TCEQ WPAP & SCS APPLICATION

For

Bluffview Subdivision Phase 1

Prepared for:

Lamy 2243 LTD.
ATTN: Bennett Holcomb
1717 West 6th Street
Ste. 390
Austin, Texas 78703
Phone:

Prepared by:

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Ste. 200
Round Rock, Texas 78681
TBPE# 1386
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February 2024

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
PROFESSIONAL ENGINEER

2-15-2024

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Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with 30 TAC 213.

Administrative Review

1. Edwards Aquifer applications must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

   To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: http://www.tceq.texas.gov/field/eapp.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.
3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.
4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

   An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.
6. If the geologic assessment was completed before October 1, 2004 and the site contains “possibly sensitive” features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.
2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.

4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a "Mid-Review Modification". Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ's Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ's San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

1. Regulated Entity Name: Bluffview Subdivision Phase 1					**2. Regulated Entity No.:**				
3. Customer Name: Bennett Holcomb, Lamy 2243 LTD.					**4. Customer No.: CN604833822**				
5. Project Type: **(Please circle/check one)**	New		Modification		Extension		Exception		
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential			**8. Site (acres):**		91.97 Acres	
9. Application Fee:	$10,775.00		**10. Permanent BMP(s):**				Extended Batch Detention Ponds, VFS, Grassy Swale		
11. SCS (Linear Ft.):	8550 LF		**12. AST/UST (No. Tanks):**						
13. County:	Williamson		**14. Watershed:**				South Fork San Gabriel River		

Application Distribution

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

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

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

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

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

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.
Justin Midura, P.E.   Justin D. Midura
Print Name of Customer/Authorized Agent   4-10-2024
Signature of Customer/Authorized Agent   Date

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

General Information Form

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: Justin Midura, P.E.

Date: 2-15-2024

Signature of Customer/Agent:

Project Information

1. Regulated Entity Name: Bluffview Subdivision Phase 1
2. County: Williamson
3. Stream Basin: South Fork San Gabriel River
4. Groundwater Conservation District (If applicable): _____
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

   Contact Person: Bennett Holcomb
   Entity: Lamy 2243 LTD
   Mailing Address: 1717 West 6th Street
   City, State: Austin, TX Zip: 78703
   Telephone: (512)-534-9265 FAX: _____
   Email Address: bholcomb@riversideresources.com

8. Agent/Representative (If any):

   Contact Person: Justin Midura, P.E.
   Entity: LJA Engineering, Inc.
   Mailing Address: 2700 La Frontera Blvd, Ste 200
   City, State: Round Rock, TX Zip: 78681
   Telephone: 512-439-4700 FAX: _____
   Email Address: Jmidura@lja.com

9. Project Location:

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

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

    The project is located in Georgetown, TX. It is bounded to the south by FM 2243, to the west by the Southwest Bypass, to the east by the Riverview Estates Subdivision, and to the north by the South Fork San Gabriel River.

11. ☒ **Attachment A – Road Map**. A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

12. ☒ **Attachment B - USGS / Edwards Recharge Zone Map**. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:

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

13. ☒ **The TCEQ must be able to inspect the project site or the application will be returned**. Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

☒ Survey staking will be completed by this date: December 2023

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

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

15. Existing project site conditions are noted below:

    ☐ Existing commercial site
    ☐ Existing industrial site
    ☐ Existing residential site
    ☐ Existing paved and/or unpaved roads
    ☐ Undeveloped (Cleared)
    ☒ Undeveloped (Undisturbed/Uncleared)
    ☐ Other: _____

Prohibited Activities

16. ☒ I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:

    (1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

    (2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

    (3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

    (4) The use of sewage holding tanks as parts of organized collection systems; and

    (5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

    (6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

17. ☒ I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

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

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

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

Administrative Information

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

☒ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
☒ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
☐ For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
☐ A request for an exception to any substantive portion of the regulations related to the protection of water quality.
☐ A request for an extension to a previously approved plan.

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

☐ TCEQ cashier
☒ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
☐ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

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

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

General Information Form

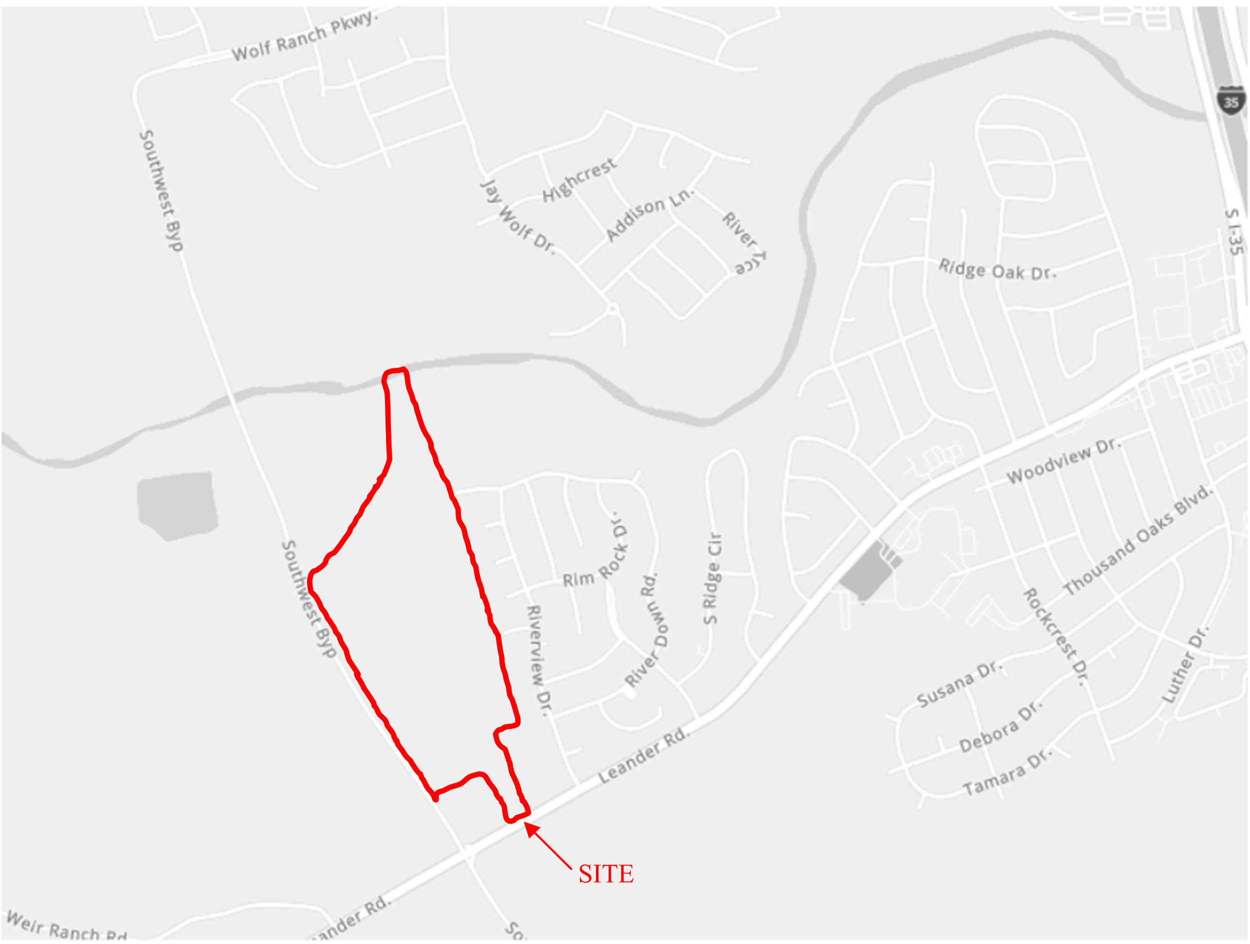
ATTACHMENT A

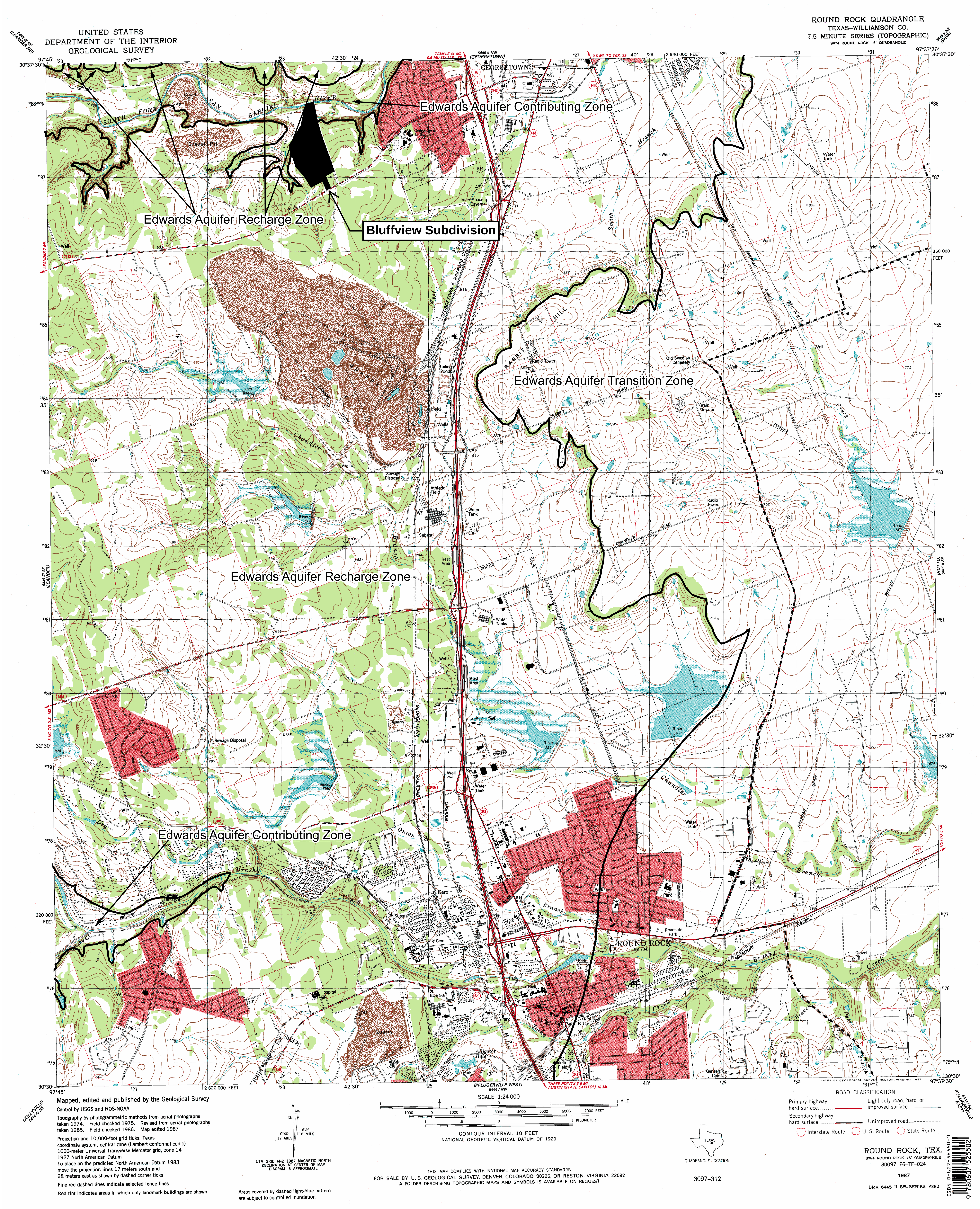
TCEQ SCS APPLICATION

<u>Bluffview Subdivision</u>

Williamson County, Texas

ROAD MAP





Texas Commission on Environmental Quality
Edwards Aquifer Protection Program

TCEQ

Regulatory Zones

30 TAC Chapter 213- Edwards Aquifer
Effective March 1990

This map was produced by the Groundwater Planning and Assessment Team of the Texas Commission on Environmental Quality to detail the boundaries of the regulatory zones of the Edwards Aquifer Protection Program, as described in Texas Administrative Code Title 30, Part 1, §213.3. No other claims are made to the accuracy or completeness of the data or to its suitability for a particular use. For more information about the Edwards Aquifer Protection Program, please contact the TCEQ Regional Offices in San Antonio or Austin. Printed June 2006.

General Information Form
ATTACHMENT C

TCEQ SCS APPLICATION

<u>Bluffview Subdivision Phase 1</u>
Williamson County, Texas

PROJECT DESCRIPTION:

This project was originally approved in a previous WPAP and SCS application approved under permit Nos. 11000104 and 11000105 on April 22, 2016 as well as permitted in 2015. We are requesting new approval to supersede prior approval of this site under this new application, since the previous approval has expired. The Bluffview Subdivision Phase 1 is located north of FM 2243, east of Southwest Bypass, and west of Riverview Subdivision in Georgetown, TX, Williamson County. Bluffview Subdivision Phase 1 consists of approximately 56.6 acres of The Bluffview PUD and proposes a combination of single-family residential lots, parkland, and all related infrastructure. The proposed development is located within the City of Georgetown city limits and subject to the Bluffview Planned Unit Development (PUD), approved ordinance number 2023-29. Under existing conditions, the tract is vacant and undeveloped. The site consists of assorted grasses and multiple protected trees, with terrain sloped at approximately 1% to 5% with steep grades going down the bluff itself.

Developed conditions propose five drainage basins. Two drainage basins to be treated by vegetative filter strips, two drainage basins to be treated by means of onsite ponding per Ponds 1 and 2, and one basin is to be treated by means of a grassy swale. The Phase 1 development is approximately 56.6 acres with 24.72 acres of impervious cover or 43.7%. The Phase 1 construction plans propose ROW, 105 single family lots, driveways, sidewalks, water, wastewater, drainage improvements, water quality and detention. 43.7% Impervious cover is proposed with this construction plan set. Phase 1 proposes two Extended Batch Detention Ponds, vegetative filter strips, and a grassy swale for water quality improvements. The following table provides detail for each BMP.

		Total Area (ac)	Impervious Cover Area (ac)
Pond 1	**Existing Basin**	25.3	0
	Developed Basin	25.3	15.40
Pond 2	**Existing Basin**	9.4	0
	Developed Basin	9.4	6.16
VFS A	**Existing Basin**	3.4	0
	Developed Basin	3.4	1.67
VFS B	**Existing Basin**	0.5	0
	Developed Basin	0.5	0.37
Grassy Swale	**Existing Basin**	1.7	0
	Developed Basin	1.7	0.55
Untreated	**Existing Basin**	16.3	0
	Developed Basin	16.3	0.57
Total	**Existing Basin**	56.6	0
	Developed Basin	56.6	24.72

The extended batch detention ponds only provide WQ volume since the project site was analyzed using HEC-HMS, and determined detention storage was already provided at the point of study for the 24-hour duration, 2-, 10-, 25-, and 100-year frequency rainfall events for proposed conditions using the TCEQ Technical Guidance Manual and City of Georgetown Drainage Criteria Manual. Stormwater is conveyed to the proposed BMP via curb and gutter flow to curb and grate inlets located in the ROW, open space, and driveways. At these points the water spills into the pond via storm pipe and released to the designated watershed by means of a safety end treatment (SET) outlet structure.

This project is located over the Edwards Aquifer Recharge Zone and within the South Fork San Gabriel River Watershed. Since this project is located over the Edwards Aquifer and proposes more than one wastewater service line, a Sewage Collection System (SCS) application is required and is submitted following the WPAP application. Phase 1 proposes 8,550 linear feet of 8”, 12” and 18” wastewater line and will connect to an existing wastewater manhole.

GEOLOGIC ASSESSMENT
FOR
BLUFFVIEW SUBDIVISION

Williamson County, Texas

January 2015

Prepared for:

Capital City Partners, Inc.
1717 West 6th Street, Suite 445
Austin, TX 78703

Prepared by:

aci group, LLC
1001 Mopac Circle
Austin, Texas 78746
License #50260

aci Project #
22-12-142

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

REGULATED ENTITY NAME: Bluffview Subdivision

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

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

PROJECT INFORMATION

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

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

Soil Units, Infiltration Characteristics & Thickness		
Soil Name	Group*	Thickness (feet)
Georgetown clay loam, 0 to 2 percent slopes (GeB)	D	0-3.5
Georgetown stony clay loam, 1 to 3 percent slopes (GsB)	D	0-3.5
Oakalla soils, channeled (Oc)	B	0-7.4
Eckrant–Rock, outcrop complex, rolling (ErE)	D	0-0.67
Eckrant–Rock outcrop complex hilly (ErG)	D	0-1
Sunev silty clay loam (SuB)	B	0-6.5

* Soil Group Definitions (Abbreviated)

A. Soils having a high infiltration rate when thoroughly wetted.

B. Soils having a moderate infiltration rate when thoroughly wetted.

C. Soils having a slow infiltration rate when thoroughly wetted.

D. Soils having a very slow infiltration rate when thoroughly wetted.

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

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

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

The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1" : 400'

Applicant's Site Plan Scale	1" = _100_ '
Site Geologic Map Scale	1" = _100_ '
Site Soils Map Scale (if more than 1 soil type)	1" = _500_ '

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

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

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

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

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

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

   __ There are ___(#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
      __ The wells are not in use and have been properly abandoned.
      __ The wells are not in use and will be properly abandoned.
      __ The wells are in use and comply with 16 TAC Chapter 76.
   _X_ There are no wells or test holes of any kind known to exist on the project site.

ADMINISTRATIVE INFORMATION

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

Date(s) Geologic Assessment was performed: _January 03, 2013_
Date(s)

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

Mark T. Adams P.G., C.A.P.M.
Print Name of Geologist

512-347-9000
Telephone

512-306-0974
Fax

Signature of Geologist

STATE OF TEXAS
MARK T. ADAMS
GEOLOGY
No. 1835
LICENSED
PROFESSIONAL GEOSCIENTIST

1/9/15
Date

Representing: aci consulting
(Name of Company)

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.
Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512-239-3282.

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November 2014

Geologic Assessment for the Bluffview Subdivision located in Williamson County, Texas

1.0 INTRODUCTION

The Bluffview Subdivision, hereafter referred to as the subject area, is located in Williamson County, Texas, 1.4 miles away from the intersection of IH 35 and RR 2243 (Figure 1).

The purpose of this assessment is to identify any karst or non-karst features and their recharge potential. This report complies with the requirements of Title 30, Texas Administrative Code (TAC) Chapter 213 relating to the protection of the Edwards aquifer recharge zone.

2.0 SCOPE

This report is intended to satisfy the requirements for a Geologic Assessment, which shall be included as a component of a Water Pollution Abatement Plan (WPAP) and/or Sewer Collection System (SCS). The scope of the report consists of a site reconnaissance and field survey and review of existing data and reports. Features identified during the field survey were ranked utilizing the Texas Commission on Environmental Quality (TCEQ) matrix for Edwards Aquifer recharge zone features. The ranking of the features will determine their viability as "sensitive" features.

3.0 INVESTIGATION METHODS

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

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

This map is intended for planning purposes only. All map data should be considered preliminary. All boundaries and designations are subject to confirmation.

500 250 0 500 Feet

1:6,000 1 inch = 500 Feet

Subject Area

aci consulting austin • denver

Weir Tract Geologic Assessment **November 2014**

Figure 1: Site Location

4.0 PROPOSED SITE USE

The proposed site use is for a Water Pollution Abatement Plan (WPAP) and onsite Sewage Collection System (SCS).

5.0 REGIONAL AND SITE GEOLOGY

The subject area is underlain by Edwards Limestone (Ked) (Collins, 1997). The geologic strata associated with the Edwards Aquifer include the Georgetown Formation overlying the Edwards Limestone Group, interfingering with the Comanche Peak Formation. These rocks are underlain by the Walnut Formation, which has members including the Whitestone Member, Keys Valley Marl Member, the Cedar Park Member, the Bee Cave Member, and the Bull Creek Member. The Glen Rose Formation, another marine limestone stratum, is located below the Walnut Formation (Figure 2).

According to geologic maps, the subject area is located in the Quaternary Alluvium, Quaternary Terrace Deposits, Edwards Limestone, and Comanche Peak Limestone (Figure 3; Figure 4).

According to Edwards Aquifer zone maps, the subject area is mostly within the Edwards Aquifer recharge zone of the northern segment of the Edwards Aquifer, however, the northern part of the subject area is within the contributing zone of the northern segment of the Edwards Aquifer (TCEQ 2001).

6.0 KARST FEATURES IN WILLIAMSON COUNTY, TEXAS

In limestone terrains, karst is expressed by erratically developed cavernous porosity and the manifestations of sinkholes, voids, and erratic surface drainage. Karst landscapes are typical of the Edwards Limestone, occurring across a vast region of Central Texas, west of the Balcones Escarpment, and these processes are critical to understanding the Edwards Aquifer within its various segments. The features produced by karst processes (voids, holes, and solution layers) eventually provide conduits for surface water runoff and "point recharge" for the Edwards aquifer. The identification and protection of these features in established recharge areas is critical to maintaining groundwater quality and species habitat. The TCEQ requires protective strategies within these areas to maintain quantity and quality of recharge prior to, during, and upon completion of construction activities.

Figure 2 – Regional Stratigraphy

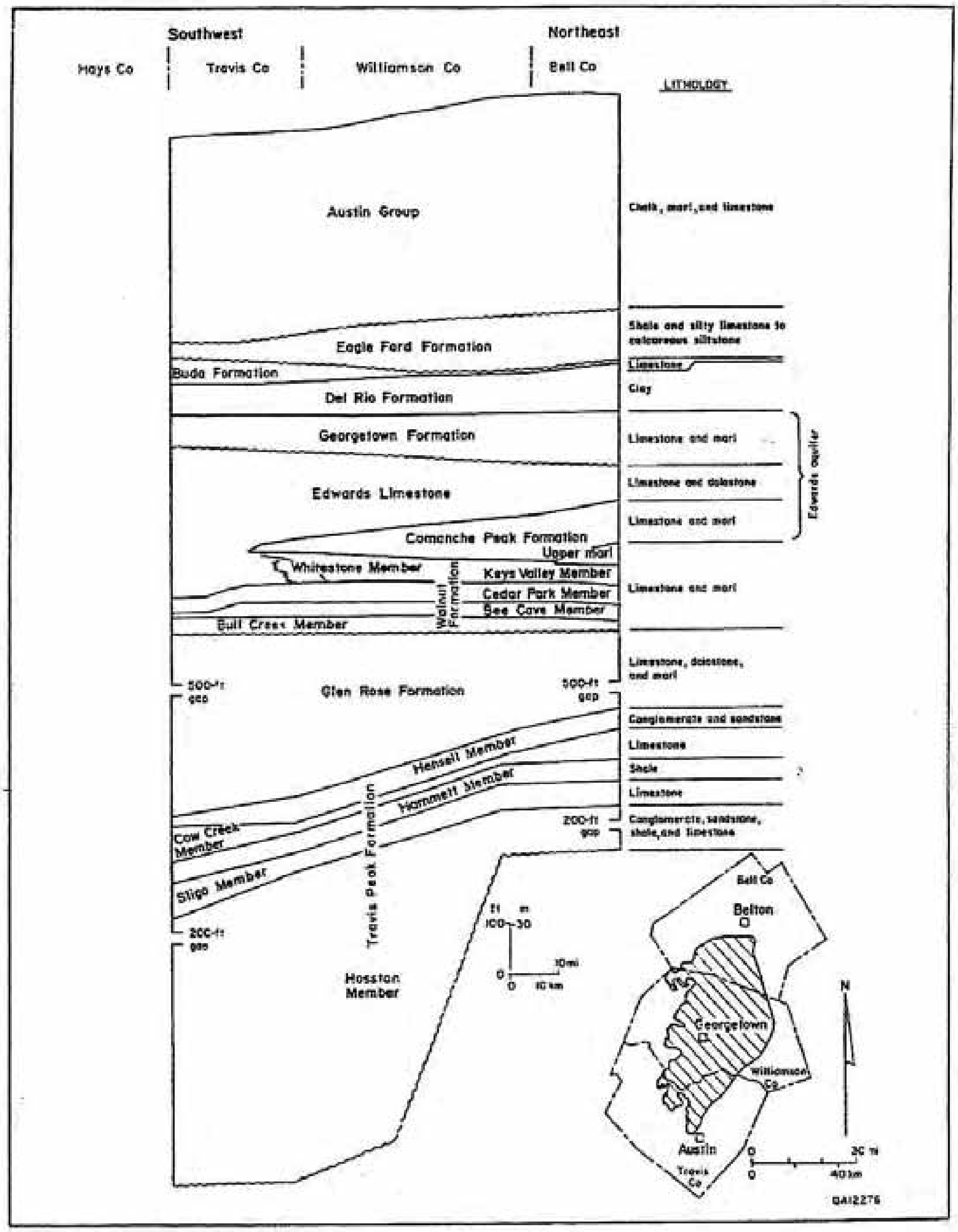
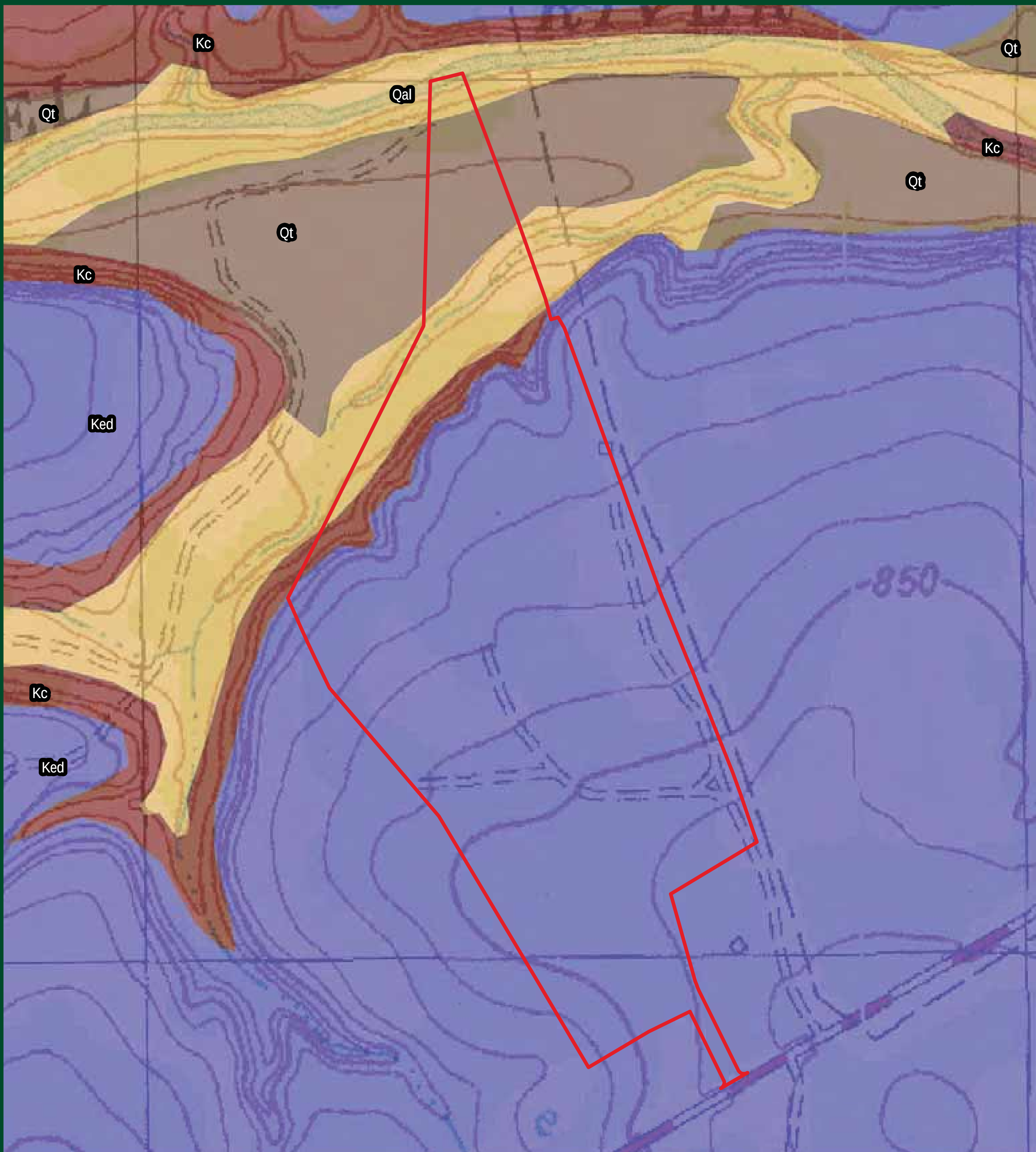


Figure 2 - Regional Stratigraphy
(Source: Senger, Collins & Kreitler, 1990)

Figure 3 – Site Stratigraphic Column
Bluffview Subdivision

System	Group or Formation	Thickness	Description
Quaternary	Alluvium and Terrace Deposits	0~20 feet (on site)	Gravel, sand, silt, and clay along streams and rivers. Alluvium is inundated regularly and the gravel is mostly limestone and chert. It is located along minor drainages, and includes undivided low terrace deposits. The terrace deposits are mostly above the flood level along entrenched streams and rivers.
Cretaceous	Edwards Limestone	0-90 feet (on site)	Limestone, dolomitic limestone, and marl. Massive to thin beds, chert, and fossiliferous; fossils include rudistids. Shallow subtidal to tidal-flat cycles. Honeycomb textures, voids in collapse breccias, and cavern systems. Accounts for most of the Edwards aquifer strata. Thickness is between 100-300 feet (regionally); thins northward.
Cretaceous	Comanche Peak Limestone	0-70 feet (on site)	Limestone and marl. Nodular, fossiliferous. Thickens northward from ~40 to 70 feet.

STATE OF TEXAS
MARK T. ADAMS
GEOLOGY
No. 1835
LICENSED
PROFESSIONAL GEOSCIENTIST



This map is intended for planning purposes only. All map data should be considered preliminary. All boundaries and designations are subject to confirmation.

500 250 0 500 Feet

1:6,000 1 inch = 500 Feet

Subject Area

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Figure 4: Geology (24K) and USGS 7.5-Minute Topographic Quadrangle *Round Rock*

7.0 SITE SOILS

The description of the site soils is derived from two sources:

- Utilization of the "Soil Survey of Williamson County, Texas", January 1983, compiled by the United States Department of Agriculture (USDA) Natural Resource Conservation Service; and
- Field observations made during the site reconnaissance.

Six soil units occurs in the subject area (Figure 5):

- *Georgetown clay loam, 0 to 2 percent slopes (GeB)*
- *Georgetown stony clay loam, 1 to 3 percent slopes (GsB)*
- *Eckrant –Rock, outcrop complex, rolling (ErE)*
- *Eckrant-Rock outcrop complex hilly (ErG)*
- *Sunev silty clay loam, 1 to 3 percent slopes (SuB)*
- *Oakalla soils, channeled. (Oc)*

Georgetown clay loam, 0 to 2 percent slopes (GeB) – A gently sloping soil that is found irregular in shape on uplands areas from 10 to 50 acres in size. The slightly acidic surface layer is brown clay loam roughly 7 inches thick. The reddish-brown upper subsoil extends to 35 inches and has a cobbly clay in the lower portion. This soil is an erosional hazard. It consists of well-drained, that has a low water capacity and slow permeability. Hydrologic group: D

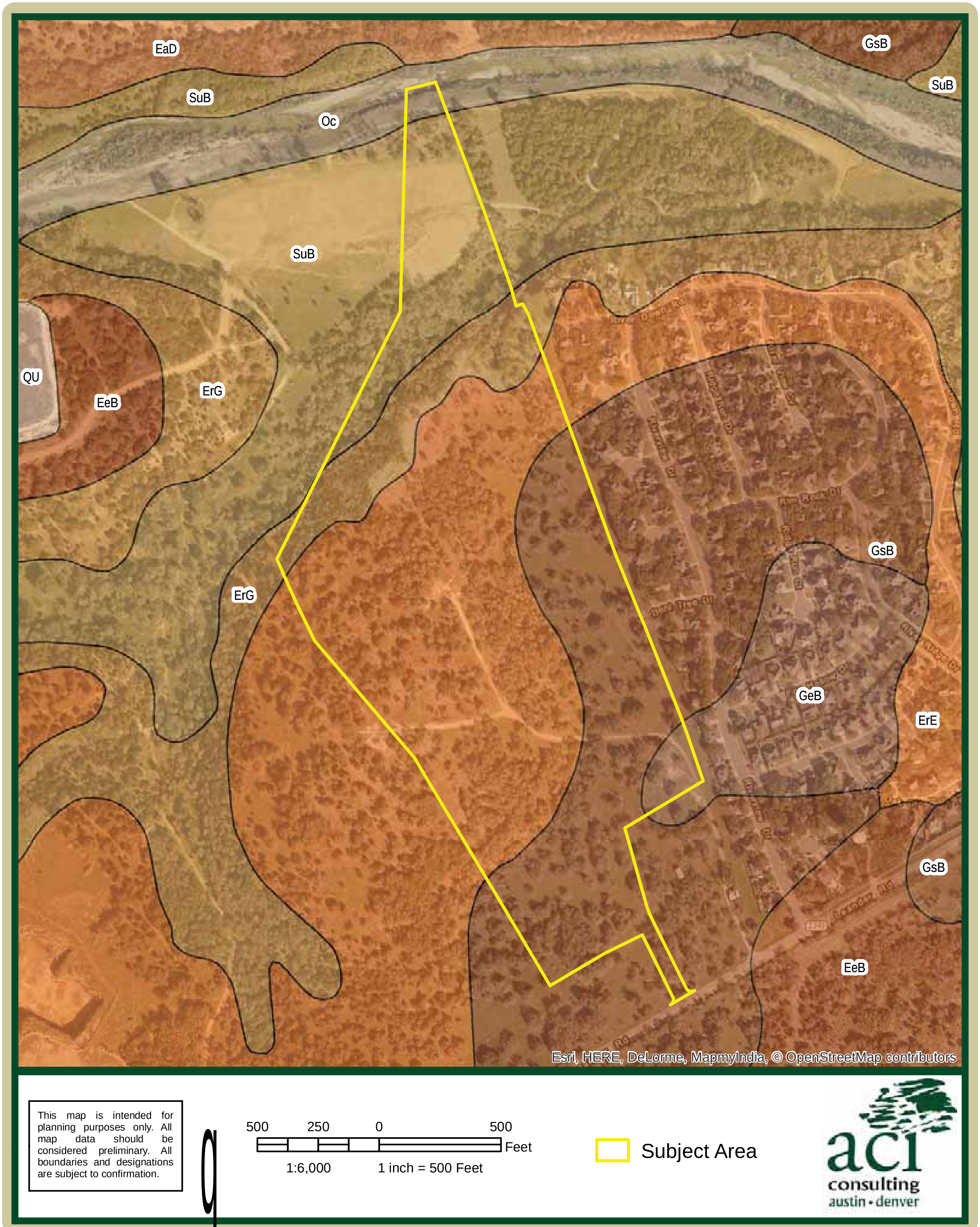
Georgetown stony clay loam, 1 to 3 percent slopes (GsB) – This sloping soil occupies higher areas of uplands. The area of the soil distribution is irregular in shape and generally 40 to 500 acres in size. The surface layer is brown stony clay about 7 inches thick, with common stones on or near the surface. The next layer is reddish-brown clay as deep as 35 inches which contains pockets of chert gravel. It consists of well-drained, fractured limestone that has a low water capacity and slow permeability. Hydrologic group: D

Eckrant –Rock, outcrop complex, rolling (ErE) – This complex occupies uplands and rock outcrop on hills and the ridges of drainageways. The soil's surface is moderately alkaline and calcareous with a layer of dark grayish-brown silty clay loam about 8 inches thick. The underlying material is pale-brown clay loam. The soil is slowly permeable, the available water capacity is very low, and they are well drained. Hydrologic group: D

Eckrant-Rock outcrop complex hilly (ErG) – This complex is frequently found on uplands mostly along major streams where geologic erosion forged ridges. Most areas range from 10 to 200 acres. The soils are calcareous and moderately alkaline, and are also very stony and up to 11 inches thick. The soil has a moderately slow permeability, the available water capacity is low, and they are well drained. Hydrologic group: D

Sunev silty clay loam, 1 to 3 percent slopes (SuB) – This calcareous and moderately alkaline soil is found on long and narrow stream terraces areas ranging from 20 to 30 acres. The surface layer is grayish-brown silt loam about 18 inches thick with underlying light yellowish-brown silty clay loam stratified with loamy and sandy material 60 inches deep. The soil is well drained with moderate permeability and available water capacity. Hydrologic group: B

Oakalla soils, channeled. (Oc) – This soil occupies narrow stream valleys in bottom land channels that are 2 to 6 feet, 10 to 30 feet wide, and 50 to 500 feet apart. The surface layer consists of a dark brown loam about 7 inches thick, followed by a 16 inch layer of dark brown clay. The underlying material of this soil is dark brown sandy clay loam roughly 66 inches deep. Hydrologic group: B



Weir Tract Geologic Assessment **November 2014**

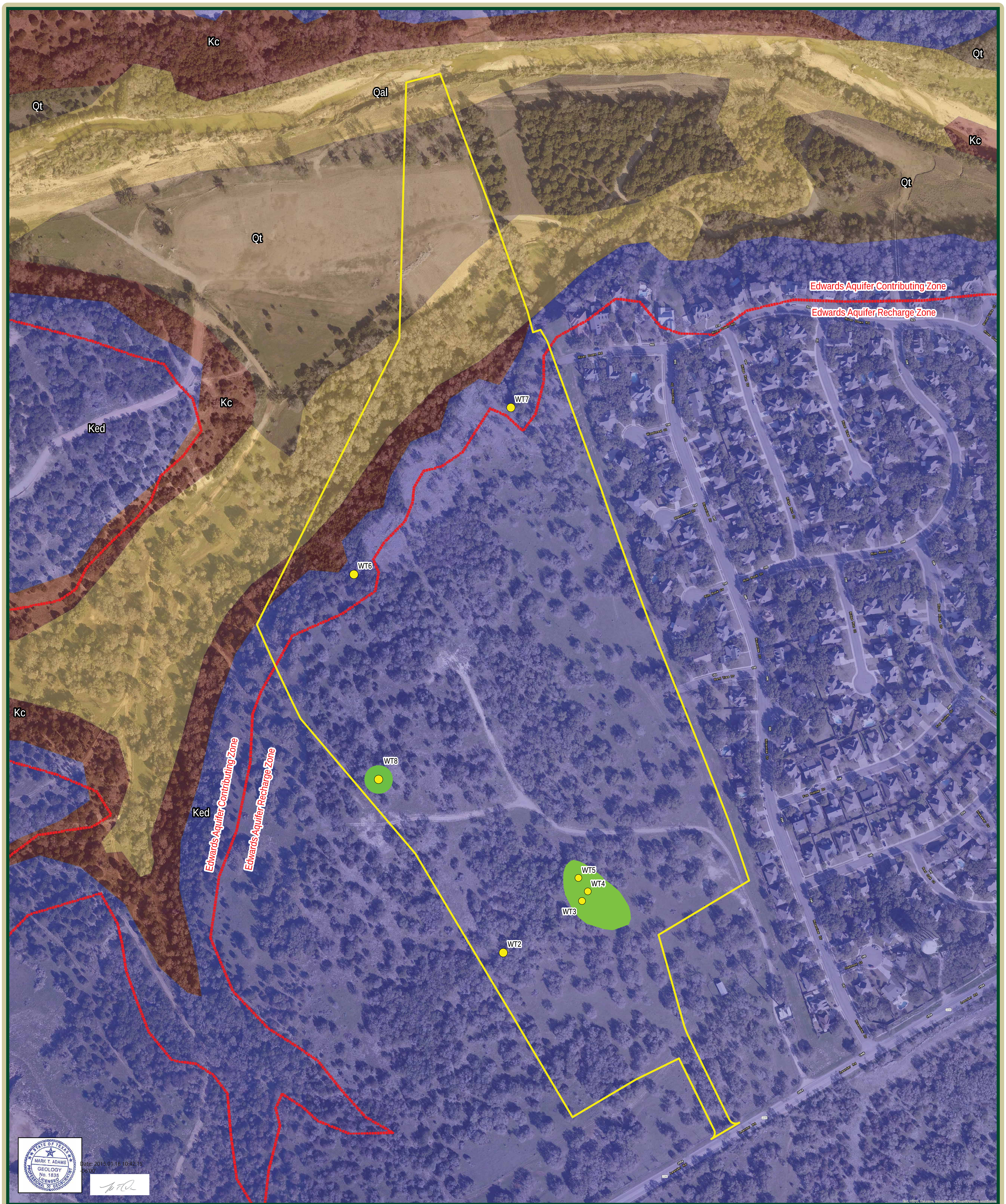
Figure 5: Soils

8.0 SITE FEATURES

A pedestrian investigation of the subject area was performed on January 3, 2013, by Mark Adams, P.G., Stan Reece, P.G., Mike Warton, and Maggie Behnke, G.I.T., with **aci consulting**. Seven features were identified during site investigations, and are detailed below. Two of these features are high elevation rock shelters that were identified along the bluff.

Portions of the subject area were previously disturbed during agricultural activities.

Originally the subject area was larger, and nine features were discovered on the larger tract. Since the commercial portion of the tract was carved out of the submittal, there are now only seven features within the subject area. Neither of the features in the commercial area would require a buffer.



This map is intended for planning purposes only. All map data should be considered preliminary. All boundaries and designations are subject to confirmation.

100 0 100
Feet

1:1,200

1 inch = 100 feet

Features

Setbacks

Subject Area

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Weir Tract Geologic Assessment
Figure 6: Features

November 2014

WT2

GPS: N. 30.611519 W. -97.712642

This feature is a solution-enlarged fracture with a length, width, and depth of 1 foot, 6 inches, and 1 foot, respectively. The feature is located in the Edwards Formation, and is positioned on a hillside. The infill material consists of leaf litter and loose recent soils. The drainage area appears to be less than 1.6 acres. The relative infiltration rate of this feature is low (15 points) as the feature is epi-karst which has been exploited as a mammal burrow.

WT3

GPS: N. 30.612005 W. -97.71174

This feature is a cave and is entrance number one to Weir Ranch North Cave 1. The cave has a length of 59.5 feet, varying width up to 20 feet, and height of 1.5 feet. The feature is located in the Edwards Formation, and is positioned on a hilltop. The infill material consists of breakdown and loose recent soils. The drainage area appears to be less than 1.6 acres. The relative infiltration rate of this feature is high (35 points).

View of the sinkhole prior to excavation.

This is a view of the opening of WT3 after excavation.


View of the inside of the cave after excavation, looking north.

WT4

GPS: N. 30.612098 W. -97.711672

This feature is a cave and is entrance number two to Weir Ranch North Cave 1. The cave has a length of 59.5 feet, varying width up to 20 feet, and height of 1.5 feet. The feature is located in the Edwards Formation, and is positioned on a hilltop. The infill material consists of breakdown and loose recent soils. The drainage area appears to be less than 1.6 acres. The relative infiltration rate of this feature is high (35 points).

View of the two apertures of the sinkhole area, prior to excavation.

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View of the entrance of WT4 after excavation.


View of the interior of the second entrance for Weir Ranch North Cave 1.

WT5
GPS: N. 30.612232 W. -97.711774

This feature is a cave and is called Weir Ranch North Cave 2. The cave has a length of 50 feet, varying width up to 5 feet and a height of 6 feet. The feature is located in the Edwards Formation, and is positioned on a hilltop. The infill material consists of breakdown and loose recent soils. The drainage area appears to be less than 1.6 acres. The relative infiltration rate of this feature is high (35 points).

View of the feature prior to excavation.

View of feature WT5 after excavation.

View of the interior of the cave, facing west.

View of the interior of the cave, facing east.

WT6

GPS: N. 30.615249 W. -97.714229

This feature is a rock shelter. The feature is located in the Edwards Limestone and Comanche Limestone, and is positioned in the cliff. The relative infiltration rate of this feature is low (5 points).

WT7

GPS: N. 30.616841 W. -97.712412

This feature is a rock shelter. The feature is located in the Edwards Limestone and Comanche Limestone, and is positioned in the cliff. The relative infiltration rate of this feature is low (5 points).

View of one of the rock shelters

WT8

GPS: N. 30.61324 W. -97.714005

This feature is a solution fracture with a length, width, and depth of 2.5 feet, 2.5 feet and 3.5 feet, respectively. The feature is located in the Edwards Formation, and is positioned on a hilltop. The infill material consists of breakdown and loose recent soils. The drainage area appears to be less than 1.6 acres. The relative infiltration rate of this feature is intermediate (20 points).

View of the feature prior to excavation.

View of the fracture WT8 after excavation.

9.0 SUMMARY OF FINDINGS

This report documents the findings of a field survey conducted by **aci consulting** personnel on January 3, 2013, and subsequent field work. Seven features were identified within the subject area, four of which are sensitive.

10.0 RECOMMENDATIONS

Buffers are recommended for Weir Ranch North Caves 1 and 2 and are shown on Figure 6. A buffer with a radius of 50 feet is also recommended for WT 8 and is also shown on the map.

11.0 REFERENCES

Collins, E.W. 1997. *Geologic Map of the Round Rock Quadrangle, Texas*. Bureau of Economic Geology, The University of Texas at Austin.

(SCS) Soil Conservation Survey. 1983. *Soil Survey of Williamson County, Texas*. United States Department of Agriculture. Texas Agriculture Experiment Station.

(TCEQ) Texas Commission on Environmental Quality. 2001. "Edwards Aquifer Protection Program, Chapter 213 Rules - Recharge Zone, Transition Zone, Contributing Zone, and Contributing Zone within the Transition Zone." Map. Digital data. November 28, 2001. Austin, Texas.

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APPENDIX A
Geologic Assessment Table

GEOLOGIC ASSESSMENT TABLE						PROJECT NAME: Bluffview Subdivision														
LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	≥40	<1.6	≥1.6	
WT 2	30.611519	-97.712642	SF	20	Ked	1	0.5	1	N-S	0	-	-	O	15	35	X		X		hillside
WT 3	30.612005	-97.71174	C	30	Ked	59.5	20	1.5	N75E	0	-	5	C,O	35	65		X	X		hilltop
WT 4	30.612098	-97.711672	C	30	Ked	59.5	20	1.5	N75E	0	-	2	C,O	35	65		X	X		hilltop
WT 5	30.612232	-97.711774	C	30	Ked	50	5	6	E-W	0	-	6x2	C,O	35	65		X	X		hilltop
WT 6	30.615249	-97.714229	O	5	Ked/Kc	-	-	-	-	0	-	-	N	5	10	X			X	rock shelter
WT 7	30.616841	-97.712412	O	5	Ked/Kc	-	-	-	-	0	-	-	N	5	10	X			X	rock shelter
WT 8	30.61324	-97.714005	SF	20	Ked	2.5	2.5	3.5	-	0	-	-	C,O	20	40		X	X		hilltop

* DATUM: NAD 83

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

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

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

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

STATE OF TEXAS
MARK T. ADAMS
GEOLOGY
No. 1335
LICENSED
PROFESSIONAL GEOSCIENTIST

Date 1/8/15

Sheet 1 of 1

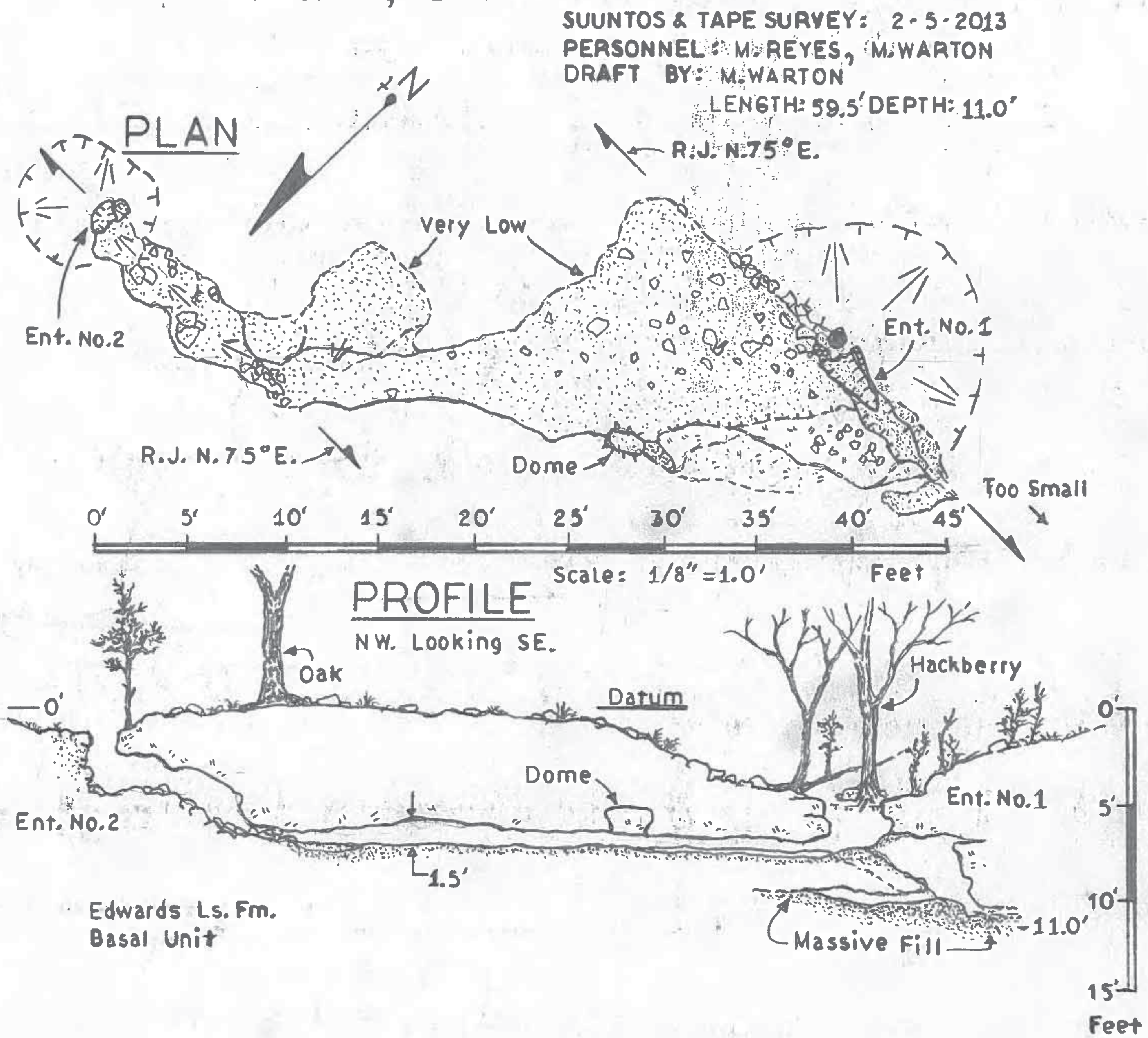
TCEQ-0585-Table (Rev. 10-01-04)

P:\Project Folders\22-12-142 GA and Feature Evaluation for Weir Tract 70acres\GA\04_geologic_assessment_table.xls

APPENDIX B
Cave Maps

WEIR RANCH NORTH CAVE NO. 1

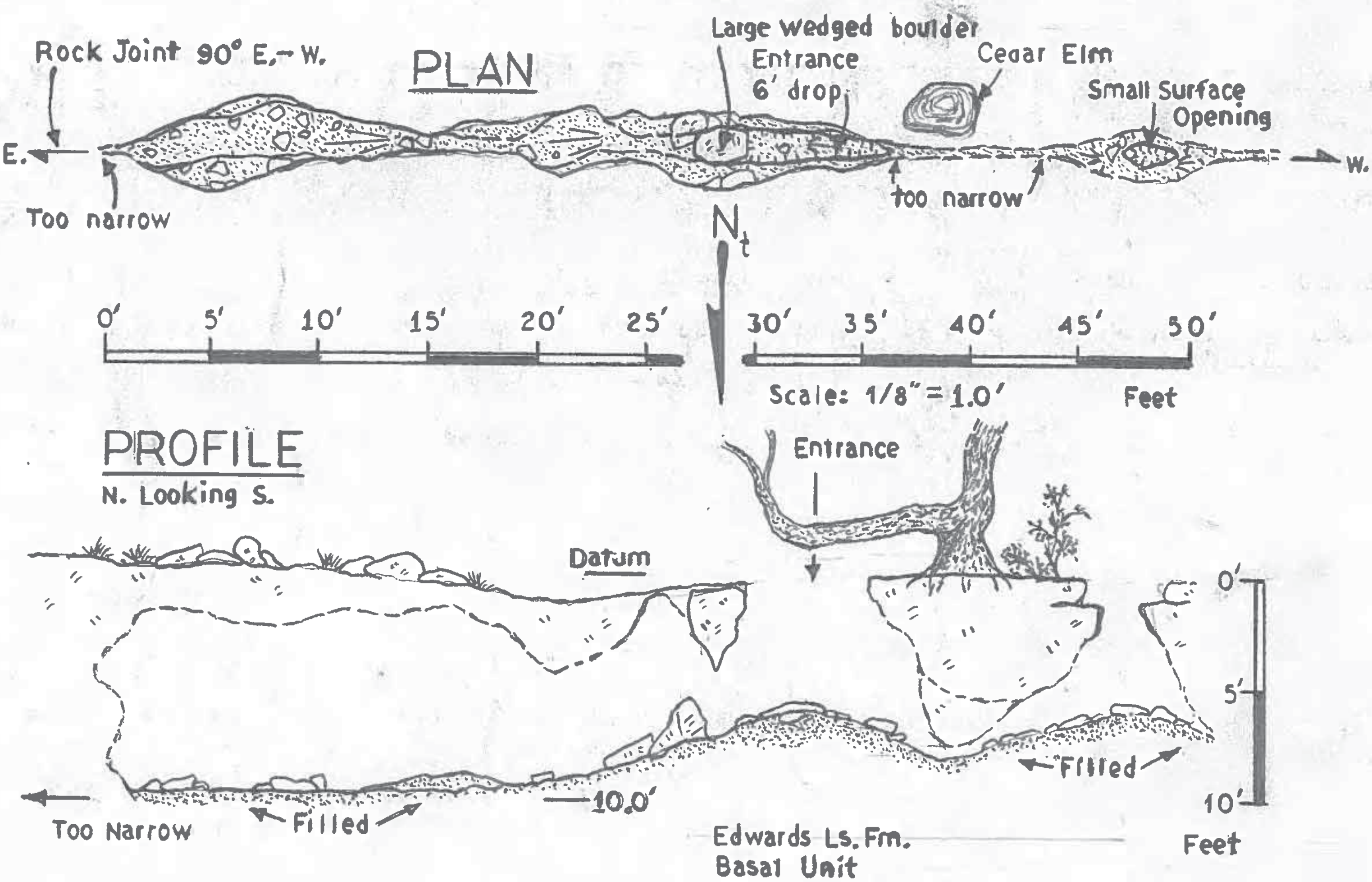
WILLIAMSON COUNTY, TEXAS



WEIR RANCH NORTH CAVE NO. 2

WILLIAMSON COUNTY, TEXAS

SUUNTOS & TAPE SURVEY: 2-6-2013
PERSONNEL: M. REYES, M. WARTON
DRAFT BY: M WARTON
~~LENGTH~~: 50.0′ DEPTH: 10.0′



Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Justin Midura, P.E.

Date: 2-15-2024

Signature of Customer/Agent:

Regulated Entity Name: Bluffview Subdivision Phase 1

Regulated Entity Information

1. The type of project is:

   - [x] Residential: Number of Lots: 105
   - [ ] Residential: Number of Living Unit Equivalents:_____
   - [ ] Commercial
   - [ ] Industrial
   - [ ] Other:_____

2. Total site acreage (size of property): 56.6
3. Estimated projected population: 368
4. The amount and type of impervious cover expected after construction are shown below:

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	446,223.05	÷ 43,560 =	10.24
Parking	44,625	÷ 43,560 =	1.02
Other paved surfaces	585,083.95	÷ 43,560 =	13.46
Total Impervious Cover	1,075,932	÷ 43,560 =	24.72

Total Impervious Cover 24.72 **÷ Total Acreage** 56.6 **X 100 =** 43.7**% Impervious Cover**

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

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

For Road Projects Only

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

7. Type of project:

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

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

☐ Concrete
☐ Asphaltic concrete pavement
☐ Other: _____

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

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

10. Length of pavement area: _____ feet.

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

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

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

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

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

100% Domestic	26,250Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day 26,250	

15. Wastewater will be disposed of by:

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

☐ **Attachment C - Suitability Letter from Authorized Agent**. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.

☐ Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

☒ Sewage Collection System (Sewer Lines):

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

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

☐ The SCS was previously submitted on_____.

☒ The SCS was submitted with this application.

☐ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

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

☒ Existing.
☐ Proposed.

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

Site Plan Requirements

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

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

Site Plan Scale: 1" = _____'.

18. 100-year floodplain boundaries:

☒ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☐ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): _____

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

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

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

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

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

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

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

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

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

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

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

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

26. ☒ Surface waters (including wetlands).

    ☐ N/A

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

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

28. ☒ Legal boundaries of the site are shown.

Administrative Information

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

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

Water Pollution Abatement Plan Application

ATTACHMENT A

TCEQ WPAP APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Factors Affecting Water Quality:

DURING CONSTRUCTION

Non-Stormwater Discharges: The following non-stormwater discharges may occur from the site during the construction period:

- Water from utility line flushing during initial line testing must use uncontaminated water that is not hyperchlorinated
- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred)
- Groundwater (from dewatering of excavation) must be uncontaminated
- Water used to wash vehicles or control dust must be accomplished using potable water without detergents

All non-stormwater discharge will be directed to the Erosion and Sedimentation Controls (Best Management Practices) to remove any suspended solids contained therein.
Stormwater during construction will remove loose material and transport it downstream

POST CONSTRUCTION

Non-Stormwater Discharges after construction has been completed which can affect water quality include:

- Fertilizers and pesticides
- Household chemicals
- Pet waste
- Used oil
- Car washing
- Mulching
- Sediment

Post-construction stormwater discharges typically will transport sediment in the form of dirt and dust accumulated on streets and other impervious flatwork, rooftops and sediment from erosion of grassy areas. That material will be transported through the storm sewer system to the wet basins, where most of the pollutants will be removed.

Water Pollution Abatement Plan Application

ATTACHMENT B

TCEQ WPAP APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Volume and Character of Stormwater:

The volume and character of stormwater at the project site for both existing and post-development conditions are as follows:

Under existing conditions, the tract is vacant and undeveloped. The site consists of assorted grasses and multiple protected trees, with terrain sloped at approximately 1% to 5% as well as steep grades going down the bluff itself. Developed conditions propose five drainage basins to be treated by means of onsite ponding per Ponds 1 & 2, vegetative filter strips, and a grassy swale.

The extended batch detention ponds only provide WQ volume since the project site was analyzed using HEC-HMS, and determined detention storage was already provided at the point of study for the 24-hour duration, 2-, 10-, 25-, and 100-year frequency rainfall events for proposed conditions using the TCEQ Technical Guidance Manual and City of Georgetown Drainage Criteria Manual. Stormwater is conveyed to the proposed BMP via curb and gutter flow to curb and grate inlets located in the ROW, open space, and driveways. At these points the water spills into the pond via storm pipe and released to the designated watershed by means of a safety end treatment (SET) outlet structure.

This project is located over the Edwards Aquifer Recharge Zone and within the South Fork San Gabriel River watershed. Since this project is located over the Edwards Aquifer and proposes more than one wastewater service line a Sewage Collection System (SCS) application is required and submitted following the WPAP application. The breakdown for each drainage basin is as follows:

		Total Area (ac)	Impervious Cover Area (ac)
Pond 1	**Existing Basin**	25.3	0
	Developed Basin	25.3	15.40
Pond 2	**Existing Basin**	9.4	0
	Developed Basin	9.4	6.16
VFS A	**Existing Basin**	3.4	0
	Developed Basin	3.4	1.67
VFS B	**Existing Basin**	0.5	0
	Developed Basin	0.5	0.37
Grassy Swale	**Existing Basin**	1.7	0
	Developed Basin	1.7	0.55
Untreated	**Existing Basin**	16.3	0
	Developed Basin	16.3	0.57
Total	**Existing Basin**	56.6	0
	Developed Basin	56.6	24.72

TCEQ requires a TSS reduction rate of 80% for proposed developments, but the City of Georgetown requires a TSS reduction rate of 85% for proposed developments. Therefore, this project is designed to remove 85% of TSS from the project. As such, the total Water Quality Volume (WQV) used as a basis for design of the two proposed extended batch detention ponds, vegetative filter strips, and grassy swale are calculated by following the guidelines in TCEQ'S RG-348 manual. Following TCEQ's guidelines, the total WQV required for each BMP are as follows:

	Required (lbs)	Provided (lbs)
Pond 1	14,260	14,650
Pond 2	5,699	5,840
VFS A	1,548	1,548
VFS B	345	345
Grassy Swale	509	509
Untreated	524	0
Total	**22,885**	**22,892**

Stormwater runoff was calculated using the Georgetown's Drainage Criteria Manual for proposed development using rational method for street and inlet calculations.

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: Bluffview Subdivision Phase 1

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: Bennett Holcomb
   Entity: Lamy 2243 LTD
   Mailing Address: 1717 West 6th Street, Ste 390
   City, State: Austin, Texas Zip: 78703
   Telephone: 512-534-9265 Fax: _____
   Email Address: bholcomb@riversideresources.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: Justin Midura, P.E.
   Texas Licensed Professional Engineer's Number: 128809
   Entity: LJA Engineering, Inc.
   Mailing Address: 2700 La Frontera Blvd, Ste 200
   City, State:Round Rock, TX Zip: 78681
   Telephone:512-439-4700 Fax:_____
   Email Address:jmidura@lja.com

Project Information

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

☒ Residential: Number of single-family lots: 105
☐ Multi-family: Number of residential units: _____
☐ Commercial
☐ Industrial
☐ Off-site system (not associated with any development)
☐ Other: _____

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

100% Domestic	26,250 gallons/day
_____% Industrial	_____ gallons/day
_____% Commingled	_____ gallons/day

Total gallons/day: 26,250

6. Existing and anticipated infiltration/inflow is 57,000 gallons/day. This will be addressed by: appropriate sizing.

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

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

8. Pipe description:

Table 1 - Pipe Description

Pipe Diameter(Inches)	***Linear Feet (1)***	***Pipe Material (2)***	***Specifications (3)***
8"	5,516.14	SDR 26	ASTM-3034
12"	941.36	SDR 26	ASTM-3034
18"	2,092.5	SDR 26	ASTM-3034

Total Linear Feet: 8,550

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

9. The sewage collection system will convey the wastewater to the San Gabriel River (name) Treatment Plant. The treatment facility is:

   ☒ Existing
   ☐ Proposed

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

   ☒ The City of Georgetown standard specifications.
   ☐ Other. Specifications are attached.

11. ☒ No force main(s) and/or lift station(s) are associated with this sewage collection system.

   ☐ A force main(s) and/or lift station(s) is associated with this sewage collection system and the **Lift Station/Force Main System Application** form (TCEQ-0624) is included with this application.

Alignment

12. ☒ There are no deviations from uniform grade in this sewage collection system without manholes and with open cut construction.

13. ☒ There are no deviations from straight alignment in this sewage collection system without manholes.

   ☐ **Attachment B - Justification and Calculations for Deviation in Straight Alignment without Manholes**. A justification for deviations from straight alignment in this sewage collection system without manholes with documentation from pipe manufacturer allowing pipe curvature is attached.
   ☐ For curved sewer lines, all curved sewer line notes (TCEQ-0596) are included on the construction plans for the wastewater collection system.

Manholes and Cleanouts

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

Table 2 - Manholes and Cleanouts

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
WWL A	72 Of 93	1+90.13	MH
WWL A	72 Of 93	4+25.49	MH
WWL A	72 Of 93	7+03.36	MH
WWL A	73 Of 93	10+03.36	MH
WWL A	73 Of 93	13+05.86	MH
WWL A	73 Of 93	15+85.49	MH
WWL A	74 Of 93	18+04.49	MH

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
WWL A	74 Of 93	19+06.11	MH
WWL A	74 Of 93	21+92.57	MH
WWL B	75 Of 93	3+50.00	MH

15. ☒ Manholes are installed at all Points of Curvature and Points of Termination of a sewer line.

16. ☒ The maximum spacing between manholes on this project for each pipe diameter is no greater than:

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

☐ **Attachment C – Justification for Variance from Maximum Manhole Spacing**. The maximum spacing between manholes on this project (for each pipe diameter used) is greater than listed in the table above. A justification for any variance from the maximum spacing is attached, and must include a letter from the entity which will operate and maintain the system stating that it has the capability to maintain lines with manhole spacing greater than the allowed spacing.

17. ☐ All manholes will be monolithic, cast-in-place concrete.

☒ The use of pre-cast manholes is requested for this project. The manufacturer's specifications and construction drawings, showing the method of sealing the joints, are attached.

Site Plan Requirements

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

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

Site Plan Scale: 1" = 200'.

19. ☒ The Site Plan must include the sewage collection system general layout, including manholes with station numbers, and sewer pipe stub outs (if any). Site plan must be overlain by topographic contour lines, using a contour interval of not greater than ten feet and showing the area within both the five-year floodplain and the 100-year floodplain of any drainage way.

20. Lateral stub-outs:

☒ The location of all lateral stub-outs are shown and labeled.
☐ No lateral stub-outs will be installed during the construction of this sewer collection system.

21. Location of existing and proposed water lines:

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

22. 100-year floodplain:

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

Table 3 - 100-Year Floodplain

Line	***Sheet***	***Station***
WWL A	72 of 93	1+00.00 to 9+72.38
	of	to
	of	to
	of	to

23. 5-year floodplain:

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

Table 4 - 5-Year Floodplain

Line	***Sheet***	***Station***
WWL A	72 of 93	1+00.00 to 2+50.00
	of	to
	of	to
	of	to

24. ☒ Legal boundaries of the site are shown.

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

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

26. ☒ All existing or proposed water line crossings and any parallel water lines within 9 feet of sewer lines are listed in the table below. These lines must have the type of pressure rated pipe to be installed shown on the plan and profile sheets. Any request for a variance from the required pressure rated piping at crossings must include a variance approval from 30 TAC Chapter 290.

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

Table 5 - Water Line Crossings

Line	***Station or Closest Point***	***Crossing or Parallel***	***Horizontal Separation Distance***	***Vertical Separation Distance***
WWL C	1+34.00	CROSSING	-	2.0'
WWL C	7+47.58	CROSSING	-	2.0'
WWL C	14+87.50	CROSSING	-	2.1'
WWL C	22+06.23	CROSSING	-	8.3'
WWL C	26+36.95	CROSSING	-	2.8'
WWL C	29+01.91	CROSSING	-	3.6'
WWL E	1+28.00	CROSSING	-	2.8'
WWL F	1+28.62	CROSSING	-	3.6'

27. Vented Manholes:

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

Table 6 - Vented Manholes

Line	***Manhole***	***Station***	***Sheet***

Line	*Manhole*	*Station*	*Sheet*

28. Drop manholes:

☐ There are no drop manholes associated with this project.

☒ Sewer lines which enter new or existing manholes or "manhole structures" higher than 24 inches above the manhole invert are listed in the table below and labeled on the appropriate profile sheets. These lines meet the requirements of 30 TAC §217.55(l)(2)(H).

Table 7 - Drop Manholes

Line	*Manhole*	*Station*	*Sheet*
WWL A	WWMH A1	1+90.13	72 of 93
WWL B	WWMH B2	4+13.42	75 of 93
WWL B	WWMH B3	4+54.42	75 of 93
WWL B	WWMH B4	5+02.77	75 of 93
WWL B	WWMH B5	6+75.37	75 of 93
WWL B	WWMH B7	7+81.28	75 of 93
WWL B	WWMH B11	16+58.83	76 of 93

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

☒ The placement and markings of all sewer line stub-outs are shown and labeled.

☐ No sewer line stub-outs are to be installed during the construction of this sewage collection system.

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

☒ The placement and markings of all lateral stub-outs are shown and labeled.

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

31. Minimum flow velocity (From Appendix A)

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

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

☒ Assuming pipes are flowing full, all slopes are designed to produce maximum flows of less than or equal to 10 feet per second for this system/line.

☐ **Attachment D – Calculations for Slopes for Flows Greater Than 10.0 Feet per Second.** Assuming pipes are flowing full, some slopes produce flows which are greater than 10 feet per second. These locations are listed in the table below. Calculations are attached.

Table 8 - Flows Greater Than 10 Feet per Second

Line	*Profile Sheet*	*Station to Station*	*FPS*	*% Slope*	*Erosion/Shock Protection*

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

☐ Concrete encasement shown on appropriate Plan and Profile sheets for the locations listed in the table above.

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

☒ N/A

Administrative Information

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

35. ☒ Standard details are shown on the detail sheets, which are dated, signed, and sealed by the Texas Licensed Professional Engineer, as listed in the table below:

Table 9 - Standard Details

Standard Details	*Shown on Sheet*
Lateral stub-out marking **[Required]**	84 of 93
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) **[Required]**	92 of 93
Alternate method of joining lateral to existing SCS line for potential future connections **[Required]**	NA of NA
Typical trench cross-sections **[Required]**	92 of 93
Bolted manholes **[Required]**	93 of 93
Sewer Service lateral standard details **[Required]**	93 of 93
Clean-out at end of line **[Required, if used]**	NA of NA
Baffles or concrete encasement for shock/erosion protection **[Required, if flow velocity of any section of pipe >10 fps]**	NA of Na
Detail showing Wastewater Line/Water Line Crossing **[Required, if crossings are proposed]**	93 of 93
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) **[Required, if Flexible Pipe is used]**	93 of 93

Standard Details	*Shown on Sheet*
Drop manholes **[Required, if a pipe entering a manhole is more than 24 inches above manhole invert]**	93 of 93

36. ☒ All organized sewage collection system general construction notes (TCEQ-0596) are included on the construction plans for this sewage collection system.

37. ☒ All proposed sewer lines will be sufficiently surveyed/staked to allow an assessment prior to TCEQ executive director approval. If the alignments of the proposed sewer lines are not walkable on that date, the application will be deemed incomplete and returned.

    ☒ Survey staking was completed on this date: December 2023

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

39. ☒ Any modification of this SCS application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

Signature

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

Print Name of Licensed Professional Engineer: Justin Midura, P.E.

Date: 2-15-2024

Place engineer's seal here:

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
PROFESSIONAL ENGINEER

Signature of Licensed Professional Engineer:

Appendix A-Flow Velocity Table

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

Table 10 - Slope Velocity

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

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

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

Figure 1 - Manning's Formula

Where:

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

Table 2 - Manholes and Cleanouts

Line	Shown on Sheet	Station	Manhole or Cleanout?
WWL B	75 of 93	4+13.42	DROP MH
WWL B	75 of 93	4+54.42	DROP MH
WWL B	75 of 93	5+02.77	DROP MH
WWL B	75 of 93	6+75.37	DROP MH
WWL B	75 of 93	7+28.32	MH
WWL B	75 of 93	7+81.28	DROP MH
WWL B	76 of 93	10+41.36	MH
WWL B	76 of 93	11+49.35	MH
WWL B	76 of 93	12+57.76	MH
WWL B	76 of 93	16+58.83	DROP MH
WWL B	76 of 93	17+42.89	MH
WWL B	76 of 93	19+87.85	MH
WWL C	80 of 93	1+64.26	MH
WWL C	80 of 93	2+76.50	MH
WWL C	80 of 93	3+87.00	MH
WWL C	80 of 93	5+02.60	MH
WWL C	80 of 93	7+74.08	MH
WWL C	81 of 93	10+08.59	MH
WWL C	81 of 93	11+53.03	MH
WWL C	81 of 93	13+14.59	MH
WWL C	81 of 93	14+61.00	MH
WWL C	81 of 93	17+13.58	MH
WWL C	82 of 93	19+98.36	MH
WWL C	82 of 93	21+29.06	MH
WWL C	82 of 93	22+33.23	MH
WWL C	82 of 93	25+25.46	MH
WWL C	82 of 93	26+07.92	MH
WWL C	83 of 93	28+67.72	MH
WWL C	83 of 93	30+91.63	MH
WWL D	77 of 93	2+17.88	MH
WWL D	77 of 93	3+07.36	MH
WWL D	77 of 93	5+23.24	MH
WWL D	78 of 93	8+94.91	MH
WWL D	78 of 93	11+51.64	MH
WWL D	78 of 93	12+38.31	MH
WWL E	79 of 93	2+05.35	MH
WWL F	79 of 93	2+79.04	MH

Bluffview Subdivision Phase 1

SCS ENGINEER DESIGN REPORT AND SPECIFICATIONS

Prepared for:

Lamy 2243 LTD.
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STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
PROFESSIONAL ENGINEER

2-15-2024

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Exhibits:

- **A.** Proposed Development Site Map
- **B.** Wastewater Calculations
- **C.** Wastewater Collection System Diagram

I. INTRODUCTION

This SCS Engineering Design Report has been prepared to comply with the Texas Commission on Environmental Quality's requirements of Title 30 Texas Administrative Code Chapter 217: Design Criteria for Domestic Wastewater Systems. This includes Subchapter A, Subchapter C, and Subchapter D of 30 TAC Chapter 217 when applicable. Whenever multiple regulations apply, the more stringent regulation shall be used.

This project was originally approved in a previous WPAP and SCS application approved under permit Nos. 11000104 and 11000105 on April 22, 2016 as well as permitted in 2015. We are requesting new approval to supersede prior approval of this site under this new application, since the previous approval has expired. The Bluffview Subdivision Phase 1 is located north of FM 2243, east of Southwest Bypass, west of The Riverview Subdivision, and south of the South Fork San Gabriel River in Georgetown, TX, Williamson County. Phase 1 development is approximately 56.6 acres with 24.72 acres of impervious cover or 43.7%. Phase 1 will begin the wastewater connection at an existing manhole in The South Fork San Gabriel River. The Phase 1 Site Plan is composed of but not limited to 105 building pads, 6,044 linear feet of new roadway, approximately 6,300 linear feet of waterline, and 8,550 linear feet of wastewater line.

The project area is located in the full-purpose City of Georgetown city limits (Bluffview Subdivision). The overall project boundaries are bracketed by FM 2243 on the south, Southwest Bypass on the west, The Riverview Subdivision on the east, and The South Fork San Gabriel River on the north. The site is located entirely in the South Fork San Gabriel River Watershed.

Wastewater service will consist of 8-inch SDR-26 PVC, 12-inch SDR-26 PVC, and 18-inch SDR-26 PVC wastewater gravity mains extended through Bluffview Subdivision. Wastewater service to this construction plan area is to be provided by City of Georgetown. A total of 8,550 proposed linear feet of wastewater line will tie into an existing manhole located in the South Fork San Gabriel Interceptor.

Wastewater will be collected into a gravity system and routed to San Gabriel Wastewater Treatment Plant.

Odor Control for this wastewater gravity system has been provided by watertight pipe connections at manholes and cleanouts. Manhole lids will be tight.

Flow development was calculated using Georgetown design criteria (250 gpd per LUE, 1,000 gal/acre/day) based on 3.5 people per LUE for residential use. Flow development calculations are included in the Supporting Engineering Calculations.

II. DESCRIPTION OF PROPOSED SYSTEM

A. Design Criteria

The gravity mains and manholes meet the TCEQ requirements of Chapter 217. All the gravity mains with this project are PVC. The construction plans consist of the following:

	Linear Feet	Pipe Material	National Standard Specification for Pipe Material	National Standard for Pipe Joints
8”	5,516.14	SDR 26	ASTM-3034	ASTM D3212
12”	941.36	SDR 26	ASTM-3034	ASTM D3212
18”	2,092.5	SDR 26	ASTM-3034	ASTM D3212

The pipes are designed with a slope that will provide a velocity of at least 2 feet per second flowing full, as calculated using Manning's equation with an "n" value of 0.013. Additionally, the collection system is designed to ensure that, with pipes flowing full, the velocities will be less than 10 feet per second.

Pipe Diameter: 8” Min. Slope: 0.35 % Max. Slope: 6.61 %

Pipe Diameter: 12” Min. Slope: 0.35 % Max. Slope: 4.88 %

Pipe Diameter: 18” Min. Slope: 0.70 % Max. Slope: 2.80 %

The plans and specifications, which describe the project identified in this report, are in substantial compliance with all the requirements of Chapter 217.

B. Structural Analysis:

Structural analysis per 30 TAC 217.53 (k) for the proposed wastewater system is below:

Wastewater Collection System Structural Analysis per 30 TAC 217.53 (k)

Proposed Wastewater Pipe Constants

Nominal Diameter	8	inch
Material	PVC, SDR 26	
Description	Gravity Sewer Pipe, Flexible Pipe	
Pipe Standard	ASTM D3034, Type PSM	
Joint Standard	ASTM D3212	
Pipe Stiffness, PS	115	psi
Wall Thickness, t	0.323	inch
Tensile Strength, T	7,000	psi
Modulus of Pipe Elasticity, E	400,000	psi

Proposed Trench Constants

Minimum Trench Width	21	inch
Maximum Trench Width	33	inch
Shallowest Bury Depth of Cover	4	feet
Deepest Bury Depth of Cover	28	feet
Unit Weight of Soil Backfill, w	120	pcf
Water Table Height Above Pipe	0	feet

Notes

1) Trench widths per City of Georgetown Construction Standards and Details - Trench and Embedment Detail WW18 included in the construction plans on the detail sheets.
2) The structural calculations provided bracket the shallowest proposed line depth at 4.72 foot depth (rounded to 4 foot depth in calculations to be conservative) and the deepest proposed line depth at 28.75 foot depth (rounded to 30 foot depth in calculations to be conservative). As the calculations show, the two opposite ends of the spectrum show the most extreme PVC depth of burial case for the proposed wastewater system which are in conformance with 30 TAC 217.53 (k).
3) Per the Georgetown Village (aka Woodfield Preserve) Geotech Report, the water table elevation was not observed in the test pits or borehole depths drilled during the preliminary excavation and study. For purposes of this structural analysis, groundwater and water table elevations are assumed to be below the proposed depth of bury (i.e. pipe is unsaturated).

Live Load Constants per AASHTO H-25 or HS-25

Depth of Cover (feet)	Live Load on PVC Pipe (psi)
1	15.63
2	6.95
3	5.21
4	3.48
5	2.18
6	1.74
7	1.53
8	0.86
+10	Negligible

Notes

1) Live loads beyond 8 feet are negligible for highway loading.

Proposed In-situ Soil and Bedding Constants

Modulus of Soil Reaction, E' (bed) (Bedding Material)	3,000	psi
Modulus of Soil Reaction, E' (in-situ) (In-Situ Material)	3,100	psi
Ratio of Modulus Bedding Soil to Modulus In-Situ Soil	0.97	unitless
Leonhardt's Zeta Factor, z	1.0	unitless
Modulus of Soil Reaction, E' (composite)	3,000	psi

Notes

1) Values are constant for both the shallowest and deepest burial depth of cover cases.
2) Values for E' (bed) per JM Eagle's Technical Bulletin No. 6 "Depth of Burial for PVC Pipe" Table 5 and City of Georgetown Construction Specifications at minimum 95% compaction.
3) Values for E' (in-situ) based on JM Eagle's Technical Bulletin No. 6 "Depth of Burial for PVC Pipe" Table 5 and Geotech Report showing limestone subgrade strata in test pits and boreholes.
4) 21-inch minimum trench widths assumed per City of Georgetown Construction Specifications.

Leonhardt's Zeta Factor and Modulus of Soil Reaction (Composite) Equations

Ratio = E' (bed) / E' (in-situ)
(when Ratio is less than or equal to 1.25, Leonhardt's Zeta Factor assumed to be 1.0, but if Ratio is greater than 1.25, use Leonhardt's Zeta Factor Equation to get coefficient).

Shallowest Depth of Cover - Prism Load

Shallowest Depth of Cover, H	4	feet
Unit Weight of Soil Backfill, w	120	pcf
Prism Load (i.e. Dead Load), P	3.33	psi

Deepest Depth of Cover - Prism Load

Deepest Depth of Cover, H	28	feet
Unit Weight of Soil Backfill, w	120	pcf
Prism Load (i.e. Dead Load), P	23.33	psi

Prism Load (i.e. Dead Load) Equation

P = (w * H) / 144

P = Prism Load, psi
w = Unit Weight of Soil Backfill, pcf
H = Depth of Cover, ft

Shallowest Depth of Cover - Deflection

Live Load @ 4' Depth, W'	3.48	psi
Prism Load, P	3.33	psi
Pipe Stiffness, PS	115	psi
Modulus of Soil Reaction, E'	3,000	psi
% Deflection	0.34	%
Check % Deflection less than 5%	Yes, within tolerance	

Deepest Depth of Cover - Deflection

Live Load @ 28' Depth, W'	0.00	psi
Prism Load, P	23.33	psi
Pipe Stiffness, PS	115	psi
Modulus of Soil Reaction, E'	3,000	psi
% Deflection	1.17	%
Check % Deflection less than 5%	Yes, within tolerance	

Modified Iowa Equation

% Deflection = [0.1 (W' + P) 100] / [0.149 (PS) + 0.061 (E')]

% Deflection = Predicted Diametric Deflection, %
W' = Live Load, psi
P = Prism Load, psi
PS = Pipe Stiffness, psi
E' = Modulus of Soil Reaction, psi

Equation per JM Eagle's Technical Bulletin No. 6 "Depth of Burial for PVC Pipe". Per TCEQ, up to 5% deflection is allowed.

Shallowest & Deepest Depth of Cover - Wall Crushing Determination

No part of the proposed wastewater collection system is proposed to be encased in concrete. Therefore, the proposed pipe is not subject to wall crushing determinations for purposes of this review for the proposed conditions. The theoretical wall crushing calculation is shown below for completeness, however is not applicable.

Compressive Stress, Pc	4,000	psi	
Surface Area of Pipe Wall, A	0.323	in^2/in	(equivalent to t, wall thickness)
Specific Weight of Soil, Ys	120	pcf	
Pipe Outside Diameter, Do	8.4	in	
Depth for Wall Crushing, H	369.1	ft	

Wall Crushing Determination

Note: Analysis only applicable for flexible pipe/PVC pipe encased in **concrete**. For purposes of this wall crushing determination, TCEQ does not consider pipes encased in cement-stablized sand to be concrete. If PVC pipe is proposed to be encased in cement-stablized sand or no concrete encasement will be used, this wall crushing determination can be skipped, otherwise the maximum depth of cover at which flexible pipewall crushing happens needs to be calculated.

Maximum Depth of Cover for Wall Crushing

H = [288 (Pc) (A)] / [(Ys) (Do)]

H = Depth of cover at which wall crushing happens, ft
288 = Coefficient (conversion factor)
Pc = Compressive Stress (i.e. Hydrostatic Design Basis), psi (assume 4,000 psi for PVC)
A = Surface Area of Pipe Wall, in^2/ft = t, wall thickness (in)
Ys = Specific Weight of Soil, pcf

Shallowest & Deepest Depth of Cover - Buckling Pressure Determinations

Modulus of Pipe Elasticity, E	400,000	psi
Dimension Ratio, DR	26	unitless
Poisson's Ratio, v	0.38	unitless
Critical Wall Buckling Pressure, Pcr	59.8	psi

Modulus of Soil Reaction, E'	3,000	psi
Reduction Factor, C	0.87	unitless
Critical Wall Buckling Pressure, Pcr (allowable)	423.9	psi

Critical Buckling Pressure Equation

Per JM Eagle Technical Bulletin No. 8, wall buckling is when external pressure on the pipeline causes failure. The threshold point at which the external pressure causes failure in the pipeline is the critical wall buckling pressure. For circular pipes, where Moment of Inertia (I) is defined as t^3 / 12, the critical wall buckling pressure can be defined per the following:

$$Pcr = [2 (E)] / [(1 - v^2) (DR - 1)^3]$$

Pcr = Critical Wall Buckling Pressure, psi
E = Modulus of Tensile Elasticity (i.e. Pipe Elasticity), psi
DR = Dimension Ratio, (Do/t)

Critical Buckling Pressure Equation

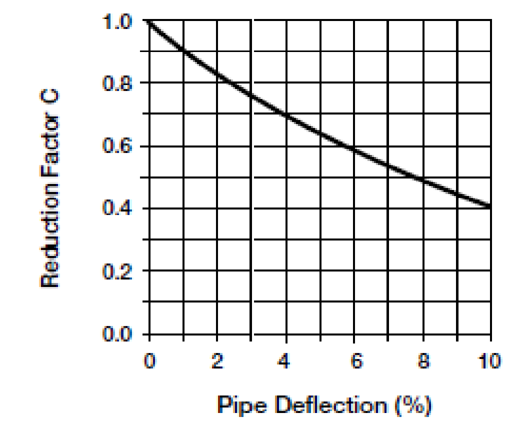
The soil surrounding a buried pipeline increases the pipe's resistance to buckling (i.e. failing). The modified (i.e. allowable) critical wall buckling pressure is defined per the following taking into consideration a reduction factor based on the pipe's anticipated deflection using JM Eagle Technical Bulletin No. 8, Figure 3:

$$Pcr\ (allowable) = 1.15\ [((Pcr)\ (E'))^{(1/2)}]\ (C)$$

Pcr = Original Critical Wall Buckling Pressure, psi
E' = Modulus of Soil Reaction, psi
C = Reduction Factor per Figure 3 (using 1.25% (i.e. the deepest burial case) to be conservative)

Figure 3

CRITICAL BUCKLING PRESSURE REDUCTION FACTOR C FOR SHAPE



Reference: "Uni-Bell Handbook of PVC Pipe."

Shallowest Depth of Cover - Proposed External Pressure

Specific Weight of Water, Yw	0.0361	pci
Height of Water Above Pipe, hw	0	inch
Depth of Cover, h	48	inch
Water Buoyancy Factor, Rw	1	unitless
Specific Weight of Soil, Ys	120	pcf
Depth of Cover, H	4	feet
Pipe Diameter, D	8	inch
Wall Thickness, t	0.323	inch
Vertical Soil Load on Pipe, Wc	27.7	lb/in
Live Load, W'	3.48	psi
Total External Pressure, Pe	6.9	psi

Proposed external pressure is less than the allowable critical wall buckling pressure, therefore the proposed pipe design works.

Deepest Depth of Cover - Proposed External Pressure

Specific Weight of Water, Yw	0.0361	pci
Height of Water Above Pipe, hw	0	inch
Depth of Cover, h	336	inch
Water Buoyancy Factor, Rw	1	unitless
Specific Weight of Soil, Ys	120	pcf
Depth of Cover, H	28	feet
Pipe Diameter, D	8	inch
Wall Thickness, t	0.323	inch
Vertical Soil Load on Pipe, Wc	194.2	lb/in
Live Load, W'	0.00	psi
Total External Pressure, Pe	24.3	psi

Proposed external pressure is less than the allowable critical wall buckling pressure, therefore the proposed pipe design works.

Applied External Pressure Equation

For proposed conditions, the total summation of external pressure applied on the pipeline is defined per the following:

$$Pe = (Yw)\ (hw) + (Rw)\ (Wc / D) + W'$$

Pe = Total summation of the external pressures on pipe, psi
Yw = Specific Weight (i.e. Unit Weight) of Water, pci (62.4 pcf => 0.0361 pci)
hw = Height of Water above Pipeline, in
Rw = Water Buoyancy Factor = 1 - 0.33 (hw / h), where h = depth of cover, in
Wc = Vertical Soil Load on Pipe, lb/in = (Ys) (H) [(D + t) / 144]
Ys = Specific Weight (i.e. Unit Weight) of Soil Backfill, pcf
H = Depth of Cover, ft
D = Pipe Diameter, in
t = Wall Thickness, in

Shallowest Depth of Cover - Strain Prediction

Total External Pressure, Pe	6.9	psi
Pipe Diameter, D	8	inch
Wall Thickness, t	0.323	inch
Modulus of Pipe Elasticity, E	400,000	psi
Max Strain due to Hoop Stress	0.00022	in/in

% Deflection	0.34	%
Vertical Decrease in Dia, ∆Y	0.027	inch
Dimension Ratio, DR	26	unitless
Max Strain due to Ring Deflect.	0.00040	in/in

Max Combined Strain in Pipe W	0.00061	in/in

The calculated values are within normal tolerances, therefore the proposed conditions will not cause strain failure in the proposed pipe design.

Deepest Depth of Cover - Strain Prediction

Total External Pressure, Pe	24.3	psi
Pipe Diameter, D	8	inch
Wall Thickness, t	0.323	inch
Modulus of Pipe Elasticity, E	400,000	psi
Max Strain due to Hoop Stress	0.00075	in/in

% Deflection	1.17	%
Vertical Decrease in Dia, ∆Y	0.093	inch
Dimension Ratio, DR	26	unitless
Max Strain due to Ring Deflect.	0.00138	in/in

Max Combined Strain in Pipe W	0.00213	in/in

The calculated values are within normal tolerances, therefore the proposed conditions will not cause strain failure in the proposed pipe design.

Strain Prediction Calculations

Per Uni-Bell Technical Report "Deflection: The Pipe/Soil Mechanism", strain is not a common cause of failure in pipelines and is not a factor that limits a pipeline's design, however strain calculations are included for completeness. The strain prediction calculations are defined by the following:

$\in h = (Pe)\ (D)\ /\ 2\ (t)\ (E)$

$\in h$ = Maximum strain in the pipe wall due to hoop stress, in/in
Pe = Total External Pressure on Pipe, psi
D = Pipe Diameter, in
t = Wall Thickness, in
E = Modulus of Pipe Elasticity, psi

$\in f = (1/DR)\ [3\ (\Delta Y)\ /\ ((D - 2\ (\Delta Y))]$

$\in f$ = Maximum strain in pipe wall due to ring deflection or flexure, in/in
ΔY = Vertical decrease in diameter, in
t = Wall Thickness, in
D = Pipe Diameter, in
DR = Dimension Ratio, unitless

$\in = \in h + \in f$

Table 5

AVERAGE VALUES OF MODULUS OF SOIL REACTION, E' (FOR INITIAL FLEXIBLE PIPE DEFLECTION)					
	PIPE BEDDING MATERIALS	E' FOR DEGREE OF COMPACTION OF PIPE ZONE BACKFILL (PSI)			
SOIL CLASS	SOIL TYPE (Unified Classification System[a])	Loose	Slight < 85% Proctor, < 40% relative density	Moderate 85% - 95% Proctor, 40% - 70% relative density	High > 95% Proctor, > 70% relative density
Class V	Fine-grained Soils (LL>50)[b] Soils with medium to high plasticity CH, MH, CH-MH	No data available; consult a competent soils engineer; Otherwise use E' = 0			
Class IV	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	1,000
Class III	Fine-grained Soils (LL < 50)Soils with medium to no plasticity CL, ML,ML-CL, with more than 25% coarse-grained particles 1004001,0002,000 Coarse-grained Soils with Fines GM, GC, SM, SCC contains more than 12% fines	100	400	1,000	2,000
Class II	Coarse-grained Soils with Little or No Fines GW, GP, SW, SPC contains less than 12% fines	200	1,000	2,000	3,000
Class I	Crushed Rock	1,000	3,000	3,000	3,000
	Accuracy in Terms of Percentage Deflection	±2	±2	±1	±0.5

[a] ASTM Designation D 2487, USBR Designation E-3
[b] LL = Liquid limit
[c] Or any borderline soil beginning with one of these symbols (i.e. GM-GC, GC-SC)
[d] For ± 1% accuracy and predicted deflection of 3%, actual deflection would be between 2% and 4%.

Note: Values applicable only for fills less than 50ft (15m). Table does not include any safety factor. For use in predicting initial deflections only; appropriate Deflection Lag Factor must be applied for long-term deflections. If bedding falls on the borderline between two compaction categories, select lower E' value or average the two values. Percentage Proctor based on laboratory maximum dry density from test standards using about 12,500 ft-lb/cu ft (598,000 J/m^3) (ASTM D 698, AASHTO T-99, USBR Designation E-11). 1psi = 6.9kN/m^2.

Source: "Soil Reaction for Buried Flexible Pipe" by Amster K. Howard, U.S. Bureau of Reclamation, Denver Colorado. Reprinted with permission from American Society of Civil Engineers Journal of Geotechnical Engineering Division, January 1977, pp. 33-43.

Wastewater Collection System Structural Analysis per 30 TAC 217.53 (k)

Proposed Wastewater Pipe Constants

Nominal Diameter	12	inch
Material	PVC, SDR 26	
Description	Gravity Sewer Pipe, Flexible Pipe	
Pipe Standard	ASTM D3034, Type PSM	
Joint Standard	ASTM D3212	
Pipe Stiffness, PS	115	psi
Wall Thickness, t	0.490	inch
Tensile Strength, T	7,000	psi
Modulus of Pipe Elasticity, E	400,000	psi

Proposed Trench Constants

Minimum Trench Width	25	inch
Maximum Trench Width	37	inch
Shallowest Bury Depth of Cover	4	feet
Deepest Bury Depth of Cover	28	feet
Unit Weight of Soil Backfill, w	120	pcf
Water Table Height Above Pipe	0	feet

Notes

1) Trench widths per City of Georgetown Construction Standards and Details - Trench and Embedment Detail WW18 included in the construction plans on the detail sheets.

2) The structural calculations provided bracket the shallowest proposed line depth at 4.72 foot depth (rounded to 4 foot depth in calculations to be conservative) and the deepest proposed line depth at 28.75 foot depth (rounded to 30 foot depth in calculations to be conservative). As the calculations show, the two opposite ends of the spectrum show the most extreme PVC depth of burial case for the proposed wastewater system which are in conformance with 30 TAC 217.53 (k).

3) Per the Georgetown Village (aka Woodfield Preserve) Geotech Report, the water table elevation was not observed in the test pits or borehole depths drilled during the preliminary excavation and study. For purposes of this structural analysis, groundwater and water table elevations are assumed to be below the proposed depth of bury (i.e. pipe is unsaturated).

Live Load Constants per AASHTO H-25 or HS-25

Depth of Cover (feet)	Live Load on PVC Pipe (psi)
1	15.63
2	6.95
3	5.21
4	3.48
5	2.18
6	1.74
7	1.53
8	0.86
+10	Negligible

Notes

1) Live loads beyond 8 feet are negligible for highway loading.

Proposed In-situ Soil and Bedding Constants

Modulus of Soil Reaction, E' (bed) (Bedding Material)	3,000	psi
Modulus of Soil Reaction, E' (in-situ) (In-Situ Material)	3,100	psi
Ratio of Modulus Bedding Soil to Modulus In-Situ Soil	0.97	unitless
Leonhardt's Zeta Factor, z	1.0	unitless
Modulus of Soil Reaction, E' (composite)	3,000	psi

Notes

1) Values are constant for both the shallowest and deepest burial depth of cover cases.

2) Values for E' (bed) per JM Eagle's Technical Bulletin No. 6 "Depth of Burial for PVC Pipe" Table 5 and City of Georgetown Construction Specifications at minimum 95% compaction.

3) Values for E' (in-situ) based on JM Eagle's Technical Bulletin No. 6 "Depth of Burial for PVC Pipe" Table 5 and Geotech Report showing limestone subgrade strata in test pits and boreholes.

4) 21-inch minimum trench widths assumed per City of Georgetown Construction Specifications.

Leonhardt's Zeta Factor and Modulus of Soil Reaction (Composite) Equations

Ratio = E' (bed) / E' (in-situ)
(when Ratio is less than or equal to 1.25, Leonhardt's Zeta Factor assumed to be 1.0, but if Ratio is greater than 1.25, use Leonhardt's Zeta Factor Equation to get coefficient).

Shallowest Depth of Cover - Prism Load

Shallowest Depth of Cover, H	4	feet
Unit Weight of Soil Backfill, w	120	pcf
Prism Load (i.e. Dead Load), P	3.33	psi

Deepest Depth of Cover - Prism Load

Deepest Depth of Cover, H	28	feet
Unit Weight of Soil Backfill, w	120	pcf
Prism Load (i.e. Dead Load), P	23.33	psi

Prism Load (i.e. Dead Load) Equation

$P = (w * H) / 144$

P = Prism Load, psi
w = Unit Weight of Soil Backfill, pcf
H = Depth of Cover, ft

Shallowest Depth of Cover - Deflection

Live Load @ 4' Depth, W'	3.48	psi
Prism Load, P	3.33	psi
Pipe Stiffness, PS	115	psi
Modulus of Soil Reaction, E'	3,000	psi
% Deflection	0.34	%
Check % Deflection less than 5%	Yes, within tolerance	

Deepest Depth of Cover - Deflection

Live Load @ 30' Depth, W'	0.00	psi
Prism Load, P	23.33	psi
Pipe Stiffness, PS	115	psi
Modulus of Soil Reaction, E'	3,000	psi
% Deflection	1.17	%
Check % Deflection less than 5%	Yes, within tolerance	

Modified Iowa Equation

% Deflection = [0.1 (W' + P) 100] / [0.149 (PS) + 0.061 (E')]

% Deflection = Predicted Diametric Deflection, %
W' = Live Load, psi
P = Prism Load, psi
PS = Pipe Stiffness, psi
E' = Modulus of Soil Reaction, psi

Equation per JM Eagle's Technical Bulletin No. 6 "Depth of Burial for PVC Pipe". Per TCEQ, up to 5% deflection is allowed.

Shallowest & Deepest Depth of Cover - Wall Crushing Determination

No part of the proposed wastewater collection system is proposed to be encased in concrete. Therefore, the proposed pipe is not subject to wall crushing determinations for purposes of this review for the proposed conditions. The theoretical wall crushing calculation is shown below for completeness, however is not applicable.

Compressive Stress, Pc	4,000	psi	
Surface Area of Pipe Wall, A	0.490	in^2/ft	(equivalent to t, wall thickness)
Specific Weight of Soil, Ys	120	pcf	
Pipe Outside Diameter, Do	12.98	in	
Depth for Wall Crushing, H	362.4	ft	

Wall Crushing Determination

Note: Analysis only applicable for flexible pipe/PVC pipe encased in **concrete**. For purposes of this wall crushing determination, TCEQ does not consider pipes encased in cement-stablized sand to be concrete. If PVC pipe is proposed to be encased in cement-stablized sand or no concrete encasement will be used, this wall crushing determination can be skipped, otherwise the maximum depth of cover at which flexible pipewall crushing happens needs to be calculated.

Maximum Depth of Cover for Wall Crushing

H = [288 (Pc) (A)] / [(Ys) (Do)]

H = Depth of cover at which wall crushing happens, ft
288 = Coefficient (conversion factor)
Pc = Compressive Stress (i.e. Hydrostatic Design Basis), psi (assume 4,000 psi for PVC)
A = Surface Area of Pipe Wall, in^2/ft = t, wall thickness (in)
Ys = Specific Weight of Soil, pcf

Shallowest & Deepest Depth of Cover - Buckling Pressure Determinations

Modulus of Pipe Elasticity, E	400,000	psi
Dimension Ratio, DR	26	unitless
Poisson's Ratio, v	0.38	unitless
Critical Wall Buckling Pressure, Pcr	59.8	psi

Modulus of Soil Reaction, E'	3,000	psi
Reduction Factor, C	0.87	unitless
Critical Wall Buckling Pressure, Pcr (allowable)	423.9	psi

Critical Buckling Pressure Equation

Per JM Eagle Technical Bulletin No. 8, wall buckling is when external pressure on the pipeline causes failure. The threshold point at which the external pressure causes failure in the pipeline is the critical wall buckling pressure. For circular pipes, where Moment of Inertia (I) is defined as t^3 / 12, the critical wall buckling pressure can be defined per the following:

Pcr = [2 (E)] / [(1 - v^2) (DR - 1)^3]

Pcr = Critical Wall Buckling Pressure, psi
E = Modulus of Tensile Elasticity (i.e. Pipe Elasticity), psi
DR = Dimension Ratio, (Do/t)

Critical Buckling Pressure Equation

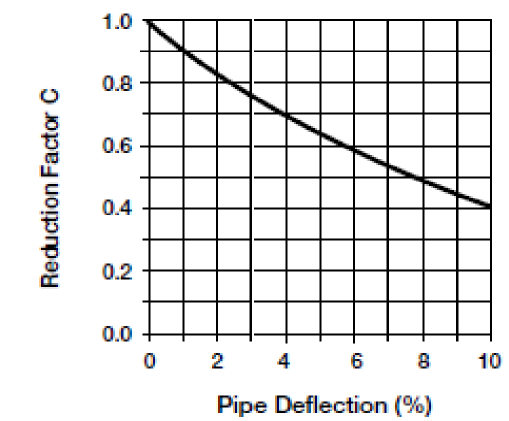
The soil surrounding a buried pipeline increases the pipe's resistance to buckling (i.e. failing). The modified (i.e. allowable) critical wall buckling pressure is defined per the following taking into consideration a reduction factor based on the pipe's anticipated deflection using JM Eagle Technical Bulletin No. 8, Figure 3:

Pcr (allowable) = 1.15 [((Pcr) (E'))$^{(1/2)}$] (C)

Pcr = Original Critical Wall Buckling Pressure, psi
E' = Modulus of Soil Reaction, psi
C = Reduction Factor per Figure 3 (using 1.25% (i.e. the deepest burial case) to be conservative)

Figure 3

CRITICAL BUCKLING PRESSURE REDUCTION FACTOR C FOR SHAPE



Reference: *"Uni-Bell Handbook of PVC Pipe."*

Shallowest Depth of Cover - Proposed External Pressure

Specific Weight of Water, Yw	0.0361	pci
Height of Water Above Pipe, hw	0	inch
Depth of Cover, h	48	inch
Water Buoyancy Factor, Rw	1	unitless
Specific Weight of Soil, Ys	120	pcf
Depth of Cover, H	4	feet
Pipe Diameter, D	12	inch
Wall Thickness, t	0.490	inch
Vertical Soil Load on Pipe, Wc	41.6	lb/in
Live Load, W'	3.48	psi
Total External Pressure, Pe	6.9	psi

Proposed external pressure is less than the allowable critical wall buckling pressure, therefore the proposed pipe design works.

Deepest Depth of Cover - Proposed External Pressure

Specific Weight of Water, Yw	0.0361	pci
Height of Water Above Pipe, hw	0	inch
Depth of Cover, h	336	inch
Water Buoyancy Factor, Rw	1	unitless
Specific Weight of Soil, Ys	120	pcf
Depth of Cover, H	28	feet
Pipe Diameter, D	12	inch
Wall Thickness, t	0.490	inch
Vertical Soil Load on Pipe, Wc	291.4	lb/in
Live Load, W'	0.00	psi
Total External Pressure, Pe	24.3	psi

Proposed external pressure is less than the allowable critical wall buckling pressure, therefore the proposed pipe design works.

Applied External Pressure Equation

For proposed conditions, the total summation of external pressure applied on the pipeline is defined per the following:

Pe = (Yw) (hw) + (Rw) (Wc / D) + W'

Pe = Total summation of the external pressures on pipe, psi
Yw = Specific Weight (i.e. Unit Weight) of Water, pci (62.4 pcf => 0.0361 pci)
hw = Height of Water above Pipeline, in
Rw = Water Buoyancy Factor = 1 - 0.33 (hw / h), where h = depth of cover, in
Wc = Vertical Soil Load on Pipe, lb/in = (Ys) (H) [(D + t) / 144]
Ys = Specific Weight (i.e. Unit Weight) of Soil Backfill, pcf
H = Depth of Cover, ft
D = Pipe Diameter, in
t = Wall Thickness, in

Shallowest Depth of Cover - Strain Prediction

Total External Pressure, Pe	6.9	psi
Pipe Diameter, D	12	inch
Wall Thickness, t	0.490	inch
Modulus of Pipe Elasticity, E	400,000	psi
Max Strain due to Hoop Stress	0.00021	in/in

% Deflection	0.34	%
Vertical Decrease in Dia, ∆Y	0.041	inch
Dimension Ratio, DR	26	unitless
Max Strain due to Ring Deflect.	0.00040	in/in

Max Combined Strain in Pipe W	0.00061	in/in

The calculated values are within normal tolerances, therefore the proposed conditions will not cause strain failure in the proposed pipe design.

Deepest Depth of Cover - Strain Prediction

Total External Pressure, Pe	24.3	psi
Pipe Diameter, D	12	inch
Wall Thickness, t	0.490	inch
Modulus of Pipe Elasticity, E	400,000	psi
Max Strain due to Hoop Stress	0.00074	in/in

% Deflection	1.17	%
Vertical Decrease in Dia, ∆Y	0.140	inch
Dimension Ratio, DR	26	unitless
Max Strain due to Ring Deflect.	0.00138	in/in

Max Combined Strain in Pipe W	0.00212	in/in

The calculated values are within normal tolerances, therefore the proposed conditions will not cause strain failure in the proposed pipe design.

Strain Prediction Calculations

Per Uni-Bell Technical Report "Deflection: The Pipe/Soil Mechanism", strain is not a common cause of failure in pipelines and is not a factor that limits a pipeline's design, however strain calculations are included for completeness. The strain prediction calculations are defined by the following:

$\in h = (Pe)\ (D)\ /\ 2\ (t)\ (E)$

$\in h$ = Maximum strain in the pipe wall due to hoop stress, in/in
Pe = Total External Pressure on Pipe, psi
D = Pipe Diameter, in
t = Wall Thickness, in
E = Modulus of Pipe Elasticity, psi

$\in f = (1/DR)\ [3\ (\Delta Y)\ /\ ((D - 2\ (\Delta Y))]$

$\in f$ = Maximum strain in pipe wall due to ring deflection or flexure, in/in
ΔY = Vertical decrease in diameter, in
t = Wall Thickness, in
D = Pipe Diameter, in
DR = Dimension Ratio, unitless

$\in = \in h + \in f$

Table 5

AVERAGE VALUES OF MODULUS OF SOIL REACTION, E' (FOR INITIAL FLEXIBLE PIPE DEFLECTION)					
	PIPE BEDDING MATERIALS	E' FOR DEGREE OF COMPACTION OF PIPE ZONE BACKFILL (PSI)			
SOIL CLASS	SOIL TYPE (Unified Classification System[a])	Loose	Slight < 85% Proctor, < 40% relative density	Moderate 85% - 95% Proctor, 40% - 70% relative density	High > 95% Proctor, > 70% relative density
Class V	Fine-grained Soils (LL>50)[b] Soils with medium to high plasticity CH, MH, CH-MH	No data available; consult a competent soils engineer; Otherwise use E' = 0			
Class IV	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	1,000
Class III	Fine-grained Soils (LL < 50)Soils with medium to no plasticity CL, ML,ML-CL, with more than 25% coarse-grained particles 1004001,0002,000 Coarse-grained Soils with Fines GM, GC, SM, SCC contains more than 12% fines	100	400	1,000	2,000
Class II	Coarse-grained Soils with Little or No Fines GW, GP, SW, SPC contains less than 12% fines	200	1,000	2,000	3,000
Class I	Crushed Rock	1,000	3,000	3,000	3,000
	Accuracy in Terms of Percentage Deflection	±2	±2	±1	±0.5

[a] ASTM Designation D 2487, USBR Designation E-3
[b] LL = Liquid limit
[c] Or any borderline soil beginning with one of these symbols (i.e. GM-GC, GC-SC)
[d] For ± 1% accuracy and predicted deflection of 3%, actual deflection would be between 2% and 4%.

Note: Values applicable only for fills less than 50ft (15m). Table does not include any safety factor. For use in predicting initial deflections only; appropriate Deflection Lag Factor must be applied for long-term deflections. If bedding falls on the borderline between two compaction categories, select lower E' value or average the two values. Percentage Proctor based on laboratory maximum dry density from test standards using about 12,500 ft-lb/cu ft (598,000 J/m^3) (ASTM D 698, AASHTO T-99, USBR Designation E-11). 1psi = 6.9kN/m^2.

Source: "Soil Reaction for Buried Flexible Pipe" by Amster K. Howard, U.S. Bureau of Reclamation, Denver Colorado. Reprinted with permission from American Society of Civil Engineers Journal of Geo-technical Engineering Division, January 1977, pp. 33-43.

Wastewater Collection System Structural Analysis per 30 TAC 217.53 (k)

Proposed Wastewater Pipe Constants

Nominal Diameter	18	inch
Material	PVC, SDR 26	
Description	Gravity Sewer Pipe, Flexible Pipe	
Pipe Standard	ASTM D3034, Type PSM	
Joint Standard	ASTM D3212	
Pipe Stiffness, PS	115	psi
Wall Thickness, t	0.671	inch
Tensile Strength, T	7,000	psi
Modulus of Pipe Elasticity, E	400,000	psi

Live Load Constants per AASHTO H-25 or HS-25

Depth of Cover (feet)	Live Load on PVC Pipe (psi)
1	15.63
2	6.95
3	5.21
4	3.48
5	2.18
6	1.74
7	1.53
8	0.86
+10	Negligible

Notes

1) Live loads beyond 8 feet are negligible for highway loading.

Proposed Trench Constants

Minimum Trench Width	32	inch
Maximum Trench Width	40	inch
Shallowest Bury Depth of Cover	4	feet
Deepest Bury Depth of Cover	16	feet
Unit Weight of Soil Backfill, w	120	pcf
Water Table Height Above Pipe	0	feet

Notes

1) Trench widths per City of Georgetown Construction Standards and Details - Trench and Embedment Detail WW18 included in the construction plans on the detail sheets.

2) The structural calculations provided bracket the shallowest proposed line depth at 4.72 foot depth (rounded to 4 foot depth in calculations to be conservative) and the deepest proposed line depth at 28.75 foot depth (rounded to 30 foot depth in calculations to be conservative). As the calculations show, the two opposite ends of the spectrum show the most extreme PVC depth of burial case for the proposed wastewater system which are in conformance with 30 TAC 217.53 (k).

