference Number (if issued):N/A Austin Regional Office (3373) ☐ Hays Travis San Antonio Regional Office (3362) Bexar Medina Uvalde Kinney Comal Application fees must be paid by check, certified check, or money order, payable to the Texas Commission on Environmental Quality. Your canceled check will serve as your receipt. This form must be submitted with your fee payment. This payment is being submitted to: X Austin Regional Office San Antonio Regional Office Mailed to: TCEQ - Cashier Overnight Delivery to: TCEQ - Cashier **Revenues Section** 12100 Park 35 Circle Building A, 3rd Floor Mail Code 214 P.O. Box 13088 Austin, TX 78753 Austin, TX 78711-3088 (512)239-0357 Site Location (Check All That Apply): Recharge Zone Contributing Zone **Transition Zone**

Type of Plan	Size	Fee Due
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	34.38 Acres	\$ 4,000
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	
Sewage Collection System	9,508 LF	\$4,754
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$

Signature: ___ Stendard Date: August 8, 2025

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

organizationage contestion of stories and incommoditions		
	Cost per Linear	Minimum Fee-
Project	Foot	Maximum Fee
Sewage Collection Systems	\$0.50	\$650 - \$6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	Fee	
Exception Request	\$500	

Extension of Time Requests

Project	Fee	
Extension of Time Request	\$150	

Core Data Form



TCEQ Core Data Form

TCEQ Use Only

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

		sion (If other is c	•				•	ith tho n	rogram applicatio	n l			
New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.) Renewal (Core Data Form should be submitted with the renewal form) Other													
2. Customer Reference Number (if issued) Follow this link to search Search Search Tother 3. Regulated Entity Reference Number (if issued)									if inquad)				
CN 605720523				Follow this lir or CN or RN Central R	number	umbers in							
SECTION	II: Cu	stomer Info	ormation				_	_					
4. General C	5. Effective D	e Date for Customer Information Updates (mm/dd/yyyy) 08/08/2025							/2025				
☑ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership ☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)													
The Customer Name submitted here may be updated automatically based on what is current and active with the													
Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).													
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John) If new Customer, enter previous Customer below:													
BERRY CREEK ASLI IX, LLC													
7. TX SOS/CPA Filing Number 8. T.				8. TX State Tax ID (11 digits) 32067561699			9.	Federa	al Tax ID (9 digits)	10. DUN	10. DUNS Number (if applicable)		
11. Type of (Customer:		ion	☐ Individual				Pai	artnership: ☐ General ☐ Limited				
		County Federal			Sole P		orship		Other:	· 			
12. Number ○ 0-20			☐ 251-500		nd high				pendently Owned	I and Opera	ted?		
	_						this fo		se check one of the	following			
☐ Owner ☐ Occupatio	nal Licens	Operation	tor ensible Party		wner &	•		plicant	Other:				
	923 N.	Pennsylvani	ia Ave.										
15. Mailing Address:		`											
Addiess.	City	Winter Park		State	FL		ZIP	32789		ZIP + 4	2456		
16. Country	Mailing In	formation (if outsi	de USA)	17. E-N				Mail Address (if applicable)					
		mshapiro@avantiprop.com											
18. Telephor	ne Number	·	1	19. Extension or Code				20. Fax Number (if applicable)					
(407) 628-8488				(()	-			
SECTION	III: Re	egulated En	iti <u>ty Inforn</u>	n <u>ation</u>									
					ty" is se	elected	below	this for	m should be acco	mpanied by	a permit application)		
The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal													
_		ndings such											
		ame (Enter name		he regulated	l action i	is taking	place	.)					
Berry Cre	ek High	lands Phase 8	3B & 9										

TCEQ-10400 (02/21) Page 1 of 2

23. Street Addres	s of	Bonnet	Lane										
the Regulated Entity: (No PO Boxes) 24. County													
		City	City Georgetov		State	TX	ZIP	786	533	ZIP	+ 4		
		William	nson		•	l		'					
		E	nter Physica	Loca	tion Descripti	on if no str	eet ad	dress is pr	ovided.				
25. Description to Physical Location					Highway Co			-		Shell I	Road		
26. Nearest City								State	!		Near	est ZIP Code	
Georgetwon							TX			78626			
27. Latitude (N) In Decin		mal: 30.72315		,			28. Longitude (W) In De			-97.69878			
Degrees		Minutes		Seco		Degre	Degrees			Minutes		Seconds	
30		72			31.5		-97		69		87.8		
29. Primary SIC C	Code (4	digits) 30.	Secondary S	SIC Co	de (4 digits)	31. Prima (5 or 6 digit	•	CS Code	32. S (5 or 6		y NAI	CS Code	
6552	6552						237210						
33. What is the Pr			f this entity?	(Do r	not repeat the SIC	or NAICS des	cription.)						
Single Family	Hon!	nes											
24 Mailina	_	923 N. Pennsylvania Ave.											
34. Mailing Address:													
Addicas.		City Winter Parl			State	FL	ZI	Р	32789		+ 4	2456	
35. E-Mail Ad	ddress	:				mshapi	ro@av	antiprop.co	m				
				37. Extension or Code 38. Fax Number (if appl									
36. 7	Teleph	one Numbe	r	1	37. Extensio	n or Code	I		38. Fax Nu	mber (if	appli	cable)	
		one Numbe 862-8488	r		37. Extensio	n or Code			38. Fax Nu (mber <i>(if</i>) -	applio	cable)	
9. TCEQ Programs	740)	862-8488 D Numbers (Check all Progra	ams and			ition nur		() -			
(9. TCEQ Programs	740)	862-8488 D Numbers (instructions fo	Check all Progra	dance.	d write in the per	mits/registra	_	mbers that wi	(Il be affected) -	odates	submitted on this	
9. TCEQ Programs	740)	862-8488 D Numbers (Check all Progra	dance.		mits/registra	_		(Il be affected) -	odates		
(9. TCEQ Programs	(740) and II a Form	Numbers (instructions fo	Check all Progra	dance.	d write in the per	mits/registra	ПЕ	mbers that wi	(Il be affected entory Air) -	odates dustrial	submitted on this	
9. TCEQ Programs orm. See the Core Dat Dam Safety	(740) and II a Form	Numbers (instructions fo	Check all Progra or additional guid	dance.	d write in the per ☑ Edwards Aqui	mits/registra	ПЕ	mbers that wi	(Il be affected entory Air) -	odates dustrial	submitted on this	
9. TCEQ Programs orm. See the Core Dat Dam Safety	(740) and II a Form	Numbers (instructions fo	Check all Progra or additional guid is ource Review A	dance.	d write in the per ☑ Edwards Aqui	mits/registra	ПЕ	mbers that wi	(Il be affected entory Air) - I by the up	odates dustrial	submitted on this	
9. TCEQ Programs orm. See the Core Dat Dam Safety Municipal Solid W	a and III a Form	Numbers (instructions fo	Check all Progra or additional guid is ource Review A	dance.	d write in the per ☑ Edwards Aqui ☑ OSSF	mits/registra	E	mbers that wi	(Il be affected entory Air) - I by the up	odates dustrial	submitted on this	
9. TCEQ Programs orm. See the Core Dat	a and III a Form	Numbers (instructions fo	Check all Progra or additional guid is ource Review A	dance.	d write in the per ☑ Edwards Aqui ☑ OSSF	mits/registra		mbers that wi	(Il be affected entory Air) - I by the up	odates dustrial	submitted on this	
9. TCEQ Programs orm. See the Core Dat Dam Safety Municipal Solid W	a and III a Form	Numbers (instructions for District New S	Check all Progra or additional guid is ource Review A	dance.	d write in the per ☑ Edwards Aqui ☐ OSSF ☐ Title V Air	mits/registra		mbers that wi missions Inve etroleum Sto ires	(Il be affected entory Air) - I by the up	odates dustrial VS ed Oil	submitted on this	