3) Per the Georgetown Village (aka Woodfield Preserve) Geotech Report, the water table elevation was not observed in the test pits or borehole depths drilled during the preliminary excavation and study. For purposes of this structural analysis, groundwater and water table elevations are assumed to be below the proposed depth of bury (i.e. pipe is unsaturated).

Proposed In-situ Soil and Bedding Constants

Modulus of Soil Reaction, E' (bed) (Bedding Material)	3,000	psi
Modulus of Soil Reaction, E' (in-situ) (In-Situ Material)	3,100	psi
Ratio of Modulus Bedding Soil to Modulus In-Situ Soil	0.97	unitless
Leonhardt's Zeta Factor, z	1.0	unitless
Modulus of Soil Reaction, E' (composite)	3,000	psi

Notes

1) Values are constant for both the shallowest and deepest burial depth of cover cases.

2) Values for E' (bed) per JM Eagle's Technical Bulletin No. 6 "Depth of Burial for PVC Pipe" Table 5 and City of Georgetown Construction Specifications at minimum 95% compaction.

3) Values for E' (in-situ) based on JM Eagle's Technical Bulletin No. 6 "Depth of Burial for PVC Pipe" Table 5 and Geotech Report showing limestone subgrade strata in test pits and boreholes.

4) 21-inch minimum trench widths assumed per City of Georgetown Construction Specifications.

Leonhardt's Zeta Factor and Modulus of Soil Reaction (Composite) Equations

Ratio = E' (bed) / E' (in-situ)
(when Ratio is less than or equal to 1.25, Leonhardt's Zeta Factor assumed to be 1.0, but if Ratio is greater than 1.25, use Leonhardt's Zeta Factor Equation to get coefficient).

Shallowest Depth of Cover - Prism Load

Shallowest Depth of Cover, H	4	feet
Unit Weight of Soil Backfill, w	120	pcf
Prism Load (i.e. Dead Load), P	3.33	psi

Deepest Depth of Cover - Prism Load

Deepest Depth of Cover, H	16	feet
Unit Weight of Soil Backfill, w	120	pcf
Prism Load (i.e. Dead Load), P	13.33	psi

Prism Load (i.e. Dead Load) Equation

P = (w * H) / 144

P = Prism Load, psi
w = Unit Weight of Soil Backfill, pcf
H = Depth of Cover, ft

Shallowest Depth of Cover - Deflection

Live Load @ 4' Depth, W'	3.48	psi
Prism Load, P	3.33	psi
Pipe Stiffness, PS	115	psi
Modulus of Soil Reaction, E'	3,000	psi
% Deflection	0.34	%
Check % Deflection less than 5%	Yes, within tolerance	

Deepest Depth of Cover - Deflection

Live Load @ 16' Depth, W'	0.00	psi
Prism Load, P	13.33	psi
Pipe Stiffness, PS	115	psi
Modulus of Soil Reaction, E'	3,000	psi
% Deflection	0.67	%
Check % Deflection less than 5%	Yes, within tolerance	

Modified Iowa Equation

% Deflection = [0.1 (W' + P) 100] / [0.149 (PS) + 0.061 (E')]

% Deflection = Predicted Diametric Deflection, %
W' = Live Load, psi
P = Prism Load, psi
PS = Pipe Stiffness, psi
E' = Modulus of Soil Reaction, psi

Equation per JM Eagle's Technical Bulletin No. 6 "Depth of Burial for PVC Pipe". Per TCEQ, up to 5% deflection is allowed.

Shallowest & Deepest Depth of Cover - Wall Crushing Determination

Compressive Stress, Pc	4,000	psi	
Surface Area of Pipe Wall, A	0.671	in^2/in	(equivalent to t, wall thickness)
Specific Weight of Soil, Ys	120	pcf	
Pipe Outside Diameter, Do	19.34	in	
Depth for Wall Crushing, H	333.1	ft	

Wall Crushing Determination

Note: Analysis only applicable for flexible pipe/PVC pipe encased in **concrete**. For purposes of this wall crushing determination, TCEQ does not consider pipes encased in cement-stablized sand to be concrete. If PVC pipe is proposed to be encased in cement-stablized sand or no concrete encasement will be used, this wall crushing determination can be skipped, otherwise the maximum depth of cover at which flexible pipewall crushing happens needs to be calculated.

Maximum Depth of Cover for Wall Crushing

H = [288 (Pc) (A)] / [(Ys) (Do)]

H = Depth of cover at which wall crushing happens, ft
288 = Coefficient (conversion factor)
Pc = Compressive Stress (i.e. Hydrostatic Design Basis), psi (assume 4,000 psi for PVC)
A = Surface Area of Pipe Wall, in^2/ft = t, wall thickness (in)
Ys = Specific Weight of Soil, pcf

Shallowest & Deepest Depth of Cover - Buckling Pressure Determinations

Modulus of Pipe Elasticity, E	400,000	psi
Dimension Ratio, DR	26	unitless
Poisson's Ratio, v	0.38	unitless
Critical Wall Buckling Pressure, Pcr	59.8	psi

Modulus of Soil Reaction, E'	3,000	psi
Reduction Factor, C	0.87	unitless
Critical Wall Buckling Pressure, Pcr (allowable)	423.9	psi

Critical Buckling Pressure Equation

Per JM Eagle Technical Bulletin No. 8, wall buckling is when external pressure on the pipeline causes failure. The threshold point at which the external pressure causes failure in the pipeline is the critical wall buckling pressure. For circular pipes, where Moment of Inertia (I) is defined as t^3 / 12, the critical wall buckling pressure can be defined per the following:

$Pcr = [2 (E)] / [(1 - v^2) (DR - 1)^3]$

Pcr = Critical Wall Buckling Pressure, psi
E = Modulus of Tensile Elasticity (i.e. Pipe Elasticity), psi
DR = Dimension Ratio, (Do/t)

Critical Buckling Pressure Equation

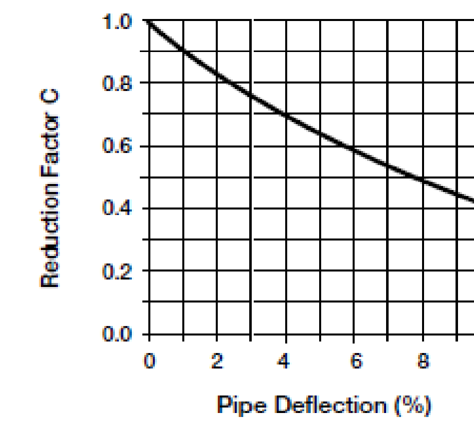
The soil surrounding a buried pipeline increases the pipe's resistance to buckling (i.e. failing). The modified (i.e. allowable) critical wall buckling pressure is defined per the following taking into consideration a reduction factor based on the pipe's anticipated deflection using JM Eagle Technical Bulletin No. 8, Figure 3:

$Pcr\ (allowable) = 1.15\ [((Pcr)\ (E'))^{(1/2)}]\ (C)$

Pcr = Original Critical Wall Buckling Pressure, psi
E' = Modulus of Soil Reaction, psi
C = Reduction Factor per Figure 3 (using 1.25% (i.e. the deepest burial case) to be conservative)

Figure 3

CRITICAL BUCKLING PRESSURE REDUCTION FACTOR C FOR SHAPE



Reference: "Uni-Bell Handbook of PVC Pipe."

Shallowest Depth of Cover - Proposed External Pressure

Specific Weight of Water, Yw	0.0361	pci
Height of Water Above Pipe, hw	0	inch
Depth of Cover, h	48	inch
Water Buoyancy Factor, Rw	1	unitless
Specific Weight of Soil, Ys	120	pcf
Depth of Cover, H	4	feet
Pipe Diameter, D	18	inch
Wall Thickness, t	0.671	inch
Vertical Soil Load on Pipe, Wc	62.2	lb/in
Live Load, W'	3.48	psi
Total External Pressure, Pe	6.9	psi

Proposed external pressure is less than the allowable critical wall buckling pressure, therefore the proposed pipe design works.

Deepest Depth of Cover - Proposed External Pressure

Specific Weight of Water, Yw	0.0361	pci
Height of Water Above Pipe, hw	0	inch
Depth of Cover, h	192	inch
Water Buoyancy Factor, Rw	1	unitless
Specific Weight of Soil, Ys	120	pcf
Depth of Cover, H	16	feet
Pipe Diameter, D	18	inch
Wall Thickness, t	0.671	inch
Vertical Soil Load on Pipe, Wc	248.9	lb/in
Live Load, W'	0.00	psi
Total External Pressure, Pe	13.8	psi

Proposed external pressure is less than the allowable critical wall buckling pressure, therefore the proposed pipe design works.

Applied External Pressure Equation

For proposed conditions, the total summation of external pressure applied on the pipeline is defined per the following:

Pe = (Yw) (hw) + (Rw) (Wc / D) + W'

Pe = Total summation of the external pressures on pipe, psi
Yw = Specific Weight (i.e. Unit Weight) of Water, pci (62.4 pcf => 0.0361 pci)
hw = Height of Water above Pipeline, in
Rw = Water Buoyancy Factor = 1 - 0.33 (hw / h), where h = depth of cover, in
Wc = Vertical Soil Load on Pipe, lb/in = (Ys) (H) [(D + t) / 144]
Ys = Specific Weight (i.e. Unit Weight) of Soil Backfill, pcf
H = Depth of Cover, ft
D = Pipe Diameter, in
t = Wall Thickness, in

Shallowest Depth of Cover - Strain Prediction

Total External Pressure, Pe	6.9	psi
Pipe Diameter, D	18	inch
Wall Thickness, t	0.671	inch
Modulus of Pipe Elasticity, E	400,000	psi
Max Strain due to Hoop Stress	0.00023	in/in

% Deflection	0.34	%
Vertical Decrease in Dia, ∆Y	0.061	inch
Dimension Ratio, DR	26	unitless
Max Strain due to Ring Deflect.	0.00040	in/in

Max Combined Strain in Pipe W	0.00063	in/in

The calculated values are within normal tolerances, therefore the proposed conditions will not cause strain failure in the proposed pipe design.

Deepest Depth of Cover - Strain Prediction

Total External Pressure, Pe	13.8	psi
Pipe Diameter, D	18	inch
Wall Thickness, t	0.671	inch
Modulus of Pipe Elasticity, E	400,000	psi
Max Strain due to Hoop Stress	0.00046	in/in

% Deflection	0.67	%
Vertical Decrease in Dia, ∆Y	0.120	inch
Dimension Ratio, DR	26	unitless
Max Strain due to Ring Deflect.	0.00078	in/in

Max Combined Strain in Pipe W	0.00124	in/in

The calculated values are within normal tolerances, therefore the proposed conditions will not cause strain failure in the proposed pipe design.

Strain Prediction Calculations

Per Uni-Bell Technical Report "Deflection: The Pipe/Soil Mechanism", strain is not a common cause of failure in pipelines and is not a factor that limits a pipeline's design, however strain calculations are included for completeness. The strain prediction calculations are defined by the following:

$\in h$ = (Pe) (D) / 2 (t) (E)

$\in h$ = Maximum strain in the pipe wall due to hoop stress, in/in
Pe = Total External Pressure on Pipe, psi
D = Pipe Diameter, in
t = Wall Thickness, in
E = Modulus of Pipe Elasticity, psi

$\in f$ = (1/DR) [3 (∆Y) / ((D - 2 (∆Y))]

$\in f$ = Maximum strain in pipe wall due to ring deflection or flexure, in/in
∆Y = Vertical decrease in diameter, in
t = Wall Thickness, in
D = Pipe Diameter, in
DR = Dimension Ratio, unitless

$\in = \in h + \in f$

Table 5

AVERAGE VALUES OF MODULUS OF SOIL REACTION, E' (FOR INITIAL FLEXIBLE PIPE DEFLECTION)					
	PIPE BEDDING MATERIALS	E' FOR DEGREE OF COMPACTION OF PIPE ZONE BACKFILL (PSI)			
SOIL CLASS	SOIL TYPE (Unified Classification System[a])	Loose	Slight < 85% Proctor, < 40% relative density	Moderate 85% - 95% Proctor, 40% - 70% relative density	High > 95% Proctor, > 70% relative density
Class V	Fine-grained Soils (LL>50)[b] Soils with medium to high plasticity CH, MH, CH-MH	No data available; consult a competent soils engineer; Otherwise use E' = 0			
Class IV	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	1,000
Class III	Fine-grained Soils (LL < 50)Soils with medium to no plasticity CL, ML,ML-CL, with more than 25% coarse-grained particles 1004001,0002,000 Coarse-grained Soils with Fines GM, GC, SM, SCC contains more than 12% fines	100	400	1,000	2,000
Class II	Coarse-grained Soils with Little or No Fines GW, GP, SW, SPC contains less than 12% fines	200	1,000	2,000	3,000
Class I	Crushed Rock	1,000	3,000	3,000	3,000
	Accuracy in Terms of Percentage Deflection	±2	±2	±1	±0.5

[a] ASTM Designation D 2487, USBR Designation E-3
[b] LL = Liquid limit
[c] Or any borderline soil beginning with one of these symbols (i.e. GM-GC, GC-SC)
[d] For ± 1% accuracy and predicted deflection of 3%, actual deflection would be between 2% and 4%.

Note: Values applicable only for fills less than 50ft (15m). Table does not include any safety factor. For use in predicting initial deflections only; appropriate Deflection Lag Factor must be applied for long-term deflections. If bedding falls on the borderline between two compaction categories, select lower E' value or average the two values. Percentage Proctor based on laboratory maximum dry density from test standards using about 12,500 ft-lb/cu ft (598,000 J/m^3) (ASTM D 698, AASHTO T-99, USBR Designation E-11). 1psi = 6.9kN/m^2.

Source: "Soil Reaction for Buried Flexible Pipe" by Amster K. Howard, U.S. Bureau of Reclamation, Denver Colorado. Reprinted with permission from American Society of Civil Engineers Journal of Geotechnical Engineering Division, January 1977, pp. 33-43.

C. Safety Considerations:

This project design incorporated numerous safety considerations. Security fences will be used throughout the projects boundary to prevent any passerby from accidentally entering an active construction zone. Any and all trenches that require a depth of larger than 4 feet will follow the trenching and excavation safety guidelines set forth by OSHA. There will be no blasting on the entire construction site. The wastewater manholes are spaced less than the maximum allowed TCEQ spacing and allow appropriate ventilation throughout to prevent odor buildup. All pipe buried is set at a reasonable depth to prevent excessive excavation. There are no anticipated tight workspaces throughout the entire jobsite.

Exhibit A: Proposed Development Site Map

Refer to Attached Construction Documents

Exhibit B: Wastewater Calculations

Phase	LUE	Approx. Drainage Area *(acre)*	*Dry Weather Flow (DWF) per LUE (gpd)*	*DWF (gpd)*	*DWF (MGD)*	*Peaking Factor (PF)*	*Peak Dry Weather Flow (Qpdwf) (MGD)*	*Inflow & Infiltration (gpd/acre)*	*Inflow & Infiltration (MGD)*	*Peak Wet Weather Flow (Qpwwf) (MGD)*
Bluffview Subdivision	105	56.6	250	26,250	0.026	3.7	0.10	1,000	0.057	0.153

Exhibit C: Wastewater Collection System Diagram

Refer to Attached Construction Documents

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: Justin Midura, P.E.

Date: 2-15-2024

Signature of Customer/Agent:

Regulated Entity Name: Bluffview Subdivision Phase 1

Project Information

Potential Sources of Contamination

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

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

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

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

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

- ☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.
- ☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

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

2. ☒ **Attachment A - Spill Response Actions**. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.
3. ☒ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
4. ☒ **Attachment B - Potential Sources of Contamination**. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

5. ☒ **Attachment C - Sequence of Major Activities**. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.
   - ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.
   - ☒ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.
6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: <u>South Fork San Gabriel River</u>

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

    ☐ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

Temporary Stormwater Section

ATTACHMENT A

TCEQ SCS APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Spill Response Actions:

1) Contain the spill.
2) Immediately stake off area.
3) Notify Hazardous Material team (if necessary); notify TCEQ:
   (512) 339-2929 or Emergency # 1-800-832-8224
4) Take necessary steps to clean up, i.e. notify remediation contractor if large spill, or small spills will be cleaned by the construction contractor

All Site personnel will be made aware of the manufacturers' recommended methods for spill cleanup and the location of information and cleanup supplies.

Spills will be reported according to the Reportable Quantity, attached on the following page.

Materials and equipment necessary for spill cleanup will be kept onsite in an accessible location known to site personnel.

All spills will be cleaned up immediately upon discovery. Any spill of hydrocarbons or hazardous substances greater than 25 gallons will require notification to the Fire Department Hazardous Materials Team and the TCEQ. As with all spills, an effort shall be made to prevent materials from entering surface streams and storm drains by using rock or earth berms to contain the material.

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

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

Education

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

General Measures

(1) To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
(2) Store hazardous materials and wastes in covered containers and protect from vandalism.
(3) Place a stockpile of spill cleanup materials where it will be readily accessible.
(4) Train employees in spill prevention and cleanup.
(5) Designate responsible individuals to oversee and enforce control measures.
(6) Spills should be covered and protected from stormwater runon during rainfall to the extent that it doesn’t compromise clean up activities.
(7) Do not bury or wash spills with water.
(8) Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
(9) Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.
(10) Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
(11) Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
(12) Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

(1) Clean up leaks and spills immediately.

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

Minor Spills

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

Semi-Significant Spills

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities. Spills should be cleaned up immediately:
(1) Contain spread of the spill.
(2) Notify the project foreman immediately.
(3) If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
(4) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
(5) If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

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

Vehicle and Equipment Maintenance

(1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
(2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately
(3) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
(4) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
(5) Place drip pans or absorbent materials under paving equipment when not in use.
(6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
(7) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
(8) Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
(9) Store cracked batteries in a non- leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

(1) If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
(2) Discourage "topping off" of fuel tanks.
(3) Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

Temporary Stormwater Section

ATTACHMENT B

TCEQ SCS APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Potential Sources of Contamination:

Gasoline, Diesel, and Hydraulic Fluid from Construction Equipment,
Asphalt Products,
Construction Materials,
Trash and Debris,
Paint,
Concrete,
Gypsum from Sheet Rock
Sediment

All materials shall be hauled in a manner consistent with the manufacturer’s recommendations. Disposal of waste material shall be in conformance with All State and Local Laws.

Kind of spill	Where discharged	Reportable quantity
Hazardous substance	onto land	"Final RQ" in Table 302.4 in 40 CFR 302.4 (PDF)
	into water	"Final RQ" or 100 lbs, whichever is **less**
Any oil	coastal waters	as required by the Texas General Land Office
Crude oil, oil that is neither a petroleum product nor used oil	onto land	210 gallons (five barrels)
	directly into water	enough to create a sheen
Petroleum product, used oil	onto land, from an exempt PST facility	210 gallons (five barrels)
	onto land, or onto land from a non-exempt PST facility	25 gallons
	directly into water	enough to create a sheen
Associated with the exploration, development and production of oil, gas, or geothermal resources	under the jurisdiction of the Railroad Commission of Texas	as required by the Railroad Commission of Texas
Industrial solid waste or other substances	into water	100 lbs
From petroleum storage tanks, underground or aboveground	into water	enough to create a sheen on water
From petroleum storage tanks, underground or aboveground	onto land	25 gallons or equal to the RQ under 40 CFR 302
Other substances that may be useful or valuable and are not ordinarily considered to be waste, but will cause pollution if discharged into water in the state	into water	100 lbs

Temporary Stormwater Section

ATTACHMENT C

TCEQ SCS APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

SEQUENCE of MAJOR ACTIVITIES:

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. Estimate of disturbed area = 39.6 acres.

2) Prior to beginning construction, the owner or his authorized representative shall convene a Pre-Construction Conference between the TCEQ, Williamson County, consulting engineer, contractor, and any other affected parties. Notify TCEQ at least 48 hours prior to the time of the conference and 48 hours prior to the beginning of construction. Provide 72-hour notification of EV Inspection (at 512-974-2278) to pre-construction conference.

3) Hold pre-construction conference with Contractor, TCEQ, EV Inspector, Engineer, and Owner.

4) Begin installation of wastewater lines. Upon completion, restore as much disturbed areas as possible, particularly channels and large open areas. Estimate of disturbed area = 39.6 acres.

5) Complete permanent erosion control and restoration of site vegetation. Estimate of disturbed area = 39.6 acres.

6) Project Engineer to provide a written concurrence letter, and scheduling final inspection with EV Inspector, prior to the removal of erosion controls.

7) Remove and dispose of temporary erosion/sedimentation control measures.

8) Conduct a final inspection and complete all punch list items.

Clearing and grubbing under a development permit, solely for the purpose of surveying and soil exploration, shall be a hand cutting or blade-up operation

Temporary Stormwater Section

ATTACHMENT D

TCEQ SCS APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Temporary Best Management Practices and Measures:

Install temporary erosion control measures, silt fence, stabilized construction entrance, and tree protection according to the plans and specifications prior to any clearing and grubbing, grading, excavating, etc.

All geologic features for this site are to be included in the geological assessment.

Temporary Stormwater Section

ATTACHMENT F

TCEQ SCS APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Structural Practices:

BMPs utilizing silt fences, diversion berms, and inlet protection devices will be used during construction to control sediment runoff.

Stormwater runoff from the site will drain into catch basins and into the permanent detention and water quality facilities before discharging downstream at a controlled rate. All stormwater from the site will be collected via a series of storm pipes and passed through the Water Quality and Detention Ponds 1 and 2, and other BMP's.

Temporary Stormwater Section

ATTACHMENT G

TCEQ SCS APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Drainage Area Map:

An overall drainage area map is included with this application.

SCS TR-55
Drainage Area Calculations
Bluffview Preliminary Plat
Atlas 14 Rainfall Distribution
IDF Curves Based on City of Austin Criteria Manual (2yr = 4.14 in.)
Zone 1

CN Values

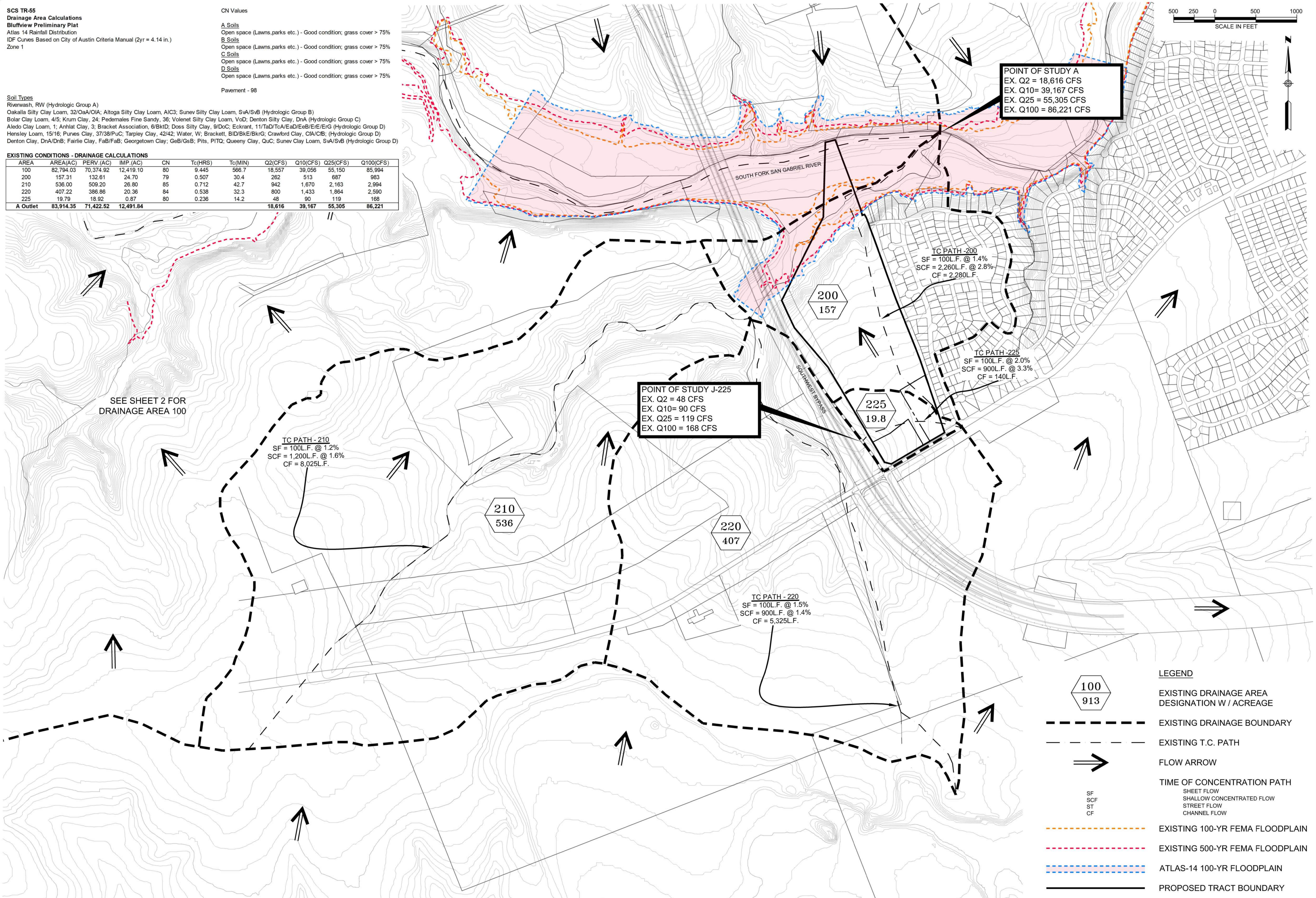
A Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
B Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
C Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
D Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%

Pavement - 98

Soil Types
Riverwash, RW (Hydrologic Group A)
Oakalla Silty Clay Loam, 32/OaA/OIA; Altoga Silty Clay Loam, AIC3; Sunev Silty Clay Loam, SvA/SvB (Hydrologic Group B)
Bolar Clay Loam, 4/5; Krum Clay, 24; Pedernales Fine Sandy, 36; Volenet Silty Clay Loam, VoD; Denton Silty Clay, DnA (Hydrologic Group C)
Aledo Clay Loam, 1; Anhlat Clay, 3; Bracket Association, 6/BktD; Doss Silty Clay, 9/DoC; Eckrant, 11/TaD/TcA/EaD/EeB/ErE/ErG (Hydrologic Group D)
Hensley Loam, 15/16; Purves Clay, 37/38/PuC; Tarpley Clay, 42/42; Water, W; Brackett, BID/BkE/BkrG; Crawford Clay, CfA/CfB; (Hydrologic Group D)
Denton Clay, DnA/DnB; Fairlie Clay, FaB/FaB; Georgetown Clay; GeB/GsB; Pits, PITQ; Queeny Clay, QuC; Sunev Clay Loam, SvA/SvB (Hydrologic Group D)

EXISTING CONDITIONS - DRAINAGE CALCULATIONS

AREA	AREA(AC)	PERV.(AC)	IMP.(AC)	CN	Tc(HRS)	Tc(MIN)	Q2(CFS)	Q10(CFS)	Q25(CFS)	Q100(CFS)
100	82,794.03	70,374.92	12,419.10	80	9.445	566.7	18,557	39,056	55,150	85,994
200	157.31	132.61	24.70	79	0.507	30.4	262	513	687	983
210	536.00	509.20	26.80	85	0.712	42.7	942	1,670	2,163	2,994
220	407.22	386.86	20.36	84	0.538	32.3	800	1,433	1,864	2,590
225	19.79	18.92	0.87	80	0.236	14.2	48	90	119	168
A Outlet	**83,914.35**	**71,422.52**	**12,491.84**				**18,616**	**39,167**	**55,305**	**86,221**



BLUFFVIEW
GEORGETOWN, TX

EXISTING CONDITIONS DRAINAGE AREA MAP

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 8/31/23
DESIGNED BY: BWF
DRAWN BY: GR
CHECKED BY: BWF
DRAWING NAME: DrainageMap_ExCond-1.500.dwg

STATE OF TEXAS
BRIAN W. FALTESEK
105982
LICENSED PROFESSIONAL ENGINEER
1/18/2024

LJA Engineering Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN - F-1386

JOB NUMBER: A140-0418

SHEET NO. 9 OF 93 SHEETS

SCS TR-55
Drainage Area Calculations
Bluffview Preliminary Plat
Atlas 14 Rainfall Distribution
IDF Curves Based on City of Austin Criteria Manual (2yr = 4.14 in.)
Zone 1

CN Values

A Soils
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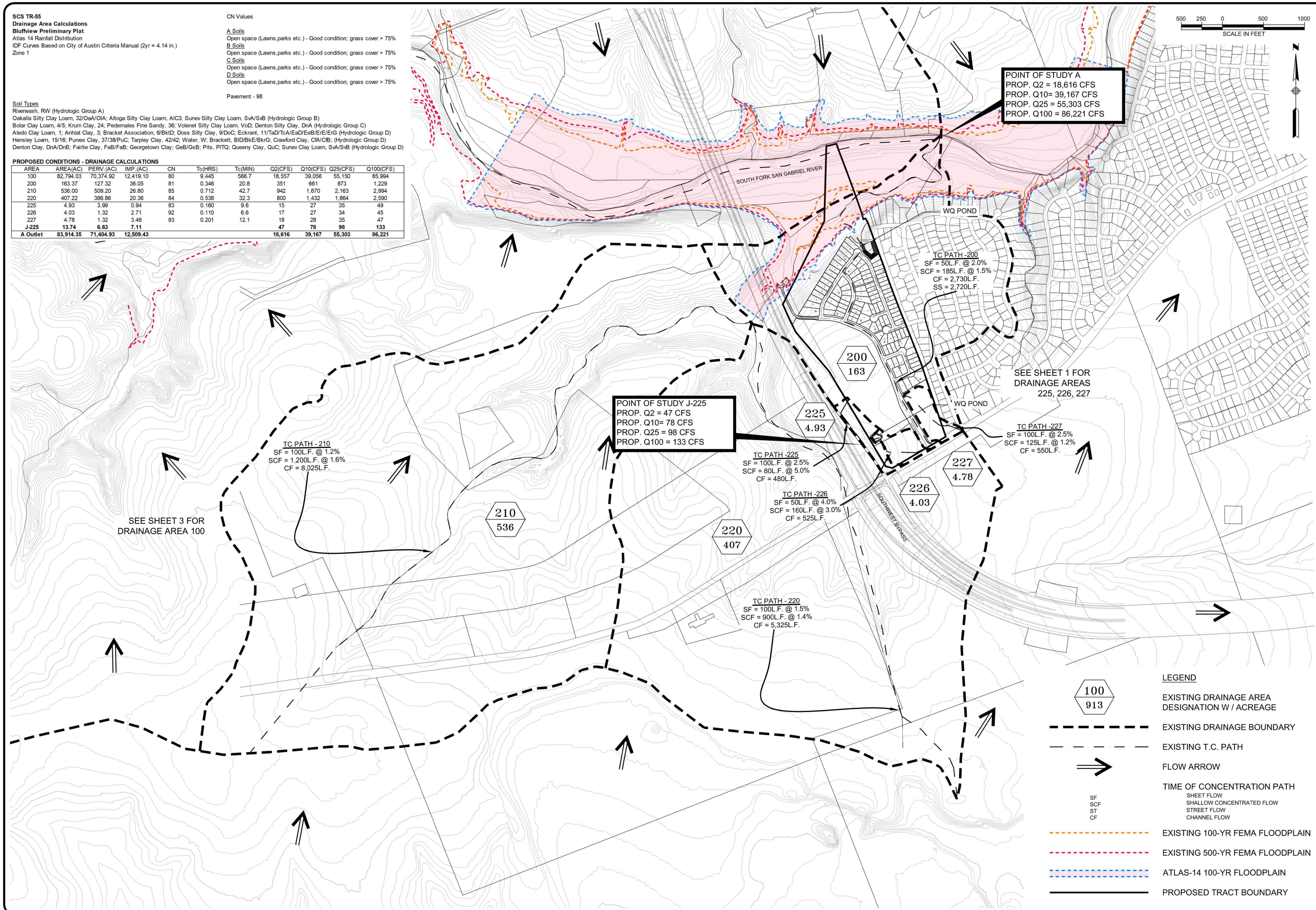
B Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
C Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
D Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%

Pavement - 98

Soil Types
Riverwash, RW (Hydrologic Group A)
Oakalla Silty Clay Loam, 32/OaA/OIA; Altoga Silty Clay Loam, AIC3; Sunev Silty Clay Loam, SvA/SvB (Hydrologic Group B)
Bolar Clay Loam, 4/5; Krum Clay, 24; Pedernales Fine Sandy, 36; Volenet Silty Clay Loam, VoD; Denton Silty Clay, DnA (Hydrologic Group C)
Aledo Clay Loam, 1; Anhlat Clay, 3; Bracket Association, 6/BktD; Doss Silty Clay, 9/DoC; Eckrant, 11/TaD/TcA/EaD/EeB/ErE/ErG (Hydrologic Group D)
Hensley Loam, 15/16; Purves Clay, 37/38/PuC; Tarpley Clay, 42/42; Water, W; Brackett, BID/BkE/BkrG; Crawford Clay, CfA/CfB; (Hydrologic Group D)
Denton Clay, DnA/DnB; Fairlie Clay, FaB/FaB; Georgetown Clay; GeB/GsB; Pits, PITQ; Queeny Clay, QuC; Sunev Clay Loam, SvA/SvB (Hydrologic Group D)

PROPOSED CONDITIONS - DRAINAGE CALCULATIONS

AREA	AREA(AC)	PERV.(AC)	IMP.(AC)	CN	Tc(HRS)	Tc(MIN)	Q2(CFS)	Q10(CFS)	Q25(CFS)	Q100(CFS)
100	82,794.03	70,374.92	12,419.10	80	9.445	566.7	18,557	39,056	55,150	85,994
200	163.37	127.32	36.05	81	0.346	20.8	351	661	873	1,229
210	536.00	509.20	26.80	85	0.712	42.7	942	1,670	2,163	2,994
220	407.22	386.86	20.36	84	0.538	32.3	800	1,432	1,864	2,590
225	4.93	3.99	0.94	83	0.160	9.6	15	27	35	49
226	4.03	1.32	2.71	92	0.110	6.6	17	27	34	45
227	4.78	1.32	3.46	93	0.201	12.1	18	28	35	47
J-225	**13.74**	**6.63**	**7.11**				**47**	**78**	**98**	**133**
A Outlet	**83,914.35**	**71,404.93**	**12,509.43**				**18,616**	**39,167**	**55,303**	**86,221**



BLUFFVIEW
GEORGETOWN, TX

PROPOSED CONDITIONS DRAINAGE AREA MAP

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 8/31/23
DESIGNED BY: BWF
DRAWN BY: GR
CHECKED BY: BWF
DRAWING NAME: DrainageMap_PropCond-1.500.dwg

STATE OF TEXAS
BRIAN W. FALTESEK
105982
LICENSED
PROFESSIONAL ENGINEER
1/18/2024

LJA Engineering Inc.
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Phone 512.439.4700
Fax 512.439.4716
FRN - F-1386

JOB NUMBER: A140-0418
SHEET NO. 12
OF 93 SHEETS

Temporary Stormwater Section

ATTACHMENT H

TCEQ WPAP APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Temporary Sediment Pond Plans and Calculations:

The ponds will be graded to full capacity at the beginning of the project. All mid-construction discharge will be routed to the ponds during construction.

Temporary Stormwater Section

ATTACHMENT I

TCEQ SCS APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Inspection and Maintenance for Best Management Practices:

Best Management Practices installed during construction will be maintained in accordance with the requirements of the EPA's NPDES/TPDES stormwater pollution prevention program. The following maintenance procedures shall be followed until permanent stabilization occurs.

Silt Fence

a. Inspect weekly or after each rainfall event and repair or replacement shall be made promptly as needed.
b. Silt fence shall be removed when the site is completely stabilized so as to not block or impede storm flow or drainage.
c. Accumulated silt shall be removed when it reaches a depth of 6 inches. The silt shall be disposed of on an approved site and in such a manner that will not contribute to additional siltation.

Rock Berm

a. Inspect weekly or after each rain and the stone and/or fabric core-woven sheathing shall be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc. event and repair or replacement shall be made promptly as needed.
b. When silt reaches a depth equal to one-third the height of the berm or 6", whichever is less, the silt shall be disposed of on an approved site and in such a manner that will not contribute to additional siltation.
c. Accumulated silt shall be removed when it reaches a depth of 6 inches. The silt shall be disposed of on an approved site and in such a manner that will not contribute to additional siltation.
d. Severe service rock berms shall be inspected daily. Silt shall be removed when it reaches a depth of 6"
e. Rock berms shall be removed when the site is completely stabilized so as to not block or impede storm flow or drainage.

Stabilized Construction Entrance

a. 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 devices used to trap sediment.

b. Entrance must be properly graded to incorporate a drain swale or a similar measure to prevent runoff from leaving the construction site.

Inlet Protection

a. Inspection shall be made weekly or after each rainfall event and replacement or repair shall be made promptly as needed.
b. Accumulated silt shall be removed when it reaches a depth of 6 inches. The silt shall be disposed of on an approved site and in such a manner that will not contribute to additional siltation.
c. The dyke shall be removed when the site is completely stabilized so as to not block or impede storm flow or drainage.

Concrete Washout

a. Inspection shall be made daily or after each rainfall event to check to leaks, identify any plastic linings and sidewalls have been damaged by construction activities.
b. When the washout container is filled over 75 percent of its capacity, the washwater should be vacuumed off or allowed to evaporate to avoid overflows. When the remaining cementitious solids have hardened, they should be removed and recycled.
c. Damages to the container should be repaired promptly.
d. Before heavy rains, the washout container's liquid level should be lowered, or the container should be covered to avoid an overflow during the rain storm.
e.

The owner shall hire an E&S compliance company to inspect E&S measures and keep reports of onsite inspections with deficiencies and solutions.

Temporary Stormwater Section

ATTACHMENT J

TCEQ SCS APPLICATION

<u>Bluffview Subdivision Phase 1</u>
Williamson County, Texas

Schedule of Interim and Permanent Soil Stabilization Practices:

Soil Stabilization for all disturbed areas shall be accomplished by hydraulic planting. Following is an outline to accomplish the required stabilization.

1. Preparing Seed Bed. After the designated areas have been rough graded to the lines, grades and typical sections indicated in the Drawings or as provided for in other items of this contract and for any other soil area disturbed by the construction, a suitable seedbed shall be prepared. The seedbed shall consist of a minimum of either 4 inches (100 millimeters) of approved topsoil or 4 inches (100 millimeters) of approved salvaged topsoil, cultivated and rolled sufficiently to enhance the soil to a state of good health, when the soil particles on the surface are small enough and lie closely enough together to prevent the seed from being covered too deeply for optimum germination. The optimum depth for seeding shall be 1/4 inch (6 millimeters). Water shall be gently applied as required to prepare the seedbed prior to the planting operation either by broadcast seeding or hydraulic planting. Bare soils should be seeded or otherwise stabilized within 14 calendar days after final grading or where construction activity has temporarily ceased for more than 21 days. Seeding shall be performed in accordance with the requirements hereinafter described.

2. Watering. All watering shall comply with Chisholm Trail Subdivision Rules and Regulations. Broadcast seeded areas shall immediately be watered with a minimum of 5 gallons of water per square yard (22.5 liters of water per square meter) or as needed and in the manner and quantity as directed by the Engineer or designated representative. Hydraulic seeded areas and native grass seeded areas shall be watered commencing after the tackifier has dried with a minimum of 5 gallons of water per square yard (22.5 liters of water per square meter) or as needed to keep the seedbed in a wet condition favorable for the growth of grass.

   Watering applications shall constantly maintain the seedbed in a wet condition favorable for the growth of grass. Watering shall continue until the grass is uniformly 1 1/2 inches (40 mm) in height and accepted by the Engineer or designated representative. Watering can be postponed immediately after a 1/2 inch (12.5 mm) or greater rainfall on the site but shall be resumed before the soil dries out.

3. Hydraulic Planting. The seedbed shall be prepared as specified above and hydraulic planting equipment, which is capable of placing all materials in a single operation, shall be used.

March 1 to September 15

Hydraulic planting mixture and minimum rate of application pounds per 1000 square feet (kilograms per 100 square meters):

Planting Mixture			
Hulled Bermuda Seed (PLS=0.83)	Fiber Mulch		Soil Tackifier
	Cellulose	Wood	
1 Lbs/1000 ft2 (0.5 kgs/100 m2))	45.9 Lbs/1000 ft2 (22.5 kgs/100 m2))		1.4 Lbs/1000 ft2 (0.7 kgs/100 m2))
		57.4 Lbs/1000 ft2 (28.01 kgs/100 m2))	1.5 Lbs/1000 ft2 (0.75 kgs/100 m2))

September 15 to March 1

Add 1.5 pounds per 1000 square feet (0.75 kilograms per 100 square meters) of cool season cover crop (see Table 1) to above mixture. The fertilizer shall conform to City of Austin Standard Specification Item No. 606S, "Fertilizer".

Table 1: Cool Season Cover Crop

Common Name	Botanical Name	Application rates	
		Lbs/1000 feet ^{2}	kg/ 100 meter^2
Wheat	Triticum aestivum	0.5	0.25
Oats	Avena sativa	0.5	0.25
Cereal Rye Grain	Secale cereale	0.5	0.25
Total Cool Season Cover Crop Seeding Rate		1.5	0.75
Total Cool Season Seeding Rate (Grass, Wildflowers, & Cover Crop)		4.5	2.25

Permanent Stormwater Section

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Justin Midura, P.E.

Date: 2-15-2024

Signature of Customer/Agent

Regulated Entity Name: Bluffview Subdivision Phase 1

Permanent Best Management Practices (BMPs)

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

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

   ☐ N/A

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

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

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

☐ N/A

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

   ☐ N/A

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

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

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

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

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

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

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

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

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

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

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

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

☐ N/A

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

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

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

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

☒ Design calculations (TSS removal calculations)
☒ TCEQ construction notes
☒ All geologic features
☒ All proposed structural BMP(s) plans and specifications

☐ N/A

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

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

    ☐ N/A

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

    ☒ N/A

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

    ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

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

    ☐ N/A

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

    ☐ N/A

Permanent Stormwater Section
ATTACHMENT B

TCEQ WPAP APPLICATION

<u>Bluffview Subdivision Phase 1</u>
Williamson County, Texas

Best Management Practices for Upgradient Stormwater:

The Bluffview Subdivision Phase 1 developments accepts off-site drainage from the upgradient and treats the offsite runoff in the proposed BMP's.

Under existing conditions, the tract is vacant and undeveloped. The site consists of assorted grasses and multiple protected trees, with terrain sloped at approximately 1% to 5% as well as steep grades going down the bluff itself. The project topography drains the project area to the north to The South Fork San Gabriel River Watershed. Developed conditions propose five drainage basins to be treated by means of onsite ponding per Ponds 1 and 2, vegetative filter strips, and a grassy swale.

The extended batch detention ponds only provide WQ volume since the project site was analyzed using HEC-HMS, and determined detention storage was already provided at the point of study for the 24-hour duration, 2-, 10-, 25-, and 100-year frequency rainfall events for proposed conditions using the TCEQ Technical Guidance Manual and City of Georgetown Drainage Criteria Manual. Stormwater is conveyed to the proposed BMP via curb and gutter flow to curb and grate inlets located in the ROW, open space, and driveways. At these points the water spills into the pond via storm pipe and released to the designated watershed by means of a safety end treatment (SET) outlet structure.

Permanent Stormwater Section

ATTACHMENT C

TCEQ WPAP APPLICATION

<u>Bluffview Subdivision Phase 1</u>
Williamson County, Texas

Best Management Practices for On-site Stormwater:

Since this project site is located within the Edwards Aquifer Recharge Zone, water quality has been provided by proposed two extended batch detention water quality ponds, two vegetative filter strips, and a grassy swale. This development proposes a total impervious cover of 24.72 acres. The proposed BMP was designed to follow TCEQ's guidelines and will remove a minimum of 85% of the increased TSS from the proposed construction per City of Georgetown ordinance. Maintenance of pond 1, the vegetative filter strips, and the grassy swale will be performed by the Bluffview HOA and pond 2 will be privately maintained.

Permanent Stormwater Section

ATTACHMENT D

TCEQ WPAP & SCS APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Best Management Practices for Surface Streams Stormwater:

No BMPs are proposed to specifically affect surface streams. The function of proposed onsite BMPs is to retain natural flow patterns and volumetric flowrates as in existing conditions, and provide WQ. Therefore, the BMPs proposed for reducing pollutant loads in surface streams are described in the previous section; "Attachment 5C, BMPs for On-Site Stormwater." A discussion on how the water quality ponds and BMP's will manage stormwater runoff entering nearby surface streams is within "Attachment I – Measures for Minimizing Surface Stream Contamination."

Permanent Stormwater Section

ATTACHMENT F

TCEQ WPAP APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Construction Plans:

Construction plans for the erosion/sedimentation control measures proposed with this development are included at the end of this report.

BLUFFVIEW SUBDIVISION

PHASE 1

Street, Drainage, Water, and Wastewater Improvements

BLUFFVIEW SUBDIVISION
PHASE 1
A140-0418

SUBMITTED FOR APPROVAL BY:
LJA ENGINEERING, INC.

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
PROFESSIONAL ENGINEER

Justin D. Midura 1-17-2024

LJA ENGINEERING, INC.
JUSTIN D. MIDURA, P.E. #128809
DATE

DEVELOPMENT SERVICES DEPARTMENT
DATE

2023-12-PP
SITE PLAN/DEVELOPMENT PERMIT NUMBER

SUBDIVISION FILE NUMBER

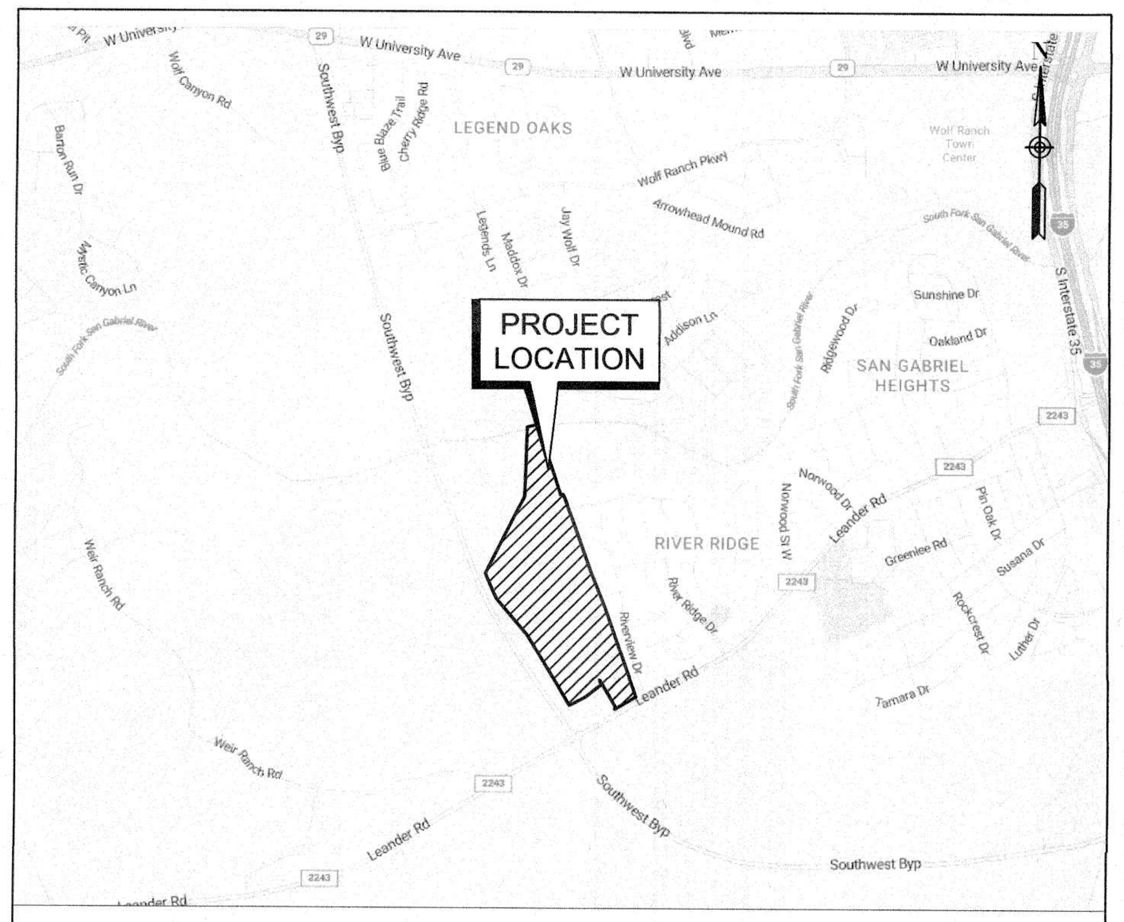
WATERSHED STATUS

THIS SITE IS LOCATED WITHIN THE SOUTH FORK SAN GABRIEL RIVER WATERSHED

FLOODPLAIN INFORMATION

THE TRACT SHOWN IS ENCUMBERED BY ZONE AE ACCORDING TO FIRM PANEL 48491C0480F, DATED DECEMBER 20, 2019.

THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR THE STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR, OR ENGINEER.



FM 2243, GEORGETOWN, TX 78628

LOCATION MAP
1" = 2,000'

Sheet Number	Sheet Title	Sheet Description
01	CV1	COVER SHEET
02-06	FP1-FP5	FINAL PLAT
07-08	GN1-GN2	GENERAL NOTES
09-10	DM1	EXISTING DRAINAGE AREA MAP
11-13	DM2	DEVELOPED DRAINAGE AREA MAP
14	DM3	INTERNAL DRAINAGE AREA MAP
15	DM4	INTERNAL DRAINAGE AREA CALCULATIONS
16	DM5	INTERNAL DRAINAGE AREA CALCULATIONS
17	EC1	EROSION/SEDIMENTATION CONTROL & TREE PROTECTION PLAN
18	EC2	EROSION/SEDIMENTATION CONTROL & TREE PROTECTION PLAN
19	EC3	EROSION/SEDIMENTATION CONTROL & TREE PROTECTION PLAN
20	EC4	EROSION/SEDIMENTATION CONTROL & TREE PROTECTION PLAN
21	EC5	EROSION/SEDIMENTATION CONTROL & TREE PROTECTION PLAN
22	EC6	EROSION/SEDIMENTATION CONTROL DETAILS
23	EC7	TREE LIST
24	EC8	TREE LIST
25	ES1	EASEMENT PLAN
26	ES2	EASEMENT PLAN
27	EX1	EXISTING CONDITIONS & DEMO PLAN
28-32	GP1-GP5	GRADING PLAN
33	ST1	BLUFF EDGE LANE PLAN & PROFILE STA. 1+00 TO 9+00
34	ST2	BLUFF EDGE LANE PLAN & PROFILE STA. 9+00 TP 17+00
35	ST3	BLUFF EDGE LANE PLAN & PROFILE STA. 17+00 TO END
36	ST4	PARK ROAD PLAN & PROFILE STA. 1+00 TO END
37	ST5	FIELDER DRIVE PLAN & PROFILE STA. 1+00 TO 9+00
38	ST6	FIELDER DRIVE PLAN & PROFILE STA. 9+00 TO 17+00
39	ST7	FIELDER DRIVE PLAN & PROFILE STA. 17+00 TO END
40	ST8	RIDGEWAY LANE PLAN & PROFILE STA. 1+00 TO END
41	ST9	FALLEN TREE COVE, BENT TREE DRIVE PLAN & PROFILE STA 1+00 TO END
42	ST10	CRESTAVEN LANE PLAN & PROFILE STA. 1+00 TO END
43	UT1	OVERALL UTILITY PLAN
44	WQ1	WATER QUALITY POND 1 PLAN
45	WQ2	WATER QUALITY POND 1 PROFILES
46	WQ3	WATER QUALITY POND 2 PLAN
47	WQ4	WATER QUALITY POND 2 PROFILES
48	WQ5	WATER QUALITY TREATMENT GRASSY SWALE
49	WQ6	WATER QUALITY V.F.S. A & B PLAN VIEWS
50	WQ7	WATER QUALITY POND SMARTPOND DETAILS
51	WQ8	WATER QUALITY POND SMARTPOND DETAILS
52	WQ9	WATER QUALITY POND NOTES & DETAILS
53	SS1	STORM SEWER LINE A PLAN & PROFILE STA. 1+00 TO 9+00
54	SS2	STORM SEWER LINE A PLAN & PROFILE STA. 9+00 TO END
55	SS3	STORM SEWER LINE 'B' PLAN & PROFILE STA. 1+00 TO 10+00
56	SS4	STORM SEWER LINE 'B' PLAN & PROFILE STA. 10+00 TO 20+00
57	SS5	STORM SEWER LINE 'B' PLAN & PROFILE STA. 20+00 TO END
58	SS6	STORM SEWER LINE 'C' PLAN & PROFILE STA. 1+00 TO END
59	SS7	STORM SEWER LINE 'D' PLAN & PROFILE STA. 1+00 TO 8+00
60	SS8	STORM SEWER LINE D PLAN & PROFILE STA. 8+00 TO END
61	SS9	STORM SEWER LINE E PLAN & PROFILE STA. 1+00 TO 8+00
62	SS10	STORM SEWER LINE 'F & G' PLAN & PROFILE STA. 1+00 TO END
63	SS11	STORM SEWER LINE 'GS' PLAN & PROFILE STA. 1+00 TO END
64	SS12	STORM SEWER LATERAL PROFILES A2, A3, A4, A5, A6, A7, A8, B2, B3, B4, B5, B6, B7, & B8
65	SS13	STORM SEWER LATERAL PROFILES B9, B10, B11, B12, B13, B14, B15, B16, C2, C3,C4, C5, & C6
66	SS14	STORM SEWER LATERAL PROFILES D2, D3, D5, D6, D7, D8, D9, D10, & D11
67-69	WL1-WL3	WATER LINE PLAN VIEW
70	WL4	WATER LINE A PROFILE STA 1+00 TO 17+00
71	WL5	WATER LINE A PROFILE STA 17+00 TO END
72	WW1	WASTEWATER LINE A PLAN & PROFILE STA. 1+00 TO 9+00
73	WW2	WASTEWATER LINE A PLAN & PROFILE STA. 9+00 TO 18+00
74	WW3	WASTEWATER LINE A PLAN & PROFILE STA. 18+00 TO END
75	WW4	WASTEWATER LINE B PLAN & PROFILE STA. 1+00 TO 9+00
76	WW5	WASTEWATER LINE B PLAN & PROFILE STA. 10+00 TO END
77	WW6	WASTEWATER LINE D PLAN & PROFILE STA. 1+00 TO 8+00
78	WW7	WASTEWATER LINE D PLAN & PROFILE STA. 8+00 TO END
79	WW8	WASTEWATER LINE E & F PLAN & PROFILE
80	WW9	WASTEWATER LINE C PLAN & PROFILE STA. 1+00 TO 9+00
81	WW10	WASTEWATER LINE A PLAN & PROFILE STA. 9+00 TO 18+00
82	WW11	WASTEWATER LINE A PLAN & PROFILE STA. 18+00 TO 27+00
83	WW12	WASTEWATER LINE C & K PLAN & PROFILE
84	WW13	WASTEWATER LINE G, H, I & J PLAN & PROFILE
85-89	SP1-SP5	SIGNAGE AND STRIPING
90-93	DT1-DT4	GENERAL DETAILS

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 REQUIREMENT AND CODES.
2. THIS PROJECT IS SUBJECT TO ALL CITY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF SUBMITTAL OF THE PROJECT TO THE CITY.
3. ALL ELECTRIC DISTRIBUTION LINES AND INDIVIDUAL SERVICE LINES SHALL BE INSTALLED UNDERGROUND. IF OVERHEAD LINES EXISTED PRIOR TO UNDERGROUND INSTALLATION, SUCH POLES, GUY WIRES, AND RELATED STRUCTURES SHALL BE REMOVED FOLLOWING CONSTRUCTION OF THE UNDERGROUND INFRASTRUCTURE (ONLY APPLICABLE FOR RESIDENTIAL PROPERTY).
4. ALL ELECTRIC AND COMMUNICATION INFRASTRUCTURE SHALL COMPLY WITH UDC SECTION 13.06.
5. THE PROPERTY SUBJECT TO THIS APPLICATION IS SUBJECT TO THE WATER QUALITY REGULATIONS OF THE CITY OF GEORGETOWN.
6. A GEOLOGIC ASSESSMENT, IN ACCORDANCE WITH THE CITY OF GEORGETOWN WATER QUALITY REGULATIONS, WAS COMPLETED ON JANUARY, 2015. ANY SPRINGS AND STREAMS AS IDENTIFIED IN THE GEOLOGIC ASSESSMENT ARE SHOWN HEREIN.

OWNER/DEVELOPER:
LAMY 2243 LTP.
1717 WEST 60th ST., SUITE 390
AUSTIN, TX 78703
PHONE: (512) 346-3482

DEVELOPER/APPLICANT:
LJA ENGINEERING INC.
FRN # F-1386
2700 LA FRONTERA BLVD, SUITE 200
CONTACT PERSON: JUSTIN D. MIDURA, P.E.
PHONE: (512)439-4700

ENGINEER/AUTHORIZED AGENT:
LJA ENGINEERING INC.
2700 LA FRONTERA BOULEVARD
SUITE 200
ROUND ROCK, TX 78681
(512)-439-4700
WEB SITE: WWW.LJA.COM
EMAIL: LJA@LJA.COM

SURVEYOR:
EARLY LAND SURVEYING, LLC
P.O. BOX 92588
AUSTIN, TX 78709
CONTACT PERSON: JOBY EARLY, RPLS
PHONE: (512) 202-8631

REVISIONS / CORRECTIONS

Number	Revision Description	Revise (R) Add (A) Void (V) Sheet No.'s	NET Change Imp. Cover (SF)	Total Site Imp. Cover (%)	COA Approval Date

LJA Engineering, Inc.
LJA
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

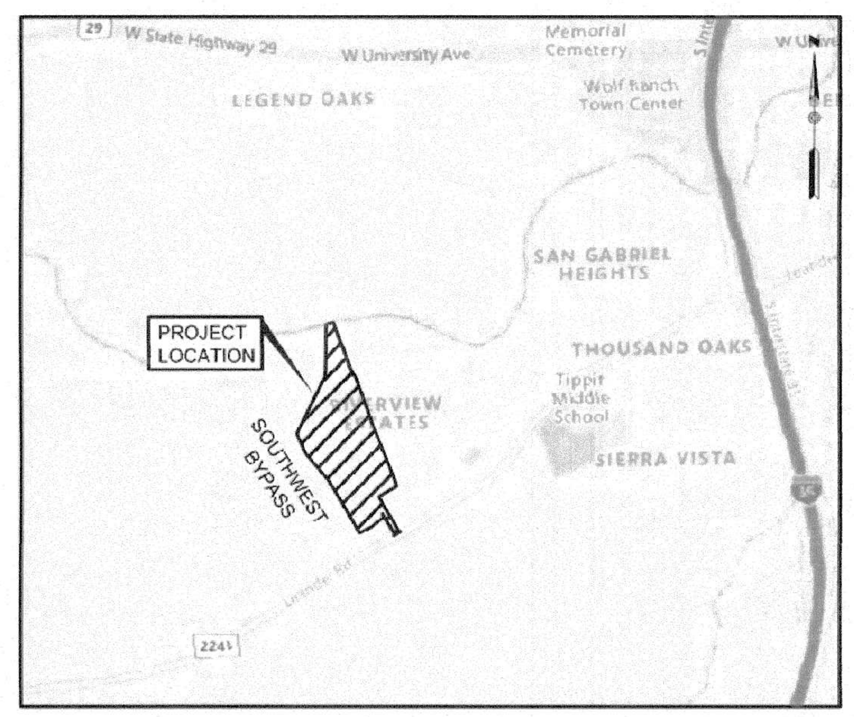
811 Know what's below. Call before you dig.

Date\Time : Fri, 19 Jan 2024 - 6:33pm User Name : jpiecuch
Path\Name : G:\A140-0418 Bluffview\ACAD\Sheet Files\A140-0418 CV1.dwg

BLUFFVIEW SUBDIVISION
PRELIMINARY PLAT

1. UTILITY PROVIDERS FOR THIS DEVELOPMENT ARE
   WATER: CITY OF GEORGETOWN
   WASTEWATER/SEPTIC: CITY OF GEORGETOWN
   ELECTRIC: PEDERNALES ELECTRIC COOPERATIVE
2. ALL STRUCTURES/OBSTRUCTIONS ARE PROHIBITED IN DRAINAGE EASEMENTS.
3. THERE ARE AREAS WITHIN THE BOUNDARIES OF THIS SUBDIVISION IN THE 100-YEAR FLOODPLAIN AS DEFINED BY FIRM MAP NUMBER 48491C0480F, EFFECTIVE DATE OF DECEMBER 20, 2019.
4. NO DEVELOPMENT SHALL BEGIN PRIOR TO THE ISSUANCE OF A FLOODPLAIN DEVELOPMENT PERMIT FOR EACH OF THE FOLLOWING LOTS: 35, BLOCK D.
5. PRIOR TO ANY CHANNEL ALTERATION OR BRIDGE CONSTRUCTION, WHICH WILL CHANGE EXISTING FLOOD PATTERNS OR ELEVATIONS WITHIN THE FEMA 100-YR FLOODPLAIN, A LETTER OF MAP AMENDMENT MUST BE SUBMITTED TO THE CITY OF GEORGETOWN FLOODPLAIN ADMINISTRATOR FOR APPROVAL AND APPROVAL BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
6. IN ORDER TO PROMOTE DRAINAGE AWAY FROM A STRUCTURE, THE SLAB ELEVATION SHOULD BE BUILT AT LEAST ONE-FOOT ABOVE THE SURROUNDING GROUND, AND THE GROUND SHOULD BE GRADED AWAY FROM THE STRUCTURE AT A SLOPE OF 1/2" PER FOOT FOR A DISTANCE OF AT LEAST 10 FEET.
7. ALL SEDIMENTATION, FILTRATION, DETENTION, AND/OR RETENTION BASINS AND RELATED APPURTENANCES SHOWN SHALL BE SITUATED WITHIN A DRAINAGE EASEMENT OR DRAINAGE LOT. THE OWNERS, HOA, OR ASSIGNEES OF THE TRACTS UPON WHICH ARE LOCATED SUCH EASEMENTS, APPURTENANCES, AND DETENTION FACILITIES SHALL MAINTAIN SAME AND BE RESPONSIBLE FOR THEIR MAINTENANCE, ROUTINE INSPECTION, AND UPKEEP.
8. PARKLAND DEDICATION REQUIREMENTS ARE BEING MET BY DEDICATION OF LOT 35, BLOCK D.
9. ANY HERITAGE TREE AS NOTED ON THIS PLAT IS SUBJECT, IN PERPETUITY, TO THE MAINTENANCE, CARE, PRUNING AND REMOVAL REQUIREMENTS OF THE CITY OF GEORGETOWN. APPROVED REMOVAL DOES NOT REQUIRE MODIFICATION OF THE PLAT.
10. ALL INDIVIDUAL LOTS CONTAINING HERITAGE TREES ARE CONFIGURED AND DESIGNED SO THAT THE LOT IS DEVELOPABLE FOR THE INTENDED PURPOSE WITHOUT REQUIRING REMOVAL OF THE HERITAGE TREES OR EXCEEDING THE PERCENTAGE OF ALLOWABLE DISTURBANCE WITHIN THE HERITAGE TREES CRZ.
11. A 10-FOOT PUBLIC UTILITY EASEMENT IS TO BE DEDICATED ALONG LOCAL STREET AND 2 LANE COLLECTOR FRONTAGES WITHIN THIS PLAT. A 15-FOOT PUBLIC UTILITY EASEMENT IS TO BE DEDICATED ALONG 4 LANE COLLECTOR STREET FRONTAGES WITHIN THIS PLAT.
12. THE MONUMENTS OF THIS PLAT HAVE BEEN ROTATED TO THE NAD 83/93 HARN - TEXAS CENTRAL ZONE AND NAVD 88.
13. IMPERVIOUS COVERAGE PLAT NOTES – RESIDENTIAL LOTS:
   THE MAXIMUM IMPERVIOUS COVERAGE PER RESIDENTIAL LOT IS ACCORDING TO THE FOLLOWING TABLE WHICH WAS RECORDED IN THE PUD ORDINANCE NO. 2023-29.
   MAXIMUM IMPERVIOUS COVER ALLOWED PER LAND USE:
   RESIDENTIAL SINGLE-FAMILY 45%
14. THE LANDOWNER ASSUMES ALL RISKS ASSOCIATED WITH IMPROVEMENTS LOCATED IN THE RIGHT-OF-WAY, OR ROAD WIDENING EASEMENTS. BY PLACING ANYTHING IN THE RIGHT-OF-WAY OR ROAD WIDENING EASEMENTS, THE LANDOWNER INDEMNIFIES AND HOLDS THE CITY OF GEORGETOWN, WILLIAMSON COUNTY, THEIR OFFICERS, AGENTS AND EMPLOYEES HARMLESS FROM ANY LIABILITY OWING TO PROPERTY DEFECTS OR NEGLIGENCE NOT ATTRIBUTABLE TO THEM AND ACKNOWLEDGES THAT THE IMPROVEMENTS MAY BE REMOVED BY THE CITY AND/OR COUNTY AND THAT THE OWNER OF THE IMPROVEMENTS WILL BE RESPONSIBLE FOR THE RELOCATION AND/OR REPLACEMENT OF THE IMPROVEMENTS.
15. THE BUILDING OF ALL STREETS, ROADS, AND OTHER PUBLIC THOROUGHFARES AND ANY BRIDGES OR CULVERTS NECESSARY TO BE CONSTRUCTED OR PLACED IS THE RESPONSIBILITY OF THE OWNERS OF THE TRACT OF LAND COVERED BY THIS PLAT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS PRESCRIBED BY THE CITY OF GEORGETOWN AND/OR WILLIAMSON COUNTY, TEXAS. NEITHER THE CITY OF GEORGETOWN NOR WILLIAMSON COUNTY ASSUMES ANY OBLIGATION TO BUILD ANY OF THE STREETS, ROADS, OR OTHER PUBLIC THOROUGHFARES SHOWN ON THIS PLAT OR OF CONSTRUCTING ANY OF THE BRIDGES OR DRAINAGE IMPROVEMENTS IN CONNECTION THEREWITH. NEITHER THE CITY OF GEORGETOWN NOR WILLIAMSON COUNTY ASSUMES ANY RESPONSIBILITY FOR DRAINAGE WAYS OR EASEMENTS IN THE SUBDIVISION, OTHER THAN THOSE DRAINING OR PROTECTING THE ROAD SYSTEM AND STREETS IN THEIR RESPECTIVE JURISDICTIONS.
16. NEITHER THE CITY OF GEORGETOWN NOR WILLIAMSON COUNTY ASSUMES ANY RESPONSIBILITY FOR THE ACCURACY OF REPRESENTATIONS BY OTHER PARTIES IN THIS PLAT. FLOODPLAIN DATA, IN PARTICULAR, MAY CHANGE DEPENDING ON SUBSEQUENT DEVELOPMENT. IT IS FURTHER UNDERSTOOD THAT THE OWNERS OF THE TRACT OF LAND COVERED BY THIS PLAT MUST INSTALL AT THEIR OWN EXPENSE ALL TRAFFIC CONTROL DEVICES AND SIGNAGE THAT MAY BE REQUIRED BEFORE THE STREETS IN THE SUBDIVISION HAVE FINALLY BEEN ACCEPTED FOR MAINTENANCE BY THE CITY AND / OR COUNTY.
17. RIGHT-OF-WAY EASEMENTS FOR WIDENING ROADWAYS OR IMPROVING DRAINAGE SHALL BE MAINTAINED BY THE LANDOWNER UNTIL ROAD OR DRAINAGE IMPROVEMENTS ARE ACTUALLY CONSTRUCTED ON THE PROPERTY. THE CITY AND/OR COUNTY HAVE THE RIGHT AT ANY TIME TO TAKE POSSESSION OF ANY ROAD WIDENING EASEMENT FOR CONSTRUCTION, IMPROVEMENT, OR MAINTENANCE OF THE ADJACENT ROAD.
18. UNLESS OTHERWISE NOTED HEREIN, ALL EASEMENTS DEDICATED TO THE CITY OF GEORGETOWN BY THIS PLAT SHALL BE EXCLUSIVE TO THE CITY OF GEORGETOWN, AND GRANTOR COVENANTS THAT GRANTOR AND GRANTOR'S HEIRS, SUCCESSORS, AND ASSIGNS SHALL NOT CONVEY ANY OTHER EASEMENT, LICENSE, OR CONFLICTING RIGHT TO USE IN ANY MANNER, THE AREA (OR ANY PORTION THEREOF) COVERED BY THIS GRANT.
19. ALL EASEMENTS DEDICATED TO THE CITY OF GEORGETOWN BY THIS PLAT ADDITIONALLY INCLUDE THE FOLLOWING RIGHTS: (1) THE RIGHT OF THE CITY TO CHANGE THE SIZE OF ANY FACILITIES INSTALLED, MAINTAINED, OR OPERATED WITHIN THE EASEMENT AREA; (2) THE RIGHT OF THE CITY TO RELOCATE ANY FACILITIES WITHIN THE EASEMENT AREA; AND (3) THE RIGHT OF THE CITY TO REMOVE FROM THE EASEMENT AREA ALL TREES AND PARTS THEREOF, OR OTHER OBSTRUCTIONS, WHICH ENDANGER OR MAY INTERFERE WITH THE EFFICIENCY AND MAINTENANCE OF ANY FACILITIES WITHIN THE EASEMENT AREA.
20. THIS PLAT IS SUBJECT TO THE PROVISIONS OF THE CITY OF GEORGETOWN WATER CONSERVATION ORDINANCE.
21. THE SUBDIVISION SUBJECT TO THIS APPLICATION IS SUBJECT TO THE WATER QUALITY REGULATIONS OF THE CITY OF GEORGETOWN.
22. A GEOLOGIC ASSESSMENT, IN ACCORDANCE WITH THE CITY OF GEORGETOWN WATER QUALITY REGULATIONS, WAS COMPLETED ON JANUARY 2015. ANY SPRINGS AND STREAMS AS IDENTIFIED IN THE GEOLOGIC ASSESSMENT ARE SHOWN HEREIN.
23. STATE-OWNED RIVERBEDS AND BEDS OF NAVIGABLE STREAMS IN THE PUBLIC DOMAIN ARE HELD IN TRUST FOR THE PUBLIC. THERE IS HEREBY GRANTED FOR THE USE AND BENEFIT OF THE PUBLIC A CONTINUING ACCESS EASEMENT FOR THE FREE AND UNOBSTRUCTED USE OF THE NAVIGABLE RIVER AND THE RIGHT OF PORTAGE ALONG ITS BANKS, ACROSS ANY PORTION OF THE PROPERTY BETWEEN THE MEAN HIGH-WATER MARKS OF THE RIVER IN ITS NATURAL STATE.
24. PARKLAND TO BE DEDICATED TO THE CITY OF GEORGETOWN BY DEED PRIOR TO RECORDATION OF FINAL PLAT.
25. TREE MITIGATION IS BEING DEFERRED TO THE FINAL PLAT AND CONSTRUCTION PLAN APPLICATIONS.

STATE OF TEXAS
BRIAN W. FALTESEK
105982
LICENSED
PROFESSIONAL ENGINEER
1-3-2024



LOCATION MAP
(1" = 2000')

GEORGETOWN
TEXAS

Approved by the City of Georgetown Planning Department on:

January 2, 2024

Per Section 3.08.070.E of the Unified Development Code, this Preliminary Plat will expire on **January 3, 2026** if a Final Plat is not recorded.

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	PRELIMINARY PLAT
3	PARCEL SUMMARY, CURVE TABLES, & ADJACENT PROPERTY OWNERS
4	TREE SCHEDULE
5	LEGAL DESCRIPTION

GENERAL INFORMATION
TOTAL ACREAGE: 68.55 ACRES
LINEAR FOOTAGE OF 50' ROW: 5258'
LINEAR FOOTAGE OF 90' ROW: 786'
TOTAL LINEAR FOOTAGE OF ROW: 6044'
ACREAGE OF ROW: 8.05 ACRES
NUMBER OF SINGLE FAMILY LOTS: 105
ACREAGE OF SINGLE FAMILY LOTS: 19.76 ACRES
NUMBER OF OPEN SPACE/LANDSCAPE LOTS: 3
ACREAGE OF OPEN SPACE/LANDSCAPE LOTS: 0.40 ACRES
NUMBER OF OPEN SPACE/LANDSCAPE & PASS-THROUGH LOTS: 1
ACREAGE OF OPEN SPACE/LANDSCAPE & PASS-THROUGH LOTS: 0.39 ACRES
NUMBER OF PEDESTRIAN ACCESS PASS-THROUGH LOTS: 1
ACREAGE OF PEDESTRIAN ACCESS PASS-THROUGH LOTS: 0.08 ACRES
NUMBER OF PRIVATE PARK/DRAINAGE LOTS: 1
ACREAGE OF PRIVATE PARK/DRAINAGE LOTS: 1.52 ACRES
NUMBER OF PUBLIC PARK LOTS: 1
ACREAGE OF PUBLIC PARK LOTS: 16.08 ACRES
NUMBER OF MULTI-FAMILY LOTS: 1
ACREAGE OF MULTI-FAMILY LOTS: 22.27 ACRES
NUMBER OF LOTS: 113
NUMBER OF BLOCKS: 5
PUD ORDINANCE: 2023-29

STREET SUMMARY

STREET NAME	STREET TYPE	ROW	FOC-FOC	CURB TYPE	CLEAR ZONE	DESIGN SPEED (MPH)
BLUFF EDGE LANE	4-LANE COLLECTOR	90'	2-25'/10' MEDIAN	VERTICAL	6.5'	35
BLUFF EDGE LANE	2-LANE COLLECTOR	50'	27'	VERTICAL	5'	30
CRESTHAVEN LANE	LOCAL STREET	50'	29	VERTICAL	5'	30
RIDGEWAY LANE	LOCAL STREET	50'	29	VERTICAL	5'	30
FIELDER DRIVE	LOCAL STREET	50'	29	VERTICAL	5'	30
FALLEN TREE COVE	LOCAL STREET	50'	29	VERTICAL	5'	30
BENT TREE DRIVE	LOCAL STREET	50'	29	VERTICAL	5'	30

LEGAL DESCRIPTION:
68.550 ACRES IN THE JOSEPH THOMPSON SURVEY, ABSTRACT 608 IN WILLIAMSON COUNTY, TEXAS.

OWNER / MANAGING PARTNER:
LAMY 2243 LTD.
1717 WEST 60TH STREET, SUITE 390
AUSTIN, TEXAS 78703

ENGINEER:
LJA ENGINEERING INC.
7500 RIALTO BLVD, BUILDING II, SUITE 100
AUSTIN, TEXAS 78735
CONTACT PERSON: BRIAN W. FALTESEK, P.E.
PHONE # (512) 439-4700
FAX # (512) 439-4716

SURVEYOR:
EARLY LAND SURVEYING, LLC
P.O. BOX 92588, AUSTIN, TEXAS 78709
AUSTIN, TEXAS 78709
CONTACT PERSON: JOE BEN EARLY, RPLS
PHONE # (512) 202-8631

SUBMITTAL DATE: DECEMBER 18, 2023

LJA Engineering
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

SHEET 1 OF 4
2023-12-PP

BLUFFVIEW SUBDIVISION PHASE 1
FINAL PLAT

REVISIONS
NO.	DESCRIPTION	BY	DATE

DATE: 1/12/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 FP1.dwg

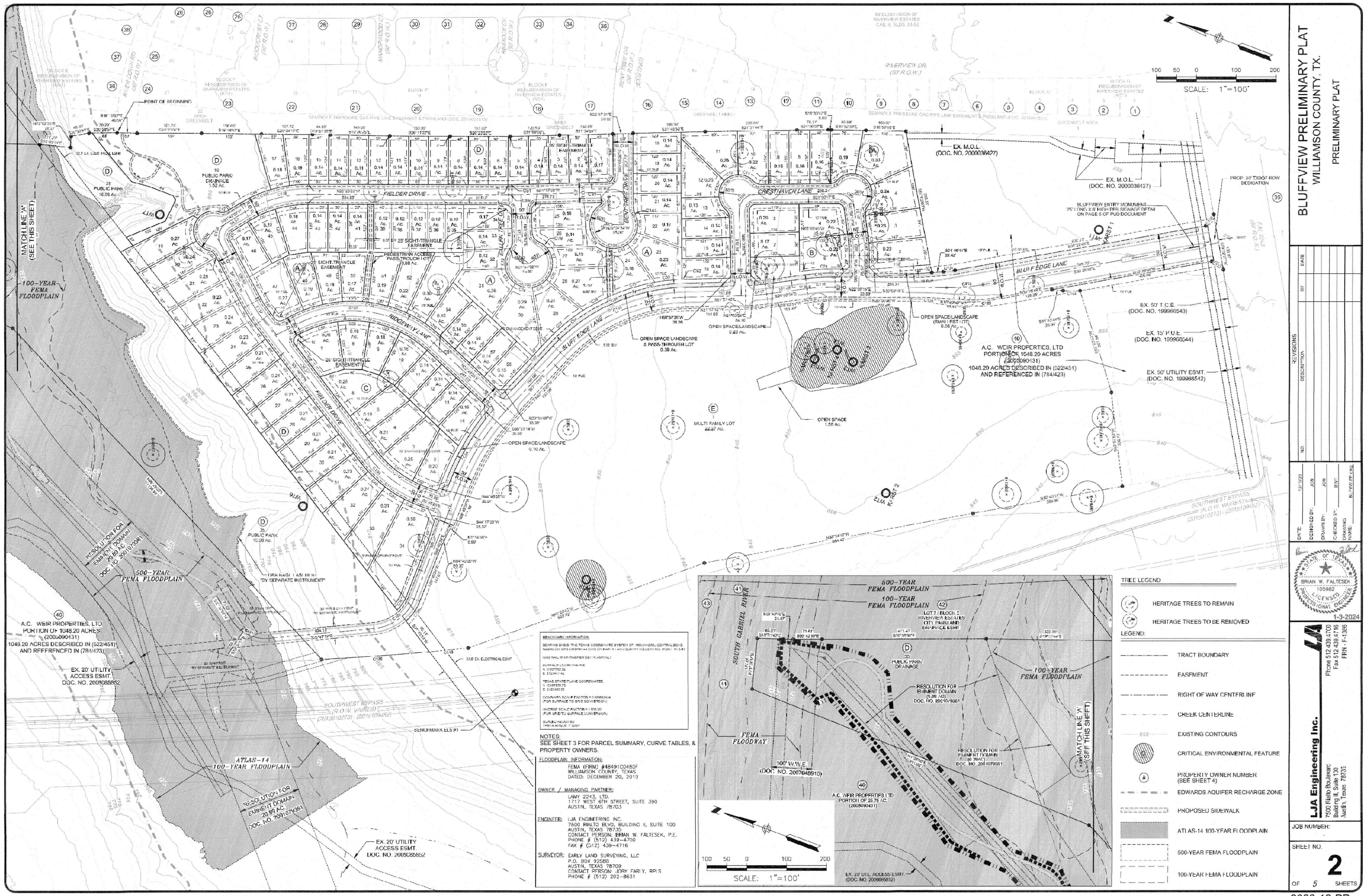
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-12-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 150
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

FP1

SHEET NO.
02
OF 93 SHEETS



2023-12-PP

BLUFFVIEW SUBDIVISION
PHASE 1

FINAL PLAT

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/12/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 FP2.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-12-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 150
Round Rock, Texas 78681
Phone 512.439.4700
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FRN-F-1386

JOB NUMBER:
####

FP2

SHEET NO.
03
OF 93 SHEETS

Date/Time : Fri, 12 Jan 2024 - 2:02pm User Name : ejlopez
Path/Name : G:\A140-0418 Bluffview\ACAD\Sheet Files\A140-0418 FP2.dwg

Block 'A' Parcel Table			
Parcel #	Area (AC.)	Area (S.F.)	Description
1	0.06	2812.42	Open Space Landscape
2	0.23	10053.58	Residential
3	0.23	9997.63	Residential
4	0.24	10652.09	Residential
5	0.33	14398.00	Residential
6	0.19	8433.30	Residential
7	0.16	7020.01	Residential
8	0.16	7019.42	Residential
9	0.16	6999.74	Residential
10	0.22	9415.21	Residential
11	0.26	11373.00	Residential
12	0.23	9820.38	Residential
13	0.13	5554.30	Residential
14	0.14	6037.05	Residential
15	0.14	6082.38	Residential
16	0.14	6299.83	Residential
17	0.39	17009.66	Open Space/Landscape & Pass-Through
18	0.14	6167.17	Residential
19	0.14	6000.00	Residential
20	0.14	6000.00	Residential

Block 'A' Parcel Table			
Parcel #	Area (AC.)	Area (S.F.)	Description
21	0.14	5985.85	Residential
22	0.17	7525.51	Residential
23	0.25	10739.35	Residential
24	0.18	7481.22	Residential
25	0.18	7971.32	Residential
26	0.14	6295.51	Residential
27	0.15	6699.27	Residential
28	0.27	11621.37	Residential
29	0.24	10618.40	Residential
30	0.29	12742.89	Residential
31	0.26	11364.81	Residential
32	0.12	5374.57	Residential
33	0.14	6087.17	Residential
34	0.17	7398.38	Residential
35	0.12	5400.00	Residential
36	0.12	5400.00	Residential
37	0.12	5400.00	Residential
38	0.12	5400.00	Residential
39	0.12	5408.64	Residential
40	0.08	3665.13	Pedestrian Access Pass-Through

Block 'A' Parcel Table			
Parcel #	Area (AC.)	Area (S.F.)	Description
41	0.14	5990.40	Residential
42	0.14	6000.00	Residential
43	0.14	6000.00	Residential
44	0.18	7875.97	Residential
45	0.17	7553.94	Residential
46	0.17	7544.00	Residential
47	0.27	11929.29	Residential
48	0.19	8451.19	Residential
49	0.18	7642.61	Residential
50	0.17	7465.66	Residential
51	0.19	8104.82	Residential
52	0.22	9430.95	Residential
53	0.30	12974.98	Residential
54	0.16	7099.79	Residential
55	0.14	6000.00	Residential
56	0.14	6000.00	Residential
57	0.14	6000.00	Residential
58	0.15	6445.54	Residential

Block 'B' Parcel Table			
Parcel #	Area (AC.)	Area (S.F.)	Description
1	0.23	9836.86	Open Space Landscape
2	0.17	7401.83	Residential
3	0.20	8785.00	Residential
4	0.22	9679.10	Residential
5	0.23	10062.30	Residential

Block 'C' Parcel Table			
Parcel #	Area (AC.)	Area (S.F.)	Description
1	0.11	4250.33	Open Space Landscape
2	0.20	8559.29	Residential
3	0.25	11034.78	Residential
4	0.21	9168.58	Residential
5	0.19	8278.39	Residential
6	0.26	11448.32	Residential
7	0.26	11317.56	Residential
8	0.18	7667.13	Residential
9	0.18	7676.66	Residential
10	0.18	7676.66	Residential
11	0.14	6000.00	Residential
12	0.14	6000.00	Residential
13	0.14	6000.00	Residential
14	0.16	7109.60	Residential

Block 'D' Parcel Table			
Parcel #	Area (AC.)	Area (S.F.)	Description
1	0.17	7351.20	Residential
2	0.14	6023.21	Residential
3	0.14	6024.64	Residential
4	0.14	6023.50	Residential
5	0.14	6218.62	Residential
6	0.14	6022.37	Residential
7	0.14	6022.38	Residential
8	0.14	6022.42	Residential
9	0.14	6027.41	Residential
10	0.14	6036.14	Residential
11	0.14	6044.94	Residential
12	0.14	6074.11	Residential
13	0.14	6119.90	Residential
14	0.14	6165.74	Residential
15	0.14	6218.60	Residential
16	0.16	7169.10	Residential
17	0.18	7880.29	Residential
18	1.52	66379.66	Public Park Drainage
19	0.27	11809.37	Residential
20	0.24	10561.70	Residential

Block 'D' Parcel Table			
Parcel #	Area (AC.)	Area (S.F.)	Description
21	0.25	10715.55	Residential
22	0.23	10120.92	Residential
23	0.24	10487.03	Residential
24	0.23	10163.56	Residential
25	0.21	9210.96	Residential
26	0.21	9210.96	Residential
27	0.21	9210.96	Residential
28	0.21	9210.96	Residential
29	0.21	9210.96	Residential
30	0.21	9210.96	Residential
31	0.23	10019.34	Residential
32	0.27	11559.56	Residential
33	0.31	13636.13	Residential
34	0.56	24211.19	Residential
35	16.08	700559.58	Public Park

Block 'D' Parcel Table			
Parcel #	Area (AC.)	Area (S.F.)	Description
1	22.27	970124.76	Multi-Family

NOTE:
SMALLEST OPEN SPACE LOT: LOT 1 (BLOCK A)
SMALLEST SINGLE FAMILY LOTS: LOT 35, 36, 37, & 38 (BLOCK A)

PROPERTY OWNERS

1. WILMA STULL
103 RIVERVIEW DR.
GEORGETOWN, TX. 78628

2. CHRISTOPHER D. & CARRIE A WOOD
105 RIVERVIEW DR.
GEORGETOWN, TX. 78628

3. MARIA V. & ALEJANDRO MARTINEZ &
FILIBERTO L. CARBAJAL &
NAIM L. CARBAJAL JARAMILLO
107 RIVERVIEW DR.
GEORGETOWN, TX. 78628

4. STEVEN & BRANDI BRISCOE MEDFORD
109 RIVERVIEW DR.
GEORGETOWN, TX. 78628

5. TARAS SHYNKAR
111 RIVERVIEW DR.
GEORGETOWN, TX. 78628

6. UNKOWN
113 RIVERVIEW DR.
GEORGETOWN, TX. 78628

7. DOROTHY F (LE) HARLAND
115 RIVERVIEW DR.
GEORGETOWN, TX. 78628

8. MELINDA E. FRITSCHLE
201 RIVERVIEW DR.
GEORGETOWN, TX. 78628

9. MCCARROLL TRUST
JOHN B. TRUSTEE
203 RIVERVIEW DR.
GEORGETOWN, TX. 78628

10. ROBERT L. & ELIZABETH A. LASHUS
205 RIVERVIEW DR.
GEORGETOWN, TX. 78628

11. STANLEY R. & DARLENE T. DAVIS
207 RIVERVIEW DR.
GEORGETOWN, TX. 78628

12. HORACIO GUTIERREZ & JULIA A. RAMIREZ
301 RIVERVIEW DR.
GEORGETOWN, TX. 78628

13. MELISSA A. MACALUSO
303 RIVERVIEW DR
GEORGETOWN, TX. 78628

14. JUDITH E. SCHOOLING
305 RIVERVIEW DR.
GEORGETOWN, TX. 78628

15. KRISTEN & DANIEL NEHRIG
307 RIVERVIEW DR.
GEORGETOWN, TX. 78628

16. MARIANNE BAUM
309 RIVERVIEW DR.
GEORGETOWN, TX. 78628

17. GARRETT & ELIZABETH LINDHOLM
102 BENT TREE DR.
GEORGETOWN, TX. 78628

18. ERIC SCOTT & GUADALUPE SUDDUTH
103 RIM ROCK CV.
GEORGETOWN, TX. 78628

19. DEBORAH S. GERNES
102 RIM ROCK CV.
GEORGETOWN, TX. 78628

20. CRAIG R. & SHANNON S. CRAWFORD
103 MANORWOOD CT.
GEORGETOWN, TX. 78628

21. TEREK T. RICHELLE BROWN
102 MANORWOOD CT.
GEORGETOWN, TX. 78628

22. STEPHEN D. & JILLYNN G. SHAVER
103 WOODCREST CT.
GEORGETOWN, TX 78628

23. DANIEL LAWRENCE & DANIELLE BETH STRONG
102 WOODCREST CT.
GEORGETOWN, TX. 78628

24. FREDERICK GEORGE & CHARMAINE POLLNITZ
705 RIVER DOWN RD.
GEORGETOWN, TX 78628

25. DONALD BARTON III & MELINDA R KEITH
703 RIVER DOWN RD.
GEORGETOWN, TX. 78628

26. BRENT K. & KRISTIN A. ABRAHAM
515 RIVERVIEW DR.
GEORGETOWN, TX. 78628

27. MATHEW HAROLD & KARRIE GUTOWSKI FATH
511 RIVERVIEW DR.
GEORGETOWN, TX. 78628

28. STEVEN & LYNDSEY TESTONE
509 RIVERVIEW DR.
GEORGETOWN, TX. 78628

29. ERIC & KELLY SEAMAN
507 RIVERVIEW DR.
GEORGETOWN, TX. 78628

30. CASEY J. DOLL, JOHN T. BELLOWS
505 RIVERVIEW DR
GEORGETOWN, TX. 78628

31. JOSHUA J. CALLIE G. WUTHRICH
503 RIVERVIEW DR.
GEORGETOWN, TX 78628

32. JOHN SAENZ
501 RIVERVIEW DR.
GEORGETOWN, TX. 78628

33. KEVIN & DEBORAH BOURN
405 RIVERVIEW DR.
GEORGETOWN, TX. 78628

34. RONALD J. STRASSER
403 RIVERVIEW DR.
GEORGETOWN, TX. 78628

35. DUSTY H. BREWER
401 RIVERVIEW DR.
GEORGETOWN, TX. 78628

36. JAMES A. & ANDREA W. EJELSTUL
706 RIVER DOWN RD.
GEORGETOWN, TX. 78628

37. ED MERSIOSKY
704 RIVER DOWN RD
GEORGETOWN, TX. 78628

38. LESTER GARLAND & SHARON LEE FRAZIER
702 RIVER DOWN RD.
GEORGETOWN, TX. 78628

39. TEXAS CRUSHED STONE
WEIR RANCH RD.
GEORGETOWN, TX. 78626

40. A C WEIR PROPERTIES LTD
1000 WEIR RANCH RD.
GEORGETOWN, TX. 78628

41. H4 GEORGETOWN LP
FM 2243
GEORGETOWN, TX. 78628

42. CITY OF GEORGETOWN
610 RIVER DOWN RD.
GEORGETOWN, TX 78628

43. H4 GEORGETOWN PHASE 1 LLC
FM 2243
GEORGETOWN, TX. 78628

Curve Table						
Curve #	Delta	Rad	Arc	Tan	Chord	Chord Bearing
C2	5°48'44"	325.00	32.97	16.50	32.96	N67°04'52"E
C3	2°11'17"	325.00	12.41	6.21	12.41	N63°04'51"E
C4	48°11'23"	25.00	21.03	11.18	20.41	S86°04'54"W
C5	65°06'00"	50.00	56.81	31.91	53.80	N77°37'36"E
C6	55°51'52"	50.00	48.75	26.51	46.84	N17°08'40"E
C7	58°24'54"	50.00	50.98	27.95	48.80	N39°59'43"W
C8	42°46'25"	25.00	18.66	9.79	18.23	S47°46'57"E
C9	5°24'58"	25.00	2.36	1.18	2.36	S23°43'16"E
C10	48°11'23"	25.00	21.03	11.18	20.41	S3°04'54"W
C11	49°07'29"	50.00	42.87	22.85	41.57	N2°36'51"E
C12	44°31'57"	50.00	38.86	20.47	37.89	N44°12'51"W
C13	50°38'30"	50.00	44.19	23.66	42.77	S88°11'55"W
C14	43°00'56"	50.00	37.54	19.70	36.66	S41°22'12"W
C15	48°11'23"	25.00	21.03	11.18	20.41	N43°57'26"E
C18	8°03'08"	525.00	73.78	36.95	73.72	S24°02'20"E
C19	01°20'29"	475.00	11.12	5.56	11.12	N27°23'40"W

Curve Table						
Curve #	Delta	Rad	Arc	Tan	Chord	Chord Bearing
C21	90°56'06"	15.00	23.81	15.25	21.39	N66°28'50"W
C22	87°04'25"	15.58	23.68	14.80	21.46	N18°20'47"E
C23	8°00'01"	275.00	38.40	19.23	38.37	N65°59'13"E
C24	8°01'59"	545.00	74.41	38.27	76.35	S24°01'45"E
C26	45°14'21"	470.00	371.10	195.83	361.53	N44°34'53"W
C27	13°44'29"	490.00	117.52	59.04	117.24	N60°19'48"W
C28	8°02'32"	490.00	68.78	34.45	68.72	N49°26'16"W
C29	21°33'25"	490.00	184.36	93.28	183.27	N32°44'24"W
C30	21°33'25"	490.00	184.36	93.28	183.27	N32°44'24"W
C31	151°05'26"	2.00	5.27	7.76	3.87	S53°35'35"W
C32	64°39'04"	60.00	67.70	37.98	64.17	N83°11'14"W
C33	39°37'11"	60.00	41.49	21.61	40.67	S36°21'06"E
C34	35°25'05"	60.00	37.09	19.16	36.50	S73°52'14"E
C35	46°25'08"	60.00	48.61	25.73	47.29	N65°12'39"E
C36	24°30'40"	99.50	42.57	21.61	42.24	S76°30'05"E
C38	7°37'36"	325.00	43.26	21.66	43.23	S3°02'23"W
C39	10°07'27"	325.00	57.43	28.79	57.35	S11°54'54"W
C40	10°07'27"	325.00	57.43	28.79	57.35	S22°02'21"W

Curve Table						
Curve #	Delta	Rad	Arc	Tan	Chord	Chord Bearing
C41	4°43'34"	325.00	26.81	13.41	26.80	S29°27'52"W
C42	2°50'52"	325.00	16.72	8.36	16.72	S33°18'05"W
C43	48°11'23"	25.00	21.03	11.18	20.41	N16°43'28"E
C44	46°39'13"	50.00	40.71	21.56	39.60	S15°57'23"W
C45	69°15'26"	50.00	60.44	34.53	56.83	S73°54'43"W
C46	67°56'54"	50.00	59.30	33.69	55.88	N37°29'07"W
C47	48°11'23"	25.00	21.03	11.18	20.41	S27°36'22"E
C48	14°56'09"	325.00	84.72	42.60	84.48	N44°13'59"W
C49	8°20'00"	325.00	47.84	23.96	47.79	N32°32'54"W
C50	7°56'31"	325.00	45.05	22.56	45.01	N24°21'38"W
C51	1°33'45"	275.00	7.50	3.75	7.50	S21°10'16"E
C52	88°57'26"	15.00	23.29	14.73	21.02	S66°25'51"E
C54	17°20'50"	625.00	178.20	89.71	177.59	S80°35'20"E
C56	16°20'09"	275.00	81.28	40.94	80.96	N14°12'24"E
C57	16°56'03"	275.00	81.28	40.94	80.98	N2°43'40"W
C58	16°54'47"	275.00	81.18	40.89	80.88	N19°39'05"W
C59	20°03'53"	275.00	96.30	48.65	95.81	N38°08'25"W
C60	3°23'56"	275.00	16.31	8.16	16.31	S30°07'41"W

Curve Table						
Curve #	Delta	Rad	Arc	Tan	Chord	Chord Bearing
C61	20°57'05"	275.00	100.56	50.85	100.00	S17°57'11"W
C62	8°15'03"	275.00	39.60	19.84	39.57	S3°21'06"W
C63	6°26'31"	325.00	36.54	18.29	36.52	S37°59'47"W
C64	80°00'00"	15.00	20.94	12.50	19.28	S8°10'21"E
C65	9°23'22"	275.00	45.07	22.58	45.02	S36°31'20"W
C66	88°4'20"	15.00	23.06	14.51	20.86	S85°15'34"W
C67	14°09'18"	275.00	67.94	34.14	67.77	N44°37'24"W
C68	17°09'22"	275.00	82.34	41.48	82.04	N28°58'04"W
C69	1°33'45"	300.00	8.18	4.04	8.07	N21°09'38"W
C70	88°26'15"	15.00	23.15	14.60	20.92	S23°49'44"W
C71	40°07'09"	25.00	17.51	9.13	17.15	N88°06'26"E
C72	50°56'45"	60.00	53.35	28.58	51.61	S82°23'49"W
C73	43°44'11"	60.00	45.80	24.08	44.70	S35°03'21"W
C74	42°15'51"	60.00	44.26	23.19	43.26	S07°56'40"E
C75	39°32'59"	60.00	41.42	21.57	40.60	S48°51'06"E
C76	32°12'06"	60.00	33.72	17.32	33.28	S04°43'39"E
C77	50°56'45"	60.00	53.35	28.58	51.61	N53°41'54"E
C78	25°51'44"	60.00	27.08	13.78	26.85	S15°17'40"W
C79	81°01'44"	60.00	84.85	51.27	77.96	N23°58'22"E
C80	90°00'00"	15.00	23.56	15.00	21.21	N66°57'08"W

Curve Table						
Curve #	Delta	Rad	Arc	Tan	Chord	Chord Bearing
C81	100°00'00"	15.00	26.18	17.88	22.98	S81°49'39"W
C82	5°51'12"	325.00	33.20	16.62	33.19	N45°14'45"W
C83	8°49'24"	325.00	50.05	25.07	50.00	N37°54'27"W
C84	8°49'24"	325.00	50.05	25.07	50.00	N29°05'02"W
C85	8°49'24"	325.00	50.05	25.07	50.00	N20°15'38"W
C86	2°38'41"	325.00	15.00	7.50	15.00	N14°31'35"W
C87	8°49'24"	325.00	50.05	25.07	50.00	N8°47'33"W
C88	8°49'24"	325.00	50.05	25.07	50.00	N0°01'52"E
C89	9°20'11"	325.00	52.96	26.54	52.90	N9°06'39"E
C90	8°36'19"	325.00	48.81	24.45	48.77	N18°04'54"E
C91	0°17'22"	325.00	1.64	0.82	1.64	N22°31'44"E
C92	21°33'25"	490.00	184.36	93.28	183.27	N32°44'24"W
C93	21°33'25"	490.00	184.36	93.28	183.27	N32°44'24"W
C94	21°47'01"	490.00	186.30	94.29	185.18	N56°18'33"W
C95	187°18'52"	50.00	163.46	782.27	99.80	N66°28'50"W
C96	179°22'46"	50.00	156.54	9231.79	100.00	N20°29'13"E
C97	8°00'01"	325.00	45.38	22.73	45.34	N65°59'13"E
C98	8°00'01"	300.00	41.89	20.98	41.86	S65°59'13"W
C99	83°00'00"	40.00	57.94	35.39	53.01	S20°29'13"W
C100	90°56'06"	40.00	63.48	40.66	57.03	S66°20'50"E

Curve Table						
Curve #	Delta	Rad	Arc	Tan	Chord	Chord Bearing
C101	208°07'13"	60.00	200.76	62.00	96.23	N04°55'19"W
C102	285°48'12"	60.00	299.29	45.37	72.38	N34°44'06"W
C103	65°41'03"	25.00	28.66	16.14	27.12	S35°12'20"W
C105	31°18'40"	275.00	150.28	77.07	148.42	N36°02'43"W
C106	31°18'40"	325.00	177.61	91.08	175.41	N36°02'43"W
C108	87°27'31"	40.50	61.82	38.74	55.99	S84°56'49"W
C109	183°51'33"	50.00	160.45	1484.08	99.94	S84°33'33"W
C110	9°23'22"	325.00	53.26	26.29	53.20	S30°31'20"W
C112	32°36'04"	275.00	156.47	80.42	154.37	S15°31'37"W
C113	32°36'04"	325.00	184.92	95.04	182.44	S15°31'37"W
C115	10°28'03"	500.00	91.35	45.80	91.22	S25°14'48"E
C116	8°03'08"	500.00	70.27	35.19	70.21	S24°02'20"E
C117	6°00'12"	500.00	53.28	26.66	53.24	S25°00'48"E
C118	45°14'21"	445.00	351.36	185.41	342.30	S44°34'53"E
C119	21°33'21"	600.00	225.73	114.22	224.40	S77°58'44"E
C120	62°58'14"	120.00	131.89	73.49	125.35	S57°16'19"E
C121	63°24'20"	100.00	110.66	61.77	105.10	S5°54'58"W
C122	90°01'16"	25.00	39.28	25.01	35.36	N14°31'49"E
C123	13°38'56"	313.50	74.68	37.52	74.50	N23°39'21"W
C124	3°10'53"	500.00	27.76	13.88	27.76	N18°25'20"W

Curve Table						
Curve #	Delta	Rad	Arc	Tan	Chord	Chord Bearing
C125	8°03'08"	475.00	66.70	33.40	66.70	S24°02'20"E
C126	6°06'12"	525.00	55.92	27.99	55.90	S25°00'48"E
C127	45°14'21"	420.00	331.62	175.00	323.07	N44°34'53"W
C128	21°33'21"	575.00	216.33	109.46	215.05	N77°58'44"W
C129	24°05'20"	147.72	62.11	31.52	61.65	N76°42'45"W
C130	2°15'41"	6870.00	271.14	135.59	271.12	N24°29'25"W
C131	5°48'05"	288.00	29.16	14.59	29.15	S27°34'47"E
C132	89°58'44"	25.00	39.26	24.99	35.35	S75°20'11"E
C133	70°50'47"	275.00	340.04	195.60	318.79	N12°44'58"W
C135	70°50'47"	325.00	401.86	231.16	376.75	N12°44'58"W
C136	32°36'04"	300.00	170.70	87.73	168.41	S15°31'37"W
C137	9°23'22"	300.00	49.16	24.64	49.11	S36°31'20"W
C138	31°18'40"	300.00	163.94	84.08	161.91	N36°02'43"W
C139	70°50'47"	300.00	370.95	213.38	347.77	N12°44'58"W
C140	28°04'20"	25.00	12.25	6.25	12.13	N55°03'15"E
C141	70°50'47"	60.00	1.03	0.51	1.03	S41°30'35"W
C142	00°17'49"	60.00	0.31	0.16	0.31	N71°58'54"W
C143	00°48'55"	6870.00	97.75	46.88	97.75	N26°01'43"W
C144	09°04'48"	267.50	42.39	21.04	42.35	S20°17'38"W

BLUFFVIEW PRELIMINARY PLAT
WILLIAMSON COUNTY, TX.
PARCEL SUMMARY, CURVE TABLES, & ADJACENT PROPERTY OWNERS

LJA Engineering, Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN - F-1386

BRIAN W. FALTESEK
105952
1-3-2024

JOB NUMBER:
SHEET NO.
3
OF 5 SHEETS
2023-12-PP

BLUFFVIEW SUBDIVISION
PHASE 1
FINAL PLAT

REVISIONS
NO. | DESCRIPTION | BY | DATE

DATE: 1/12/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME:

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-12-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 150
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:
####
FP3
SHEET NO.
04
OF 93 SHEETS

Date/Time : Fri, 12 Jan 2024 - 2:03pm
User Name : ejlopez
PathName : G:\A140-0418 Bluffview\ACAD\Sheet Files\A140-0418 FP3.dwg

Phase 1 Tree Schedule				
Key	Tree #	Size (Individual Trunks, inches)	Half Critical Root Zone (feet)	Species
R-HT	5008	26	13	Live Oak
R-HT	5127	33 (19, 16, 12)	16.5	Post Oak
HT	5132	28 (20, 16)	14	Live Oak
HT	5149	27	13.5	Live Oak
R-HT	5252	28	14	Live Oak
R-HT	5481	27 (19, 16)	13.5	Live Oak
R-HT	5532	26.5 (15, 12, 11)	13.25	Cedar Elm
R-HT	5551	26.5 (22, 9)	13.25	Live Oak
R-HT	5573	26 (18, 16)	13	Live Oak
HT	5576	39.5 (22, 20, 15)	19.75	Live Oak
HT	5645	28 (19, 18)	14	Live Oak
R-HT	5854	28.5 (19, 19)	14.25	Live Oak
HT	11408+D	30	15	Pecan
R-HT	12022+B	29	14.5	Live Oak
HT	12023+B	29	14.5	Live Oak
R-HT	12035+B	27	13.5	Live Oak
R-HT	12043+B	32	16	Live Oak
HT	18706+B	26	13	Live Oak
HT	20902+B	32.5 (23, 19)	16.25	Live Oak
R-HT	20904+B	30 (15, 11, 11, 8)	15	Live Oak
R-HT	20905+B	31 (13, 12, 11, 7, 6)	15.5	Live Oak
HT	20906+B	39 (20, 19, 19)	19.5	Live Oak
R-HT	20907+B	28.5 (20, 17)	14.25	Live Oak
R-HT	20910+B	32 (16, 12, 12, 8)	16	Live Oak
R-HT	20913+B	35.5 (23, 13, 12)	17.75	Live Oak
HT	20926+B	29	14.5	Red Oak
Legend	P = Protected HT = Heritage Tree R = Removal of Protected Tree R-HT = Removal of Heritage Tree D – Dead or Diseased			
Mitigation	Heritage Inches Removed	452.25		
	Heritage Inches Mitigated	1356.75		

Phase 2 Tree Schedule				
Key	Tree #	Size (Individual Trunks, inches)	Half Critical Root Zone (feet)	Species
P	5032	18	9	Live Oak
P	5033	16	8	Live Oak
P	5034	21.5 (15, 13)	10.75	Live Oak
P	5035	12	6	Live Oak
P	5036	20	10	Live Oak
P	5037	16	8	Live Oak
P	5038	21	10.5	Live Oak
P	5039	23.5 (14, 11, 8)	11.75	Live Oak
P	5040	23	11.5	Live Oak
P	5041	18	9	Live Oak
P	5042	16	8	Live Oak
P	5043	13	6.5	Live Oak
P	5044	15	7.5	Live Oak
P	5045	16	8	Live Oak
P	5046	18	9	Live Oak
P	5047	16	8	Live Oak
P	5048	20	10	Live Oak
P	5049	21	10.5	Live Oak
P	5050	13	6.5	Live Oak
P	5051	14	7	Live Oak
P	5052	20	10	Live Oak
P	5053	16	8	Live Oak
P	5054	14	7	Live Oak
P	5055	13	6.5	Live Oak
P	5056	20	10	Live Oak
P	5057	16	8	Live Oak
HT	5058	27	13.5	Live Oak
P	5064	18 (12, 12)	9	Live Oak
P	5066	15	7.5	Live Oak
R	5069	20	10	Live Oak
P	5070	15	7.5	Live Oak
P	5071	15	7.5	Live Oak
P	5072	13	6.5	Live Oak
P	5073	19	9.5	Live Oak
P	5074	13	6.5	Live Oak
P	5075	12	6	Live Oak
P	5076	16	8	Live Oak
P	5077	14	7	Live Oak
P	5078	21	10.5	Live Oak
P	5079	16	8	Live Oak
P	5080	13	6.5	Live Oak
P	5081	17	8.5	Live Oak
P	5082	22.5 (12, 11, 10)	11.25	Live Oak
P	5083	18	9	Live Oak
P	5084	17.5 (13, 9)	8.75	Live Oak
P	5085	13	6.5	Live Oak
P	5086	14	7	Live Oak
P	5087	17	8.5	Live Oak
HT	5088	26	13	Live Oak
P	5089	20	10	Live Oak
P	5090	17	8.5	Live Oak
P	5091	22	11	Live Oak
P	5092	14	7	Live Oak
P	5093	18	9	Live Oak
P	5094	13	6.5	Live Oak
P	5095	12	6	Live Oak
P	5096	18	9	Live Oak
P	5097	20	10	Live Oak
P	5098	17	8.5	Live Oak
P	5099	16	8	Live Oak
P	5100	20	10	Live Oak
P	5101	20	10	Live Oak
P	5102	19	9.5	Live Oak
P	5103	24	12	Live Oak
P	5104	22	11	Live Oak
P	5105	22	11	Live Oak
P	5106	20	10	Live Oak
P	5107	17	8.5	Live Oak
P	5108	13	6.5	Live Oak
P	5109	13	6.5	Live Oak
P	5110	13	6.5	Live Oak
P	5111	14	7	Live Oak
P	5112	16	8	Live Oak
P	5113	16	8	Live Oak
P	5114	13	6.5	Live Oak
P	5115	18	9	Live Oak
P	5116	19	9.5	Live Oak
P	5117	12	6	Live Oak
P	5118	23	11.5	Live Oak
P	5119	23	11.5	Live Oak
P	5120	19	9.5	Live Oak
P	5156	14	7	Cedar Elm
P	5157	23	11.5	Live Oak
P	5158	25 (17, 16)	12.5	Live Oak
P	5159	16	8	Live Oak
P	5160	16	8	Live Oak
P	5161	15	7.5	Live Oak
P	5162	13	6.5	Live Oak
P	5163	14	7	Live Oak
P	5164	21	10.5	Live Oak
P	5165	13	6.5	Live Oak
P	5166	13	6.5	Live Oak
P	5167	12	6	Live Oak
P	5168	12	6	Cedar Elm
P	5169	12	6	Live Oak
P	5170	15	7.5	Live Oak
P	5171	15.5 (12, 7)	7.75	Live Oak
P	5172	19	9.5	Live Oak
P	5173	16	8	Live Oak
P	5174	23	11.5	Live Oak
R-HT	5196	26	13	Live Oak
R	5197	12	6	Live Oak
P	5198	21.5 (15, 13)	10.75	Live Oak
P	5199	20	10	Live Oak
P	5200	21	10.5	Live Oak
P	5201	13	6.5	Live Oak
P	5202	16	8	Live Oak
R	5203	16	8	Live Oak
R	5204	16	8	Live Oak
P	5206	12	6	Live Oak
P	5207	20 (16, 8)	10	Live Oak
P	5214	15	7.5	Live Oak
P	5215	15	7.5	Live Oak
P	5216	12	6	Live Oak
P	5217	14	7	Live Oak
P	5218	13	6.5	Live Oak
HT	5219	28	14	Live Oak
P	5220	12	6	Live Oak
P	5221	12	6	Live Oak
P	5222	14	7	Live Oak
P	5223	15	7.5	Live Oak
HT	5224	26.5 (21, 11)	13.25	Live Oak
P	5225	18	9	Live Oak
P	5226	16	8	Live Oak
R	5230	12	6	Live Oak
P	5231	15	7.5	Live Oak
R	5232	14	7	Live Oak
P	5235	13	6.5	Live Oak
P	5236	14	7	Live Oak
P	5237	14	7	Live Oak
P	5238	15	7.5	Live Oak
P	5239	20	10	Live Oak
P	5240	15	7.5	Live Oak
P	5241	25 (18, 14)	12.5	Live Oak
P	5242	16	8	Live Oak
P	5243	12	6	Live Oak
P	5244	15	7.5	Live Oak
P	5245	19	9.5	Live Oak
P	5246	14	7	Live Oak
P	5247	13	6.5	Live Oak
P	5248	20	10	Live Oak
P	5249	18	9	Live Oak
P	5250	18	9	Live Oak
R	5279	15	7.5	Live Oak
P	5280	14	7	Live Oak
P	5281	12	6	Live Oak
P	5282	13	6.5	Live Oak
P	5283	18	9	Live Oak
P	5284	13	6.5	Live Oak
P	5285	12	6	Live Oak
P	5286	12	6	Live Oak
P	5287	13	6.5	Live Oak
P	5289	13	6.5	Live Oak
P	5290	12	6	Live Oak
P	5291	13	6.5	Live Oak
P	5292	12	6	Live Oak
P	5293	14	7	Live Oak
P	5294	13	6.5	Live Oak
P	5295	15	7.5	Live Oak
P	5296	13	6.5	Live Oak
P	5302	15	7.5	Live Oak
P	5308	19	9.5	Live Oak
P	5309	17	8.5	Live Oak
P	5310	12	6	Live Oak
P	5311	12	6	Live Oak
P	5312	12	6	Live Oak
P	5313	13	6.5	Live Oak
P	5314	18.5 (15, 7)	9.25	Live Oak
P	5315	13	6.5	Live Oak
P	5316	12	6	Live Oak
P	5317	13	6.5	Live Oak
P	5318	14	7	Live Oak
P	5319	14	7	Live Oak
P	5320	12	6	Live Oak
P	5321	15	7.5	Live Oak
P	5322	12	6	Live Oak
P	5323	12	6	Live Oak
P	5324	14	7	Live Oak
P	5325	14	7	Live Oak
P	5326	12	6	Live Oak
P	5327	14	7	Live Oak
P	5328	14	7	Live Oak
P	5329	13	6.5	Live Oak
P	5330	13	6.5	Live Oak
P	5331	12	6	Live Oak
P	5332	12	6	Live Oak
P	5333	14	7	Live Oak
P	5334	15	7.5	Live Oak
P	5335	13	6.5	Live Oak
P	5336	12	6	Live Oak
P	5337	12	6	Live Oak
P	5338	13	6.5	Live Oak
P	5339	12	6	Live Oak
P	5340	13	6.5	Live Oak
P	5341	13	6.5	Live Oak
P	5342	14	7	Live Oak
P	5343	12	6	Live Oak
P	5344	12	6	Live Oak
P	5345	14	7	Live Oak
P	5346	16	8	Live Oak
P	5347	16	8	Live Oak
P	5348	17	8.5	Live Oak
P	5349	12	6	Live Oak
P	5350	16.5 (12, 9)	8.25	Live Oak
P	5351	14	7	Live Oak
P	5352	15	7.5	Cedar Elm
P	5353	13	6.5	Live Oak
P	5354	14	7	Live Oak
P	5355	16	8	Live Oak
P	5356	15	7.5	Live Oak
P	5357	16	8	Live Oak
P	5358	17	8.5	Live Oak
P	5359	17	8.5	Live Oak
P	5360	14	7	Live Oak
P	5361	12	6	Live Oak
P	5362	15	7.5	Live Oak
P	5363	16 (12, 8)	8	Live Oak
P	5364	22 (16, 12)	11	Live Oak
P	5365	16	8	Live Oak
P	5366	13	6.5	Live Oak
P	5367	20 (14, 12)	10	Live Oak
P	5368	20 (14, 12)	10	Live Oak
P	5369	12	6	Live Oak
P	5370	12	6	Live Oak
P	5371	19.5 (12, 8, 7)	9.75	Live Oak
P	5372	13	6.5	Live Oak
P	5373	16	8	Live Oak
P	5374	17.5 (13, 9)	8.75	Live Oak
P	5375	17.5 (13, 9)	8.75	Live Oak
P	5376	12	6	Live Oak
P	5377	14	7	Live Oak
P	5378	13	6.5	Live Oak
P	5379	14	7	Live Oak
P	5380	12	6	Live Oak
P	5381	12	6	Live Oak
P	5382	12	6	Live Oak
P	5383	13	6.5	Live Oak
P	5384	12	6	Live Oak
P	5385	20	10	Live Oak
P	5386	15	7.5	Live Oak
P	5387	16	8	Live Oak
P	5388	13	6.5	Live Oak
P	5389	14	7	Live Oak
P	5390	15	7.5	Live Oak
P	5391	15	7.5	Live Oak
P	5392	12	6	Live Oak
P	5393	14	7	Live Oak
P	5394	19	9.5	Live Oak
P	5395	15	7.5	Live Oak
P	5396	15	7.5	Live Oak
P	5397	12	6	Live Oak
P	5398	13	6.5	Live Oak
P	5399	12	6	Live Oak
P	5400	12	6	Live Oak
P	5401	15	7.5	Live Oak
R	5456	12	6	Live Oak
R	5627	12	6	Live Oak
R	5700	18	9	Live Oak
R	5701	15	7.5	Live Oak
R	5702	14	7	Live Oak
R	5703	13	6.5	Live Oak
R	5704	13	6.5	Live Oak
P	5705	12	6	Live Oak
P	5706	12	6	Live Oak
P	5707	12	6	Live Oak
P	5716	12	6	Live Oak
P	5717	13	6.5	Live Oak
P	5718	13	6.5	Live Oak
P	5719	13	6.5	Live Oak
P	5720	15	7.5	Live Oak
P	5721	16 (12, 8)	8	Cedar Elm
P	5722	16	8	Live Oak
P	5723	16	8	Live Oak
P	5724	18	9	Cedar Elm
P	5725	15	7.5	Live Oak
P	5726	14	7	Live Oak
P	5727	13	6.5	Live Oak
P	5728	16	8	Live Oak
P	5729	19.5 (14, 11)	9.75	Live Oak
P	5730	19.5 (14, 11)	9.75	Live Oak
P	5731	21.5 (12, 10, 9)	10.75	Live Oak
P	5732	15	7.5	Live Oak
P	5733	18	9	Live Oak
P	5734	15	7.5	Live Oak
P	5735	12	6	Live Oak
P	5736	20.5 (16, 9)	10.25	Live Oak
P	5737	22 (15, 14)	11	Live Oak
P	5738	12	6	Live Oak
P	5739	14	7	Live Oak
P	5740	15	7.5	Live Oak
P	5741	18	9	Live Oak
P	5742	17	8.5	Live Oak
P	5743	13	6.5	Live Oak
P	5744	25	12.5	Live Oak
P	5745	25.5 (17, 17)	12.75	Live Oak
P	5746	12	6	Live Oak
P	5747	23 (19, 8)	11.5	Live Oak
HT	5748	31 (23, 16)	15.5	Live Oak
P	5749	19	9.5	Live Oak
P	5750	19	9.5	Live Oak
P	5751	15	7.5	Live Oak
P	5752	12	6	Live Oak
P	5753	12	6	Live Oak
P	5754	17	8.5	Live Oak
P	5755	17	8.5	Live Oak
P	5756	14	7	Live Oak
P	5757	12	6	Live Oak
P	5758	12	6	Live Oak
P	5759	15	7.5	Live Oak
P	5760	14	7	Live Oak
P	5761	20.5 (16, 9)	10.25	Live Oak
P	5762	15	7.5	Live Oak
P	5763	16	8	Live Oak
P	5764	18	9	Live Oak
P	5765	13	6.5	Live Oak
P	5766	17	8.5	Live Oak
P	5767	17	8.5	Live Oak
P	5768	18	9	Live Oak
P	5769	14	7	Live Oak
P	5770	14	7	Live Oak
P	5771	12	6	Live Oak
P	5772	17	8.5	Live Oak
P	5773	12	6	Live Oak
P	5774	12	6	Live Oak
P	5775	12	6	Live Oak
P	5776	16	8	Live Oak
P	5777	14	7	Live Oak
P	5778	12	6	Live Oak
P	5779	12	6	Live Oak
P	5780	12	6	Live Oak
P	5781	13	6.5	Live Oak
P	5782	13	6.5	Live Oak
P	5783	13	6.5	Live Oak
P	5784	12	6	Live Oak
P	5785	12	6	Live Oak
P	5786	14	7	Cedar Elm
P	5787	13	6.5	Live Oak
P	5788	19	9.5	Live Oak
P	5789	13	6.5	Live Oak
P	5790	13	6.5	Live Oak
P	5791	15	7.5	Live Oak
P	5792	15	7.5	Live Oak
P	5793	12	6	Live Oak
P	5794	12	6	Live Oak
P	5795	17	8.5	Live Oak
P	5796	16	8	Live Oak
P	5797	16	8	Live Oak
P	5798	16	8	Live Oak
P	5799	15	7.5	Live Oak
P	5800	15	7.5	Live Oak
P	5801	15	7.5	Cedar Elm
P	5802	18	9	Live Oak
P	5803	18	9	Live Oak
P	5804	14	7	Live Oak
P	5805	13	6.5	Live Oak
P	5806	23 (17, 12)	11.5	Live Oak
P	5807	19	9.5	Live Oak
P	5808	21	10.5	Live Oak
P	5809	20	10	Live Oak
P	5810	19	9.5	Live Oak
HT	5811	27	13.5	Live Oak
P	5812	19	9.5	Live Oak
P	5813	15	7.5	Live Oak
P	5814	16	8	Live Oak
P	5815	13	6.5	Live Oak
P	5816	13	6.5	Live Oak
P	5817	15	7.5	Live Oak
P	5818	16	8	Live Oak
P	5819	22	11	Live Oak
P	5820	19	9.5	Live Oak
P	5821	20	10	Live Oak
P	5822	25 (18, 14)	12.5	Live Oak
P	5823	19.5 (13, 13)	9.75	Live Oak
P	5824	15	7.5	Live Oak
P	5825	12	6	Live Oak
P	5826	12	6	Live Oak
R	5827	14	7	Live Oak
P	5828	14	7	Live Oak
P	5831	19.5 (15, 9)	9.75	Live Oak
P	5832	19 (13, 12)	9.5	Live Oak
P	5833	18	9	Live Oak
P	5834	20	10	Live Oak
HT	5835	26.5 (19, 15)	14.25	Live Oak
P	5836	21	10.5	Live Oak
P	5837	24.5 (11, 19)	12.25	Live Oak
P	5838	17	8.5	Live Oak
P	5839	20	10	Live Oak
P	5840	19 (14, 10)	9.5	Live Oak
P	5841	17	8.5	Live Oak
P	5842	18	9	Live Oak
P	5843	24.5 (18, 13)	12.25	Live Oak
P	5844	22 (17, 10)	11	Live Oak
P	5845	15	7.5	Live Oak
P	5846	20	10	Live Oak
P	5847	18	9	Live Oak
HT	5848	26 (18, 16)	13	Live Oak
P	5849	15	7.5	Live Oak
R	5850	24 (18, 12)	12	Live Oak
P	7134	23	11.5	Live Oak
P	7135	14	7	Live Oak
P	7136	16	8	Live Oak
P	7137	16	8	Live Oak
P	7138	13	6.5	Live Oak
P	7139	16	8	Live Oak
P	7140	12	6	Live Oak
P	7141	14	7	Live Oak
P	7142	15	7.5	Live Oak
P	7143	16	8	Live Oak
P	7144	22.5 (16, 13)	11.25	Live Oak
P	7145	23	11.5	Live Oak
P	7146	18	9	Live Oak
P	7147	15	7.5	Live Oak
P	7160	17	8.5	Live Oak
P	7161	21	10.5	Live Oak
P	7162	18	9	Live Oak
P	7163	17	8.5	Live Oak
P	7164	12	6	Live Oak
P	7165	16	8	Live Oak
P	7166	16	8	Live Oak
P	7168	17	8.5	Live Oak
P	7169	17	8.5	Live Oak
P	7170	12	6	Live Oak
P	7171	15	7.5	Live Oak
P	7172	16	8	Live Oak
P	7173	18	9	Live Oak
P	7174	13	6.5	Live Oak
P	7175	12	6	Live Oak
P	7176	12	6	Live Oak
P	7177	16	8	Live Oak
P	7191	16	8	Live Oak
P	7192	14	7	Live Oak
P	7193	15	7.5	Live Oak
P	18273+B	19	9.5	Live Oak
HT	18275+B	27.5 (22, 11)	13.75	Live Oak
P	18278+B	16	8	Live Oak
HT	18284+B	41 (30, 22)	20.5	Live Oak
HT	18286+B	28	14	Live Oak
P	18287+B	19	9.5	Live Oak
R	18306+B	24	12	Live Oak
R	18307+B	24.5 (17, 15)	12.25	Live Oak
P	18399+B	16	8	Live Oak
HT	18490+B	27 (20, 14)	13.5	Live Oak
P	18491+B	25	12.5	Live Oak
P	18497+B	17	8.5	Live Oak
P	18499+B	14	7	Live Oak
HT	18701+B	35.5 (25, 21)	17.75	Live Oak
HT	18702+B	26 (19, 14)	13	Live Oak
P	18703+B	16	8	Live Oak
HT	18704+B	26	13	Live Oak
HT	20903+B	36.5 (27, 19)	18.25	Live Oak
R HT	20908+B	26.5 (16, 11, 10)	13.25	Live Oak
HT	20916+B	30 (22, 16)	15	Live Oak
HT	20917+B	30.5 (22, 17)	15.25	Live Oak
HT	20919+B	45 (18, 16, 16, 16, 6)	22.5	Live Oak
P	22473+B	14	7	Live Oak
P	22478+B	12	6	Live Oak
P	22485+B	24 (15, 13, 5)	12	Live Oak
P	22495+B	19	9.5	Live Oak
HT	22496+B	29	14.5	Live Oak
P	22501+B	15	7.5	Live Oak
P	22502+B	15	7.5	Live Oak
P	22503+B	16	8	Live Oak
P	22505+B	24.5 (15, 11, 8)	12.25	Live Oak
P	22506+B	25	12.5	Live Oak
P	22507+B	20	10	Live Oak
Legend	P = Protected HT = Heritage Tree R = Removal of Protected Tree R HT = Removal of Heritage Tree D – Dead or Diseased			
Protected Tree Calculation (UDC Section 8.02.030.E.2):				
Total # of Protected Trees (443)/Total Acreage (22.27) = Tree Density (19.89)				
Total # of Protected Trees (443) x (0.2) = Total # of Protected Trees Required to Remain on Site				
Total Number of Protected Trees: 443				
Total Number of Protected Trees Required to Remain: 89				
Mitigation	Protected Trees Inches Removed		288.5	
	Protected Trees Inches Mitigated		115.4	
	Heritage Inches Removed		52.5	
	Heritage Inches Mitigated		157.5	

BLUFFVIEW PRELIMINARY PLAT
WILLIAMSON COUNTY, TX.
TREE SCHEDULE

BRIAN W. FALTESEK
105982
LICENSED PROFESSIONAL ENGINEER
1-3-2024

LJA Engineering Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN - F-1386

JOB NUMBER:
SHEET NO. 4
OF 5 SHEETS
2023-12-PP

BLUFFVIEW SUBDIVISION
PHASE 1

FINAL PLAT

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/12/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 FP4.dwg

JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-12-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 150
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: ####
FP4
SHEET NO. 05
OF 93 SHEETS

DateTime : Fri, 12 Jan 2024 - 2:53pm User Name : ejlopez
PathName : G:\A140-0418 Bluffview\ACAD\Sheet Files\A140-0418 FP4.dwg

I, BRIAN W. FALTESEK, REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT A PORTION OF THIS SUBDIVISION IS IN THE EDWARDS AQUIFER RECHARGE ZONE AND IS ENCROACHED BY A ZONE AE FLOOD AREA, AS DENOTED HEREIN, AND AS DEFINED BY FEDERAL EMERGENCY MANAGEMENT ADMINISTRATION FLOOD HAZARD BOUNDARY MAP, COMMUNITY PANEL NUMBER 48491C0480F, EFFECTIVE DATE DECEMBER 20, 2019, AND THAT EACH LOT CONFORMS TO THE CITY OF GEORGETOWN REGULATIONS.

THE FULLY DEVELOPED, CONCENTRATED STORMWATER RUNOFF RESULTING FROM THE ONE HUNDRED (100) YEAR FREQUENCY STORM IS CONTAINED IS WITHIN THE DRAINAGE EASEMENT SHOWN AND/OR PUBLIC RIGHTS-OF WAY DEDICATED BY THIS PLAT.

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL AT AUSTIN, TRAVIS, TEXAS, THIS DAY 3 OF JANUARY, 2024.

Brian Faltesek

BRIAN W. FALTESEK
REGISTERED PROFESSIONAL ENGINEER
NO. 105982 STATE OF TEXAS

STATE OF TEXAS
BRIAN W. FALTESEK
105982
LICENSED
PROFESSIONAL ENGINEER

I, JOE BEN EARLY, REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT THIS PLAT IS TRUE AND CORRECTLY MADE FROM AN ACTUAL SURVEY MADE ON THE GROUND OF THE PROPERTY LEALLY DESCRIBED HEREON, AND THAT THERE IS NO APPARENT DISCREPANCIES, CONFLICTS, OVERLAPPING OF IMPROVEMENTS, VISIBLE UTILITY LINES OR ROADS IN PLACE, EXCEPT AS SHOWN ON THE ACCOMPANYING PLAT, AND THAT THE CORNER MONUMENTS SHOWN HEREON WERE PROPERLY PLACED UNDER MY SUPERVISION IN ACCORDANCE WITH THE SUBDIVISION REGULATIONS OF THE CITY OF GEORGETOWN, TEXAS.

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL AT AUSTIN, TRAVIS, TEXAS, THIS DAY 4 OF JANUARY, 2024.

JOE BEN EARLY
REGISTERED PROFESSIONAL LAND SURVEYOR
NO. 6016 STATE OF TEXAS

STATE OF TEXAS
REGISTERED
JOE BEN EARLY, JR.
6016
PROFESSIONAL
LAND SURVEYOR

EARLY LAND SURVEYING, LLC

P.O. Box 92588, Austin, TX 78709
512-202-8631
earlysurveying.com
TBPELS Firm No. 10194487

68.550 ACRES
WILLIAMSON COUNTY, TEXAS

A DESCRIPTION OF 68.550 ACRES (APPROXIMATELY 2,986,043 SQ. FT.) IN THE JOSEPH THOMPSON SURVEY, ABSTRACT NO. 608 IN WILLIAMSON COUNTY, TEXAS, BEING A PORTION OF A 68.080 ACRE TRACT CONVEYED TO LAMY 2243, LTD IN A SPECIAL WARRANTY DEED EFFECTIVE MARCH 29, 2013 AND RECORDED IN DOCUMENT NO. 2013028282, OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS AND ALL OF A 1.248 ACRE TRACT CONVEYED TO LAMY 2243, LTD., IN A SPECIAL WARRANTY DEED EXECUTED MAY 18, 2023 AND RECORDED IN DOCUMENT NO. 2023048610 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS; SAID 68.550 ACRES BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a 1/2" rebar found for the northwest terminus of River Down Road (50' right-of-way width) as shown on Resubdivision of Riverview Estates, a subdivision of record in Cabinet K, Slide 51 of the Plat Records of Williamson County, Texas, being in the northeast line of the said 68.080 acre tract, being also the southwest corner of Lot 8, Block E, of said Resubdivision of Riverview Estates;

THENCE South 18°15'27" East, with the southwest termination of River Down Road, and the northeast line of the said 68.080 acre tract, a distance of 49.97 feet to a calculated point for the southwest terminus of River Down Road, being the northwest corner of Lot 22, Block F, of said Resubdivision of Riverview Estates;

THENCE with the northeast line of the said 68.080 acre tract, and the southwest line of said Lot 22, the following nine (9) courses and distances:

1. South 20°23'07" East, a distance of 161.74 feet to a calculated point;
2. South 19°48'07" East, a distance of 150.06 feet to a calculated point;
3. South 20°04'17" East, a distance of 127.72 feet to a calculated point;
4. South 19°01'36" East, a distance of 44.65 feet to a calculated point;
5. South 19°20'25" East, a distance of 149.00 feet to a calculated point;
6. South 20°11'22" East, a distance of 150.99 feet to a calculated point;
7. South 20°23'22" East, a distance of 151.07 feet to a calculated point;
8. South 21°59'08" East, a distance of 123.93 feet to a calculated point;

Page 2

9. South 21°54'24" East, a distance of 133.88 feet to a calculated point for the northwest terminus of Bent Tree Drive (50' right-of-way width) as shown on said Resubdivision of Riverview Estates, being the southwest corner of said Lot 22;

THENCE South 22°07'34" East, with the southwest termination of Bent Tree Drive, and the northeast line of the said 68.080 acre tract, a distance of 50.02 feet to a calculated point for the southwest terminus of Bent Tree Drive, being the northwest corner of Lot 1, Block G, of said Resubdivision of Riverview Estates;

THENCE with the northeast line of the said 68.080 acre tract, and the southwest line of said Lot 1, the following six (6) courses and distances:

1. South 21°48'52" East, a distance of 180.94 feet to a calculated point;
2. South 21°31'44" East, a distance of 229.94 feet to a calculated point;
3. South 21°00'07" East, a distance of 78.31 feet to a calculated point;
4. South 18°30'47" East, a distance of 8.80 feet to a calculated point;
5. South 19°52'38" East, a distance of 85.88 feet to a calculated point;
6. South 18°52'05" East, a distance of 100.07 feet to a calculated point;

THENCE South 59°05'00" West, with a southeast line of the said 68.080 acre tract, and crossing a 1048.20 acre tract described in Document No. 2005090431 of the Official Public Records of Williamson County, Texas, and being further described in Volume 522, Page 451 of the Deed Records of Williamson County, Texas, a distance of 359.31 feet to a calculated point for the northeast corner of the said 1.248 acre tract, from which a 1/2" rebar with "Terra Firma" cap found for an angle point in a southeast line of the said 68.080 acre tract, being the northwest corner of the said 1.248 acre tract, bears South 59°05'00" West, a distance of 18.44 feet;

THENCE with the northeast line of the said 1.248 acre tract, and crossing the said 1048.20 acre tract, the following four (4) courses and distances:

1. South 24°40'44" East, a distance of 29.42 feet to a calculated point;
2. With a curve to the left, having a radius of 288.00 feet, a delta angle of 05°48'05", an arc length of 29.16 feet, and a chord which bears South 27°34'47" East, a distance of 29.15 feet to a calculated point;
3. South 30°28'49" East, a distance of 637.73 feet to a calculated point;
4. With a curve to the left, having a radius of 25.00 feet, a delta angle of 89°58'44", an arc length of 39.26 feet, and a chord which bears South 75°28'11" East, a distance of 35.35 feet to a calculated point in the northwest right-of-way line of F.M. 2243 (80' right-of-way width), being the easternmost corner of the said 1.248 acre tract, from which a 1/2" rebar found for an angle point in the northwest right-of-way line of F.M. 2243, bears North 59°32'27" East, a distance of 183.79 feet;

Page 3

THENCE South 59°32'27" West, with the northwest right-of-way line of F.M. 2243, and the southeast line of the said 1.248 acre tract, a distance of 130.07 feet to a mag nail with "Early Boundary" washer set for the southeast corner of the said 68.080 acre tract;

THENCE South 59°32'27" West, with the northwest right-of-way line of F.M. 2243, and the south line of the said 68.080 acre tract, a distance of 9.93 feet to a calculated point for a point of curvature in the southeast line of a 0.774 acre tract described in Document No. 2023048609 of the Official Public Records of Williamson County, Texas;

THENCE crossing the said 68.080 acre tract, and with the southeast line of the said 0.774 acre tract, with a curve to the left, having a radius of 25.00 feet, a delta angle of 11°25'22", an arc length of 4.98 feet, and a chord which bears North 53°49'46" East, a distance of 4.98 feet, to a calculated point for the easternmost corner of the said 0.774 acre tract, being the southernmost corner of the said 1.248 acre tract;

THENCE with the southwest line of the said 1.248 acre tract, and crossing the said 1048.20 acre tract, the following two (2) courses and distances:

1. With a curve to the left, having a radius of 25.00 feet, a delta angle of 78°35'54", an arc length of 34.30 feet, and a chord which bears North 08°49'08" East, a distance of 31.67 feet to a calculated point;
2. North 30°28'49" West, a distance of 406.56 feet to a calculated point;

THENCE crossing the said 68.080 acre tract, the following two (2) courses and distances:

1. South 15°45'44" East, a distance of 28.04 feet to a calculated point;
2. With a curve to the left, having a radius of 267.50 feet, a delta angle of 09°04'48", an arc length of 42.39 feet, and a chord which bears South 20°17'38" East, a distance of 42.35 feet to a calculated point, being the northernmost corner of the said 0.774 acre tract;

THENCE with the northwest line of the said 0.774 acre tract, and crossing the said 68.080 acre tract, the following two (2) courses and distances:

1. South 52°23'43" West, a distance of 267.04 feet to a calculated point;
2. South 62°57'55" West, a distance of 236.70 feet to a calculated point in the northeast right-of-way line of Southwest Bypass (right-of-way width varies) as described in Document Nos. 2015010273 and 2015109482 of the Official Public Records of Williamson County, Texas, being in the southwest line of the said 68.080 acre tract, being also the westernmost corner of the said 0.774 acre tract;

THENCE with the northeast right-of-way line of Southwest Bypass, and the southwest line of the said 68.080 acre tract, the following five (5) courses and distances:

1. North 30°40'31" West, a distance of 380.08 feet to a 1/2" rebar with "Diamond Surveying" cap found;

Page 4

2. North 30°54'42" West, a distance of 684.43 feet to a mag nail with "Early Boundary" washer set;
3. North 40°22'43" West, a distance of 629.23 feet to a 1/2" rebar with "Diamond Surveying" cap found;
4. With a curve to the right, having a radius of 6870.00 feet, a delta angle of 00°48'55", an arc length of 97.75 feet, and a chord which bears North 26°01'43" West, a distance of 97.75 feet to a calculated point;
5. With a curve to the right, having a radius of 6870.00 feet, a delta angle of 02°15'41", an arc length of 271.14 feet, and a chord which bears North 24°29'25" West, a distance of 271.12 feet to a 1/2" rebar with "Terra Firma" cap found for the westernmost corner of the said 68.080 acre tract, from which a 1/2" rebar found in the northeast right-of-way line of Southwest Bypass, bears with a curve to the right, having a radius of 6870.00 feet, a delta angle of 00°57'22", an arc length of 114.63 feet, and a chord which bears North 22°52'50" West, a distance of 114.62 feet;

THENCE with the northwest line of the said 68.080 acre tract, crossing the said 1048.20 acre tract, and with the southeast line of a 25.75 acre tract described in Document No. 2005090431, and being further described in Volume 1238, Page 445 of the Deed Records of Williamson County, the following two (2) courses and distances:

1. North 26°29'53" East, a distance of 1134.99 feet to a 1/2" rebar with "Terra Firma" cap found;
2. North 01°28'00" East, passing a cotton spindle found at a distance of 826.43 feet and 0.84 feet right of line and continuing for a total distance of 911.03 feet to a calculated point in the centerline of the South San Gabriel River for the northwest corner of the said 68.080 acre tract, being also in the south line of a 236.714 acre tract described in Document No. 2018054155 of the Official Public Records of Williamson County, Texas;

THENCE North 75°35'37" East, with the centerline of the South San Gabriel River, the north line of the said 68.080 acre tract and the south line of the said 236.714 acre tract, a distance of 127.88 feet to a calculated point for the northernmost corner of the said 68.080 acre tract;

THENCE with the northeast line of the said 68.080 acre tract, and the southwest line of Lots 7 and 8, of said Resubdivision of Riverview Estates, the following nine (9) courses and distances:

1. South 18°33'43" East, a distance of 65.93 feet to a 1/2" rebar found;
2. South 18°50'40" East, a distance of 24.47 feet to a 1/2" rebar with "Dean Woodley RPLS 5086" cap found;
3. South 20°42'13" East, a distance of 71.61 feet to a 1/2" rebar with "Dean Woodley RPLS 5086" cap found;
4. South 20°35'36" East, a distance of 411.42 feet to a 1/2" rebar found;

Page 5

5. South 19°33'44" East, a distance of 325.99 feet to a 1/2" rebar with "Terra Firma" cap found;
6. South 14°40'14" East, a distance of 77.23 feet to a 1/2" rebar found;
7. North 72°02'33" East, a distance of 28.27 feet to a cotton spindle found;
8. South 30°30'57" East, a distance of 46.31 feet to a 1/2" rebar with "Terra Firma" cap found;
9. South 20°59'57" East, a distance of 70.29 feet to the **POINT OF BEGINNING**, containing 68.550 acres of land, more or less.

Surveyed on the ground on August 24, 2022.

Bearing Basis: The Texas Coordinate System of 1983 (NAD83), Central Zone, utilizing the SmartNet North America Network.

Attachments: Survey Drawing No. 1014-002-PHASE 1&2

10/11/23
Joe Ben Early, Jr. Date
Registered Professional Land Surveyor,
State of Texas No. 6016

SKETCH TO ACCOMPANY A DESCRIPTION OF 68.550 ACRES (APPROXIMATELY 2,986,043 SQ. FT.) IN THE JOSEPH THOMPSON SURVEY, ABSTRACT NO. 608 IN WILLIAMSON COUNTY, TEXAS, BEING A PORTION OF A 68.080 ACRE TRACT CONVEYED TO LAMY 2243, LTD IN A SPECIAL WARRANTY DEED EFFECTIVE MARCH 29, 2013 AND RECORDED IN DOCUMENT NO. 2013028282, OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS AND ALL OF A 1.248 ACRE TRACT CONVEYED TO LAMY 2243, LTD., IN A SPECIAL WARRANTY DEED EXECUTED MAY 18, 2023 AND RECORDED IN DOCUMENT NO. 2023048610 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS

LEGEND
- 1/2" REBAR FOUND (OR AS NOTED)
- 1/2" REBAR WITH "DIAMOND SURVEYING" CAP FOUND
- 1/2" REBAR WITH "DEAN WOODLEY" CAP FOUND
- 1/2" REBAR WITH "TERRA FIRMA" CAP FOUND
- MAG NAIL WITH "EARLY BOUNDARY" WASHER SET
- COTTON SPINDLE FOUND
- CALCULATED POINT
- CONTROL POINT/BENCHMARK LOCATION
- ( ) RECORD INFORMATION

THIS IS A SURFACE DRAWING.

BEARING BASIS: THE TEXAS COORDINATE SYSTEM OF 1983 (NAD83), CENTRAL ZONE, BASED ON GPS OBSERVATIONS ON EARLY LAND SURVEYING CONTROL POINT "ELS #1"

MAG NAIL WITH WASHER SET IN ASPHALT

SURFACE COORDINATES:
N 10197763.32
E 3120477.42

TEXAS STATE PLANE COORDINATES:
N 10196539.73
E 3120103.00

COMBINED SCALE FACTOR = 0.999880014
(FOR SURFACE TO GRID CONVERSION)

INVERSE SCALE FACTOR = 1.000120
(FOR GRID TO SURFACE CONVERSION)

SCALED ABOUT 0,0
THETA ANGLE: 1°20'54"

10/11/2023

DATE OF SURVEY: 8/24/22
PLOT DATE: 10/11/23
DRAWING NO.: 1014-002-PHASE 1&2
DRAWN BY: MAW & JBE
SHEET 1 OF 5

EARLY LAND SURVEYING, LLC
P.O. BOX 92588
AUSTIN, TX 78709
512-202-8631
TBPELS FIRM NO. 10194487

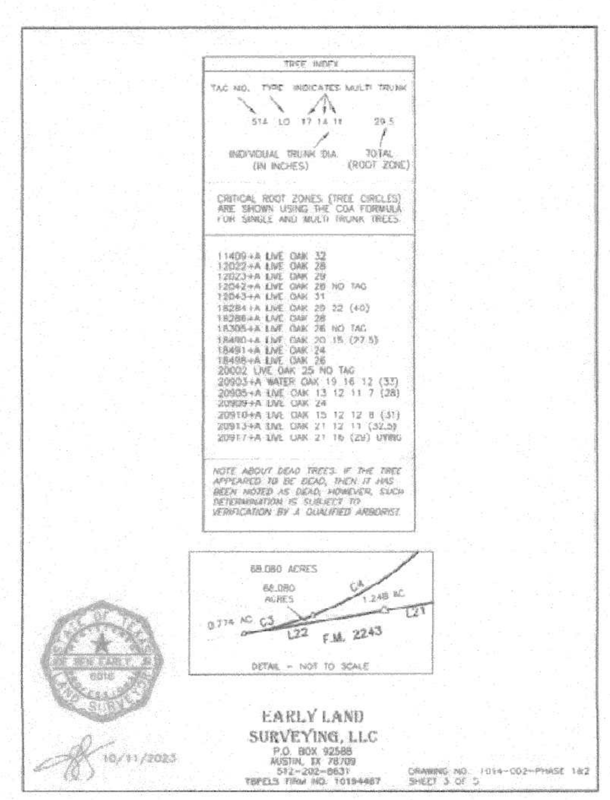
ATTACHMENTS: METES AND BOUNDS DESCRIPTION 1014-002-PHASE 1&2

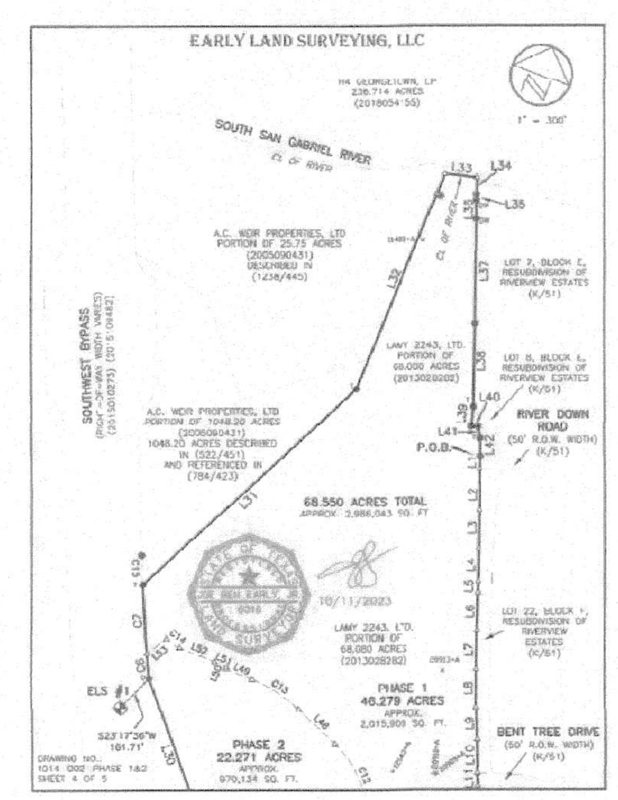
LINE TABLE		
LINE	BEARING	DISTANCE
L1	S18°15'27"E	49.97'
L2	S20°23'07"E	161.74'
L3	S19°48'07"E	150.06'
L4	S20°04'17"E	127.72'
L5	S19°01'36"E	44.65'
L6	S19°20'25"E	149.00'
L7	S20°11'22"E	150.99'
L8	S20°23'22"E	151.07'
L9	S21°59'08"E	123.93'
L10	S21°54'24"E	133.88'
L11	S22°07'34"E	50.02'
L12	S21°48'52"E	180.94'
L13	S21°31'44"E	229.94'
L14	S21°00'07"E	78.31'
L15	S18°30'47"E	8.80'
L16	S19°52'38"E	85.88'
L17	S18°52'05"E	100.07'
L18	S59°05'00"W	359.31'
L19	S24°40'44"E	29.42'
L20	S30°28'49"E	637.73'
L21	S59°32'27"W	130.07'
L22	S59°32'27"W	9.93'
L24	N30°28'49"W	406.56'
L25	S15°45'44"E	28.04'
L26	S52°23'43"W	267.04'
L27	S62°57'55"W	236.70'
L28	N30°40'31"W	380.08'
L29	N30°54'42"W	684.43'
L30	N40°22'43"W	629.23'
L31	N26°29'53"E	1134.99'
L32	N01°28'00"E	911.03'
L33	N75°35'37"E	127.88'
L34	S18°33'43"E	65.93'
L35	S18°50'40"E	24.47'
L36	S20°42'13"E	71.61'
L37	S20°35'36"E	411.42'
L38	S19°33'44"E	325.99'
L39	S14°40'14"E	77.23'
L40	N72°02'33"E	28.27'
L41	S30°30'57"E	46.31'
L42	S20°59'57"E	70.29'
L43	N30°28'49"W	128.35'
L44	N16°49'53"W	93.61'
L45	N20°00'46"W	226.11'
L46	N28°23'52"W	86.08'
L47	N21°57'42"W	146.43'
L48	N67°12'03"W	193.08'
L49	N88°45'24"W	111.18'
L50	N01°14'36"E	5.99'
L51	N84°45'09"W	50.30'
L52	N88°45'24"W	147.01'
L53	S31°49'39"W	96.11'
L54	S59°05'00"W	18.44'
L55	N59°32'27"E	183.79'

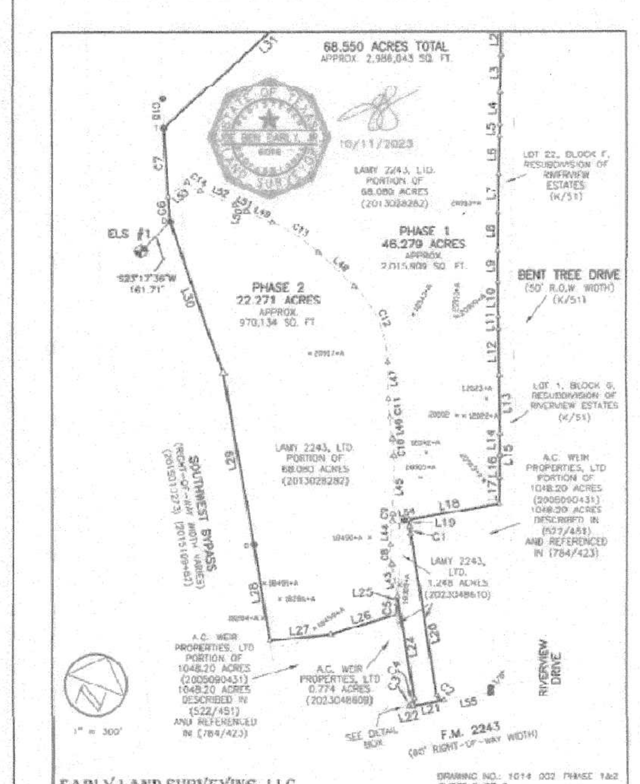
CURVE TABLE					
CURVE	RADIUS	DELTA	ARC	BEARING	CHORD
C1	288.00'	5°48'05"	29.16'	S27°34'47"E	29.15'
C2	25.00'	89°58'44"	39.26'	S75°28'11"E	35.35'
C3	25.00'	11°25'22"	4.98'	N53°49'46"E	4.98'
C4	25.00'	78°35'54"	34.30'	N08°49'08"E	31.67'
C5	267.50'	9°04'48"	42.39'	S20°17'38"E	42.35'
C6	6870.00'	0°48'55"	97.75'	N26°01'43"W	97.75'
C7	6870.00'	2°15'41"	271.14'	N24°29'25"W	271.12'
C8	313.50'	13°36'56"	74.68'	N23°39'21"W	74.50'
C9	500.00'	3°10'53"	27.76'	N18°25'20"W	27.76'
C10	475.00'	8°23'06"	69.51'	N24°12'19"W	69.45'
C11	625.00'	6°26'10"	70.21'	N25°10'47"W	70.17'
C12	420.00'	45°14'21"	331.62'	N44°34'53"W	323.07'
C13	575.00'	21°33'21"	216.33'	N77°58'44"W	215.05'
C14	147.72'	24°04'32"	62.07'	N76°43'08"W	61.62'
C15	6870.00'	0°57'22"	114.63'	N22°52'50"W	114.62'

EARLY LAND SURVEYING, LLC
P.O. BOX 92588
AUSTIN, TX 78709
512-202-8631
TBPELS FIRM NO. 10194487

DRAWING NO.: 1014-002-PHASE 1&2
SHEET 2 OF 5







BLUFFVIEW PRELIMINARY PLAT
WILLIAMSON COUNTY, TX.
LEGAL DESCRIPTION

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 12/15/23
DESIGNED BY: JCN
DRAWN BY: JCN
CHECKED BY: BWF
DRAWING NAME: BLFVW-PP.dwg

STATE OF TEXAS
BRIAN W. FALTESEK
105982
LICENSED
PROFESSIONAL ENGINEER
1-3-2024

LJA Engineering Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
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FRN - F-1386

JOB NUMBER:

SHEET NO. 5 OF 5 SHEETS

2023-12-PP

BLUFFVIEW SUBDIVISION
PHASE 1

FINAL PLAT

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 1/12/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 FP5.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
PROFESSIONAL ENGINEER
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 150
Round Rock, Texas 78681
Phone 512.439.4700
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FRB-F-1386

JOB NUMBER: ####

FP5

SHEET NO. 06 OF 93 SHEETS

Date/Time : Fri, 12 Jan 2024 - 2:20pm User Name : ejlopez
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GENERAL NOTES

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

GENERAL CONSTRUCTION NOTES

APPLICABLE TO ALL LINE AND SITE WORK

1. ANY FITTINGS, VALVES, OR OTHER APPURTENANCES NECESSARY FOR TESTING OR STERILIZATION OF UTILITY LINES SHALL BE PROVIDED BY CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
2. ALL BACKFILLED AREAS UNDER PROPOSED ROADS SHALL BE COMPACTED IN ACCORDANCE WITH THE CITY OF GEORGETOWN STANDARD SPECIFICATIONS REQUIREMENTS.
3. ALIGNMENT SHOWN ON PLANS SHALL BE ACHIEVED BY DEFLECTION, EXCEPT WHERE SPECIFIC FITTINGS ARE CALLED FOR ON PLANS. THERE WILL BE NO PAY ITEM FOR FITTINGS USED FOR DEFLECTION PURPOSES.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING UTILITIES SUCH AS GAS LINES, WATER LINES, VALVE BOXES, FIRE HYDRANTS, STRUCTURES AND OTHER APPURTENANCES THAT LIE WITHIN THE RIGHT-OF-WAY AND EASEMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR, AT HIS EXPENSE, ALL UTILITIES, DRIVEWAYS, PAVEMENT, CURB AND GUTTER, SIDEWALKS, FENCES AND OTHER ITEMS DAMAGED DURING CONSTRUCTION REGARDLESS OF WHETHER THESE ITEMS ARE SHOWN ON THE PLANS. THE LOCATION OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IS APPROXIMATE.
5. WHENEVER EXISTING UTILITIES, INDICATED OR NOT ON PLANS, PRESENT OBSTRUCTIONS TO GRADE AND ALIGNMENT OF PIPE, IMMEDIATELY NOTIFY ENGINEER, WHO WITHOUT DELAY, WILL DETERMINE WHENEVER EXISTING IMPROVEMENTS ARE TO BE RELOCATED, OR GRADE AND ALIGNMENT OF PROPOSED UTILITY CHANGED. WHERE NECESSARY TO MOVE SERVICES, POLES, GUY WIRES, PIPELINES, OR OTHER OBSTRUCTIONS, THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNERS OF UTILITIES AND RELOCATE THESE AT EH CONTRACTOR'S SOLE EXPENSE.
6. ALL WATER LINES SHALL CONFORM TO AWWA C-900, CLASS 200 (DR 14). ALL GRAVITY SANITARY SEWER LINES LOCATED WITHIN THE R.O.W.'S AND EASEMENTS SHALL CONFORM TO ASTM D-3034, PVC, SDR 26 WITH ASTM D-3212 JOINTS UNLESS OTHERWISE NOTED. ALL OTHER GRAVITY SANITARY SEWER LINES SHALL CONFORM TO ASTM D-3034, PVC, SDR 35 WITH ASTM D-3212 JOINTS UNLESS OTHERWISE NOTED. GRAVITY SANITARY SEWER LINE CROSSING POTABLE WATER LINES TO BE 1-20' PIPE SECTION PVC SDR 26 CENTERED AT THE CROSSING. SANITARY FORCEMAINS SHALL BE SCH 80 PVC. ALL STORM SEWER LOCATED IN EASEMENTS SHALL BE CLASS III RCP. OTHER STORM SEWER MAY BE HDPE OR AS APPROVED BY THE ENGINEER.

GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF GEORGETOWN STANDARD SPECIFICATIONS.
2. DESIGN PROCEDURES ARE IN COMPLETE COMPLIANCE WITH THE CITY OF GEORGETOWN DRAINAGE CRITERIA MANUAL.

FIRE DEPARTMENT NOTES

1. THE CITY OF GEORGETOWN FIRE DEPARTMENT REQUIRES FINAL ASPHALT OR CONCRETE PAVEMENT ON REQUIRED ACCESS ROADS PRIOR TO THE START OF THE COMBUSTIBLE CONSTRUCTION. ANY OTHER METHOD OF PROVIDING "ALL-WEATHER DRIVING CAPABILITIES" SHALL BE REQUIRED TO BE DOCUMENTED AND APPROVED AS AN ALTERNATE METHOD OF CONSTRUCTION IN ACCORDANCE WITH THE APPLICABLE RULES FOR TEMPORARY ROADS OUTLINED IN THE CITY OF AUSTIN FIRE PROTECTION CRITERA MANUAL.
2. FIRE HYDRANTS SHALL BE INSTALLED WITH THE CENTER OF FOUR (4) INCH OPENING (STEAMER) LOCATED AT LEAST 18 INCHES ABOVE FINISHED GRADE. THE STEAMER OPENING OF FIRE HYDRANTS SHALL FACE THE APPROVED FIRE ACCESS DRIVEWAY OR PUBLIC STREET AND SET BACK FROM THE CURB LINE(S) AN APPROVED DISTANCE, TYPICALLY THREE (3) TO SIX (6) FEET. THE AREA BETWEEN THE STEAMER OPENING AND THE STREET OR DRIVEWAY GIVING EMERGENCY VEHICLE ACCESS SHALL BE FREE OF OBSTRUCTIONS.
3. TIMING OF INSTALLATIONS: WHEN FIRE PROTECTION FACILITIES ARE INSTALLED BY THE CONTRACTOR, SUCH FACILITIES SHALL INCLUDE SURFACE ACCESS ROADS. EMERGENCY ACCESS ROADS OR DRIVES SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING THE TIME OF CONSTRUCTION. WHEN THE FIRE DEPARTMENT APPROVES AN ALTERNATE METHOD OF PROTECTION, THIS REQUIREMENT MAY BE MODIFIED AS DOCUMENTED IN THE APPROVAL OF THE ALTERNATE METHOD.
4. ALL EMERGENCY ACCESS ROADWAYS AND FIRE LANES, INCLUDING PREVIOUS/DECORATIVE PAVING, SHALL BE ENGINEERED AND INSTALLED AS REQUIRED TO SUPPORT THE AXLE LOADS OF EMERGENCY VEHICLES. A LOAD CAPACITY SUFFICIENT TO MEET THE REQUIREMENTS FOR HS-20 LOADING (16 KIPS/WHEEL) AND A TOTAL VEHICLE LIVE LOAD OF 80,000 POUNDS IS CONSIDERED COMPLIANT WITH THIS REQUIREMENT.
5. FIRE LANES DESIGNATED ON SITE PLANS SHALL BE REGISTERED WITH THE CITY OF GEORGETOWN FIRE DEPARTMENT AND INSPECTED FOR FINAL APPROVAL.
6. THE MINIMUM VERTICAL CLEARANCE REQUIRED FOR EMERGENCY VEHICLE ACCESS ROADS OR DRIVES IS 14 FEET FOR THE FULL WIDTH OF THE ROADWAY OR DRIVEWAY.
7. STENCIL THE WORDS "FIRE ZONE/TOW-AWAY ZONE" IN WHITE LETTERS AT LEAST 3" HIGH AT 35 FOOT INTERVALS ALONG THE CURB. SIGNS SHALL BE POSTED AT BOTH ENDS OF THE FIRE ZONE AT INTERVALS OF 50 FEET OR LESS.

Date\Time : Thu, 18 Jan 2024 - 8:08pm User Name : jpiecuch
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CITY OF GEORGETOWN - GENERAL CONSTRUCTION NOTES

1. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY OF GEORGETOWN MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
2. CONTRACTOR SHALL CALL TEXAS 811 (811 OR 1-800-344-8377) FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET R.O.W.
3. CONTRACTOR SHALL NOTIFY THE CITY OF GEORGETOWN - SITE & SUBDIVISION DIVISION TO SUBMIT REQUIRED DOCUMENTATION, PAY CONSTRUCTION INSPECTION FEES, AND TO SCHEDULE THE REQUIRED SITE AND SUBDIVISION PRE-CONSTRUCTION MEETING. THIS MEETING MUST BE HELD PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN THE R.O.W. OR PUBLIC EASEMENTS.
4. FOR SLOPES AND TRENCHES GREATER THAN FIVE FEET IN DEPTH, A NOTE MUST BE ADDED STATING: "ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION." (OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 611 EAST 6TH STREET, AUSTIN, TEXAS.)
5. ALL SITE WORK MUST COMPLY WITH ENVIRONMENTAL REGULATIONS.
6. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS AND PRIOR TO THE FOLLOWING, THE ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DRAINAGE, FILTRATION AND DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS:
   - RELEASE THE CERTIFICATE OF OCCUPANCY BY THE DEVELOPMENT SERVICES DEPARTMENT (INSIDE THE CITY LIMITS); OR
   - INSTALLATION OF AN ELECTRIC OR WATER METER (IN THE FIVE-MILE ETJ).
7. THE CONTRACTOR SHALL GIVE THE CITY A MINIMUM OF 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION, CALL CONSTRUCTION INSPECTION DIVISION, 512-974-6360 OR 512-974-7034.
8. BARRICADES, BUILT TO CITY OF GEORGETOWN STANDARD SPECIFICATIONS, SHALL BE CONSTRUCTED ON ALL DEAD-END STREETS AND AS NECESSARY DURING CONSTRUCTION TO MAINTAIN JOB SAFETY.
9. IF BLASTING IS PLANNED BY THE CONTRACTOR, A BLASTING PERMIT MUST BE SECURED PRIOR TO COMMENCEMENT OF ANY BLASTING.
10. ANY EXISTING PAVEMENT, CURBS, AND/OR SIDEWALKS DAMAGED OR REMOVED WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE BEFORE ACCEPTANCE OF THE SUBDIVISION.
11. THE LOCATION OF ANY WATER AND/OR WASTEWATER LINES SHOWN ON THE PLANS MUST BE VERIFIED BY THE WATER AND WASTEWATER DEPARTMENT.

DEVELOPER INFORMATION

OWNER: LAMY, 2243, LTD

ADDRESS: 1221 S. MOPAC EXPRESSWAY, SUITE 200, AUSTIN, TX 78746

OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS: JUSTIN MIDURA
PHONE #: 512.439.4700

PERSON OR FIRM RESPONSIBLE FOR EROSION/SEDIMENTATION CONTROL MAINTENANCE: ____________

PHONE#: ____________

PERSON OR FIRM RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION MAINTENANCE: ____________

PHONE #: ____________

SPECIAL NOTES

NOTES FOR PLANS WHERE APPLICABLE

1. THE SUBGRADE MATERIAL IN WOODFIELD PRESERVE WAS TESTED BY MLA GEOTECHNICAL IN A REPORT DATED JULY, 2021 AND THE STREET SECTION DESIGNED ACCORDING TO CURRENT CITY OF GEORGETOWN DESIGN CRITERIA. THE STREET SECTIONS ARE TO BE CONSTRUCTED AS FOLLOWS:

STREET NAME	R.O.W. WIDTH	PAVEMENT WIDTH	CLB	HMAC	GEOGRID	LIME STABILIZED BASE
* LOCAL STREET	PER PUD	PER PUD	8"	2"	N/A	N/A
* PARK ROAD	PER PUD	PER PUD	8"	2"	N/A	N/A
* RESIDENTIAL COLLECTOR	PER PUD	PER PUD	10"	2"	N/A	N/A

*REFER TO GEOTECH REPORT FOR SUBGRADE MATERIALS SPECIFICATIONS IF PI IS GREATER THAN 20

HMAC – HOT MIX ASPHALTIC CONCRETE
CLB – CRUSHED LIMESTONE BASE
MOISTURE BARRIER – 10 MIL POLY LINER

NOTES:
IN AREAS WHERE LIMESTONE WILL FORM THE SUBGRADE, THE CRUSHED LIMESTONE MAY BE DECREASE BY ONE (1) INCH FOR LOCAL STREETS ONLY.

ALTERNATE BID ITEM MAY BE PROVIDED FOR IN THE BID DOCUMENTS FOR LIME STABILIZED BASE, ADDITIONAL CRUSHED LIMESTONE BASE, OR ALTERNATE DESIGNS WHEN REQUIRED FOR EXPANSIVE CLAYS. WHEN EXPANSIVE CLAYS ARE ENCOUNTERED IN THE FIELD THE GEOTECHNICAL ENGINEER WILL DIRECT THE OWNER/CONTRACTOR TO PROVIDE ADDITIONAL BASE, LIME STABILIZATION, OR ALTERNATIVE SECTION.

2. MANHOLE FRAMES, COVERS, AND WATER VALVE COVERS WILL BE RAISED TO FINISHED PAVEMENT GRADE AT THE OWNER'S EXPENSE BY A QUALIFIED CONTRACT WITH CITY INSPECTION. ALL UTILITY ADJUSTMENTS SHALL BE COMPLETED PRIOR TO FINAL PAVING CONSTRUCTION.
3. ALL COLLECTOR AND ARTERIAL STREETS SHALL HAVE AUTOMATIC SCREED CONTROL ON ASPHALTIC CONCRETE PAVEMENT CONSTRUCTION, PLACED AS PER THE CITY OF GEORGETOWN STANDARD SPECIFICATIONS.
4. AT INTERSECTIONS WHICH HAVE VALLEY DRAINAGE, THE CROWNS OF THE INTERSECTING STREETS WILL CULMINATE IN A DISTANCE OF 40' FROM THE INTERSECTING CURB LINE UNLESS OTHERWISE NOTED. INLETS ON THE INTERSECTING STREET SHALL NOT BE CONSTRUCTED WITHIN 50 FEET OF THE VALLEY GUTTER.
5. AT INTERSECTIONS OF TWO 44' STREETS OR LARGER, THE CROWNS OF THE INTERSECTING STREETS WILL CULMINATE IN A DISTANCE OF 40 FEET FROM INTERSECTING CURB LINE UNLESS OTHERWISE NOTED.
6. PRIOR TO FINAL ACCEPTANCE OF A STREET OUTSIDE THE CITY LIMITS, STREET NAME SIGNS CONFORM TO COUNTY STANDARDS SHALL BE INSTALLED BY DEVELOPER.
7. SIDEWALK REQUIREMENTS: PER SITE PLAN DESIGN.
8. A CURB LAY DOWN IS REQUIRED AT ALL POINTS WHERE THE PROPOSED SIDEWALK INTERSECTS THE CURB.
9. WHEN USING LIME STABILIZATION OF SUBGRADE, IT SHALL BE PLACED IN SLURRY FORM.

10. INSIDE THE GEORGETOWN CITY LIMITS, SIDEWALKS SHALL BE COMPLETED PRIOR TO ACCEPTANCE OF ANY TYPE I OR TYPE II DRIVEWAY APPROACHES AND/OR ISSUANCE OF A CERTIFICATE OF OCCUPANCY. WHEN OUTSIDE THE GEORGETOWN CITY LIMITS, LETTER OF CREDIT MAY BE POSTED OR OTHER SUITABLE FINANCIAL ARRANGEMENTS MAY BE MADE TO INSURE CONSTRUCTION OF THE SIDEWALKS. IN EITHER CASE, SIDEWALKS ADJACENT TO "COMMON AREAS", PARKWAYS, OR OTHER LOCATIONS ON WHICH NO BUILDING CONSTRUCTION WILL TAKE PLACE, MUST BE CONSTRUCTED PRIOR TO FINAL ACCEPTANCE OF THE SUBDIVISION.
11. A LICENSE AGREEMENT FOR LANDSCAPING MAINTENANCE AND IRRIGATION IN STREET R.O.W. SHALL BE EXECUTED BY THE DEVELOPER IN PARTY WITH THE CITY OF GEORGETOWN PRIOR TO FINAL ACCEPTANCE OF THE SITE PLAN IMPROVEMENTS.
12. THE ACQUISITION OF RIGHT-OF-WAY AND/OR EASEMENTS AND THE SCHEDULING OF CONSTRUCTION IS THE RESPONSIBILITY OF THE OWNER.
13. CONTOUR DATA SOURCE: JOBY EARLY R.P.L.S.
    EARLY LAND SURVEYING, LLC
    P.O BOX 92588
    AUSTIN, TX 78709
    PHONE: 512-202-8631
14. UNDERGROUND FACILITIES WERE NOT LOCATED BY SURVEY COMPANY.
15. TREE CROWN DIAMETER WAS CALCULATED USING THE CITY OF GEORGETOWN'S FORMULA; ONE INCH OF TRUNK DIAMETER EQUALS ONE FOOT OF CROWN RADIUS.
16. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.
17. ALL SITE WORK MUST ALSO COMPLY WITH ENVIRONMENTAL REQUIREMENTS.
18. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS AND PRIOR TO THE FOLLOWING, THE ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DRAINAGE, AND DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.

ON-SITE FILL SPECIFICATIONS

1. SELECTION OF ON-SITE FILL MATERIAL SHALL BE GUIDED BY THE FOLLOWING CRITERIA:
   A. THE MATERIAL SHALL NOT CONTAIN ANY ROCKS HAVING A MAXIMUM DIMENSION GREATER THAN (6) INCHES.
   B. THE MATERIAL SHALL HAVE AT LEAST FIFTY PERCENT (50%) PASSING THE NO. 4 SIEVE.
   C. THE MATERIAL SHALL BE FREE OF ROOTS, TRASH, CONCRETE RUBBLE, AND OTHER ORGANIC MATERIAL.
2. COMPACTION SHALL BE NINTY-FIVE PERCENT (95%) OF MAXIMUM LABORATORY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D-698. THE MATERIAL SHALL BE WITHIN THREE (3) PERCENTAGE POINTS OF OPTIMUM MOISTURE CONTENT DURING COMPACTION.
3. PLACEMENT SHALL BE IN LIFTS NOT EXCEEDING SIX (6) INCHES AFTER COMPACTION. EACH COMPACTED LIFT SHOULD BE INSPECTED AND/OR TESTED FOR DENSITY COMPLIANCE BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING THE NEXT LIFT. THE FILL AREA SHOULD EXTEND AT LEAST 24 INCHES (36 INCHES ON FILLS OVER SIX (6) FEET IN HEIGHT) BEYOND THE BACK OF CURB OR FOUNDATION LINE BEFORE SLOPING DOWNWARD ON NOT MORE THAN THREE (3) TO ONE (1) SLOPE TO NATURAL SOIL. BACKSLOPES SHALL BE WELL-COMPACTED. MAXIMUM FILL HEIGHTS SHOULD NOT EXCEED FOUR (4) FEET WITHOUT ENGINEERING CONSULTATION.
4. TESTING AND CERTIFICATION OF THE ON-SITE FILL MATERIAL SHALL BE PERFORMED BY THE GEOTECHNICAL ENGINEER. A 50-LB. SAMPLE OF THE PROPOSED MATERIAL SHALL BE SUBMITTED TO THE GEOTECHNICAL ENGINEER FOR APPROVAL AND DETERMINATION OF A MOISTURE-DENSITY RELATIONSHIP IN ADVANCE OF THE FILL AND COMPACTION OPERATIONS IN ORDER TO PERMIT INSPECTION AND TESTING AS THE FILL IS PLACED. FILL PLACEMENT WILL BE INSPECTED AND TESTED FOR UNIFORMITY, ACCEPTABLE MATERIAL, AND FIELD DENSITY PER 5,000 SQUARE FEET PER LIFT (A MINIMUM OF THREE (3) PER LIFT PER PAD).
5. DEVIATIONS FROM THE ABOVE SPECIFICATIONS MAY BE PERMITTED UPON APPROVAL FROM THE GEOTECHNICAL ENGINEER.
6. COMPLIANCE WITH THESE SPECIFICATIONS AS STATED ABOVE OR AS MODIFIED BY THE GEOTECHNICAL ENGINEER FOR SPECIFIC CONDITIONS SHALL BE THE BASIS FOR CERTIFICATION OF COMPLIANCE WITH FHA DATA SHEET 79G AND VA REQUIREMENTS.

SPOILS SITE

1. THE TEMPORARY AND PERMANENT SPOILS DISPOSAL SITES ARE LOCATED ON THE E/S CONTROL AND SOIL MANAGEMENT PLAN.
2. OFF-SITE DISPOSAL: THE CONTRACTOR SHALL NOT DISPOSE OF SURPLUS EXCAVATED MATERIAL FROM THE SITE WITHOUT NOTIFYING THE INSPECTOR 48 HOURS PRIOR TO THE REMOVAL. THIS NOTIFICATION SHALL INCLUDE THE DISPOSAL LOCATION AND A COPY OF THE PERMIT ISSUED TO RECEIVE THE MATERIAL.

SITE RELATED CONCRETE AND STEEL WORK

1. CONCRETE COMPRESSIVE STRENGTH WILL BE A MINIMUM OF 3,000 PSI AFTER 28 DAYS.
2. ALL STEEL SHALL BE GRADE 60.
3. ALL CONCRETE SLOPE PROTECTION SHALL BE REINFORCED WITH WELDED WIRE FABRIC, 6X6 W1.4XW1.4 WITH MINIMUM CLEARANCE TO EDGE OF CONCRETE.
4. PLACEMENT OF STEEL AND ALL SPLICES SHALL BE PER LATEST ACI CODE.
5. PLACEMENT OF CONCRETE SHALL BE PER LATEST ACI CODE.
6. ALL CONCRETE SLOPE PROTECTION TO HAVE 12" DEEP X 6" WIDE TOE WALL AROUND ENTIRE STRUCTURE.

BLUFFVIEW SUBDIVISION
PHASE 1

GENERAL NOTES

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY: ____
DRAWN BY: ____
CHECKED BY: ____
DRAWING NAME: A140-0418 GN1.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
PROFESSIONAL ENGINEER
1-17-2024

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Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

GN1

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

Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer

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

1. A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any regulated activities. This notice must include:
   - the name of the approved project;
   - the activity start date; and
   - the contact information of the prime contractor.
2. All contractors conducting regulated activities associated with this project must be provided with complete copies of the approved Water Pollution Abatement Plan (WPAP) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.
3. If any sensitive feature(s) (caves, solution cavity, sink hole, etc.) is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. Construction activities may not be resumed until the TCEQ has reviewed and approved the appropriate protective measures in order to protect any sensitive feature and the Edwards Aquifer from potentially adverse impacts to water quality.
4. No temporary or permanent hazardous substance storage tank shall be installed within 150 feet of a water supply source, distribution system, well, or sensitive feature.
5. Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the approved plans and manufacturers specifications. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. These controls must remain in place until the disturbed areas have been permanently stabilized.
6. Any sediment that escapes the construction site must be collected and properly disposed of before the next rain event to ensure it is not washed into surface streams, sensitive features, etc.
7. Sediment must be removed from the sediment traps or sedimentation basins not later than

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

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

    A. any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;

    B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;

    C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

Austin Regional Office	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.

Texas Commission on Environmental Quality
Organized Sewage Collection System
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, 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.

1. 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.
2. 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.
3. A written notice of construction must be submitted to the presiding TCEQ regional office at least 48 hours prior to the start of any regulated activities. This notice must include:
   - the name of the approved project;
   - the activity start date; and
   - the contact information of the prime contractor.
4. Any modification to the activities described in the referenced SCS application following the date of approval may require the submittal of an SCS application to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval.
5. Prior to beginning any construction activity, all temporary erosion and sedimentation (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.
6. If any sensitive features are discovered during the wastewater line trenching activities, all regulated activities near the sensitive feature must be suspended immediately. The applicant must immediately notify the appropriate regional office of the TCEQ of the feature discovered. A geologist's assessment of the location and extent of the feature discovered must be reported to that regional office in writing and the applicant must submit a plan for ensuring the structural integrity of the sewer line or for modifying the proposed collection system alignment around the feature. The regulated activities near the sensitive feature may not proceed until the

executive director has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from any potentially adverse impacts to water quality while maintaining the structural integrity of the line.

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

   The diameter of the manholes must be a minimum of four feet and the manhole for entry must have a minimum clear opening diameter of 30 inches. These dimensions and other details showing compliance with the commission's rules concerning manholes and sewer line/manhole inverts described in 30 TAC §217.55 are included on Plan Sheet __ 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.
10. Where water lines and new sewer line are installed with a separation distance closer than nine feet (i.e., water lines crossing wastewater lines, water lines paralleling wastewater lines, or water lines next to manholes) the installation must meet the requirements of 30 TAC §217.53(d) (Pipe Design) and 30 TAC §290.44(e) (Water Distribution).
11. Where sewers lines deviate from straight alignment and uniform grade all curvature of sewer pipe must be achieved by the following procedure which is recommended by the pipe manufacturer: ________________________________.

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

    Specific care must be taken to ensure that the joint is placed in the center of the trench and properly bedded in accordance with 30 TAC §217.54.
12. New sewage collection system lines must be constructed with stub outs for the connection of anticipated extensions. The location of such stub outs must be marked on the ground such that their location can be easily determined at the time of connection of the extensions. Such stub outs must be manufactured wyes or tees that are compatible in size and material with both the sewer line and the extension. At the time of original construction, new stub-outs must be constructed sufficiently to extend beyond the end of the street pavement. All stub-outs must be sealed with a manufactured cap to prevent leakage. Extensions that were not anticipated at the time of original construction or that are to be connected to an existing sewer line not furnished with stub outs must be connected using a manufactured saddle and in accordance with accepted plumbing techniques.

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

13. Trenching, bedding and backfill must conform with 30 TAC §217.54. The bedding and backfill for flexible pipe must comply with the standards of ASTM D-2321, Classes IA, IB, II or III. Rigid pipe bedding must comply with the requirements of ASTM C 12 (ANSI A 106.2) classes A, B or C.
14. Sewer lines must be tested from manhole to manhole. When a new sewer line is connected to an existing stub or clean-out, it must be tested from existing manhole to new manhole. If a stub or clean-out is used at the end of the proposed sewer line, no private service attachments may be connected between the last manhole and the cleanout unless it can be certified as conforming with the provisions of 30 TAC §213.5(c)(3)(E).
15. All sewer lines must be tested in accordance with 30 TAC §217.57. The engineer must retain copies of all test results which must be made available to the executive director upon request. The engineer must certify in writing that all wastewater lines have passed all required testing to the appropriate regional office within 30 days of test completion and prior to use of the new collection system. Testing method will be:
    - (a) For a collection system pipe that will transport wastewater by gravity flow, the design must specify an infiltration and exfiltration test or a low-pressure air test. A test must conform to the following requirements:
      - (1) *Low Pressure Air Test.*
        - (A) A low pressure air test must follow the procedures described in American Society For Testing And Materials (ASTM) C-828, ASTM C-924, or ASTM F-1417 or other procedure approved by the executive director, except as to testing times as required in Table C.3 in subparagraph (C) of this paragraph or Equation C.3 in subparagraph (B)(ii) of this paragraph.
        - (B) For sections of collection system pipe less than 36 inch average inside diameter, the following procedure must apply, unless a pipe is to be tested as required by paragraph (2) of this subsection.
          - (i) A pipe must be pressurized to 3.5 pounds per square inch (psi) greater than the pressure exerted by groundwater above the pipe.
          - (ii) Once the pressure is stabilized, the minimum time allowable for the pressure to drop from 3.5 psi gauge to 2.5 psi gauge is computed from the following equation:

Equation C.3

$$T = \frac{0.085 \times D \times K}{Q}$$

Where:

T = time for pressure to drop 1.0 pound per square inch gauge in seconds
K = 0.000419 X D X L, but not less than 1.0
D = average inside pipe diameter in inches

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

(C) Since a K value of less than 1.0 may not be used, the minimum testing time for each pipe diameter is shown in the following Table C.3:

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

(D) An owner may stop a test if no pressure loss has occurred during the first 25% of the calculated testing time.
(E) If any pressure loss or leakage has occurred during the first 25% of a testing period, then the test must continue for the entire test duration as outlined above or until failure.
(F) Wastewater collection system pipes with a 27 inch or larger average inside diameter may be air tested at each joint instead of following the procedure outlined in this section.
(G) A testing procedure for pipe with an inside diameter greater than 33 inches must be approved by the executive director.

(2) *Infiltration/Exfiltration Test.*
- (A) The total exfiltration, as determined by a hydrostatic head test, must not exceed 50 gallons per inch of diameter per mile of pipe per 24 hours at a minimum test head of 2.0 feet above the crown of a pipe at an upstream manhole.
- (B) An owner shall use an infiltration test in lieu of an exfiltration test when pipes are installed below the groundwater level.
- (C) The total exfiltration, as determined by a hydrostatic head test, must not exceed 50 gallons per inch diameter per mile of pipe per 24 hours at a minimum test head of two feet above the crown of a pipe at an upstream manhole, or at least two feet above existing groundwater level, whichever is greater.
- (D) For construction within a 25-year flood plain, the infiltration or exfiltration must not exceed 10 gallons per inch diameter per mile of pipe per 24 hours at the same minimum test head as in subparagraph (C) of this paragraph.
- (E) If the quantity of infiltration or exfiltration exceeds the maximum quantity specified, an owner shall undertake remedial action in order to reduce

the infiltration or exfiltration to an amount within the limits specified. An owner shall retest a pipe following a remediation action.

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

16. All manholes must be tested to meet or exceed the requirements of 30 TAC §217.58.
    - (a) All manholes must pass a leakage test.
    - (b) An owner shall test each manhole (after assembly and backfilling) for leakage, separate and independent of the collection system pipes, by hydrostatic exfiltration testing, vacuum testing, or other method approved by the executive director.

      (1) Hydrostatic Testing.

- (A) The maximum leakage for hydrostatic testing or any alternative test methods is 0.025 gallons per foot diameter per foot of manhole depth per hour.
- (B) To perform a hydrostatic exfiltration test, an owner shall seal all wastewater pipes coming into a manhole with an internal pipe plug, fill the manhole with water, and maintain the test for at least one hour.
- (C) A test for concrete manholes may use a 24-hour wetting period before testing to allow saturation of the concrete.

(2) Vacuum Testing.
- (A) To perform a vacuum test, an owner shall plug all lift holes and exterior joints with a non-shrink grout and plug all pipes entering a manhole.
- (B) No grout must be placed in horizontal joints before testing.
- (C) Stub-outs, manhole boots, and pipe plugs must be secured to prevent movement while a vacuum is drawn.
- (D) An owner shall use a minimum 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 recommendations.
- (F) There must be a vacuum of 10 inches of mercury inside a manhole to perform a valid test.
- (G) A test does not begin until after the vacuum pump is off.
- (H) A manhole passes the test if after 2.0 minutes and with all valves closed, the vacuum is at least 9.0 inches of mercury.

17. 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.

BLUFFVIEW SUBDIVISION
PHASE 1

GENERAL NOTES

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/12/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 GN2.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 150
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: ####

GN2

SHEET NO. 08 OF 93 SHEETS

SCS TR-55
Drainage Area Calculations
Bluffview Preliminary Plat
Atlas 14 Rainfall Distribution
IDF Curves Based on City of Austin Criteria Manual (2yr = 4.14 in.)
Zone 1

CN Values

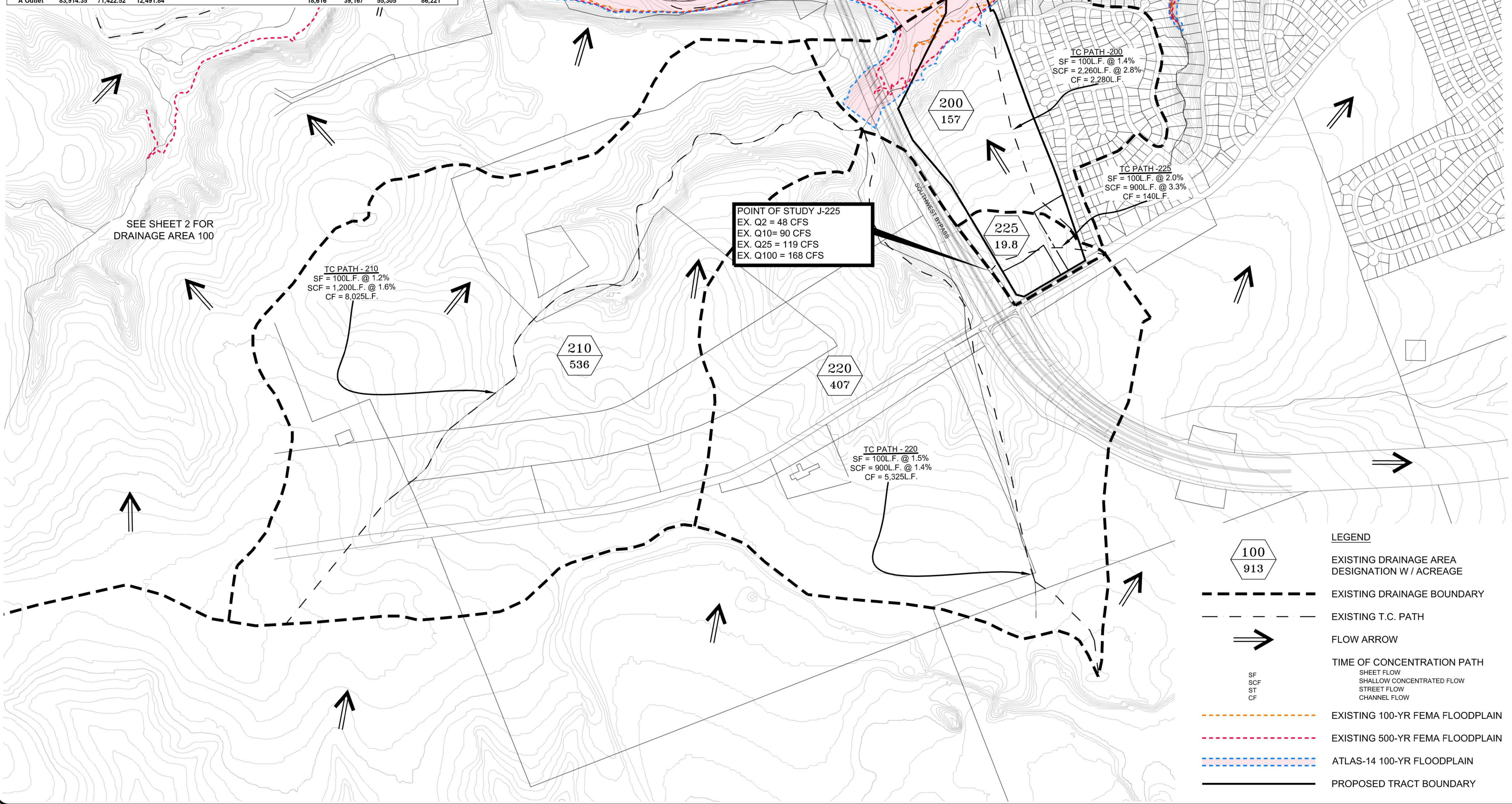
A Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
B Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
C Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
D Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%

Pavement - 98

Soil Types
Riverwash, RW (Hydrologic Group A)
Oakalla Silty Clay Loam, 32/OaA/OIA; Altoga Silty Clay Loam, AIC3; Sunev Silty Clay Loam, SvA/SvB (Hydrologic Group B)
Bolar Clay Loam, 4/5; Krum Clay, 24; Pedernales Fine Sandy, 36; Volenet Silty Clay Loam, VoD; Denton Silty Clay, DnA (Hydrologic Group C)
Aledo Clay Loam, 1; Anhlat Clay, 3; Bracket Association, 6/BktD; Doss Silty Clay, 9/DoC; Eckrant, 11/TaD/TcA/EaD/EeB/ErE/ErG (Hydrologic Group D)
Hensley Loam, 15/16; Purves Clay, 37/38/PuC; Tarpley Clay, 42/42; Water, W; Brackett, BID/BkE/BkrG; Crawford Clay, CfA/CfB; (Hydrologic Group D)
Denton Clay, DnA/DnB; Fairlie Clay, FaB/FaB; Georgetown Clay; GeB/GsB; Pits, PITQ; Queeny Clay, QuC; Sunev Clay Loam, SvA/SvB (Hydrologic Group D)

EXISTING CONDITIONS - DRAINAGE CALCULATIONS

AREA	AREA(AC)	PERV.(AC)	IMP.(AC)	CN	Tc(HRS)	Tc(MIN)	Q2(CFS)	Q10(CFS)	Q25(CFS)	Q100(CFS)
100	82,794.03	70,374.92	12,419.10	80	9.445	566.7	18,557	39,056	55,150	85,994
200	157.31	132.61	24.70	79	0.507	30.4	262	513	687	983
210	536.00	509.20	26.80	85	0.712	42.7	942	1,670	2,163	2,994
220	407.22	386.86	20.36	84	0.538	32.3	800	1,433	1,864	2,590
225	19.79	18.92	0.87	80	0.236	14.2	48	90	119	168
A Outlet	**83,914.35**	**71,422.52**	**12,491.84**				**18,616**	**39,167**	**55,305**	**86,221**



BLUFFVIEW
GEORGETOWN, TX
EXISTING CONDITIONS DRAINAGE AREA MAP

REVISIONS

NO.	DESCRIPTION	BY	DATE

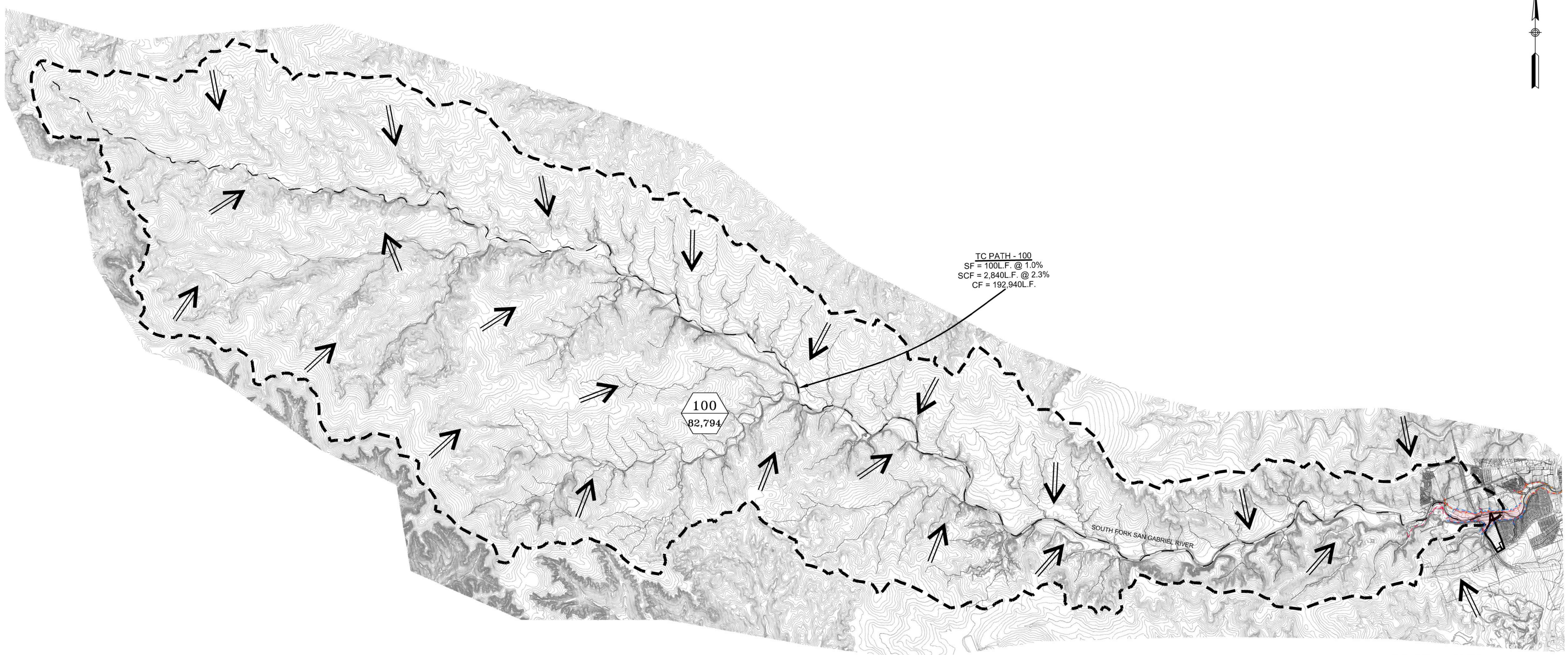
DATE: 8/31/23
DESIGNED BY: BWF
DRAWN BY: GR
CHECKED BY: BWF
DRAWING NAME: DrainageMap_ExCond-1,500.dwg

STATE OF TEXAS
BRIAN W. FALTESEK
105982
LICENSED PROFESSIONAL ENGINEER
1/18/2024

LJA Engineering Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN - F-1386

JOB NUMBER: A140-0418

SHEET NO. 9 OF 93 SHEETS



SEE SHEET 1 FOR DRAINAGE AREAS 100, 200, 210, 220, 225

SCS TR-55
Drainage Area Calculations
Bluffview Preliminary Plat
Atlas 14 Rainfall Distribution
IDF Curves Based on City of Austin Criteria Manual (2yr = 4.14 in.)
Zone 1

CN Values

A Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
B Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
C Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
D Soils
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Pavement - 98

Soil Types
Riverwash, RW (Hydrologic Group A)
Oakalla Silty Clay Loam, 32/OaA/OIA; Altoga Silty Clay Loam, AIC3; Sunev Silty Clay Loam, SvA/SvB (Hydrologic Group B)
Bolar Clay Loam, 4/5; Krum Clay, 24; Pedernales Fine Sandy, 36; Volenet Silty Clay Loam, VoD; Denton Silty Clay, DnA (Hydrologic Group C)
Aledo Clay Loam, 1; Anhlat Clay, 3; Bracket Association, 6/BktD; Doss Silty Clay, 9/DoC; Eckrant, 11/TaD/TcA/EaD/EeB/ErE/ErG (Hydrologic Group D)
Hensley Loam, 15/16; Purves Clay, 37/38/PuC; Tarpley Clay, 42/42; Water, W; Brackett, BID/BkE/BkrG; Crawford Clay, CfA/CfB; (Hydrologic Group D)
Denton Clay, DnA/DnB; Fairlie Clay, FaB/FaB; Georgetown Clay; GeB/GsB; Pits, PITQ; Queeny Clay, QuC; Sunev Clay Loam, SvA/SvB (Hydrologic Group D)

EXISTING CONDITIONS - DRAINAGE CALCULATIONS

AREA	AREA(AC)	PERV.(AC)	IMP.(AC)	CN	Tc(HRS)	Tc(MIN)	Q2(CFS)	Q10(CFS)	Q25(CFS)	Q100(CFS)
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A Outlet	**83,914.35**	**71,422.52**	**12,491.84**				**18,616**	**39,167**	**55,305**	**86,221**

LEGEND

100 / 913 — EXISTING DRAINAGE AREA DESIGNATION W/ ACREAGE
EXISTING DRAINAGE BOUNDARY
EXISTING T.C. PATH
FLOW ARROW
TIME OF CONCENTRATION PATH
SF — SHEET FLOW
SCF — SHALLOW CONCENTRATED FLOW
ST — STREET FLOW
CF — CHANNEL FLOW
EXISTING 100-YR FEMA FLOODPLAIN
EXISTING 500-YR FEMA FLOODPLAIN
ATLAS-14 100-YR FLOODPLAIN
PROPOSED TRACT BOUNDARY

BLUFFVIEW
GEORGETOWN, TX
EXISTING CONDITIONS DRAINAGE AREA MAP

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 8/31/23
DESIGNED BY: BWF
DRAWN BY: GR
CHECKED BY: BWF
DRAWING NAME: DrainageMap_ExCond-1-5000.dwg

STATE OF TEXAS
BRIAN W. FALTESEK
105952
LICENSED PROFESSIONAL ENGINEER
1/18/2024

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FRN - F-1386

JOB NUMBER: A140-0418

SHEET NO. 10 OF 93 SHEETS

SCS TR-55
Drainage Area Calculations
Bluffview Preliminary Plat
Atlas 14 Rainfall Distribution
IDF Curves Based on City of Austin Criteria Manual (2yr = 4.14 in.)
Zone 1

CN Values

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Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
B Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
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Pavement - 98

Soil Types
Riverwash, RW (Hydrologic Group A)
Oakalla Silty Clay Loam, 32/OaA/OIA; Altoga Silty Clay Loam, AIC3; Sunev Silty Clay Loam, SvA/SvB (Hydrologic Group B)
Bolar Clay Loam, 4/5; Krum Clay, 24; Pedernales Fine Sandy, 36; Volenet Silty Clay Loam, VoD; Denton Silty Clay, DnA (Hydrologic Group C)
Aledo Clay Loam, 1; Anhlat Clay, 3; Bracket Association, 6/BktD; Doss Silty Clay, 9/DoC; Eckrant, 11/TaD/TcA/EaD/EeB/ErE/ErG (Hydrologic Group D)
Hensley Loam, 15/16; Purves Clay, 37/38/PuC; Tarpley Clay, 42/42; Water, W; Brackett, BID/BkE/BkrG; Crawford Clay, CfA/CfB; (Hydrologic Group D)
Denton Clay, DnA/DnB; Fairlie Clay, FaB/FaB; Georgetown Clay; GeB/GsB; Pits, PITQ; Queeny Clay, QuC; Sunev Clay Loam, SvA/SvB (Hydrologic Group D)

PROPOSED CONDITIONS - DRAINAGE CALCULATIONS

AREA	AREA(AC)	PERV.(AC)	IMP.(AC)	CN	Tc(HRS)	Tc(MIN)	Q2(CFS)	Q10(CFS)	Q25(CFS)	Q100(CFS)
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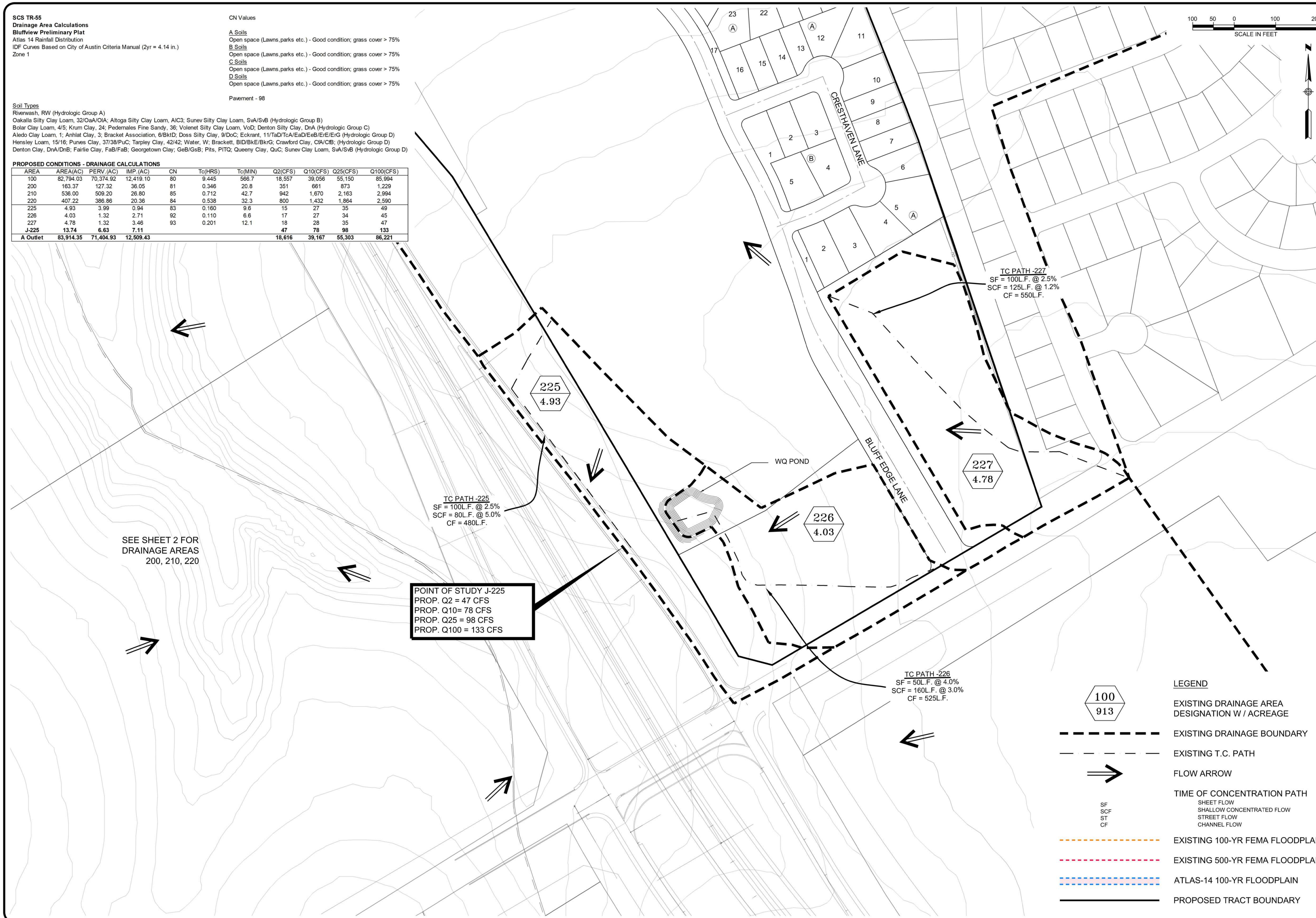
200	163.37	127.32	36.05	81	0.346	20.8	351	661	873	1,229
210	536.00	509.20	26.80	85	0.712	42.7	942	1,670	2,163	2,994
220	407.22	386.86	20.36	84	0.538	32.3	800	1,432	1,864	2,590
225	4.93	3.99	0.94	83	0.160	9.6	15	27	35	49
226	4.03	1.32	2.71	92	0.110	6.6	17	27	34	45
227	4.78	1.32	3.46	93	0.201	12.1	18	28	35	47
J-225	**13.74**	**6.63**	**7.11**				**47**	**78**	**98**	**133**
A Outlet	**83,914.35**	**71,404.93**	**12,509.43**				**18,616**	**39,167**	**55,303**	**86,221**



LEGEND

100 / 913	EXISTING DRAINAGE AREA DESIGNATION W / ACREAGE
	EXISTING DRAINAGE BOUNDARY
	EXISTING T.C. PATH
	FLOW ARROW
	TIME OF CONCENTRATION PATH
SF	SHEET FLOW
SCF	SHALLOW CONCENTRATED FLOW
ST	STREET FLOW
CF	CHANNEL FLOW
	EXISTING 100-YR FEMA FLOODPLAIN
	EXISTING 500-YR FEMA FLOODPLAIN
	ATLAS-14 100-YR FLOODPLAIN
	PROPOSED TRACT BOUNDARY

BLUFFVIEW
GEORGETOWN, TX

PROPOSED CONDITIONS DRAINAGE AREA MAP

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 8/31/23
DESIGNED BY: BWF
DRAWN BY: GR
CHECKED BY: BWF
DRAWING NAME: DrainageMap_PropCond-1.100.dwg

STATE OF TEXAS
BRIAN W. FALTESEK
105982
LICENSED
PROFESSIONAL ENGINEER
1/18/2024

LJA Engineering Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN - F-1386

JOB NUMBER:
A140-0418

SHEET NO.
11
OF 93 SHEETS

SCS TR-55
Drainage Area Calculations
Bluffview Preliminary Plat
Atlas 14 Rainfall Distribution
IDF Curves Based on City of Austin Criteria Manual (2yr = 4.14 in.)
Zone 1

CN Values

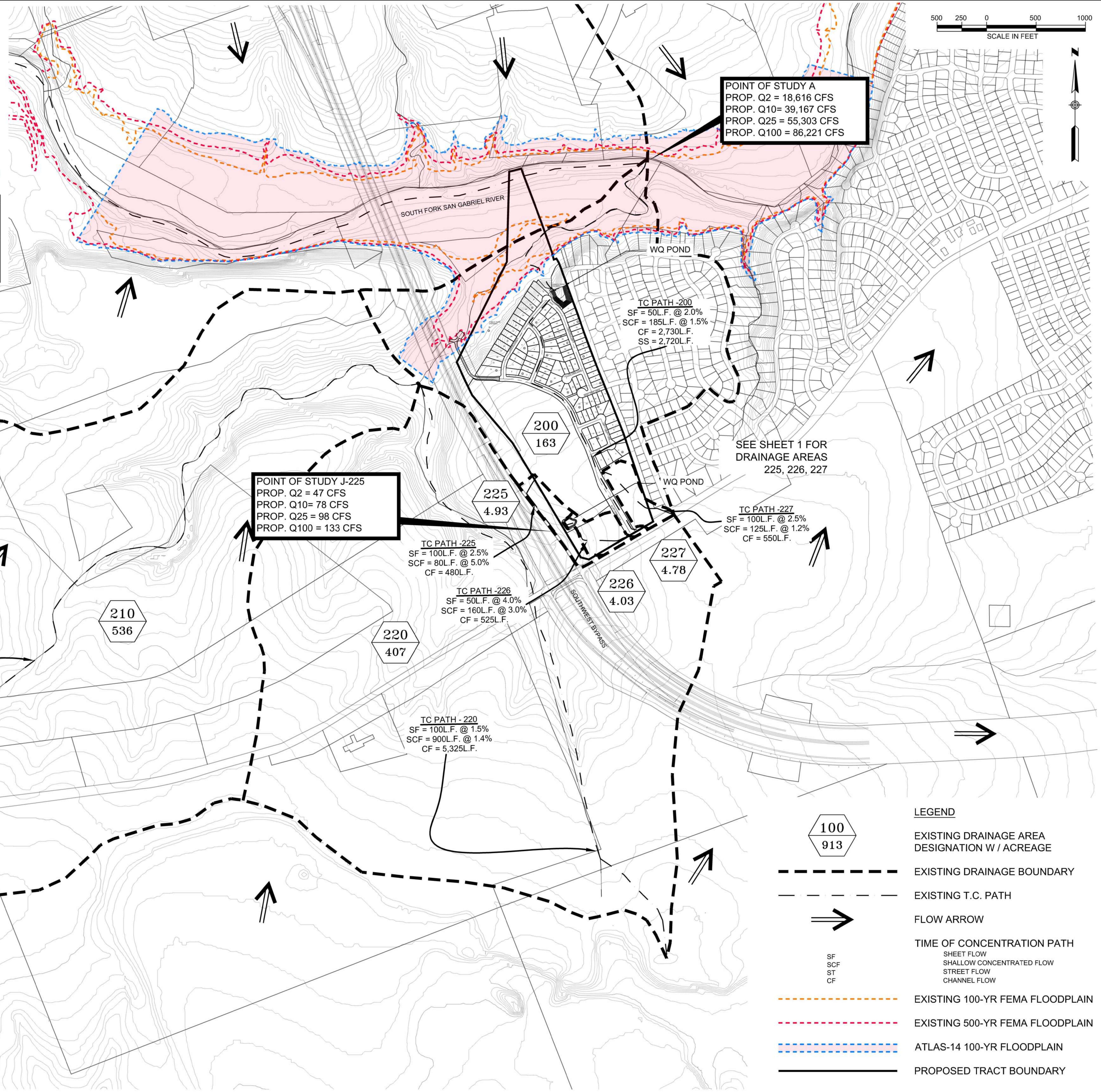
A Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
B Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
C Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%
D Soils
Open space (Lawns,parks etc.) - Good condition; grass cover > 75%

Pavement - 98

Soil Types
Riverwash, RW (Hydrologic Group A)
Oakalla Silty Clay Loam, 32/OaA/OIA; Altoga Silty Clay Loam, AIC3; Sunev Silty Clay Loam, SvA/SvB (Hydrologic Group B)
Bolar Clay Loam, 4/5; Krum Clay, 24; Pedernales Fine Sandy, 36; Volenet Silty Clay Loam, VoD; Denton Silty Clay, DnA (Hydrologic Group C)
Aledo Clay Loam, 1; Anhlat Clay, 3; Bracket Association, 6/BktD; Doss Silty Clay, 9/DoC; Eckrant, 11/TaD/TcA/EaD/EeB/ErE/ErG (Hydrologic Group D)
Hensley Loam, 15/16; Purves Clay, 37/38/PuC; Tarpley Clay, 42/42; Water, W; Brackett, BID/BkE/BkrG; Crawford Clay, CfA/CfB; (Hydrologic Group D)
Denton Clay, DnA/DnB; Fairlie Clay, FaB/FaB; Georgetown Clay; GeB/GsB; Pits, PITQ; Queeny Clay, QuC; Sunev Clay Loam, SvA/SvB (Hydrologic Group D)

PROPOSED CONDITIONS - DRAINAGE CALCULATIONS

AREA	AREA(AC)	PERV.(AC)	IMP.(AC)	CN	Tc(HRS)	Tc(MIN)	Q2(CFS)	Q10(CFS)	Q25(CFS)	Q100(CFS)
100	82,794.03	70,374.92	12,419.10	80	9.445	566.7	18,557	39,056	55,150	85,994
200	163.37	127.32	36.05	81	0.346	20.8	351	661	873	1,229
210	536.00	509.20	26.80	85	0.712	42.7	942	1,670	2,163	2,994
220	407.22	386.86	20.36	84	0.538	32.3	800	1,432	1,864	2,590
225	4.93	3.99	0.94	83	0.160	9.6	15	27	35	49
226	4.03	1.32	2.71	92	0.110	6.6	17	27	34	45
227	4.78	1.32	3.46	93	0.201	12.1	18	28	35	47
J-225	**13.74**	**6.63**	**7.11**				**47**	**78**	**98**	**133**
A Outlet	**83,914.35**	**71,404.93**	**12,509.43**				**18,616**	**39,167**	**55,303**	**86,221**



LEGEND

100 / 913	EXISTING DRAINAGE AREA DESIGNATION W / ACREAGE
	EXISTING DRAINAGE BOUNDARY
	EXISTING T.C. PATH
	FLOW ARROW
SF / SCF / ST / CF	TIME OF CONCENTRATION PATH: SHEET FLOW / SHALLOW CONCENTRATED FLOW / STREET FLOW / CHANNEL FLOW
	EXISTING 100-YR FEMA FLOODPLAIN
	EXISTING 500-YR FEMA FLOODPLAIN
	ATLAS-14 100-YR FLOODPLAIN
	PROPOSED TRACT BOUNDARY

BLUFFVIEW
GEORGETOWN, TX

PROPOSED CONDITIONS DRAINAGE AREA MAP

REVISIONS

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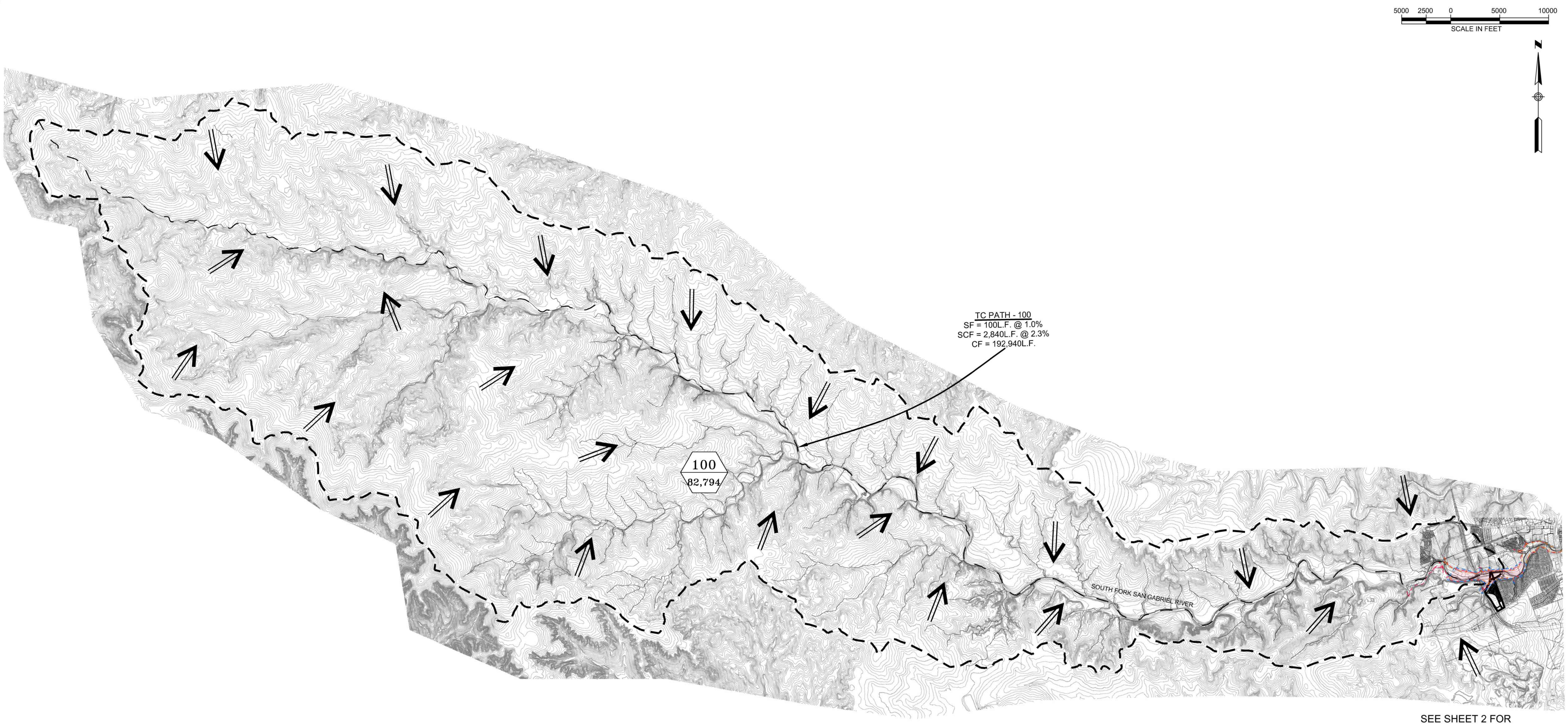
JOB NUMBER: A140-0418

SHEET NO. 12 OF 93 SHEETS

I:\A140 Riverside Res\Bluffview\New-Plan\DrainageMap_PropCond-1.500.dwg
User: grodriguez
Last Modified: Aug. 29, 23 - 11:32
Plot Date/Time: Jan. 18, 24 - 08:39:22

...\Topo-combined-grid.dwg
...\Floodplain Study\topo-base-wetted.dwg



SEE SHEET 2 FOR DRAINAGE AREAS 100, 200, 210, 220, 225, 226, 227, 228

SCS TR-55
Drainage Area Calculations
Bluffview Preliminary Plat
Atlas 14 Rainfall Distribution
IDF Curves Based on City of Austin Criteria Manual (2yr = 4.14 in.)
Zone 1

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Pavement - 98

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Denton Clay, DnA/DnB; Fairlie Clay, FaB/FaB; Georgetown Clay; GeB/GsB; Pits, PlTQ; Queeny Clay, QuC; Sunev Clay Loam, SvA/SvB (Hydrologic Group D)

PROPOSED CONDITIONS - DRAINAGE CALCULATIONS

AREA	AREA(AC)	PERV.(AC)	IMP.(AC)	CN	Tc(HRS)	Tc(MIN)	Q2(CFS)	Q10(CFS)	Q25(CFS)	Q100(CFS)
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LEGEND

100 / 913 — EXISTING DRAINAGE AREA DESIGNATION W / ACREAGE
EXISTING DRAINAGE BOUNDARY
EXISTING T.C. PATH
FLOW ARROW
TIME OF CONCENTRATION PATH
SF — SHEET FLOW
SCF — SHALLOW CONCENTRATED FLOW
ST — STREET FLOW
CF — CHANNEL FLOW
EXISTING 100-YR FEMA FLOODPLAIN
EXISTING 500-YR FEMA FLOODPLAIN
ATLAS-14 100-YR FLOODPLAIN
PROPOSED TRACT BOUNDARY

BLUFFVIEW
GEORGETOWN, TX
PROPOSED CONDITIONS DRAINAGE AREA MAP

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 8/31/23
DESIGNED BY: BWF
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DRAWING NAME: DrainageMap_PropCond-1.5000.dwg

STATE OF TEXAS
BRIAN W. FALTESEK
105982
LICENSED PROFESSIONAL ENGINEER
1/18/2024

LJA Engineering Inc.
7500 Rialto Boulevard
Building II, Suite 100
Austin, Texas 78735
Phone 512.439.4700
Fax 512.439.4716
FRN - F-1386

JOB NUMBER: A140-0418

0 100 200

1" = 100'

LEGEND:

TRIB 1-A
A = X.XX AC
IC = X%
CN = XX
TC = X.X MIN
Q_{25} = X.X CFS
Q_{100} = X.X CFS

DRAINAGE AREA BASIN

DRAINAGE DEVIDE

PROPOSED FLOW DIRECTION OF FINISHED GRADE LOT PER BUILDER

TIME AND CONCENTRATION

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION PHASE 1

INTERNAL DRAINAGE AREA MAP

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 DM3.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd. Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A140-0418

DM3

SHEET NO. 14 OF 93 SHEETS

Date/Time : Thu, 18 Jan 2024 - 9:57pm User Name : jsleouch
PathName : G:\A140-0418 Bluffview\ACAD\Sheet Files\A140-0418 DM3.dwg

PROPOSED DRAINAGE CALCULATIONS - RATIONAL METHOD

IDF COEFFICIENTS

	25-YEAR	100-YEAR
a	111.07	129.03
b	17.23	17.83
c	0.7815	0.7625

DEVELOPED RUNOFF COEFFICIENTS

	25-YEAR	100-YEAR
LOTS	0.67	0.70
ROW (50')	0.82	0.83
OPEN SPACE	0.31	0.36

DEVELOPED RUNOFF COEFFICIENTS

	25-YEAR	100-YEAR
ROW (90')	0.79	0.80

AREA NO.	TOTAL AREA (AC)	LOT AREA (AC)	ROW AREA (AC)	OPEN SPACE (AC)	Tc (MIN)	C25 COMP	C100 COMP	I25 (IN/HR)	I100 (IN/HR)	Q25 (CFS)	Q100 (CFS)	INLET TYPE
A1	0.36	0.04	0.21	0.11	5.0	0.65	0.67	9.84	11.88	2.3	2.9	GRADE
A2	0.87	0.56	0.26	0.05	6.3	0.69	0.72	9.40	11.38	5.7	7.2	GRADE
A3	1.15	1.04	0.12	0.00	7.0	0.69	0.71	9.20	11.14	7.3	9.2	GRADE
A4	0.30	0.00	0.30	0.00	7.2	0.82	0.83	9.14	11.08	2.3	2.8	GRADE
A5	0.71	0.63	0.09	0.00	5.6	0.69	0.72	9.63	11.64	4.7	5.9	GRADE
A6	1.01	0.78	0.23	0.00	7.2	0.70	0.73	9.15	11.09	6.5	8.1	GRADE
A7	0.15	0.09	0.05	0.00	5.0	0.72	0.75	9.84	11.88	1.1	1.3	GRADE
A8A	0.34	0.00	0.34	0.00	5.3	0.82	0.83	9.74	11.77	2.7	3.3	GRADE
A8B	1.01	0.74	0.27	0.00	7.1	0.71	0.74	9.18	11.12	6.6	8.3	GRADE
B1	0.72	0.18	0.16	0.38	8.3	0.51	0.55	8.82	10.71	3.3	4.2	GRADE
B2	0.79	0.07	0.14	0.59	7.3	0.43	0.47	9.12	11.05	3.1	4.1	GRADE
B3	0.52	0.07	0.45	0.00	5.0	0.80	0.81	9.84	11.88	4.1	5.0	GRADE
B4	0.99	0.00	0.25	0.73	9.5	0.44	0.48	8.52	10.36	3.7	4.9	GRADE
B5	0.68	0.09	0.32	0.27	9.9	0.60	0.63	8.42	10.24	3.4	4.4	GRADE
B6	0.24	0.05	0.13	0.06	5.0	0.67	0.69	9.84	11.88	1.6	2.0	GRADE
B7	0.55	0.06	0.39	0.09	6.7	0.72	0.73	9.30	11.26	3.6	4.5	GRADE
B8	0.34	0.04	0.27	0.02	5.0	0.77	0.79	9.84	11.88	2.6	3.1	GRADE
B9	0.15	0.04	0.10	0.00	5.0	0.78	0.79	9.84	11.88	1.1	1.4	GRADE
B10	0.29	0.11	0.14	0.04	6.5	0.69	0.71	9.35	11.32	1.9	2.3	GRADE
B11	0.65	0.08	0.40	0.17	5.0	0.66	0.69	9.84	11.88	4.2	5.3	GRADE
B12	0.47	0.33	0.13	0.01	5.5	0.70	0.73	9.67	11.68	3.2	4.0	GRADE
B13	1.31	1.20	0.09	0.02	6.7	0.68	0.70	9.30	11.26	8.2	10.4	GRADE
B14	0.64	0.59	0.05	0.00	5.4	0.68	0.71	9.70	11.72	4.3	5.4	GRADE
B15	0.47	0.38	0.06	0.03	5.2	0.67	0.70	9.77	11.80	3.1	3.9	GRADE
B16	0.41	0.07	0.33	0.00	5.1	0.79	0.81	9.82	11.86	3.2	3.9	GRADE
C1	0.46	0.33	0.12	0.01	9.3	0.70	0.73	8.57	10.42	2.8	3.5	GRADE
C2	1.65	1.24	0.18	0.23	7.3	0.64	0.67	9.10	11.03	9.5	12.1	GRADE
C3	1.04	0.75	0.09	0.20	7.4	0.61	0.65	9.08	11.01	5.8	7.4	GRADE
C4	0.61	0.33	0.28	0.00	5.8	0.74	0.76	9.57	11.57	4.3	5.4	GRADE
C5	0.16	0.00	0.16	0.00	5.0	0.82	0.83	9.84	11.88	1.3	1.6	GRADE
C6	0.67	0.49	0.08	0.10	5.4	0.63	0.66	9.71	11.73	4.1	5.2	GRADE
D1	0.17	0.00	0.17	0.00	5.0	0.79	0.80	9.84	11.88	1.4	1.7	GRADE
D2	2.91	2.25	0.18	0.48	7.4	0.62	0.65	9.07	11.00	16.3	20.8	GRADE
D3	1.84	1.35	0.45	0.04	5.8	0.69	0.72	9.58	11.59	12.2	15.3	GRADE
D4	0.13	0.00	0.13	0.00	5.0	0.79	0.80	9.84	11.88	1.0	1.2	GRADE
D5	1.09	0.82	0.19	0.09	5.0	0.66	0.69	9.84	11.88	7.1	8.9	GRADE
D6	1.54	1.11	0.16	0.27	7.2	0.62	0.65	9.14	11.08	8.7	11.1	GRADE
D7	0.36	0.15	0.18	0.03	5.0	0.72	0.74	9.84	11.88	2.5	3.1	GRADE
D8	0.59	0.50	0.09	0.00	5.0	0.69	0.72	9.84	11.88	4.0	5.0	GRADE
D9	2.07	1.58	0.17	0.31	9.1	0.63	0.66	8.62	10.47	11.2	14.3	GRADE
D10	0.66	0.53	0.11	0.02	6.6	0.68	0.71	9.33	11.29	4.2	5.3	GRADE
D11	2.32	1.83	0.14	0.36	8.7	0.62	0.66	8.74	10.61	12.6	16.1	GRADE

	I.C	Frequency	C_1 - Developed	C_2 - Undeveloped	Eqn. $C_{COM} = IC*C_1 + (1-IC)*C_2$
LOTS	55%	25-YR	0.97	0.31	0.67
	55%	100-YR	0.97	0.36	0.70
ROW (50')	80%	25-YR	0.95	0.31	0.82
	80%	100-YR	0.95	0.36	0.83
ROW (90')	75%	25-YR	0.95	0.31	0.79
	75%	100-YR	0.95	0.36	0.80
OPEN SPACE	0%	25-YR	0.95	0.31	0.31
	0%	100-YR	0.95	0.36	0.36

Residental Collector
where, $b = S_x = -0.0568$
$G_2 = 0.00871$
$G_1 = 0.0568$
$A = -1.3358 \times 10^{-3}$
Neighborhood Collector
where, $b = S_x = -0.073$
$G_2 = 0.01033$
$G_1 = 0.073$
$A = -2.321 \times 10^{-3}$
Local Street
where, $b = S_x = -0.0641$
$G_2 = 0.009073$
$G_1 = 0.0641$
$A = -1.775 \times 10^{-3}$

TIME OF CONCENTRATION CALCULATIONS

ENTER MANNINGS n-VALUE — Undev = 0.30; Grass = 0.25; Pvmt = 0.016

AREA NO.	SHEET FLOW DIST (FT)	SHEET FLOW SLOPE (FT/FT)	SHEET FLOW Tc (MIN)	SHALLOW CONC FLOW DIST (FT)	SHALLOW CONC FLOW SLOPE (FT/FT)	SHALLOW CONC FLOW Tc (MIN)	STREET FLOW DIST (FT)	STREET FLOW SLOPE (FT/FT)	STREET FLOW Tc (MIN)	TOTAL Tc (MIN)
A1	0	0.020	0.0	37	0.118	0.1	374	0.02	2.1	5.0
A2	25	0.019	4.8	278	0.039	1.5	23	0.06	0.1	6.3
A3	25	0.019	4.8	276	0.048	1.3	131	0.01	0.9	7.0
A4	22	0.020	4.2	0	0.020	0.0	507	0.02	3.0	7.2
A5	25	0.041	3.5	234	0.053	1.0	124	0.01	1.1	5.6
A6	25	0.029	4.0	256	0.045	1.2	199	0.01	1.9	7.2
A7	25	0.027	4.1	106	0.025	0.7	31	0.02	0.2	5.0
A8A	0	0.020	0.0	0	0.020	0.0	494	0.01	5.3	5.3
A8B	25	0.027	4.2	216	0.026	1.4	241	0.02	1.5	7.1
B1	25	0.008	6.8	236	0.033	1.3	35	0.02	0.2	8.3
B2	25	0.024	4.4	369	0.024	2.5	45	0.01	0.4	7.3
B3	0	0.020	0.0	0	0.020	0.0	529	0.02	3.5	5.0
B4	25	0.024	4.4	443	0.023	3.0	215	0.01	2.1	9.5
B5	25	0.012	5.8	57	0.030	0.3	330	0.01	3.8	9.9
B6	25	0.082	2.7	32	0.030	0.2	143	0.04	0.6	5.0
B7	14	0.020	3.0	0	0.020	0.0	585	0.02	3.7	6.7
B8	18	0.076	2.1	35	0.034	0.2	274	0.03	1.4	5.0
B9	18	0.039	2.8	21	0.039	0.1	169	0.03	0.7	5.0
B10	25	0.011	5.9	63	0.058	0.3	75	0.03	0.3	6.5
B11	14	0.300	1.0	25	0.030	0.1	661	0.03	3.1	5.0
B12	25	0.023	4.4	132	0.049	0.6	70	0.02	0.5	5.5
B13	25	0.039	3.6	442	0.026	2.8	54	0.04	0.2	6.7
B14	25	0.067	2.9	376	0.026	2.4	25	0.05	0.1	5.4
B15	25	0.033	3.9	177	0.026	1.1	53	0.04	0.2	5.2
B16	10	0.018	2.4	0	0.020	0.0	544	0.03	2.7	5.1
C1	25	0.005	8.0	142	0.038	0.8	87	0.02	0.5	9.3
C2	25	0.020	4.7	311	0.030	1.9	117	0.01	0.8	7.3
C3	25	0.020	4.7	334	0.025	2.2	63	0.01	0.5	7.4
C4	25	0.078	2.7	11	0.019	0.1	459	0.02	3.0	5.8
C5	0	0.020	0.0	0	0.020	0.0	222	0.01	2.2	5.0
C6	25	0.032	3.9	222	0.039	1.2	47	0.02	0.3	5.4
D1	11	0.020	2.4	0	0.020	0.0	297	0.02	1.6	5.0
D2	25	0.020	4.7	466	0.043	2.3	68	0.02	0.4	7.4
D3	25	0.065	2.9	300	0.034	1.7	247	0.03	1.2	5.8
D4	10	0.020	2.3	0	0.020	0.0	170	0.02	1.1	5.0
D5	25	0.080	2.7	267	0.039	1.4	120	0.02	0.7	5.0
D6	25	0.020	4.7	346	0.039	1.8	132	0.03	0.7	7.2
D7	25	0.063	3.0	138	0.045	0.7	156	0.02	0.8	5.0
D8	25	0.052	3.2	232	0.029	1.4	79	0.03	0.4	5.0
D9	25	0.020	4.7	564	0.032	3.2	243	0.03	1.2	9.1
D10	25	0.020	4.7	169	0.029	1.0	178	0.03	0.8	6.6
D11	25	0.020	4.7	506	0.032	2.9	201	0.03	1.0	8.7

STREET GUTTER DEPTH CALCULATIONS FOR 100YR STORM

AREA #	FLOW (CFS)	QBYPASS (CFS)	QTOTAL (CFS)	STREET CAP (CFS)	S_O (%)	Y (FT)	QX-OVER (CFS)	Q NET (CFS)	FLOW TO	STREET WIDTH (FT)	SPREAD (FT)	ALLOWABLE SPREAD (FT)	INLET TYPE
A1	2.9		2.9	25.0	2.18	0.22	0.0	2.9	NA	29	3.5	14.5	GRADE
A2	7.2		7.2	42.8	6.39	0.26	0.0	7.2	NA	29	4.1	14.5	GRADE
A3	9.2	0.1	9.2	20.1	1.40	0.37	0.0	9.2	NA	29	6.8	14.5	GRADE
A4	2.8		2.8	23.8	1.98	0.22	0.0	2.8	NA	29	3.5	14.5	GRADE
A5	5.9	0.6	6.5	16.1	0.90	0.36	0.0	6.5	NA	29	6.3	14.5	GRADE
A6	8.1		8.1	14.8	0.76	0.40	0.0	8.1	NA	29	7.5	14.5	GRADE
A7	1.3		1.3	25.7	2.30	0.16	0.0	1.3	NA	29	2.5	14.5	GRADE
A8A	3.3		3.3	13.0	0.59	0.30	0.0	3.3	NA	29	5.1	14.5	GRADE
A8B	8.3	9.8	18.1	22.4	1.74	0.46	0.0	18.1	NA	29	9.7	14.5	GRADE
B1	4.2		4.2	64.0	1.65	0.18	0.0	4.2	NA	25	11.8	25	GRADE
B2	4.1		4.1	41.7	0.70	0.21	0.0	4.1	NA	25	15.0	25	GRADE
B3	5.0		5.0	61.0	1.50	0.20	0.0	5.0	NA	25	13.4	25	GRADE
B4	4.9		4.9	41.7	0.70	0.22	0.0	4.9	NA	25	17.0	25	GRADE
B5	4.4		4.4	10.9	0.50	0.35	0.0	4.4	NA	27	7.0	13.5	GRADE
B6	2.0		2.0	31.2	4.12	0.18	0.0	2.0	NA	27	3.0	13.5	GRADE
B7	4.5		4.5	20.0	1.70	0.29	0.0	4.5	NA	27	5.3	13.5	GRADE
B8	3.1		3.1	25.2	2.70	0.23	0.0	3.1	NA	27	4.0	13.5	GRADE
B9	1.4		1.4	28.6	3.46	0.16	0.0	1.4	NA	27	2.7	13.5	GRADE
B10	2.3		2.3	27.7	3.25	0.20	0.0	2.3	NA	27	3.4	13.5	GRADE
B11	5.3		5.3	27.0	3.10	0.27	0.0	5.3	NA	27	5.0	13.5	GRADE
B12	4.0		4.0	21.2	1.56	0.27	0.0	4.0	NA	29	4.4	14.5	GRADE
B13	10.4		10.4	32.8	3.74	0.32	0.0	10.4	NA	29	5.6	14.5	GRADE
B14	5.4	1.8	7.2	39.1	5.32	0.26	0.0	7.2	NA	29	4.3	14.5	GRADE
B15	3.9		3.9	33.7	3.96	0.22	0.0	3.9	NA	29	3.5	14.5	GRADE
B16	3.9		3.9	28.2	2.76	0.24	0.0	3.9	NA	29	3.8	14.5	GRADE
C1	3.5		3.5	23.5	1.93	0.24	0.0	3.5	NA	29	3.9	14.5	GRADE
C2	12.1		12.1	20.6	1.48	0.41	0.0	12.1	NA	29	7.8	14.5	GRADE
C3	7.4	2.3	9.6	16.6	0.96	0.41	0.0	9.6	NA	29	7.8	14.5	GRADE
C4	5.4		5.4	21.3	1.58	0.30	0.0	5.4	NA	29	5.0	14.5	GRADE
C5	1.6	0.6	2.1	13.7	0.65	0.25	0.0	2.1	NA	29	4.0	14.5	GRADE
C6	5.2		5.2	21.2	1.57	0.30	0.0	5.2	NA	29	5.0	14.5	GRADE
D1	1.7		1.7	26.4	2.43	0.18	0.0	1.7	NA	29	2.7	14.5	GRADE
D2	20.8		20.8	23.1	1.85	0.48	0.0	20.8	NA	29	10.6	14.5	GRADE
D3	15.3	8.5	23.8	29.7	3.07	0.46	0.0	23.8	NA	29	9.6	14.5	GRADE
D4	1.2		1.2	21.9	1.67	0.17	0.0	1.2	NA	29	2.6	14.5	GRADE
D5	8.9		8.9	25.3	2.24	0.34	0.0	8.9	NA	29	5.9	14.5	GRADE
D6	11.1		11.1	26.8	2.50	0.36	0.0	11.1	NA	29	6.4	14.5	GRADE
D7	3.1	12.2	15.3	26.7	2.49	0.41	0.0	15.3	NA	29	7.7	14.5	GRADE
D8	5.0	4.9	9.9	30.9	3.32	0.33	0.0	9.9	NA	29	5.6	14.5	GRADE
D9	14.3	2.0	16.3	28.9	2.90	0.40	0.0	16.3	NA	29	7.6	14.5	GRADE
D10	5.3	1.4	6.7	29.3	2.98	0.29	0.0	6.7	NA	29	4.8	14.5	GRADE
D11	16.1	5.7	21.9	27.3	2.59	0.46	0.0	21.9	NA	29	9.6	14.5	GRADE

INLET CALCULATIONS FOR 100YR STORM (ALL INLETS ARE TYPE 1 ON GRADE)

INLET #	AREA #	ST WIDTH (FT)	QTOTAL (CFS)	STREET CAP (CFS)	S (%)	Y (FT)	QA/LA (CFS/FT)	LA (FT)	L (FT)	L/LA	A/Y	Q/QA	QIN (CFS)	QBYPASS (CFS)	FLOW TO
A1	A1	29	2.9	25.0	2.18	0.22	0.7	4.27	10	2.34	1.87	1.0000	2.9	0.0	NA
A2	A2	29	7.2	42.8	6.39	0.26	0.7	10.11	10	0.99	1.63	0.9927	7.1	0.1	A3
A3	A3	29	9.2	20.1	1.40	0.37	0.8	11.10	10	0.90	1.12	0.9399	8.7	0.6	A5
A4	A4	29	2.8	23.8	1.98	0.22	0.7	4.14	10	2.42	1.86	1.0000	2.8	0.0	NA
A5	A5	29	6.5	16.1	0.90	0.36	0.8	8.01	10	1.25	1.17	1.0000	6.5	0.0	NA
A6	A6	29	8.1	14.8	0.76	0.40	0.9	9.48	10	1.05	1.04	1.0000	8.1	0.0	NA
A7	A7	29	1.3	25.7	2.30	0.16	0.6	2.13	10	4.70	2.54	1.0000	1.3	0.0	NA
B1	B1	25	4.2	64.0	1.65	0.18	0.6	6.70	10	1.49	2.30	1.0000	4.2	0.0	NA
B2	B2	25	4.1	41.7	0.70	0.21	0.7	6.22	10	1.61	1.98	1.0000	4.1	0.0	NA
B3	B3	25	5.0	61.0	1.50	0.20	0.6	7.72	10	1.29	2.13	1.0000	5.0	0.0	NA
B4	B4	25	4.9	41.7	0.70	0.22	0.7	7.29	10	1.37	1.85	1.0000	4.9	0.0	NA
B5	B5	27	4.4	10.9	0.50	0.35	0.8	5.37	10	1.86	1.17	1.0000	4.4	0.0	NA
B6	B6	27	2.0	31.2	4.12	0.18	0.6	3.11	10	3.22	2.35	1.0000	2.0	0.0	NA
B7	B7	27	4.5	20.0	1.70	0.29	0.7	6.13	10	1.63	1.45	1.0000	4.5	0.0	NA
B8	B8	27	3.1	25.2	2.70	0.23	0.7	4.62	10	2.17	1.82	1.0000	3.1	0.0	NA
B9	B9	27	1.4	28.6	3.46	0.16	0.6	2.25	10	4.44	2.59	1.0000	1.4	0.0	NA
B10	B10	27	2.3	27.7	3.25	0.20	0.7	3.59	10	2.79	2.11	1.0000	2.3	0.0	NA
B11	B11	27	5.3	27.0	3.10	0.27	0.7	7.31	10	1.37	1.54	1.0000	5.3	0.0	NA
B12	B12	29	4.0	21.2	1.56	0.27	0.7	5.55	10	1.80	1.56	1.0000	4.0	0.0	NA
B13	B13	29	10.4	32.8	3.74	0.32	0.8	13.34	10	0.75	1.28	0.8260	8.6	1.8	B14
B14	B14	29	7.2	39.1	5.32	0.26	0.7	9.99	10	1.00	1.57	1.0000	7.2	0.0	NA
B15	B15	29	3.9	33.7	3.96	0.22	0.7	5.77	10	1.73	1.87	1.0000	3.9	0.0	NA
B16	B16	29	3.9	28.2	2.76	0.24	0.7	5.62	10	1.78	1.75	1.0000	3.9	0.0	NA
C1	C1	29	3.5	23.5	1.93	0.24	0.7	5.00	10	2.00	1.71	1.0000	3.5	0.0	NA
C2	C2	29	12.1	20.6	1.48	0.41	0.9	13.95	10	0.72	1.02	0.8134	9.9	2.3	C3
C3	C3	29	9.6	16.6	0.96	0.41	0.9	11.09	10	0.90	1.02	0.9425	9.1	0.6	C5
C4	C4	29	5.4	21.3	1.58	0.30	0.8	7.18	10	1.39	1.39	1.0000	5.4	0.0	NA
C5	C5	29	2.1	13.7	0.65	0.25	0.7	3.06	10	3.27	1.67	1.0000	2.1	0.0	NA
C6	C6	29	5.2	21.2	1.57	0.30	0.7	6.99	10	1.43	1.41	1.0000	5.2	0.0	NA
D1	D1	29	1.7	26.4	2.43	0.18	0.6	2.63	10	3.80	2.35	1.0000	1.7	0.0	NA
D2	D2	29	20.8	23.1	1.85	0.48	0.9	21.92	10	0.46	0.87	0.5904	12.3	8.5	D3
D3	D3	29	23.8	29.7	3.07	0.46	0.9	25.75	10	0.39	0.91	0.5145	12.2	11.6	D7
D4	D4	29	1.2	21.9	1.67	0.17	0.6	1.97	10	5.09	2.46	1.0000	1.2	0.0	NA
D5	D5	29	8.9	25.3	2.24	0.34	0.8	11.27	10	0.89	1.23	0.9283	8.3	0.6	D7
D6	D6	29	11.1	26.8	2.50	0.36	0.8	13.66	10	0.73	1.16	0.8175	9.1	2.0	D9
D7	D7	29	15.3	26.7	2.49	0.41	0.9	17.73	10	0.56	1.03	0.6821	10.5	4.9	D8
D8	D8	29	9.9	30.9	3.32	0.33	0.8	12.71	10	0.79	1.28	0.8549	8.5	1.4	D10
D9	D9	29	16.3	28.9	2.90	0.40	0.9	18.89	10	0.53	1.03	0.6490	10.6	5.7	D11
D10	D10	29	6.7	29.3	2.98	0.29	0.7	9.10	10	1.10	1.44	1.0000	6.7	0.0	NA
D11	D11	29	21.9	27.3	2.59	0.46	0.9	23.64	10	0.42	0.91	0.5520	12.1	9.8	A8B

INLET CALCULATIONS FOR 100YR STORM (ALL INLETS ARE TYPE 1 IN SUMP WITH 10% REDUCTION)

INLET #	AREA #	QTOTAL (CFS)	L (FT)	L x 0.90 (FT)	Q/L (CFS/FT)	Yo + 5" (FT)	INLET Yo (FT)	BELOW 0.5 FT
A8	A8A & A8B	21.4	10	9	2.38	0.86	0.44	Yes

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1
INTERNAL DRAINAGE CALCULATIONS

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 DM4.dwg

STATE OF TEXAS — JUSTIN D. MIDURA — 128809 — LICENSED PROFESSIONAL ENGINEER
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A140-0418

DM4

STREET GUTTER DEPTH CALCULATIONS FOR 25YR STORM

AREA #	FLOW (CFS)	QBYPASS (CFS)	QTOTAL (CFS)	STREET CAP (CFS)	S_O (%)	Y (FT)	QX-OVER (CFS)	Q NET (CFS)	FLOW TO	STREET WIDTH (FT)	SPREAD (FT)	ALLOWABLE SPREAD (FT)	INLET TYPE
A1	2.3		2.3	25.0	2.18	0.20	0.0	2.3	NA	29	3.2	14.5	GRADE
A2	5.7		5.7	42.8	6.39	0.23	0.0	5.7	NA	29	3.7	14.5	GRADE
A3	7.3		7.3	20.1	1.40	0.34	0.0	7.3	NA	29	6.0	14.5	GRADE
A4	2.3		2.3	23.8	1.98	0.21	0.0	2.3	NA	29	3.2	14.5	GRADE
A5	4.7		4.7	16.1	0.90	0.32	0.0	4.7	NA	29	5.4	14.5	GRADE
A6	6.5		6.5	14.8	0.76	0.37	0.0	6.5	NA	29	6.6	14.5	GRADE
A7	1.1		1.1	25.7	2.30	0.15	0.0	1.1	NA	29	2.3	14.5	GRADE
A8A	2.7		2.7	13.0	0.59	0.28	0.0	2.7	NA	29	4.6	14.5	GRADE
A8B	6.6	4.8	11.4	22.4	1.74	0.39	0.0	11.4	NA	29	7.2	14.5	GRADE
B1	3.3		3.3	64.0	1.65	0.16	0.0	3.3	NA	25	10.3	25	GRADE
B2	3.1		3.1	41.7	0.70	0.19	0.0	3.1	NA	25	12.6	25	GRADE
B3	4.1		4.1	61.0	1.50	0.18	0.0	4.1	NA	25	11.9	25	GRADE
B4	3.7		3.7	41.7	0.70	0.20	0.0	3.7	NA	25	14.1	25	GRADE
B5	3.4		3.4	10.9	0.50	0.32	0.0	3.4	NA	27	6.2	13.5	GRADE
B6	1.6		1.6	31.2	4.12	0.16	0.0	1.6	NA	27	2.8	13.5	GRADE
B7	3.6		3.6	20.0	1.70	0.26	0.0	3.6	NA	27	4.8	13.5	GRADE
B8	2.6		2.6	25.2	2.70	0.21	0.0	2.6	NA	27	3.7	13.5	GRADE
B9	1.1		1.1	28.6	3.46	0.15	0.0	1.1	NA	27	2.5	13.5	GRADE
B10	1.9		1.9	27.7	3.25	0.18	0.0	1.9	NA	27	3.1	13.5	GRADE
B11	4.2		4.2	27.0	3.10	0.25	0.0	4.2	NA	27	4.5	13.5	GRADE
B12	3.2		3.2	21.2	1.56	0.25	0.0	3.2	NA	29	4.0	14.5	GRADE
B13	8.2		8.2	32.8	3.74	0.30	0.0	8.2	NA	29	5.0	14.5	GRADE
B14	4.3	0.5	4.7	39.1	5.32	0.23	0.0	4.7	NA	29	3.6	14.5	GRADE
B15	3.1		3.1	33.7	3.96	0.20	0.0	3.1	NA	29	3.2	14.5	GRADE
B16	3.2		3.2	28.2	2.76	0.22	0.0	3.2	NA	29	3.5	14.5	GRADE
C1	2.8		2.8	23.5	1.93	0.22	0.0	2.8	NA	29	3.5	14.5	GRADE
C2	9.5		9.5	20.6	1.48	0.37	0.0	9.5	NA	29	6.8	14.5	GRADE
C3	5.8	0.8	6.5	16.6	0.96	0.35	0.0	6.5	NA	29	6.3	14.5	GRADE
C4	4.3		4.3	21.3	1.58	0.28	0.0	4.3	NA	29	4.5	14.5	GRADE
C5	1.3		1.3	13.7	0.65	0.21	0.0	1.3	NA	29	3.2	14.5	GRADE
C6	4.1		4.1	21.2	1.57	0.27	0.0	4.1	NA	29	4.4	14.5	GRADE
D1	1.4		1.4	26.4	2.43	0.16	0.0	1.4	NA	29	2.5	14.5	GRADE
D2	16.3		16.3	23.1	1.85	0.44	0.0	16.3	NA	29	8.8	14.5	GRADE
D3	12.2	5.2	17.5	29.7	3.07	0.41	0.0	17.5	NA	29	7.8	14.5	GRADE
D4	1.0		1.0	21.9	1.67	0.16	0.0	1.0	NA	29	2.4	14.5	GRADE
D5	7.1		7.1	25.3	2.24	0.31	0.0	7.1	NA	29	5.3	14.5	GRADE
D6	8.7		8.7	26.8	2.50	0.33	0.0	8.7	NA	29	5.7	14.5	GRADE
D7	2.5	6.6	9.2	26.7	2.49	0.33	0.0	9.2	NA	29	5.8	14.5	GRADE
D8	4.0	0.8	4.8	30.9	3.32	0.25	0.0	4.8	NA	29	4.0	14.5	GRADE
D9	11.2	0.6	11.8	28.9	2.90	0.36	0.0	11.8	NA	29	6.4	14.5	GRADE
D10	4.2		4.2	29.3	2.98	0.24	0.0	4.2	NA	29	3.9	14.5	GRADE
D11	12.6	2.5	15.2	27.3	2.59	0.40	0.0	15.2	NA	29	7.6	14.5	GRADE

INLET CALCULATIONS FOR 25YR STORM (ALL INLETS ARE TYPE 1 ON GRADE)

INLET #	AREA #	ST WIDTH (FT)	QTOTAL (CFS)	STREET CAP (CFS)	S (%)	Y (FT)	QA/LA (CFS/FT)	LA (FT)	L (FT)	L/LA	A/Y	Q/QA	QIN (CFS)	QBYPASS (CFS)	FLOW TO
A1	A1	29	2.3	25.0	2.18	0.20	0.7	3.50	10	2.86	2.04	1.0000	2.3	0.0	NA
A2	A2	29	5.7	42.8	6.39	0.23	0.7	8.31	10	1.20	1.77	1.0000	5.7	0.0	NA
A3	A3	29	7.3	20.1	1.40	0.34	0.8	9.13	10	1.10	1.22	1.0000	7.3	0.0	NA
A4	A4	29	2.3	23.8	1.98	0.21	0.7	3.46	10	2.89	2.01	1.0000	2.3	0.0	NA
A5	A5	29	4.7	16.1	0.90	0.32	0.8	6.14	10	1.63	1.32	1.0000	4.7	0.0	NA
A6	A6	29	6.5	14.8	0.76	0.37	0.8	7.88	10	1.27	1.13	1.0000	6.5	0.0	NA
A7	A7	29	1.1	25.7	2.30	0.15	0.6	1.74	10	5.74	2.76	1.0000	1.1	0.0	NA
B1	B1	25	3.3	64.0	1.65	0.16	0.6	5.29	10	1.89	2.54	1.0000	3.3	0.0	NA
B2	B2	25	3.1	41.7	0.70	0.19	0.6	4.83	10	2.07	2.21	1.0000	3.1	0.0	NA
B3	B3	25	4.1	61.0	1.50	0.18	0.6	6.43	10	1.55	2.30	1.0000	4.1	0.0	NA
B4	B4	25	3.7	41.7	0.70	0.20	0.7	5.69	10	1.76	2.06	1.0000	3.7	0.0	NA
B5	B5	27	3.4	10.9	0.50	0.32	0.8	4.39	10	2.28	1.29	1.0000	3.4	0.0	NA
B6	B6	27	1.6	31.2	4.12	0.16	0.6	2.54	10	3.94	2.56	1.0000	1.6	0.0	NA
B7	B7	27	3.6	20.0	1.70	0.26	0.7	5.09	10	1.97	1.58	1.0000	3.6	0.0	NA
B8	B8	27	2.6	25.2	2.70	0.21	0.7	3.85	10	2.60	1.97	1.0000	2.6	0.0	NA
B9	B9	27	1.1	28.6	3.46	0.15	0.6	1.86	10	5.36	2.80	1.0000	1.1	0.0	NA
B10	B10	27	1.9	27.7	3.25	0.18	0.6	2.94	10	3.41	2.29	1.0000	1.9	0.0	NA
B11	B11	27	4.2	27.0	3.10	0.25	0.7	6.04	10	1.66	1.67	1.0000	4.2	0.0	NA
B12	B12	29	3.2	21.2	1.56	0.25	0.7	4.57	10	2.19	1.69	1.0000	3.2	0.0	NA
B13	B13	29	8.2	32.8	3.74	0.30	0.8	10.96	10	0.91	1.40	0.9425	7.8	0.5	B14
B14	B14	29	4.7	39.1	5.32	0.23	0.7	6.96	10	1.44	1.84	1.0000	4.7	0.0	NA
B15	B15	29	3.1	33.7	3.96	0.20	0.7	4.71	10	2.12	2.04	1.0000	3.1	0.0	NA
B16	B16	29	3.2	28.2	2.76	0.22	0.7	4.70	10	2.13	1.89	1.0000	3.2	0.0	NA
C1	C1	29	2.8	23.5	1.93	0.22	0.7	4.09	10	2.44	1.86	1.0000	2.8	0.0	NA
C2	C2	29	9.5	20.6	1.48	0.37	0.8	11.48	10	0.87	1.11	0.9206	8.8	0.8	C3
C3	C3	29	6.5	16.6	0.96	0.35	0.8	8.08	10	1.24	1.18	1.0000	6.5	0.0	NA
C4	C4	29	4.3	21.3	1.58	0.28	0.7	5.97	10	1.68	1.51	1.0000	4.3	0.0	NA
C5	C5	29	1.3	13.7	0.65	0.21	0.7	1.98	10	5.06	2.01	1.0000	1.3	0.0	NA
C6	C6	29	4.1	21.2	1.57	0.27	0.7	5.71	10	1.75	1.54	1.0000	4.1	0.0	NA
D1	D1	29	1.4	26.4	2.43	0.16	0.6	2.19	10	4.56	2.54	1.0000	1.4	0.0	NA
D2	D2	29	16.3	23.1	1.85	0.44	0.9	18.08	10	0.55	0.95	0.6780	11.0	5.2	D3
D3	D3	29	17.5	29.7	3.07	0.41	0.9	20.08	10	0.50	1.02	0.6197	10.8	6.6	D7
D4	D4	29	1.0	21.9	1.67	0.16	0.6	1.64	10	6.10	2.65	1.0000	1.0	0.0	NA
D5	D5	29	7.1	25.3	2.24	0.31	0.8	9.29	10	1.08	1.34	1.0000	7.1	0.0	NA
D6	D6	29	8.7	26.8	2.50	0.33	0.8	11.18	10	0.89	1.27	0.9326	8.2	0.6	D9
D7	D7	29	9.2	26.7	2.49	0.33	0.8	11.61	10	0.86	1.24	0.9102	8.3	0.8	D8
D8	D8	29	4.8	30.9	3.32	0.25	0.7	6.90	10	1.45	1.67	1.0000	4.8	0.0	NA
D9	D9	29	11.8	28.9	2.90	0.36	0.8	14.48	10	0.69	1.17	0.7837	9.2	2.5	D11
D10	D10	29	4.2	29.3	2.98	0.24	0.7	6.07	10	1.65	1.72	1.0000	4.2	0.0	NA
D11	D11	29	15.2	27.3	2.59	0.40	0.9	17.66	10	0.57	1.04	0.6833	10.4	4.8	A8B

INLET CALCULATIONS FOR 25YR STORM (ALL INLETS ARE TYPE 1 IN SUMP WITH 10% REDUCTION)

INLET #	AREA #	QTOTAL (CFS)	L (FT)	L x 0.90 (FT)	Q/L (CFS/FT)	Yo + 5" (FT)	INLET Yo (FT)	BELOW 0.5 FT
A8	A8A & A8B	14.2	10	9	1.57	0.65	0.23	Yes

RATIONAL METHOD - STORM WATER RUNOFF CALCULATIONS for DEVELOPED OFFSITE DRAINAGE AREAS

	IDF COEFFICIENTS			
	2-YEAR	10-YEAR	25-YEAR	100-YEAR
a	106.29	96.84	111.070	129.03
b	16.81	15.88	17.230	17.830
c	0.9076	0.7952	0.7815	0.7625

	RUNOFF COEFFICIENTS			
	2-YEAR	10-YEAR	25-YEAR	100-YEAR
PERV.	0.24	0.28	0.31	0.36
IMP	0.97	0.97	0.97	0.97

DEVELOPED DRAINAGE AREAS

Drainage Area	TOTAL AREA (SF)	TOTAL AREA (AC)	IMP AREA (SF)	IMP AREA (AC)	PERV AREA (AC)	Tc (MIN)	C2 COMP	C10 COMP	C25 COMP	C100 COMP	I2 (IN/HR)	I10 (IN/HR)	I25 (IN/HR)	I100 (IN/HR)	Q2 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)
COMM 1	316781	7.272	186901	4.291	2.982	10.1	0.67	0.69	0.70	0.72	5.36	7.27	8.38	10.20	26.2	36.3	42.6	53.40
OS 2	27816	0.639	15299	0.351	0.287	5.0	0.64	0.66	0.67	0.70	6.48	8.64	9.84	11.88	2.7	3.6	4.2	5.28
OS 3	14603	0.335	8032	0.184	0.151	11.0	0.64	0.66	0.67	0.70	5.19	7.06	8.15	9.93	1.1	1.6	1.8	2.32
GS 1	66346	1.523	20910	0.480	1.043	5.0	0.47	0.50	0.52	0.55	6.48	8.64	9.84	11.88	4.6	6.5	7.8	9.99
GS 2	2973	0.068	2973	0.068	0.000	5.0	0.97	0.97	0.97	0.97	6.48	8.64	9.84	11.88	0.4	0.6	0.7	0.79
E1	973626	22.351	632857	14.528	7.823	10.0	0.71	0.73	0.74	0.76	5.37	7.29	8.40	10.22	85.8	118.6	138.7	172.73
COMM 2	176103	4.043	123272	2.830	1.213	5.0	0.75	0.76	0.77	0.79	6.48	8.64	9.84	11.88	19.7	26.7	30.7	37.80

TIME OF CONCENTRATION CALCULATIONS

Undev = 0.30
ENTER MANNINGS n-VALUE Grass = 0.25 Pvmt = 0.016

AREA NO.	SHEET FLOW DIST (FT)	SHEET FLOW SLOPE (FT/FT)	SHEET FLOW Tc (MIN)	SHALLOW CONC FLOW DIST (FT)	SHALLOW CONC FLOW SLOPE (FT/FT)	SHALLOW CONC FLOW Tc (MIN)	STREET FLOW DIST (FT)	STREET FLOW SLOPE (FT/FT)	STREET FLOW Tc (MIN)	TOTAL Tc (MIN)
COMM 1	40	0.02	7	200	0.01	1.72	300	0.02	1.74	10.05
OS 2	0	0.02	0	0	0.02	0.00	150	0.01	1.12	5.00
OS 3	100	0.04	11	92	0.07	0.37	0	NA	0.00	11.04
OS 4	100	0.07	9	64	0.12	0.19	0	NA	0.00	9.01
GRASSY SWALE	25	0.33	2	0	0.10	0.00	724	0.10	1.92	5.00
GRASSY SWALE	0	0.33	0	0	0.10	0.00	59	0.03	0.29	5.00
E1	10	0.01	3	1578	0.03	10.11	0	0.03	0.00	12.87

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BLUFFVIEW SUBDIVISION
PHASE 1

INTERNAL DRAINAGE CALCULATIONS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 DM5.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
1-17-2024

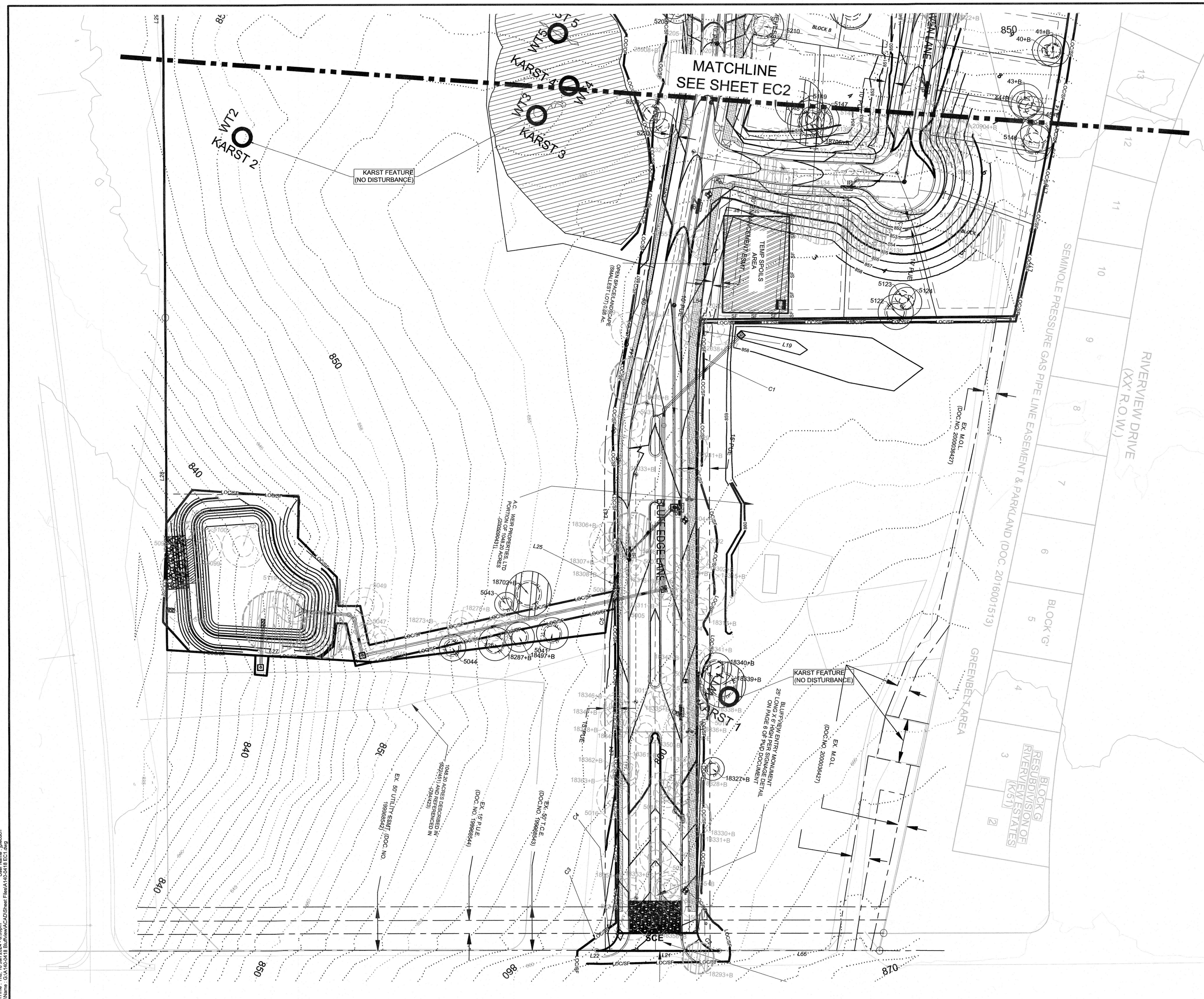
LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A140-0418

DM5

SHEET NO. 16

OF 93 SHEETS



BLUFFVIEW SUBDIVISION PHASE 1

EROSION/SEDIMENTATION CONTROL & TREE PROTECTION PLAN

1" = 50'

LEGEND:

- ROCK BERM
- INLET PROTECTION
- SILT FENCE
- LIMITS OF CONSTRUCTION
- LIMITS OF CONSTRUCTION/SILT FENCE
- LIMITS OF CONSTRUCTION/CHAIN LINK FENCE
- LIMITS OF CONSTRUCTION/ORANGE FENCE
- TREE PROTECTION FENCE
- PROPOSED CONTOURS
- EXISTING CONTOURS
- STABILIZED CONSTRUCTION EXIT
- STAGING & SPOILS SITE
- LOT LINE
- TREE TO BE SAVED W/ 1/2 CRZ
- TREE TO BE REMOVED W/ 1/2 CRZ
- HERITAGE TREE TO BE SAVED W/ 1/2 CRZ
- HERITAGE TREE TO BE REMOVED W/ 1/2 CRZ
- CONCRETE WASHOUT
- POND SKIMMER

NOTES:

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3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING, OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY.
5. LIMITS OF CONSTRUCTION & SILT FENCE SHOWN OFF BOUNDARY LINES FOR CLARITY ONLY. SILT FENCE SHALL BE PLACED WITHIN TRACT BOUNDARIES.
6. NO MORE THAN 2000 LINEAR FEET OF DISTURBANCE FOR UTILITY INSTALLATION SHALL OCCUR AT ANY TIME WITH CLEAN UP AND RESTORATION WORK OCCURING BEFORE PROCEEDING TO THE NEXT SECTION. THE CONTRACTOR IS REQUIRED TO RESTORE ALL DISTURBED AREAS AS THE WORK PROGRESSES.
7. CONTRACTOR SHALL MAINTAIN THE DEWATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DEWATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS, FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE SYSTEM PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DEWATERING PLAN AT THE PRE-CONSTRUCTION MEETING.
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REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 EC1.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

EC1

SHEET NO. 17 OF 93 SHEETS

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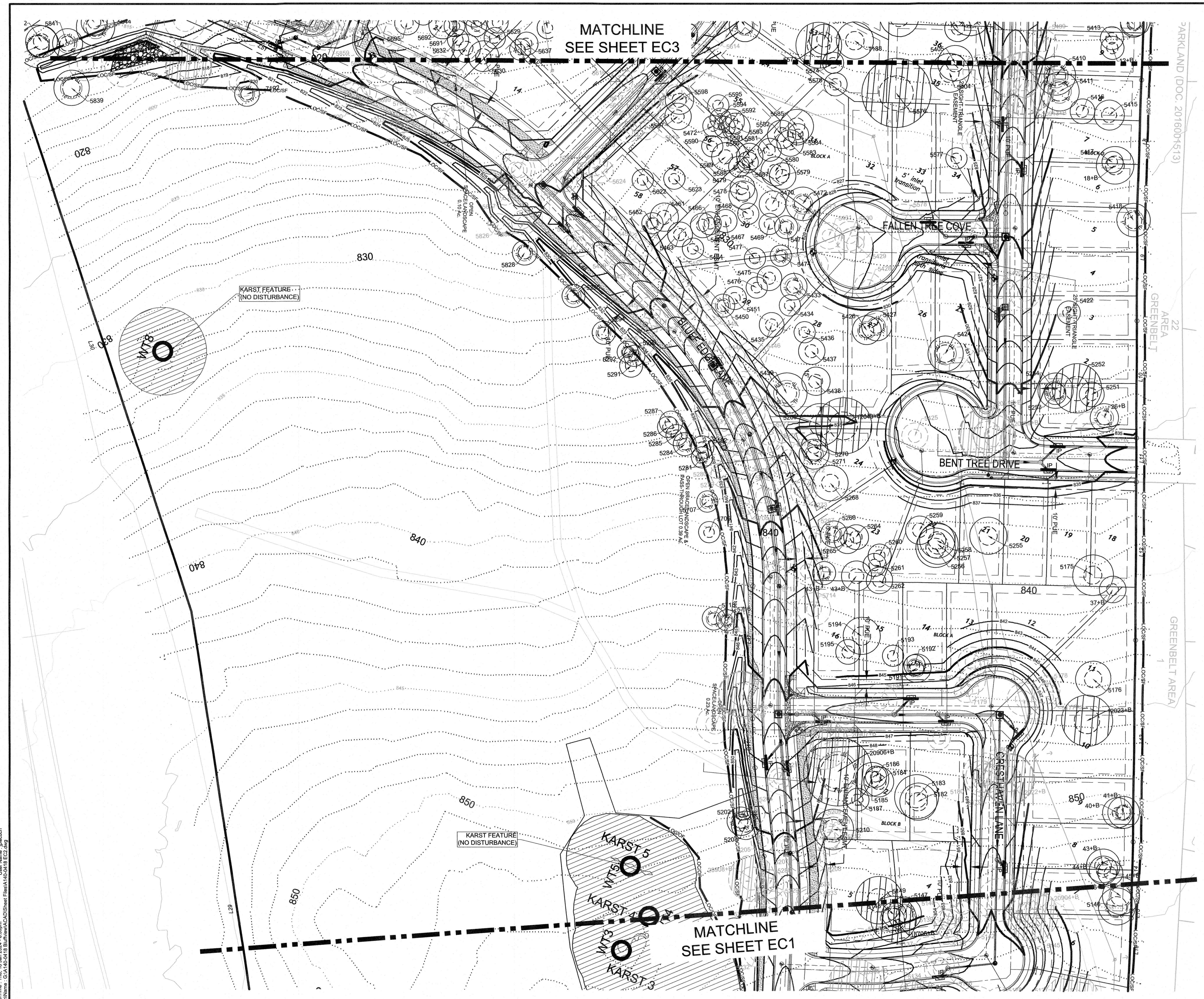

0 50 100
1" = 50'

LEGEND:

RB	ROCK BERM
IP	INLET PROTECTION
SF	SILT FENCE
LOC	LIMITS OF CONSTRUCTION
LOC/SF	LIMITS OF CONSTRUCTION/SILT FENCE
LOC/CL	LIMITS OF CONSTRUCTION/CHAIN LINK FENCE
LOC/OF	LIMITS OF CONSTRUCTION/ORANGE FENCE
TP	TREE PROTECTION FENCE
700	PROPOSED CONTOURS
700	EXISTING CONTOURS
SCE	STABILIZED CONSTRUCTION EXIT
	STAGING & SPOILS SITE
	LOT LINE
1234	TREE TO BE SAVED W/ 1/2 CRZ
1234	TREE TO BE REMOVED W/ 1/2 CRZ
1234	HERITAGE TREE TO BE SAVED W/ 1/2 CRZ
1234	HERITAGE TREE TO BE REMOVED W/ 1/2 CRZ
	CONCRETE WASHOUT
	POND SKIMMER

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BLUFFVIEW SUBDIVISION PHASE 1

EROSION/SEDIMENTATION CONTROL & TREE PROTECTION PLAN

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 EC2.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A140-0418

EC2

SHEET NO. 18 OF 93 SHEETS

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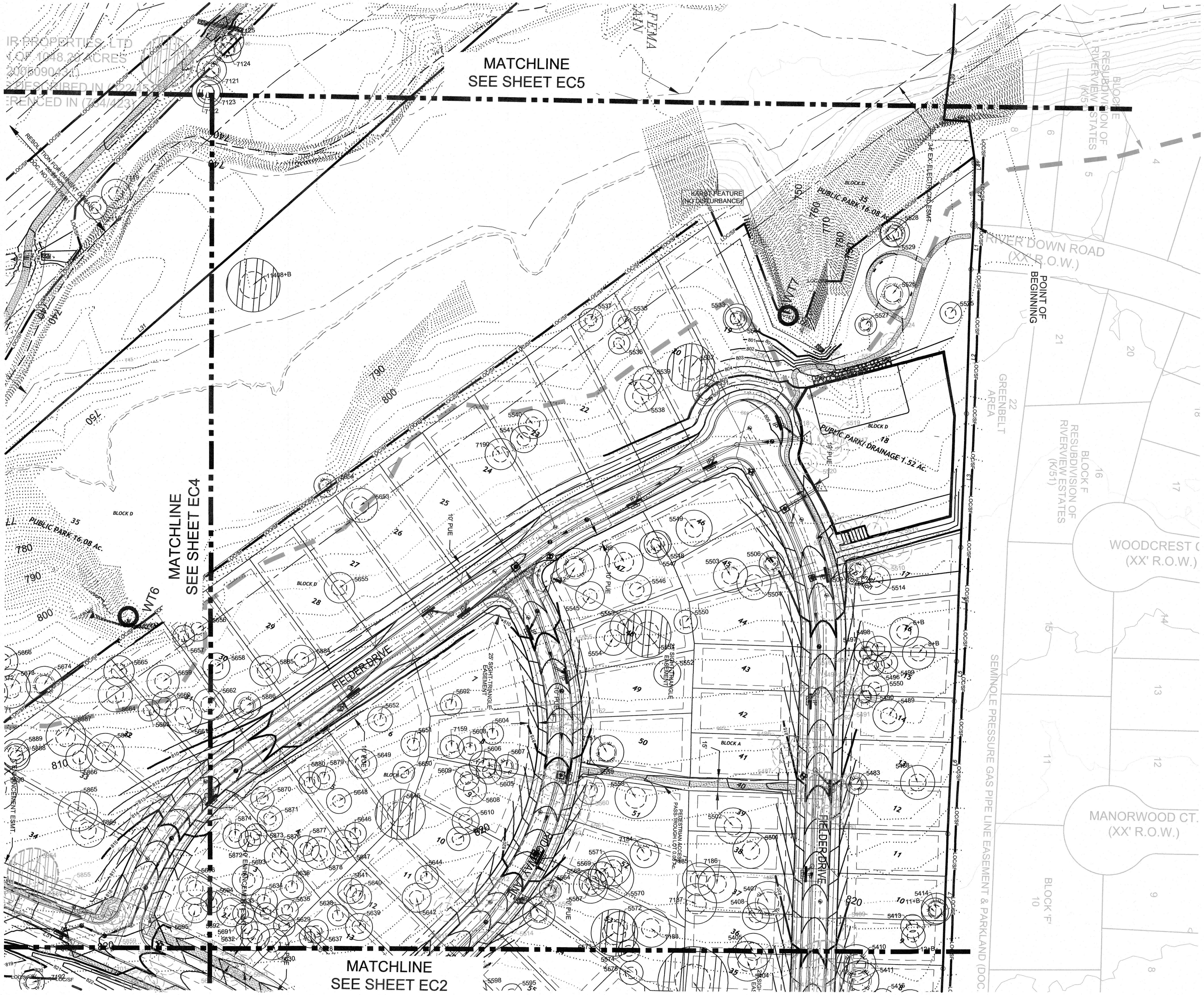

N

0 50 100

1" = 50'

LEGEND:

- RB — ROCK BERM
- IP — INLET PROTECTION
- SF — SILT FENCE
- LOC — LIMITS OF CONSTRUCTION
- LOC/SF — LIMITS OF CONSTRUCTION/SILT FENCE
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BLUFFVIEW SUBDIVISION PHASE 1

EROSION/SEDIMENTATION CONTROL & TREE PROTECTION PLAN

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 EC3.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-17-2024

LJA
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386
LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681

JOB NUMBER: A140-0418

EC3

SHEET NO. 19 OF 93 SHEETS

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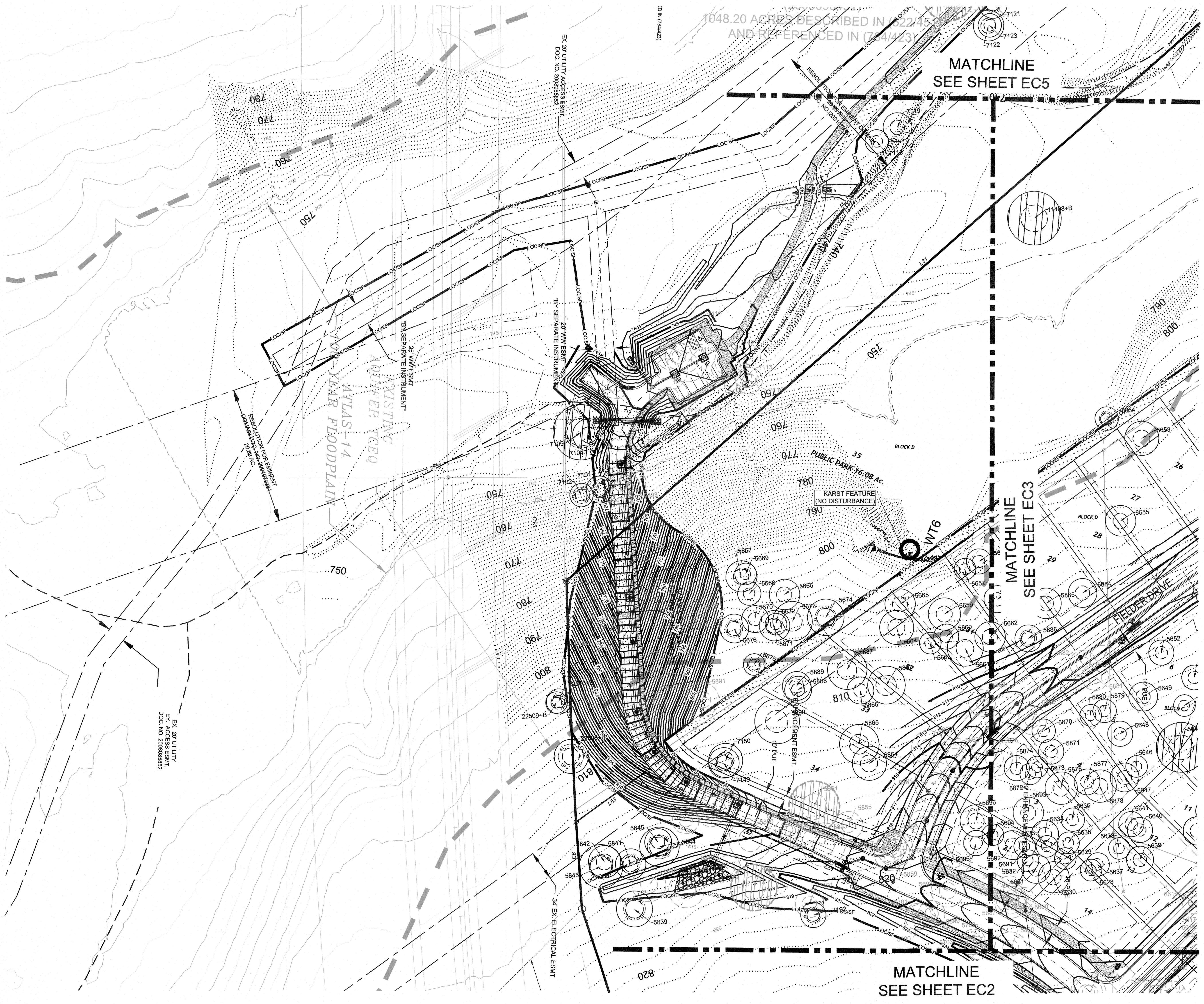

N

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- 1234 — HERITAGE TREE TO BE REMOVED W/ 1/2 CRZ
- CONCRETE WASHOUT — CONCRETE WASHOUT
- POND SKIMMER

NOTES:

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3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING, OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY.
5. LIMITS OF CONSTRUCTION & SILT FENCE SHOWN OFF BOUNDARY LINES FOR CLARITY ONLY. SILT FENCE SHALL BE PLACED WITHIN TRACT BOUNDARIES.
6. NO MORE THAN 2000 LINEAR FEET OF DISTURBANCE FOR UTILITY INSTALLATION SHALL OCCUR AT ANY TIME WITH CLEAN UP AND RESTORATION WORK OCCURING BEFORE PROCEEDING TO THE NEXT SECTION. THE CONTRACTOR IS REQUIRED TO RESTORE ALL DISTURBED AREAS AS THE WORK PROGRESSES.
7. CONTRACTOR SHALL MAINTAIN THE DEWATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DEWATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE SYSTEM PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DEWATERING PLAN AT THE PRE-CONSTRUCTION MEETING.
8. ALL SILT FENCE ALONG EXISTING PAVED R.O.W.S SHALL BE SET AT A MINIMUM OF 3' AWAY FROM BACK OF CURB OR EDGE OF PAVING TO AVOID STANDING WATER ON SUBGRADE SURFACES.
9. SILT FENCE ALONG BACK OF CURB MAY BE TEMPORARILY REMOVED FOR GRADING TO CURB EDGES BUT SHALL BE REINSTALLED DAILY.
10. MID-CONSTRUCTION CONTROLS SHALL BE SET AFTER MAJOR SITE GRADING OPERATIONS ARE COMPLETED TO WITHIN ± 0.1 FEET OF SITE SUBGRADE.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY SEDIMENT TRANSPORTED FROM THE SITE TO THE WATER QUALITY/DETENTION PONDS.

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION PHASE 1

EROSION/SEDIMENTATION CONTROL & TREE PROTECTION PLAN

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 EC4.dwg

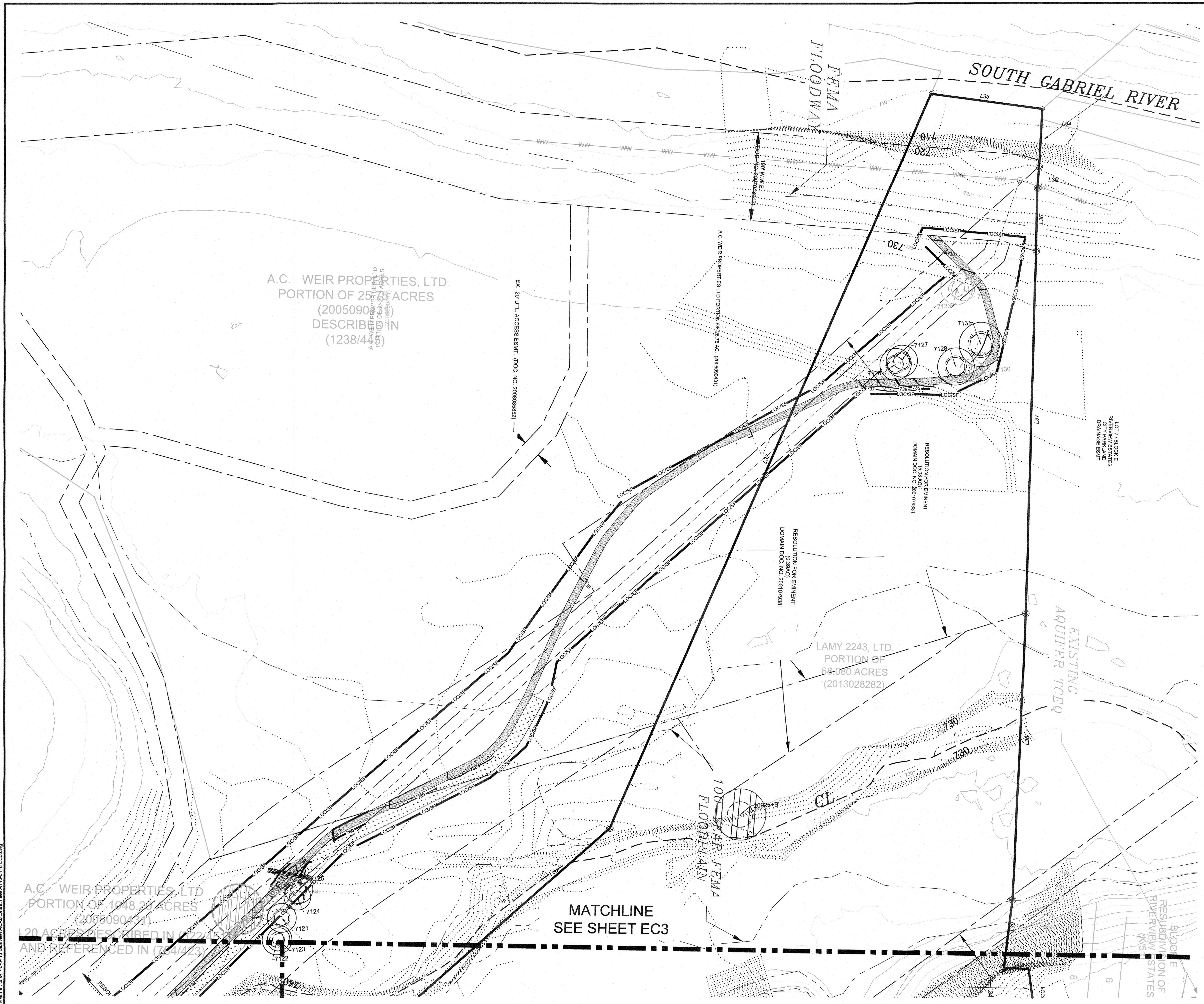
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

EC4

Date/Time : Thu, 18 Jan 2024 - 7:00pm User Name : jdeouch
Path/Name : G:\A140-0418 Bluffview\ACAD\Sheet Files\A140-0418 EC4.dwg



0 50 100
1" = 50'

LEGEND:

Symbol	Description
RB	ROCK BERM
IP	INLET PROTECTION
SF	SILT FENCE
LOC	LIMITS OF CONSTRUCTION
LOC/SF	LIMITS OF CONSTRUCTION/SILT FENCE
LOC/CL	LIMITS OF CONSTRUCTION/CHAIN LINK FENCE
LOC/OF	LIMITS OF CONSTRUCTION/ORANGE FENCE
TP — TP	TREE PROTECTION FENCE
700	PROPOSED CONTOURS
700	EXISTING CONTOURS
SCE	STABILIZED CONSTRUCTION EXIT
	STAGING & SPOILS SITE
	LOT LINE
1234	TREE TO BE SAVED W/ 1/2 CRZ
1234	TREE TO BE REMOVED W/ 1/2 CRZ
1234	HERITAGE TREE TO BE SAVED W/ 1/2 CRZ
1234	HERITAGE TREE TO BE REMOVED W/ 1/2 CRZ
CONCRETE WASHOUT	CONCRETE WASHOUT
	POND SKIMMER

NOTES:

1. IF DISTURBED AREA IS NOT WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION MATTING.
2. ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF GEORGETOWN RULES AND REGULATIONS.
3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING, OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY.
5. LIMITS OF CONSTRUCTION & SILT FENCE SHOWN OFF BOUNDARY LINES FOR CLARITY ONLY. SILT FENCE SHALL BE PLACED WITHIN TRACT BOUNDARIES.
6. NO MORE THAN 2000 LINEAR FEET OF DISTURBANCE FOR UTILITY INSTALLATION SHALL OCCUR AT ANY TIME WITH CLEAN UP AND RESTORATION WORK OCCURING BEFORE PROCEEDING TO THE NEXT SECTION. THE CONTRACTOR IS REQUIRED TO RESTORE ALL DISTURBED AREAS AS THE WORK PROGRESSES.
7. CONTRACTOR SHALL MAINTAIN THE DEWATERING SYSTEM TO ENSURE PERFORMANCE. IF THE DEWATERING SYSTEM IS NOT PERFORMING, THE CONTRACTOR MUST IMMEDIATELY MAKE THE NECESSARY MODIFICATIONS FOLLOWING THE ENVIRONMENTAL INSPECTOR'S DIRECTION TO ENSURE ADEQUATE SYSTEM PERFORMANCE. CONTRACTOR SHALL PROVIDE THE DEWATERING PLAN AT THE PRE-CONSTRUCTION MEETING.
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10. MID-CONSTRUCTION CONTROLS SHALL BE SET AFTER MAJOR SITE GRADING OPERATIONS ARE COMPLETED TO WITHIN ± 0.1 FEET OF SITE SUBGRADE.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY SEDIMENT TRANSPORTED FROM THE SITE TO THE WATER QUALITY/DETENTION PONDS.

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION PHASE 1

EROSION/SEDIMENTATION CONTROL & TREE PROTECTION PLAN

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 EC5.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-17-2024

LJA
LJA Engineering, Inc.
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Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

EC5

SHEET NO. 21 OF 93 SHEETS

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

1. THE CONTRACTOR TO INSTALL AND MAINTAIN EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING, GRADING, OR EXCAVATION). CONTRACTOR TO REMOVE EROSION/SEDIMENTATION CONTROLS AT THE COMPLETION OF PROJECT AND GRASS RESTORATION.
2. ALL PROJECTS WITHIN THE RECHARGE ZONE OF THE EDWARD'S AQUIFER SHALL SUBMIT A BEST MANAGEMENT PRACTICES AND WATER POLLUTION AND ABATEMENT PLAN TO THE TNRCC FOR APPROVAL PRIOR TO ANY CONSTRUCTION.
3. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS TO BE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN AND WATER POLLUTION ABATEMENT PLAN. DEVIATIONS FROM THE APPROVED PLAN MUST BE SUBMITTED TO AND APPROVED BY THE OWNER'S REPRESENTATIVE.
4. ALL PLANTING SHALL BE DONE BETWEEN MAY 1 AND SEPTEMBER 15 EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING. IF PLANTING IS AUTHORIZED TO BE DONE OUTSIDE THE DATES SPECIFIED, THE SEED SHALL BE PLANTED WITH THE ADDITION OF WINTER FESCUE (KENTUCKY 31) AT A RATE OF 100lb/ACRE. GRASS SHALL BE COMMON BERMUDA GRASS, HULLED, MINIMUM 82% PURE LIVE SEED. ALL GRASS SEED SHALL BE FREE FROM NOXIOUS WEED, GRADE "A" RECENT CROP, RECLEANED AND TREATED WITH APPROPRIATE FUNGICIDE AT TIME OF MIXING. SEED SHALL BE FURNISHED IN SEALED, STANDARD CONTAINERS WITH DEALER'S GUARANTEED ANALYSIS.
5. ALL DISTURBED AREAS TO BE RESTORED AS NOTED IN THE WATER POLLUTION ABATEMENT PLAN.
6. THE PLANTED AREA TO BE IRRIGATED OR SPRINKLED IN A MANNER THAT WILL NOT ERODE THE TOPSOIL, BUT WILL SUFFICIENTLY SOAK THE SOIL TO A DEPTH OF FOUR (4) INCHES. THE IRRIGATION TO OCCUR AT 10-DAY INTERVALS DURING THE FIRST TWO MONTHS TO INSURE GERMINATION AND ESTABLISHMENT OF THE GRASS . RAINFALL OCCURRENCES OF 1/2 INCH OR GREATER TO POSTPONE THE WATERING SCHEDULE ONE WEEK.
7. RESTORATION TO BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1-1/2 INCHES HIGH WITH 95% *COVERAGE,* PROVIDED NO BARE SPOTS LARGER THAN 25 SQUARE FEET EXIST.
8. A MINIMUM OF FOUR (4) INCHES OF TOPSOIL TO BE PLACED IN ALL AREAS DISTURBED BY CONSTRUCTION.
9. THE CONTRACTOR TO HYDROMULCH OR SOD (AS SHOWN ON PLANS) ALL EXPOSED CUTS AND FILLS UPON COMPLETION OF CONSTRUCTION.
10. EROSION AND SEDIMENTATION CONTROLS TO BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILDUP WITHIN TREE DRIPLINE.
11. TO AVOID SOIL COMPACTION, CONTRACTOR SHALL NOT ALLOW VEHICULAR TRAFFIC, PARKING, OR STORAGE OF EQUIPMENT OR MATERIALS IN THE TREE DRIPLINE AREAS.
12. WHERE A FENCE IS CLOSER THAN FOUR (4) FEET TO A TREE TRUNK, PROTECT THE TRUNK WITH STRAPPED-ON PLANKING TO A HEIGHT OF EIGHT (8) FEET (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE FENCING.
13. TREES TO BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.
14. ANY ROOT EXPOSED BY CONSTRUCTION ACTIVITY TO BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOPSOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN TWO DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
15. CONTRACTOR TO PRUNE VEGETATION TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND EQUIPMENT BEFORE DAMAGE OCCURS (RIPPING OF BRANCHES, ETC.). ALL FINISHED PRUNING TO BE DONE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE "NATIONAL ARBORIST ASSOCIATION PRUNING STANDARDS FOR SHADE TREES").
16. THE CONTRACTOR IS TO INSPECT THE CONTROLS AT WEEKLY INTERVALS AND AFTER EVERY RAINFALL EXCEEDING 1/4 INCH TO VERIFY THAT THEY HAVE NOT BEEN SIGNIFICANTLY DISTURBED. ANY ACCUMULATED SEDIMENT AFTER A SIGNIFICANT RAINFALL TO BE REMOVED AND PLACED IN THE OWNER DESIGNATED SPOIL DISPOSAL SITE. THE CONTRACTOR TO CONDUCT PERIODIC INSPECTIONS OF ALL EROSION/SEDIMENTATION CONTROLS AND TO MAKE ANY REPAIRS OR MODIFICATIONS NECESSARY TO ASSURE CONTINUED EFFECTIVE OPERATION OF EACH DEVICE.
17. WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, TREE WELL, OR OTHER SUCH SITE DEVELOPMENT IMMEDIATELY ADJACENT TO A PROTECTED TREE, ERECT THE FENCE APPROXIMATELY TWO TO FOUR FEET (2'-4') BEHIND THE AREA IN QUESTION.
18. NO ABOVE AND/OR BELOW GROUND TEMPORARY FUEL STORAGE FACILITIES TO BE STORED ON THE PROJECT SITE.
19. IF EROSION AND SEDIMENTATION CONTROL SYSTEMS ARE EXISTING FROM PRIOR CONTRACTS, OWNER'S REPRESENTATIVE AND THE CONTRACTOR TO EXAMINE THE EXISTING EROSION AND SEDIMENTATION CONTROL SYSTEMS FOR DAMAGE PRIOR TO CONSTRUCTION. ANY DAMAGE TO PREEXISTING EROSION AND SEDIMENTATION CONTROLS NOTED TO BE REPAIRED AT OWNERS EXPENSE.
20. INTENTIONAL RELEASE OF VEHICLE OR EQUIPMENT FLUIDS ONTO THE GROUND IS NOT ALLOWED. CONTAMINATED SOIL RESULTING FROM ACCIDENTAL SPILL TO BE REMOVED AND DISPOSED OF PROPERLY.

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

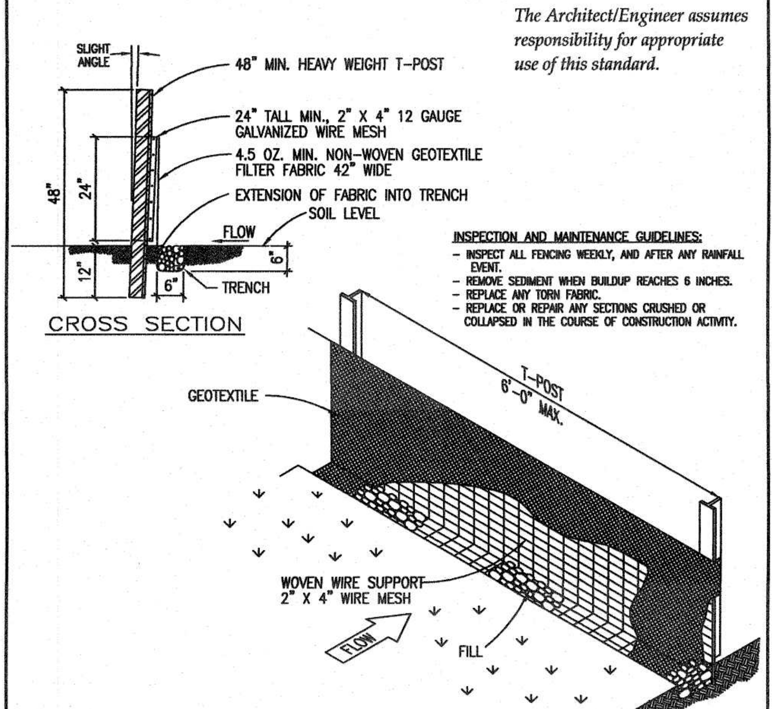
ADOPTED 6/21/2006

GEORGETOWN TEXAS — Georgetown Utility Systems — Your Community Owned Utility

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
EROSION AND SEDIMENTATION AND TREE PROTECTION NOTES

EC01A — NTS — 1/2003 — MRS — TRB

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



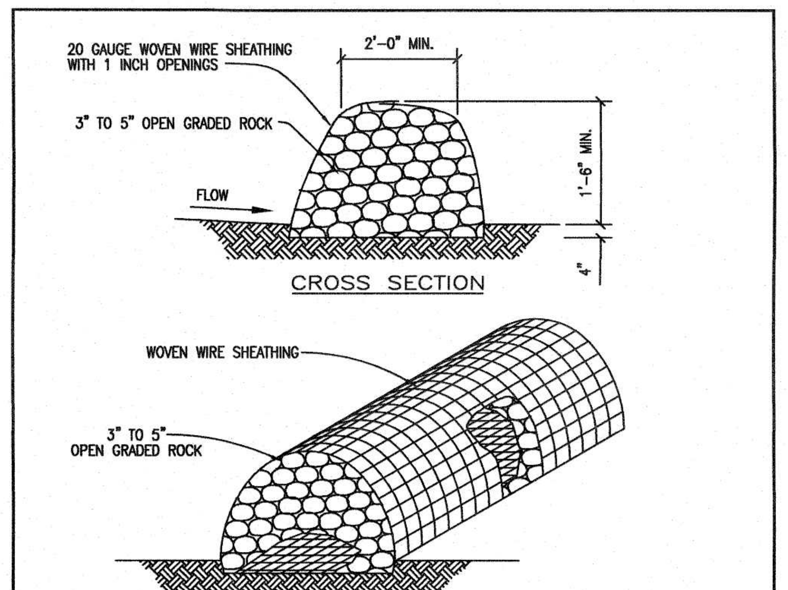
INSPECTION AND MAINTENANCE GUIDELINES:
- INSPECT ALL FENCING WEEKLY, AND AFTER ANY RAINFALL EVENT.
- REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.
- REPLACE ANY TORN FABRIC.
- REPLACE OR REPAIR ANY SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY.

INSTALLATION:
- LAYOUT THE SILT FENCE FOLLOWING AS CLOSELY AS POSSIBLE TO THE CONTOUR.
- CLEAR THE GROUND OF DEBRIS, ROCKS, PLANTS (INCLUDING GRASSES TALLER THAN 2") TO PROVIDE A SMOOTH FLOW APPROACH SURFACE. EXCAVATE 6" DEEP X 6" WIDE TRENCH ON UPSTREAM SIDE OF FACE PER PLANS.
- DRIVE THE HEAVY DUTY T-POST AT LEAST 12 INCHES INTO THE GROUND AND AT A SLIGHT ANGLE TOWARDS THE FLOW.
- ATTACH THE 2" X 4" 12 GAUGE WELDED WIRE MESH TO THE T-POST WITH 11 1/2 GAUGE GALVANIZED T-POST CLIPS. THE TOP OF THE WIRE TO BE 24" ABOVE GROUND LEVEL. THE WELDED WIRE MESH TO BE OVERLAPPED 6" AND TIED AT LEAST 6 TIMES WITH HOG RINGS.
- THE SILT FENCE TO BE INSTALLED WITH A SKIRT A MINIMUM OF 6" WIDE PLACED ON THE UPHILL SIDE OF THE FENCE INSIDE EXCAVATED TRENCH. THE FABRIC TO OVERLAP THE TOP OF THE WIRE BY 1".
- ANCHOR THE SILT FENCE BY BACKFILLING WITH EXCAVATED DIRT AND ROCKS (NOT LARGER THAN 2").
- GEOTEXTILE SPLICES SHOULD BE A MINIMUM OF 18" WIDE ATTACHED IN AT LEAST 6 PLACES. SPLICES IN CONCENTRATED FLOW AREAS WILL NOT BE ACCEPTED.
- SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

ADOPTED 6/21/2006

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
SILT FENCE DETAIL

EC02 — NTS — 1/2003 — MRS — TRB



INSTALLATION:
- LAYOUT THE ROCK BERM FOLLOWING AS CLOSELY AS POSSIBLE TO THE CONTOUR.
- CLEAR THE GROUND OF DEBRIS, ROCKS OR PLANTS THAT WILL INTERFERE WITH INSTALLATION.
- PLACE WOVEN WIRE FABRIC ON THE GROUND ALONG THE PROPOSED INSTALLATION WITH ENOUGH OVERLAP TO COMPLETELY ENCIRCLE THE FINISHED SIZE OF THE BERM.
- PLACE THE ROCK ALONG THE CENTER OF THE WIRE TO THE DESIGNATED HEIGHT.
- WRAP THE STRUCTURE WITH THE PREVIOUSLY PLACED WIRE MESH SECURE ENOUGH SO THAT WHEN WALKED ACROSS THE STRUCTURE RETAINS IT'S SHAPE.
- SECURE WITH TIE WIRE.
- THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROX. 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.
- THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

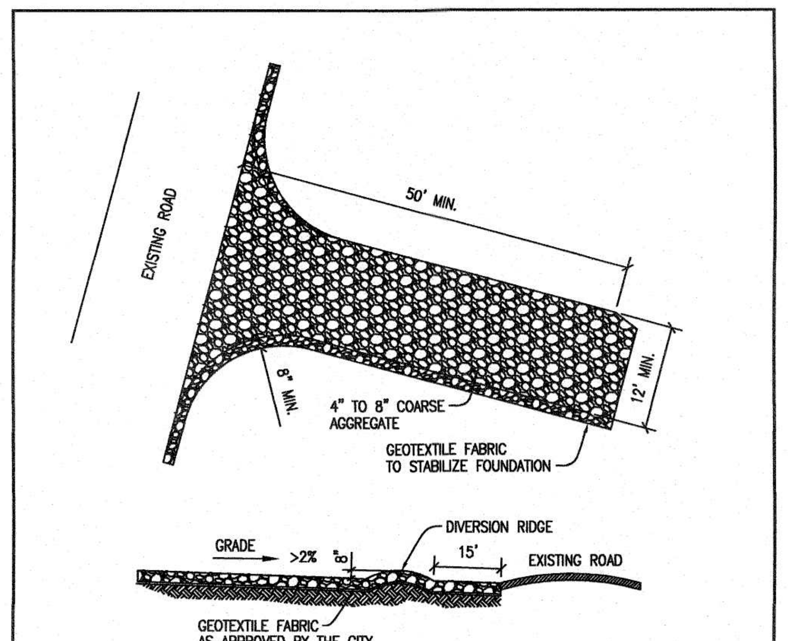
INSPECTION AND MAINTENANCE GUIDELINES:
- INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL EVENT BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.
- REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER.
- REPAIR ANY LOOSE WIRE SHEATHING.
- THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
- THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
ROCK BERM DETAIL

EC03 — NTS — 1/2003 — MRS — TRB



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

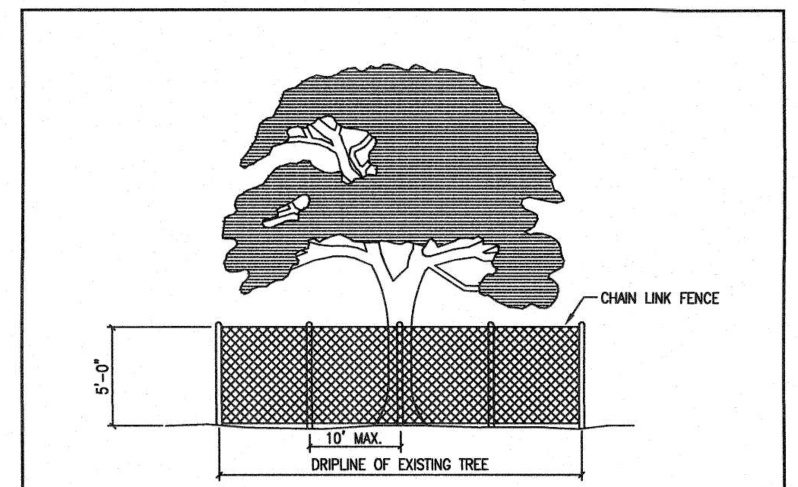
INSPECTIONS AND MAINTENANCE GUIDELINES:
- THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
- ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ON TO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
- WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY.
- WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
- ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
STABILIZED CONSTRUCTION ENTRANCE

EC06 — NTS — 1/2003 — MRS — TRB



NOTES:

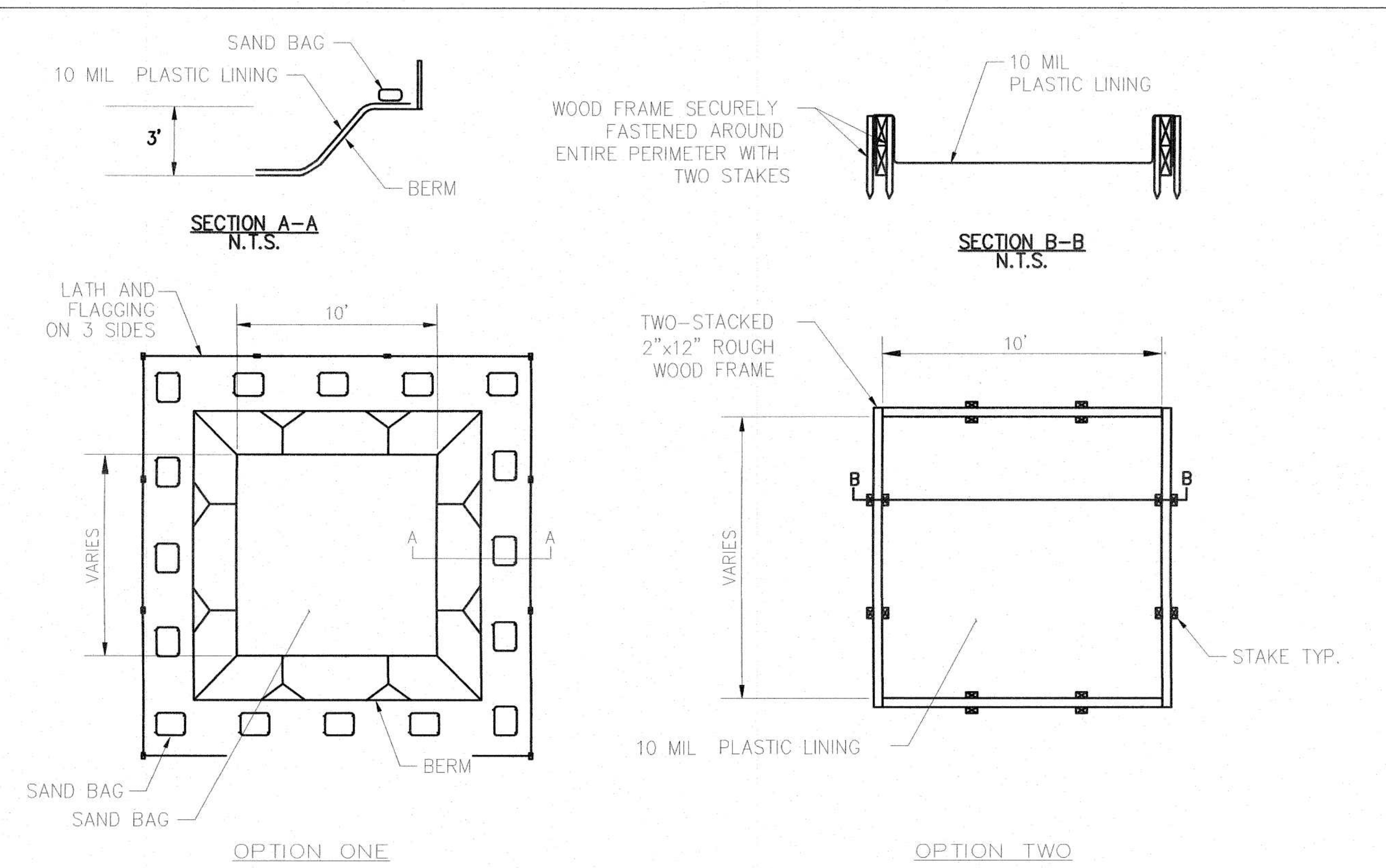
1. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING).
2. FENCES SHALL COMPLETELY SURROUND THE TREE, OR CLUSTERS OF TREES; WILL BE LOCATED AT THE *OUTERMOST LIMIT OF THE TREE BRANCHES (DRIPLINE), AND WILL* BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
   A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MATERIALS.
   B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN SIX INCHES (6") CUT OR FILL, OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY.
   C. WOUNDS TO EXPOSED ROOTS, TRUNKS OR LIMBS BY MECHANICAL EQUIPMENT.
   D. OTHER ACTIVITIES DETRIMENTAL TO TREES, SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING AND FIRE.
3. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIPLINES MAY BE PERMITTED IN THE FOLLOWING CASES:
   A. WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.
   B. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN SIX FEET (6'-0") TO BUILDING.

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

ADOPTED 6/21/2006

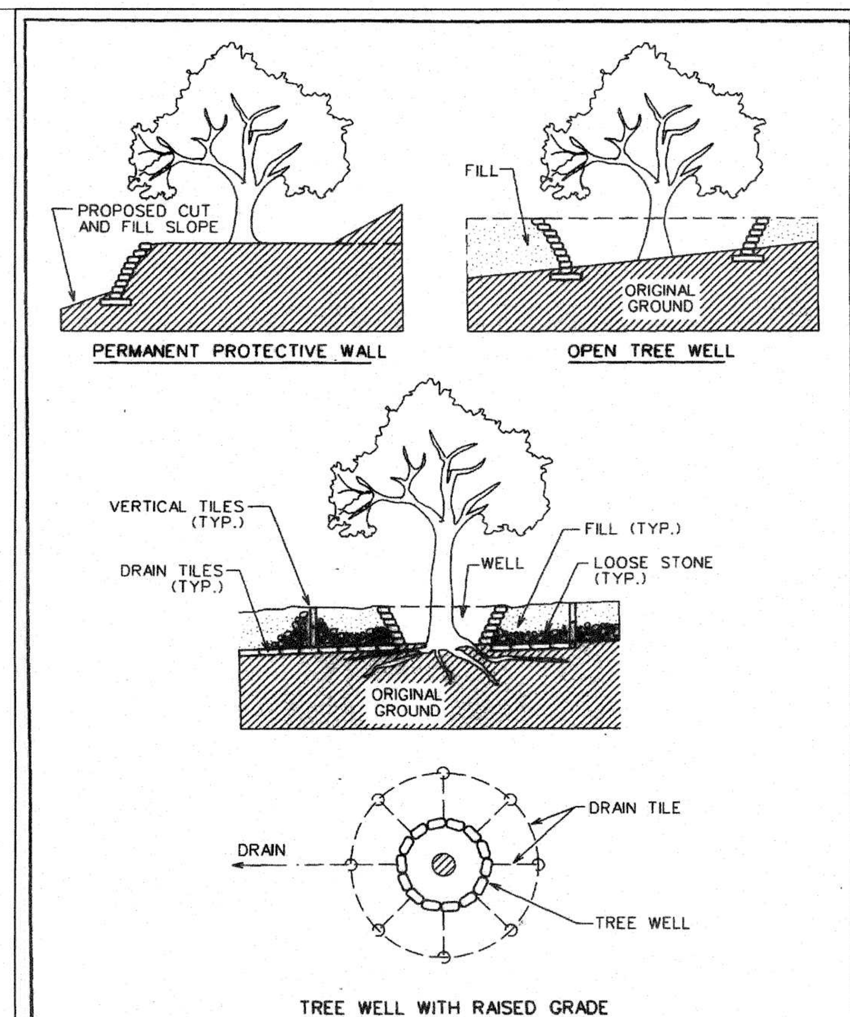
CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
TREE PROTECTION – CHAIN LINK FENCE

EC09



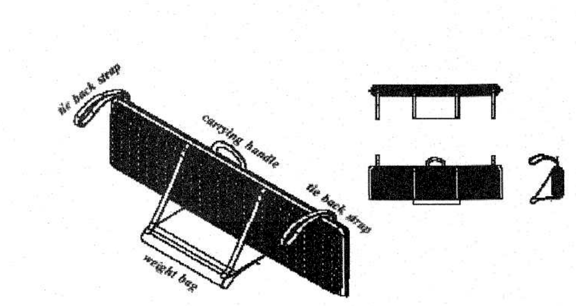
CONCRETE WASHOUT

N.T.S.

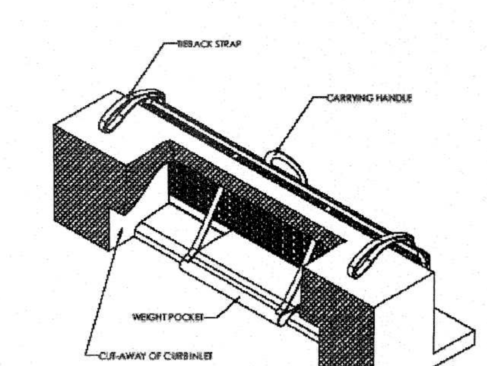


CITY OF AUSTIN — DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	SLOPE PROTECTION AND TREE WELLS	
3/2/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 610S-6 2 OF 2

Gutter Gator
or Approved Equal



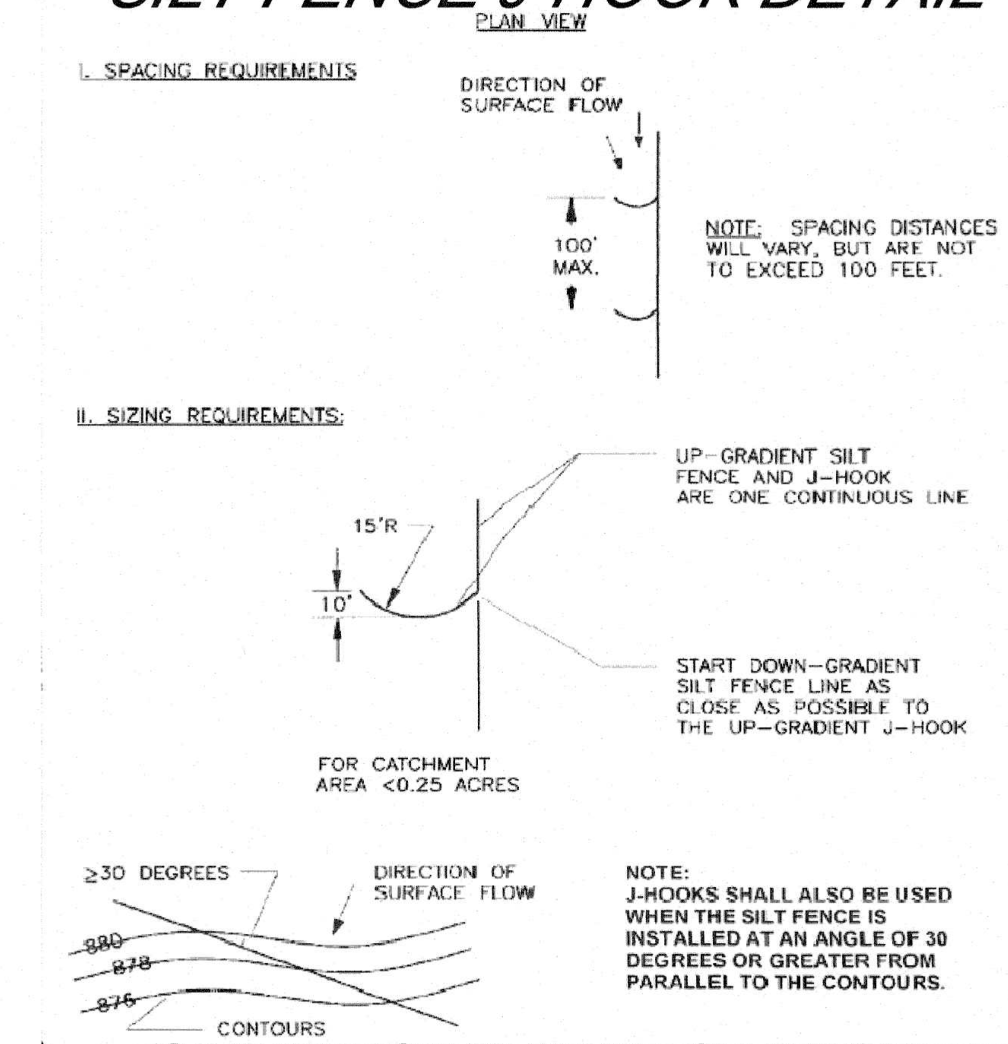
Non Woven Filter Fabric Sleeve per City of Austin specifications for curb inlet protection



Gutter Gator Inlet Protection Barrier

StormWater Structures — 1930 Aldine Western Road Houston, TX 77038

SILT FENCE J-HOOK DETAIL



NOTE:
J-HOOKS SHALL ALSO BE USED WHEN THE SILT FENCE IS INSTALLED AT AN ANGLE OF 30 DEGREES OR GREATER FROM PARALLEL TO THE CONTOURS.

SILT FENCE TURNBACK DETAIL

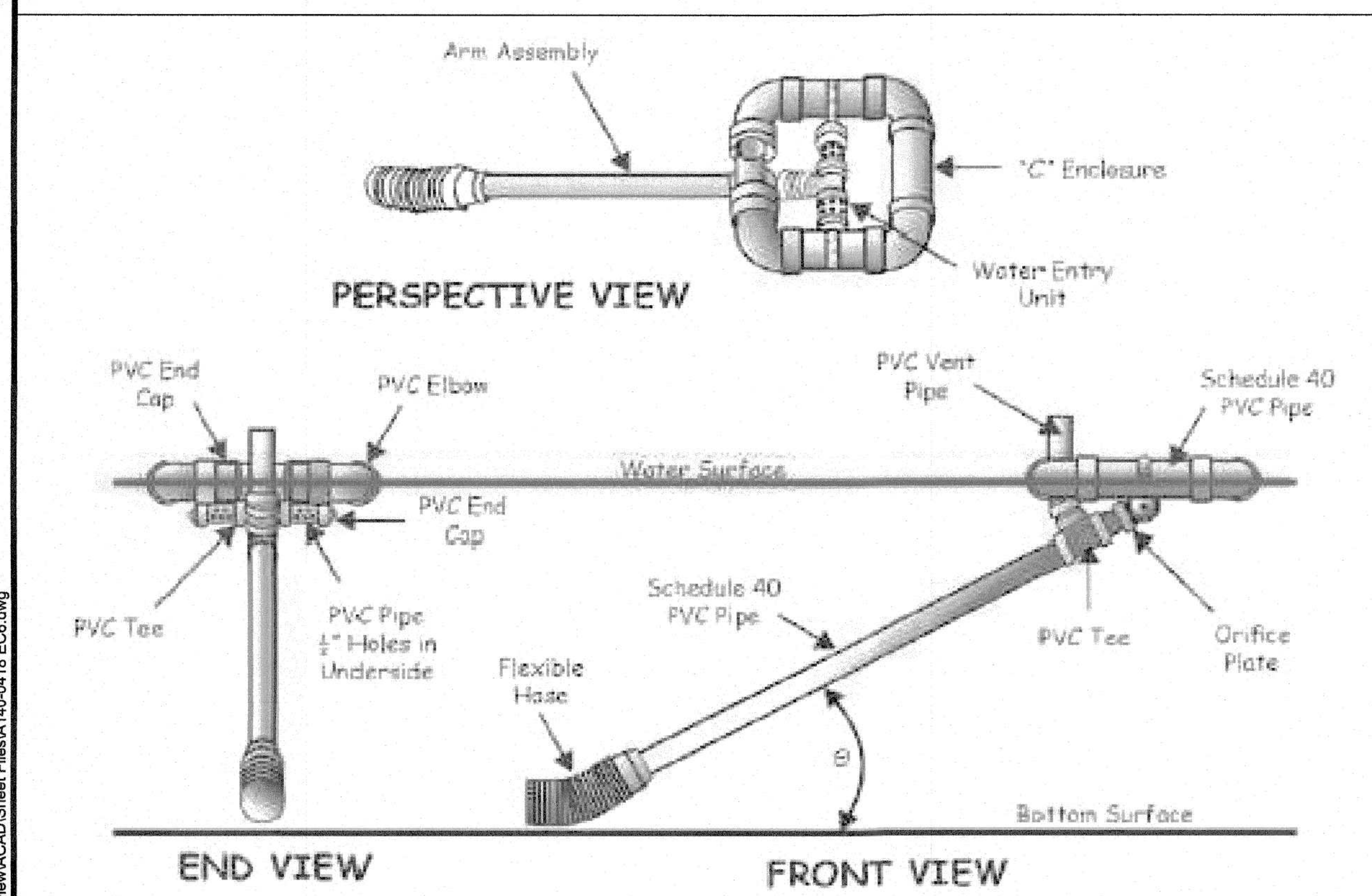


Figure 6.64a Schematic of a skimmer from Pennsylvania Erosion and Sediment Pollution Control Manual, March, 2000.

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

Date/Time : Fri, 12 Jan 2024 - 2:56pm
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User Name: rlopez

BLUFFVIEW SUBDIVISION
PHASE 1

EROSION/SEDIMENTATION CONTROL DETAILS

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 1/12/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 EC6.dwg

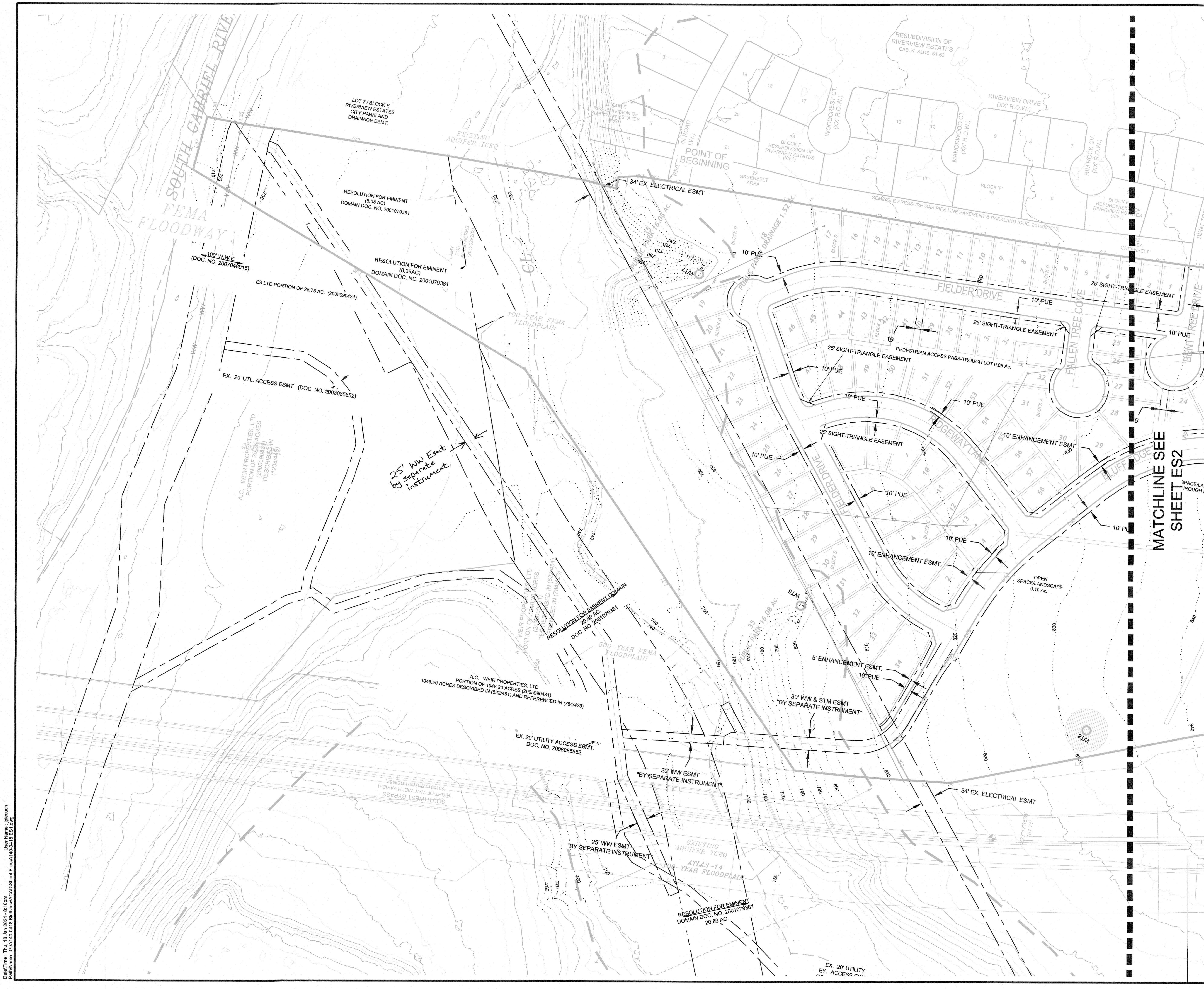
STATE OF TEXAS — JUSTIN D. MIDURA — 128809 — LICENSED PROFESSIONAL ENGINEER
1-12-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 150
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: ####

EC6

SHEET NO. 22 OF 93 SHEETS



0 100 200
1" = 100'

LEGEND:
EXISTING CONTOURS
BUILDING SETBACK

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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BLUFFVIEW SUBDIVISION
PHASE 1
EASEMENT PLAN

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/18/2024
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DRAWING NAME: A140-0418 ES1.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER:
A140-0418

ES1

SHEET NO.
25
OF 93 SHEETS

Date/Time : Thu, 18 Jan 2024 - 6:10pm User Name : jplecouch
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BLUFFVIEW SUBDIVISION
PHASE 1

EASEMENT PLAN

REVISIONS

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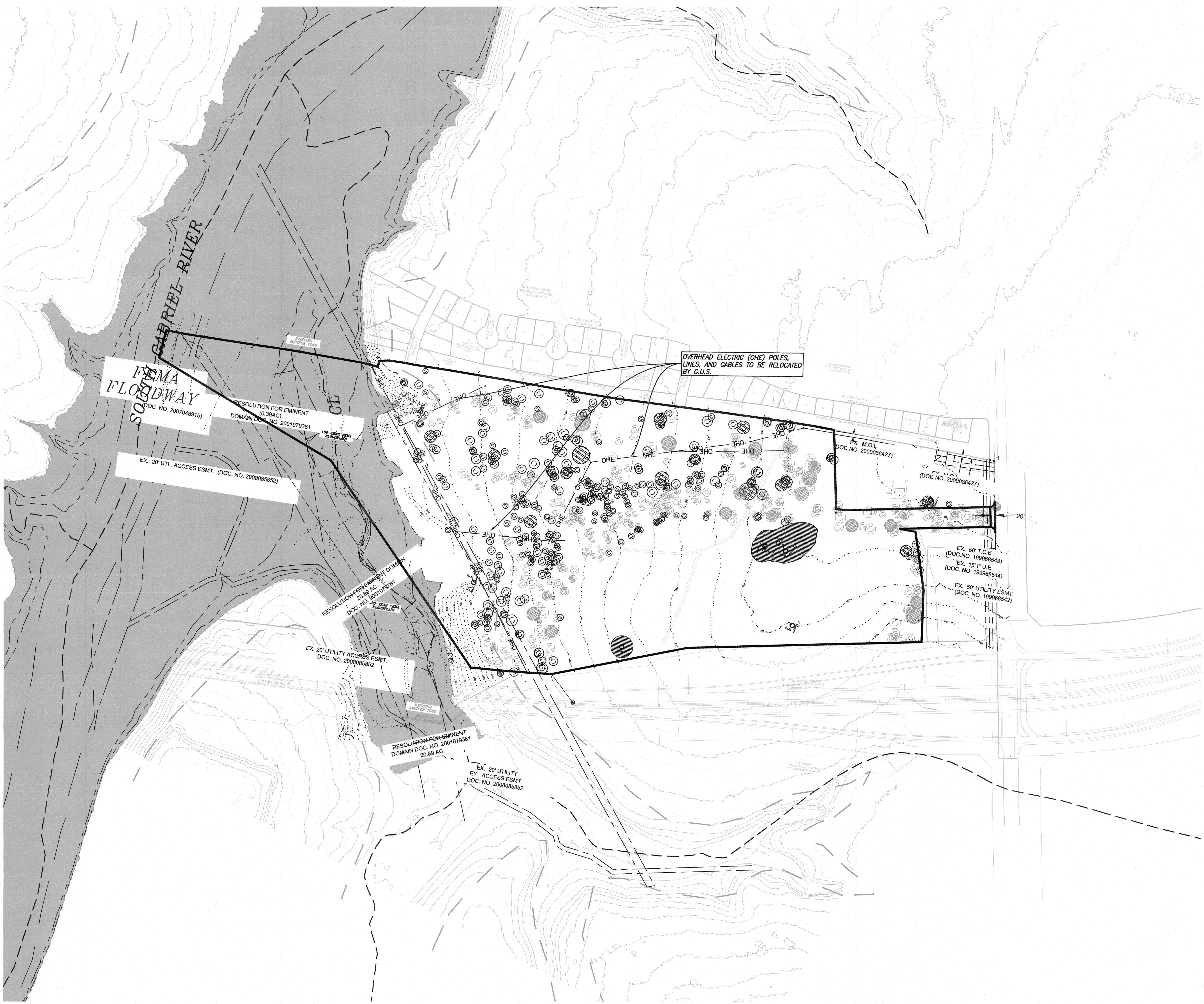
JOB NUMBER: A140-0418

ES2

SHEET NO. 26 OF 93 SHEETS



0 100 200
1" = 100'

LEGEND:

610	EXISTING CONTOURS
	BUILDING SETBACK
1234	TREE TO BE SAVED
	DEMO AREA

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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BLUFFVIEW SUBDIVISION PHASE 1

EXISTING CONDITIONS AND DEMO PLAN

REVISIONS

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A140-0418

EX1

SHEET NO.
27
OF 93 SHEETS

1" = 50'

0 50 100

LEGEND:

- EXISTING CONTOURS
- PROPOSED CONTOURS
- TOP OF PAVEMENT ELEVATION
- TOP OF WALL ELEVATION
- BOTTOM OF WALL ELEVATION
- TOP OF CURB ELEVATION
- TOP OF GRADE/GRATE ELEVATION
- TOP OF LAY DOWN CURB ELEVATION
- PROPOSED STORM SEWER LINE
- PROPOSED RETAINING WALL
- PROPOSED TREE WELL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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GRADING PLAN

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JUSTIN D. MIDURA
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1-17-2024

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JOB NUMBER: A140-0418

GP1

SHEET NO. 28 OF 93 SHEETS

Date/Time : Thu, 18 Jan 2024 - 8:43pm User Name : jolecuch
PathName : G:\A140-0418 Bluffview\CAD\Sheet Files\A140-0418 GP1.dwg

N

0 50 100
1" = 50'

LEGEND:

610	EXISTING CONTOURS
608	PROPOSED CONTOURS
604.00 TP	TOP OF PAVEMENT ELEVATION
604.00 TW	TOP OF WALL ELEVATION
604.00 BW	BOTTOM OF WALL ELEVATION
604.00 TC	TOP OF CURB ELEVATION
604.00 TG	TOP OF GRADE/GRATE ELEVATION
604.00 TLC	TOP OF LAY DOWN CURB ELEVATION
	PROPOSED STORM SEWER LINE
	PROPOSED RETAINING WALL
	PROPOSED TREE WELL

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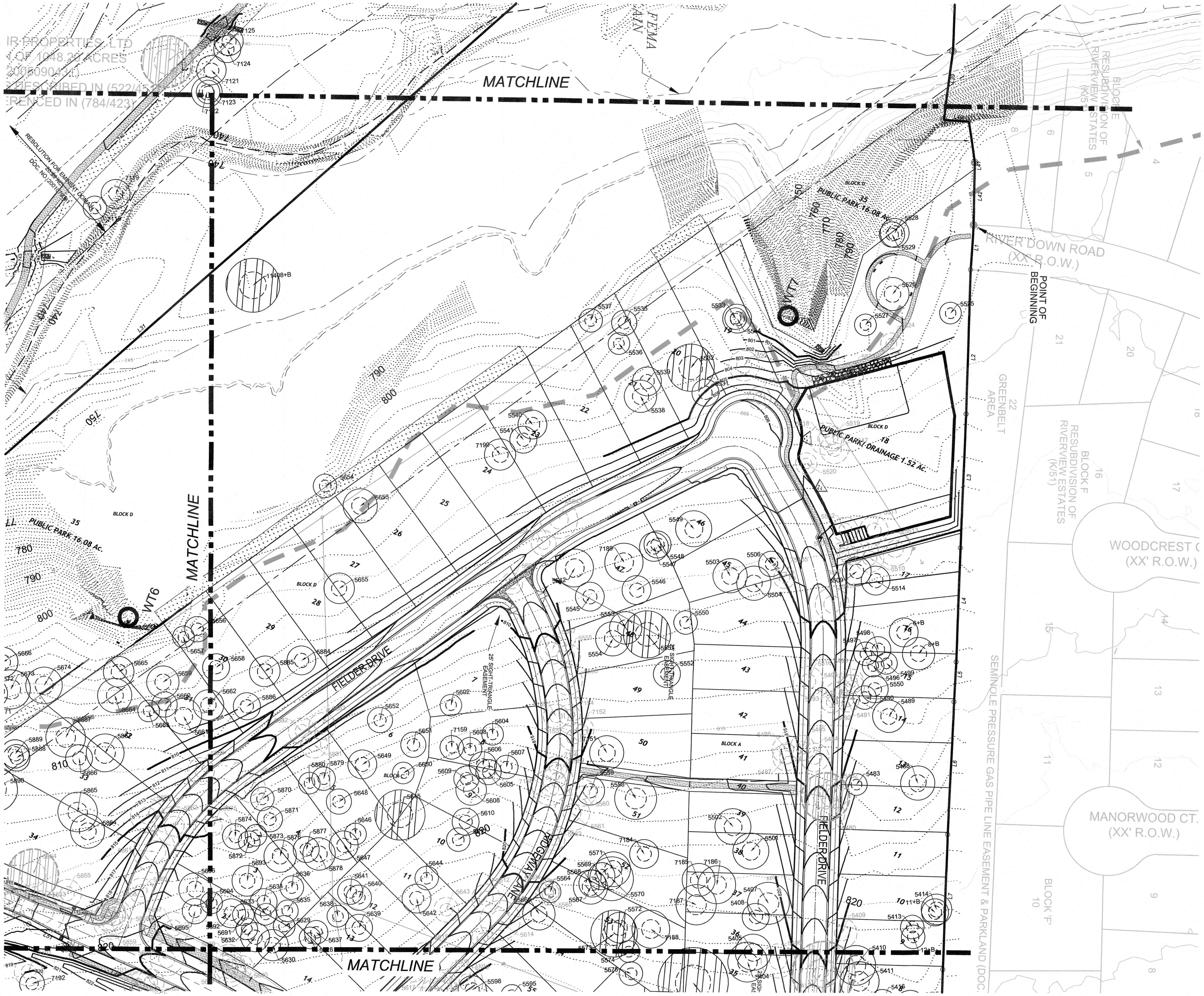
GP2

SHEET NO. 29

OF 93 SHEETS



N

0 50 100
1" = 50'

LEGEND:

610	EXISTING CONTOURS
608	PROPOSED CONTOURS
604.00 TP	TOP OF PAVEMENT ELEVATION
604.00 TW	TOP OF WALL ELEVATION
604.00 BW	BOTTOM OF WALL ELEVATION
604.00 TC	TOP OF CURB ELEVATION
604.00 TG	TOP OF GRADE/GRATE ELEVATION
604.00 TLC	TOP OF LAY DOWN CURB ELEVATION
	PROPOSED STORM SEWER LINE
	PROPOSED RETAINING WALL
	PROPOSED TREE WELL

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GRADING PLAN

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GP3

SHEET NO.
30
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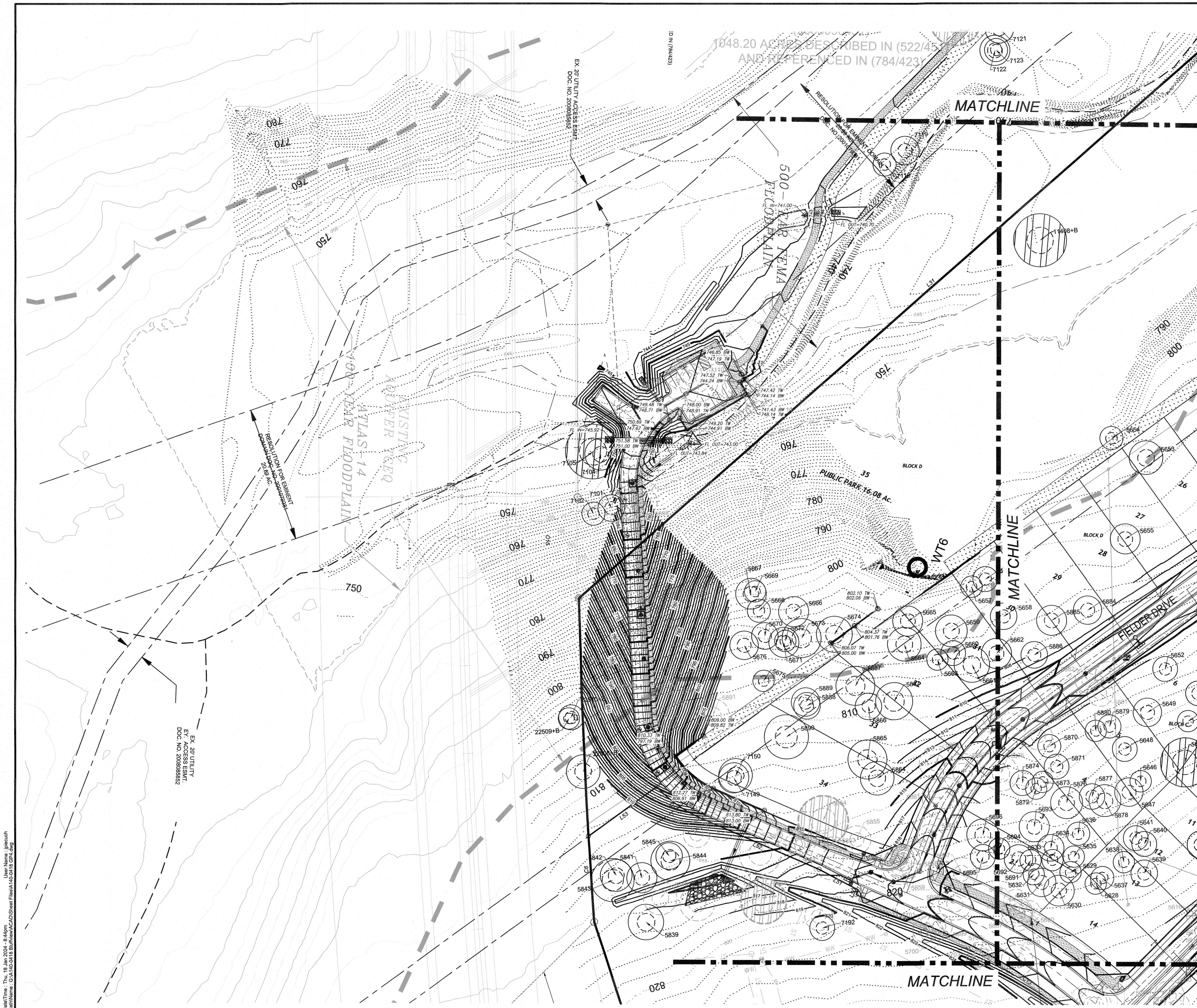

N

0 50 100
1" = 50'

LEGEND:

610	EXISTING CONTOURS
608	PROPOSED CONTOURS
604.00 TP	TOP OF PAVEMENT ELEVATION
604.00 TW	TOP OF WALL ELEVATION
604.00 BW	BOTTOM OF WALL ELEVATION
604.00 TC	TOP OF CURB ELEVATION
604.00 TG	TOP OF GRADE/GRATE ELEVATION
604.00 TLC	TOP OF LAY DOWN CURB ELEVATION
	PROPOSED STORM SEWER LINE
	PROPOSED RETAINING WALL
	PROPOSED TREE WELL

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STATE OF TEXAS
JUSTIN D. MIDURA
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1-17-2024

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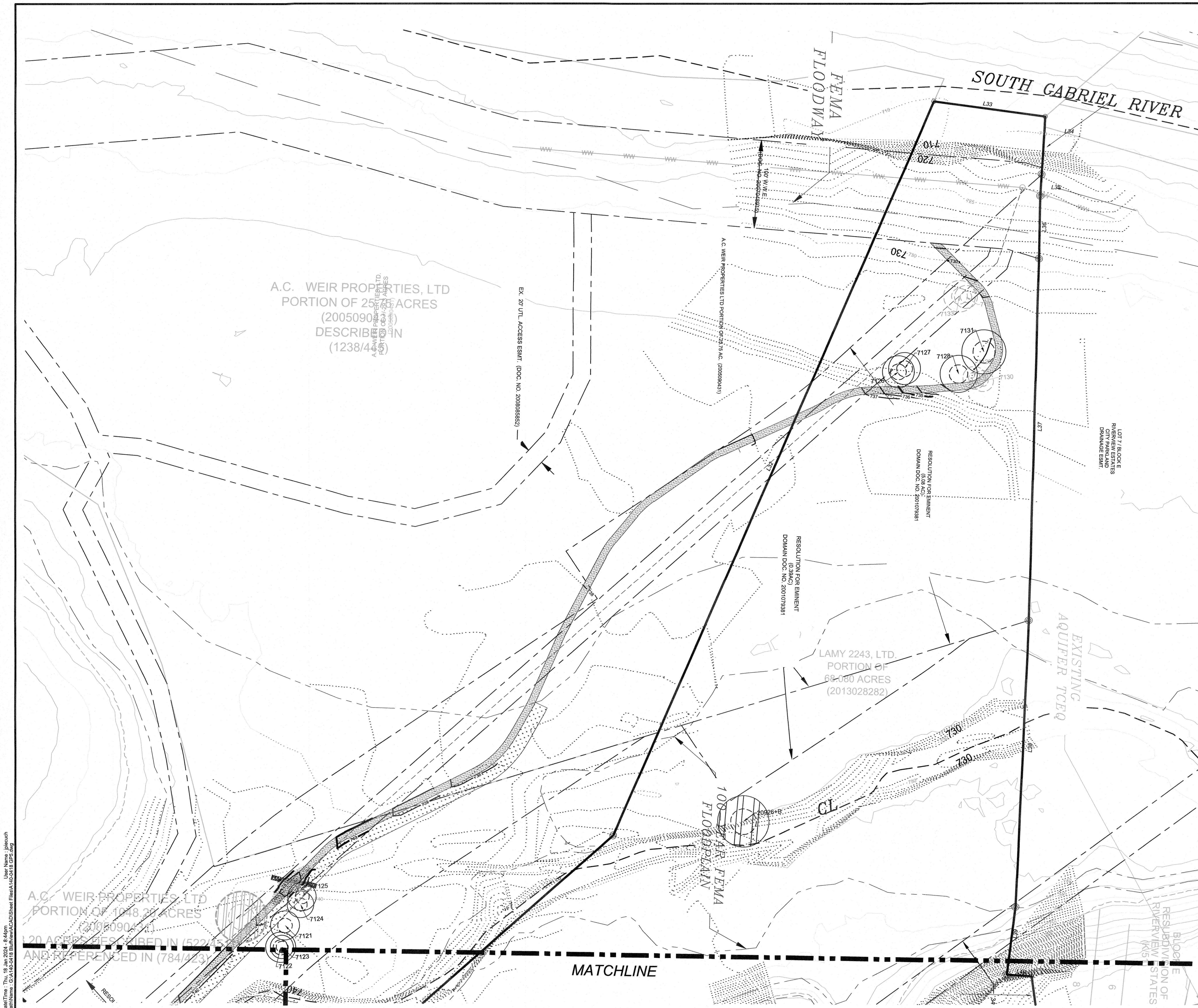
GP4

SHEET NO. 31 OF 93 SHEETS



LEGEND:

- EXISTING CONTOURS
- PROPOSED CONTOURS
- TOP OF PAVEMENT ELEVATION
- TOP OF WALL ELEVATION
- BOTTOM OF WALL ELEVATION
- TOP OF CURB ELEVATION
- TOP OF GRADE/GRATE ELEVATION
- TOP OF LAY DOWN CURB ELEVATION
- PROPOSED STORM SEWER LINE
- PROPOSED RETAINING WALL
- PROPOSED TREE WELL

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1-19-2024

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GP5

Date/Time : Thu, 18 Jan 2024 - 8:44pm User Name : jolecuch
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LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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BLUFFVIEW SUBDIVISION
PHASE 1

PRIVATE STORM SEWER LAYOUT

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
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DRAWING NAME: A140-0418 UT1.dwg

STATE OF TEXAS
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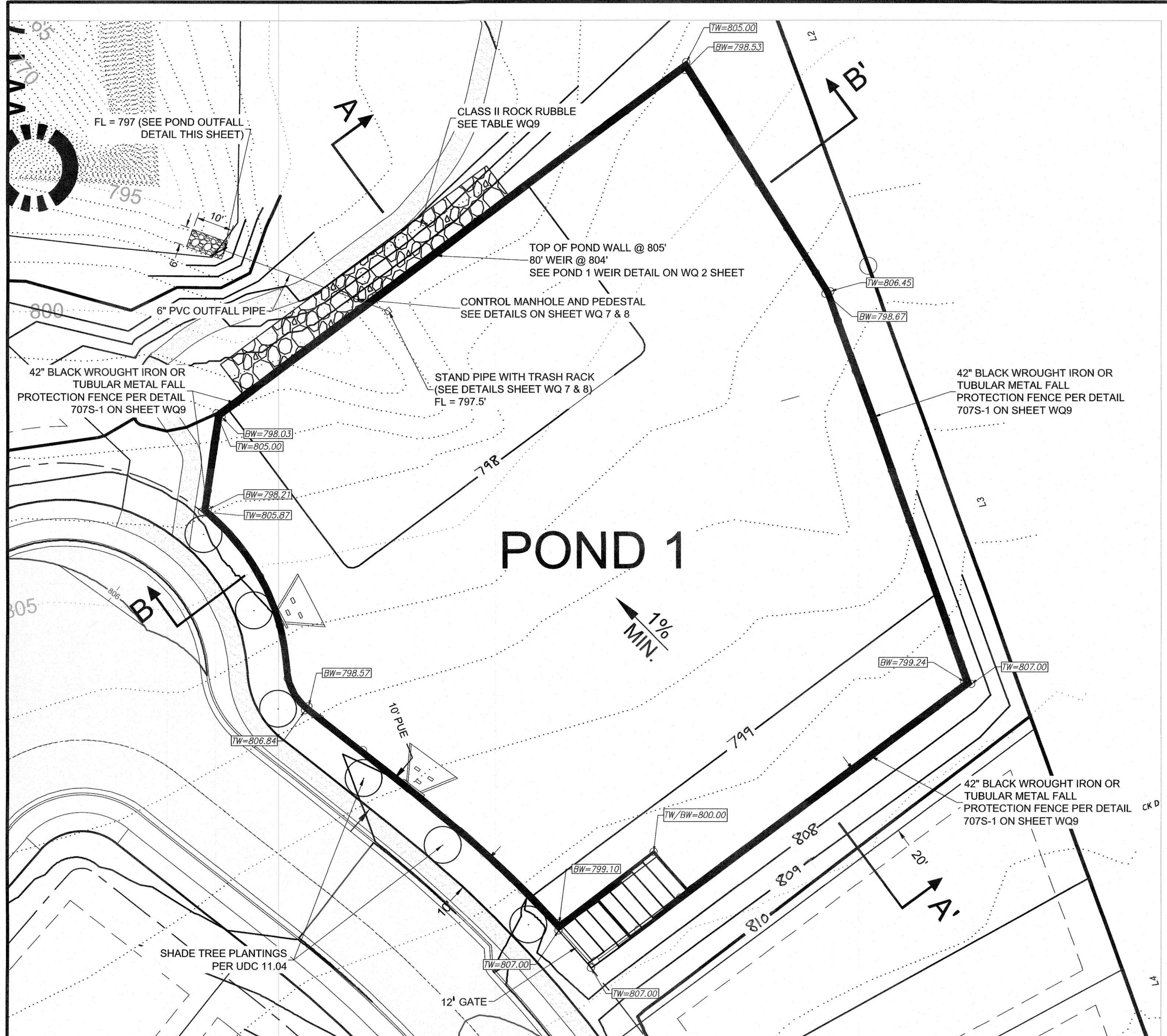
JOB NUMBER: A140-0418

UT1



Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Bluffview
Date Prepared: 1/3/2024

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

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

Page 3-29 Equation 3.3: $L_M = 28.93026(A_N \times P)$

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 85% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County = **Williamson**
Total project area included in plan * = **56.6** acres
Predevelopment impervious area within the limits of the plan * = **0.00** acres
Total post-development impervious area within the limits of the plan* = **24.7** acres
Total post-development impervious cover fraction * = **0.44**
P = **32** inches

$L_{M\ TOTAL\ PROJECT}$ = **22885** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **6**

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

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area = **25.3** acres
Predevelopment impervious area within drainage basin/outfall area = **0.00** acres
Post-development impervious area within drainage basin/outfall area = **15.4** acres
Post-development impervious fraction within drainage basin/outfall area = **0.61**
$L_{M\ THIS\ BASIN}$ = **14260** lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** **(Batch Detention Basin)**
Removal efficiency = **91** percent

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

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

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

A_C = **25.3** acres
A_I = **15.4** acres
A_P = **9.93** acres
L_R = **15676** lbs

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

Desired $L_{M\ THIS\ BASIN}$ = **14650** lbs.

F = **0.93**

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

Rainfall Depth = **2.20** inches
Post Development Runoff Coefficient = **0.57**
On-site Water Quality Volume = **114675** cubic feet

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

Off-site area draining to BMP = **6.6** acres
Off-site Impervious cover draining to BMP = **2.1** acres
Impervious fraction of off-site area = **0.32**
Off-site Runoff Coefficient = **0.27**
Off-site Water Quality Volume = **14288** cubic feet

Storage for Sediment = **25793**
Total Capture Volume (required water quality volume(s) x 1.20) = 154756 cubic feet
The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

8. Extended Detention Basin System Designed as Required in RG-348A Pages 3-46 to 3-51

Required Water Quality Volume for extended detention basin = **154756** cubic feet

EXTENDED BATCH DETENTION CALCULATIONS
POND 1

WATER QUALITY CONTROL CALCULATIONS

	Required	Provided
25-year Peak Flow Rate	172.1 cfs	
100-year Peak Flow Rate	219.4 cfs	
Water Quality Volume	154,756 cf	155,529 cf
Water Quality Elevation	803.99 ft MSL	803.99 ft MSL
WQV Height Above Pond Bottom	Max 5.00 ft	4.99 ft
Length of WQV Weir	80 ft	80 ft (or using HEC-HMS design)
Head above Weir on Design Flow (100yr Storm)	Max 1.00 ft	0.94 ft

WATER QUALITY STAGE/STORAGE RELATIONSHIPS

BATCH DETENTION POND

STAGE	AREA (sf)	INC. VOL.	STORAGE (cf)	STORAGE (Ac-Ft)
797.50	0	0	0	0.00000
798.00	5,553	925	925	0.02125
799.00	25,330	14,248	15,173	0.34833
800.00	28,442	26,871	42,044	0.96521
801.00	28,442	28,442	70,487	1.61815
802.00	28,442	28,442	98,929	2.27109
803.00	28,442	28,442	127,371	2.92403
803.99	28,442	28,158	155,529	3.57045
804.00	28,442	284	155,813	3.57698
805.00	28,442	28,442	184,255	4.22992

UNDERDRAIN PIPE ORIFICE OPENING		
Avg Head=	3.50	ft
48 hour=	172,800	sec
Average Flow (WQV/48 Hour)=	0.90005	cfs
Orifice Area (Q/(0.6*(2gh)^0.5))=	0.09999	sf
Orifice Area=	14.40	in^2
Orifice Diameter=	4.28	in
Orifice Diameter Used=	4.28	in
Drawdown time =	48.00	hours

N

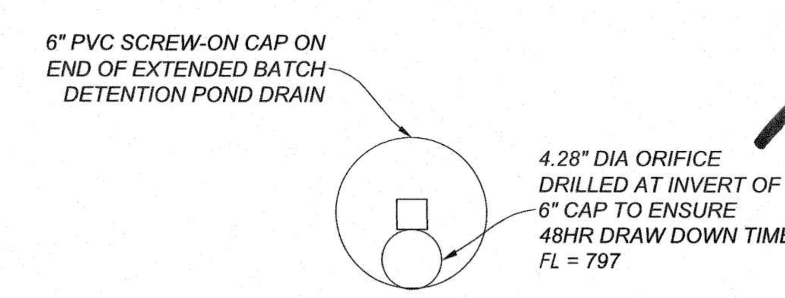
0 20 40
1" = 20'

LEGEND:

—o—	PROPOSED FENCE
700	EXISTING CONTOURS
700	PROPOSED CONTOURS
604.00 TW	TOP OF WALL ELEVATION
604.00 BW	BOTTOM OF WALL ELEVATION
	PROPOSED RETAINING WALL
○	PROPOSED SHADE TREE

NOTES:
1. COMPACT SUBGRADE TO 95% DENSITY MINIMUM 12 INCHES BELOW POND
2. 12 INCHES MINIMUM TOPSOIL AT POND BOTTOM.
3. SEE STRUCTURAL PLANS FOR WALL DETAILS.
4. CONTRACTOR TO USE DEWATERING SKIMMER DURING CONSTRUCTION, SEE EROSION CONTROL SHEET FOR LOCATION.
5. THE PROPOSED POND SHALL BE LOCATED WITHIN A DRAINAGE EASEMENT LOT TO BE DEDICATED PER FINAL PLAT.

POND OUTFALL DETAIL



FILTRATION DRAIN
OUTLET ORIFICE CAP
SCALE: 1" = 6"

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BLUFFVIEW SUBDIVISION
PHASE 1

WATER QUALITY POND 1 SECTIONS

REVISIONS

NO.	DESCRIPTION	BY	DATE

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STATE OF TEXAS
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128809
LICENSED
1-17-2024

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SHEET NO.
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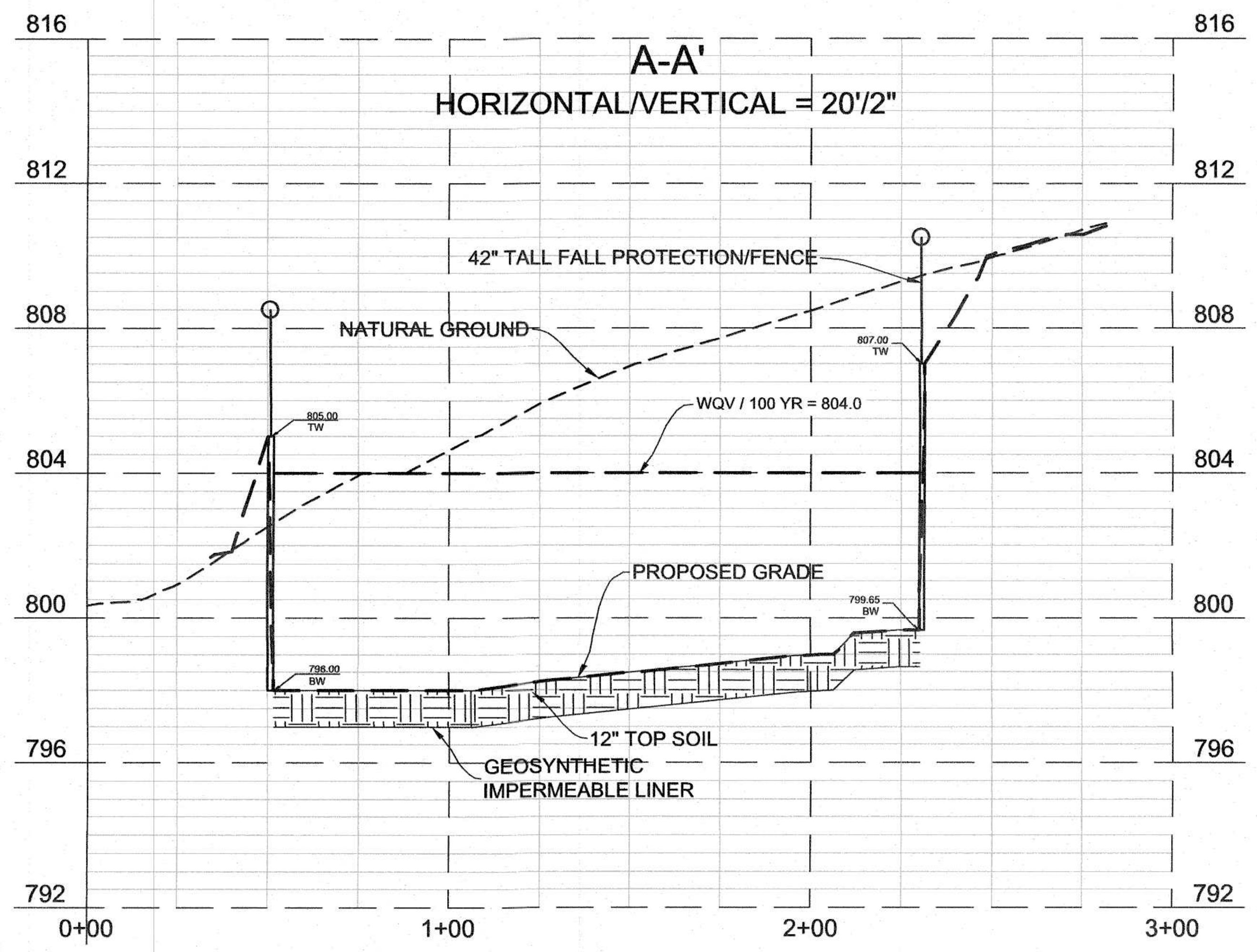
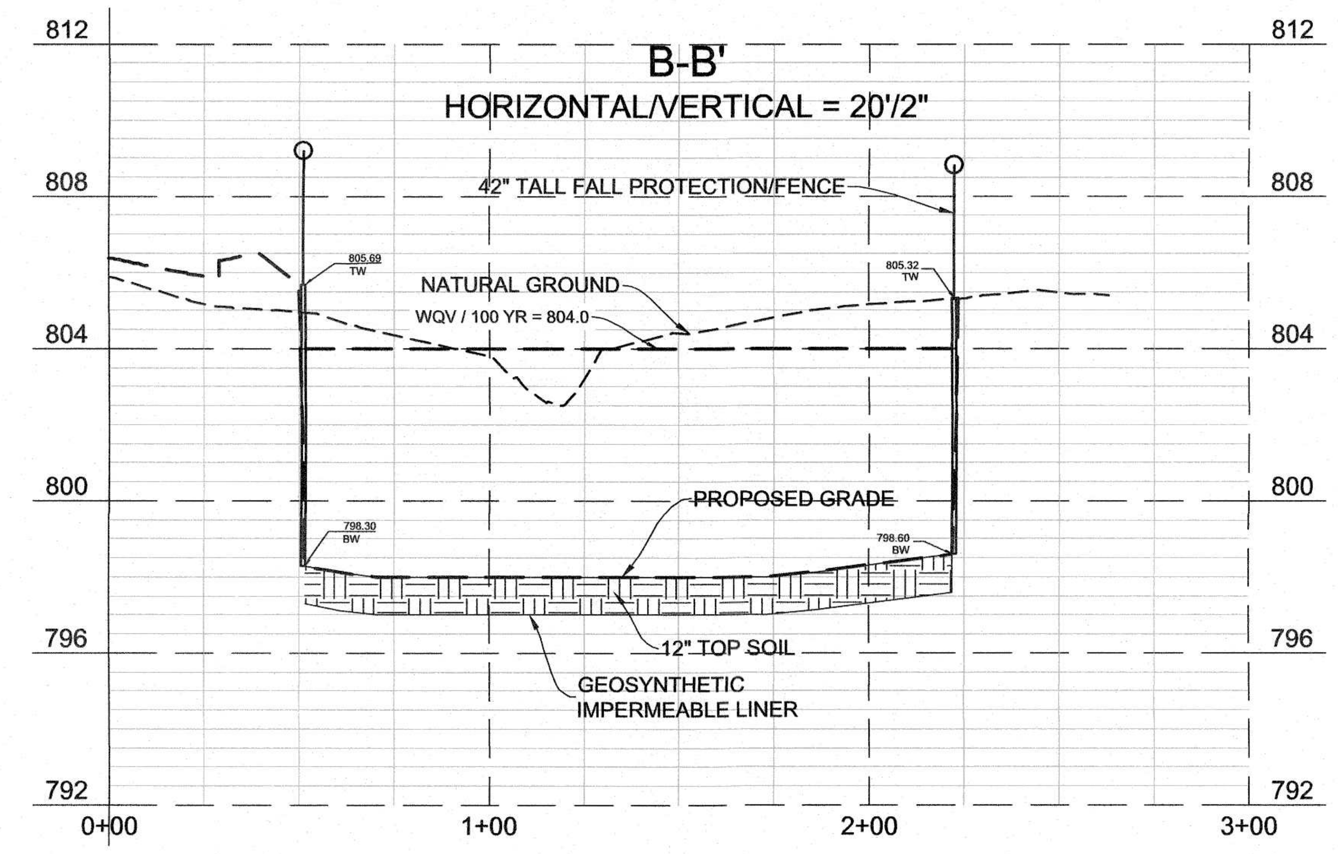


SECTION A-A'
STA 0+00 - STA. 3+00
SCALE : 1=40' (HORIZONTAL)
SCALE : 1=4' (VERTICAL)

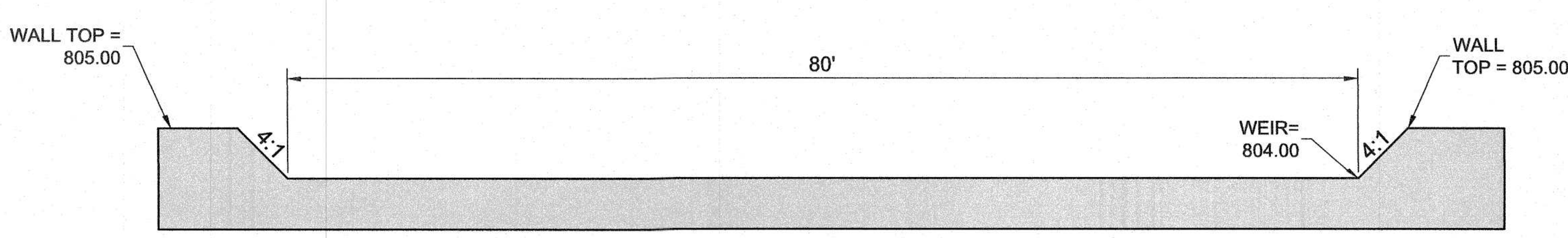


SECTION B-B'
STA. 0+00 - STA. 3+00
SCALE : 1=40' (HORIZONTAL)
SCALE : 1=4' (VERTICAL)

Table 3-7 Geotextile Fabric Specifications (COA, 2004)

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

*modified



POND 1 WEIR DETAIL
SCALE : 1" = 10'

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BLUFFVIEW SUBDIVISION
PHASE 1
WATER QUALITY POND X SECTIONS

REVISIONS

NO.	DESCRIPTION	BY	DATE

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DRAWING NAME: A140-0418 WQ2.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
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WQ2

SHEET NO. 45 OF 93 SHEETS

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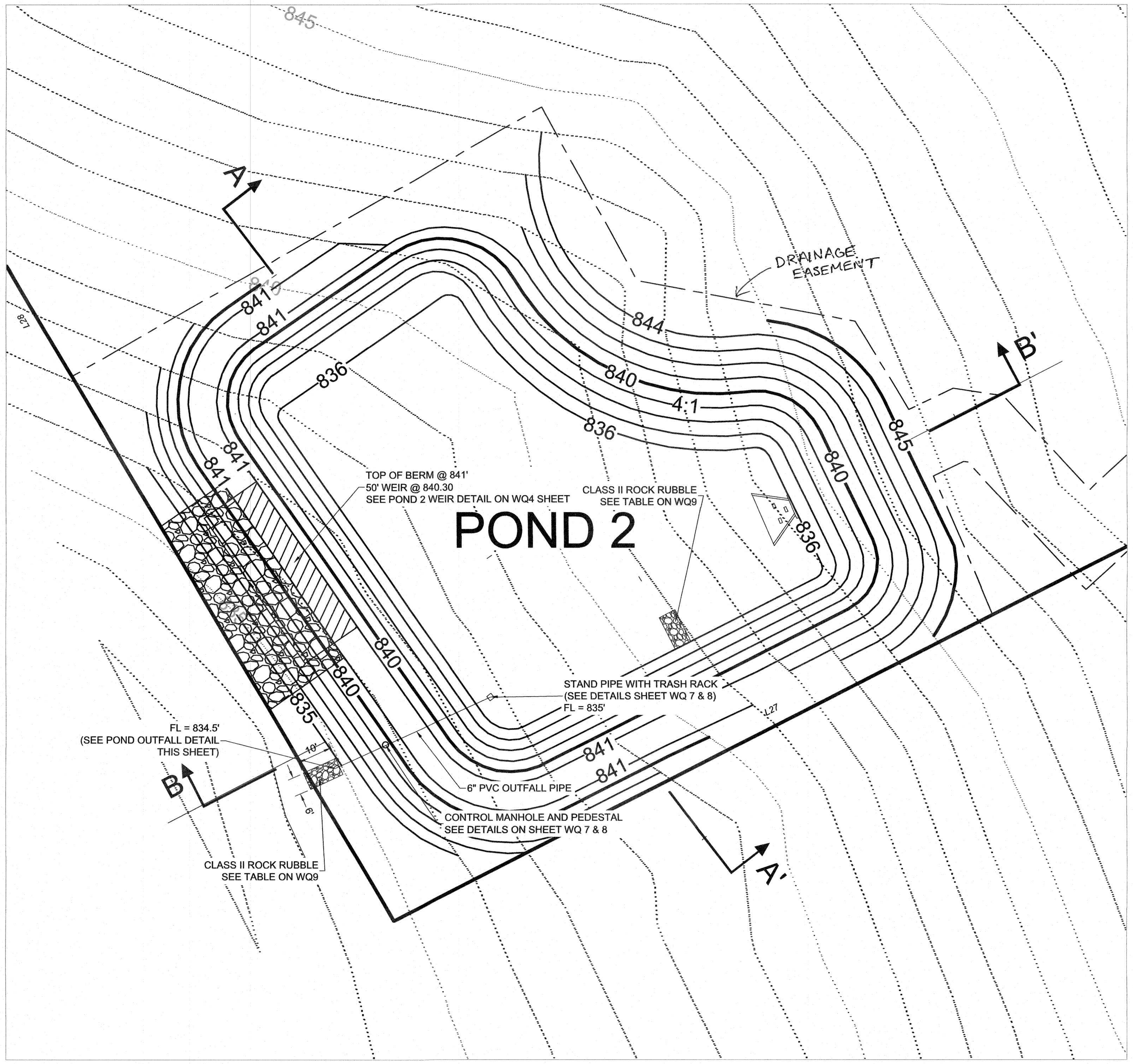

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Bluffview
Date Prepared: 1/3/2024

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Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348A.
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Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

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

Page 3-29 Equation 3.3: $L_M = 28.93026(A_N \times P)$

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 85% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	**Williamson**	
Total project area included in plan * =	**56.6**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan* =	**24.7**	acres
Total post-development impervious cover fraction * =	**0.44**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**22885**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **6**

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

Drainage Basin/Outfall Area No. = 2

Total drainage basin/outfall area =	**9.4**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**6.2**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.65**	
$L_{M\ THIS\ BASIN}$ =	**5699**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Extended Detention** **(Batch Detention Basin)**
Removal efficiency = **91** percent

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

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

where:

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

A_C =	**9.4**	acres
A_I =	**6.2**	acres
A_P =	**3.25**	acres
L_R =	**6253**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = **5840** lbs.

F = **0.93**

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

Rainfall Depth =	**2.20**	inches
Post Development Runoff Coefficient =	**0.61**	
On-site Water Quality Volume =	**45540**	cubic feet

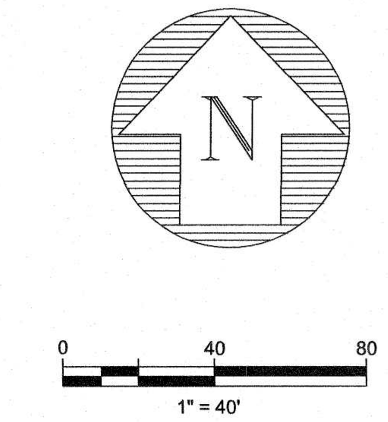
Calculations from RG-348A Pages 3-36 to 3-37

Off-site area draining to BMP =	**2.3**	acres
Off-site Impervious cover draining to BMP =	**0.5**	acres
Impervious fraction of off-site area =	**0.22**	
Off-site Runoff Coefficient =	**0.22**	
Off-site Water Quality Volume =	**3962**	cubic feet
Storage for Sediment =	**9900**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**59403**	cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

8. Extended Detention Basin System Designed as Required in RG-348A Pages 3-46 to 3-51

Required Water Quality Volume for extended detention basin = **59403** cubic feet

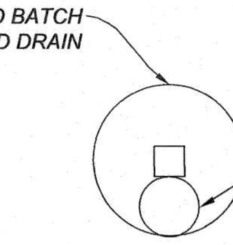


LEGEND:

	PROPOSED FENCE
700	EXISTING CONTOURS
700	PROPOSED CONTOURS
604.00 TW	TOP OF WALL ELEVATION
604.00 BW	BOTTOM OF WALL ELEVATION
	PROPOSED RETAINING WALL
	PROPOSED SHADE TREE

NOTES:
1. COMPACT SUBGRADE TO 95% DENSITY MINIMUM 12 INCHES BELOW POND
2. 12 INCHES MINIMUM TOPSOIL AT POND BOTTOM.
3. SEE STRUCTURAL PLANS FOR WALL DETAILS.
4. CONTRACTOR TO USE DEWATERING SKIMMER DURING CONSTRUCTION, SEE EROSION CONTROL SHEET FOR LOCATION.
5. THE PROPOSED POND SHALL BE LOCATED WITHIN A DRAINAGE EASEMENT LOT TO BE DEDICATED PER FINAL PLAT.

POND OUTFALL DETAIL



FILTRATION DRAIN
OUTLET ORIFICE CAP
SCALE: 1" = 6"

EXTENDED BATCH DETENTION CALCULATIONS
POND 2

WATER QUALITY CONTROL CALCULATIONS

25-year Peak Flow Rate	62.4 cfs	
100-year Peak Flow Rate	79.0 cfs	
	Required	Provided
Water Quality Volume	59,403 cf	60,151 cf
Water Quality Elevation	840.30 ft MSL	840.30 ft MSL
WQV Height Above Pond Bottom	Max 5.00 ft	4.30 ft
Length of WQV Weir	50 ft	50 ft (or using HEC-HMS design)
Head above Weir on Design Flow (100yr Storm)	Max 1.00 ft	0.65 ft

WATER QUALITY STAGE/STORAGE RELATIONSHIPS

BATCH DETENTION POND

STAGE	AREA (sf)	INC. VOL.	STORAGE (cf)	STORAGE (Ac-Ft)
835.00	0	0	0	0.00000
836.00	9,680	3,227	3,227	0.07407
837.00	11,484	10,569	13,796	0.31671
838.00	12,998	12,233	26,029	0.59755
839.00	14,578	13,781	39,810	0.91391
840.00	16,224	15,394	55,204	1.26730
840.30	16,758	4,947	60,151	1.38088
841.00	18,003	12,164	72,315	1.66011

UNDERDRAIN PIPE ORIFICE OPENING		
Avg Head=	2.90	ft
48 hour=	172,800	sec
Average Flow (WQV/48 Hour)=	0.34810	cfs
Orifice Area (Q/(0.6*(2gh)^0.5))=	0.04245	sf
Orifice Area=	6.11	in^2
Orifice Diameter=	2.79	in
Orifice Diameter Used=	2.79	in
Drawdown time =	48.00	hours

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1

WATER QUALITY POND 1 SECTIONS

REVISIONS

NO.	DESCRIPTION	BY	DATE

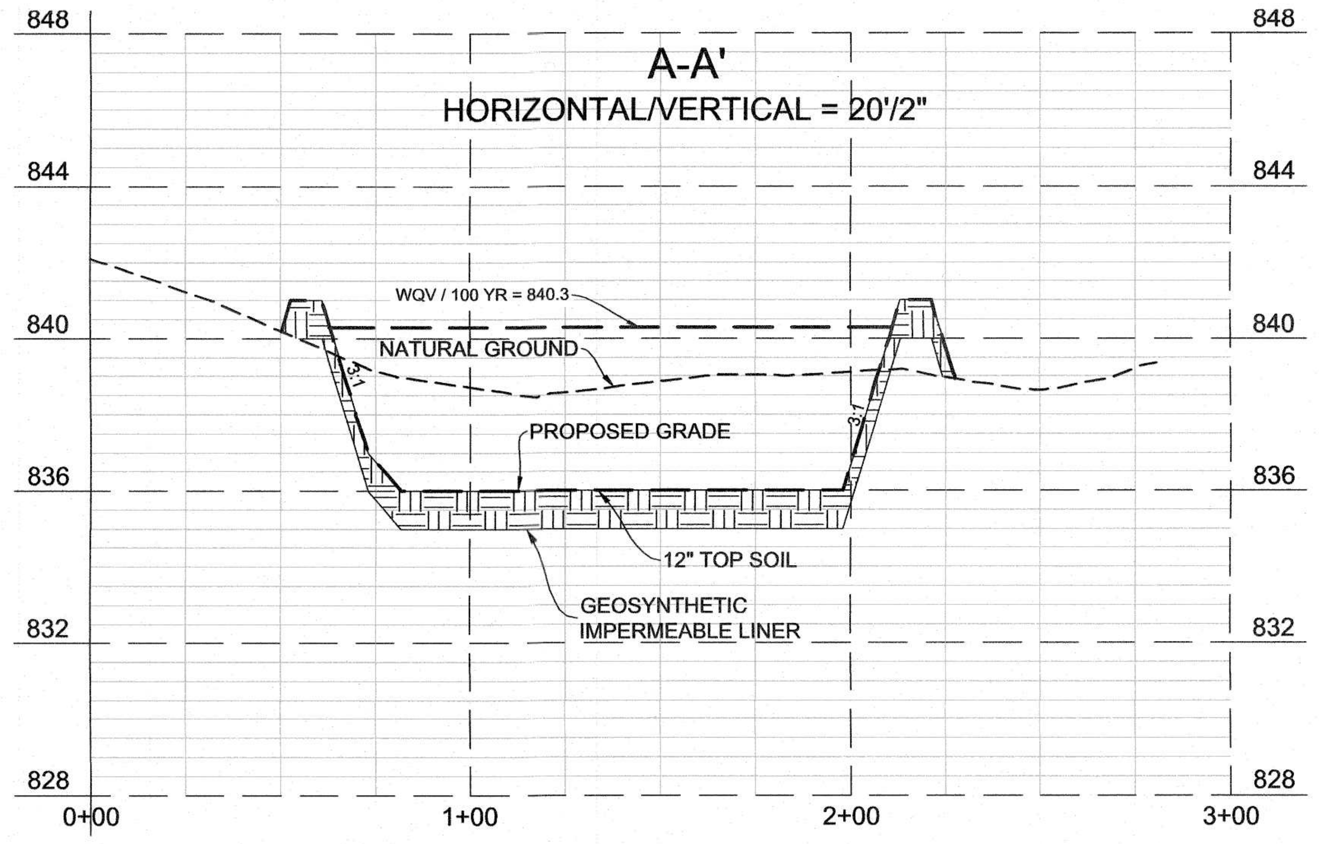
DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WQ3.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
PROFESSIONAL ENGINEER
1-17-2024

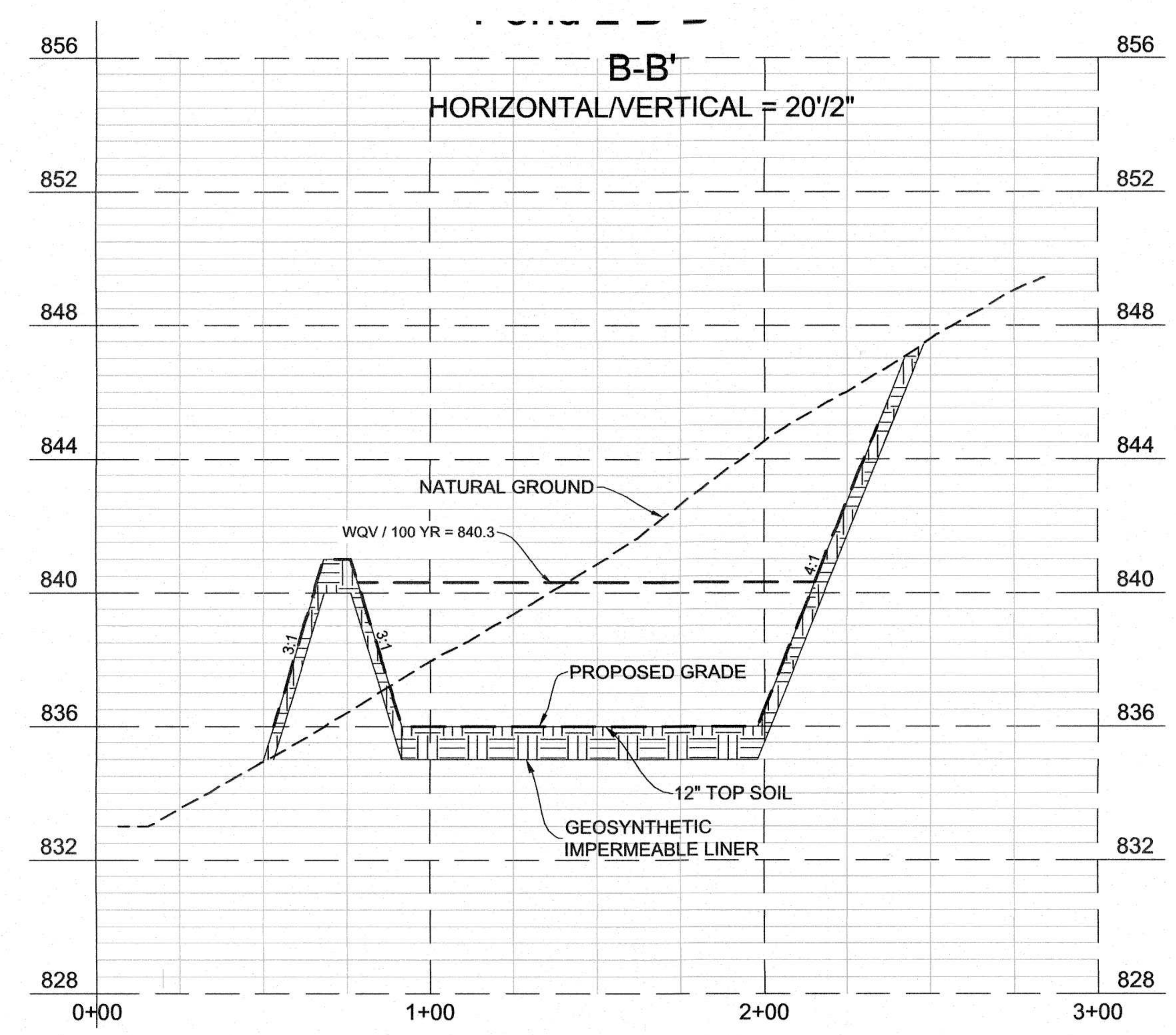
LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER:
A140-0418

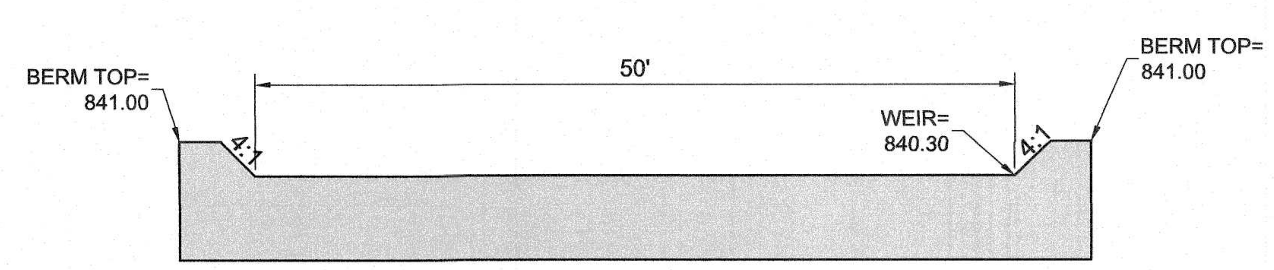
WQ3



SECTION A-A'
STA 0+00 - STA. 3+00
SCALE : 1=40' (HORIZONTAL)
SCALE : 1=4' (VERTICAL)



SECTION B-B'
STA. 0+00 - STA. 3+00
SCALE : 1=40' (HORIZONTAL)
SCALE : 1=4' (VERTICAL)



POND 2 WEIR DETAIL
SCALE : 1" = 10'

Table 3-7 Geotextile Fabric Specifications (COA, 2004)

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

*modified

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

BLUFFVIEW SUBDIVISION
PHASE 1
WATER QUALITY POND 2 SECTIONS

REVISIONS

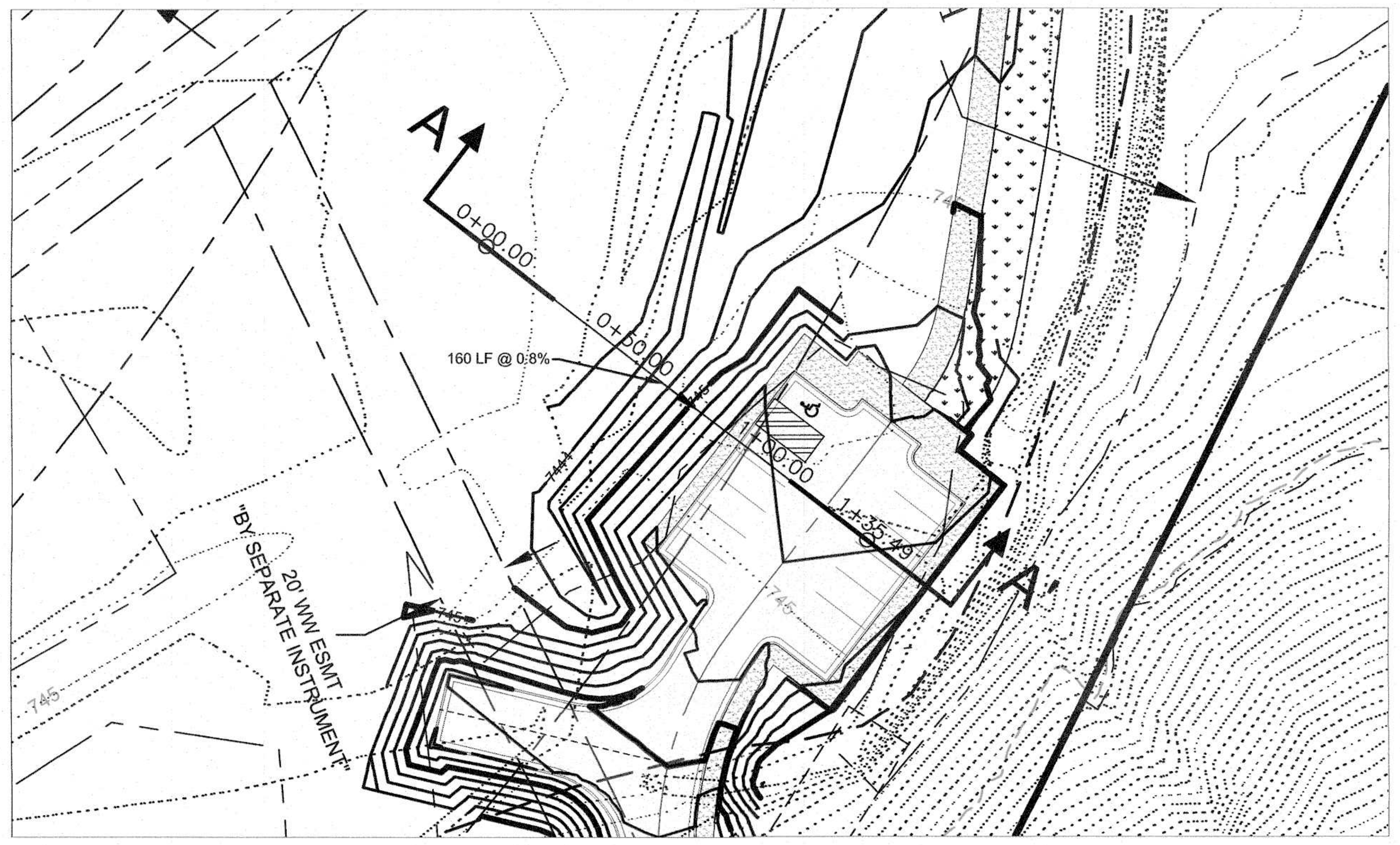
NO.	DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WQ4.dwg

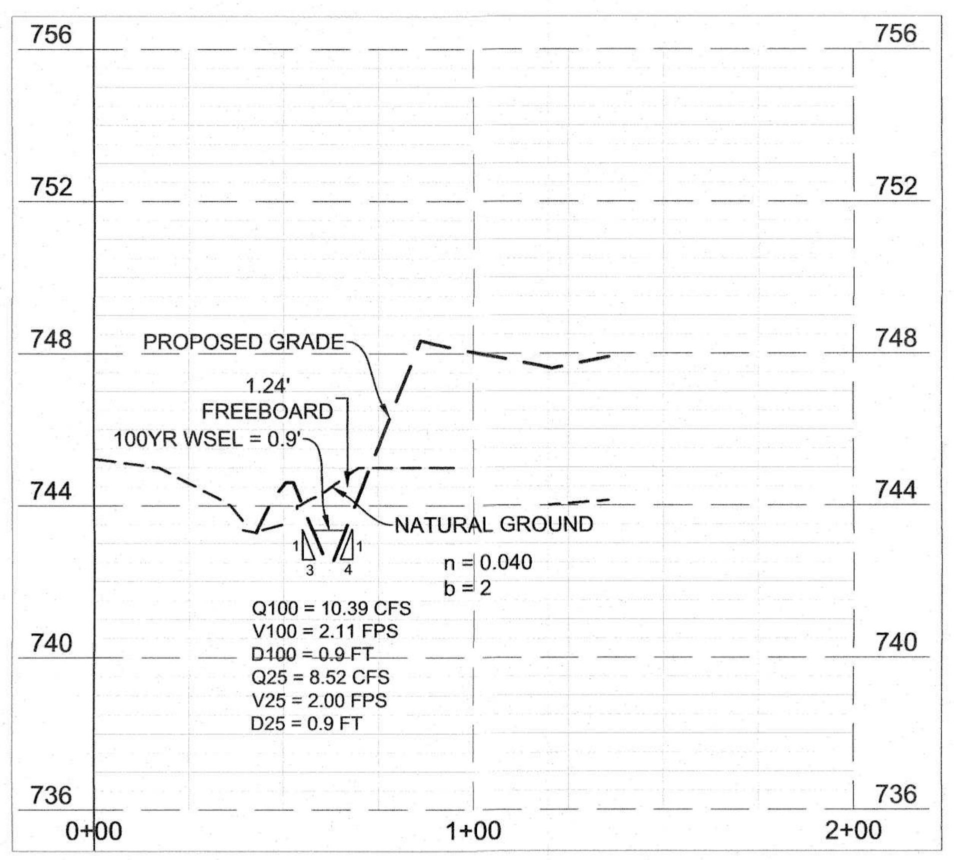
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418
WQ4
SHEET NO. 47 OF 93 SHEETS



Grassy Swale



SECTION A-A'
STA 0+00 - STA. 2+00
SCALE : 1=40' (HORIZONTAL)
SCALE : 1=4' (VERTICAL)

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Bluffview**
Date Prepared: **1/3/2024**

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

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

Page 3-29 Equation 3.3: $L_M = 28.93026(A_N \times P)$

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 85% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

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

County =	**Williamson**	
Total project area included in plan * =	**56.6**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan* =	**24.7**	acres
Total post-development impervious cover fraction * =	**0.44**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**22885**	lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **6**

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

Drainage Basin/Outfall Area No. = 5

Total drainage basin/outfall area =	**1.7**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**0.6**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.33**	
$L_{M\ THIS\ BASIN}$ =	**509**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Grassy Swale**
Removal efficiency = **85** percent

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

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

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

A_C =	**1.7**	acres
A_I =	**0.6**	acres
A_P =	**1.10**	acres
L_R =	**534**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = **509** lbs.

F = **0.95**

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

Rainfall Depth =	**2.60**	inches
Post Development Runoff Coefficient =	**0.33**	
On-site Water Quality Volume =	**5194**	cubic feet

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

Off-site area draining to BMP =	**0.0**	acres
Off-site Impervious cover draining to BMP =	**0.0**	acres
Impervious fraction of off-site area =	**0**	
Off-site Runoff Coefficient =	**0.00**	
Off-site Water Quality Volume =	**0**	cubic feet
Storage for Sediment =	**1039**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**6233**	cubic feet

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

15. Grassy Swales Designed as Required in RG-348 Pages 3-51 to 3-54

Design parameters for the swale:

Drainage Area to be Treated by the Swale = A =	1.7 acres
Impervious Cover in Drainage Area =	0.6 acres
Rainfall intensity = i =	1.1 in/hr
Swale Slope =	0.0216 ft/ft
Side Slope (z) =	3
Design Water Depth = y =	0.33 ft
Weighted Runoff Coefficient = C =	0.47

A_{CS} = cross-sectional area of flow in Swale =	1.61 sf
P_W = Wetted Perimeter =	5.95 feet
R_H = hydraulic radius of flow cross-section = A_{CS}/P_W =	0.27 feet
n = Manning's roughness coefficient =	0.2

15A. Using the Method Described in the RG-348

Manning's Equation: $Q = \frac{1.49}{n} A_{CS} R_H^{2/3} S^{0.5}$

$b = \frac{0.134 \times Q}{y^{1.67} S^{0.5}} - zy$ = 3.84 feet

Q = CiA = 0.85 cfs

To calculate the flow velocity in the swale:

V (Velocity of Flow in the swale) = Q/A_{CS} = 0.53 ft/sec

To calculate the resulting swale length:

L = Minimum Swale Length = V (ft/sec) * 300 (sec) = 157.61 feet

If any of the resulting values do not meet the design requirement set forth in RG-348, the design parameters must be modified and the solver rerun.

N

0 100 200
1" = 100'

LEGEND:

610	EXISTING CONTOURS
608	PROPOSED CONTOURS
604.00 TP	TOP OF PAVEMENT ELEVATION
604.00 TW	TOP OF WALL ELEVATION
604.00 BW	BOTTOM OF WALL ELEVATION
604.00 TC	TOP OF CURB ELEVATION
604.00 TG	TOP OF GRADE/GRATE ELEVATION
604.00 TLC	TOP OF LAY DOWN CURB ELEVATION
	PROPOSED STORM SEWER LINE
	DRY STACK ROCK WALL
	MORTARED ROCK WALL
	VEGETATED FILTER STRIP

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1
WATER QUALITY V.F.S. A & B PLAN VIEWS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WQ5.dwg

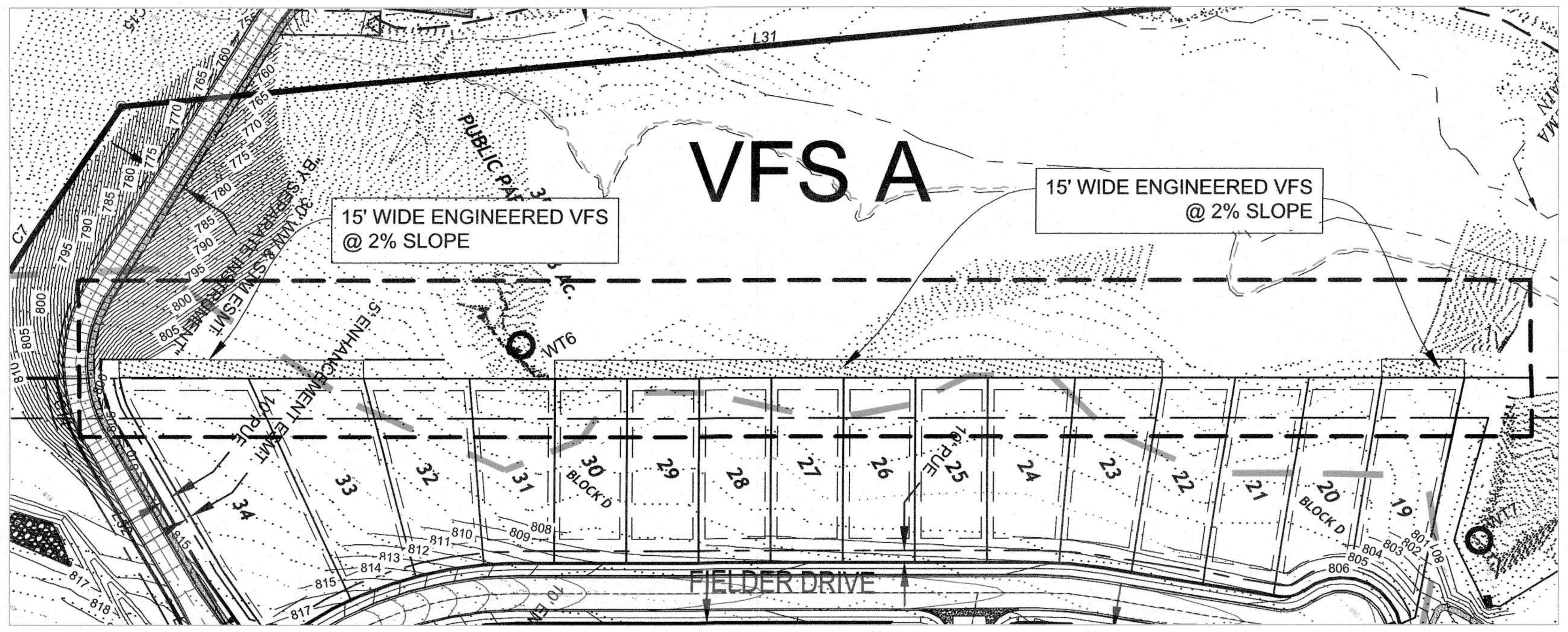
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-17-2024

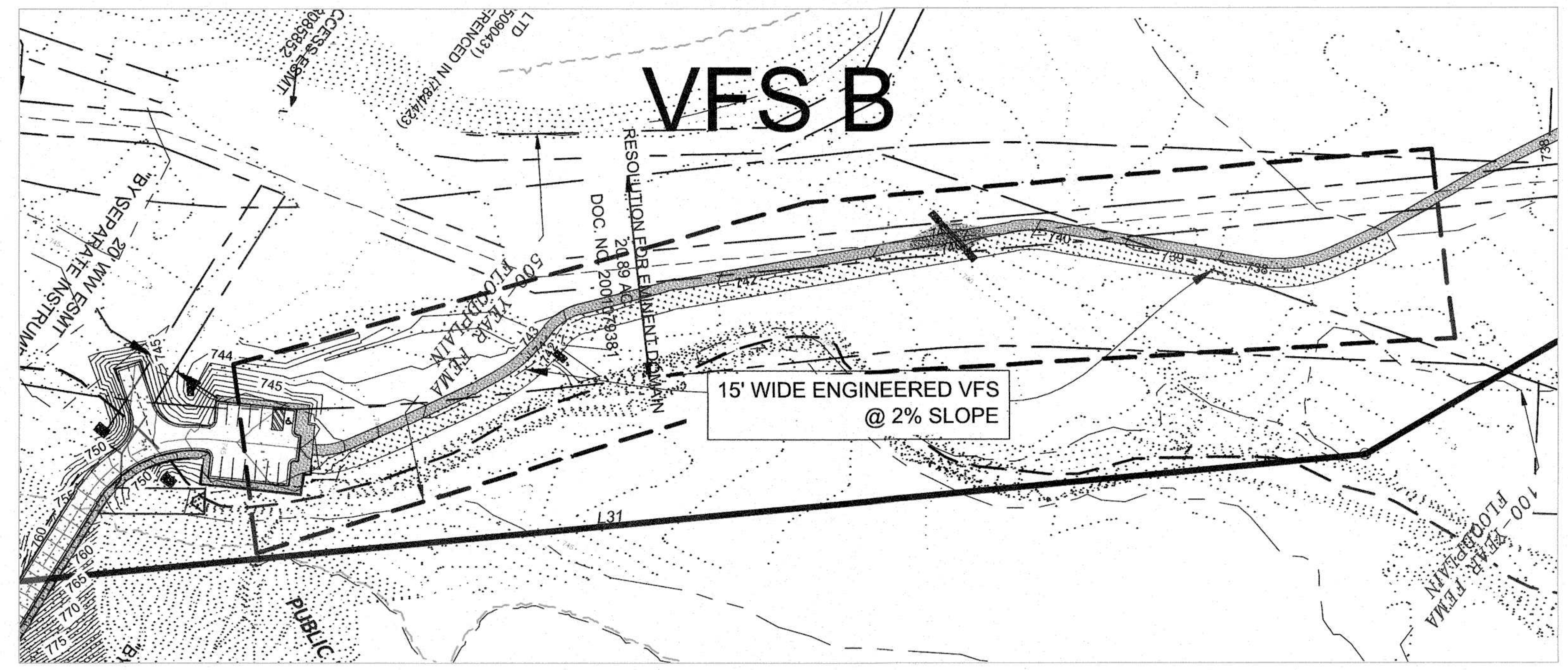
LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:
A140-0418

WQ3

SHEET NO.
48
OF 93 SHEETS





VFS A

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Bluffview**
Date Prepared: **1/3/2024**

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

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

Page 3-29 Equation 3.3: $L_M = 28.93026(A_N \times P)$

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 85% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project
County = **Williamson**
Total project area included in plan * = **56.6** acres
Predevelopment impervious area within the limits of the plan * = **0.00** acres
Total post-development impervious area within the limits of the plan* = **24.7** acres
Total post-development impervious cover fraction * = **0.44**
P = **32** inches

$L_{M\ TOTAL\ PROJECT}$ = **22885** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **6**

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

Drainage Basin/Outfall Area No. = 3

Total drainage basin/outfall area = **3.4** acres
Predevelopment impervious area within drainage basin/outfall area = **0.00** acres
Post-development impervious area within drainage basin/outfall area = **1.7** acres
Post-development impervious fraction within drainage basin/outfall area = **0.49**
$L_{M\ THIS\ BASIN}$ = **1548** lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Vegetated Filter Strips**
Removal efficiency = **85** percent

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

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

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

A_C = **3.4** acres
A_I = **1.7** acres
A_P = **1.77** acres
L_R = **1599** lbs

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

Desired $L_{M\ THIS\ BASIN}$ = **1548** lbs.

F = **0.97**

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

Rainfall Depth = **3.00** inches
Post Development Runoff Coefficient = **0.46**
On-site Water Quality Volume = **17350** cubic feet

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

Off-site area draining to BMP = **0.0** acres
Off-site Impervious cover draining to BMP = **0.0** acres
Impervious fraction of off-site area = **0**
Off-site Runoff Coefficient = **0.00**
Off-site Water Quality Volume = **0** cubic feet

Storage for Sediment = **3470**
Total Capture Volume (required water quality volume(s) x 1.20) = 20820 cubic feet
The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

16. Vegetated Filter Strips Designed as Required in RG-348 Pages 3-55 to 3-57

There are no calculations required for determining the load or size of vegetative filter strips.
The 85% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.

If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.

VFS B

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Bluffview**
Date Prepared: **1/3/2024**

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

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

Page 3-29 Equation 3.3: $L_M = 28.93026(A_N \times P)$

where:
$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 85% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project
County = **Williamson**
Total project area included in plan * = **56.6** acres
Predevelopment impervious area within the limits of the plan * = **0.00** acres
Total post-development impervious area within the limits of the plan* = **24.7** acres
Total post-development impervious cover fraction * = **0.44**
P = **32** inches

$L_{M\ TOTAL\ PROJECT}$ = **22885** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **6**

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

Drainage Basin/Outfall Area No. = 4

Total drainage basin/outfall area = **0.5** acres
Predevelopment impervious area within drainage basin/outfall area = **0.00** acres
Post-development impervious area within drainage basin/outfall area = **0.4** acres
Post-development impervious fraction within drainage basin/outfall area = **0.75**
$L_{M\ THIS\ BASIN}$ = **345** lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Vegetated Filter Strips**
Removal efficiency = **85** percent

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

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

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

A_C = **0.5** acres
A_I = **0.4** acres
A_P = **0.12** acres
L_R = **353** lbs

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

Desired $L_{M\ THIS\ BASIN}$ = **345** lbs.

F = **0.98**

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

Rainfall Depth = **3.33** inches
Post Development Runoff Coefficient = **0.69**
On-site Water Quality Volume = **4132** cubic feet

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

Off-site area draining to BMP = **0.0** acres
Off-site Impervious cover draining to BMP = **0.0** acres
Impervious fraction of off-site area = **0**
Off-site Runoff Coefficient = **0.00**
Off-site Water Quality Volume = **0** cubic feet

Storage for Sediment = **826**
Total Capture Volume (required water quality volume(s) x 1.20) = 4959 cubic feet
The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

16. Vegetated Filter Strips Designed as Required in RG-348 Pages 3-55 to 3-57

There are no calculations required for determining the load or size of vegetative filter strips.
The 85% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.

If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.

0 100 200
1" = 100'

LEGEND:

- EXISTING CONTOURS (610)
- PROPOSED CONTOURS (608)
- TOP OF PAVEMENT ELEVATION (604.00 TP)
- TOP OF WALL ELEVATION (604.00 TW)
- BOTTOM OF WALL ELEVATION (604.00 BW)
- TOP OF CURB ELEVATION (604.00 TC)
- TOP OF GRADE/GRATE ELEVATION (604.00 TG)
- TOP OF LAY DOWN CURB ELEVATION (604.00 TLC)
- PROPOSED STORM SEWER LINE
- DRY STACK ROCK WALL
- MORTARED ROCK WALL
- VEGETATED FILTER STRIP

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1
WATER QUALITY V.F.S. A & B PLAN VIEWS

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WQ6.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
PROFESSIONAL ENGINEER
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A140-0418

WQ6

smartPOND Valve SPECIFICATION

Continuously Monitored Automated Stormwater System with Valve

1. Introduction
The following specifications describe the components, general functions, and applications of a smartPOND Continuously Monitored Automated Stormwater System (C-MASS) with Valve. The system functions as an electronically controlled, solar powered stormwater management device, providing precision management capabilities and real-time data. Using sensors, solar power, an electronic actuator, and an internet-based control interface, the smartPOND valve connects to a specialized perforated riser inside the stormwater impoundment to enable managers to precisely control water retention and detention automatically or in real time.

2. smartPOND Valve Applications in Stormwater Management
The smartPOND valve is a device for active Stormwater management. As opposed to passive devices such as floating skimmers or stationary weirs, active water management dramatically increases the efficiency and effectiveness of a detention or retention pond. Where a passive stormwater detention system allows water to leave immediately upon collection, the smartPOND valve can detain newly caught Stormwater and allow it to settle for a programmed period before automatically dewatering the impoundment completely. For stormwater retention systems, it is possible to manage the treatment volume while maintaining a specified amount of capacity for flood storage or other use.

2.1 Pre-Programmed Control
Many functions can be pre-programmed without any human interactions, leaving the valve to automatically receive commands based on environmental conditions and respond as programmed.

2.1.1 Batch Detention Function for Stormwater Quality
The smartPOND valve meets TCEQ Batch Detention specifications for a 91% Total Suspended Solid removal rate. The function proceeds as follows. With the valve in the closed position and the impoundment dry, the system will stand by and wait for a water collection event. At the first sign of water collection, the unit will begin a 12-hour detention timer. At the end of the 12-hour detention period, the valve will open and release all of the water that has been collected. After the water level drops to 0", the valve will remain open for an additional 2 hours to facilitate final drainage, then return to the closed position to stand by for the next water collection event.

2.1.2 Predevelopment Hydrograph Function for Flood Control
The smartPOND valve predevelopment hydrograph function takes in site specific variables to determine a maximum release rate based on predevelopment conditions. The valve reads water depth in the pond every 15 minutes to determine the maximum release rate desirable to ensure the impoundment neither overtops, nor exceeds its maximum release based on predevelopment flows.

2.1.3 Hazmat Function for Spill Containment
smartPOND when specified for hazmat spill containment can be equipped with pollutant specific sensors that when triggered automatically close the valve until the command is overridden.

2.2 Real Time Monitoring
smartPOND comes standard with telemetry available on each unit and access to the user app available at no additional cost for 1 year. This option allows for real time monitoring of the unit and the data that comes along with it. From the real time monitoring app, a user can:
- Control the valve, either open or close
- See the water level
- See if trash or debris is surrounding the inlet
- Get maintenance alerts (Low Battery, Valve Failure, Etc.)
- Maintain specified water level

3. Components
The smartPOND valve may be implemented either above or below ground, and is comprised of the following components:

3.1 Hardware and Configuration
The standard smartPOND valve features a cast 6" valve. An extended spool and mounting flange on each side of the valve allows it to be attached to the outfall pipe in various configurations. The valve is actuated with an electric motor connected by an extendable drive shaft for underground applications.

For above ground applications, the entire system including all necessary components for operation assemble into one kit and are housed under a single lockable steel enclosure with the solar panel mounted on top. In this configuration, the unit can be installed on a stable, level pad and be bolted onto the back of the outfall pipe with six ¾" bolts and then switched to the "ON" position.

For underground applications, the valve is installed in a vault or concrete encasement as needed. An extended drive shaft connects between the underground valve and the rest of the components, including the motor and all electronics, which are housed in the lockable steel enclosure directly above ground.

3.2 Electronics and Software Specifications
- **Main board** - The main board of the smartPOND valve's electronics box serves as the main connection terminal for all sensors and additional control boards
- **Motor Controller Board** - The motor controller board of the smartPOND valve regulates the connection between the battery and the motor and receives inputs from the main board to control motor direction. It also powers the main board.
- **Motor** - The smartPOND valve's motor operates on 12-volts and has two wires connecting to the motor controller board. It is mounted on a bracket and connects to the directly to the valve with a driveshaft.
- **Battery** - The smartPOND valve is powered by a 12-volt, 30 amp/hour gel battery. Two terminals at the top connect the power wires to the motor controller board and the solar charge controller to the battery.
- **Solar Panel** - The solar panel of the smartPOND valve is 12-volts with 15 watt charging capability. It connects to a solar charge controller which regulates the voltage and current before connecting with two wires to the positive and negative battery terminals.
- **Sensors**
  - *Pressure Transducer* - The water level sensor is a pressure transducer sensor capable of staying submersed in water indefinitely. It mounts on the side of the smartPOND valve's center spool.
  - *Valve position sensor* - A proximity sensor senses the position of the valve's drive shaft in order to control and determine the position of the valve.
- **(Optional)**
  - *Cell data modem* - A cellular data modem will be required for real time control and alert options as well as predevelopment hydrograph functions.
  - *Hydrocarbon Sensor* - This optional sensor may be fitted to the smartPOND valve to perform specific functions based on the presence of hydrocarbon contamination.

4. Real Time Monitoring Interface (optional)
If the real time monitoring option is selected, the smartPOND valve may be monitored in real time through the Autoflow app. Live and historical data from each unit may be viewed in the app, as well as alerts (detailed in section 5).

4.1 Accessing unit data
To access live and historical data in the Autoflow app, select the unit of interest on the home page by clicking on the unit's name. From there, select the "Data" button, and the data page for that unit will be displayed.

4.2 Sending a command
To send a remote-control command to the SmartPOND valve, click the "Send New Command" button on the unit's home page. The unit's current position will be displayed at the top. To change the unit's position, simply select "OPEN" or "CLOSE". Within 1-3 minutes, the unit will move to the new position and update its status in the app.

5. Alerts
The smartPOND valve will indicate the following alerts by illuminating an exteriorly visible red LED light
- Low battery
- Loss of function
- Valve malfunction
- Hydrocarbon contamination (optional)

If the telemetry option is selected, the unit will upload the above alerts to the Autoflow app and notify the operator via text or email.

6. In Case of Failure
To bypass the smartPOND valve's normal automated functions and control the valve position in case of failure:

6.1 Removal of motor and manual direct control
In case of a total electronic or motor failure, the motor and motor bracket can be uninstalled together by removing the two bolts at the bottom of the motor bracket. With the motor and motor bracket removed, the output shaft on the butterfly valve can be manually controlled with a socket wrench, or any other tool that can grip the output shaft.

7. Additional Components List

7.1 Perforated Riser
The smartPOND valve system includes a stackable perforated steel riser which installs on the inlet side of the outfall pipe within the impoundment area. The perforated riser features an 8-inch steel perforated square tube within a 24" round steel mesh tube. At the bottom of the 8-inch square tube, there is a female threaded fitting for a six inch PVC outfall pipe to connect. The steel tube is perforated with 1-inch holes every 4" on center to the height of the impoundment.

7.2 Trash Cage
The trash cage attaches to the perforated riser with a coupling and calder pin. The trash cage will be comprised of steel banding and a 1.5" x 1.5" mesh to prevent floatable's and other contaminants from entering and clogging the perforated riser. The trash cage will sit 0.5" above the bottom of the impoundment to allow the last 0.5" out of the impoundment.

7.3 Valve Stem Extension
The drive shaft/valve stem of the smartPOND system may be extended to any length necessary for instances where the valve will be in an underground vault or manhole. The valve stem will connect the valve to the above ground controls.

8. Maintenance

8.1 Grease
The smartPOND valve includes a grease fitting on the valve itself which should be greased twice per year. It is also recommended that a thick, mildly heat-resistant grease be used to avoid grease melting out of the groove in warmer temperatures.

8.2 Flange Bolts
There are 6 bolts connecting the smartPOND valve's flange to the outfall pipe or fixture. During routine maintenance intervals, these bolts should be checked for tightness. All bolts should be tightened evenly.

8.3 Perforated Riser
Silt, sediment, and debris can build up around the perforated riser with time. An annual inspection of the unit is necessary to ensure that excess debris or sediment has not limited the drainage capacity of the perforated riser. To access the perforated riser for maintenance, lift the trash cage off of the riser, dig out any accumulated sediment, and clear all perforations.

8.4 Trash Cage
As a part of routine maintenance, it is advisable to remove trash and debris that has accumulated on the trash cage and properly dispose.

8.5 Solar Panel
On all inspection visits, it is necessary to confirm that the solar panel is facing south and is well secured. The solar panel is commonly utilized by birds and insects. It is important to keep the surface clean of bird litter, insect nests and debris in order to maintain optimal performance.

8.6 Battery
Over time, battery terminals may corrode. Check annually for corrosion and clean as needed. The battery should be replaced every 4 to 6 years.

8.7 Storage
The smartPOND valve is shipped in a near-fully assembled configuration and should be stored likewise. The systems are transported and stored on pallets and must remain secured via straps or steel bands to said pallet at all times. The solar panel is not installed at times of transport or storage and should not be installed until the unit is ready to begin operation. The battery may be stored inside the electronics box and if removed, should never be stored on a concrete surface.

9. Installation
The smartPOND valve can be installed in a near-completely assembled configuration. Only the solar panel should be removed during the installation process. There are several ways to install the smartPOND valve with the key being structured support.

9.1 Structural Support
If the smartPOND valve is mounted to a steel pipe in an above ground/fully assembled configuration, the weight of the unit may be supported by the steel pipe. For plastic or concrete pipes, it is recommended that the weight of the unit be supported by either a concrete pad or steel frame. For below ground installations, the upper unit (electronics and actuator) should be fastened to the surface of the concrete vault. For vault installations, see design details for standard vault design.

10. Important Safety Information and Warnings:
- Always keep hands clear of the valve and motor when unit is in operation.
- Turn the power switch off when doing any electrical work.
- Do not enter the water when the device is actively draining water
- Always use proper PPE and confined space protocol when servicing a valve beneath ground.

11. PRODUCTS
Manufacturer/Supplier/Reseller shall be an established stormwater company that has at least 5 installations of automated stormwater management devices that have been in use and functional for the past 3 or more years.

A. Acceptable smartPOND Valve
"smartBATCH" Automated Batch Detention System
"smartPOND" Automated Detention System

B. Acceptable System Supplier
Convergent Water Technologies, Inc.
(800)711-5428
www.convergentwater.com

C. Authorized Value Added Reseller
Construction EcoServices
(800)456-1000
www.ecosvs.com

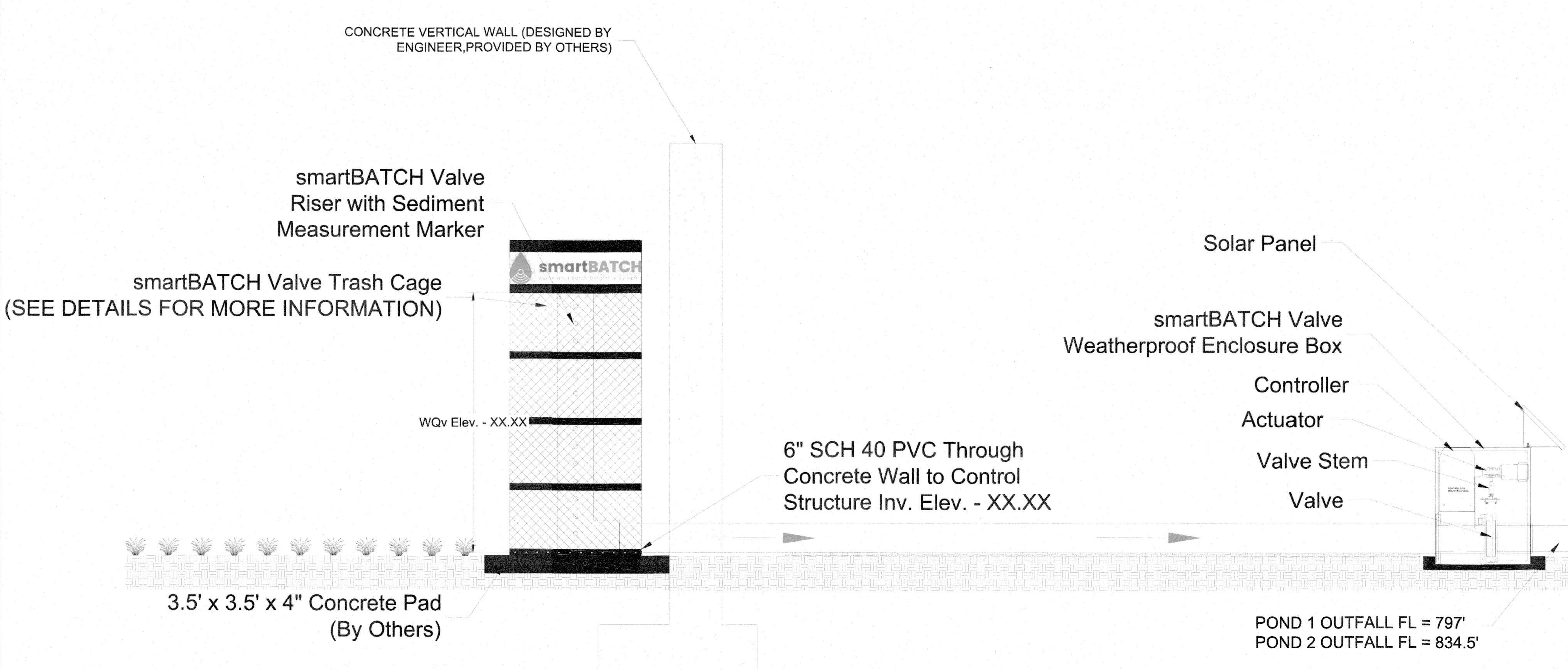
12. Quality Assurance and Performance Specifications
The quality of all system components and all other appurtenances and their assembly process shall be subject to inspection upon delivery of the system to the work site.Installation is to be performed only by skilled work people with satisfactory record of performance on earthworks, pipe, welding, chamber, or pond/landfill construction projects of comparable size and quality.

NOTE: ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.

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

smartPOND Valve
Specifications

REVISION NO. 0
DATE 5/26/2020
SHEET NO.



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

smartBATCH Valve
with VERTICAL WALL

REVISION NO. 0
DATE 5/29/2020
SHEET NO.

NOTE: ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-17-2024

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WQ7.dwg

REVISIONS			
NO.	DESCRIPTION	BY	DATE

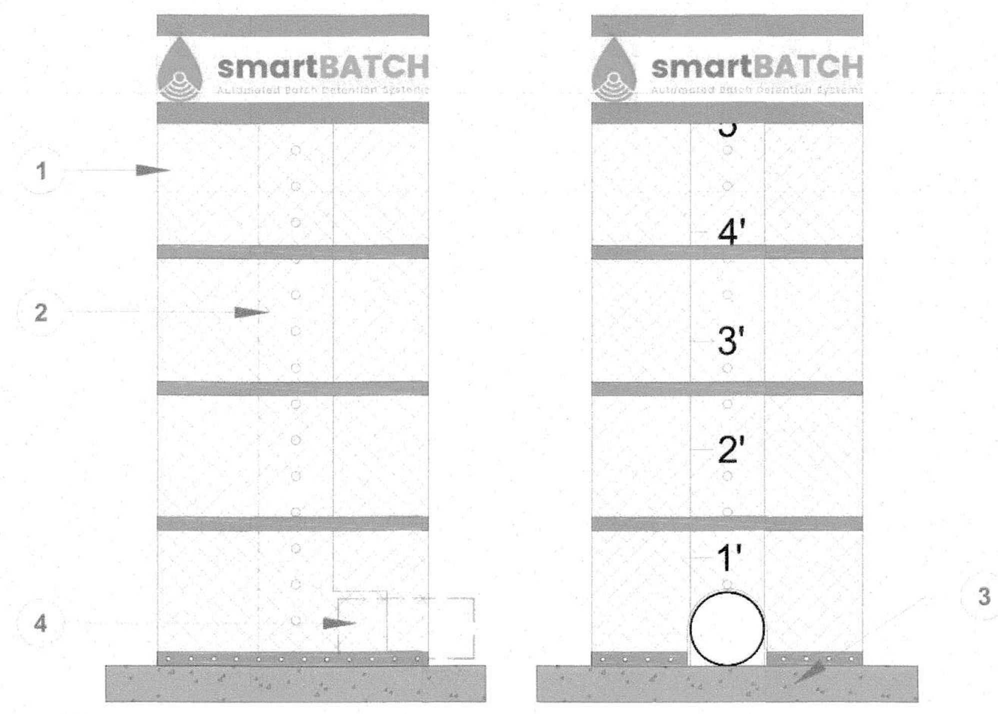
BLUFFVIEW SUBDIVISION
PHASE 1
WATER QUALITY POND SMARTPOND DETAILS

JOB NUMBER: A140-0418
WQ7
SHEET NO. 50
OF 93 SHEETS

PROGRAMMABLE LOGIC FLOW CHART

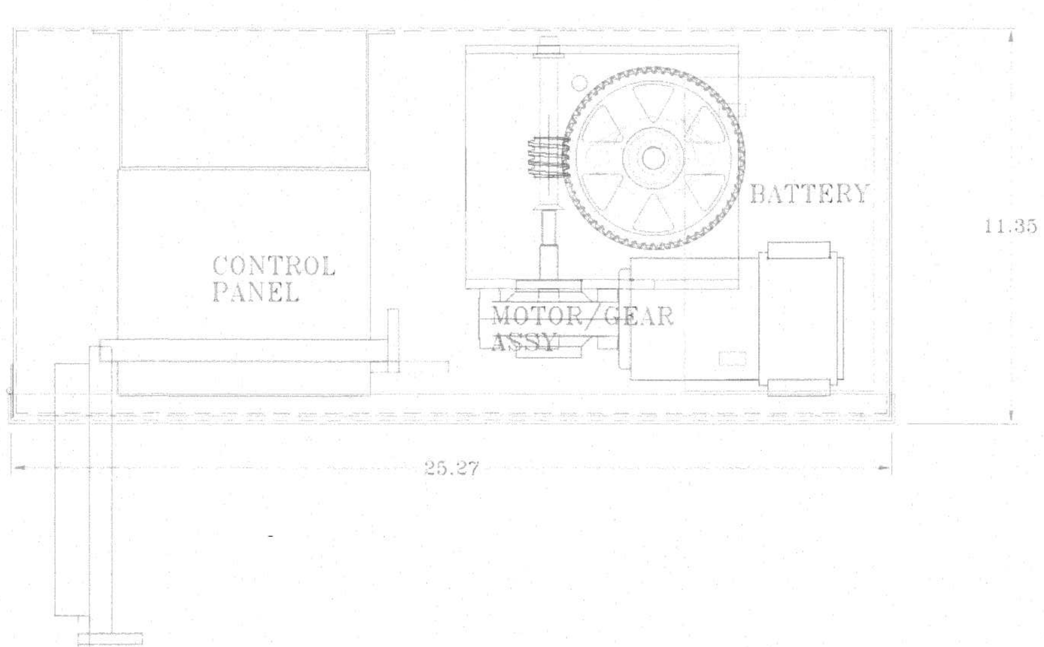
- smartPOND gate closed in vertical position (default) and standing by
- Water Level sensor indicates new water collection event
- 12-Hour detention timer begins and gate remains in vertical position
- After 12-hour detention is complete, smartPOND immediately lowers gate to match current water level, then executes a topwater drawdown at a rate of 46 hours to 0" position
- If additional water collection event occurs (2nd rain), smartPOND continues with 12-hour detention timer uninterrupted
- Once gate & water levels = 0" gate remains at full-open position for additional 2 hours
- Drawdown complete

TRASH CAGE WITH PERFORATED RISER PIPE

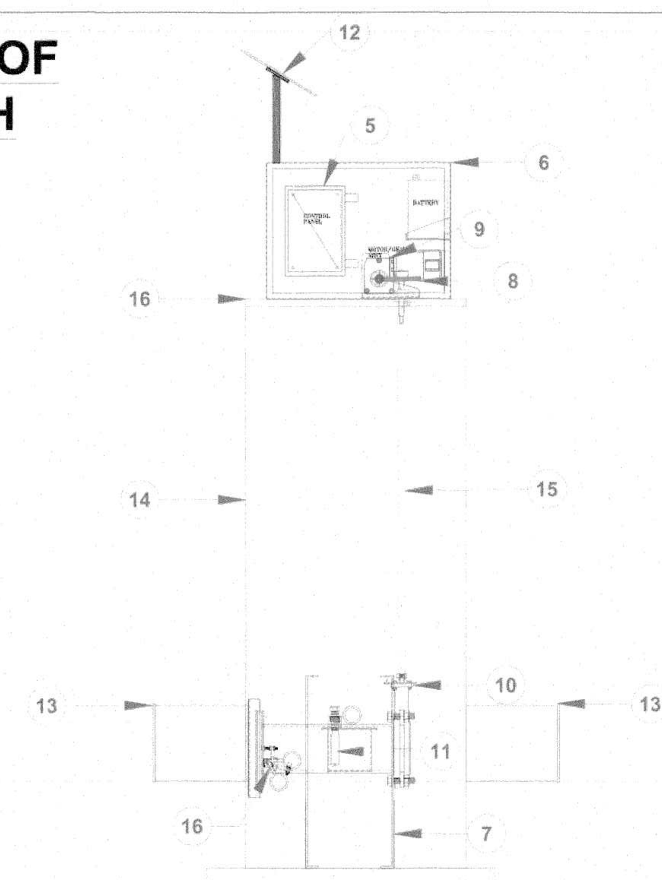


Item	Parts List smartPOND Valve Component
1	30" DIAMETER CAGE WITH 1 1/2" GALVANIZED MESH SCREEN
2	8" SQUARE PERFORATED TUBING WITH 1" PERFORATION, WITH 4" VERTICAL SPACING ON CENTERS WITH WATER DEPTH MARKER
3	3 1/2' X 3 1/2' X 4" CONCRETE PAD (BY OTHERS)
4	6" PVC OUTFALL PIPE (BY OTHERS)
5	WEATHERPROOF ELECTRONIC BOX
6	CONTROL BOX
7	PEDESTAL
8	ACTUATOR
9	MOTOR
10	6" VALVE
11	LEVEL TRANSDUCER
12	SOLAR PANEL
13	OUTLET PIPE (BY OTHERS)
14	30" DRAIN BASIN
15	VALVE STEM
16	QUICK DISCONNECT VALVE CONNECTION

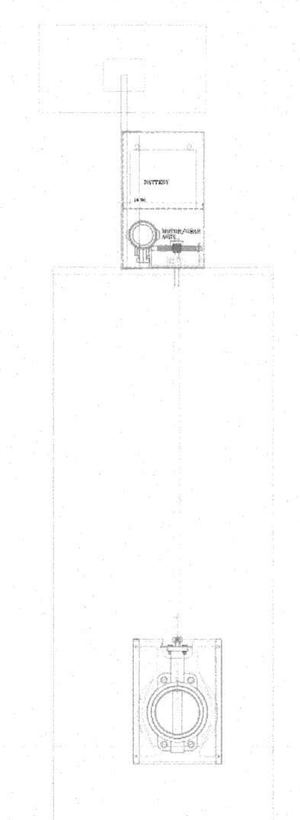
PLAN VIEW OF ENCLOSER



SECTION VIEW OF SMARTBATCH



FRONT VIEW OF SMARTBATCH



smartBATCH
Automated Batch Detention Systems

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

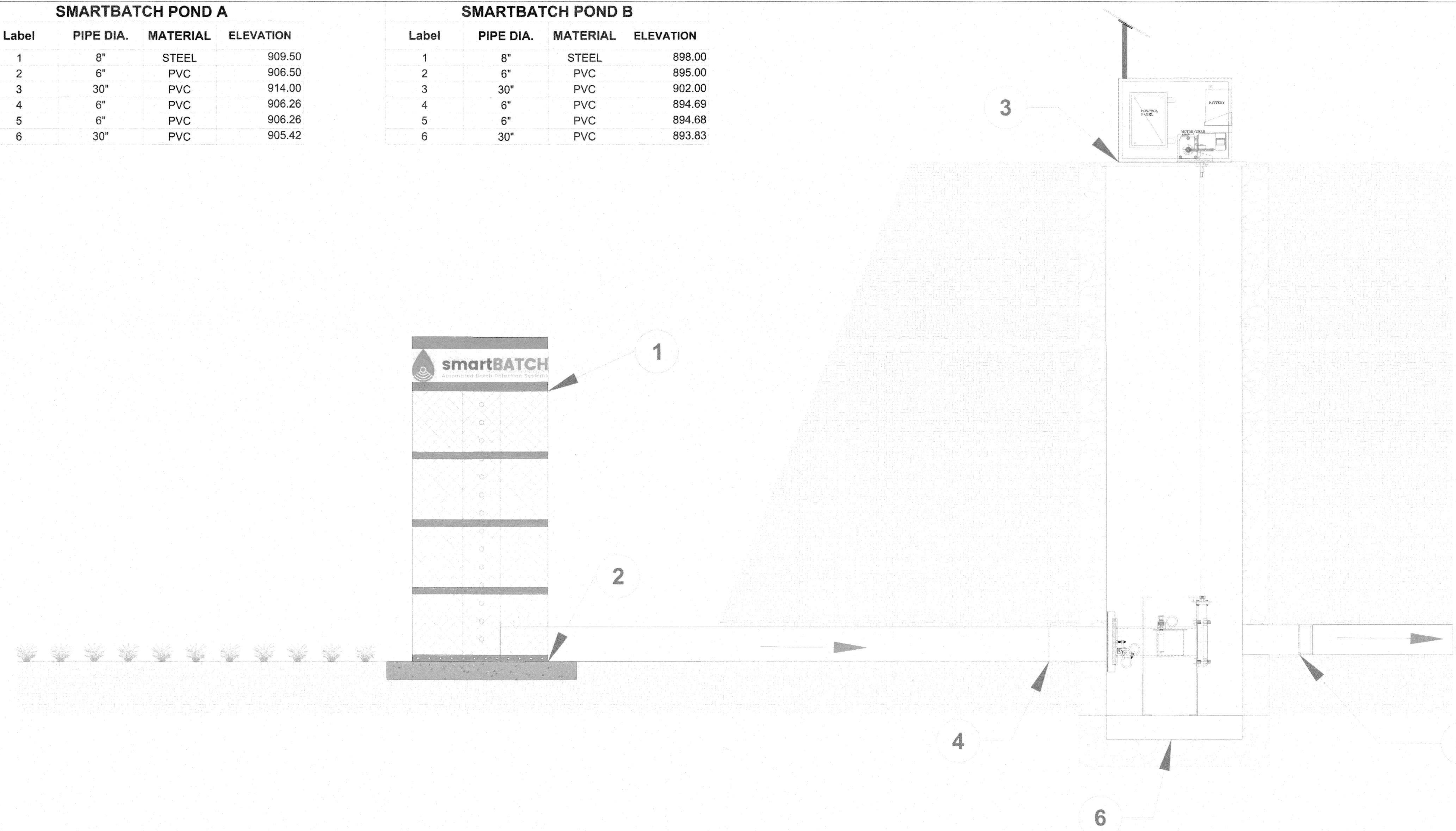
CONVERGENT WATER TECHNOLOGIES

SMARTBATCH POND A

Label	PIPE DIA.	MATERIAL	ELEVATION
1	8"	STEEL	909.50
2	6"	PVC	906.50
3	30"	PVC	914.00
4	6"	PVC	906.26
5	6"	PVC	906.26
6	30"	PVC	905.42

SMARTBATCH POND B

Label	PIPE DIA.	MATERIAL	ELEVATION
1	8"	STEEL	898.00
2	6"	PVC	895.00
3	30"	PVC	902.00
4	6"	PVC	894.69
5	6"	PVC	894.68
6	30"	PVC	893.83



smartBATCH
Automated Batch Detention Systems

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

CONVERGENT WATER TECHNOLOGIES

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
PROFESSIONAL ENGINEER
1-17-2024

DATE:	1/18/2024
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
DRAWING NAME:	A140-0418 WQ8.dwg

REVISIONS

NO.	DESCRIPTION	BY	DATE

BLUFFVIEW SUBDIVISION
PHASE 1

WATER QUALITY POND SMARTPOND DETAILS

JOB NUMBER: A140-0418

WQ8

SHEET NO. 51 OF 93 SHEETS

FOUNDATION NOTES

1. DESIGN LOADS

   ACTIVE LATERAL EARTH PRESSURE – EQUIVALENT FLUID PRESSURE OF 42 PCF

2. DESIGN ALLOWABLE SOIL BEARING PRESSURE IS 2,000 PSF

3. THE GEOTECHNICAL INVESTIGATION REPORT FOR THIS PROJECT HAS BEEN PREPARED BY:

   MLA LABS, INC.
   2804 LONGHORN BOULEVARD
   AUSTIN, TEXAS 78758
   (512) 873-8899

   THE CONTRACTOR SHALL OBTAIN A COPY OF THIS REPORT AND REVIEW ITS CONTENTS TO BECOME FAMILIAR WITH THE GEOTECHNICAL CONDITIONS THAT EXIST AT THIS SITE AND THE RECOMMENDATIONS PRESENTED IN THE GEOTECHNICAL INVESTIGATION.

   ALTERNATIVE MATERIAL PROPOSED FOR USE AS EARTHEN FILL SHOULD BE SUBMITTED TO THE GEOTECHNICAL ENGINEER FOR TESTING.

4. PRIOR TO COMMENCEMENT OF EXCAVATION OPERATIONS, FIELD LOCATE AND ADEQUATELY PROTECT ANY EXISTING STRUCTURES, TREES, UTILITIES AND/OR OTHER PERMANENT ELEMENTS TO REMAIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ANY DAMAGE RESULTING FROM CONSTRUCTION OPERATIONS.

5. ALL VEGETATION, ORGANIC TOPSOIL, AND ANY OTHER SOFT OR UNSUITABLE MATERIAL SHOULD BE REMOVED FROM BENEATH THE LIMITS OF THE PROPOSED CONSTRUCTION AREA. AFTER STRIPPING OPERATIONS ARE COMPLETED, THE EXPOSED SUBGRADE SHALL BE PROOFROLLED WITH HEAVY CONSTRUCTION EQUIPMENT SUCH AS A 15-TON ROLLER OR EQUIVALENT EQUIPMENT TO DETECT WEAK AREAS AND UNSUITABLE SUBGRADE MATERIALS. ANY UNSUITABLE MATERIALS LOCATED BY PROOFROLLING SHOULD BE REMOVED AND REPLACED WITH COMPACTED SELECT FILL MATERIAL OR SOILS EXHIBITING SIMILAR CLASSIFICATION, MOISTURE CONTENT AND DENSITY AS THE ADJACENT IN-SITU SOILS.

6. EXCAVATIONS FOR STRUCTURES SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD SPECIFICATION ITEM NO. 401. FOOTINGS SHALL BE FOUNDED ON WEATHERED LIMESTONE, PROOFROLLED NATURAL SOILS OR COMPACTED SELECT FILL. EXCAVATIONS SHALL BE NEAT AND FREE OF ALL LOOSE MATERIALS AND DEBRIS PRIOR TO PLACEMENT OF CONCRETE. CONTRACTOR SHALL USE CARE TO PROTECT EXCAVATIONS FROM CAVING AND SLOUGHING DUE TO TRAFFIC FROM EQUIPMENT OR WORKMEN. PROPER SITE DRAINAGE SHOULD BE MAINTAINED TO PREVENT PONDING OF SURFACE RUNOFF. ANY WATER ACCUMULATIONS IN EXCESS OF 1 INCH SHALL BE PUMPED OUT PRIOR TO PLACEMENT OF CONCRETE.

7. IN THE EVENT THAT EXCAVATIONS ARE COMPLETED TO A DEPTH GREATER THAN THAT REQUIRED BY THE DRAWINGS, THE CONTRACT SHALL, AT THE ENGINEER'S OPTION, FILL THE OVEREXCAVATION WITH CONCRETE OR COMPACTED SELECT FILL. SELECT FILL SHALL CONSIST OF WELL GRADED CRUSHED LIMESTONE BASE CONFORMING TO THE REQUIREMENTS OF TXDOT 1993 STANDARD SPECIFICATIONS ITEM 247, GRADE 4. FILL SHALL BE PLACED IN LOOSE LIFTS OF MAXIMUM 8 INCHES THICKNESS WITH COMPACTED THICKNESS NOT TO EXCEED 6-INCHES AND COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR DRY DENSITY AT A MOISTURE CONTENT RANGING FROM -3 TO +3 PERCENT OF THE OPTIMUM VALUE. CONCRETE OR FILL REQUIRED TO COMPENSATE THE OVEREXCAVATION SHALL BE AT THE CONTRACTOR'S EXPENSE.

8. REBAR AND CONCRETE FOR FOOTINGS SHALL BE PLACED AS SOON AS PRACTICAL FOLLOWING COMPLETION OF EXCAVATIONS TO PREVENT EXCESSIVE DRYING OR WETTING OF THE SUBGRADE.

9. BACKFILLING OPERATIONS SHALL BE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD SPECIFICATION ITEM NO. 401. SELECT BACKFILL SHALL CONSIST OF FREE DRAINING CRUSHED LIMESTONE BASE MATERIAL. WHERE SHOWN, THE TOP 12 INCHES OF BACKFILL SHALL CONSIST OF A CLAY MATERIAL WITH A MINIMUM PI OF 32. THE CLAY MATERIAL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION.

10. BACKFILLING OPERATIONS SHALL NOT BEGIN UNTIL CONCRETE WALLS HAVE CURED A MINIMUM OF 7 DAYS. FORMS SHALL REMAIN IN PLACE FOR A MINIMUM OF 7 DAYS. IF DESIRED, FORMS MAY BE REMOVED PROVIDED THE 7 DAY CURING PERIOD. UNDER NO CIRCUMSTANCES SHALL BACKFILLING COMMENCE IN LESS THAN 7 DAYS. THE BACKFILL PLACEMENT AND COMPACTION OPERATIONS SHALL BE CAREFULLY CONTROLLED TO PREVENT OVERCOMPACTION OR DAMAGE TO THE STRUCTURES.

11. THE CONTRACTOR SHALL, AS A MINIMUM, ADHERE TO OCCUPATIONAL SAFETY AND HEALTH (OSHA) REGULATIONS TO PROTECT PERSONNEL AT THAT CONCRETE IS CURED USING WET COTTON MATS FOR THE REMAINDER OF EXCAVATION SITES..

EMBANKMENT

1. EMBANKMENT MATERIAL SPECIFICATIONS AS FOLLOWS:

PERCENT PASSING NO. 200	70% MIN.
LIQUID LIMIT	35% MIN.
PLASTICITY INDEX	18% TO 30%
PERCENT CLAY (FINER THAN 0.002MM)	30%
PERCENT DISPERSION	<35%

2. THE EMBANKMENT FILL SHALL BE PLACED IN LOOSE LIFTS, NOT TO EXCEED 8 INCHES IN THICKNESS, AND COMPACTED TO 95 TO 100 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY TEST METHOD TEX-113-E AND WITH +/- 3 PERCENTAGE POINTS OF OPTIMUM MOISTURE AS DETERMINED BY THE SAME TEST.

3. NATURAL SUBGRADE SHOULD BE CUT SUCH THAT FILL PLACEMENT IS ON RELATIVELY HORIZONTAL SURFACE.

4. EACH SUCCESSIVE LIFT SHOULD BE PLACED HORIZONTALLY AND FILL SHOULD BE BENCHED INTO THE EXISTING NATURAL SUBGRADE.

5. THE EXCESS FILL CAN BE CUT TO SLOPE THE FINAL DESIGN SLOPE.

6. UPON COMPLETION OF THE DAM AND EMBANKMENT THE FILL SHOULD BE PROMPTLY COVERED WITH EROSION CONTROL MATERIAL SUCH AS SEED IMPREGNATED JUTE MESH.

CONCRETE FINISHING

1. REPAIR OF SURFACE DEFECTS – DEFECTIVE AREAS SHALL BE REPAIRED IMMEDIATELY AFTER REMOVAL OF FORMS. HONEYCOMBED AND OTHER DEFECTIVE AREAS SHALL BE REMOVED DOWN TO SOUND CONCRETE. THE DEFECTIVE AND SURROUNDING AREA SHALL BE DAMPENED AND A BONDING GROUT APPLIED TO THE AREA. BONDING GROUT SHALL CONSIST OF APPROXIMATELY ONE PART CEMENT TO ONE PART FINE SAND PASSING A NO. 30 SIEVE. MIX GROUT TO THE CONSISTENCY OF A THICK CREAM AND BRUSH THOROUGHLY INTO THE SURFACE.

   PATCHING MORTAR SHALL BE OF THE SAME MATERIALS AND APPROXIMATELY THE SAME PROPORTIONS AS CONCRETE EXCEPT THAT COARSE AGGREGATE SHALL BE OMITTED. PREPARE MORTAR WITH NO MORE THAN ONE PART CEMENT TO 2½ PARTS SAND. USE WHITE PORTLAND CEMENT FOR PART OF THE GRAY CEMENT TO MIX A MORTAR OF A COLOR TO MATCH THE SURROUNDING CONCRETE. USE NO MORE WATER THAN NECESSARY AND MIX MORTAR TO THE STIFFEST CONSISTENCY THAT WILL PERMIT PLACING.

   AFTER SURFACE WATER FROM THE BONDING GROUT HAS DISSIPATED, THOROUGHLY BRUSH PATCHING MORTAR INTO THE BONDING GROUT.

   IN LIEU OF USE OF BONDING GROUT, A LATEX BONDING AGENT MAY BE USED.

2. UNLESS NOTED OTHERWISE, CONCRETE SURFACES EXPOSED TO VIEW IN THE COMPLETED STRUCTURE SHALL RECEIVE THE FOLLOWING FINISH:

   A. VERTICAL SURFACES AND TOPS OF WALLS AND OTHER STRUCTURAL ELEMENTS SHALL RECEIVE A CLASS "C" TWO-RUB FINISH EXCEPT WHERE FORM LINERS ARE SPECIFIED.

   B. TOP SURFACE OF STILLING BASIN FOUNDATION AND OUTLET SLAB SHALL RECEIVE A STEEL TROWELED FINISH.

   C. TOP SURFACE OF SLOPED CONCRETE SLABS SHALL RECEIVE A LIGHT TO MEDIUM, TRANSVERSE BROOM FINISH OR BELT FINISH.

GENERAL POND AND DAM CONSTRUCTION NOTES

THE GEOTECHNICAL INVESTIGATION REPORT FOR THIS PROJECT HAS BEEN PREPARED BY

MLA LABS, INC.
2804 LONGHORN BOULEVARD
AUSTIN, TEXAS 78758
(512) 873-8899

THE CONTRACTOR SHALL OBTAIN A COPY OF THIS REPORT AND REVIEW ITS CONTENTS TO BECOME FAMILIAR WITH THE GEOTECHNICAL CONDITIONS THAT EXIST AT THIS SITE AND THE RECOMMENDATIONS PRESENTED IN THE GEOTECHNICAL INVESTIGATION.

ALTERNATIVE MATERIAL PROPOSED FOR USE AS EARTHEN FILL SHOULD BE SUBMITTED TO THE GEOTECHNICAL ENGINEER FOR TESTING.

GENERAL POND AND DAM CONSTRUCTION NOTES – SEQUENCE OF CONSTRUCTION

1. INSTALL EROSION CONTROLS AND TREE PROTECTION PER APPROVED PLANS.

2. HOLD PRECONSTRUCTION CONFERENCE.

3. ROUGH-CUT ALL REQUIRED OR NECESSARY PONDS. THE PERMANENT OUTLET STRUCTURE MUST BE CONSTRUCTED PRIOR TO DEVELOPMENT OF ANY EMBANKMENT OR EXCAVATION THAT LEADS TO PONDING CONDITIONS. THE OUTLET SYSTEM MUST CONSIST OF A LOW-LEVEL OUTLET AND AN EMERGENCY OVERFLOW MEETING THE REQUIREMENTS OF THE DRAINAGE CRITERIA MANUAL (SECTION 8.3) AND/OR THE ENVIRONMENTAL CRITERIA MANUAL (SECTION 1.4.2.K) AS REQUIRED. THE OUTLET SYSTEM SHALL BE PROTECTED FROM EROSION AND SHALL BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION UNTIL FINAL RESTORATION IS ACHIEVED.

4. COMPLETE PERMANENT EROSION CONTROL AND SITE RESTORATION. REMOVE TEMPORARY EROSION/SEDIMENTATION CONTROLS AND TREE PROTECTION. RESTORE ANY AREAS DISTURBED DURING REMOVAL OF EROSION/SEDIMENTATION CONTROLS.

MAINTENANCE SPECIFICATIONS

DURING SITE CONSTRUCTION

1. THE SEDIMENT LOAD TO THE SEDIMENTATION CHAMBER MUST BE CAREFULLY MONITORED AND THE SEDIMENT SHALL BE REMOVED WHEN 1/3 OF THE SEDIMENTATION CHAMBER VOLUME IS LOST.

2. UPON COMPLETION OF SITE REVEGETATION, ANY SEDIMENT BUILDUP IN THE FOREBAY EXCEEDING 5% LOSS OF AVAILABLE VOLUME SHALL BE REMOVED; AND IF SEDIMENT BUILDUP IN THE MAIN PORTION OF THE FACILITY EXCEEDS 10% OF THE AVAILABLE VOLUME, THE MAIN BODY OF THE FACILITY SHALL BE MAINTAINED FOR SEDIMENT REMOVAL.

FIRST YEAR – QUARTERLY OR MORE OFTEN AS REQUIRED BY SITE CONDITIONS

1. REMOVE ACCUMULATED TRASH AND DEBRIS.

2. MOW POND AREA IF GRASS EXCEEDS EIGHTEEN (18) INCHES.

3. INSPECT AND REMOVE SEDIMENT FROM POND IF MORE THAN TEN (10) PERCENT OF THE VOLUME IS LOST.

4. INSPECT FOR EVIDENCE OF IMPROPER OPERATION, SUCH AS AREAS OF EROSION, IMPROPER DRAINAGE, VANDALISM, OR STRUCTURAL STORM DAMAGE, AND PERFORM THE REQUIRED CORRECTIVE MAINTENANCE.

5. MONITOR FOR PERCENT SURVIVORSHIP OF PLANTED SPECIES AND PERCENT COVER. REPLANT AS NEEDED TO MAINTAIN 85% SURVIVAL RATE.

6. SEDIMENT REMOVED FROM THIS FACILITY MUST BE TRANSPORTED FOR DEWATERING TO A PERMITTED SITE OR LANDFILL.

7. MONITOR FOR PERCENT COVER OF NUISANCE SPECIES, E.G. CATTAILS, COTTONWOODS AND WILLOWS. REMOVE OR THIN TO LIMIT TO 10% COVERAGE.

SECOND AND THIRD YEARS – SEMI-ANNUALLY

1. REMOVE ACCUMULATED TRASH AND DEBRIS.

2. MOW POND IF GRASS EXCEEDS EIGHTEEN (18) INCHES.

3. CONTROL OF INSECTS, WEEDS, ODORS AND ALGAE WILL BE IMPLEMENTED WHERE REQUIRED TO PREVENT PUBLIC NUISANCE CONCERNS. THE FACILITY SHALL BE EVALUATED SEMIANNUALLY FOR THESE ITEMS.

4. INSPECT AND REMOVE SEDIMENT FROM POND IF MORE THAN FIFTEEN (15) PERCENT OF VOLUME IS LOST.

5. INSPECT FOR EVIDENCE OF IMPROPER OPERATION, SUCH AS AREAS OF EROSION, IMPROPER DRAINAGE, VANDALISM, OR STRUCTURAL STORM DAMAGE, AND PERFORM THE REQUIRED CORRECTIVE MAINTENANCE.

6. MONITOR FOR PERCENT SURVIVORSHIP OF PLANTED SPECIES AND PERCENT COVER. REPLANT AS NEEDED TO MAINTAIN 85% SURVIVAL RATE.

7. MONITOR FOR PERCENT COVER OF NUISANCE SPECIES, E.G. CATTAILS, COTTONWOODS AND WILLOWS. REMOVE OR THIN TO LIMIT TO 10% COVERAGE.

FOURTH YEAR AND BEYOND – SEMI-ANNUALLY

1. REMOVE ACCUMULATED TRASH AND DEBRIS.

2. MOW POND IF GRASS EXCEEDS EIGHTEEN (18) INCHES.

3. INSPECT AND REMOVE SEDIMENT FROM POND IF MORE THAN FIFTEEN (15) PERCENT OF THE VOLUME IS LOST.

4. INSPECT FOR EVIDENCE OF IMPROPER OPERATION, SUCH AS AREAS OF EROSION, IMPROPER DRAINAGE, VANDALISM, OR STRUCTURAL STORM DAMAGE, AND PERFORM THE REQUIRED CORRECTIVE MAINTENANCE.

ANNUALLY

1. CONTROL OF INSECTS, WEEDS, ODORS AND ALGAE WILL BE IMPLEMENTED WHERE REQUIRED TO PREVENT PUBLIC NUISANCE CONCERNS. THE FACILITY SHALL BE EVALUATED SEMIANNUALLY FOR THESE ITEMS.

2. MONITOR FOR PERCENT SURVIVORSHIP OF PLANTED SPECIES AND PERCENT COVER. REPLANT AS NEEDED TO MAINTAIN 85% SURVIVAL RATE.

3. MONITOR FOR PERCENT COVER OF NUISANCE SPECIES, E.G. CATTAILS, COTTONWOODS AND WILLOWS. REMOVE OR THIN TO LIMIT TO 10% COVERAGE.

WATERSTOPS

1. WATERSTOPS SHALL CONSIST OF A FLEXIBLE BUTYL RUBBER AND SWELLABLE CLAY WATERPROOFING COMPOUND THAT SWELLS UPON CONTACT WITH WATER TO FORM A COMPRESSION SEAL. THE INSTALLATION OF THE WATERSTOP SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. AN ACCEPTABLE PRODUCT IS SWELLSTOP WATERSTOP AS MANUFACTURED BY GREENSTREAK PLASTIC PRODUCTS COMPANY, INC., 3400 TREE COURT INDUSTRIAL BLVD., ST. LOUIS, MO 63122, PHONE (800) 325-9504.

2. WATERSTOPS AT EXPANSION JOINTS SHALL BE 9 INCH RIBBED PVC WITH 1" CENTERBULB. ALL OTHER WATERSTOPS SHALL BE 6 INCH RIBBED PVC OR BUTYL RUBBER AND SWELLABLE CLAY WATERPROOFING, SUCH AS SWELLSTOP (SEE ABOVE). WATERSTOPS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

3. PVC WATERSTOPS SHALL BE SPLICED VIA FUSION TECHNIQUES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

4. WATERSTOP JUNCTIONS AT BASE OF EXPANSION JOINTS – IF PVC WATERSTOPS IF USED ARE USED FOR BOTH THE EXPANSION JOINTS AND THE CONSTRUCTION JOINT BETWEEN WALL AND FOOTING, THE JUNCTIONS AT THE BASE OF THE EXPANSION JOINT SHALL CONSIST OF A PREFABRICATED FLAT TEE SECTION.

   IF BUTYL RUBBER AND SWELLABLE CLAY TYPE WATERSTOP IS USED AT CONSTRUCTION JOINT BETWEEN WALL AND FOOTING, THEN THE PVC WATERSTOP AT THE EXPANSION JOINT SHALL BE EMBEDDED 3 INCHES MINIMUM INTO THE TOP OF THE FOOTING. THE BUTYL RUBBER AND SWELLABLE CLAY TYPE WATERSTOP SHALL THEN BE CONTINUOUS ACROSS THE VERTICAL EXPANSION JOINT WATERSTOP.

TESTING LABORATORY REQUIREMENTS

THE CONTRACTOR SHALL SECURE THE SERVICES OF A COMMERCIAL TESTING LABORATORY TO PERFORM ALL REQUIRED MATERIALS TESTS AND INSPECTIONS.

1. ONE SET OF CONCRETE TEST CYLINDERS SHALL BE OBTAINED FOR EVERY 50 CUBIC YARDS OF CONCRETE PLACED, OR ANY PORTION THEREOF PLACED IN A SINGLE DAY, AS FOLLOW:

   A. FOUR (4) CONCRETE TEST CYLINDERS SHALL BE MOLDED FROM EACH SAMPLE AND CURED ACCORDING TO ASTM C 31. COMPRESSIVE TESTS SHALL BE PERFORMED ON ONE CYLINDER AT 7 DAYS AND TWO CYLINDERS AT 28 DAYS. THE FOURTH CYLINDER SHALL BE RETAINED FOR 56 DAYS AND TESTED ONLY IF THE AVERAGE STRENGTH OF THE 28 DAYS TESTS DO NOT MEET THE MINIMUM REQUIRED COMPRESSIVE STRENGTH.

   B. A SLUMP TEST AND TEMPERATURE MEASUREMENT SHALL BE PERFORMED FOR EACH SAMPLE.

   C. COMPUTATION OF WATER/CEMENT RATIO, AS REQUIRED OR DIRECTED BY THE ENGINEER.

2. ADDITIONAL CYLINDERS MAY BE MADE AND TESTED, AS NECESSARY, FOR ACCELERATED REMOVAL OF FORMS OR ERECTION OF MEMBERS TO VERIFY THAT NECESSARY STRENGTHS HAVE BEEN OBTAINED. SUCH CYLINDERS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.

3. REINFORCED CONCRETE CONSTRUCTION – SERVICES ARE TO BE PROVIDED AS FOLLOWS:

   A. INSPECT EXCAVATIONS AND REINFORCING STEEL PLACEMENT PRIOR TO CONCRETE POURS.

4. THE CONTRACTOR SHALL COOPERATE AND COORDINATE FULLY WITH THE TESTING LABORATORY.

5. IN THE EVENT THAT CONCRETE ELEMENTS OR MEMBERS DO NOT ACHIEVE THE SPECIFIED MINIMUM COMPRESSIVE STRENGTHS, THE ENGINEER MAY REQUIRE ADDITIONAL ANALYSIS, TESTING OR REMOVAL AND REPLACEMENT OF MEMBERS. ANY AND ALL SUCH ADDITIONAL ANALYSIS OR TESTING SHALL BE AT THE CONTRACTOR'S EXPENSE, WHETHER SUCH ANALYSIS OR TESTING DEMONSTRATES ADEQUATE STRENGTH OR NOT. REPLACEMENT OF ANY MEMBERS DEEMED QUESTIONABLE OR INADEQUATE BY THE ENGINEER SHALL BE AT THE CONTRACTOR'S EXPENSE.

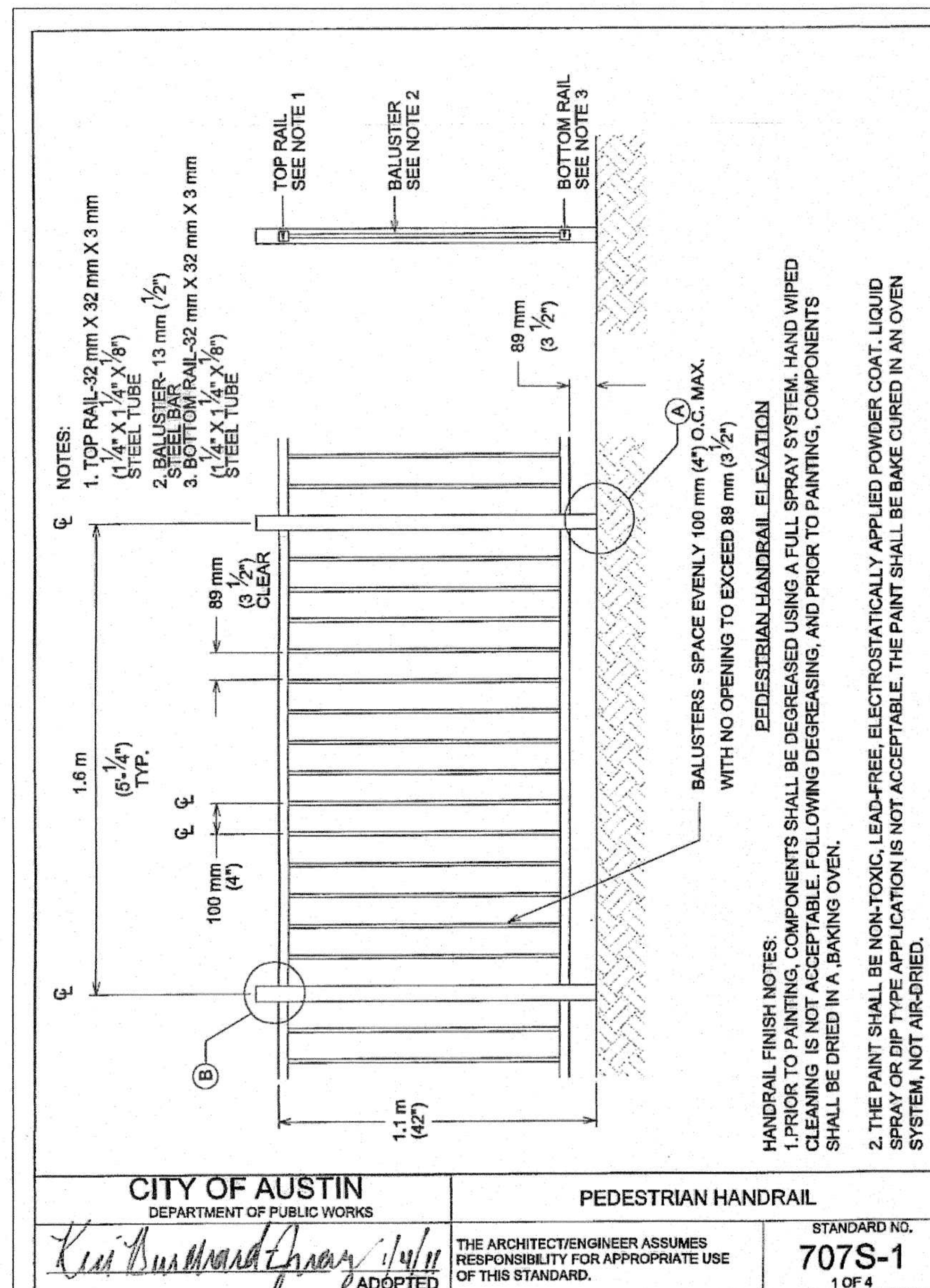
6. THE CONTRACTOR SHALL ARRANGE FOR COPIES OF THE INSPECTION AND TESTING REPORTS TO BE SENT TO THE ENGINEER.

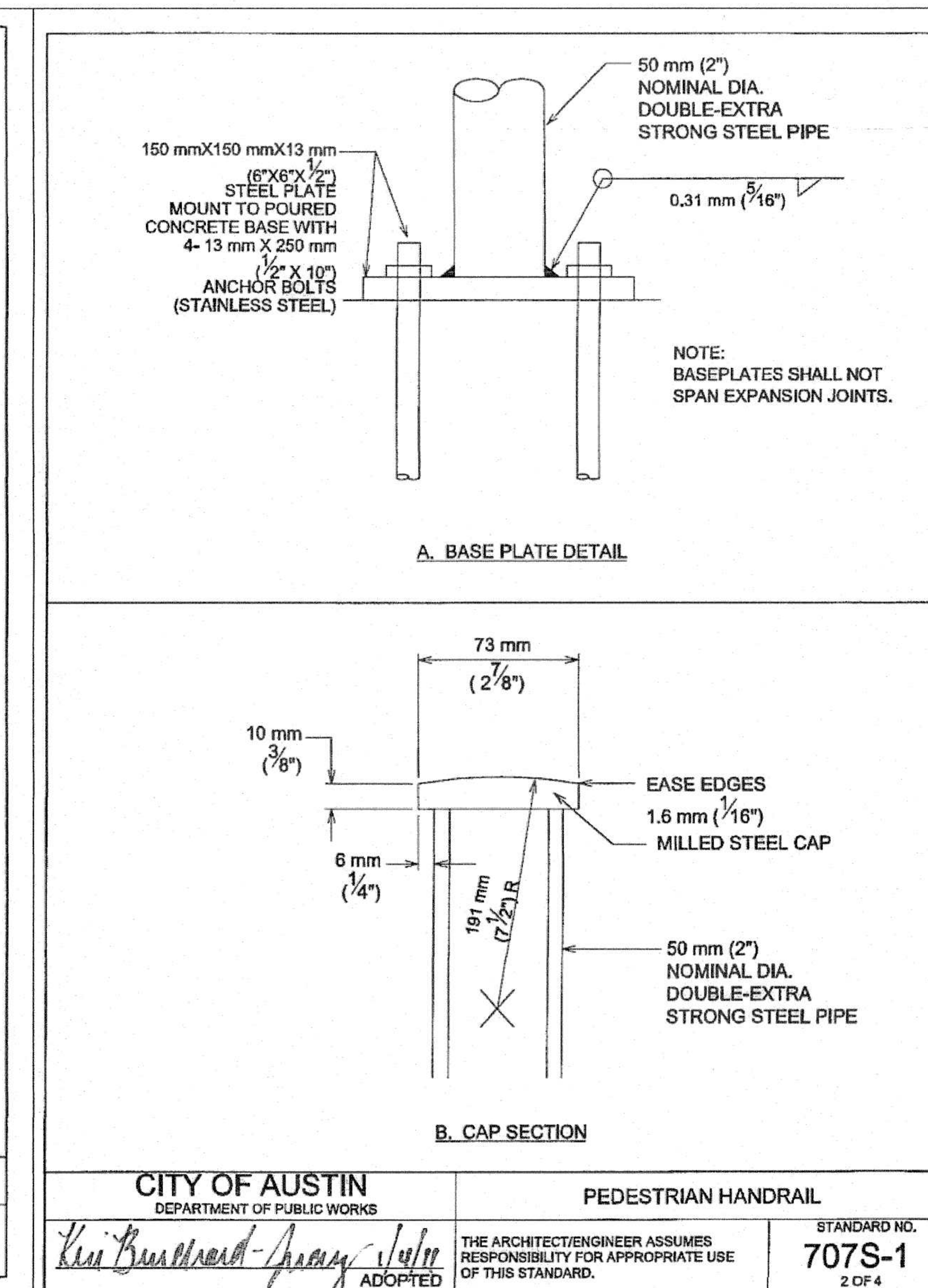
Rock Riprap Gradation Table*

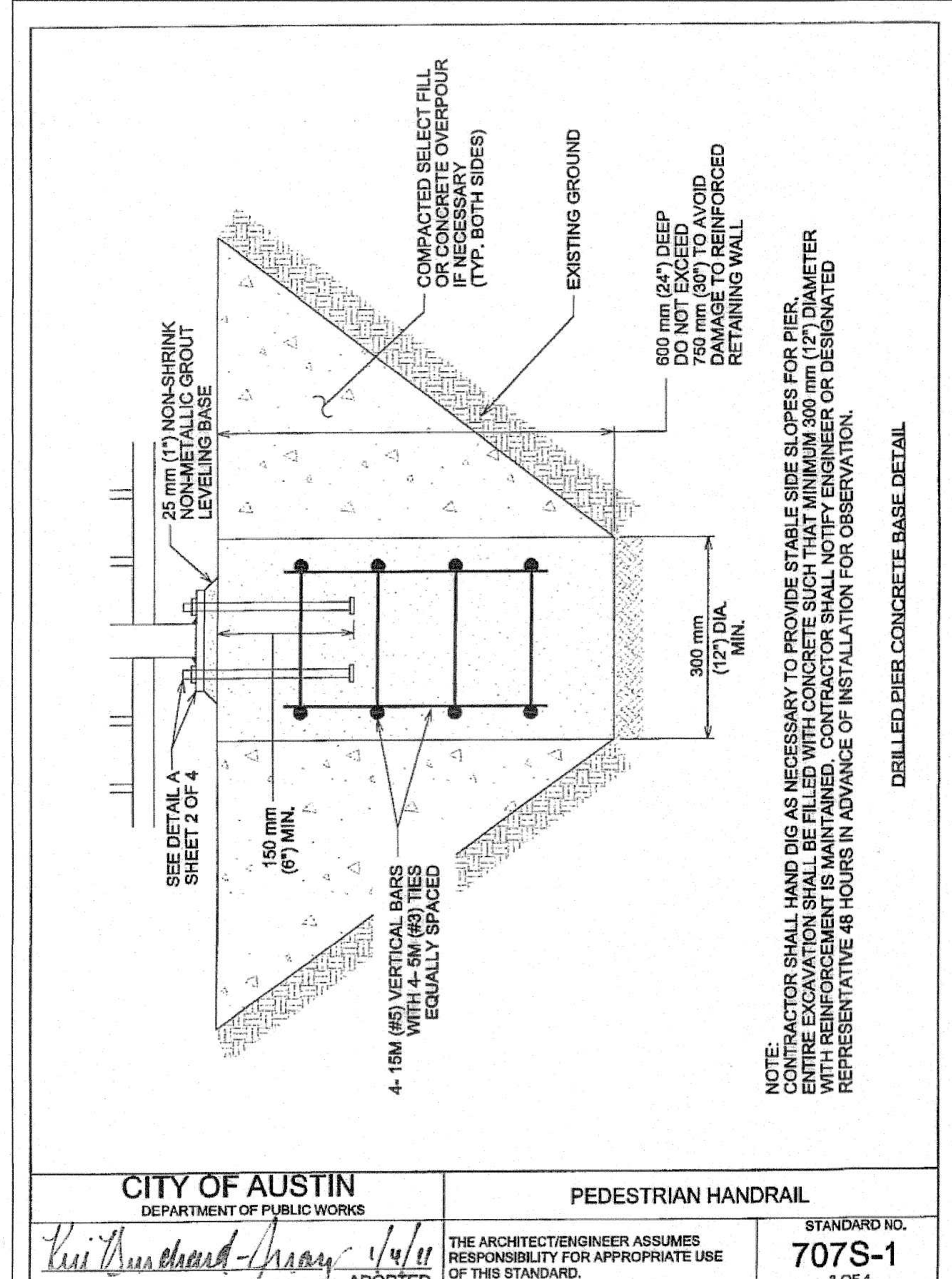
Rock Riprap Class by Median Particle Diameter (D50)		D50 (in)		D100 (in)
Class	Diameter (in)	Min	Max	Max
I	6	5.7	6.9	12
II	9	8.5	10.5	18
III	12	11.5	14	24
IV	15	14.5	17.5	30
V	18	17	20.5	36
VI	21	20	24	42
VII	24	23	27.5	48
VIII	30	28.5	34.5	60
IX	36	34	41.5	72
X	42	40	48.5	84

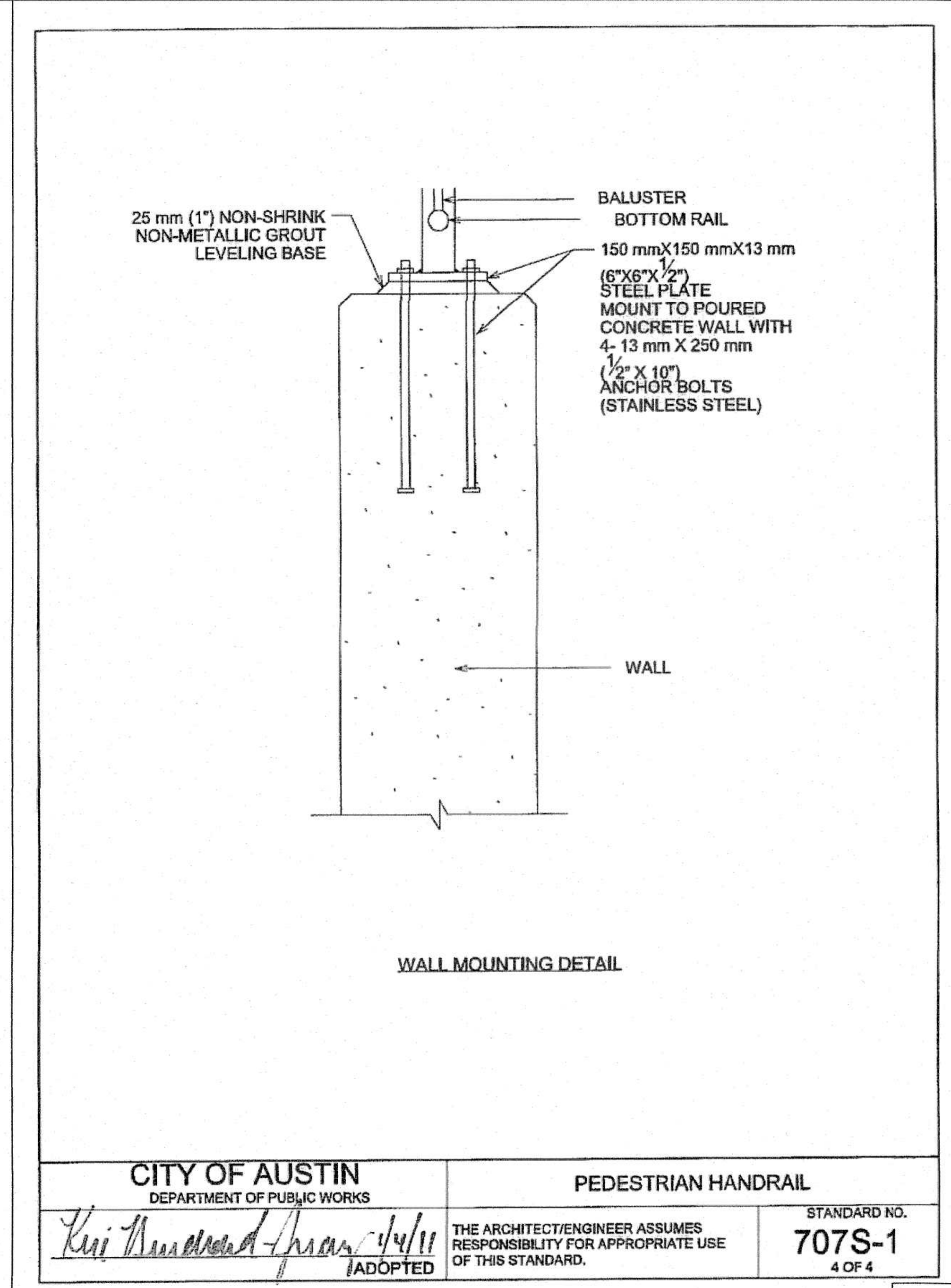
*Per City of Austin ECM 1.4.6.D.5

The rock riprap layer thickness shall be no less than the maximum stone size (D100) or 1.5 times the D50, whichever produces the greater thickness. For applications in drainage channels the riprap layer should be a minimum of 2.0 times as thick as the median stone size specified.









LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1

WATER QUALITY POND NOTES

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WQ9.dwg

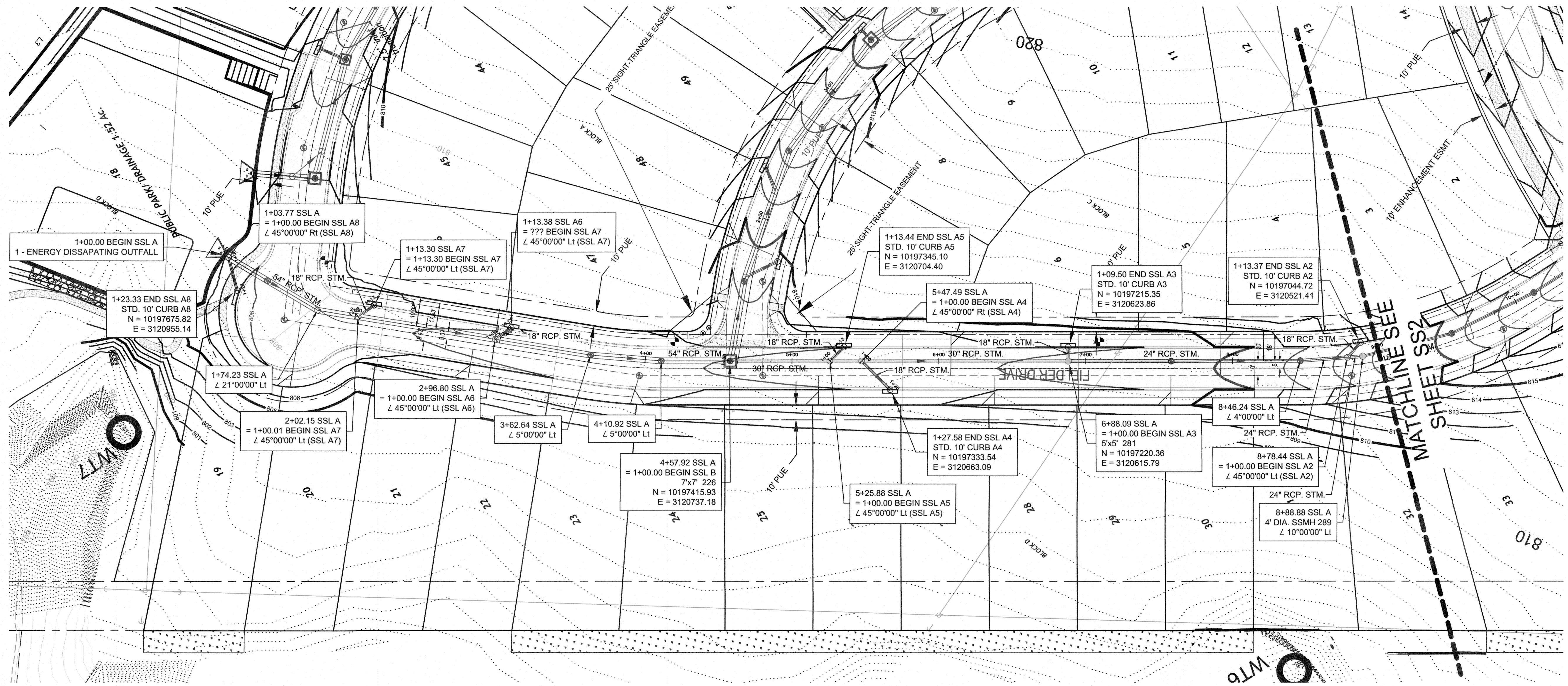
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER:
A140-0418

WQ9

SHEET NO.
52
OF 93 SHEETS



0 40 80
1" = 40'

LEGEND:

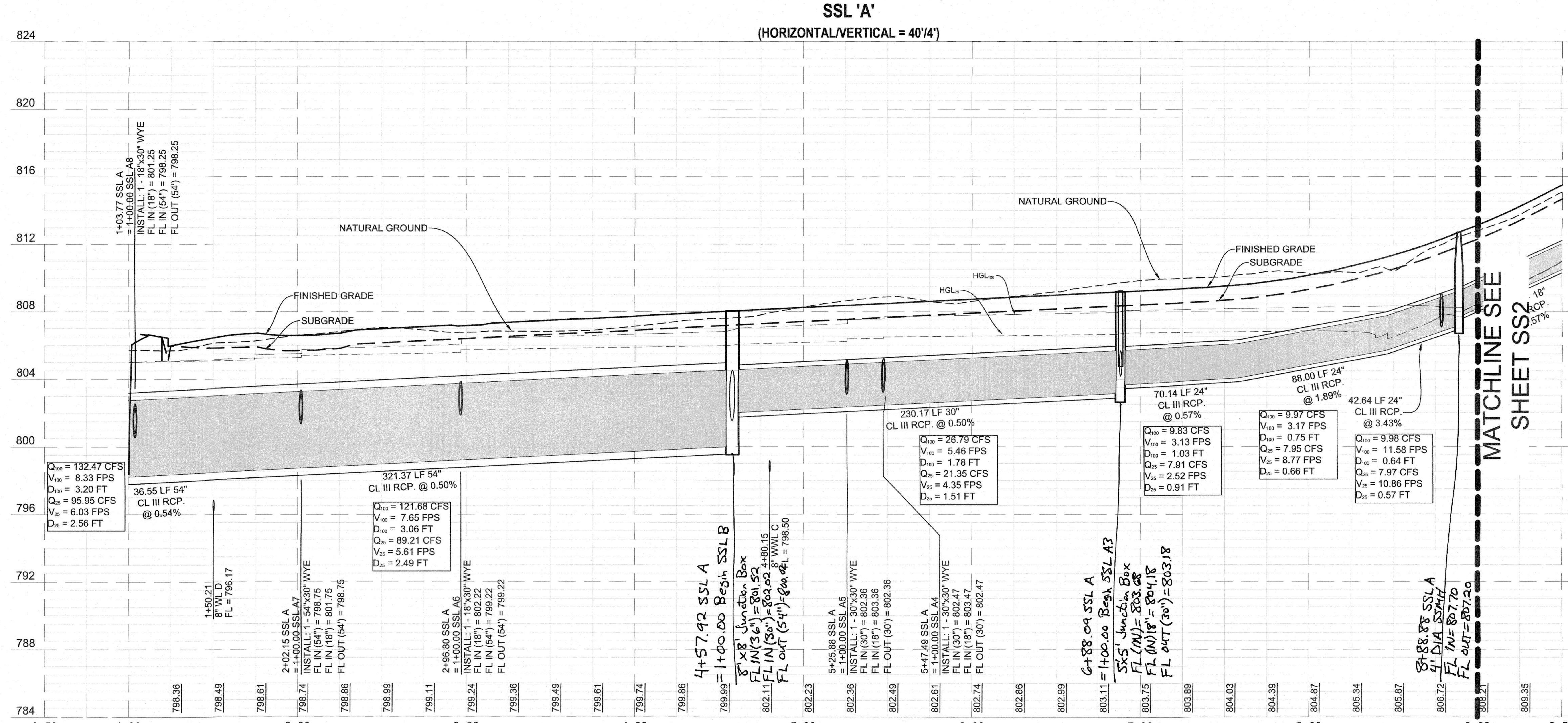
- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:

1. REFER TO DETAILS 508-3 AND/OR 508-4 FOR INLET CONSTRUCTION.
2. REFER TO DETAILS 506S-5, 506S-7, 506S-8, 506S-9, AND/OR 506S-10 FOR MANHOLE CONSTRUCTION. CONTRACTOR MA SUBSTITUTE JUNCTION BOXES FOR RING MANHOLES WITH APPROVAL OF THE ENGINEER.
3. PIPE STATIONING AND LINEAR FOOTAGE IS FROM CENTER OF MANHOLE. PIPE SLOPE IS CALCULATED FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
4. INLET CURB TRANSITIONS SHALL BE STANDARD 10' LONG UNLESS OTHERWISE NOTED ON THESE PLANS. THE MINIMUM ALLOWABLE TRANSITION LENGTH SHALL BE 7.5 FEET.

SSL 'A'

(HORIZONTAL/VERTICAL = 40'/4')



PROFILE LINE LEGEND

- 100-YR HGL
- 25-YR HGL
- NATURAL GROUND
- PROPOSED PAVEMENT

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION PHASE 1

STORM SEWER LINE 'A' PLAN AND PROFILE
STA. 1+00 TO 9+00

NO.	DESCRIPTION	BY	DATE
REVISIONS			

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS1.dwg

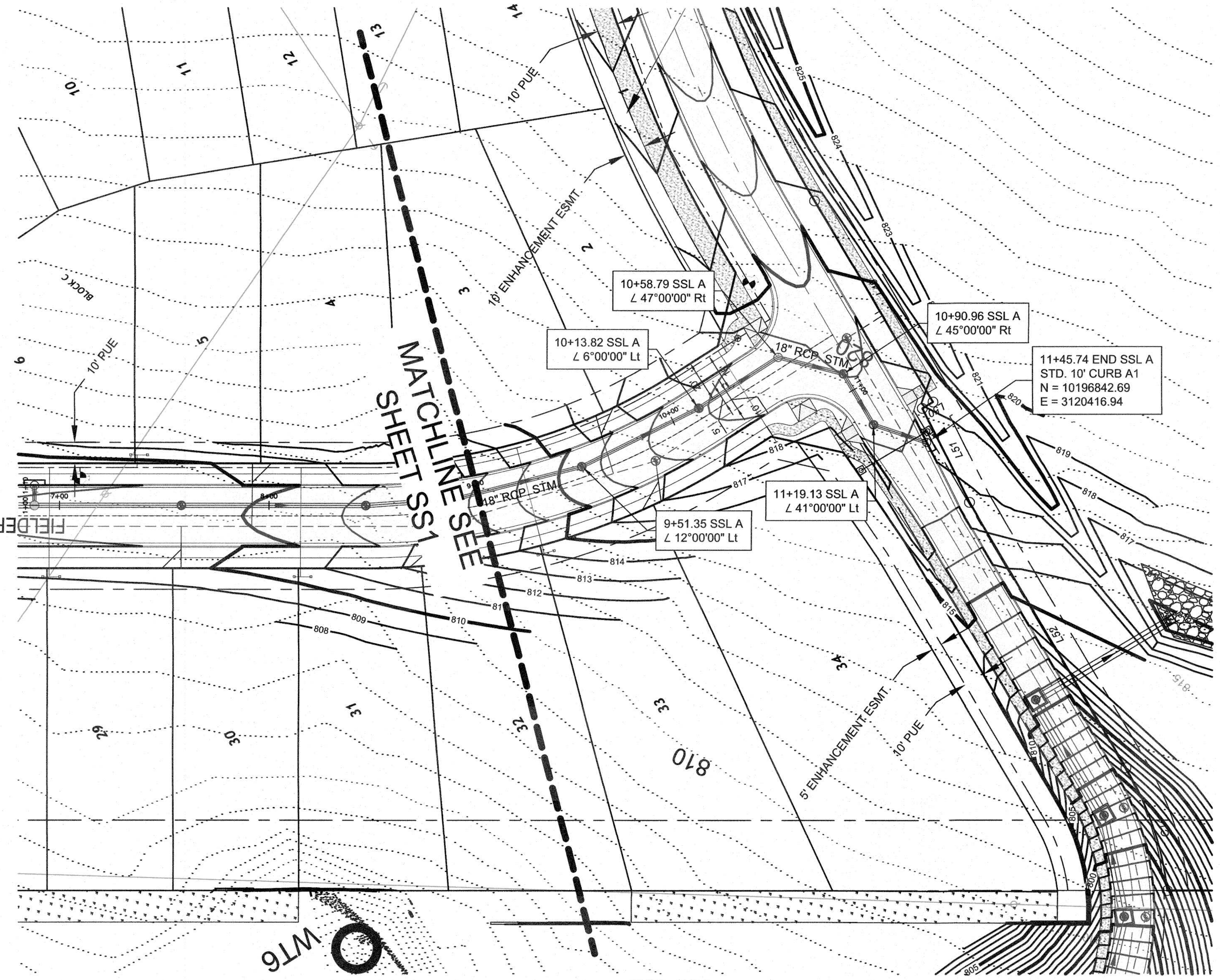
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A140-0418

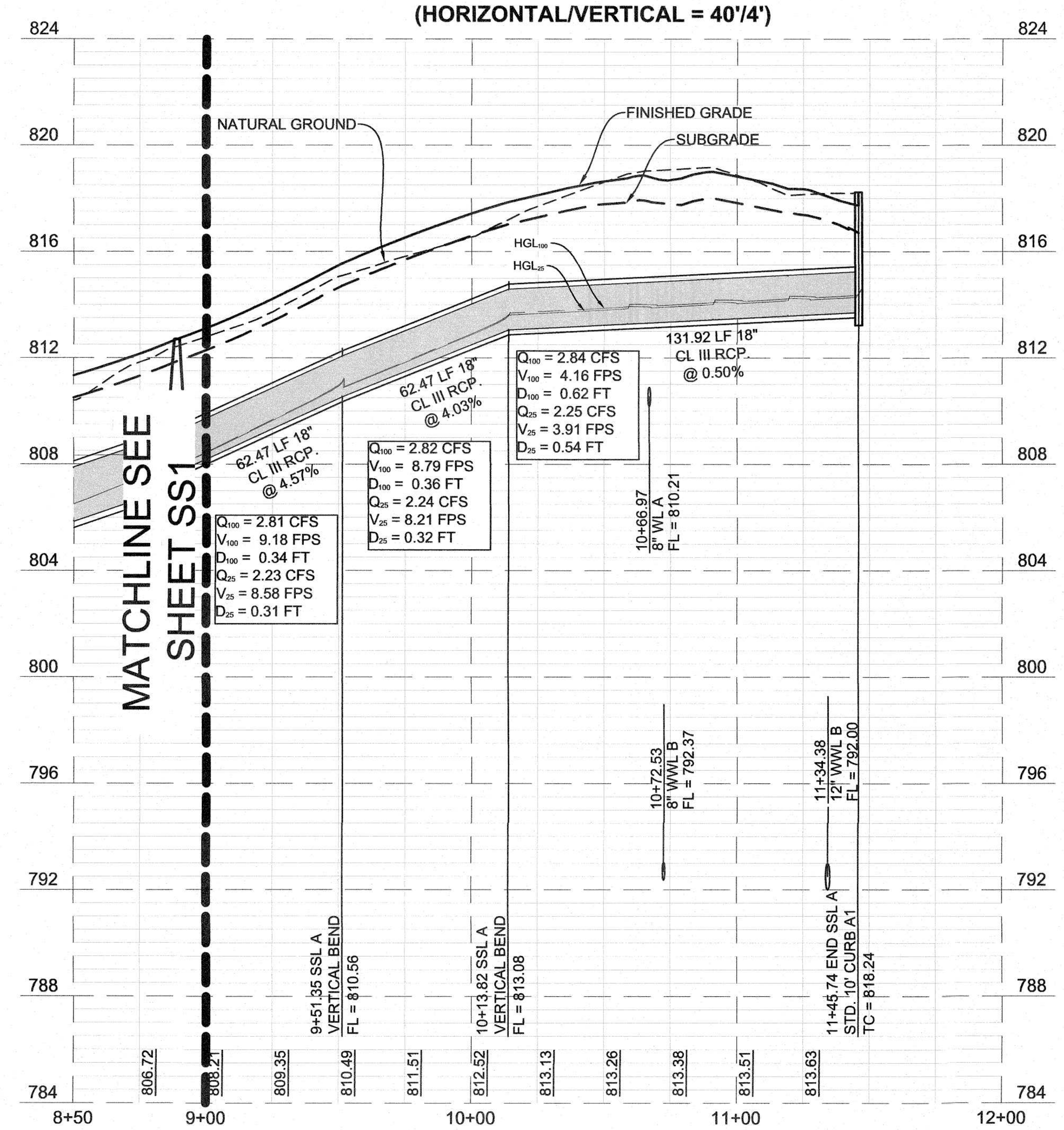
SS1

SHEET NO. 53 OF 93 SHEETS



SSL 'A'

(HORIZONTAL/VERTICAL = 40'/4')



0 40 80
1" = 40'

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
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- SINGLE WASTEWATER PRESSURE SERVICE LEAD

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3. PIPE STATIONING AND LINEAR FOOTAGE IS FROM CENTER OF MANHOLE. PIPE SLOPE IS CALCULATED FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
4. INLET CURB TRANSITIONS SHALL BE STANDARD 10' LONG UNLESS OTHERWISE NOTED ON THESE PLANS. THE MINIMUM ALLOWABLE TRANSITION LENGTH SHALL BE 7.5 FEET.

PROFILE LINE LEGEND

- 100-YR HGL
- 25-YR HGL
- NATURAL GROUND
- PROPOSED PAVEMENT

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1

STORM SEWER LINE 'A' PLAN AND PROFILE
STA. 9+00 TO END

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS2.dwg

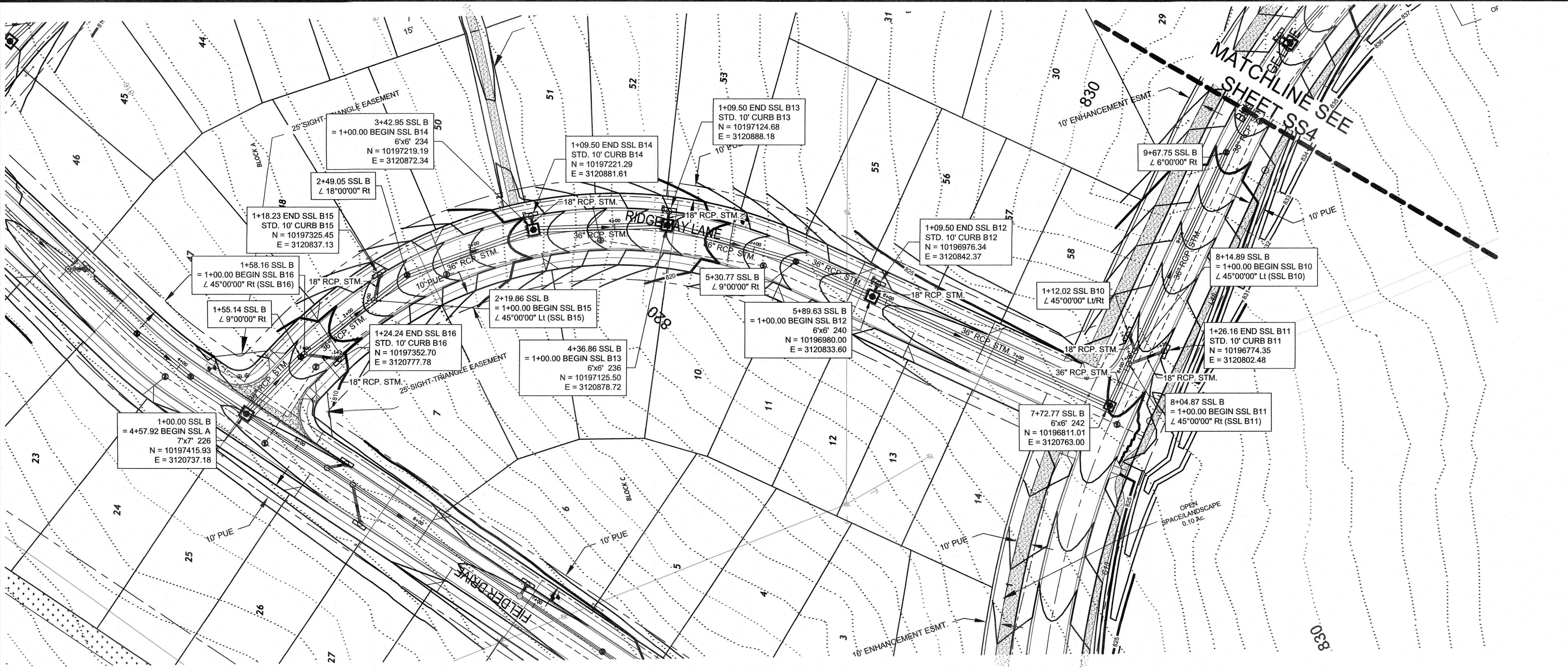
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:
A140-0418

SS2

SHEET NO.
54
OF 93 SHEETS

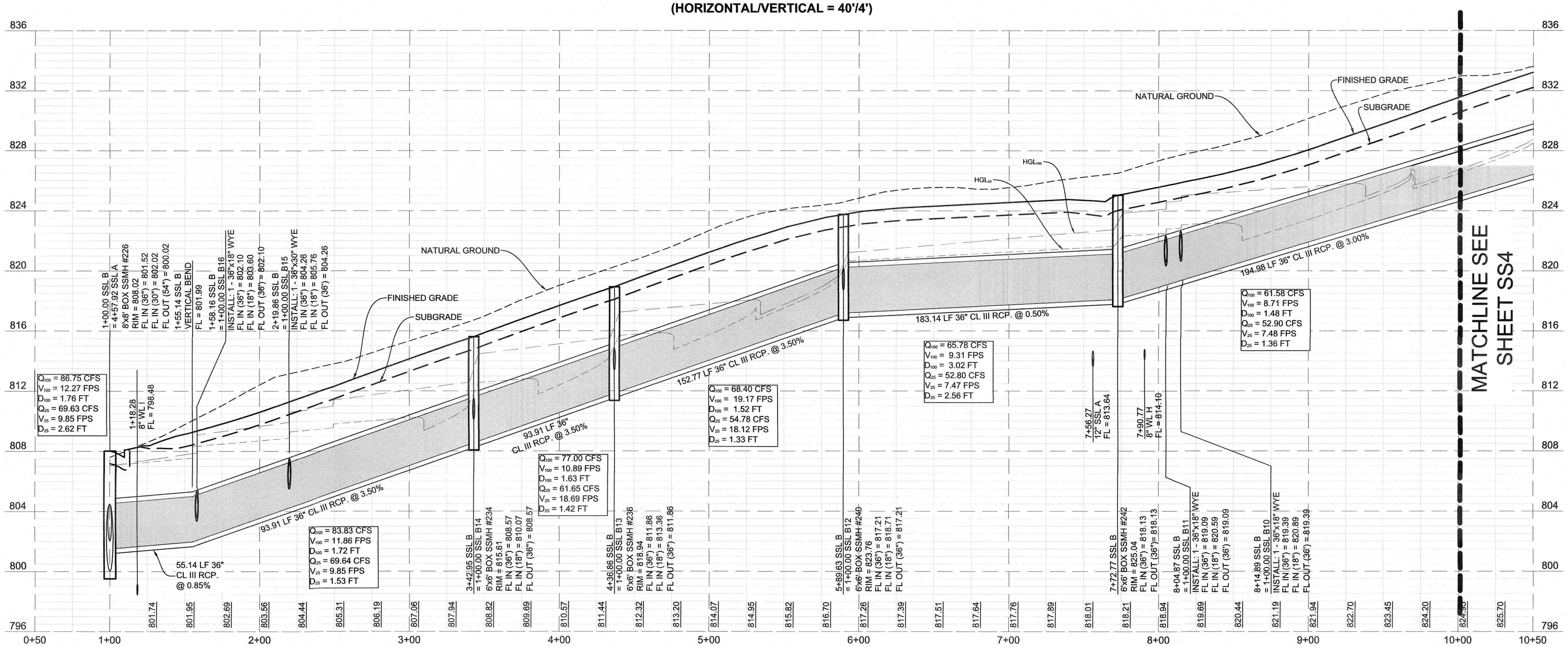


LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

SSL 'B'

(HORIZONTAL/VERTICAL = 40'/4')



NOTES:

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2. REFER TO DETAILS 506S-5, 506S-7, 506S-8, 506S-9, AND/OR 506S-10 FOR MANHOLE CONSTRUCTION. CONTRACTOR MA SUBSTITUTE JUNCTION BOXES FOR RING MANHOLES WITH APPROVAL OF THE ENGINEER.
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4. INLET CURB TRANSITIONS SHALL BE STANDARD 10' LONG UNLESS OTHERWISE NOTED ON THESE PLANS. THE MINIMUM ALLOWABLE TRANSITION LENGTH SHALL BE 7.5 FEET.

PROFILE LINE LEGEND

- 100-YR HGL
- 25-YR HGL
- NATURAL GROUND
- PROPOSED PAVEMENT

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1

STORM SEWER LINE 'B' PLAN AND PROFILE
STA. 1+00 TO 10+00

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS3.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED

LJA Engineering, Inc.
2700 La Frontera Blvd. Suite 200 Round Rock, Texas 78681
Phone 512.439.4700 Fax 512.439.4716 FRB-F-1386

JOB NUMBER: A140-0418

SS3

SHEET NO. 55 OF 93 SHEETS

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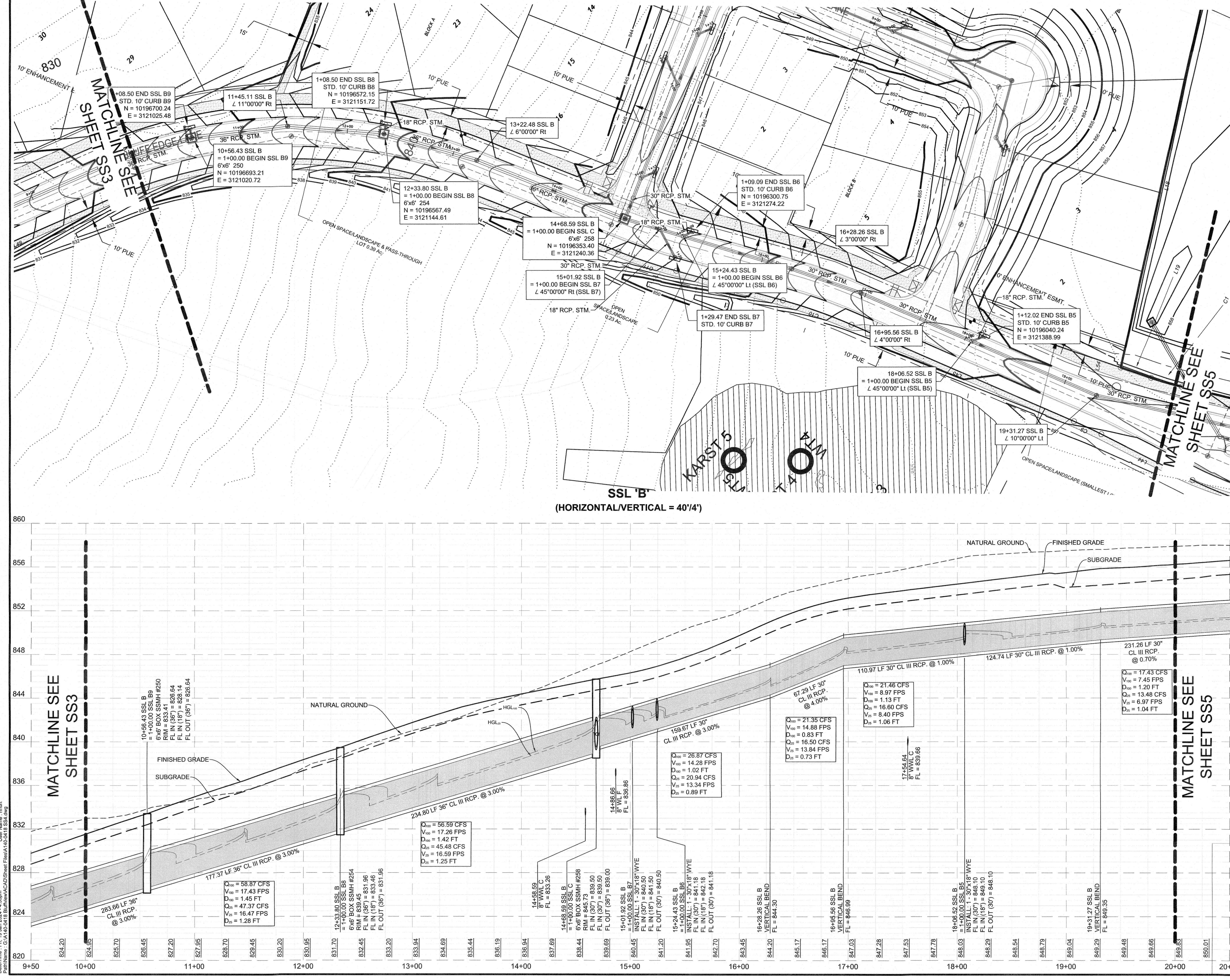

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
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PROFILE LINE LEGEND

- 100-YR HGL
- 25-YR HGL
- NATURAL GROUND
- PROPOSED PAVEMENT

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

BLUFFVIEW SUBDIVISION PHASE 1

STORM SEWER LINE 'B' PLAN AND PROFILE STA. 10+00 TO 20+00

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS4.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
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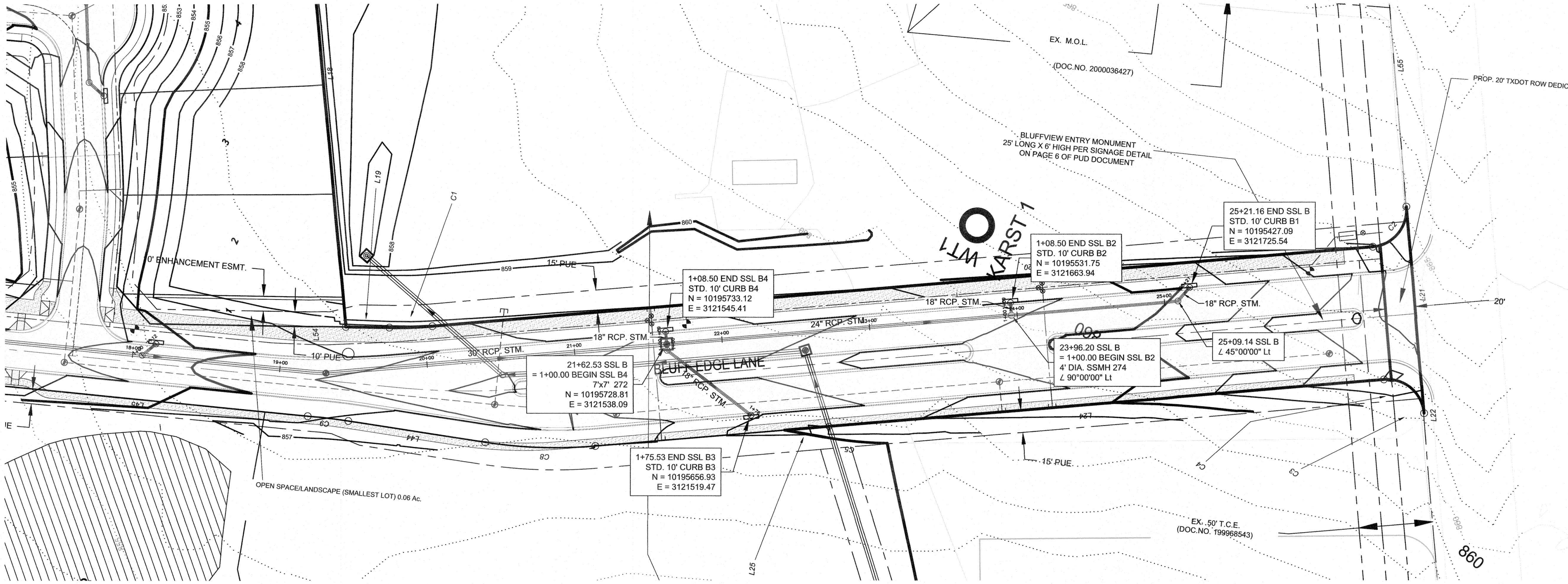
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

SS4

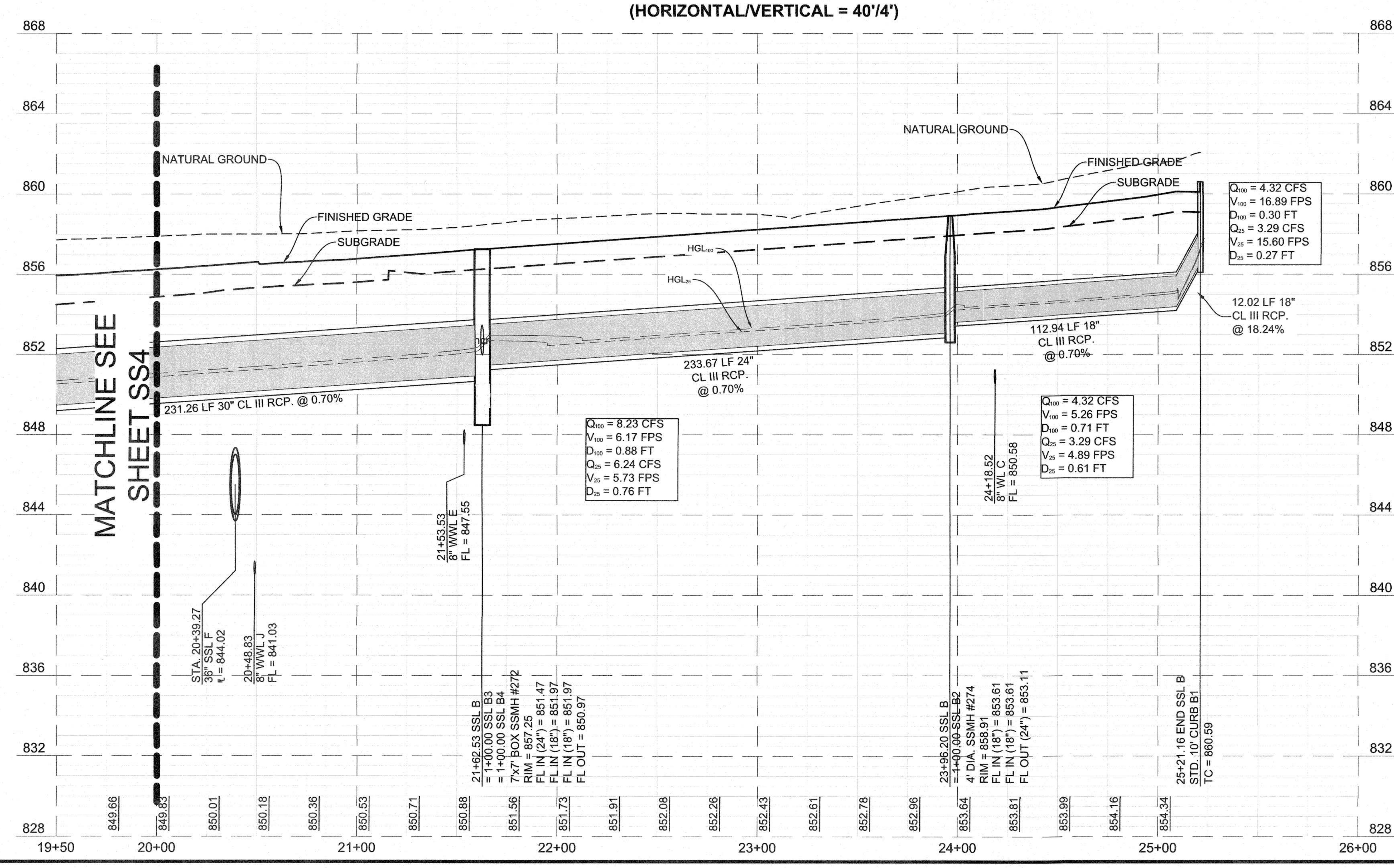


LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

0 40 80
1" = 40'

SSL 'B'
(HORIZONTAL/VERTICAL = 40'/4')



NOTES:

1. REFER TO DETAILS 508-3 AND/OR 508-4 FOR INLET CONSTRUCTION.
2. REFER TO DETAILS 506S-5, 506S-7, 506S-8, 506S-9, AND/OR 506S-10 FOR MANHOLE CONSTRUCTION. CONTRACTOR MA SUBSTITUTE JUNCTION BOXES FOR RING MANHOLES WITH APPROVAL OF THE ENGINEER.
3. PIPE STATIONING AND LINEAR FOOTAGE IS FROM CENTER OF MANHOLE. PIPE SLOPE IS CALCULATED FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
4. INLET CURB TRANSITIONS SHALL BE STANDARD 10' LONG UNLESS OTHERWISE NOTED ON THESE PLANS. THE MINIMUM ALLOWABLE TRANSITION LENGTH SHALL BE 7.5 FEET.

PROFILE LINE LEGEND
- 100-YR HGL
- 25-YR HGL
- NATURAL GROUND
- PROPOSED PAVEMENT

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1

STORM SEWER LINE 'B' PLAN AND PROFILE
STA. 20+00 TO END

NO.	DESCRIPTION	BY	DATE

REVISIONS

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS5.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

SS5

SHEET NO. 57 OF 93 SHEETS

Date/Time: Fri, 19 Jan 2024 - 4:56pm User Name: hhurt
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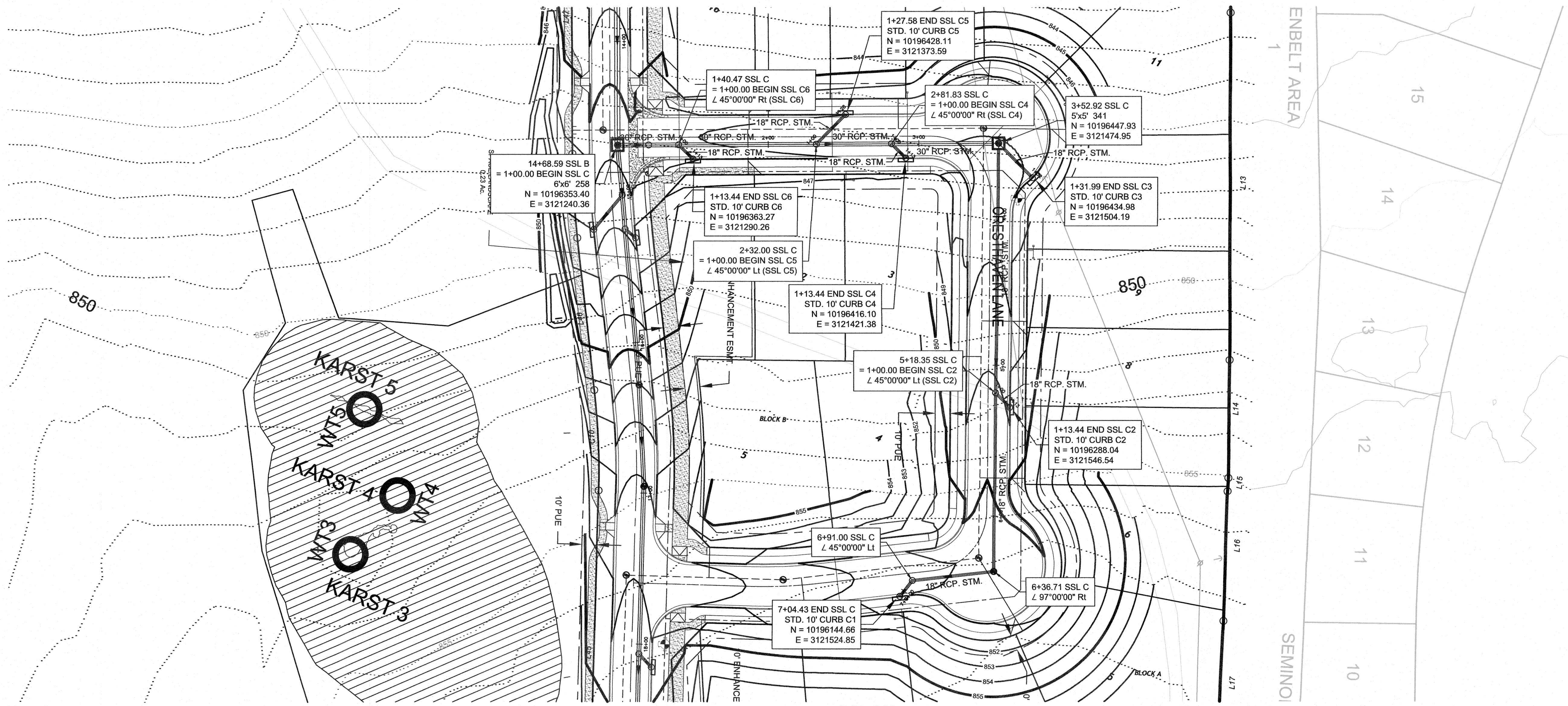

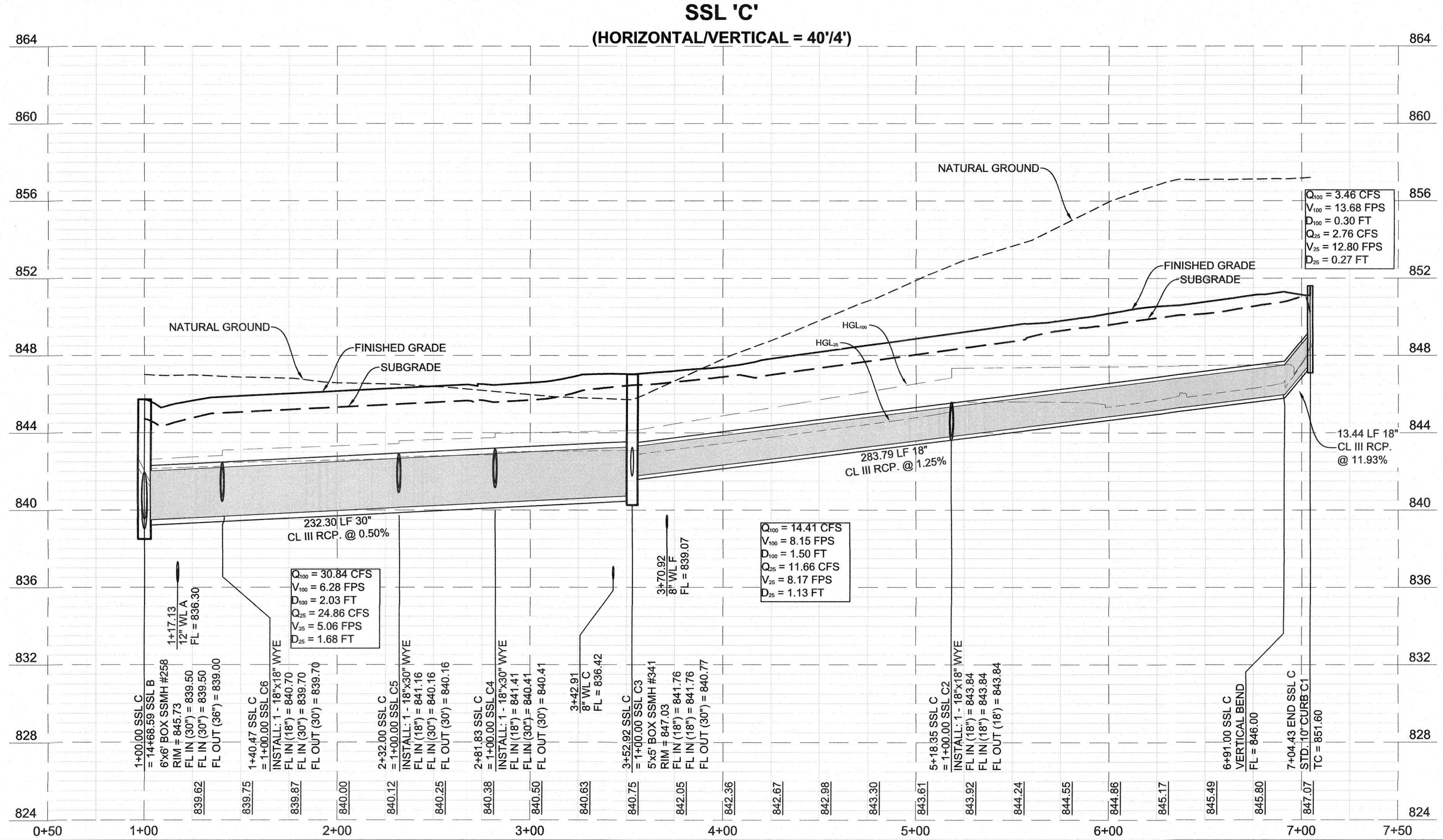

1" = 40'

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:

1. REFER TO DETAILS 508-3 AND/OR 508-4 FOR INLET CONSTRUCTION.
2. REFER TO DETAILS 506S-5, 506S-7, 506S-8, 506S-9, AND/OR 506S-10 FOR MANHOLE CONSTRUCTION. CONTRACTOR MA SUBSTITUTE JUNCTION BOXES FOR RING MANHOLES WITH APPROVAL OF THE ENGINEER.
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4. INLET CURB TRANSITIONS SHALL BE STANDARD 10' LONG UNLESS OTHERWISE NOTED ON THESE PLANS. THE MINIMUM ALLOWABLE TRANSITION LENGTH SHALL BE 7.5 FEET.

PROFILE LINE LEGEND

- 100-YR HGL
- 25-YR HGL
- NATURAL GROUND
- PROPOSED PAVEMENT

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION PHASE 1

STORM SEWER LINE 'C' PLAN AND PROFILE STA. 1+00 TO END

NO.	DESCRIPTION	BY	DATE
REVISIONS			

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS6.dwg

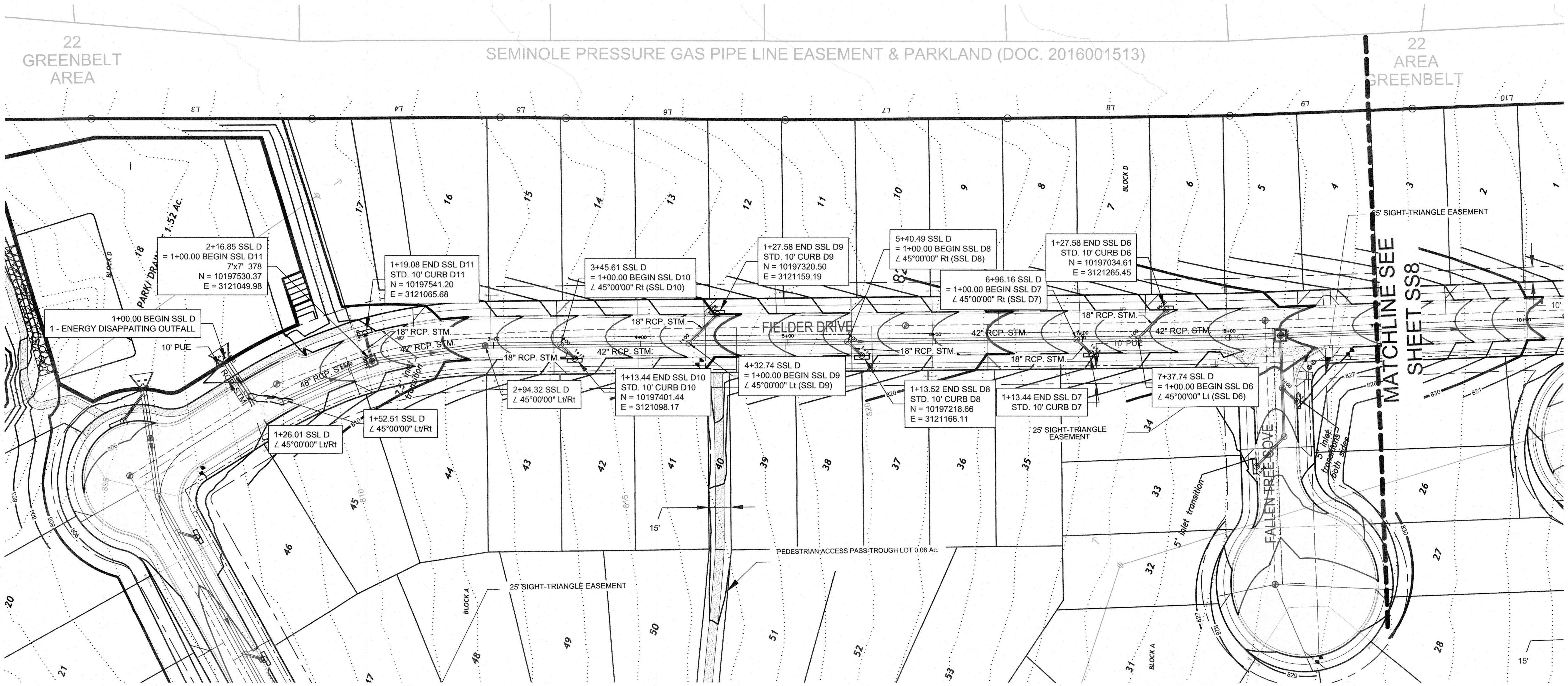
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

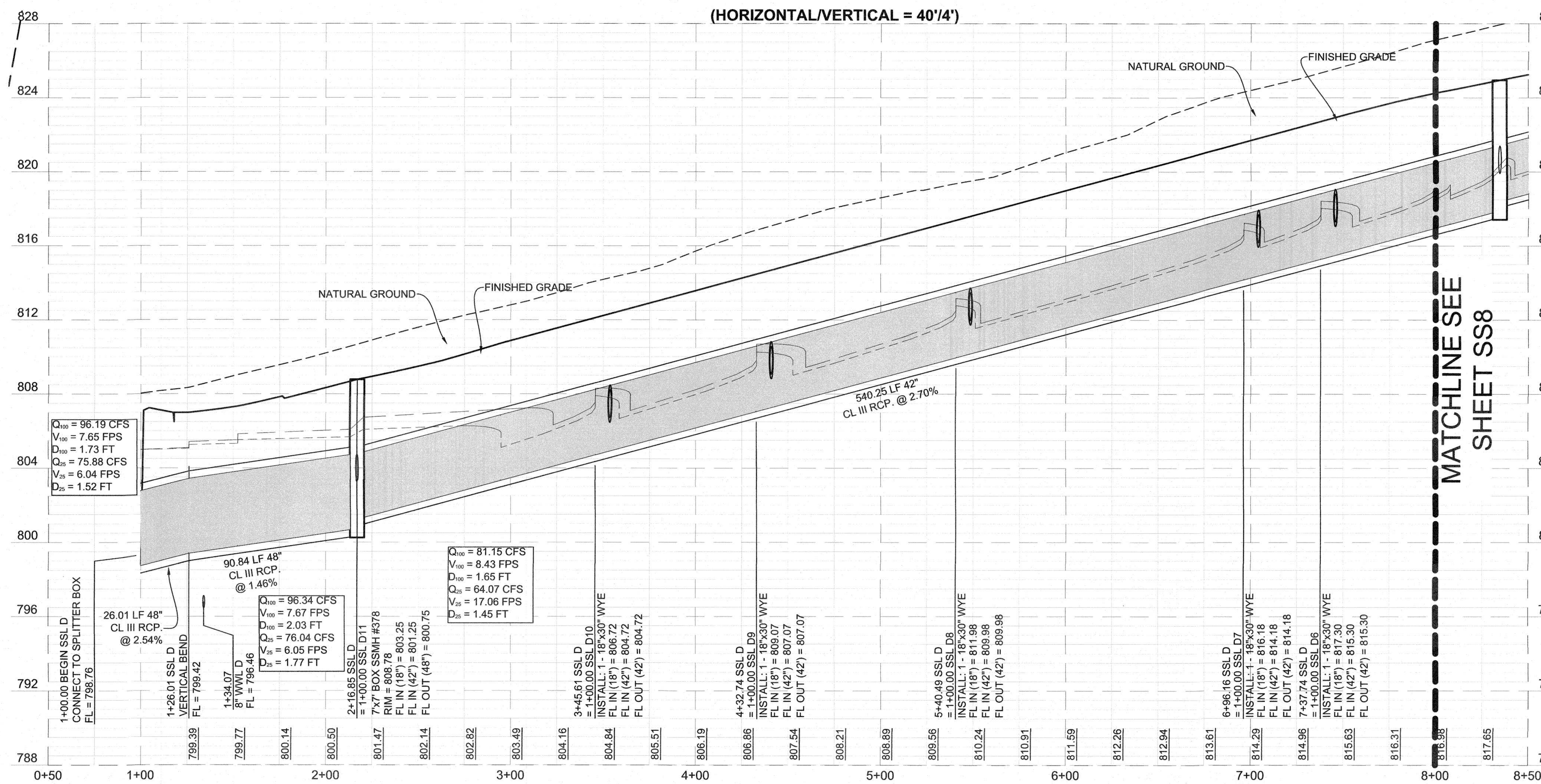
JOB NUMBER: A140-0418

SS6

SHEET NO. 58 OF 93 SHEETS



SSL 'D'
(HORIZONTAL/VERTICAL = 40'/4')



LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:

1. REFER TO DETAILS 508-3 AND/OR 508-4 FOR INLET CONSTRUCTION.
2. REFER TO DETAILS 506S-5, 506S-7, 506S-8, 506S-9, AND/OR 506S-10 FOR MANHOLE CONSTRUCTION. CONTRACTOR MA SUBSTITUTE JUNCTION BOXES FOR RING MANHOLES WITH APPROVAL OF THE ENGINEER.
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PROFILE LINE LEGEND

- 100-YR HGL
- 25-YR HGL
- NATURAL GROUND
- PROPOSED PAVEMENT

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1

STORM SEWER LINE 'D' PLAN AND PROFILE
STA. 1+00 TO 8+00

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS7.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

SS7

SHEET NO. 59 OF 93 SHEETS

Date/Time : Fri, 19 Jan 2024 - 4:57pm User Name : hhurt
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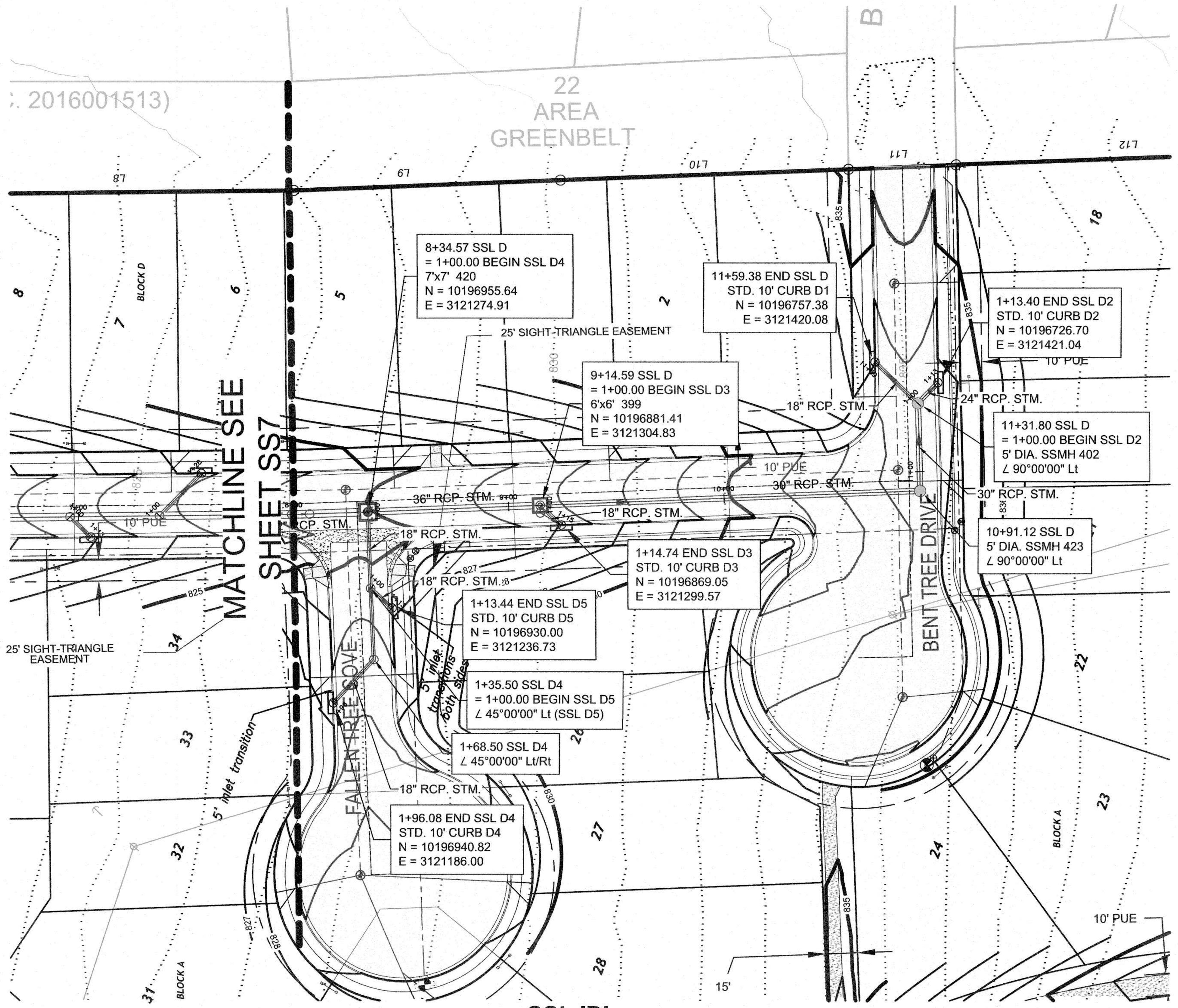
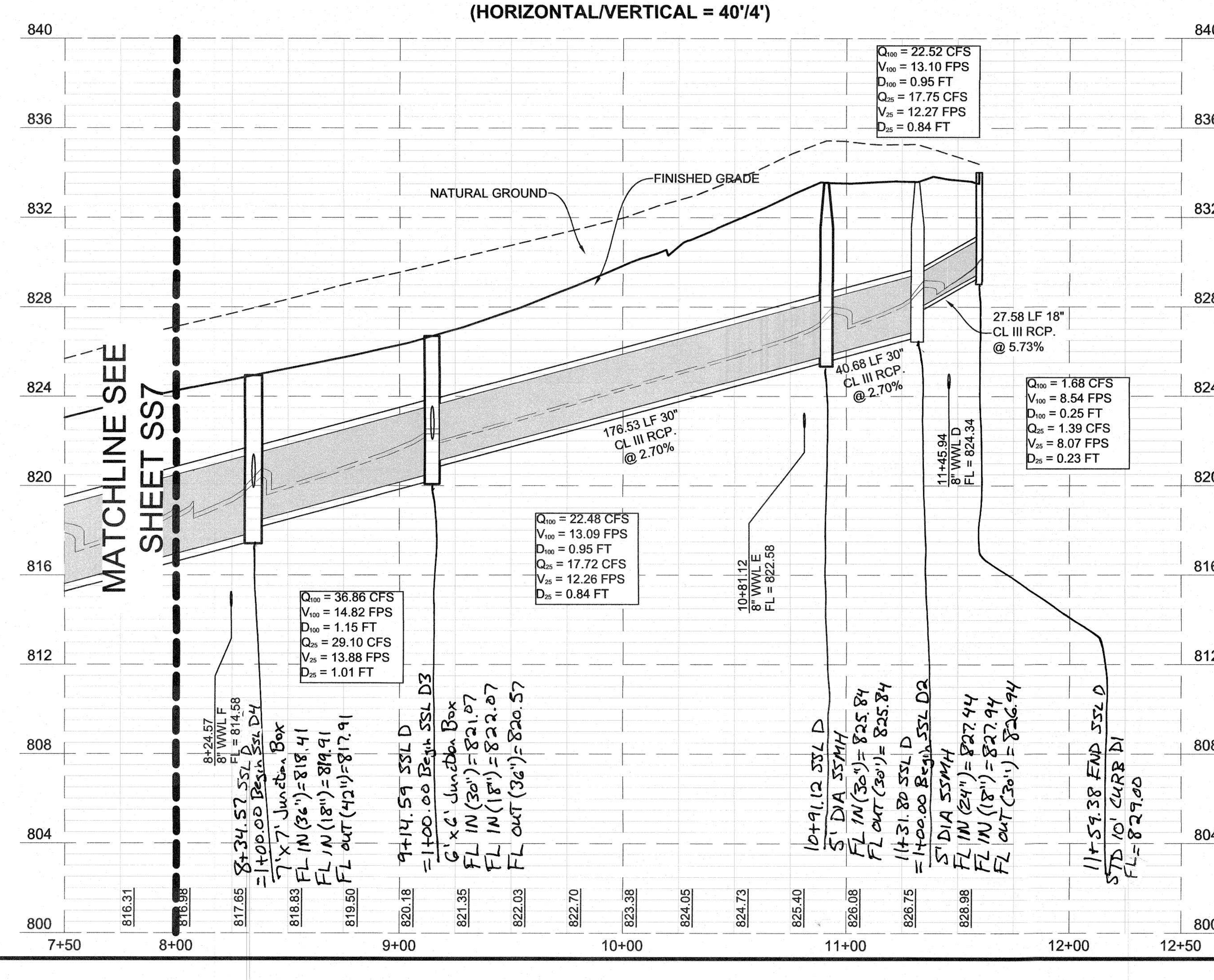


SSL 'D'

(HORIZONTAL/VERTICAL = 40'/4')



0 40 80
1" = 40'

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:

1. REFER TO DETAILS 508-3 AND/OR 508-4 FOR INLET CONSTRUCTION.
2. REFER TO DETAILS 506S-5, 506S-7, 506S-8, 506S-9, AND/OR 506S-10 FOR MANHOLE CONSTRUCTION. CONTRACTOR MA SUBSTITUTE JUNCTION BOXES FOR RING MANHOLES WITH APPROVAL OF THE ENGINEER.
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PROFILE LINE LEGEND

- 100-YR HGL
- 25-YR HGL
- NATURAL GROUND
- PROPOSED PAVEMENT

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION PHASE 1

STORM SEWER LINE 'D' PLAN AND PROFILE STA. 8+00 TO END

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS8.dwg

STATE OF TEXAS JUSTIN D. MIDURA 128809 LICENSED PROFESSIONAL ENGINEER 1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd. Suite 200 Round Rock, Texas 78681
Phone 512.439.4700 Fax 512.439.4716 FRB-F-1386

JOB NUMBER: A140-0418

SS8

SHEET NO. 60 OF 93 SHEETS

Date/Time : Fri, 19 Jan 2024 - 4:58pm User Name : lhurt
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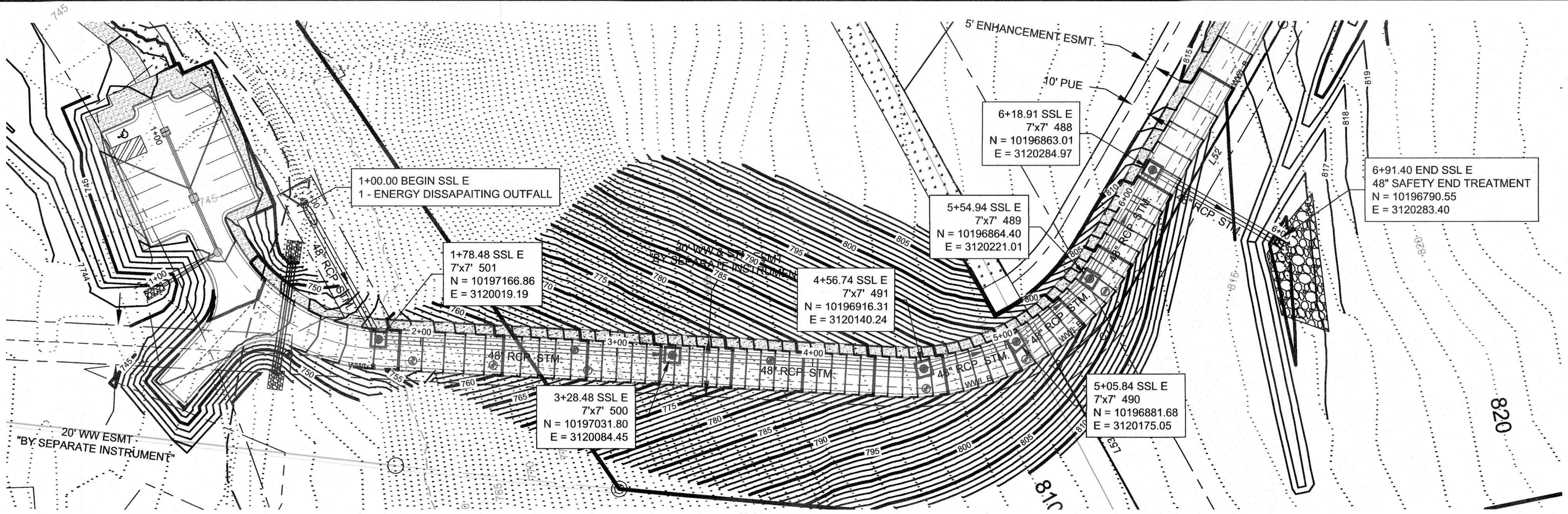
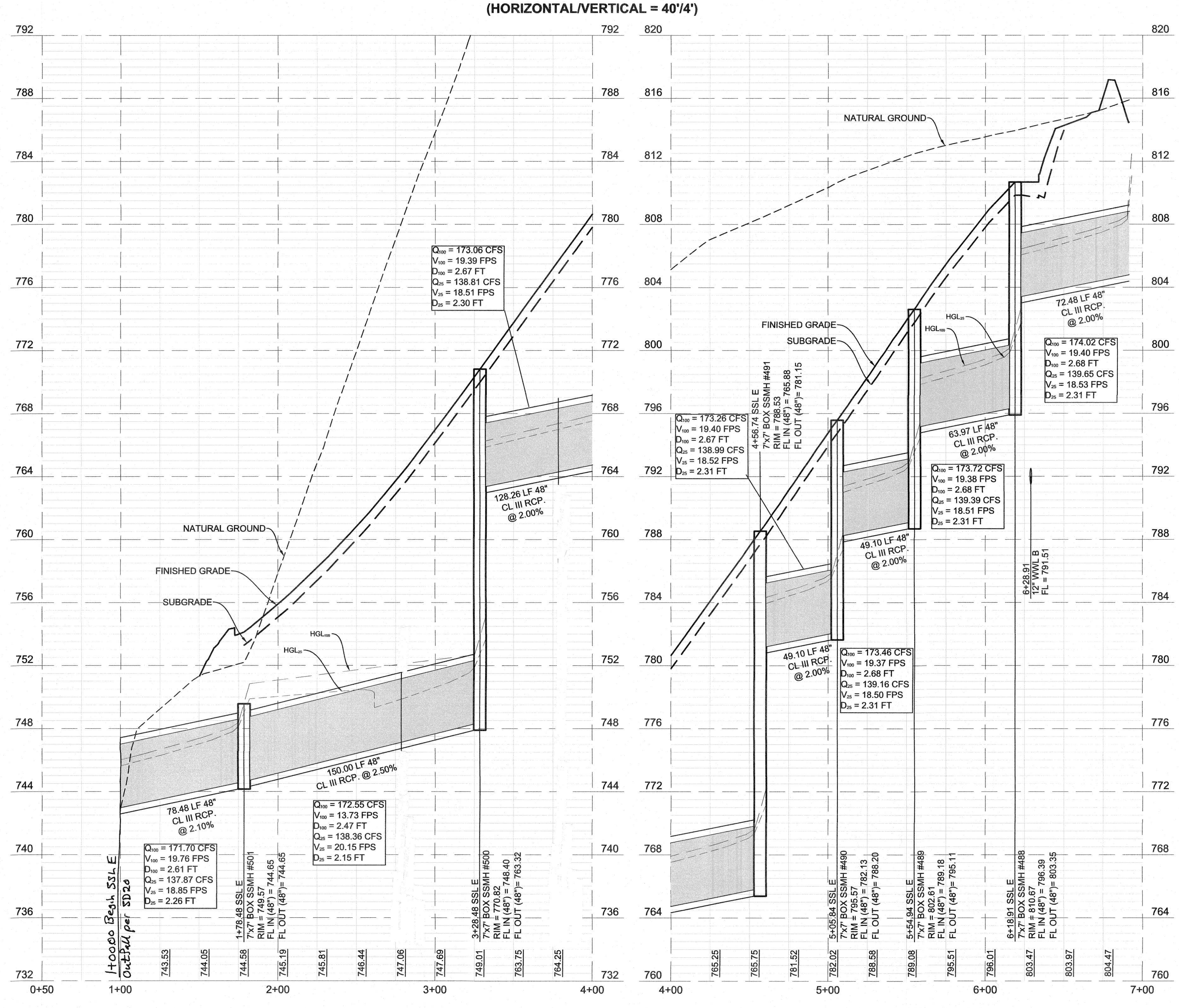


SSL 'E'
(HORIZONTAL/VERTICAL = 40'/4')



1" = 40'

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:

1. REFER TO DETAILS 508-3 AND/OR 508-4 FOR INLET CONSTRUCTION.
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PROFILE LINE LEGEND

- 100-YR HGL
- 25-YR HGL
- NATURAL GROUND
- PROPOSED PAVEMENT

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BLUFFVIEW SUBDIVISION PHASE 1

STORM SEWER LINE 'E' PLAN AND PROFILE STA. 1+00 TO END

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS9.dwg

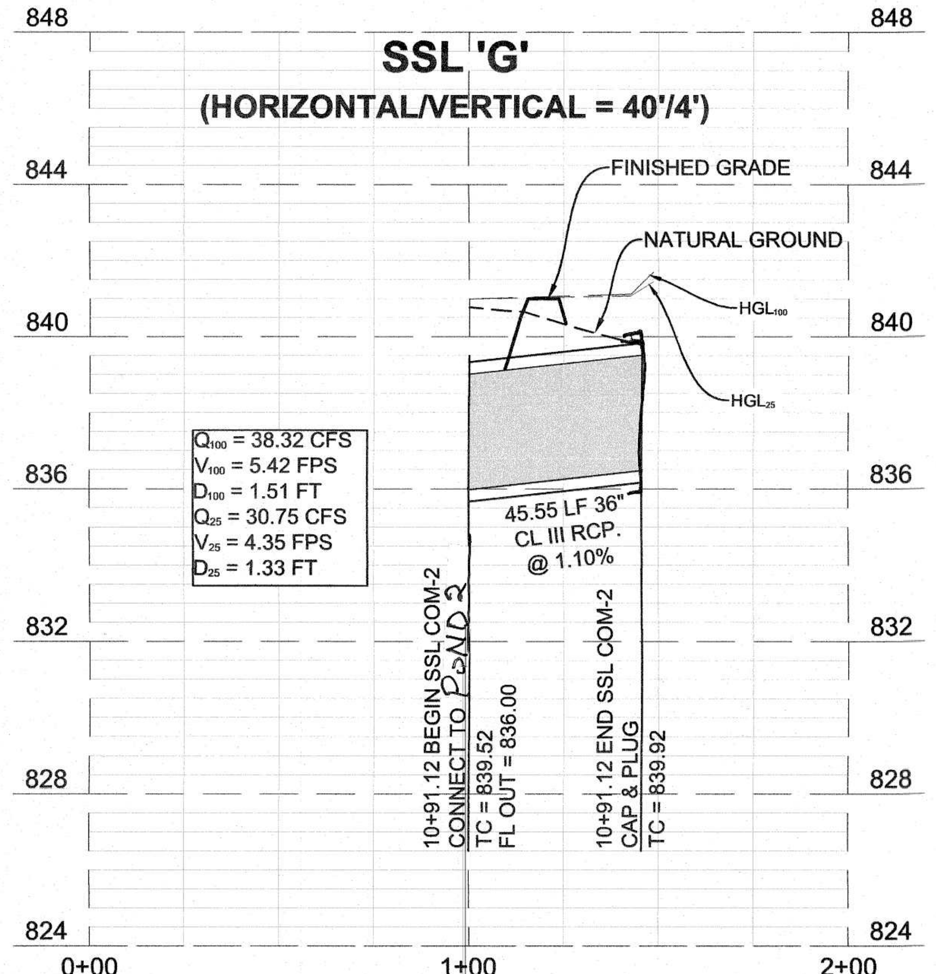
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER

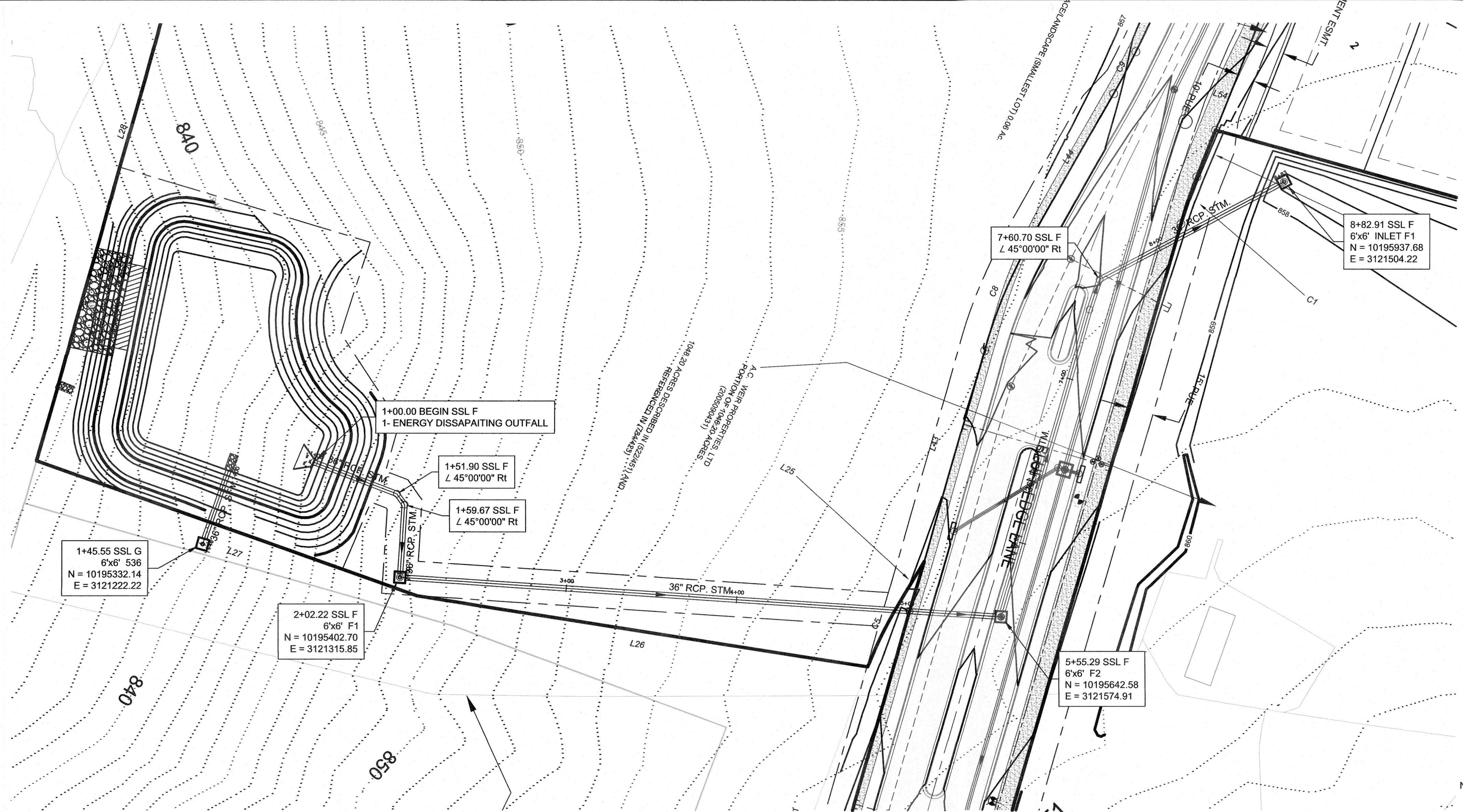
LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

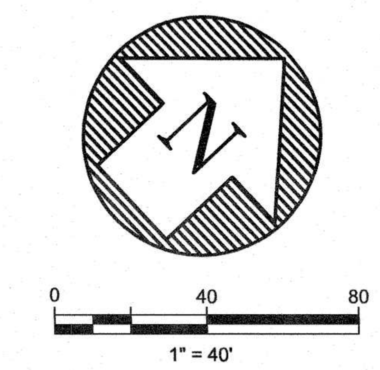
JOB NUMBER: A140-0418

SS9

SHEET NO. 61 OF 93 SHEETS







LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:

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2. REFER TO DETAILS 506S-5, 506S-7, 506S-8, 506S-9, AND/OR 506S-10 FOR MANHOLE CONSTRUCTION. CONTRACTOR MA SUBSTITUTE JUNCTION BOXES FOR RING MANHOLES WITH APPROVAL OF THE ENGINEER.
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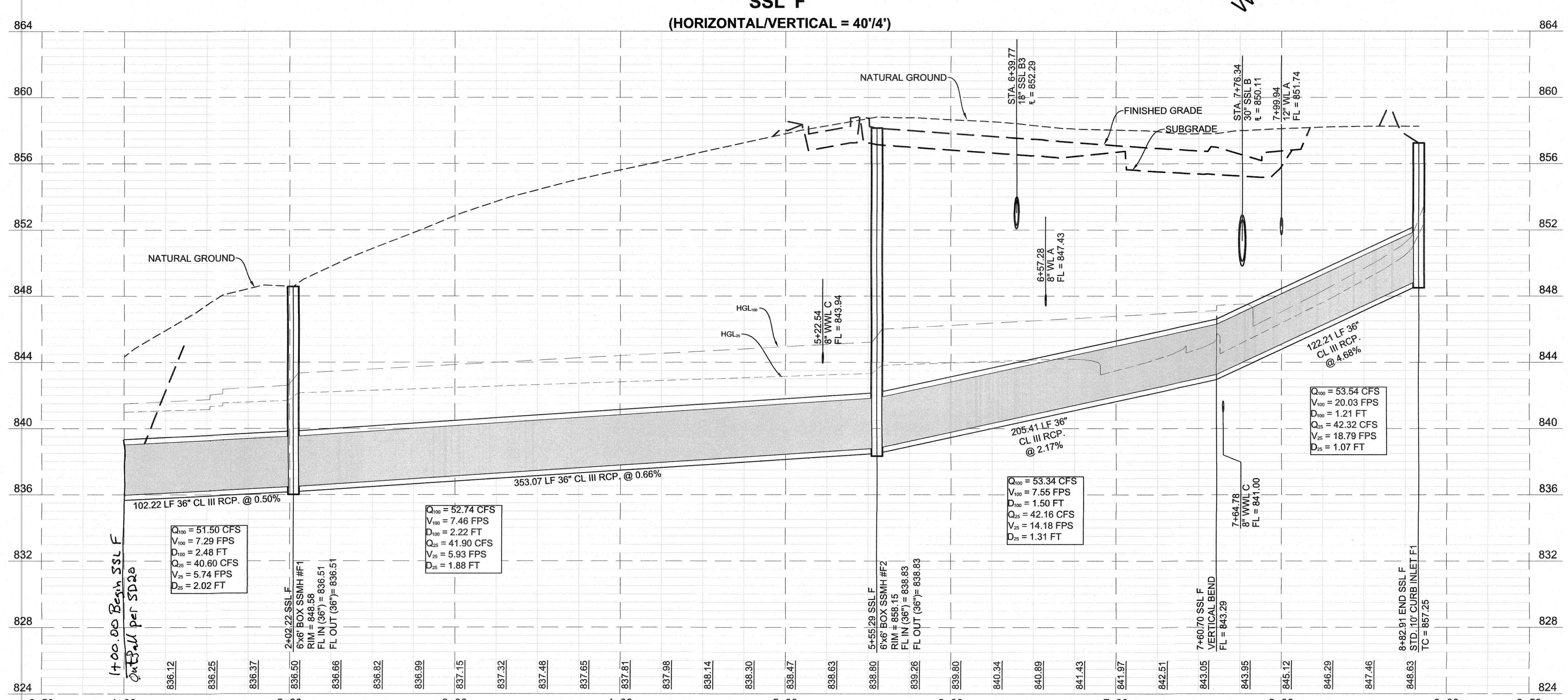


PROFILE LINE LEGEND	
	100-YR HGL
	25-YR HGL
	NATURAL GROUND
	PROPOSED PAVEMENT

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION PHASE 1
STORM SEWER LINE 'F' AND 'G' PLAN AND PROFILE STA. 1+00 TO END

REVISIONS			
NO.	DESCRIPTION	BY	DATE

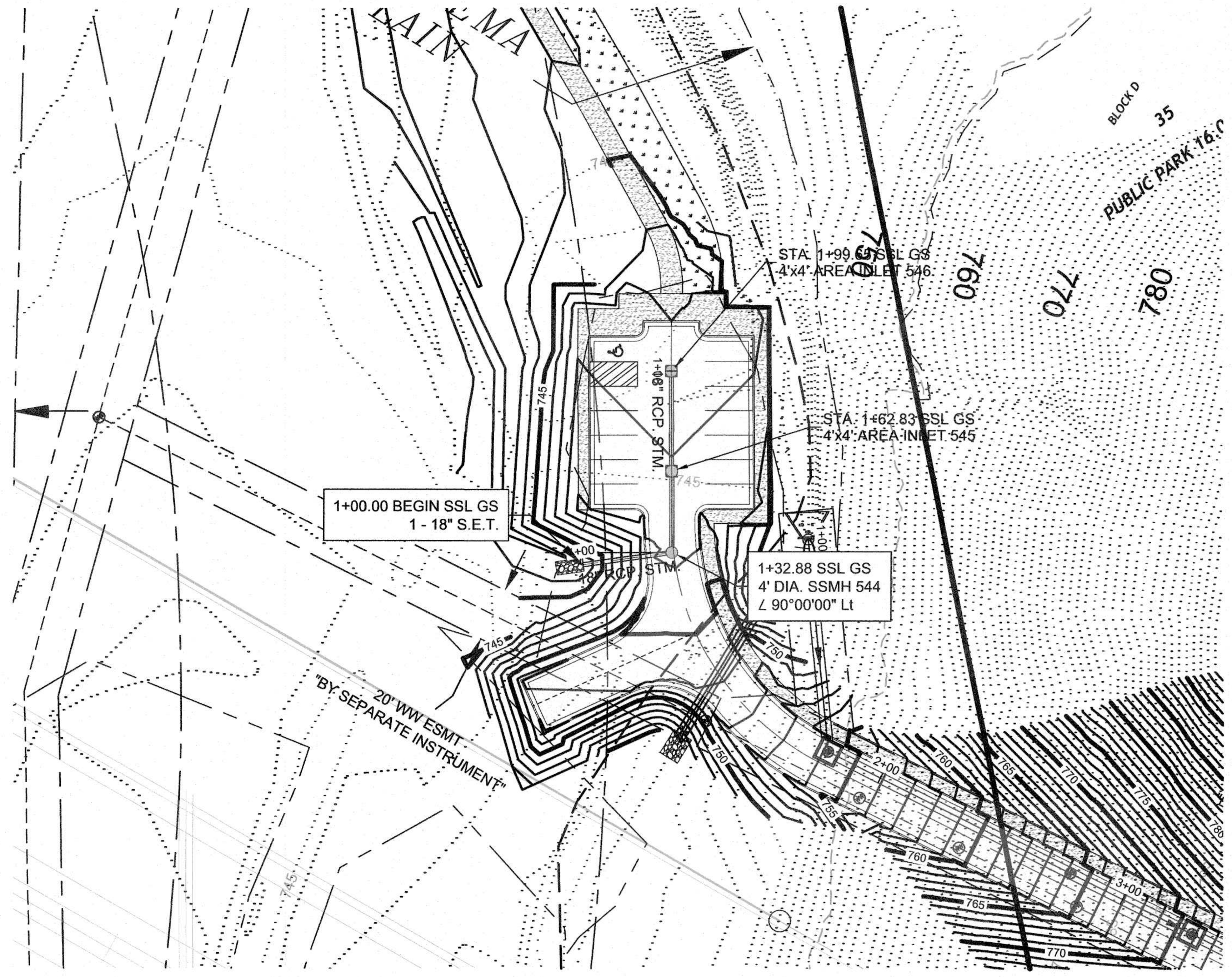
DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS10.dwg

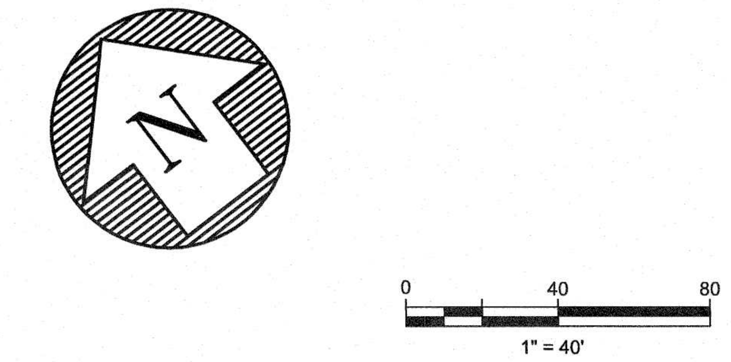
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A140-0418

SS10





LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:

1. REFER TO DETAILS 508-3 AND/OR 508-4 FOR INLET CONSTRUCTION.
2. REFER TO DETAILS 506S-5, 506S-7, 506S-8, 506S-9, AND/OR 506S-10 FOR MANHOLE CONSTRUCTION. CONTRACTOR MA SUBSTITUTE JUNCTION BOXES FOR RING MANHOLES WITH APPROVAL OF THE ENGINEER.
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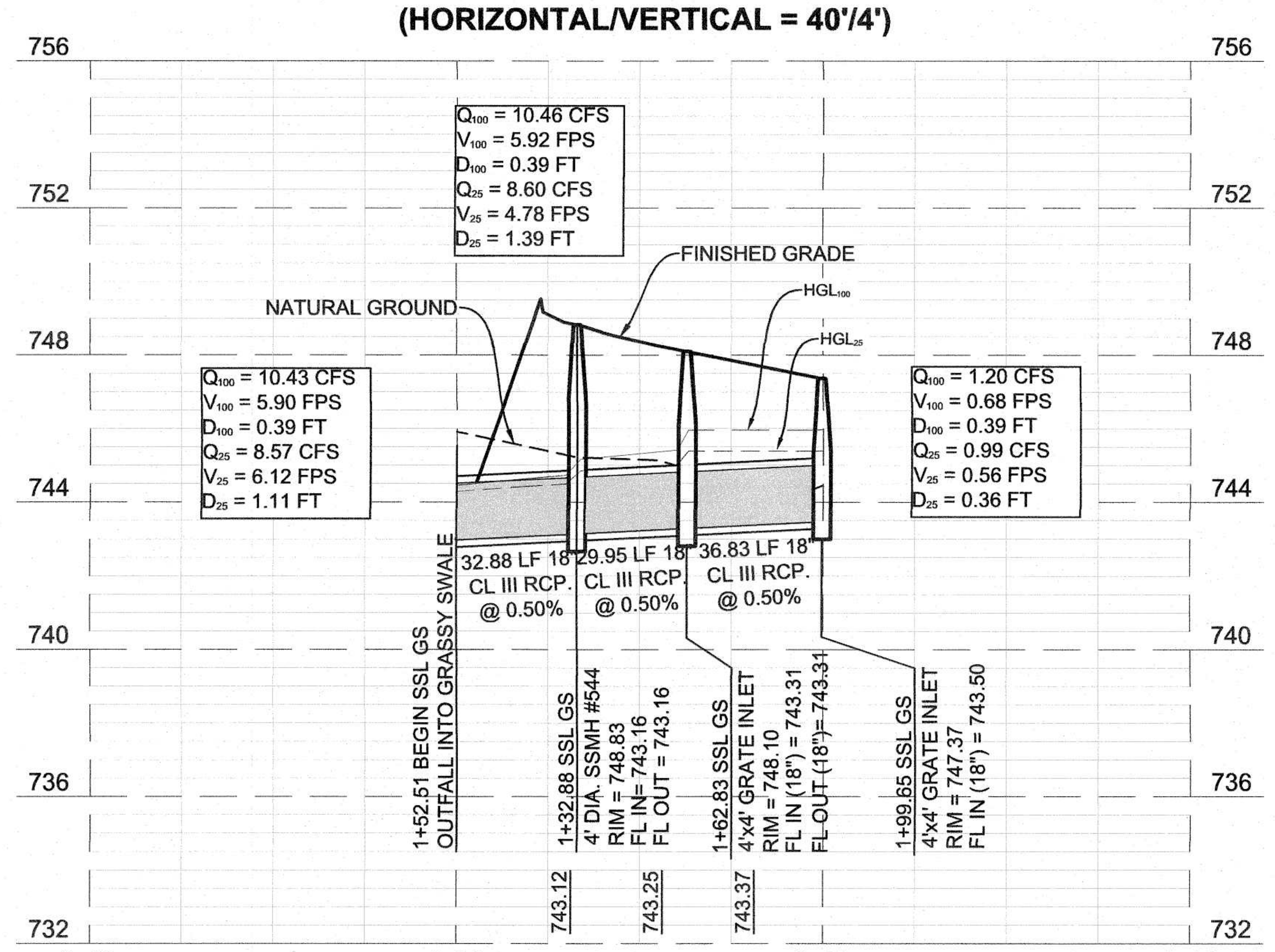
PROFILE LINE LEGEND

- 100-YR HGL
- 25-YR HGL
- NATURAL GROUND
- PROPOSED PAVEMENT

SSL 'GS'

(HORIZONTAL/VERTICAL = 40'/4')



LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1

STORM SEWER LINE 'GS' PLAN AND PROFILE
STA. 1+00 TO END

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS11.dwg

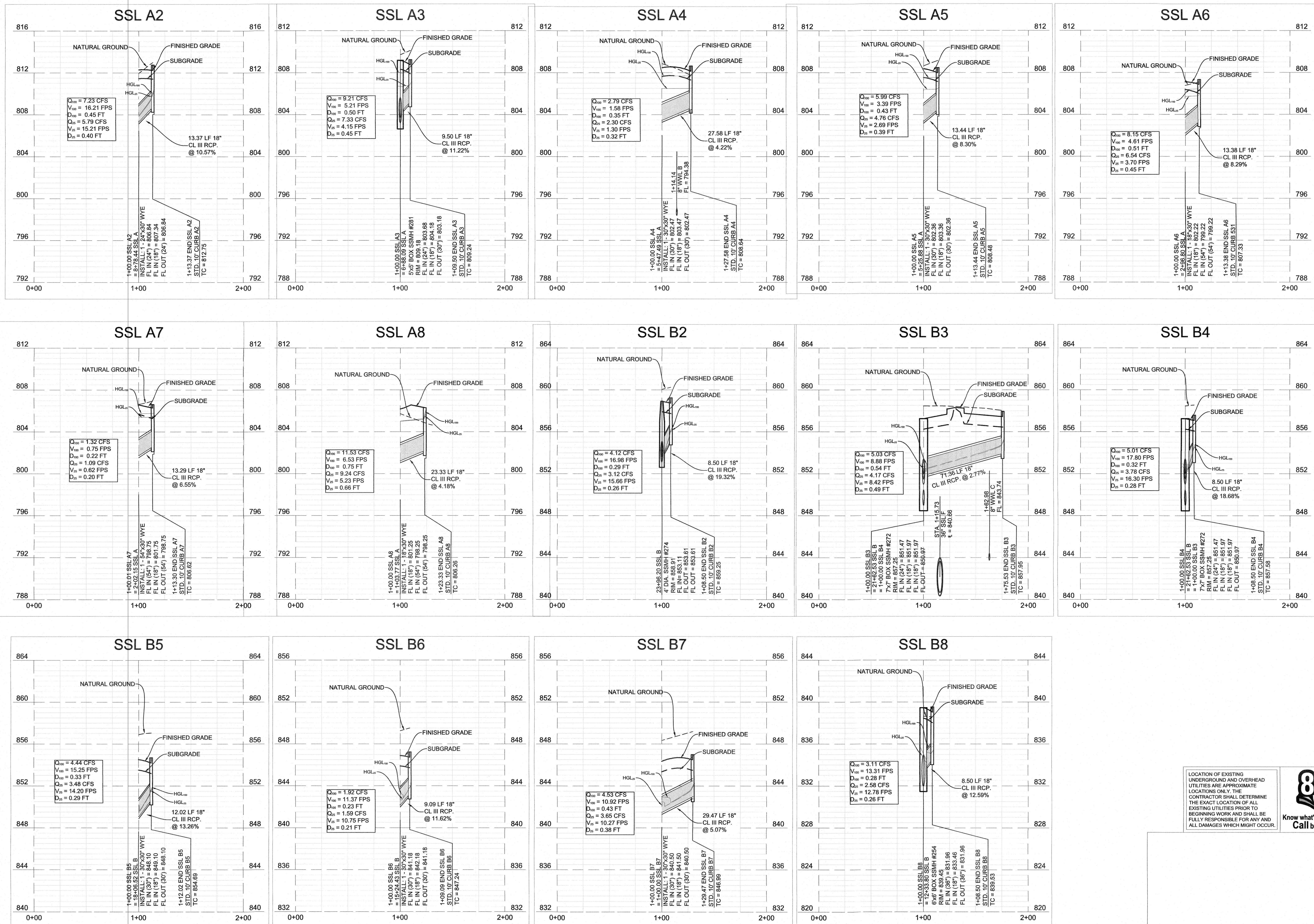
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER:
A140-0418

SS11

SHEET NO.
63
OF 93 SHEETS



LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION PHASE 1

STORM SEWER LATERAL PROFILES A2, A3, A4, A5, A6, A7, A8, B2, B3, B4, B5, B6, B7, & B8

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS12.dwg

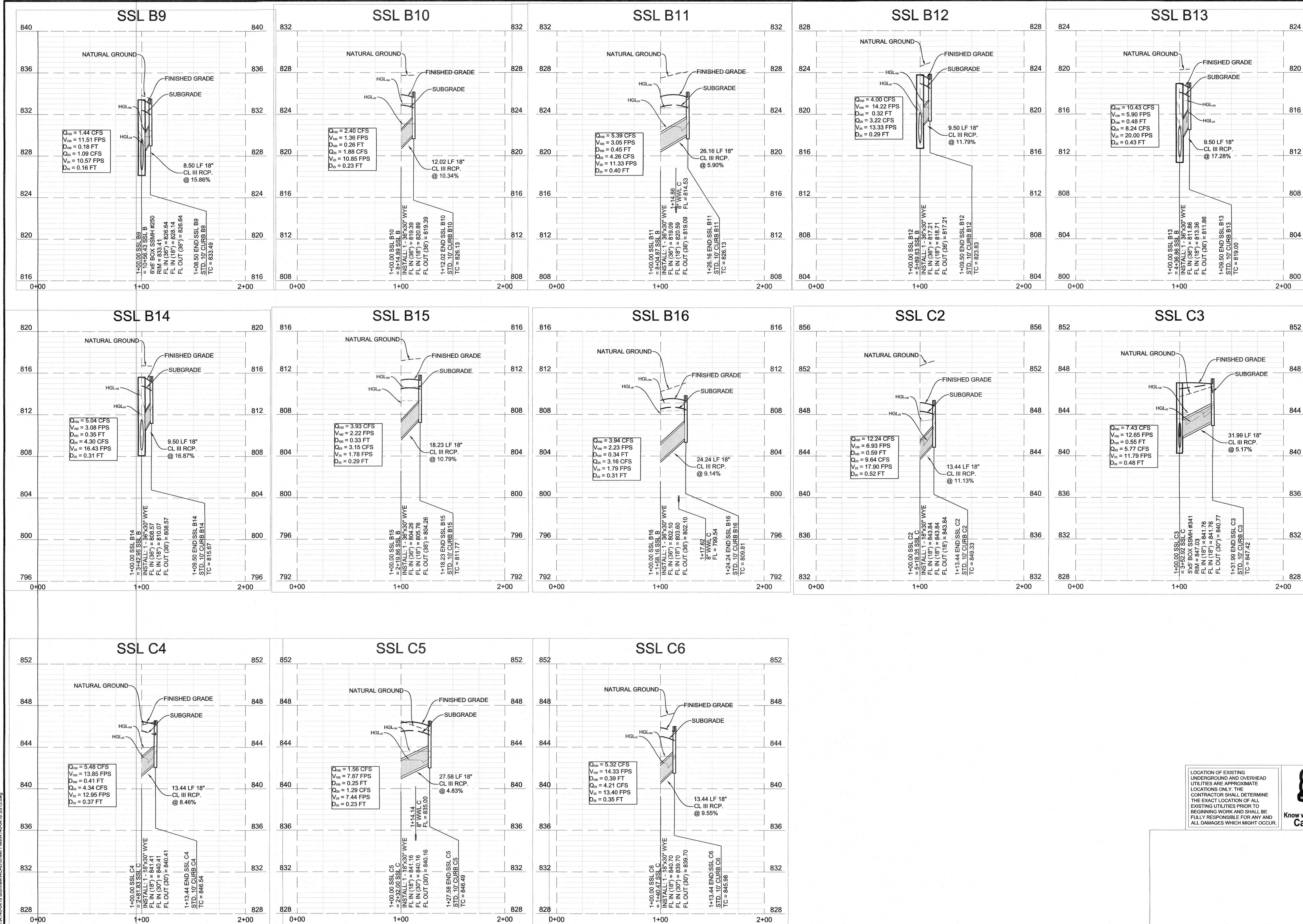
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

SS12

SHEET NO. 64 OF 93 SHEETS



LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1
STORM SEWER LATERAL PROFILES
B9, B10, B11, B12, B13, B14, B15, B16, C2, C3, C4, C5, & C6

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS13.dwg

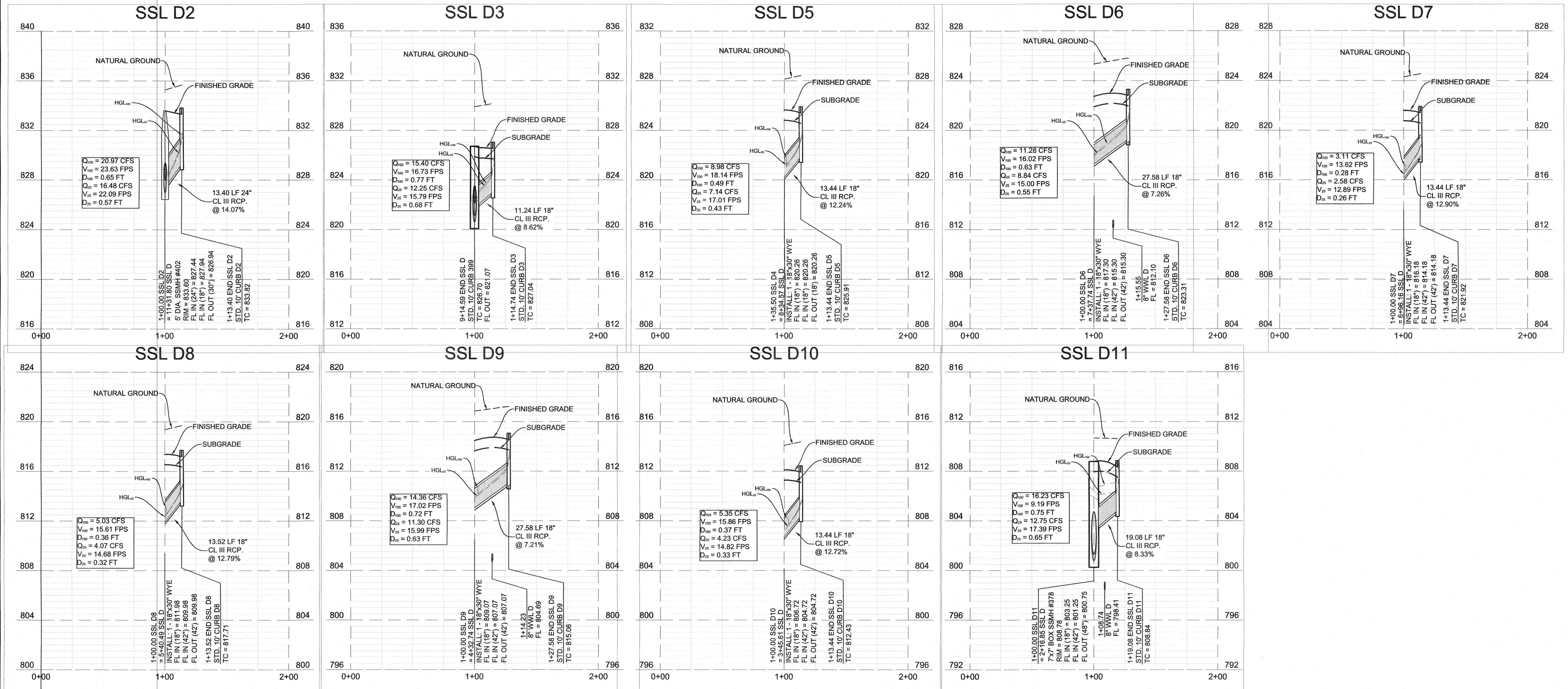
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:
A140-0418

SS13

SHEET NO.
65
OF 93 SHEETS



LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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BLUFFVIEW SUBDIVISION PHASE 1

STORM SEWER LATERAL PROFILES D2, D3, D5, D6, D7, D8, D9, D10, & D11

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 SS14.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
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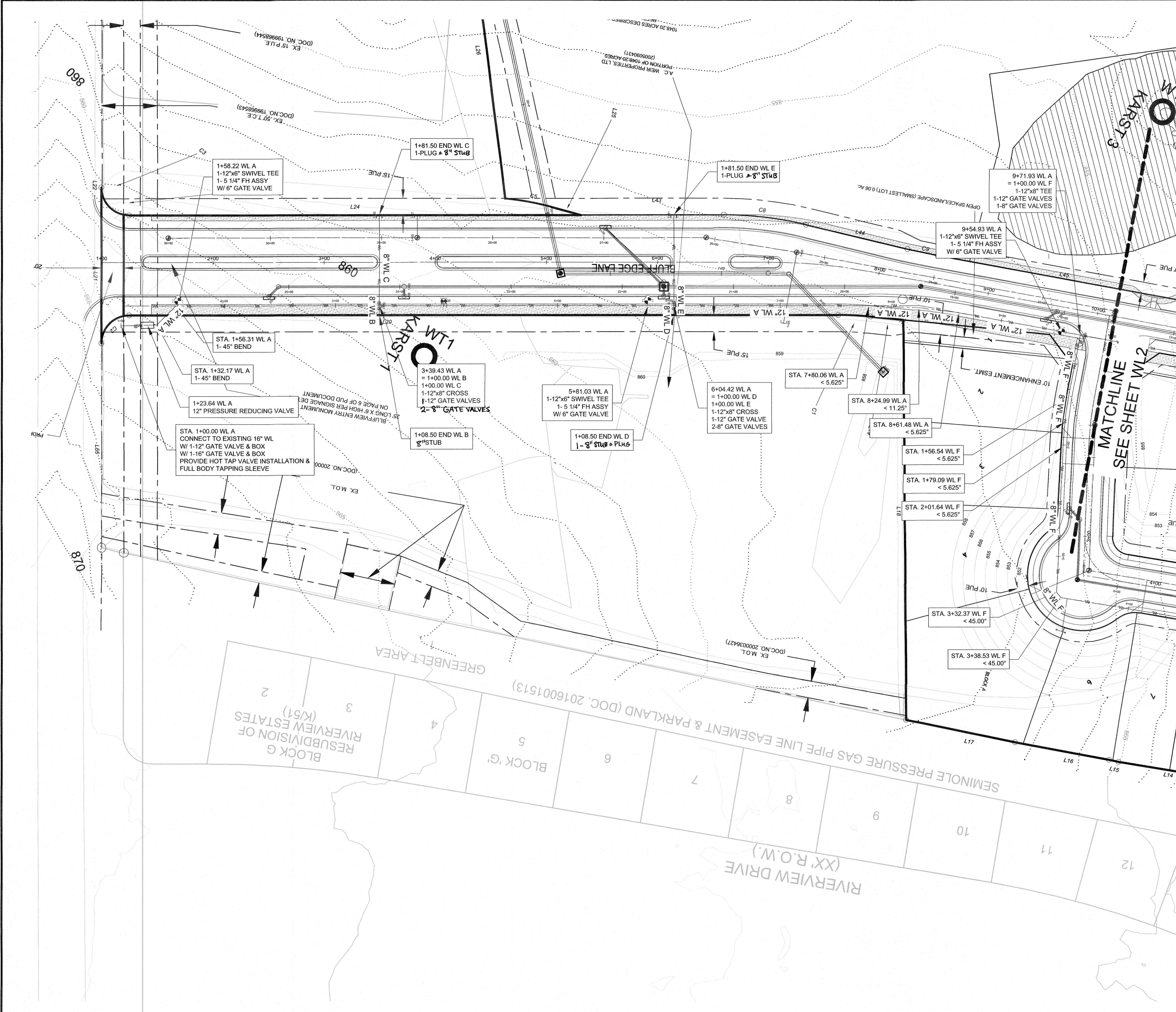
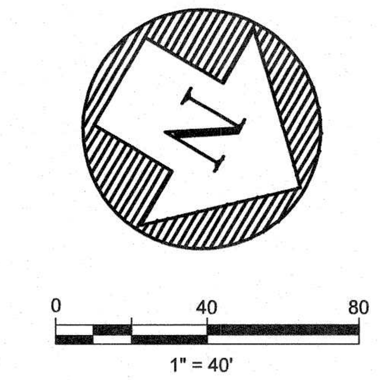
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

SS14





LEGEND:

	PROPOSED FIRE HYDRANT ASSEMBLY
	EXISTING FIRE HYDRANT
	PROPOSED GATE VALVE
	EXISTING GATE VALVE
	PROPOSED AIR RELEASE VALVE
	EXISTING AIR RELEASE VALVE
	PROPOSED PLUG OR CAP
	EXISTING PLUG OR CAP
	PROPOSED CLEAN OUT
	EXISTING CLEAN OUT
	PROPOSED WATER LINE
	PROPOSED WASTEWATER LINE AND MANHOLE
	PROPOSED STORM SEWER LINE AND MANHOLE
	EXISTING WATER LINE
	EXISTING WASTEWATER LINE AND MANHOLE
	EXISTING STORM SEWER LINE
	DOUBLE SANITARY SERVICE LEAD
	SINGLE SANITARY SERVICE LEAD
	DOUBLE WATER SERVICE LEAD
	SINGLE WATER SERVICE LEAD
	SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:

1. ALL WATER LINE PIPE FITTINGS SHALL HAVE RESTRAINED JOINTS.
2. ALL FITTINGS SHALL HAVE THRUST BLOCKING.
3. ALL WATER LINES TO BE AWWA C900, DR18 PVC CL-150 PSI.
4. ALL FIRE HYDRANT LEADS ARE DUCTILE IRON PER CITY OF GEORGETOWN DETAIL W-10.
5. ALL GATE VALVES TO BE INSTALLED PER COA DETAIL 511-AW-01.
6. ALL WATER SERVICES TO BE INSTALLED PER CITY OF GEORGETOWN DETAIL W-04 (SINGLE) AND W-05 (DOUBLE)
7. CONTRACTOR SHALL NOT EXCEED 1° BENDS OR DEFLECTIONS IN WATER LINE PIPE WITHOUT USE OF AN APPROVED FITTING.
8. LA-507.5.7 CITY OF GEORGETOWN FIRE HYDRANT COLOR CODE SYSTEM. PRIVATE FIRE HYDRANT MAINTENANCE SHALL BE IN ACCORDANCE WITH NFPA 291.
   A. ALL PRIVATE HYDRANT BARRELS WILL BE PAINTED RED WITH THE BONNET PAINTED USING THE HYDRANT FLOW STANDARD IN PARAGRAPH C OF THIS SECTION TO INDICATE FLOW. IT WILL BE THE CUSTOMER'S RESPONSIBILITY TO TEST AND MAINTAIN THEIR PRIVATE FIRE HYDRANT(S).
   B. ALL PRIVATE FIRE HYDRANTS SHOULD BE INSPECTED, MAINTAINED, AND FLOW TESTED ANNUALLY, AND COLOR CODED TO INDICATE THE EXPECTED FIRE FLOW FROM THE HYDRANT DURING NORMAL OPERATION. SUCH COLOR APPLIED TO THE FIRE HYDRANT BY PAINTING THE BONNET THE APPROPRIATE COLOR FOR THE EXPECTED FLOW CONDITION.
   C. HYDRANT FLOW CODING STANDARDS. PUBLIC HYDRANTS BARRELS WILL BE PAINTED SILVER, THE HYDRANTS WILL BE FLOW TESTED, AND THE BONNET PAINTED USING THE HYDRANT FLOW STANDARD IN AS FOLLOWS: AT 20 PSI RESIDUAL.

FLOW	COLOR
GREATER THAN 1500 GPM	BLUE
1000- 1500 GPM	GREEN
500-999 GPM	ORANGE
LESS THAN 500 GPM	RED
NOT WORKING	BLACK OR BAGGED

   D. AT THE CONCLUSION OF CONSTRUCTION FIRE HYDRANTS SHALL BE FLOW TESTED AND COLOR CODED IN ACCORDANCE WITH CITY'S STANDARDS, AND RESULTS SHALL BE EMAILED TO THE FIRE DEPARTMENT. IFC- LA-507.5.7 FIRE HYDRANT SYSTEMS.

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

BLUFFVIEW SUBDIVISION
PHASE 1

WATER LINE PLAN VIEW

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME:

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
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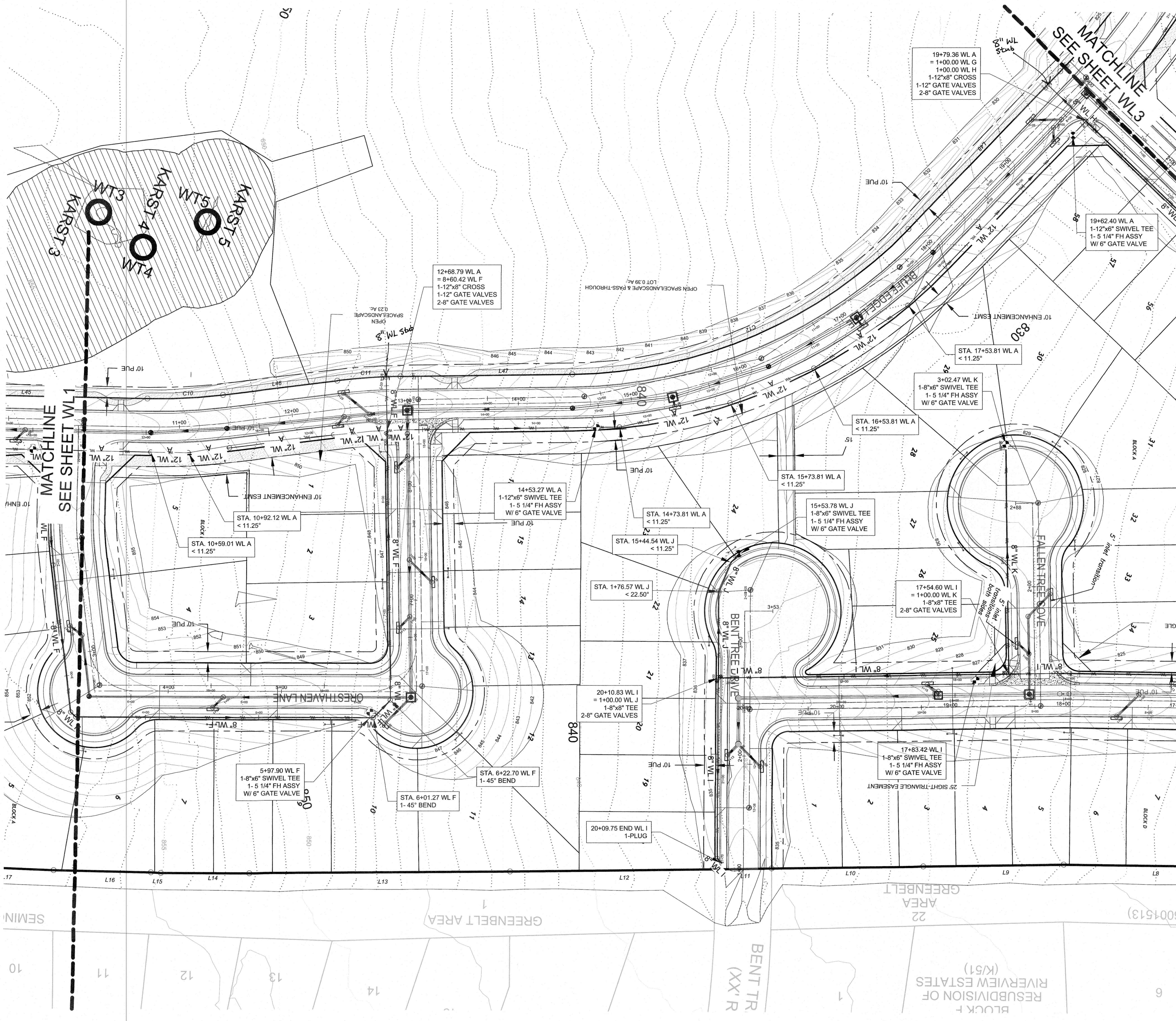
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:
A140-0418

WL1

SHEET NO.
67
OF 93 SHEETS

Date/Time: Fri, 19 Jan 2024 - 1:23am User Name: jdecuoch
Path/Name: G:\A140-0418 Bluffview\ACAD\Sheet Files\A140-0418 WL1.dwg



LEGEND:

PROPOSED FIRE HYDRANT ASSEMBLY
EXISTING FIRE HYDRANT
PROPOSED GATE VALVE
EXISTING GATE VALVE
PROPOSED AIR RELEASE VALVE
EXISTING AIR RELEASE VALVE
PROPOSED PLUG OR CAP
EXISTING PLUG OR CAP
PROPOSED CLEAN OUT
EXISTING CLEAN OUT
PROPOSED WATER LINE
PROPOSED WASTEWATER LINE AND MANHOLE
PROPOSED STORM SEWER LINE AND MANHOLE
EXISTING WATER LINE
EXISTING WASTEWATER LINE AND MANHOLE
EXISTING STORM SEWER LINE
DOUBLE SANITARY SERVICE LEAD
SINGLE SANITARY SERVICE LEAD
DOUBLE WATER SERVICE LEAD
SINGLE WATER SERVICE LEAD
SINGLE WASTEWATER PRESSURE SERVICE LEAD

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FLOW	COLOR
GREATER THAN 1500 GPM	BLUE
1000- 1500 GPM	GREEN
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LESS THAN 500 GPM	RED
NOT WORKING	BLACK OR BAGGED

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BLUFFVIEW SUBDIVISION
PHASE 1

WATER LINE PLAN VIEW

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME:

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

WL2

SHEET NO. 68 OF 93 SHEETS

Date/Time : Fri, 19 Jan 2024 - 1:23am
User Name : jsiecuch
PathName : G:\A140-0418 Bluffview\CAD\Sheet Files\A140-0418 WL2.dwg

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
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BLUFFVIEW SUBDIVISION PHASE 1

WATER LINE PLAN VIEW

REVISIONS			
NO.	DESCRIPTION	BY	DATE

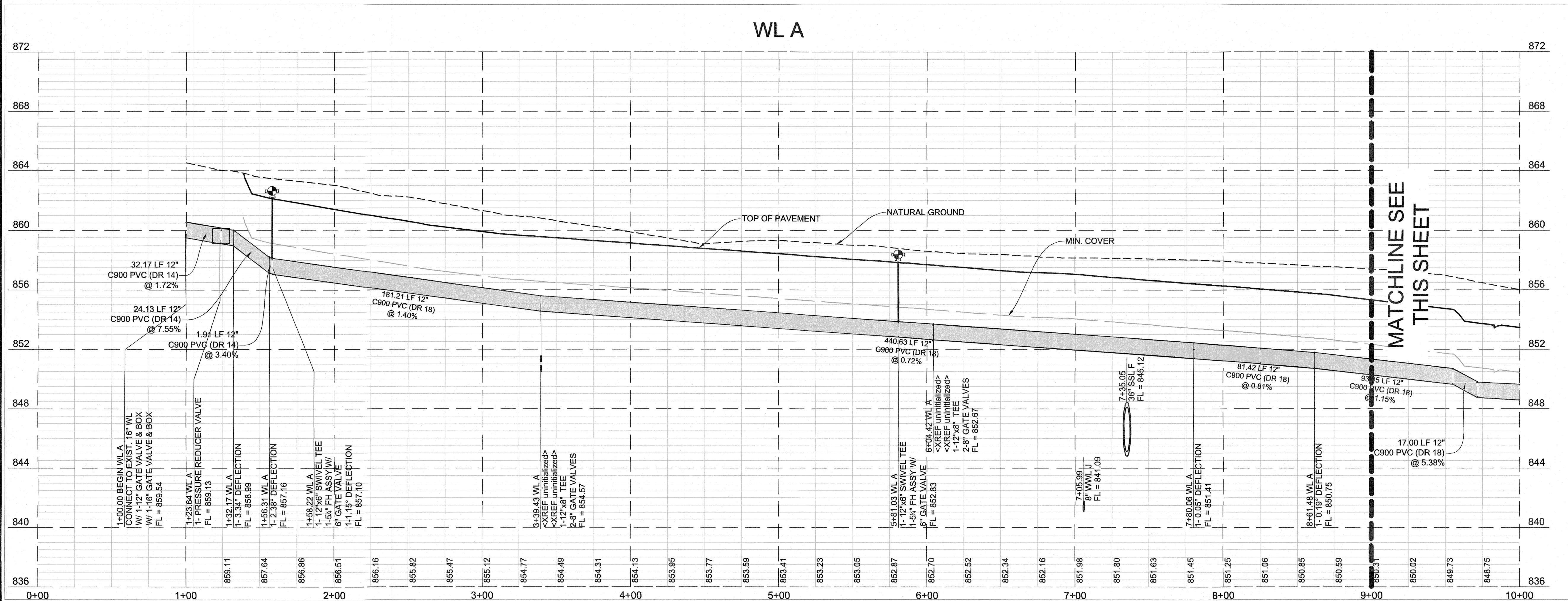
DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WL3.dwg

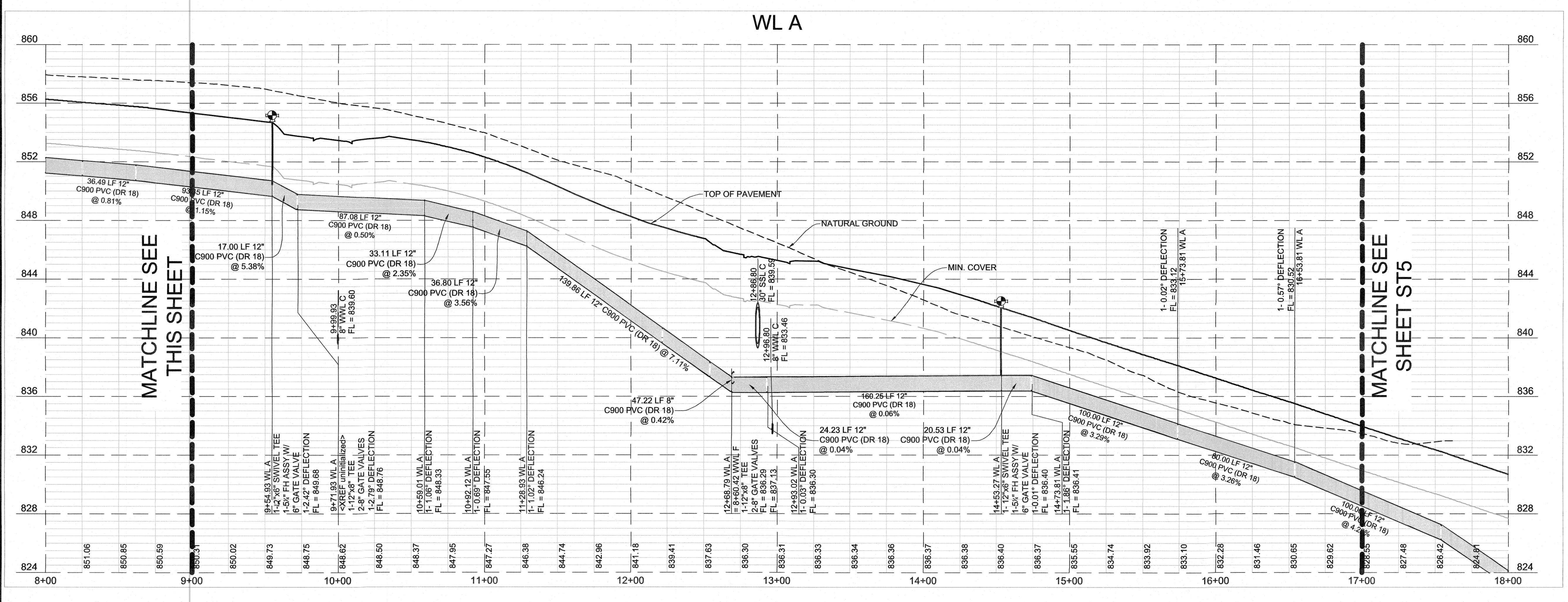
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

WL3





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BLUFFVIEW SUBDIVISION PHASE 1

WATER LINE 'A' PROFILE STA. 1+00.00 TO 17+00.00

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY: -
DRAWN BY: -
CHECKED BY: -
DRAWING NAME: A140-0418 WL4.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A140-0418

WL4

SHEET NO. 70 OF 93 SHEETS

Date/Time : Fri, 19 Jan 2024 - 1:24am
User Name : jolecuch
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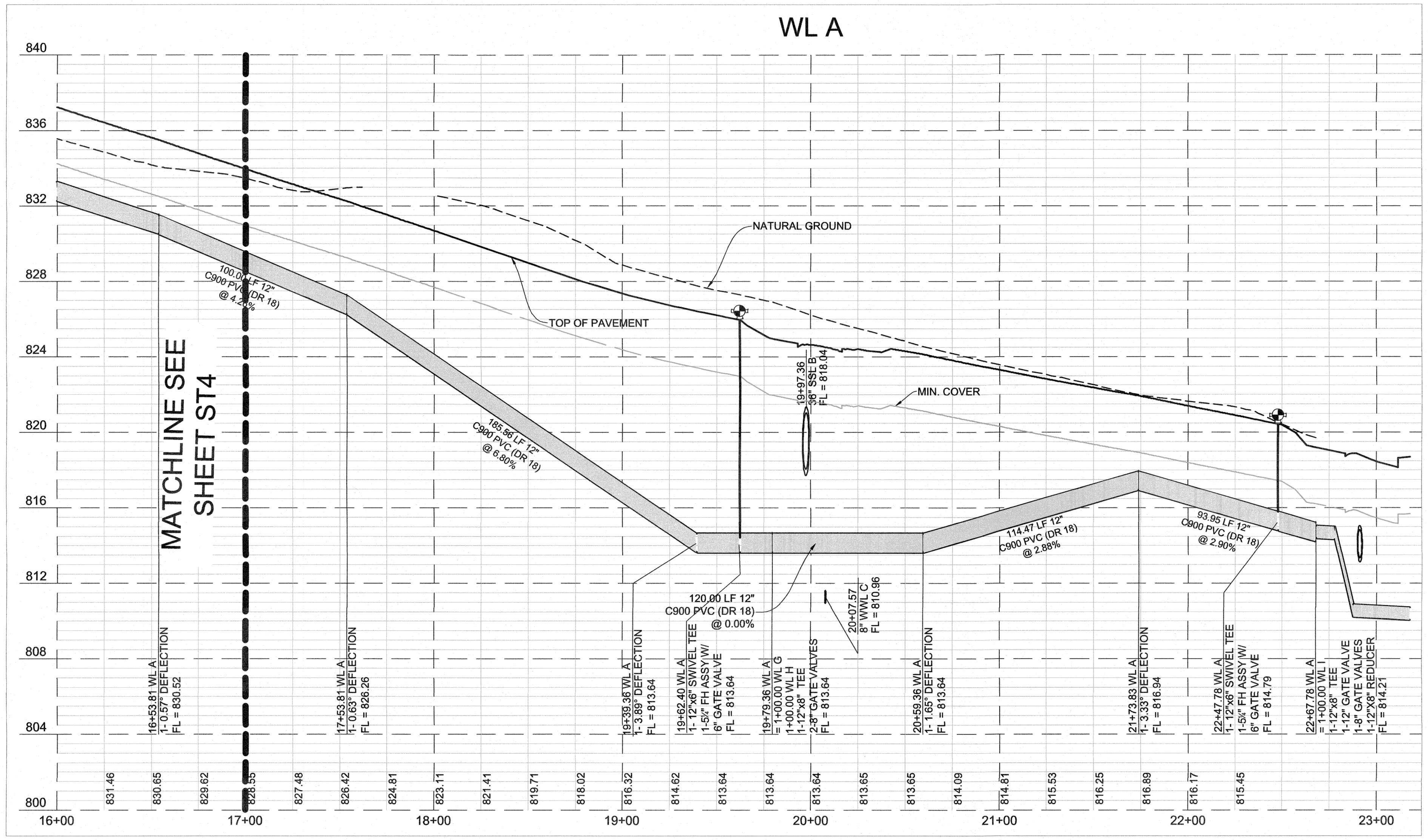

NOTES:

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2. ALL FITTINGS SHALL HAVE THRUST BLOCKING.
3. ALL WATER LINES TO BE AWWA C900, DR18 PVC CL-150 PSI.
4. ALL FIRE HYDRANT LEADS ARE DUCTILE IRON PER CITY OF GEORGETOWN DETAIL W-10.
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FLOW	COLOR
GREATER THAN 1500 GPM	BLUE
1000- 1500 GPM	GREEN
500-999 GPM	ORANGE
LESS THAN 500 GPM	RED
NOT WORKING	BLACK OR BAGGED

   D. AT THE CONCLUSION OF CONSTRUCTION FIRE HYDRANTS SHALL BE FLOW TESTED AND COLOR CODED IN ACCORDANCE WITH CITY'S STANDARDS, AND RESULTS SHALL BE EMAILED TO THE FIRE DEPARTMENT. IFC- LA-507.5.7 FIRE HYDRANT SYSTEMS.

BLUFFVIEW SUBDIVISION
PHASE 1

WATER LINE 'A' PROFILE
STA. 17+00.00 TO END

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WL5.dwg

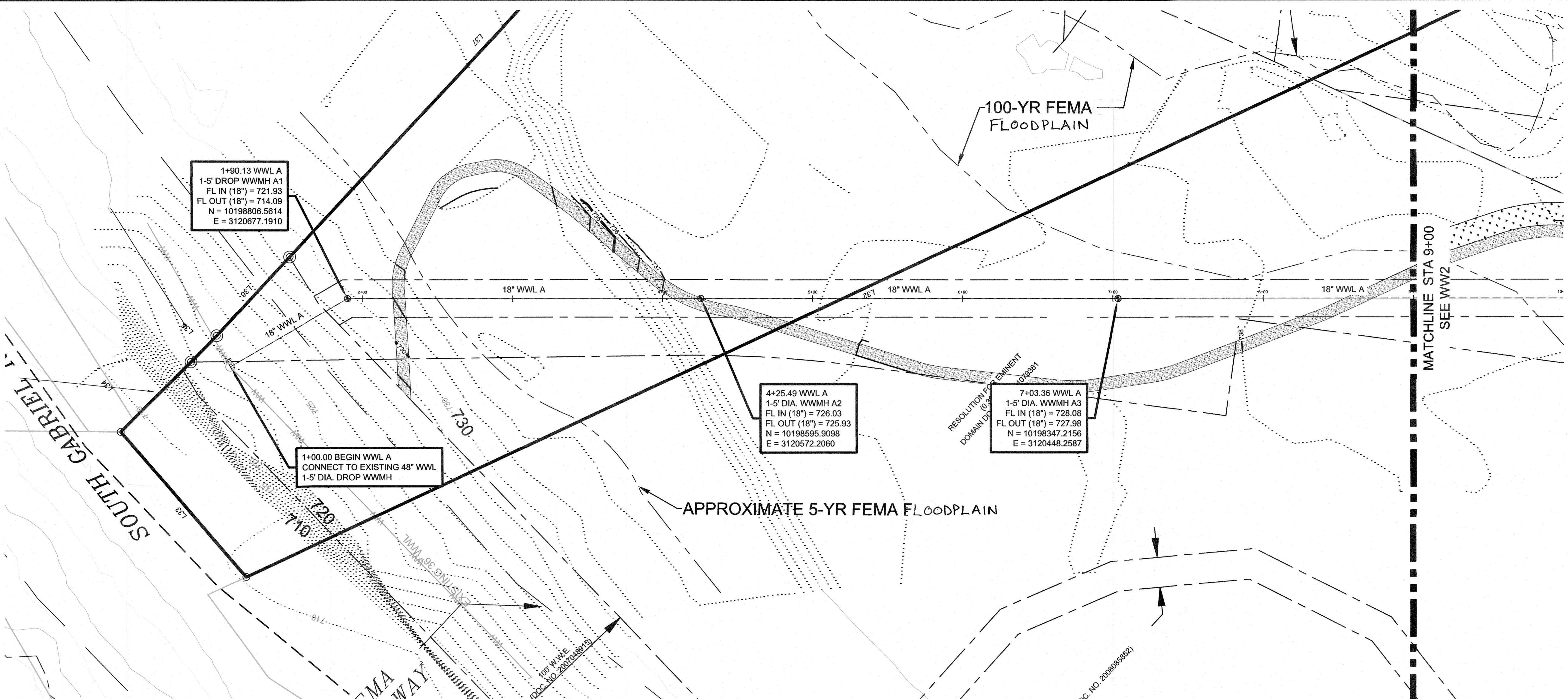
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

WL5

SHEET NO. 71 OF 93 SHEETS



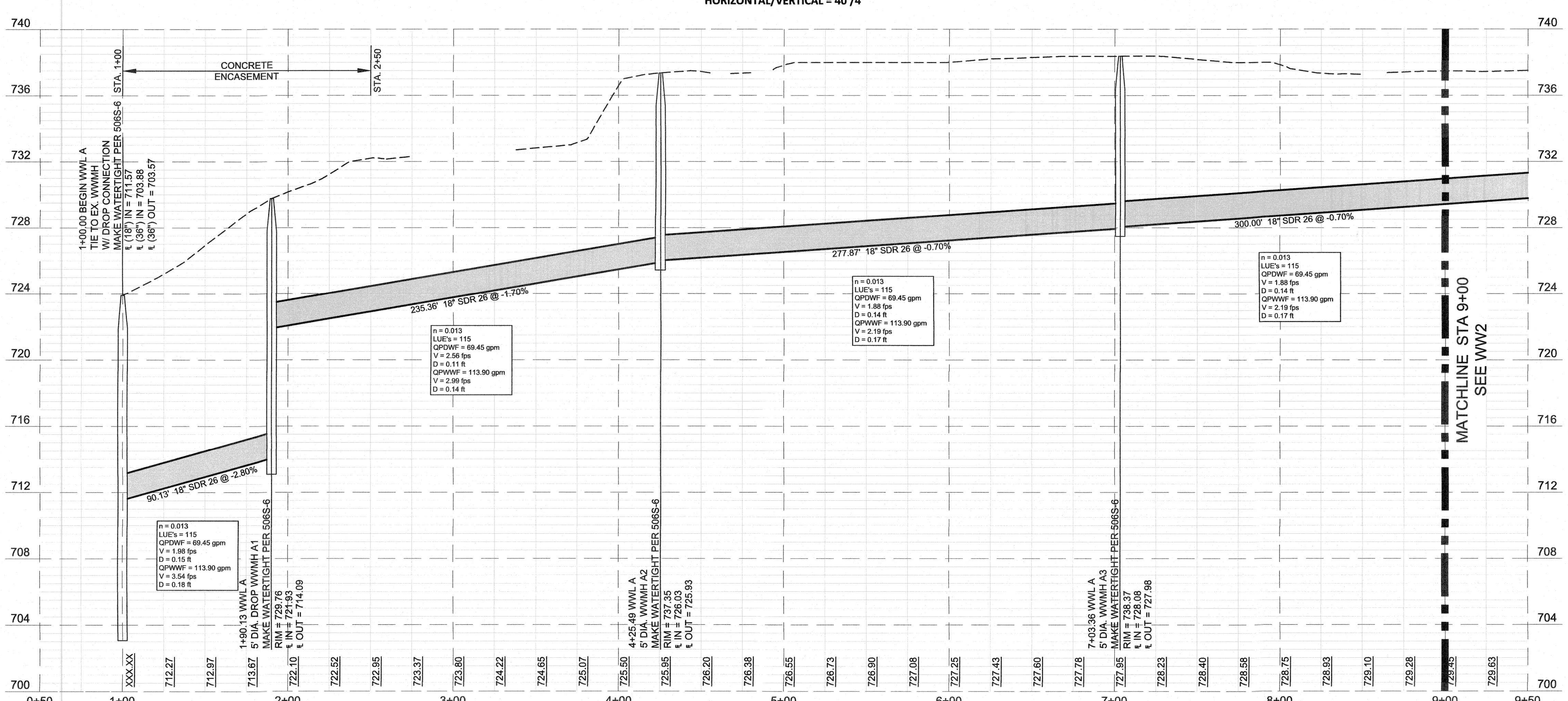
1" = 40'

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

WWL A

HORIZONTAL/VERTICAL = 40'/4'



NOTES:

1. ALL WASTEWATER LINES ARE PVC SDR 26.
2. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER CITY OF GEORGETOWN DETAIL WW04 OR WW05 (DROP MANHOLE), WW02 OR WW03 (STANDARD MANHOLE), AND TO CITY OF GEORGETOWN DETAILS WW06, WW07, WW07A, WW09, AND WW10.
3. ALL GRAVITY SANITARY SEWER LINES SHALL CONFORM TO ASTM D 3034, PVC, SDR 26 WITH ASTM 3212 JOINTS. GRAVITY SANITARY SEWER LINES CROSSING POTABLE WATER LINES SHALL CONFORM TO 30 TAC 217.53(d).
4. ALL MANHOLES OUTSIDE OF PUBLIC RIGHT OF WAY SHALL HAVE BOLTED AND GASKETED WATERTIGHT COVERS.
5. ALL STREETS SHALL BE CONSTRUCTED TO SUBGRADE PRIOR TO PLACEMENT OF WATER AND WASTEWATER LINES. FILL AREAS TO MEET CITY OF AUSTIN SPECIFICATION FOR BACKFILL AND COMPACTION.
6. ALL WASTEWATER SERVICES TO BE INSTALLED PER CITY OF GEORGETOWN DETAIL WW13. ALL SERVICES MUST BE PLACED IN RIGHT OF WAY AT PROPERTY LINE. NO SERVICES ARE TO BE LOCATED WITHIN SIDEWALKS OR CURB RAMPS.
7. CONTRACTOR TO VERIFY ALL WASTEWATER LINE GRADE AND ALIGNMENTS AT NO GREATER THAN 50' INTERVALS.
8. SEE PROFILE SHEETS FOR DEEP SERVICE CONNECTIONS AND LOCATIONS.
9. THE USE OF BRICK MANHOLES AND BRICKS TO ADJUST MANHOLES IS PROHIBITED.
10. PIPE STATIONING AND LINEAR FOOTAGE IS FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. PIPE SLOPE IS CALCULATED FROM INSIDE FACE OF MANHOLE TO INSIDE FACE OF MANHOLE.

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

BLUFFVIEW SUBDIVISION PHASE 1

WASTEWATER LINE 'A' PLAN AND PROFILE STA. 1+00 TO 9+00

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 1/24/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW1.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-24-2024

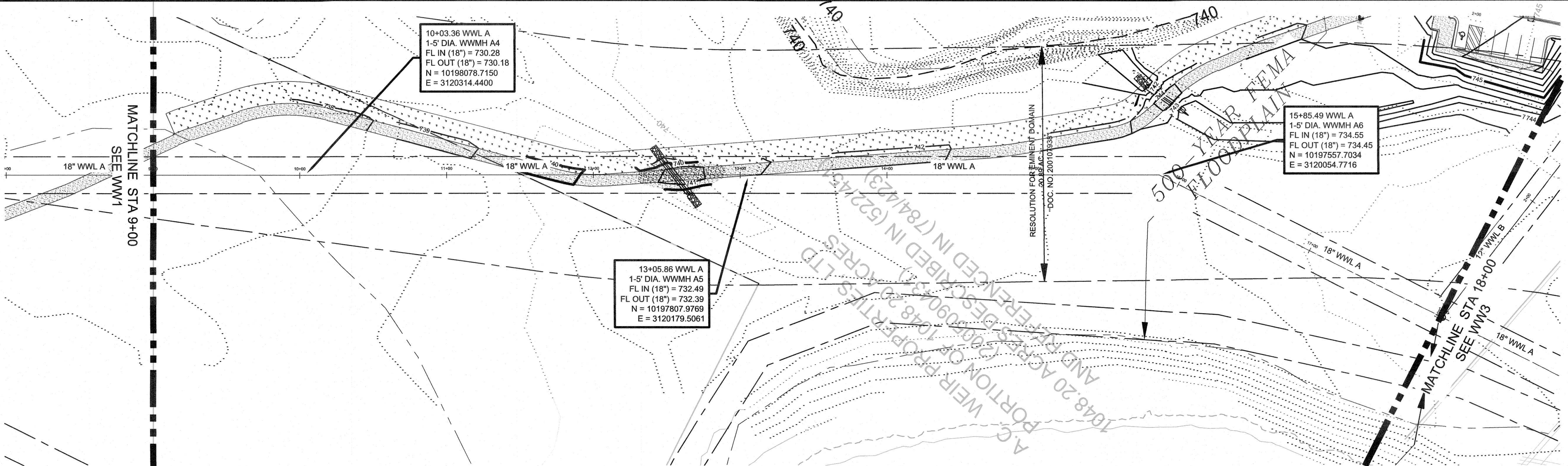
LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

WW1

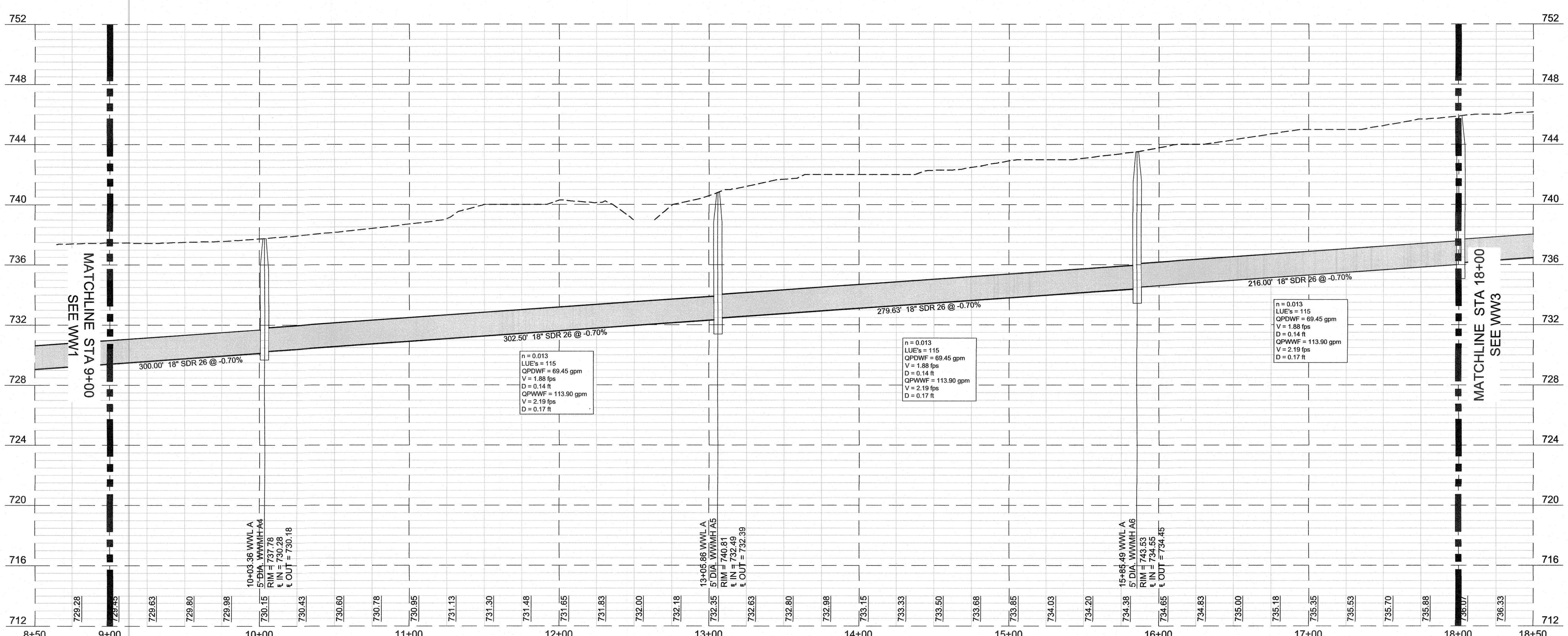
SHEET NO. 72

OF 93 SHEETS



WWL A

HORIZONTAL/VERTICAL = 40'/4'



LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:

1. ALL WASTEWATER LINES ARE PVC SDR 26.
2. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER CITY OF GEORGETOWN DETAIL WW04 OR WW05 (DROP MANHOLE), WW02 OR WW03 (STANDARD MANHOLE), AND TO CITY OF GEORGETOWN DETAILS WW06, WW07, WW07A, WW09, AND WW10.
3. ALL GRAVITY SANITARY SEWER LINES SHALL CONFORM TO ASTM D 3034, PVC, SDR 26 WITH ASTM 3212 JOINTS. GRAVITY SANITARY SEWER LINES CROSSING POTABLE WATER LINES SHALL CONFORM TO 30 TAC 217.53(d).
4. ALL MANHOLES OUTSIDE OF PUBLIC RIGHT OF WAY SHALL HAVE BOLTED AND GASKETED WATERTIGHT COVERS.
5. ALL STREETS SHALL BE CONSTRUCTED TO SUBGRADE PRIOR TO PLACEMENT OF WATER AND WASTEWATER LINES. FILL AREAS TO MEET CITY OF AUSTIN SPECIFICATION FOR BACKFILL AND COMPACTION.
6. ALL WASTEWATER SERVICES TO BE INSTALLED PER CITY OF GEORGETOWN DETAIL WW13. ALL SERVICES MUST BE PLACED IN RIGHT OF WAY AT PROPERTY LINE. NO SERVICES ARE TO BE LOCATED WITHIN SIDEWALKS OR CURB RAMPS.
7. CONTRACTOR TO VERIFY ALL WASTEWATER LINE GRADE AND ALIGNMENTS AT NO GREATER THAN 50' INTERVALS.
8. SEE PROFILE SHEETS FOR DEEP SERVICE CONNECTIONS AND LOCATIONS.
9. THE USE OF BRICK MANHOLES AND BRICKS TO ADJUST MANHOLES IS PROHIBITED.
10. PIPE STATIONING AND LINEAR FOOTAGE IS FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. PIPE SLOPE IS CALCULATED FROM INSIDE FACE OF MANHOLE TO INSIDE FACE OF MANHOLE.

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

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
PROFESSIONAL ENGINEER
1-17-2024

BLUFFVIEW SUBDIVISION
PHASE 1

WASTEWATER LINE 'A' PLAN AND PROFILE
STA. 9+00 TO 18+00

NO.	DESCRIPTION	BY	DATE
REVISIONS			

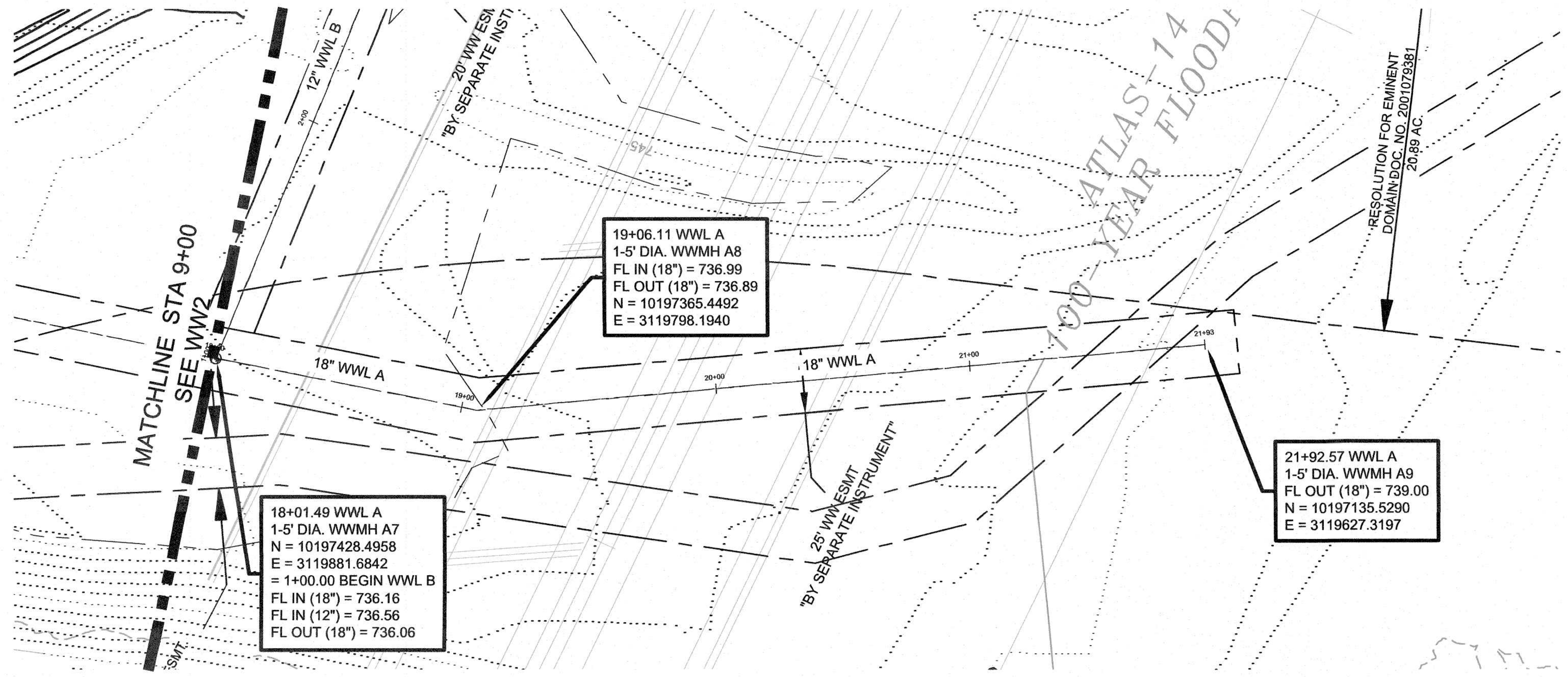
DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW2.dwg

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:
A140-0418

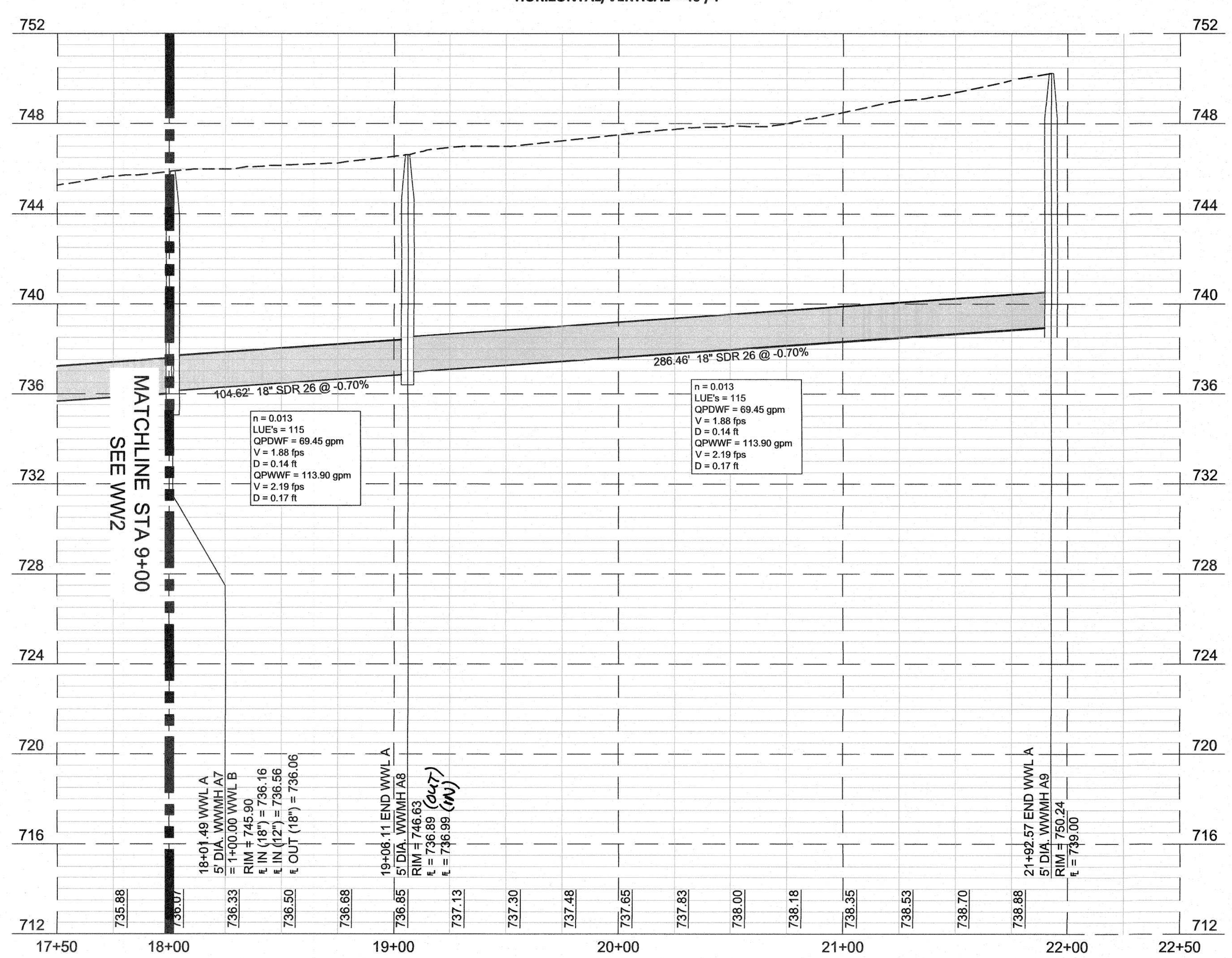
WW2

SHEET NO.
73
OF 93 SHEETS



WWL A

HORIZONTAL/VERTICAL = 40'/4'



0 40 80
1" = 40'

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:

1. ALL WASTEWATER LINES ARE PVC SDR 26.
2. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER CITY OF GEORGETOWN DETAIL WW04 OR WW05 (DROP MANHOLE), WW02 OR WW03 (STANDARD MANHOLE), AND TO CITY OF GEORGETOWN DETAILS WW06, WW07, WW07A, WW09, AND WW10.
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5. ALL STREETS SHALL BE CONSTRUCTED TO SUBGRADE PRIOR TO PLACEMENT OF WATER AND WASTEWATER LINES. FILL AREAS TO MEET CITY OF AUSTIN SPECIFICATION FOR BACKFILL AND COMPACTION.
6. ALL WASTEWATER SERVICES TO BE INSTALLED PER CITY OF GEORGETOWN DETAIL WW13. ALL SERVICES MUST BE PLACED IN RIGHT OF WAY AT PROPERTY LINE. NO SERVICES ARE TO BE LOCATED WITHIN SIDEWALKS OR CURB RAMPS.
7. CONTRACTOR TO VERIFY ALL WASTEWATER LINE GRADE AND ALIGNMENTS AT NO GREATER THAN 50' INTERVALS.
8. SEE PROFILE SHEETS FOR DEEP SERVICE CONNECTIONS AND LOCATIONS.
9. THE USE OF BRICK MANHOLES AND BRICKS TO ADJUST MANHOLES IS PROHIBITED.
10. PIPE STATIONING AND LINEAR FOOTAGE IS FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. PIPE SLOPE IS CALCULATED FROM INSIDE FACE OF MANHOLE TO INSIDE FACE OF MANHOLE.

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

BLUFFVIEW SUBDIVISION
PHASE 1

WASTEWATER LINE A PLAN AND PROFILE
STA. 18+00 TO END

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW3.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER:
A140-0418

WW3

SHEET NO.
74
OF 93 SHEETS

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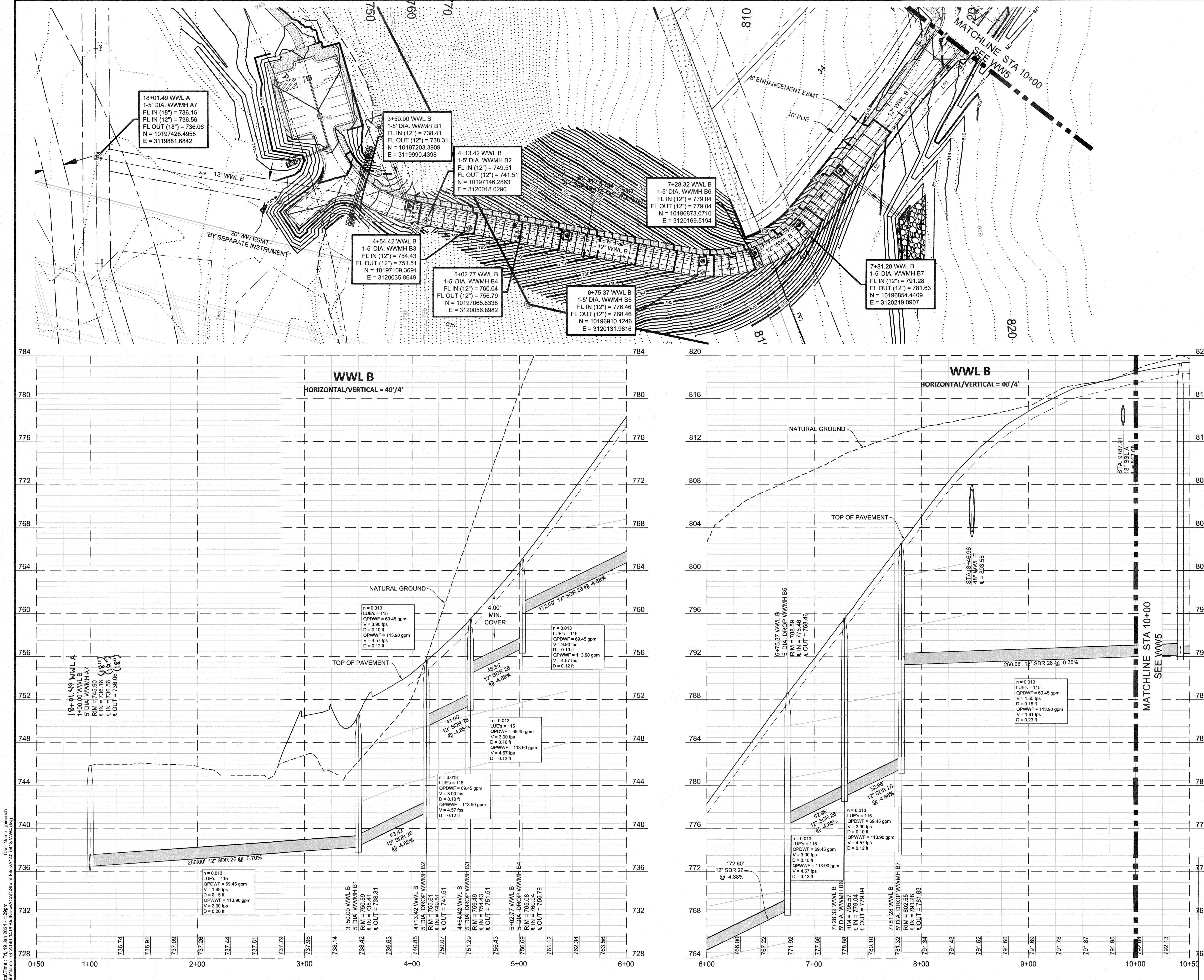

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:

1. ALL WASTEWATER LINES ARE PVC SDR 26.
2. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER CITY OF GEORGETOWN DETAIL WW04 OR WW05 (DROP MANHOLE), WW02 OR WW03 (STANDARD MANHOLE), AND TO CITY OF GEORGETOWN DETAILS WW06, WW07, WW07A, WW09, AND WW10.
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BLUFFVIEW SUBDIVISION PHASE 1

WASTEWATER LINE 'B' PLAN AND PROFILE STA. 1+00 TO 9+00

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW4.dwg

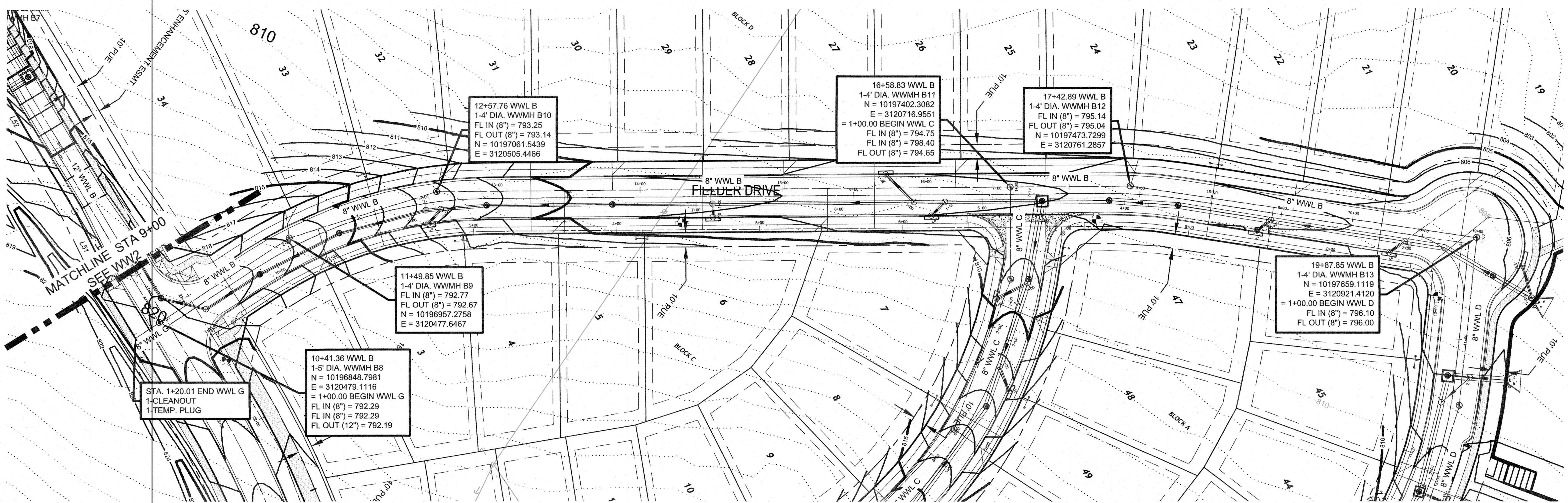
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A140-0418

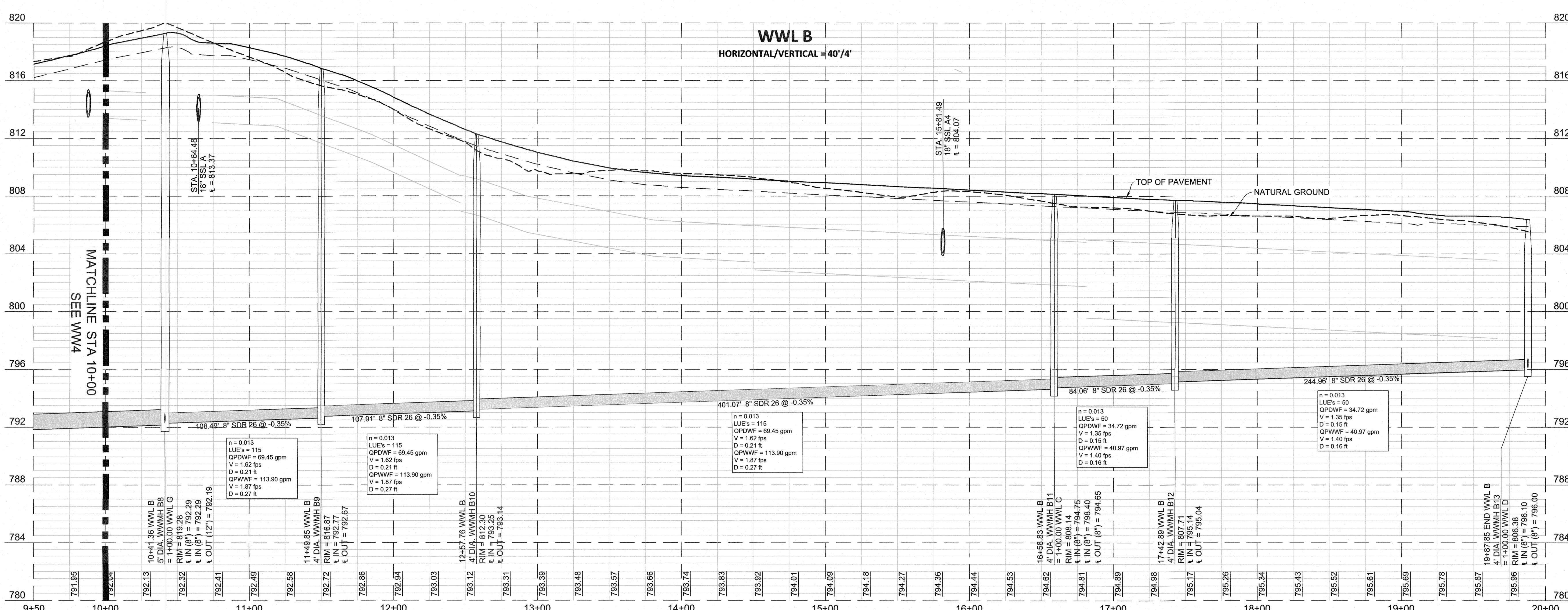
WW4

SHEET NO. 75 OF 93 SHEETS



LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD



NOTES:

1. ALL WASTEWATER LINES ARE PVC SDR 26.
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BLUFFVIEW SUBDIVISION
PHASE 1

WASTEWATER LINE 'B' PLAN AND PROFILE
STA. 10+00 TO END

NO.	REVISIONS DESCRIPTION	BY	DATE

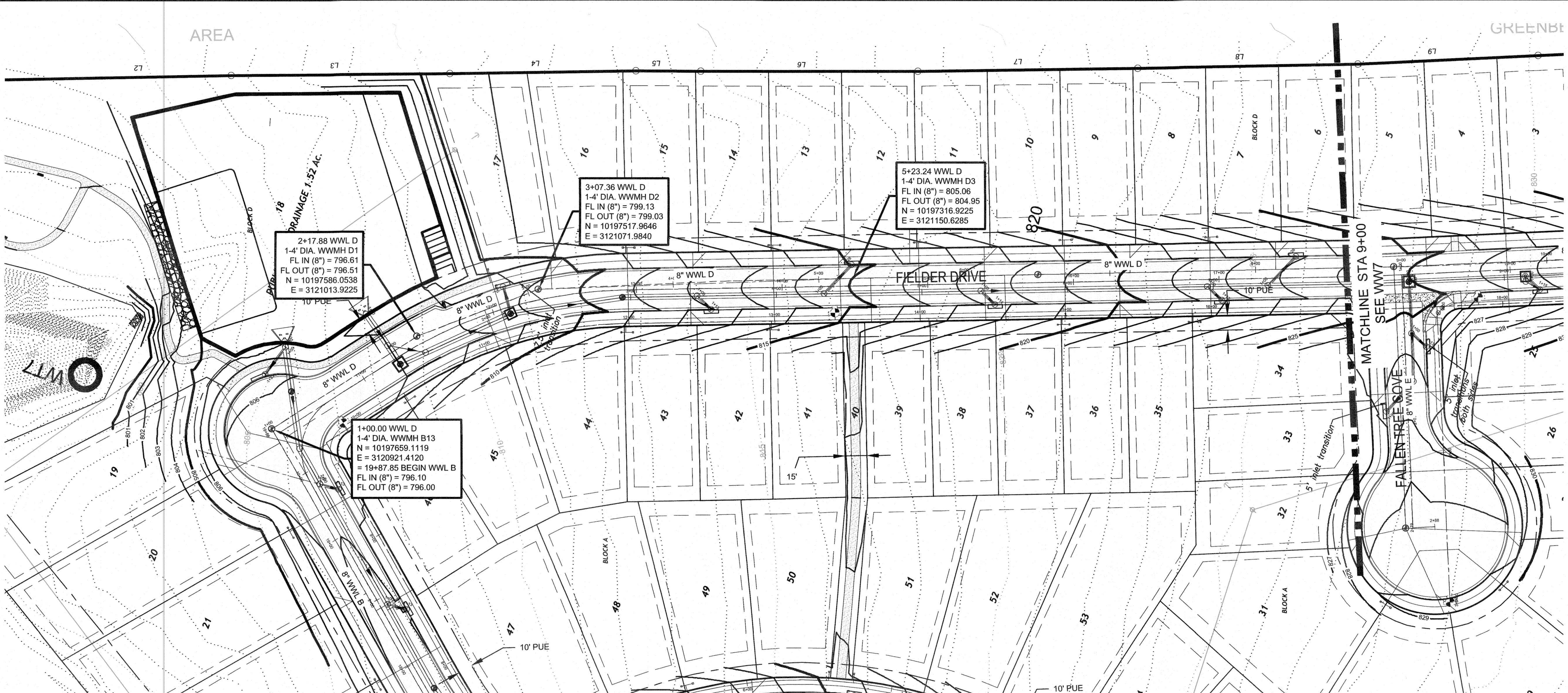
DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW5.dwg

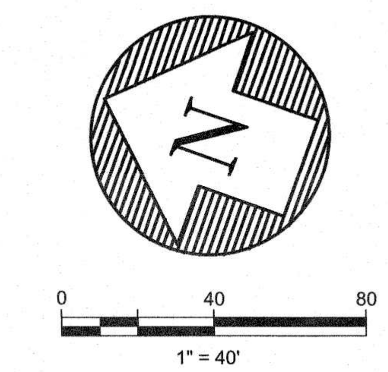
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:
A140-0418

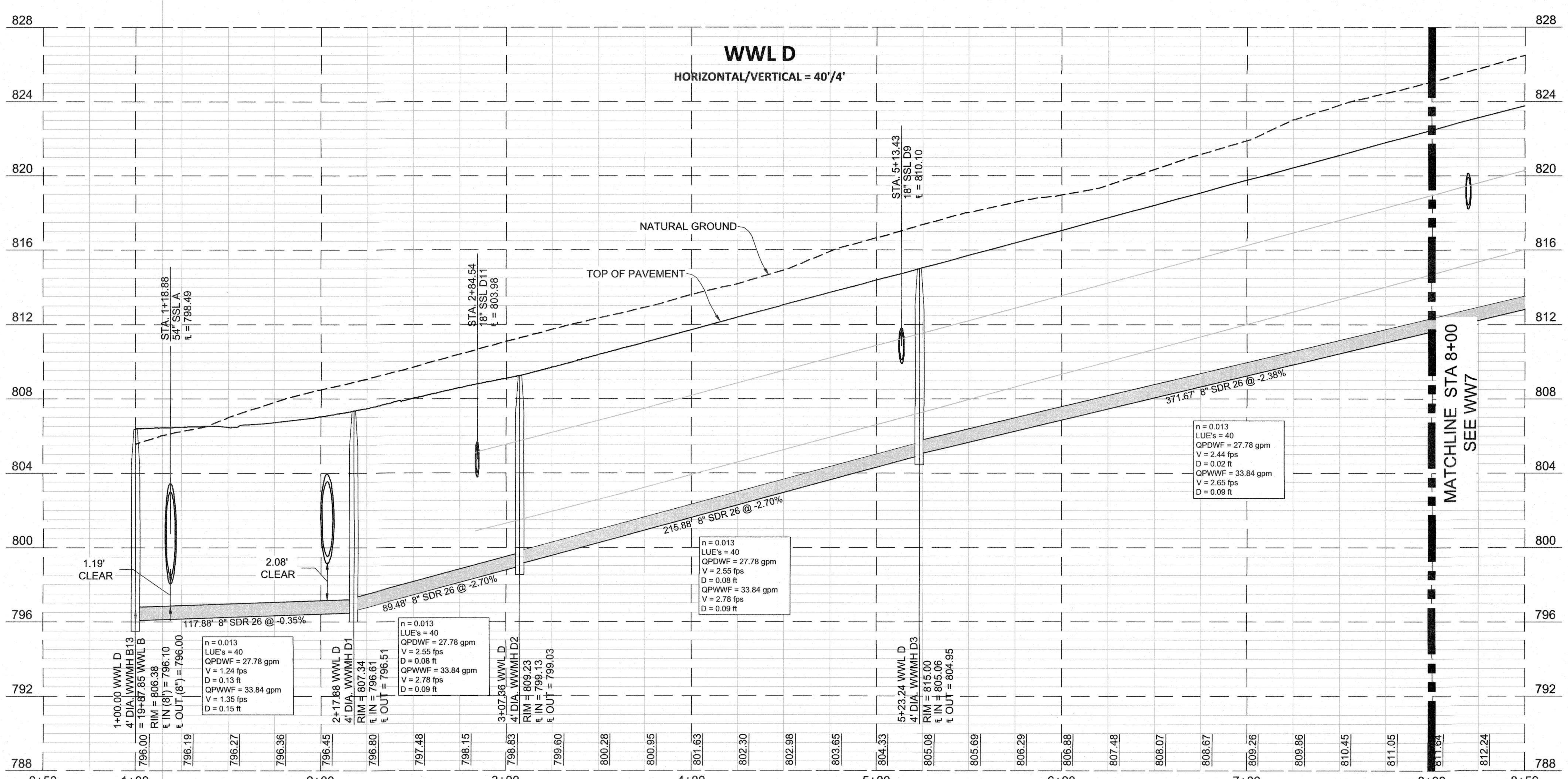
WW5





LEGEND:

PROPOSED FIRE HYDRANT ASSEMBLY
EXISTING FIRE HYDRANT
PROPOSED GATE VALVE
EXISTING GATE VALVE
PROPOSED AIR RELEASE VALVE
EXISTING AIR RELEASE VALVE
PROPOSED PLUG OR CAP
EXISTING PLUG OR CAP
PROPOSED CLEAN OUT
EXISTING CLEAN OUT
PROPOSED WATER LINE
PROPOSED WASTEWATER LINE AND MANHOLE
PROPOSED STORM SEWER LINE AND MANHOLE
EXISTING WATER LINE
EXISTING WASTEWATER LINE AND MANHOLE
EXISTING STORM SEWER LINE
DOUBLE SANITARY SERVICE LEAD
SINGLE SANITARY SERVICE LEAD
DOUBLE WATER SERVICE LEAD
SINGLE WATER SERVICE LEAD
SINGLE WASTEWATER PRESSURE SERVICE LEAD



NOTES:

1. ALL WASTEWATER LINES ARE PVC SDR 26.
2. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER CITY OF GEORGETOWN DETAIL WW04 OR WW05 (DROP MANHOLE), WW02 OR WW03 (STANDARD MANHOLE), AND TO CITY OF GEORGETOWN DETAILS WW06, WW07, WW07A, WW09, AND WW10.
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811 Know what's below. Call before you dig.

BLUFFVIEW SUBDIVISION PHASE 1

WASTEWATER LINE 'D' PLAN AND PROFILE STA. 1+00 TO 8+00

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW6.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

WW6

SHEET NO. 77 OF 93 SHEETS

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Date/Time: Fri, 19 Jan 2024 - 1:30pm
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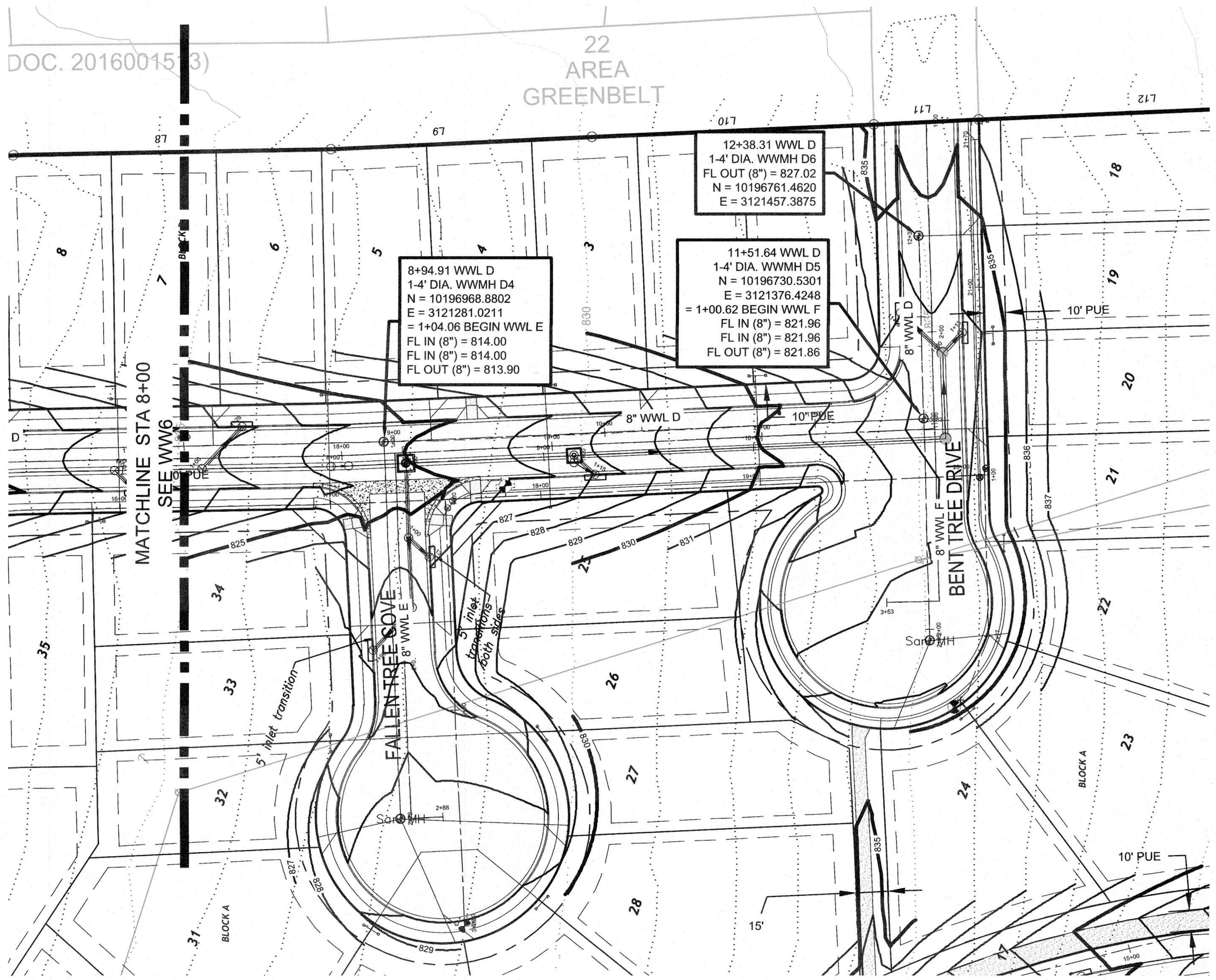

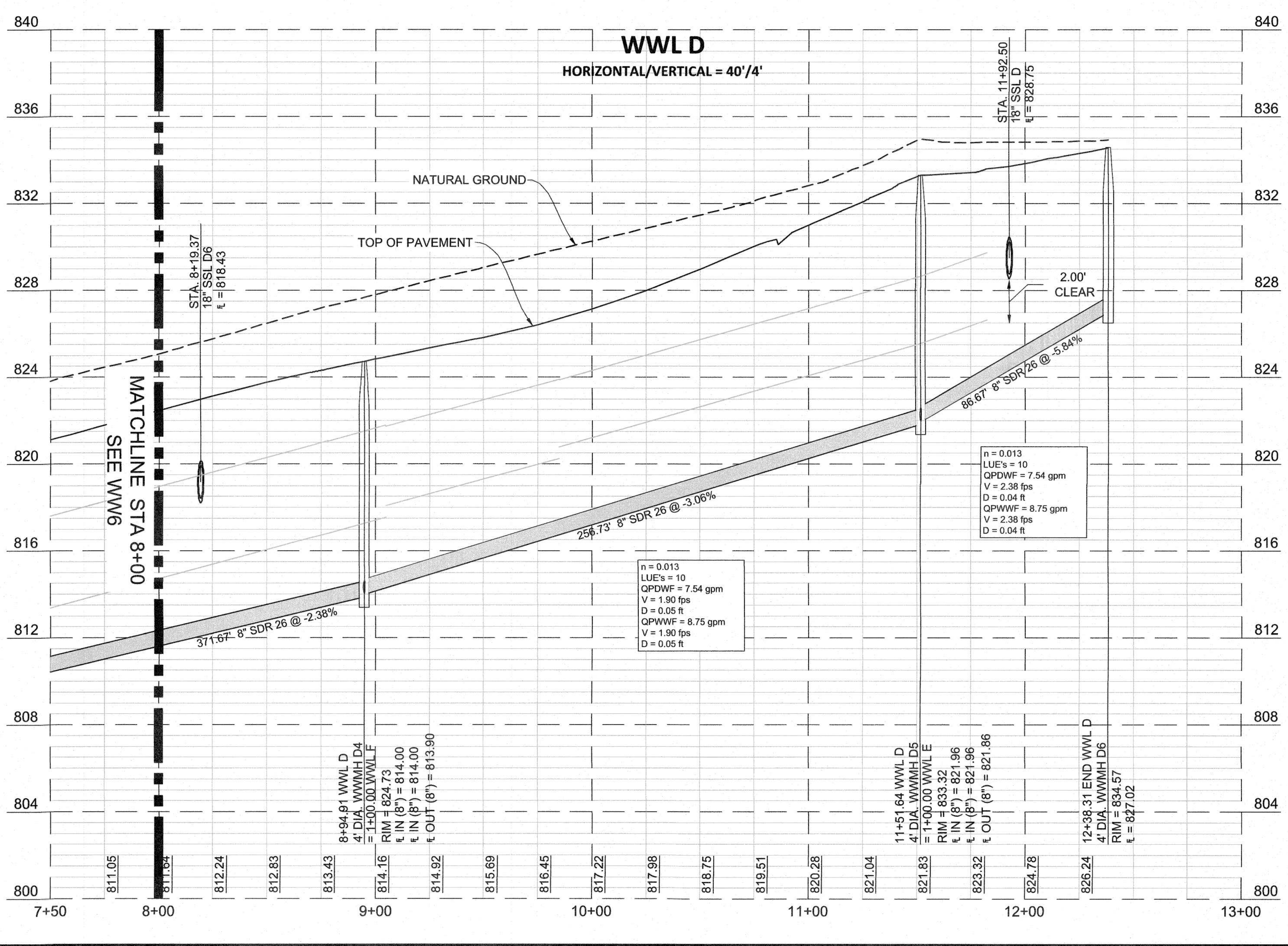

0 40 80
1" = 40'

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:

1. ALL WASTEWATER LINES ARE PVC SDR 26.
2. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER CITY OF GEORGETOWN DETAIL WW04 OR WW05 (DROP MANHOLE), WW02 OR WW03 (STANDARD MANHOLE), AND TO CITY OF GEORGETOWN DETAILS WW06, WW07, WW07A, WW09, AND WW10.
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811
Know what's below. Call before you dig.

BLUFFVIEW SUBDIVISION PHASE 1

WASTEWATER LINE 'D' PLAN AND PROFILE STA. 8+00 TO END

NO.	REVISIONS DESCRIPTION	BY	DATE

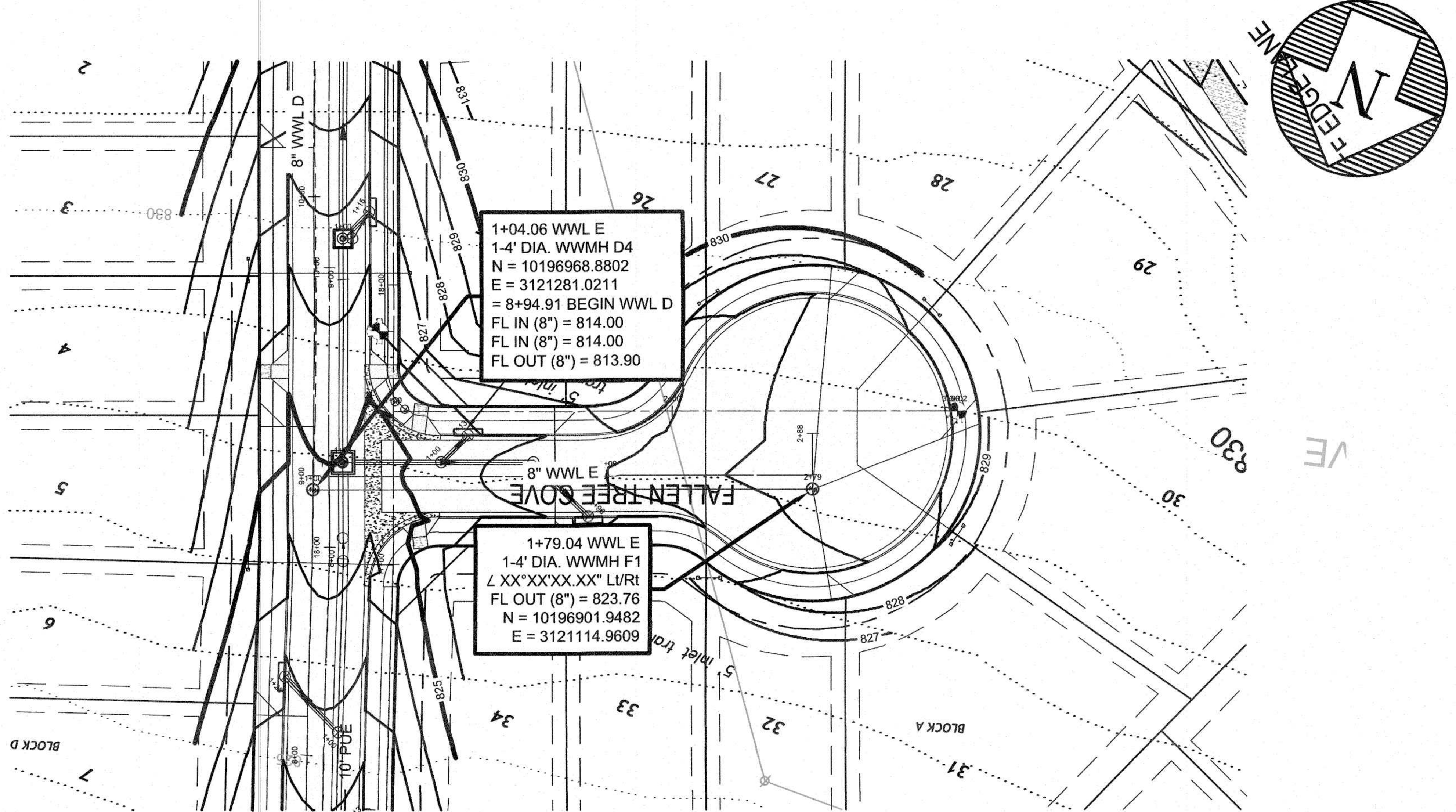
DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW7.dwg

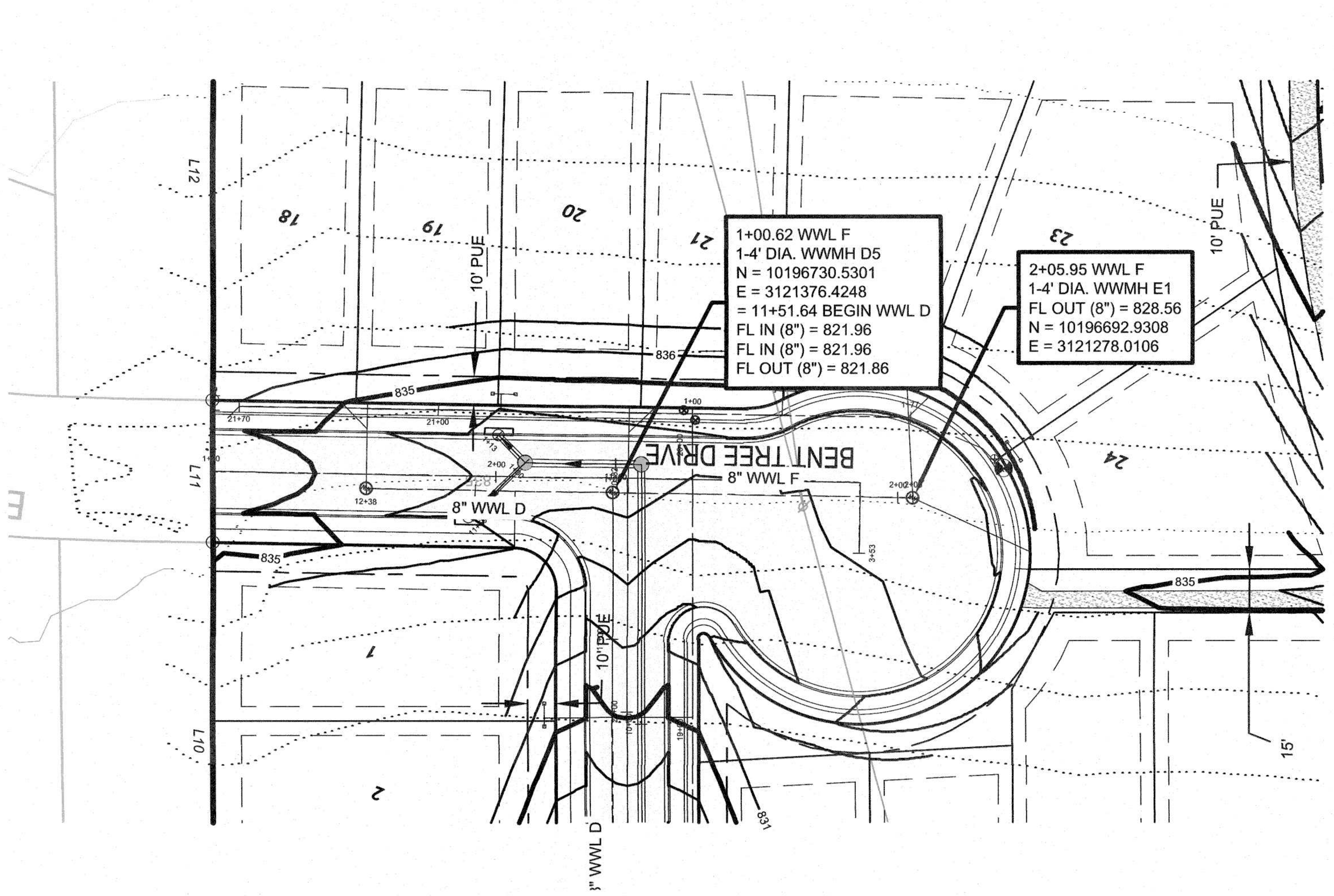
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A140-0418

WW7





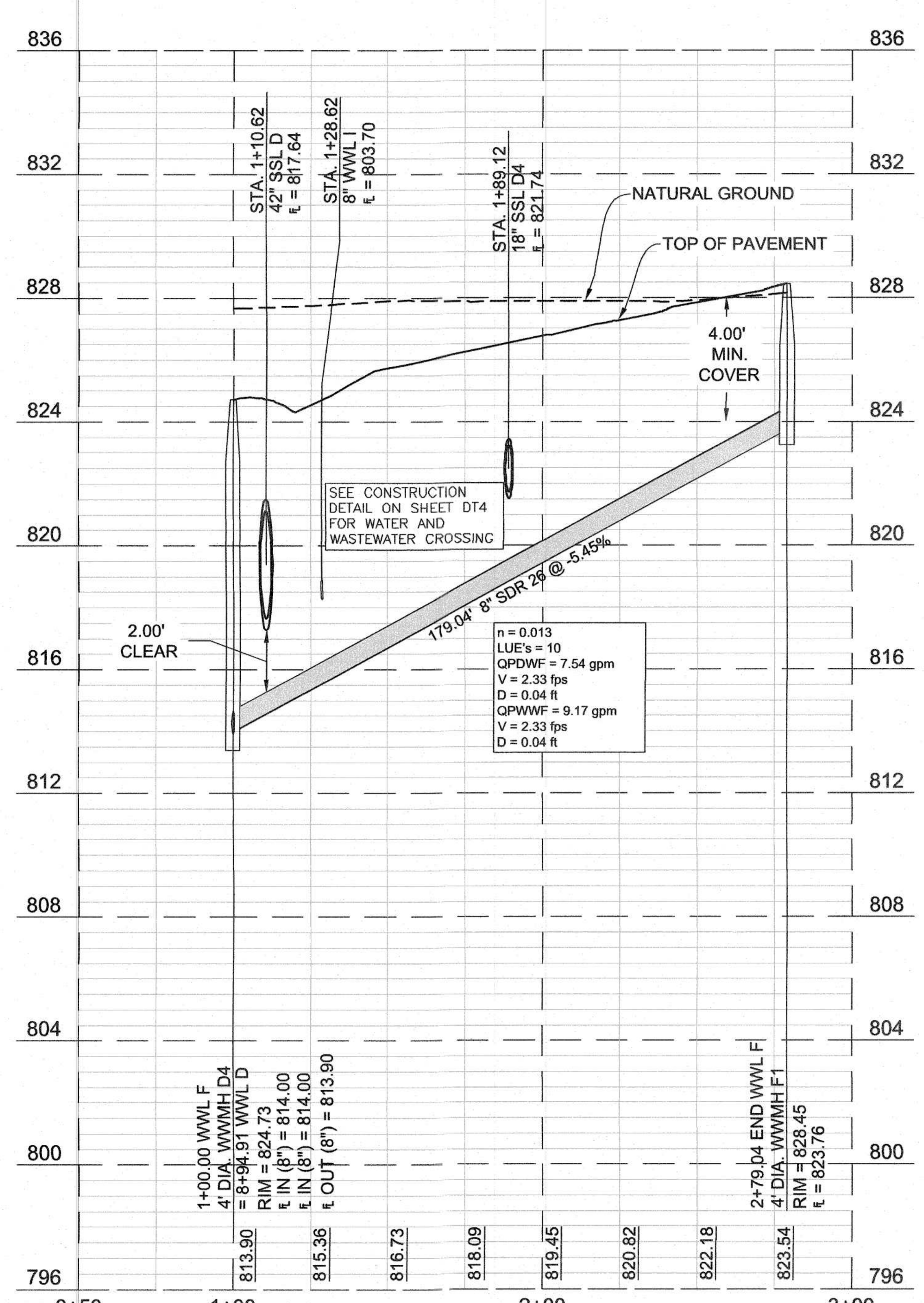
0 40 80
1" = 40'

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

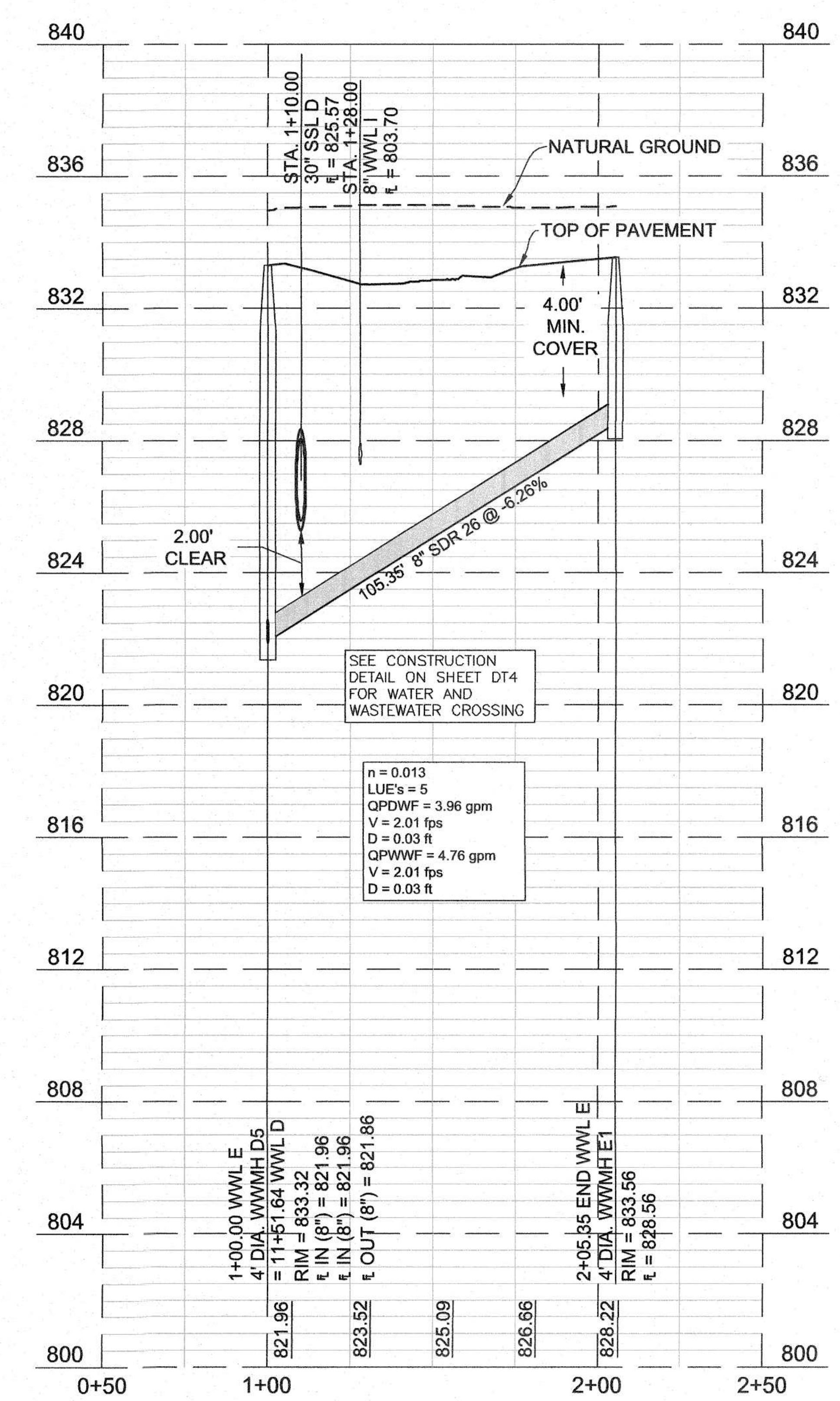
WWL F

HORIZONTAL/VERTICAL = 40'/4'



WWL E

HORIZONTAL/VERTICAL = 40'/4'



NOTES:
1. ALL WASTEWATER LINES ARE PVC SDR 26.
2. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER CITY OF GEORGETOWN DETAIL WW04 OR WW05 (DROP MANHOLE), WW02 OR WW03 (STANDARD MANHOLE), AND TO CITY OF GEORGETOWN DETAILS WW06, WW07, WW07A, WW09, AND WW10.
3. ALL GRAVITY SANITARY SEWER LINES SHALL CONFORM TO ASTM D 3034, PVC, SDR 26 WITH ASTM 3212 JOINTS. GRAVITY SANITARY SEWER LINES CROSSING POTABLE WATER LINES SHALL CONFORM TO 30 TAC 217.53(d).
4. ALL MANHOLES OUTSIDE OF PUBLIC RIGHT OF WAY SHALL HAVE BOLTED AND GASKETED WATERTIGHT COVERS.
5. ALL STREETS SHALL BE CONSTRUCTED TO SUBGRADE PRIOR TO PLACEMENT OF WATER AND WASTEWATER LINES. FILL AREAS TO MEET CITY OF AUSTIN SPECIFICATION FOR BACKFILL AND COMPACTION.
6. ALL WASTEWATER SERVICES TO BE INSTALLED PER CITY OF GEORGETOWN DETAIL WW13. ALL SERVICES MUST BE PLACED IN RIGHT OF WAY AT PROPERTY LINE. NO SERVICES ARE TO BE LOCATED WITHIN SIDEWALKS OR CURB RAMPS.
7. CONTRACTOR TO VERIFY ALL WASTEWATER LINE GRADE AND ALIGNMENTS AT NO GREATER THAN 50' INTERVALS.
8. SEE PROFILE SHEETS FOR DEEP SERVICE CONNECTIONS AND LOCATIONS.
9. THE USE OF BRICK MANHOLES AND BRICKS TO ADJUST MANHOLES IS PROHIBITED.
10. PIPE STATIONING AND LINEAR FOOTAGE IS FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. PIPE SLOPE IS CALCULATED FROM INSIDE FACE OF MANHOLE TO INSIDE FACE OF MANHOLE.

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION PHASE 1

WASTEWATER LINES 'E' & 'F' PLAN AND PROFILE STA. 1+00 TO END

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW8.dwg

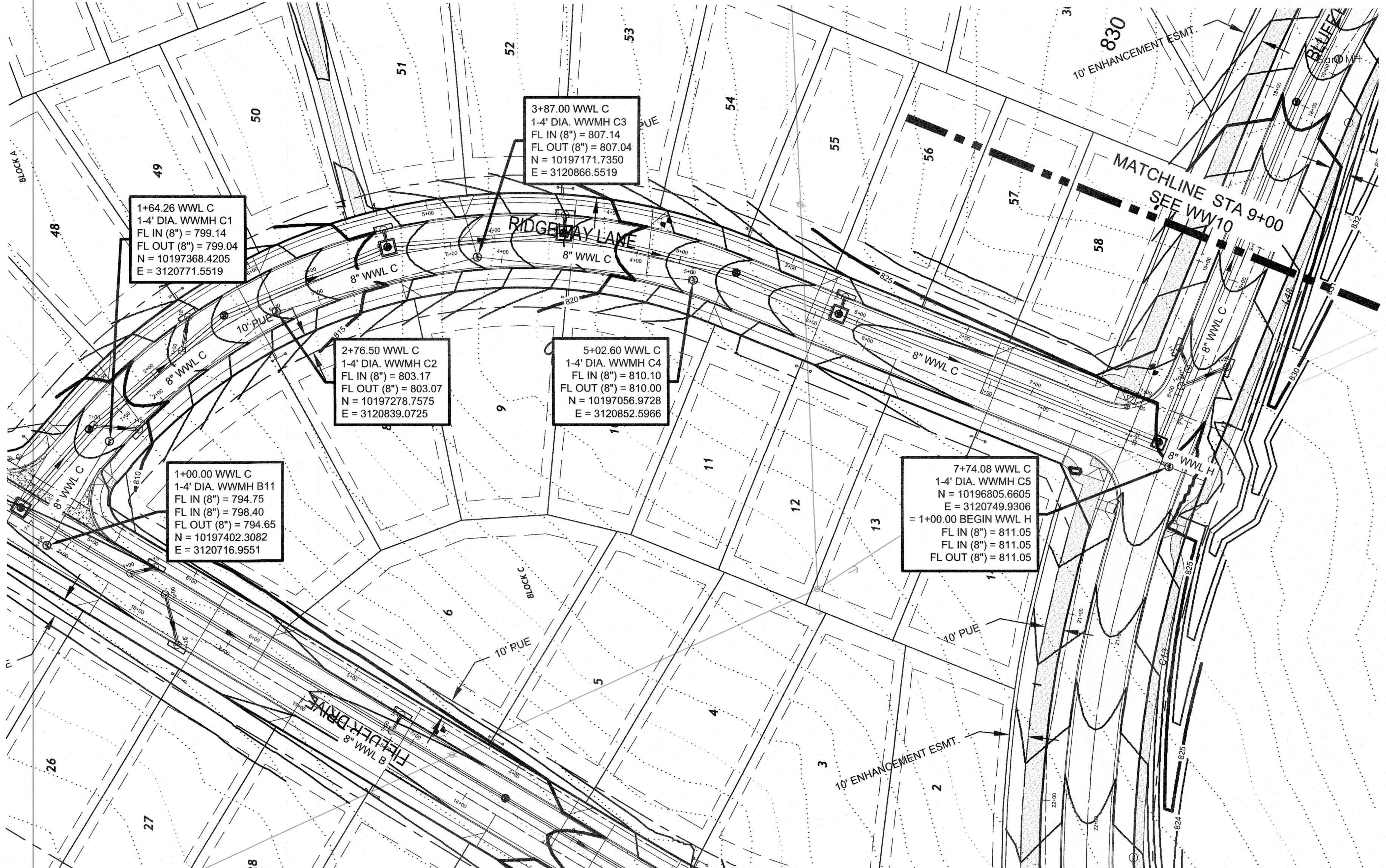
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A140-0418

WW8

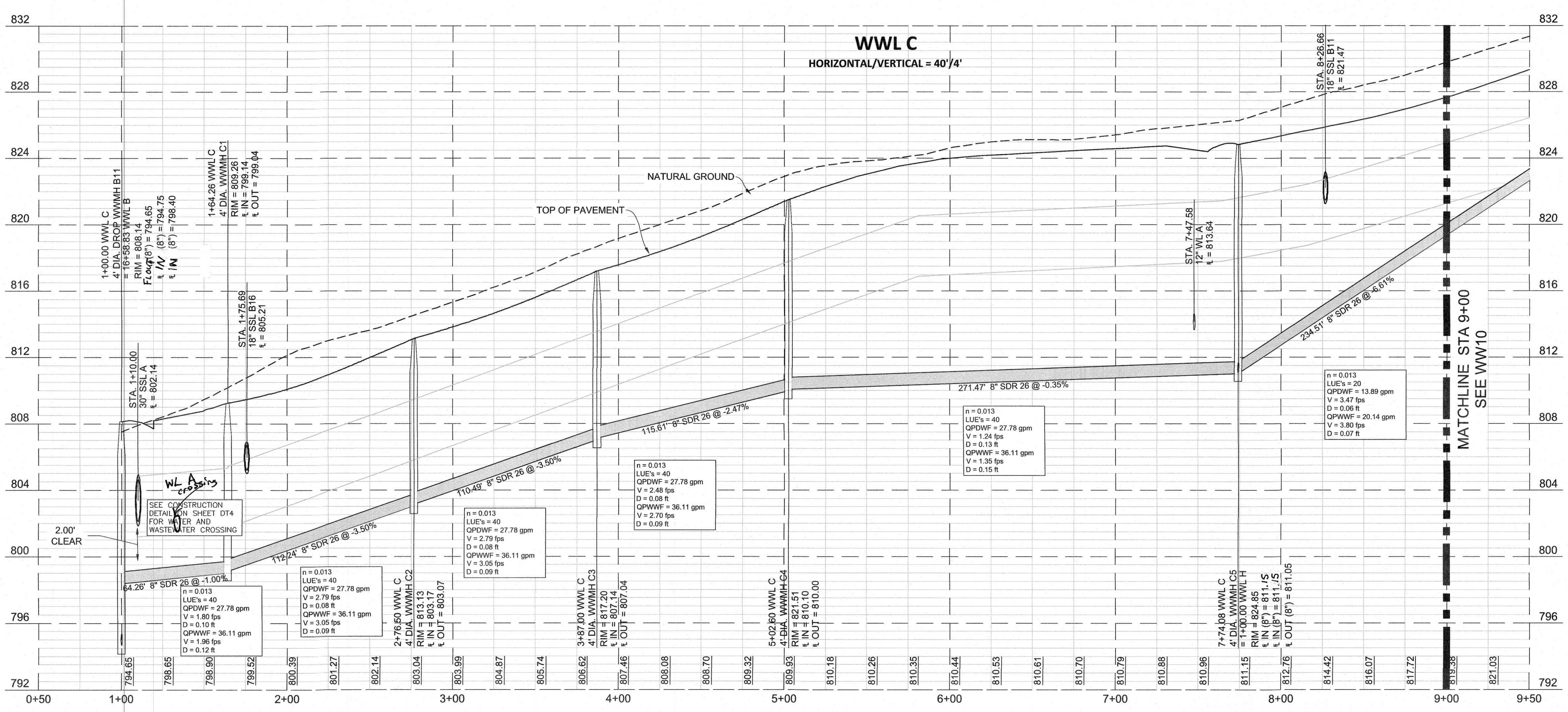
SHEET NO. 79 OF 93 SHEETS



1" = 40'

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD



NOTES:
1. ALL WASTEWATER LINES ARE PVC SDR 26.
2. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER CITY OF GEORGETOWN DETAIL WW04 OR WW05 (DROP MANHOLE), WW02 OR WW03 (STANDARD MANHOLE), AND TO CITY OF GEORGETOWN DETAILS WW06, WW07, WW07A, WW09, AND WW10.
3. ALL GRAVITY SANITARY SEWER LINES SHALL CONFORM TO ASTM D 3034, PVC, SDR 26 WITH ASTM 3212 JOINTS. GRAVITY SANITARY SEWER LINES CROSSING POTABLE WATER LINES SHALL CONFORM TO 30 TAC 217.53(d).
4. ALL MANHOLES OUTSIDE OF PUBLIC RIGHT OF WAY SHALL HAVE BOLTED AND GASKETED WATERTIGHT COVERS.
5. ALL STREETS SHALL BE CONSTRUCTED TO SUBGRADE PRIOR TO PLACEMENT OF WATER AND WASTEWATER LINES. FILL AREAS TO MEET CITY OF AUSTIN SPECIFICATION FOR BACKFILL AND COMPACTION.
6. ALL WASTEWATER SERVICES TO BE INSTALLED PER CITY OF GEORGETOWN DETAIL WW13. ALL SERVICES MUST BE PLACED IN RIGHT OF WAY AT PROPERTY LINE. NO SERVICES ARE TO BE LOCATED WITHIN SIDEWALKS OR CURB RAMPS.
7. CONTRACTOR TO VERIFY ALL WASTEWATER LINE GRADE AND ALIGNMENTS AT NO GREATER THAN 50' INTERVALS.
8. SEE PROFILE SHEETS FOR DEEP SERVICE CONNECTIONS AND LOCATIONS.
9. THE USE OF BRICK MANHOLES AND BRICKS TO ADJUST MANHOLES IS PROHIBITED.
10. PIPE STATIONING AND LINEAR FOOTAGE IS FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. PIPE SLOPE IS CALCULATED FROM INSIDE FACE OF MANHOLE TO INSIDE FACE OF MANHOLE.

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1

WASTEWATER LINE 'C' PLAN AND PROFILE
STA. 1+00 TO 9+00

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW9.dwg

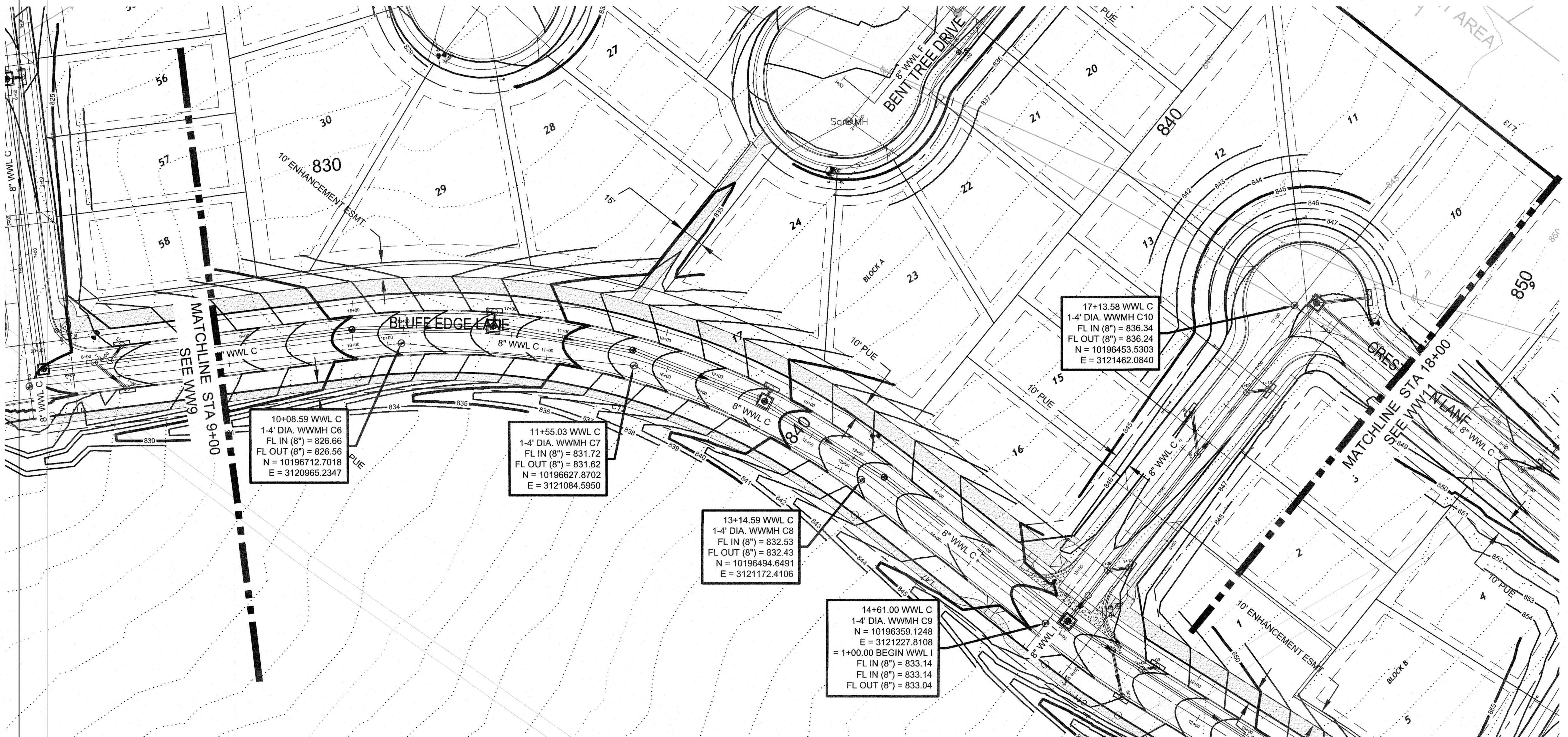
STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:
A140-0418

WW9

SHEET NO.
80
OF 93 SHEETS



1" = 40'

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:
1. ALL WASTEWATER LINES ARE PVC SDR 26.
2. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER CITY OF GEORGETOWN DETAIL WW04 OR WW05 (DROP MANHOLE), WW02 OR WW03 (STANDARD MANHOLE), AND TO CITY OF GEORGETOWN DETAILS WW06, WW07, WW07A, WW09, AND WW10.
3. ALL GRAVITY SANITARY SEWER LINES SHALL CONFORM TO ASTM D 3034, PVC, SDR 26 WITH ASTM 3212 JOINTS. GRAVITY SANITARY SEWER LINES CROSSING POTABLE WATER LINES SHALL CONFORM TO 30 TAC 217.53(d).
4. ALL MANHOLES OUTSIDE OF PUBLIC RIGHT OF WAY SHALL HAVE BOLTED AND GASKETED WATERTIGHT COVERS.
5. ALL STREETS SHALL BE CONSTRUCTED TO SUBGRADE PRIOR TO PLACEMENT OF WATER AND WASTEWATER LINES. FILL AREAS TO MEET CITY OF AUSTIN SPECIFICATION FOR BACKFILL AND COMPACTION.
6. ALL WASTEWATER SERVICES TO BE INSTALLED PER CITY OF GEORGETOWN DETAIL WW13. ALL SERVICES MUST BE PLACED IN RIGHT OF WAY AT PROPERTY LINE. NO SERVICES ARE TO BE LOCATED WITHIN SIDEWALKS OR CURB RAMPS.
7. CONTRACTOR TO VERIFY ALL WASTEWATER LINE GRADE AND ALIGNMENTS AT NO GREATER THAN 50' INTERVALS.
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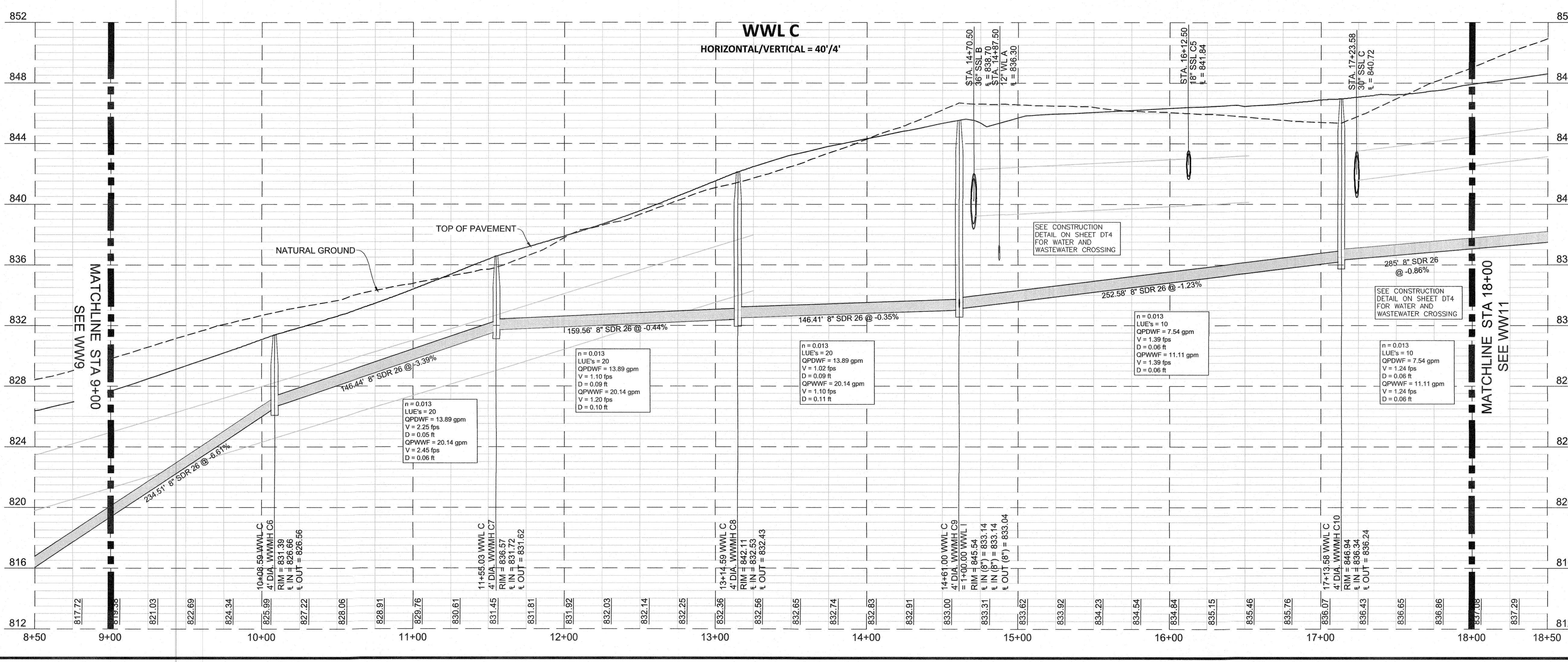
9. THE USE OF BRICK MANHOLES AND BRICKS TO ADJUST MANHOLES IS PROHIBITED.
10. PIPE STATIONING AND LINEAR FOOTAGE IS FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. PIPE SLOPE IS CALCULATED FROM INSIDE FACE OF MANHOLE TO INSIDE FACE OF MANHOLE.



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

BLUFFVIEW SUBDIVISION PHASE 1

WASTEWATER LINE 'C' PLAN AND PROFILE STA. 9+00 TO 18+00

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW10.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-17-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER: A140-0418

WW10

SHEET NO. 81 OF 93 SHEETS

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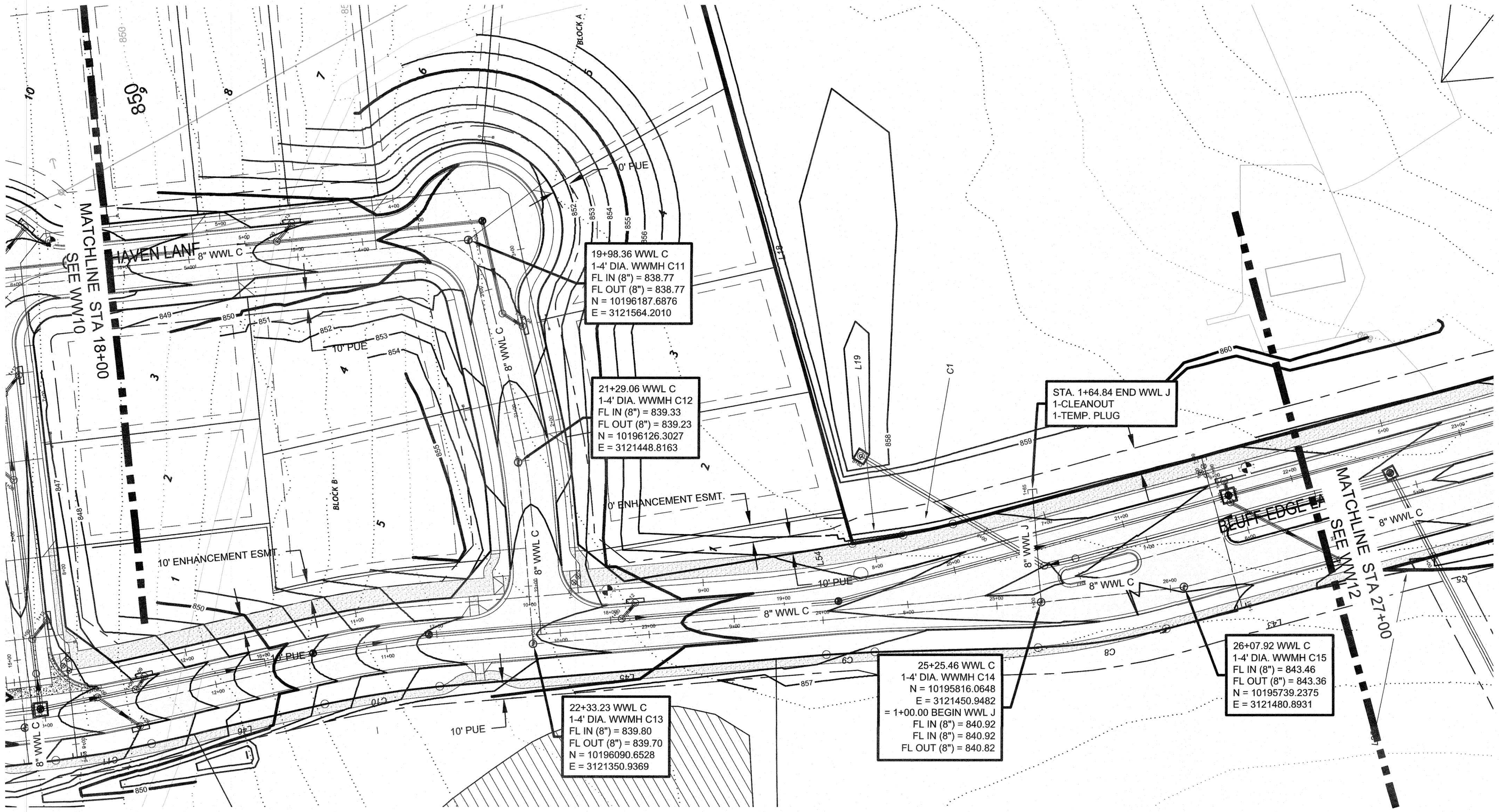

0 40 80
1" = 40'

LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:
1. ALL WASTEWATER LINES ARE PVC SDR 26.
2. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER CITY OF GEORGETOWN DETAIL WW04 OR WW05 (DROP MANHOLE), WW02 OR WW03 (STANDARD MANHOLE), AND TO CITY OF GEORGETOWN DETAILS WW06, WW07, WW07A, WW09, AND WW10.
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5. ALL STREETS SHALL BE CONSTRUCTED TO SUBGRADE PRIOR TO PLACEMENT OF WATER AND WASTEWATER LINES. FILL AREAS TO MEET CITY OF AUSTIN SPECIFICATION FOR BACKFILL AND COMPACTION.
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7. CONTRACTOR TO VERIFY ALL WASTEWATER LINE GRADE AND ALIGNMENTS AT NO GREATER THAN 50' INTERVALS.
8. SEE PROFILE SHEETS FOR DEEP SERVICE CONNECTIONS AND LOCATIONS.
9. THE USE OF BRICK MANHOLES AND BRICKS TO ADJUST MANHOLES IS PROHIBITED.
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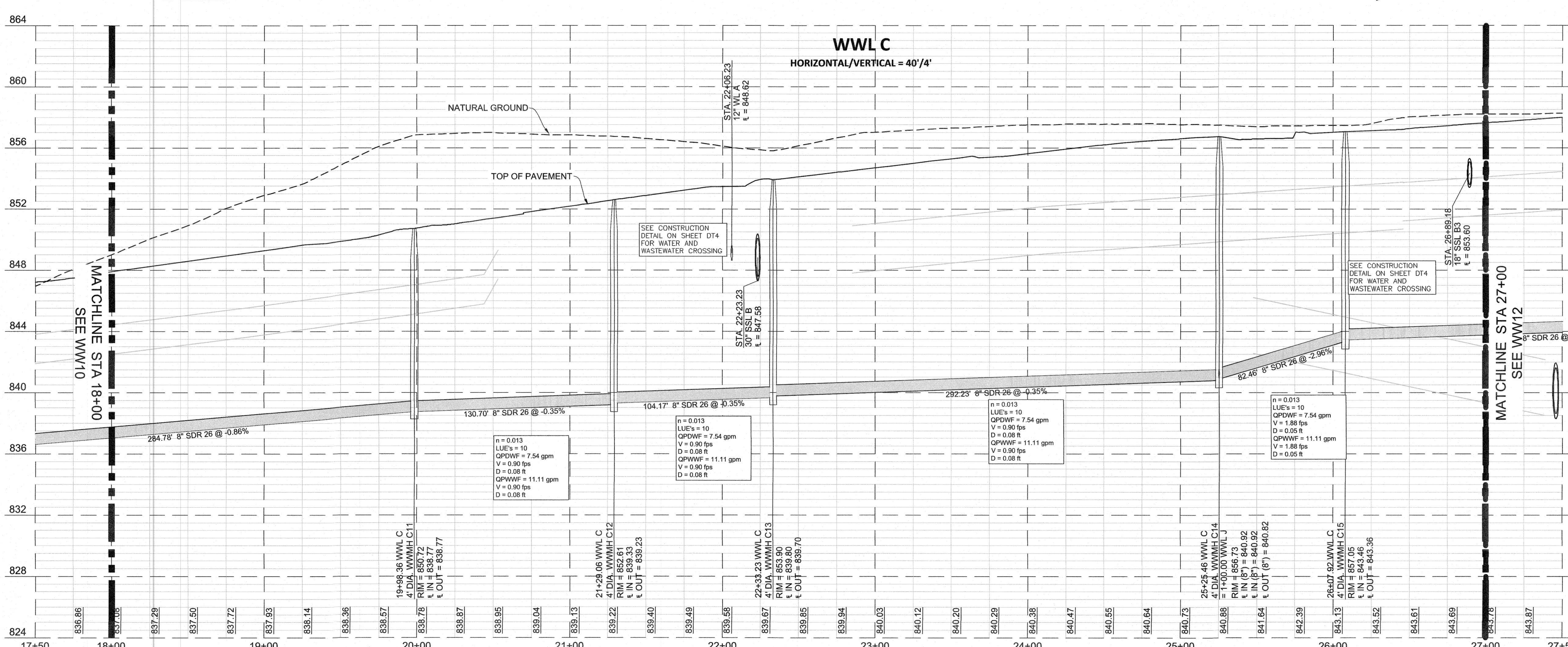
WWL C
HORIZONTAL/VERTICAL = 40'/4'



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

BLUFFVIEW SUBDIVISION
PHASE 1

WASTEWATER LINE 'C' PLAN AND PROFILE
STA. 18+00 TO 27+00

NO.	DESCRIPTION	BY	DATE
	REVISIONS		

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW11.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:
A140-0418

WW11

SHEET NO.
82
OF 93 SHEETS

Date/Time : Fri, 19 Jan 2024 - 1:33pm
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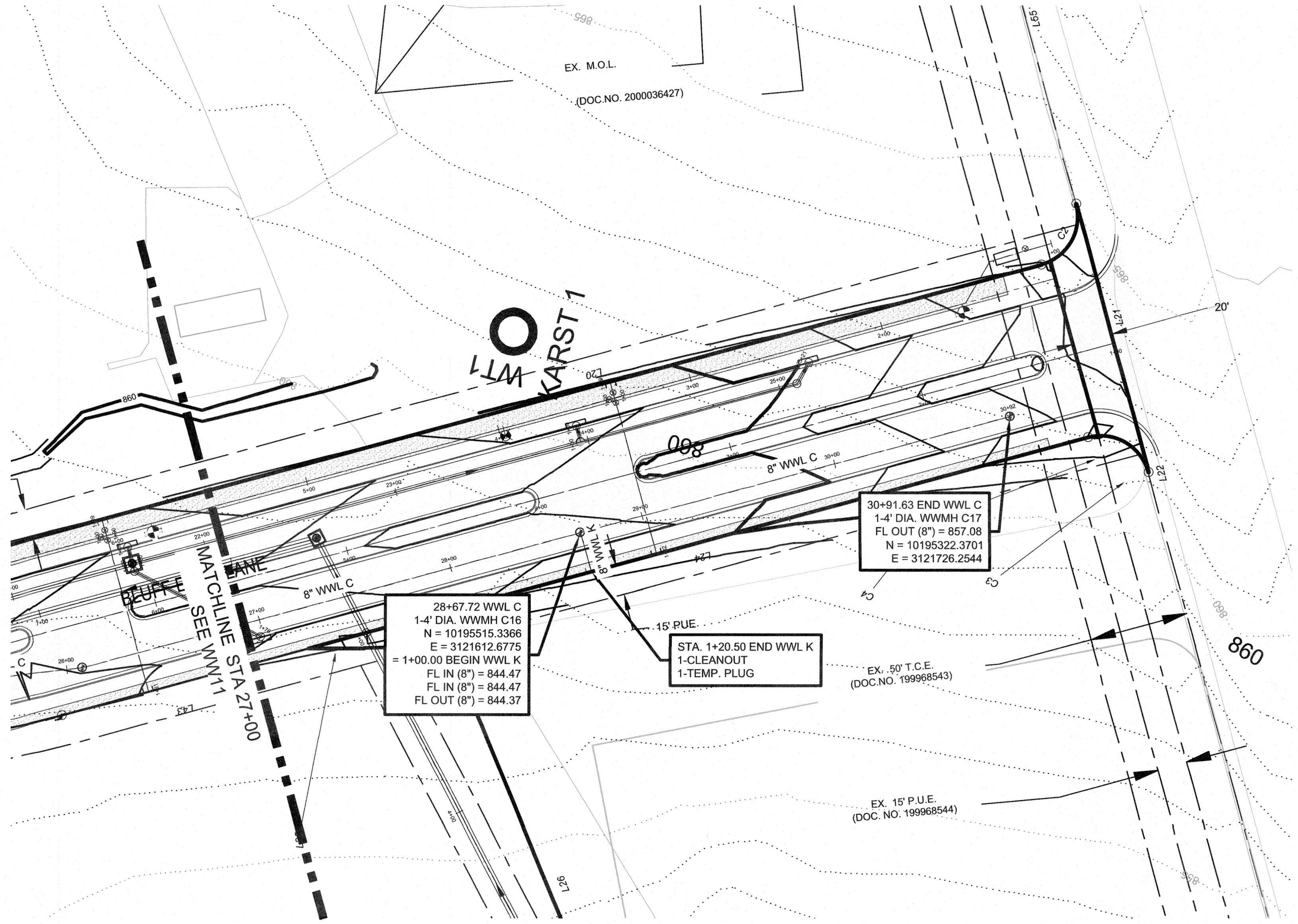
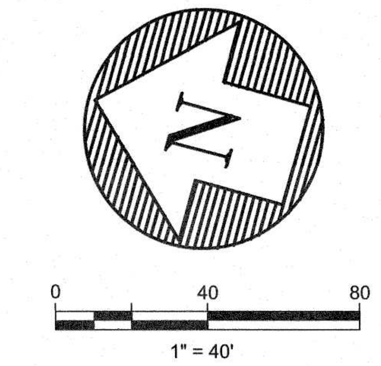
User Name : jslouch





LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

NOTES:
1. ALL WASTEWATER LINES ARE PVC SDR 26.
2. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER CITY OF GEORGETOWN DETAIL WW04 OR WW05 (DROP MANHOLE), WW02 OR WW03 (STANDARD MANHOLE), AND TO CITY OF GEORGETOWN DETAILS WW06, WW07, WW07A, WW09, AND WW10.
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8. SEE PROFILE SHEETS FOR DEEP SERVICE CONNECTIONS AND LOCATIONS.
9. THE USE OF BRICK MANHOLES AND BRICKS TO ADJUST MANHOLES IS PROHIBITED.
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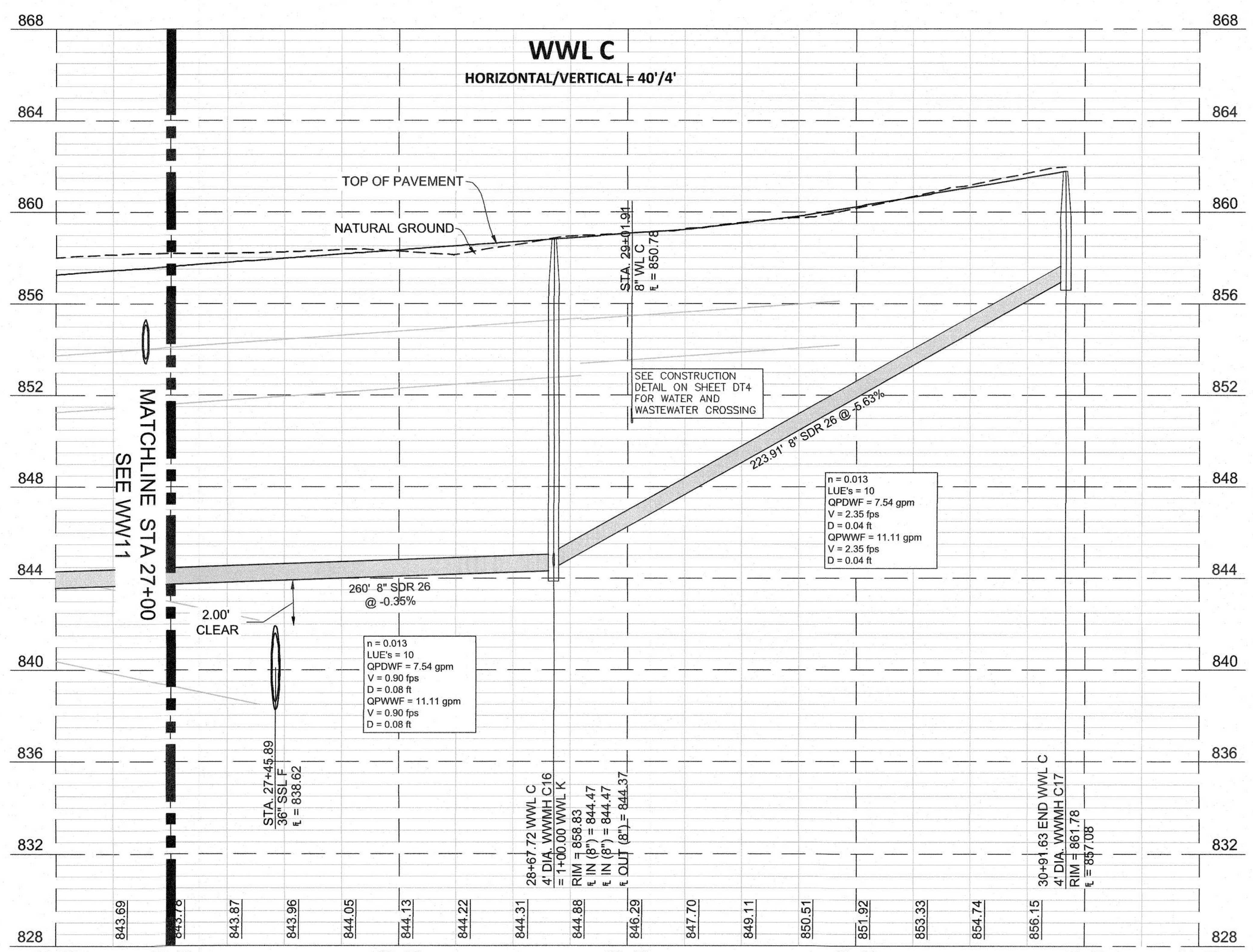

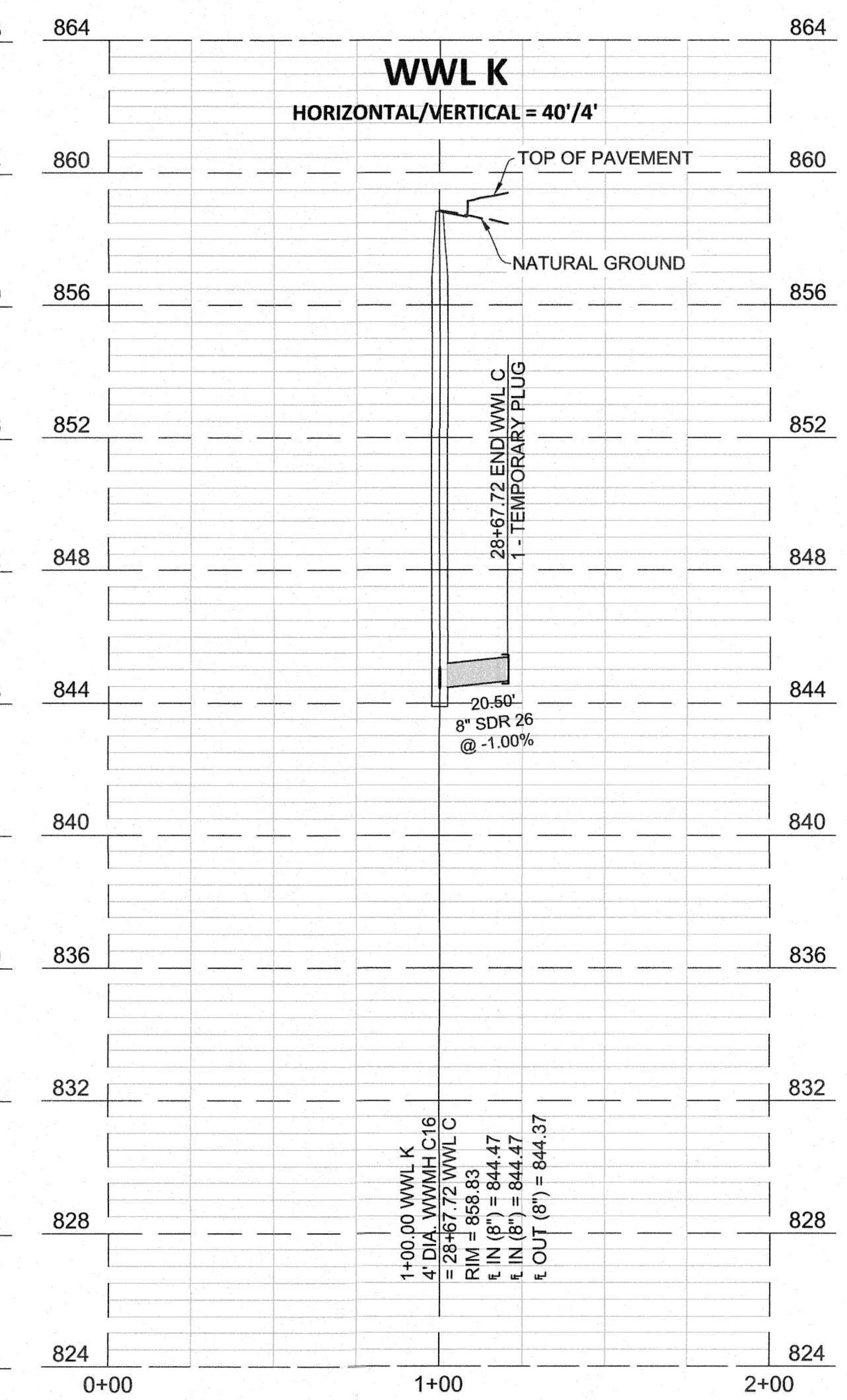

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION
PHASE 1

WASTEWATER LINE 'X' PLAN AND PROFILE
STA. 1+00 TO END

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW12.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

JOB NUMBER:
A140-0418

WW12

SHEET NO.
83
OF 93 SHEETS

Date/Time : Fri, 19 Jan 2024 - 1:33pm User Name : jsiecuch
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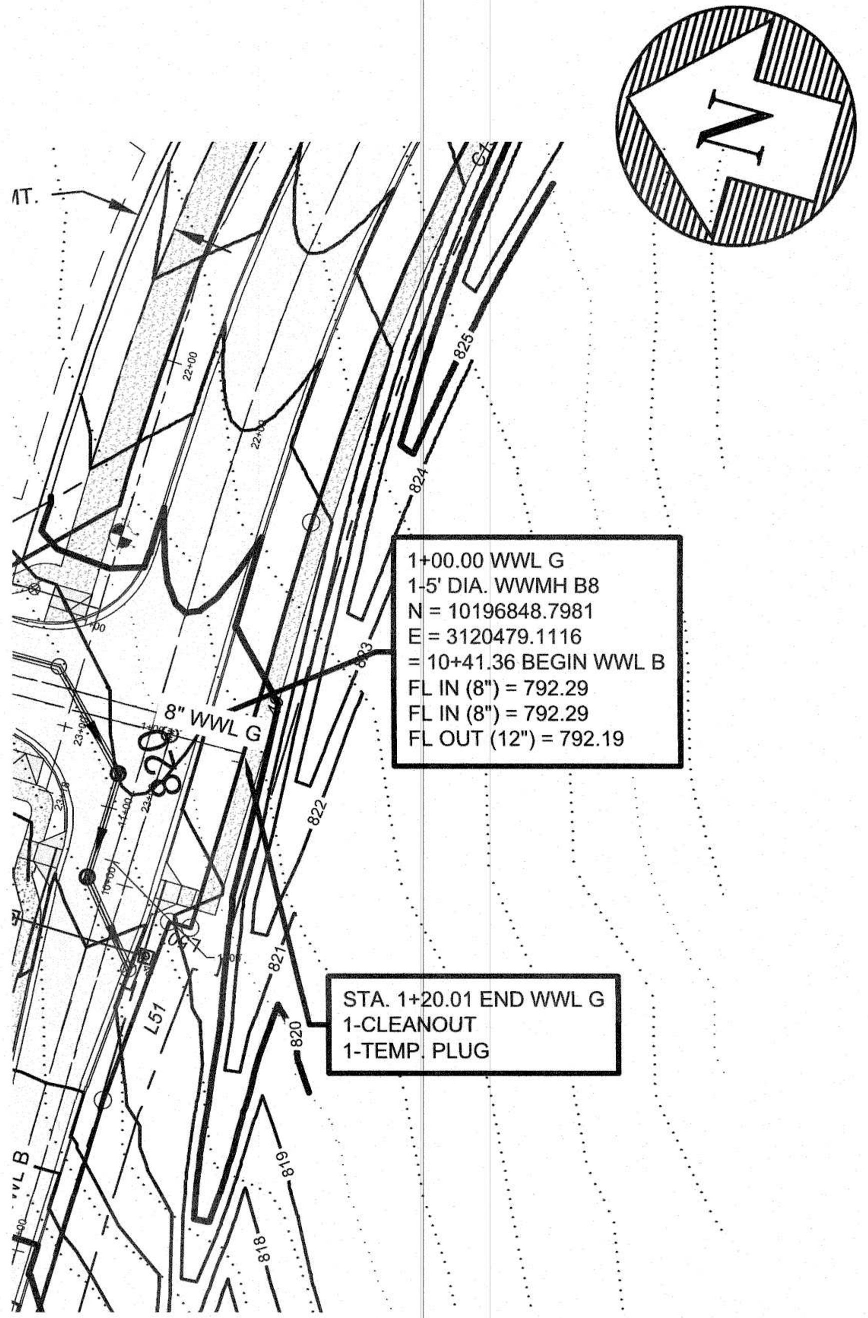
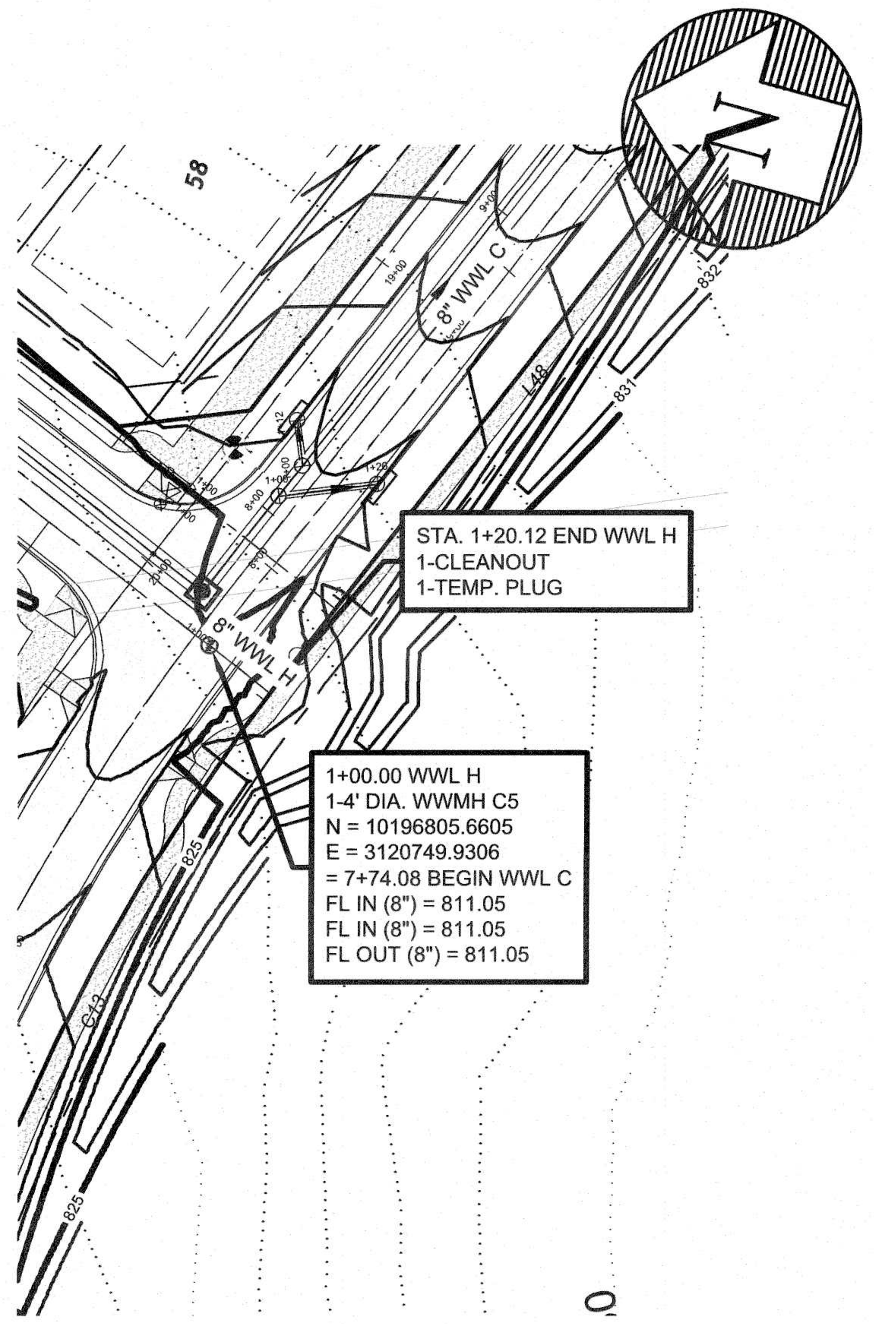
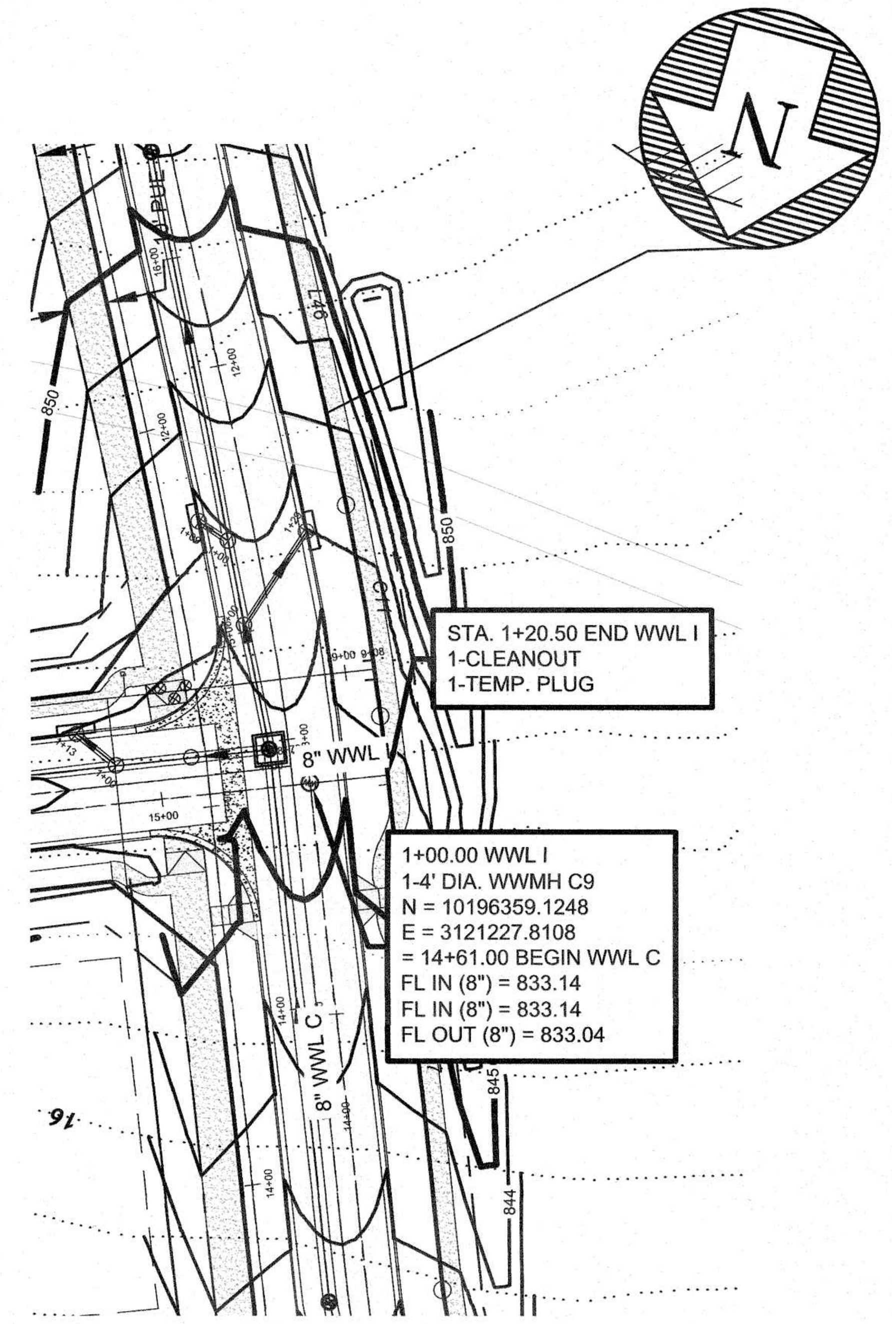
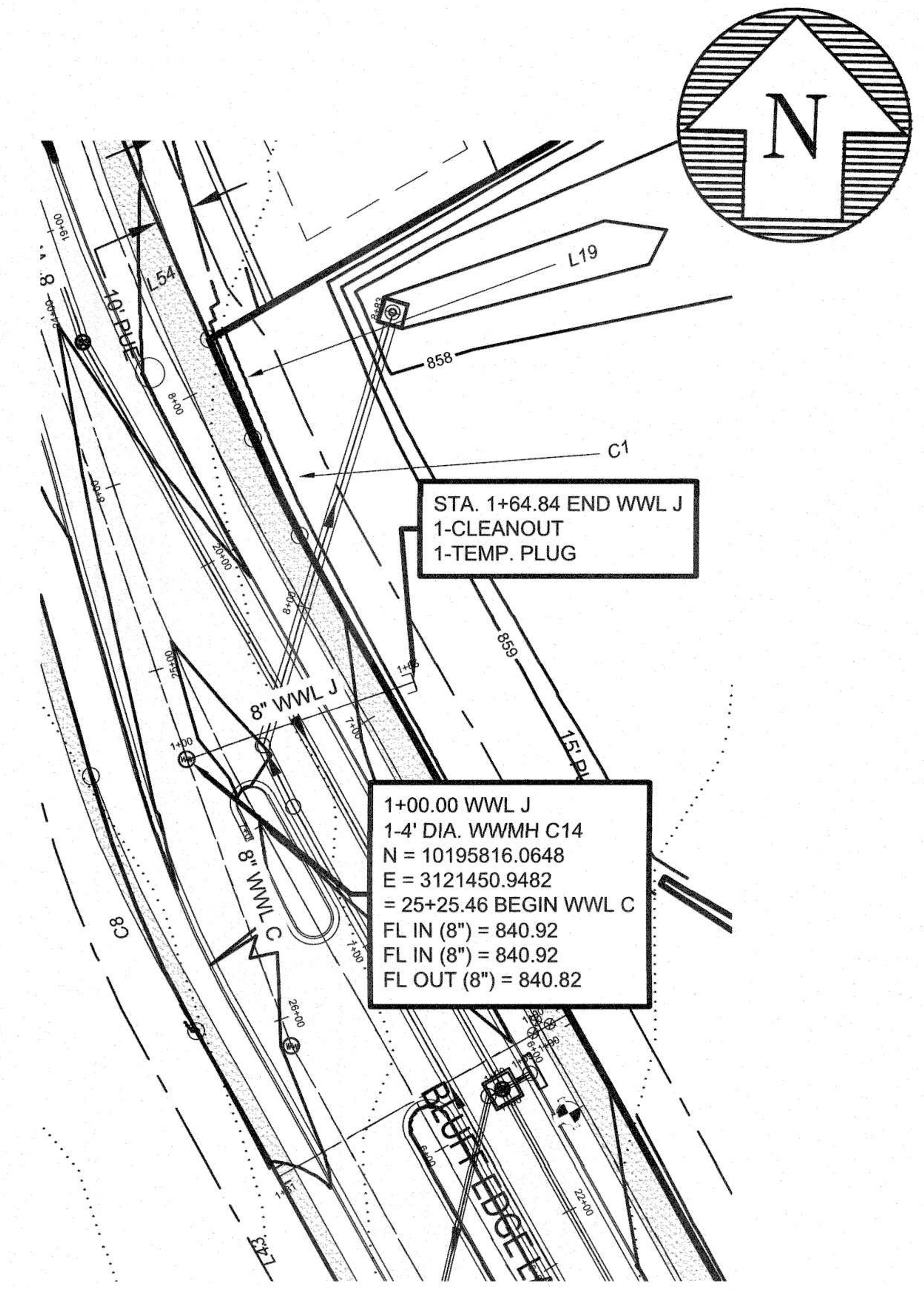






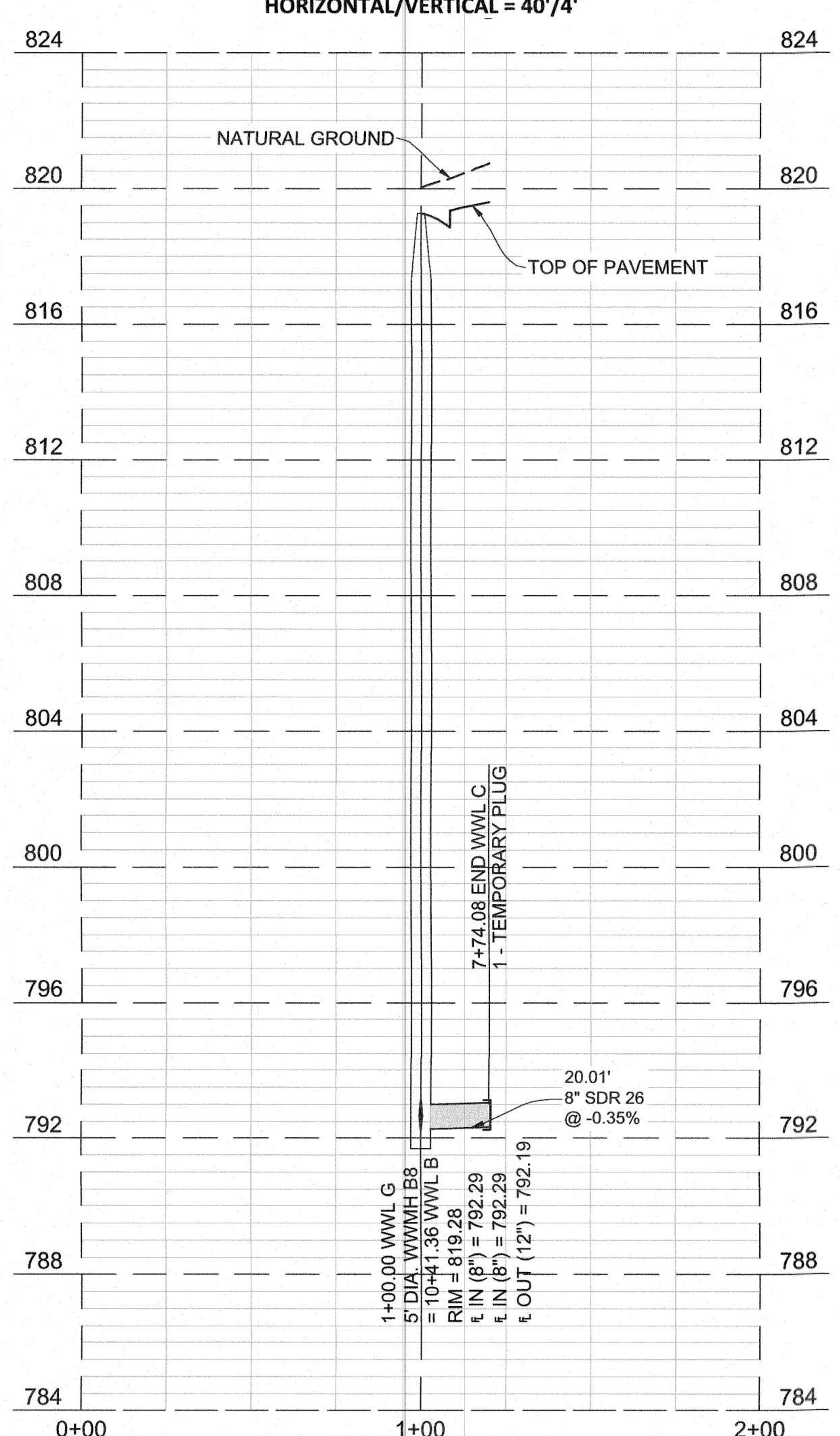


0 40 80
1" = 40'

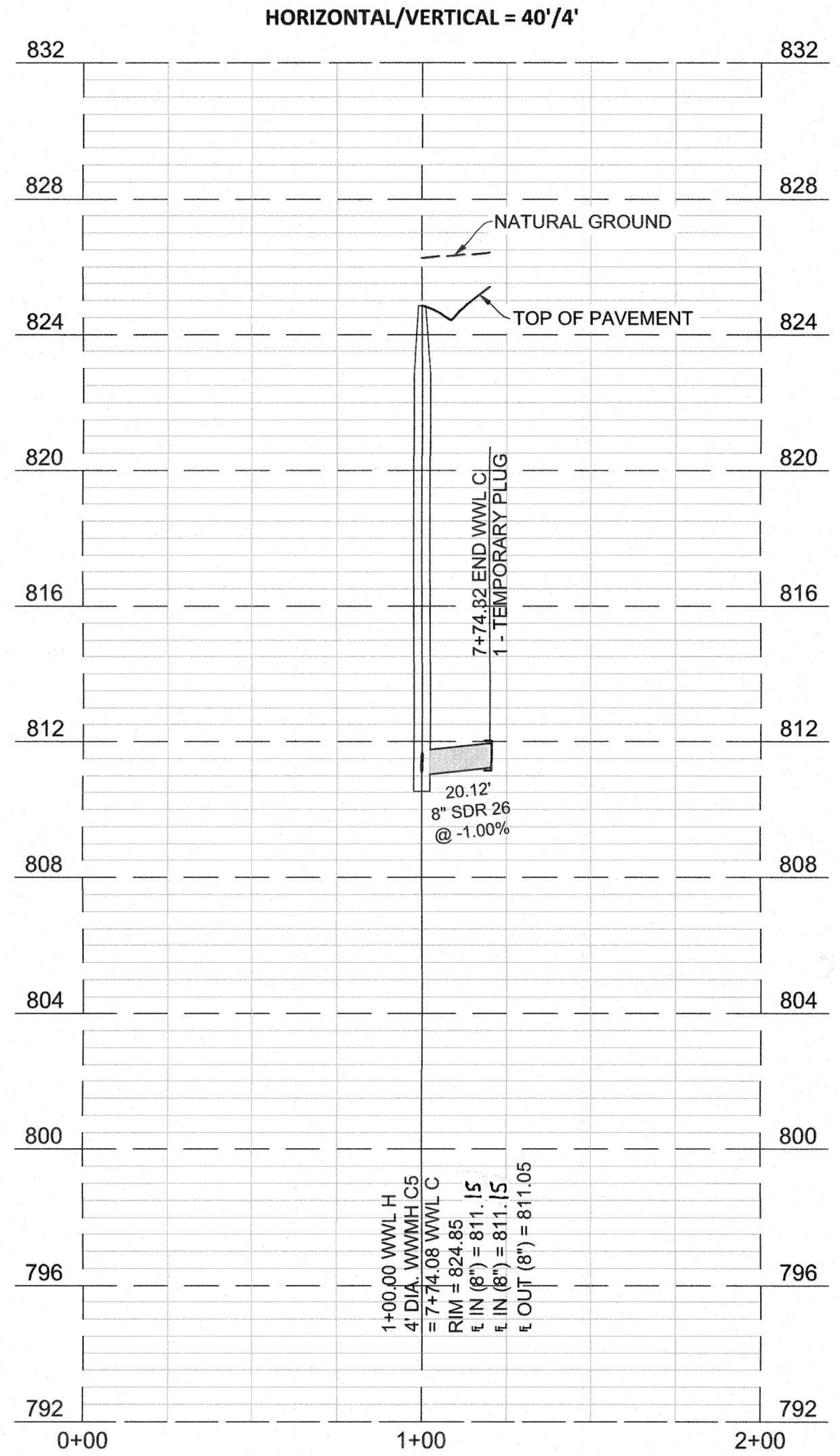
LEGEND:

- PROPOSED FIRE HYDRANT ASSEMBLY
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED AIR RELEASE VALVE
- EXISTING AIR RELEASE VALVE
- PROPOSED PLUG OR CAP
- EXISTING PLUG OR CAP
- PROPOSED CLEAN OUT
- EXISTING CLEAN OUT
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE AND MANHOLE
- PROPOSED STORM SEWER LINE AND MANHOLE
- EXISTING WATER LINE
- EXISTING WASTEWATER LINE AND MANHOLE
- EXISTING STORM SEWER LINE
- DOUBLE SANITARY SERVICE LEAD
- SINGLE SANITARY SERVICE LEAD
- DOUBLE WATER SERVICE LEAD
- SINGLE WATER SERVICE LEAD
- SINGLE WASTEWATER PRESSURE SERVICE LEAD

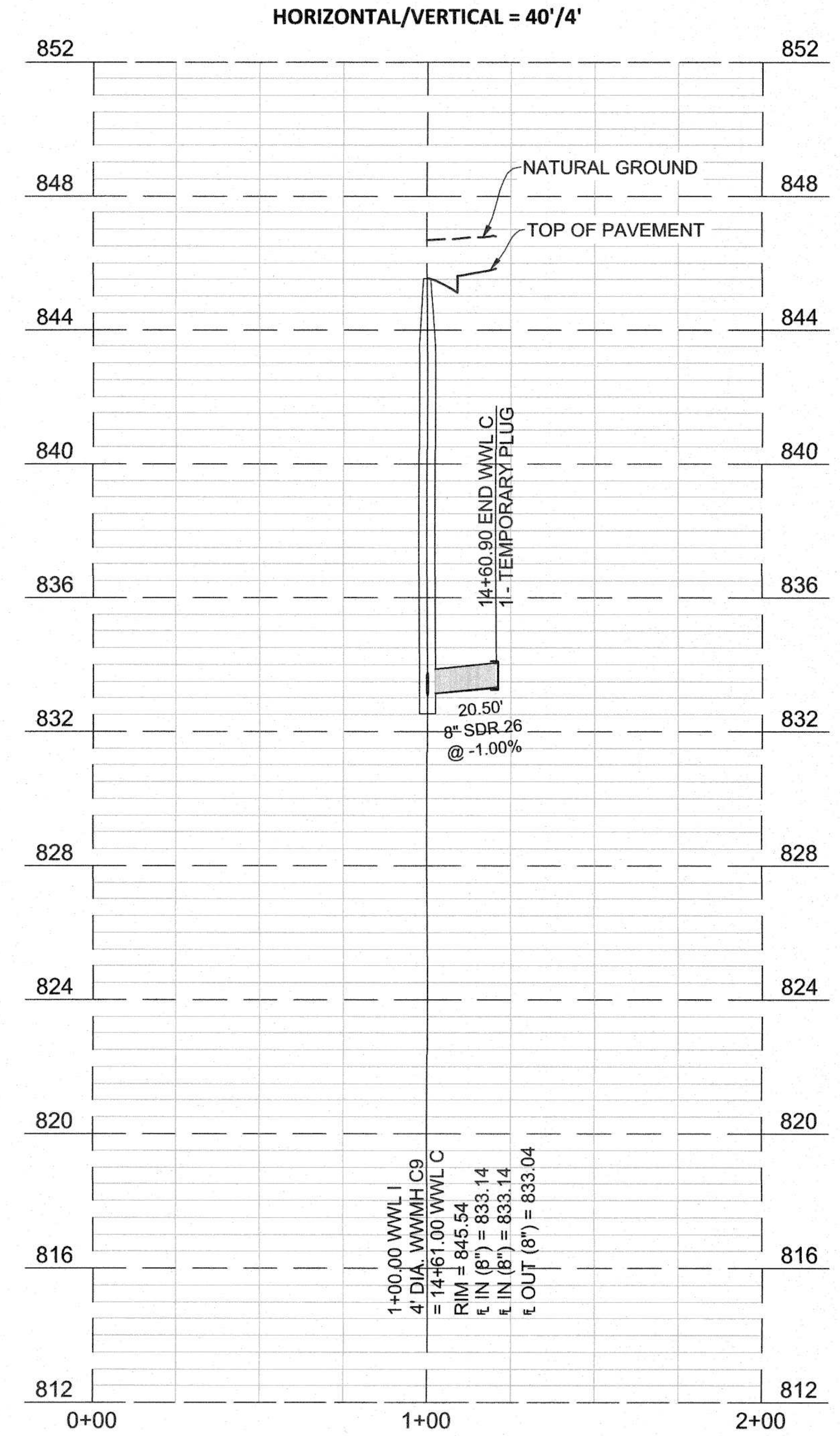
WWL G
HORIZONTAL/VERTICAL = 40'/4'



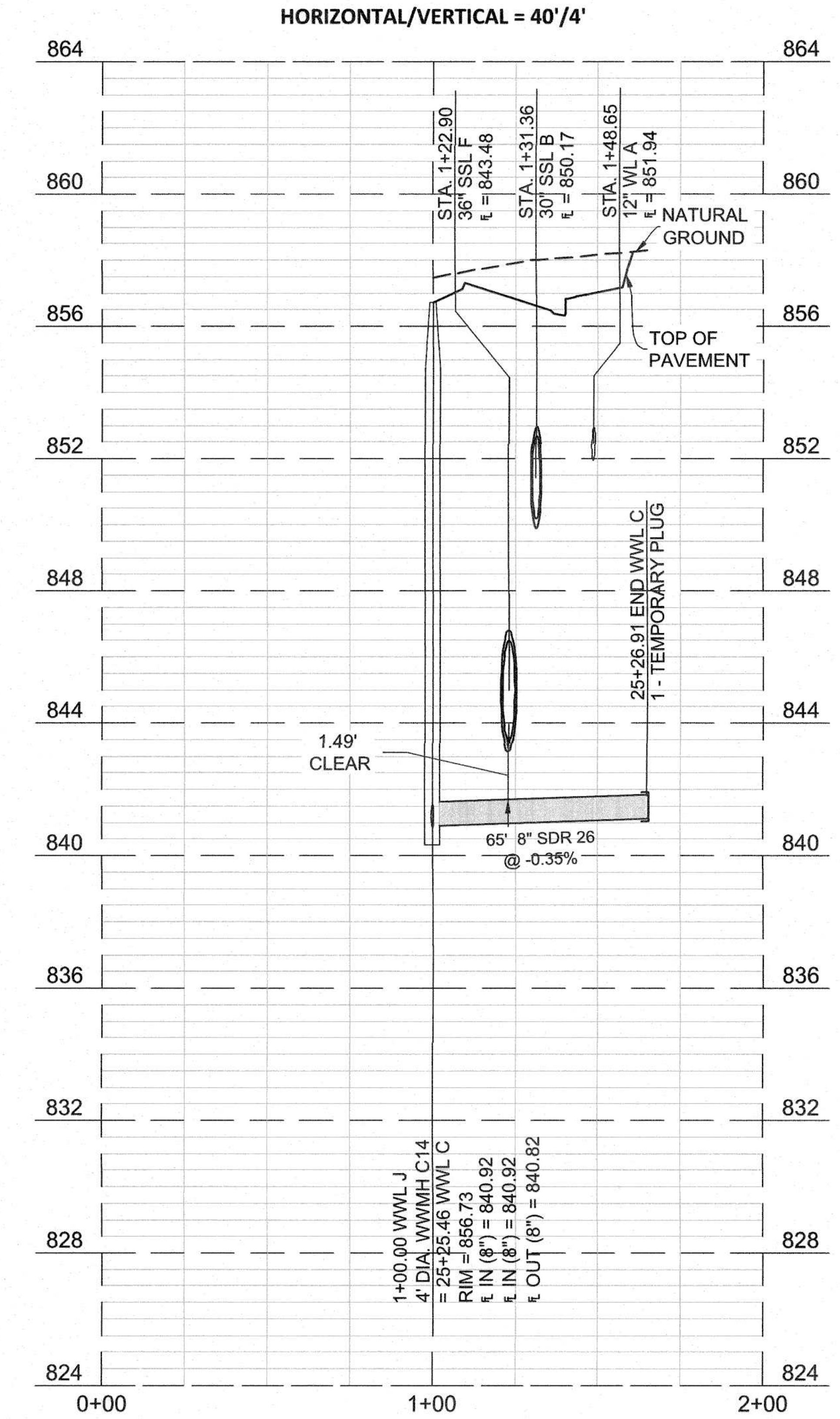
WWL H
HORIZONTAL/VERTICAL = 40'/4'



WWL I
HORIZONTAL/VERTICAL = 40'/4'



WWL J
HORIZONTAL/VERTICAL = 40'/4'



NOTES:
1. ALL WASTEWATER LINES ARE PVC SDR 26.
2. ALL WASTEWATER MANHOLES TO BE CONSTRUCTED PER CITY OF GEORGETOWN DETAIL WW04 OR WW05 (DROP MANHOLE), WW02 OR WW03 (STANDARD MANHOLE), AND TO CITY OF GEORGETOWN DETAILS WW06, WW07, WW07A, WW09, AND WW10.
3. ALL GRAVITY SANITARY SEWER LINES SHALL CONFORM TO ASTM D 3034, PVC, SDR 26 WITH ASTM 3212 JOINTS. GRAVITY SANITARY SEWER LINES CROSSING POTABLE WATER LINES SHALL CONFORM TO 30 TAC 217.53(d).
4. ALL MANHOLES OUTSIDE OF PUBLIC RIGHT OF WAY SHALL HAVE BOLTED AND GASKETED WATERTIGHT COVERS.
5. ALL STREETS SHALL BE CONSTRUCTED TO SUBGRADE PRIOR TO PLACEMENT OF WATER AND WASTEWATER LINES. FILL AREAS TO MEET CITY OF AUSTIN SPECIFICATION FOR BACKFILL AND COMPACTION.
6. ALL WASTEWATER SERVICES TO BE INSTALLED PER CITY OF GEORGETOWN DETAIL WW13. ALL SERVICES MUST BE PLACED IN RIGHT OF WAY AT PROPERTY LINE. NO SERVICES ARE TO BE LOCATED WITHIN SIDEWALKS OR CURB RAMPS.
7. CONTRACTOR TO VERIFY ALL WASTEWATER LINE GRADE AND ALIGNMENTS AT NO GREATER THAN 50' INTERVALS.
8. SEE PROFILE SHEETS FOR DEEP SERVICE CONNECTIONS AND LOCATIONS.
9. THE USE OF BRICK MANHOLES AND BRICKS TO ADJUST MANHOLES IS PROHIBITED.
10. PIPE STATIONING AND LINEAR FOOTAGE IS FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. PIPE SLOPE IS CALCULATED FROM INSIDE FACE OF MANHOLE TO INSIDE FACE OF MANHOLE.

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.

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

BLUFFVIEW SUBDIVISION PHASE 1

WASTEWATER LINE 'X' PLAN AND PROFILE STA. 1+00 TO END

NO.	REVISIONS DESCRIPTION	BY	DATE

DATE: 1/19/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 WW13.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
1-19-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
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FRN-F-1386

JOB NUMBER: A140-0418

WW13

SHEET NO. 84 OF 93 SHEETS

Date/Time : Fri, 19 Jan 2024 - 1:34pm User Name : jplcouch
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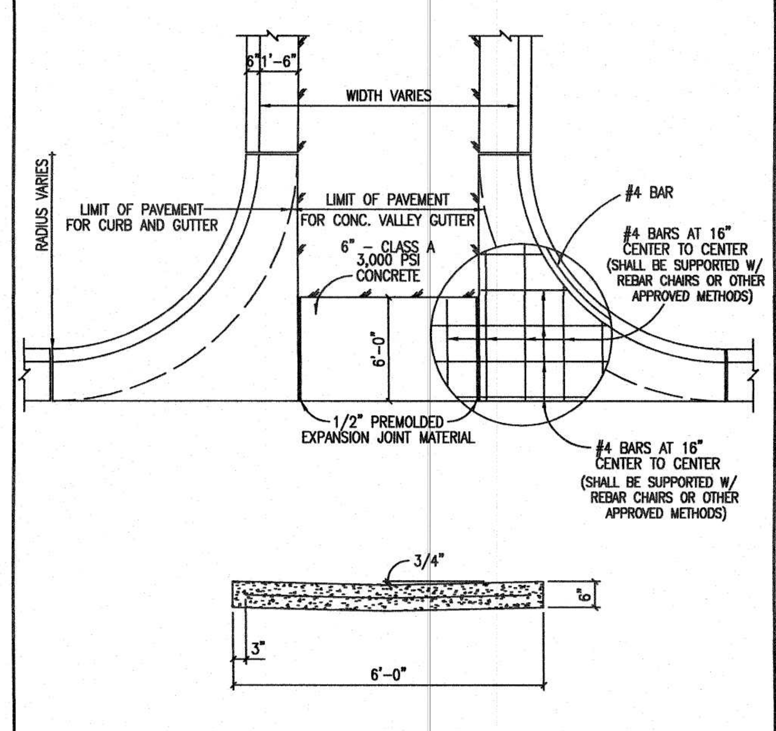
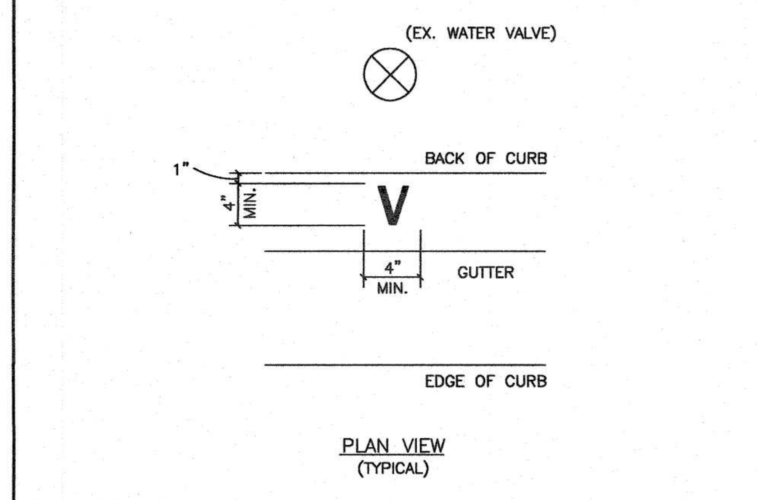


The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
CONCRETE VALLEY GUTTER DETAIL — SD03



NOTES:

1. ALL WATER SERVICE, WASTE WATER SERVICE AND VALVE LOCATIONS SHALL BE APPROXIMATLEY MARKED AS FOLLOWS:

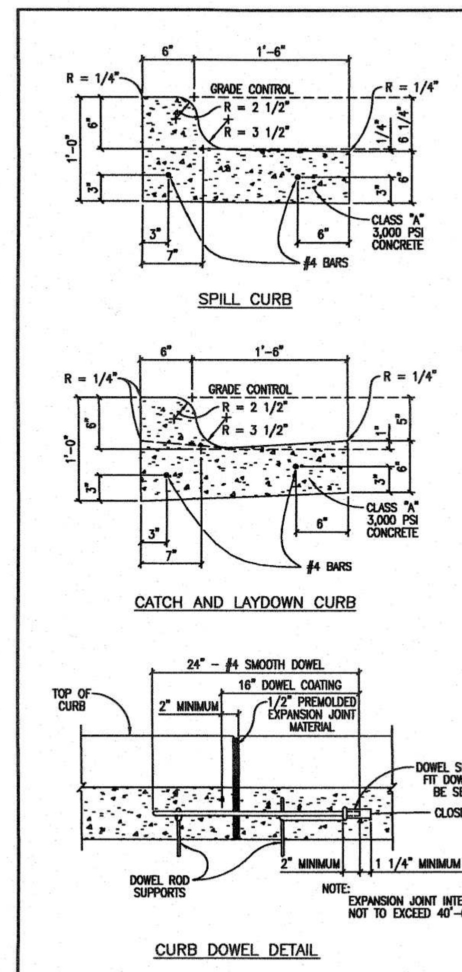
WATER SERVICE	"W"	TOP OF CURB
WASTE WATER SERVICE	"S"	TOP OF CURB
VALVE	"V"	TOP OF CURB

2. LETTERS SHALL HAVE A 1/2" MAX. WIDTH.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
CURB STAMP DETAIL — SD05



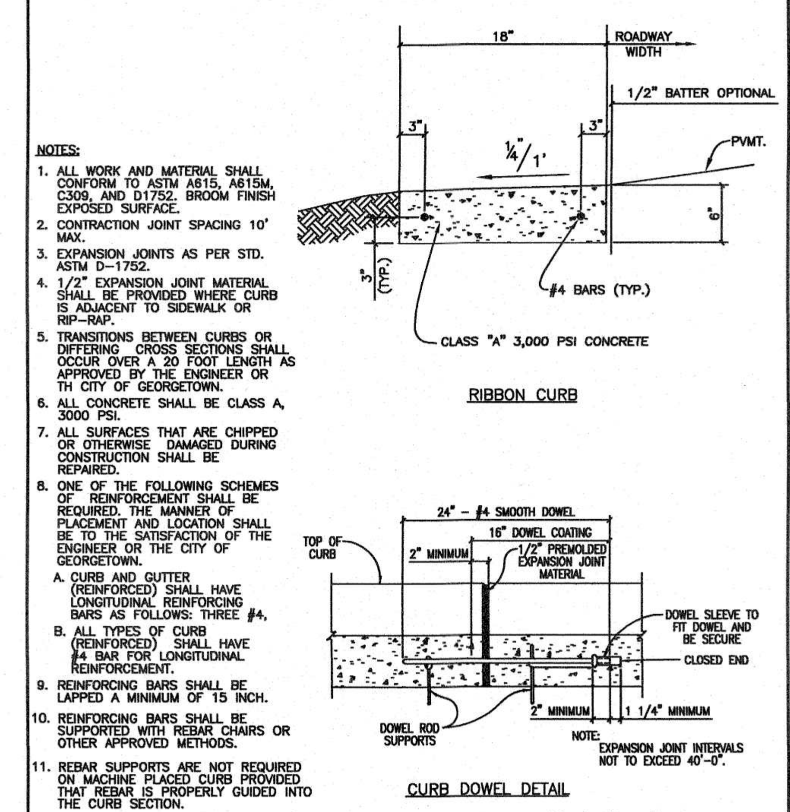
NOTES:

1. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309, AND D1752. BROOM FINISH EXPOSED SURFACE.
2. CONTRACTION JOINT SPACING 10' MAX.
3. EXPANSION JOINTS AS PER STD. ASTM D-1752.
4. 1/2" EXPANSION JOINT MATERIAL SHALL BE PROVIDED WHERE CURB IS ADJACENT TO SIDEWALK OR RIP-RAP.
5. TRANSITIONS BETWEEN CURBS OR DIFFERING CROSS SECTIONS SHALL OCCUR OVER A 20 FOOT LENGTH AS APPROVED BY THE ENGINEER OR THE CITY OF GEORGETOWN.
6. ALL CONCRETE SHALL BE CLASS A, 3000 PSI.
7. ALL SURFACES THAT ARE CHIPPED OR OTHERWISE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED.
8. THE FOLLOWING SCHEME OF REINFORCEMENT SHALL BE REQUIRED. THE MANNER OF PLACEMENT AND LOCATION SHALL BE TO THE SATISFACTION OF THE ENGINEER OR THE CITY OF GEORGETOWN.
   A. ALL CURB AND CURB AND GUTTER (REINFORCED) SHALL HAVE TWO #4 LONGITUDINAL REINFORCING BARS.
9. REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 15 INCH.
10. REINFORCING BARS SHALL BE SUPPORTED WITH REBAR CHAIRS OR OTHER APPROVED METHODS.
11. REBAR SUPPORTS ARE NOT REQUIRED ON MACHINE PLACED CURB PROVIDED THAT REBAR IS PROPERLY GUIDED INTO THE CURB SECTION.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
CURB AND GUTTER DETAILS — SD06



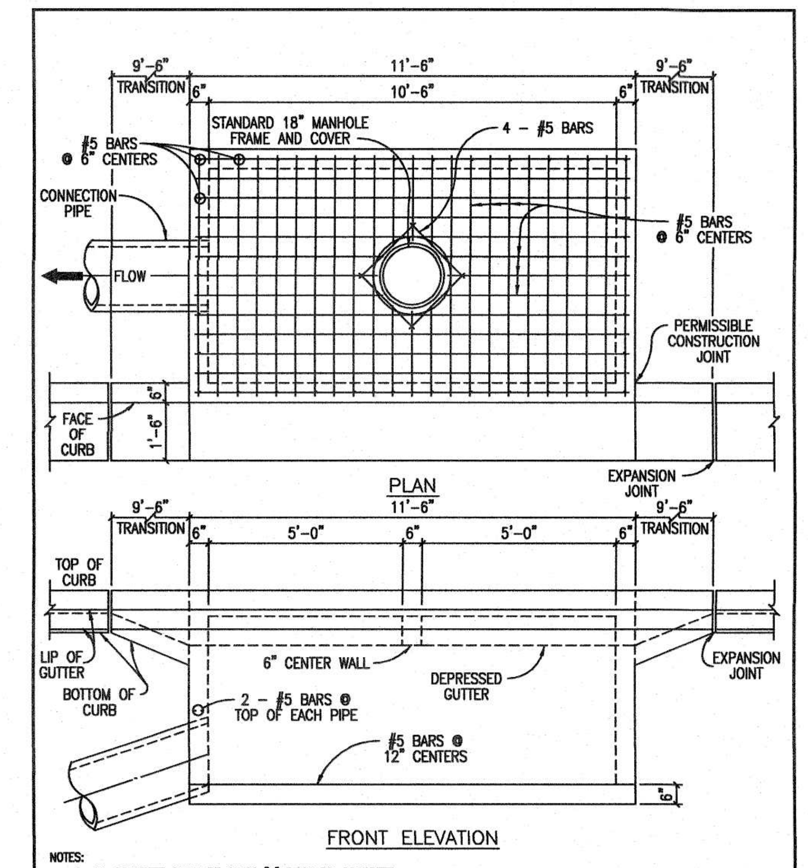
NOTES:

1. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309, AND D1752. BROOM FINISH EXPOSED SURFACE.
2. CONTRACTION JOINT SPACING 10' MAX.
3. EXPANSION JOINTS AS PER STD. ASTM D-1752.
4. 1/2" EXPANSION JOINT MATERIAL SHALL BE PROVIDED WHERE CURB IS ADJACENT TO SIDEWALK OR RIP-RAP.
5. TRANSITIONS BETWEEN CURBS OR DIFFERING CROSS SECTIONS SHALL OCCUR OVER A 20 FOOT LENGTH AS APPROVED BY THE ENGINEER OR TH CITY OF GEORGETOWN.
6. ALL CONCRETE SHALL BE CLASS A, 3000 PSI.
7. ALL SURFACES THAT ARE CHIPPED OR OTHERWISE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED.
8. ONE OF THE FOLLOWING SCHEMES OF REINFORCEMENT SHALL BE REQUIRED. THE MANNER OF PLACEMENT AND LOCATION SHALL BE TO THE SATISFACTION OF THE ENGINEER OR THE CITY OF GEORGETOWN.
   A. CURB AND GUTTER (REINFORCED) SHALL HAVE LONGITUDINAL REINFORCING BARS AS FOLLOWS: THREE #4.
   B. ALL TYPES OF CURB (REINFORCED) SHALL HAVE #4 BAR FOR LONGITUDINAL REINFORCEMENT.
9. REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 15 INCH.
10. REINFORCING BARS SHALL BE SUPPORTED WITH REBAR CHAIRS OR OTHER APPROVED METHODS.
11. REBAR SUPPORTS ARE NOT REQUIRED ON MACHINE PLACED CURB PROVIDED THAT REBAR IS PROPERLY GUIDED INTO THE CURB SECTION.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
RIBBON CURB DETAILS — SD08



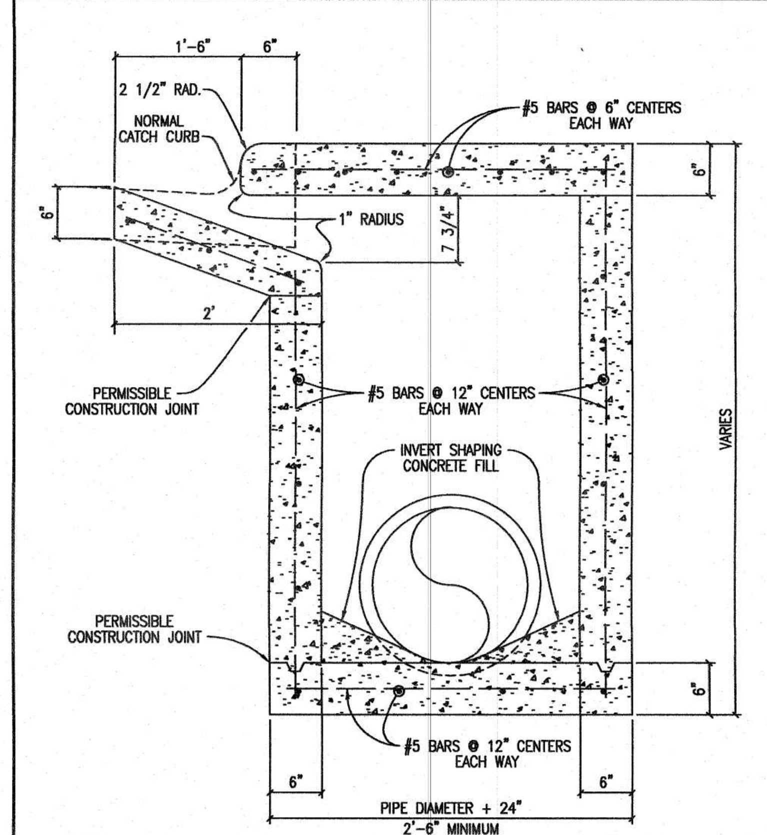
NOTES:

1. ALL CONCRETE SHALL BE CLASS "A" 3,000 PSI CONCRETE.
2. STORM SEWER PIPE MATERIAL TO BE R.C.P. (CLASS III) UNLESS OTHERWISE APPROVED BY THE CITY OF GEORGETOWN.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
CURB INLET DETAIL — SD09



NOTES:

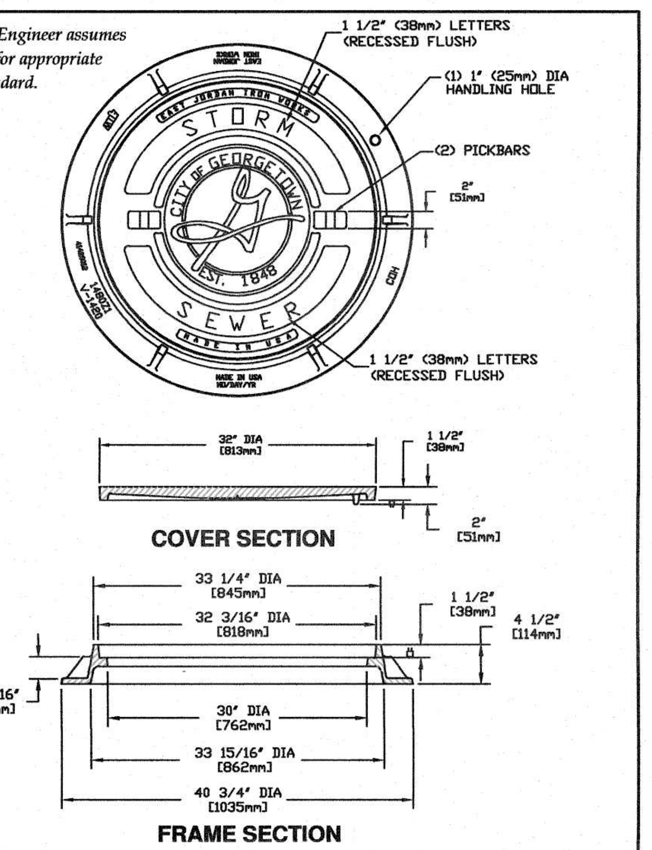
1. ALL CONCRETE SHALL BE CLASS "A" 3,000 PSI CONCRETE.
2. STORM SEWER PIPE MATERIAL TO BE R.C.P. (CLASS III) UNLESS OTHERWISE APPROVED BY THE CITY OF GEORGETOWN.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
CURB DRAIN INLET TYPICAL SECTION — SD10

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



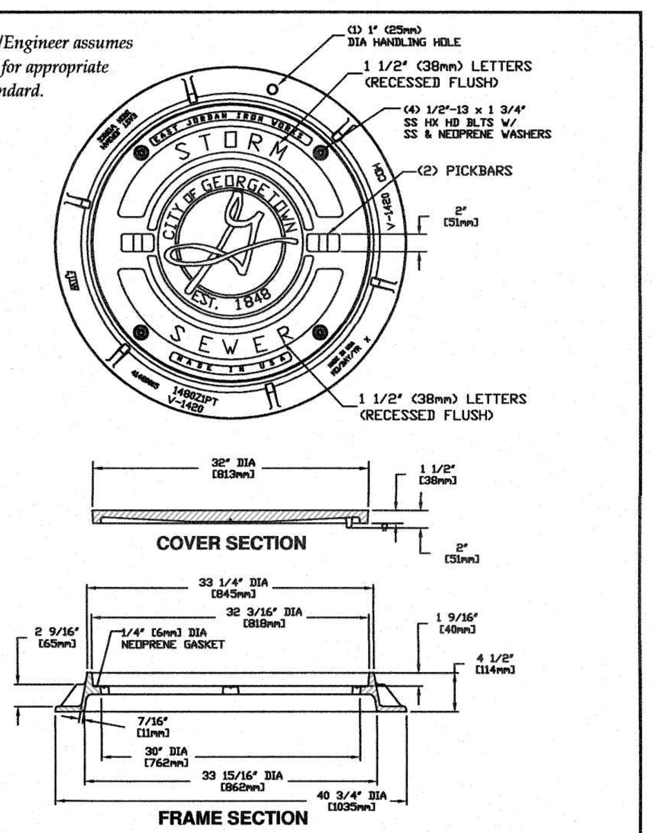
NOTES:

1. STANDARD STORM SEWER MANHOLE SET TO BE EAST JORDAN IRON WORKS, INC. CATALOG NO. 1480A V-1420\1480Z1, COVER TO BE STAMPED WITH "STORM SEWER".
2. STANDARD STORM SEWER MANHOLE SET TO BE HEAVY DUTY LOAD RATED.
3. FOR MORE DETAILED SPECIFICATIONS REFER TO EAST JORDAN IRON WORKS, INC. REFERENCE PRODUCT DRAWING 41420012 00148391.
4. FOR BOLTED STORM SEWER MANHOLE SET REFER TO DETAIL SD11A.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD STORM SEWER MANHOLE SET — SD11

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

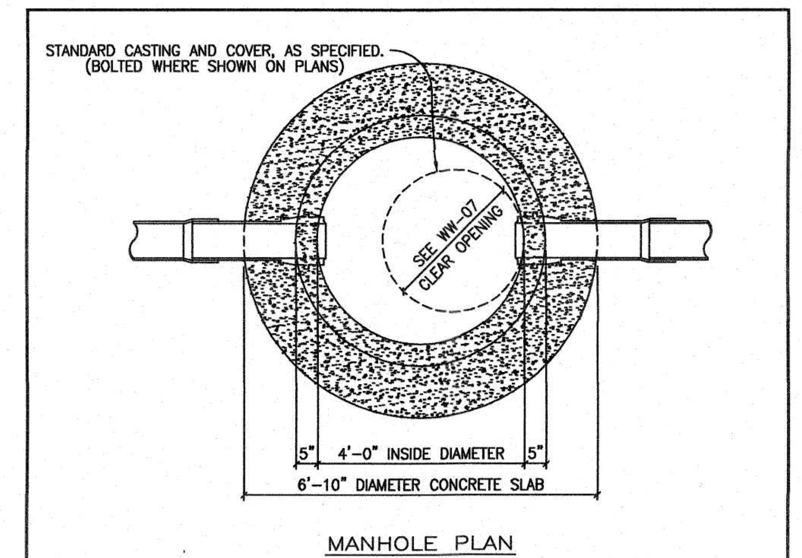


NOTES:

1. BOLTED STORM SEWER MANHOLE SET TO BE EAST JORDAN IRON WORKS, INC. CATALOG NO. 1480APT V-1420\1480Z1PT. COVER TO BE STAMPED WITH "STORM SEWER".
2. BOLTED STORM SEWER MANHOLE SET TO BE HEAVY DUTY LOAD RATED.
3. FOR MORE DETAILED SPECIFICATIONS REFER TO EAST JORDAN IRON WORKS, INC. REFERENCE PRODUCT DRAWING 00148393 41420015.
4. FOR STANDARD STORM SEWER MANHOLE SET REFER TO DETAIL SD11.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
BOLTED STORM SEWER MANHOLE SET — SD11A



MANHOLE PLAN

CITY OF GEORGETOWN NOTES:

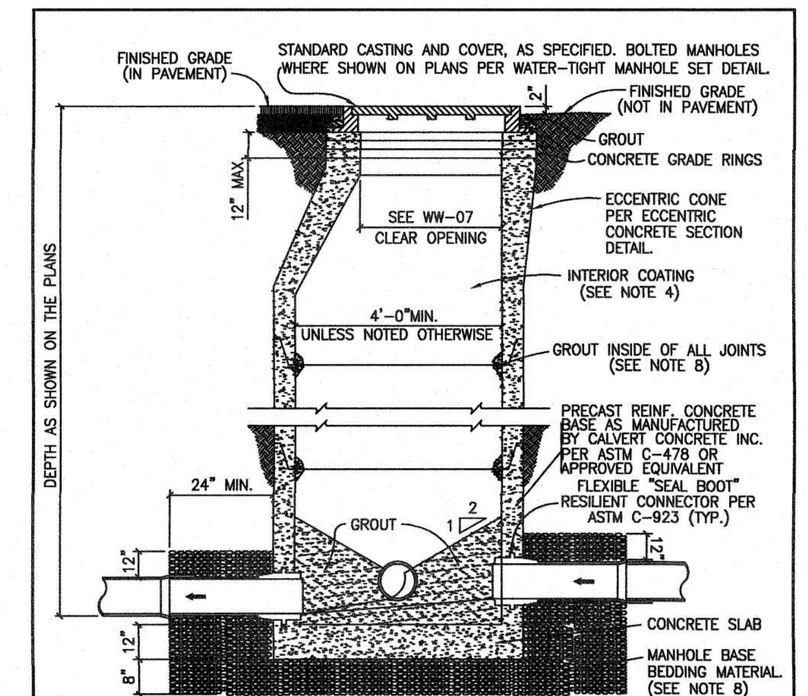
MANHOLE DETAILS SHALL REFLECT THE CITY'S MINIMUM SPECIFICATIONS, AS STATED BELOW:

A. ALL MANHOLES SHALL BE 48" I.D., R.C.P., CLASS III, WITH RUBBER O-RING GASKET JOINTS CONFORMING TO ASTM C478, C433 AND C76.
B. ALL MANHOLES SHALL HAVE FRAME AND COVER, AS MANUFACTURED BY EAST JORDAN IRON WORKS (AS PER DETAIL # WW-07) OR APPROVED EQUIVALENT.
C. ALL MANHOLES SHALL BE CONCRETE WITH CAST IRON FRAME AND COVER.
D. ALL MANHOLES SHALL HAVE AN ECCENTRIC CONE.
E. MANHOLES MAY HAVE A FLAT LID, IF APPROVED BY CITY OF GEORGETOWN, BEING 12" THICK WITH A MINIMUM 30" OPENING, AS MANUFACTURED BY CALVERT CONCRETE OR APPROVED EQUAL M.F.G. CONFORMING TO ASTM C478, 5000 P.S.I. CONCRETE, TRAFFIC BEARING, AND O-RING JOINT CONFORMING TO ASTM C443.
F. INVERTS AND FLEXIBLE SEAL BOOTS, PER ASTM C-923, SHALL BE CAST INTO BASE SECTION.
G. MINIMUM DROP BETWEEN INVERTS SHALL BE ONE-TENTH OF A FOOT (0.1').
H. GRADE RINGS WITH AN I.D. TO MATCH FRAMES CLEAR OPENING WITH A MAXIMUM OF FIVE (5) GRADE RINGS ARE ALLOWED.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD STORM SEWER MANHOLE PLAN — SD12



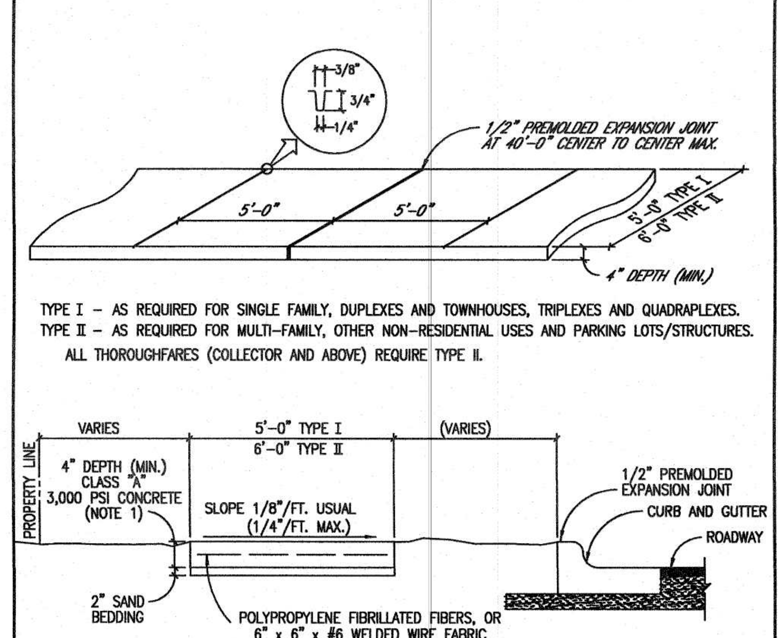
NOTES:

1. MANHOLES SHALL BE PRECAST ASTM C-478 BELL AND SPIGOT WITH PROFILE GASKET – SINGLE OFF-SET JOINTS.
2. SEE PLANS AND MANHOLE SCHEDULE, FOR MANHOLE SIZE, LOCATION, CONFIGURATION, TYPE OF TOP SECTION, VENTING REQUIREMENTS, PIPE SIZE AND TYPES.
3. SEE SPECIFICATIONS ON MATERIALS AND CONSTRUCTION.
4. AN 80 MIL COAT OF RAVEN LINING SYSTEMS, RAVEN 405 ULTRA HIGH BUILD EPOXY COATING, OR SPRAY WALL EPOXY COATING, OR APPROVED EQUAL, TO BE APPLIED TO ENTIRE INTERIOR OF EACH STORM SEWER MANHOLE AND UNDERSIDE OF FLAT TOPS.
5. ALL MANHOLE COVERS SHALL BE BOLTED AND GASKETED WHEN MANHOLES ARE LOCATED OUT FROM PAVEMENT.
6. MANHOLES TO BE VENTED ARE IDENTIFIED ON MANHOLE SCHEDULE. REFERENCE MANHOLE VENT DETAIL.
7. MANHOLES ARE TO BE DESIGNED TO RESIST LATERAL AND VERTICAL SOIL FORCES RESULTING FROM MANHOLE DEPTH. ADDITIONALLY, MANHOLES LOCATED IN PAVEMENT TO BE DESIGNED FOR HS-20 TRAFFIC LOADS.
8. MANHOLE BASE BEDDING MATERIAL SPECS. FOR 3/4" WASHED GRAVEL.
9. GROUT SHALL MEET THE REQUIREMENTS AS STATED BY THE COATING MANUFACTURER.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD STORM SEWER MANHOLE – SECTION — SD13



TYPE I – AS REQUIRED FOR SINGLE FAMILY, DUPLEXES AND TOWNHOUSES, TRIPLEXES AND QUADRAPLEXES.
TYPE II – AS REQUIRED FOR MULTI-FAMILY, OTHER NON-RESIDENTIAL USES AND PARKING LOTS/STRUCTURES.
ALL THOROUGHFARES (COLLECTOR AND ABOVE) REQUIRE TYPE II.

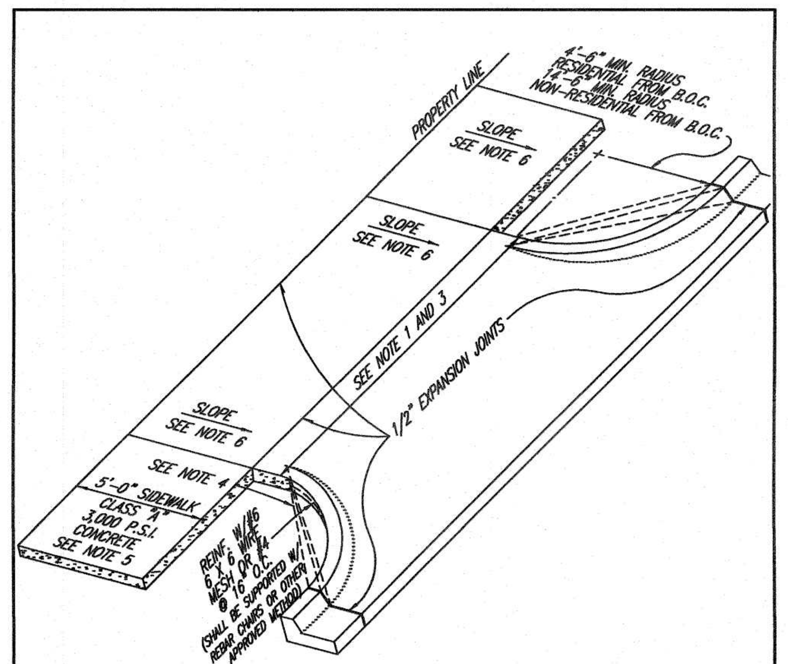
NOTES:

1. STANDARD LOCATION OF SIDEWALK SHALL BE IN CONFORMANCE WITH THE UDC.
2. SIDEWALK SHALL CONFORM TO CURRENT TDLR/TAS STANDARDS.
3. ALL SIDEWALKS SHALL BE SUBMITTED AND APPROVED BY THE REGISTERED ACCESSIBILITY SPECIALIST (RAS) AND ENGINEER OF RECORD.
4. ANY VARIANCE IN TEXTURE, GRADE OR ALIGNMENT SHALL BE APPROVED BY THE REGISTERED ACCESSIBILITY SPECIALIST (RAS) AND BY THE CITY ENGINEER.
5. SLIP DOWEL SHALL BE INSTALLED AT EVERY LONGITUDINAL EXPANSION JOINT (UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER DURING ENGINEERING PLAN REVIEW PRIOR TO FINAL DESIGN).

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

REVISED 6/25/2015 WBD
ADOPTED 6/21/2006 TRB

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
SIDEWALK SECTION AND JOINT DETAIL — SD14



NOTES:

1. MAXIMUM WIDTH OF APPROACH SHALL BE 24'-0" FOR RESIDENTIAL, 30'-0" FOR NON-RESIDENTIAL UNDIVIDED AND 45'-0" FOR NON-RESIDENTIAL DIVIDED.
2. DRIVEWAY PERMITS SHALL BE ACQUIRED FROM CITY INSPECTION OFFICE.
3. MINIMUM WIDTH OF APPROACH SHALL BE 10'-0" FOR RESIDENTIAL AND 15'-0" FOR NON-RESIDENTIAL.
4. LINEAR "RADIUS" AT CORNERS, PERMITTED FOR "SINGLE FAMILY" OR "TWO FAMILY" RESIDENTIAL DRIVEWAY APPROACH.
5. SIDEWALK LOCATION SHALL BE APPROVED BY CITY ENGINEER PRIOR TO FINAL DESIGN.
6. SLOPE 1/8" PER FOOT USUAL, SHALL NOT EXCEED 2.0%.
7. DRIVEWAY APPROACH THICKNESS SHALL BE A MIN. OF 6".

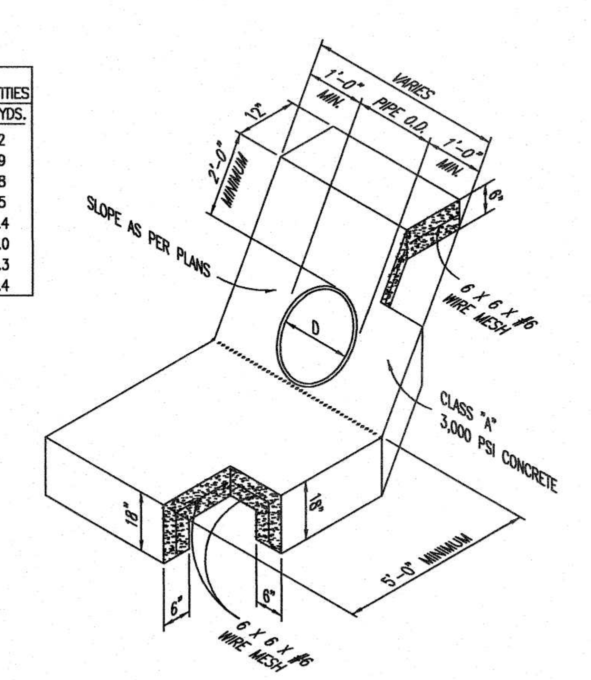
The Architect/Engineer assumes responsibility for appropriate use of this standard.

REVISED 6/25/2015 WBD
ADOPTED 6/21/2006 TRB

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
CONCRETE DRIVEWAY APPROACH TYPICAL — SD15

MINIMUM RIP-RAP QUANTITIES

PIPE	SQ. YDS.
18"	6.2
24"	6.9
27"	7.8
30"	9.5
36"	10.4
42"	12.0
48"	14.3
54"	16.4