99. TCEQ Programs orm. See the Core Dat Dam Safety Municipal Solid W Sludge Voluntary Cleanu	s and II a Form	Numbers (instructions for District New S	Check all Progra or additional guid is ource Review A Water	dance.	d write in the per ☑ Edwards Aqui ☐ OSSF ☐ Title V Air	mits/registra		mbers that wi missions Inve etroleum Sto ires	(Il be affected entory Air) - I by the up	odates dustrial VS ed Oil	submitted on this	
9. TCEQ Programs orm. See the Core Dat Dam Safety Municipal Solid W	and II a Form /aste	Numbers (instructions for District New S	Check all Progra or additional guid is ource Review A Water	dance.	d write in the per ☑ Edwards Aqui ☐ OSSF ☐ Title V Air	mits/registra		mbers that wi missions Inve etroleum Sto ires	(Il be affected entory Air rage Tank) - I by the up	odates dustrial VS ed Oil	submitted on this	
9. TCEQ Programs orm. See the Core Dat Dam Safety Municipal Solid W Sludge Voluntary Cleanu SECTION IV 40.	and II a Form /aste	Numbers (instructions for District New S	Check all Progra or additional guides s ource Review A Water Water	dance.	d write in the per ☑ Edwards Aqui ☐ OSSF ☐ Title V Air ☐ Wastewater A	mits/registra		missions Inversions In	(Il be affected entory Air rage Tank) - I by the up	odates dustrial VS ed Oil	submitted on this	
99. TCEQ Programs orm. See the Core Dat Dam Safety Municipal Solid W Sludge Voluntary Cleanup SECTION IV 40. Name: AC Ste	radma	Numbers (instructions for District New S	Check all Progra or additional guides s ource Review A Water Water	dance.	d write in the per ☑ Edwards Aqui ☐ OSSF ☐ Title V Air ☐ Wastewater A	mits/registra fer griculture 41. Title:	P	missions Inversions In	(Il be affected entory Air rage Tank anager) - I by the up	odates dustrial VS ed Oil	submitted on this	
9. TCEQ Programs orm. See the Core Dat Dam Safety Municipal Solid W Sludge Voluntary Cleanu SECTION IV 40. Name: AC Ste 42. Telephone Num (512) 418-450	s and II a Form //aste p : Pre adma mber	Numbers (instructions for District New S	Check all Progra or additional guid is ource Review A Water Water formation de 44.	Air C	d write in the per ☑ Edwards Aqui ☐ OSSF ☐ Title V Air ☐ Wastewater A	mits/registra fer griculture 41. Title:	P	mbers that wi missions Investorated the Investoration of the Investorati	(Il be affected entory Air rage Tank anager) - I by the up	odates dustrial VS ed Oil	submitted on this	
9. TCEQ Programs orm. See the Core Dat Dam Safety Municipal Solid W Sludge Voluntary Cleanu SECTION IV 40. Name: AC Ste 42. Telephone Num (512) 418-450 SECTION V: 66. By my signature ignature authority to	s and II a Form //aste p	Numbers (instructions for District District New S Storm Waste Parer In 43. Ext./Cook	Check all Progra or additional guides source Review A Water Water de 44. Signatur the best of my	hir [d write in the per Edwards Aqui OSSF Title V Air Wastewater A	mits/registra fer griculture 41. Title: 45. E-M ac.ste informatio	P Pail Add	mbers that wi	(Il be affected entory Air rage Tank anager ey-horn.c	by the up	odates dustrial VS ed Oil her:	submitted on this Hazardous Waste and that I have	
9. TCEQ Programs orm. See the Core Dat Dam Safety Municipal Solid W Sludge Voluntary Cleanu SECTION IV 40. Name: AC Ste 42. Telephone Num	s and II a Form /aste p : Pre adma mber 8 Aut	Numbers (instructions for District District New S Storm Waste Parer In 43. Ext./Cook	Check all Progra or additional guides source Review A Water Water de 44. Signatur the best of my	hir [d write in the per Edwards Aqui OSSF Title V Air Wastewater A	mits/registra fer griculture 41. Title: 45. E-M ac.ste informatio	P Plail Add	mbers that wi	anager ey-horn.c	by the up	odates dustrial VS ed Oil her:	submitted on this Hazardous Waste and that I have	

TCEQ-10400 (02/21) Page 2 of 2

08/14/2025

Date:

Signature: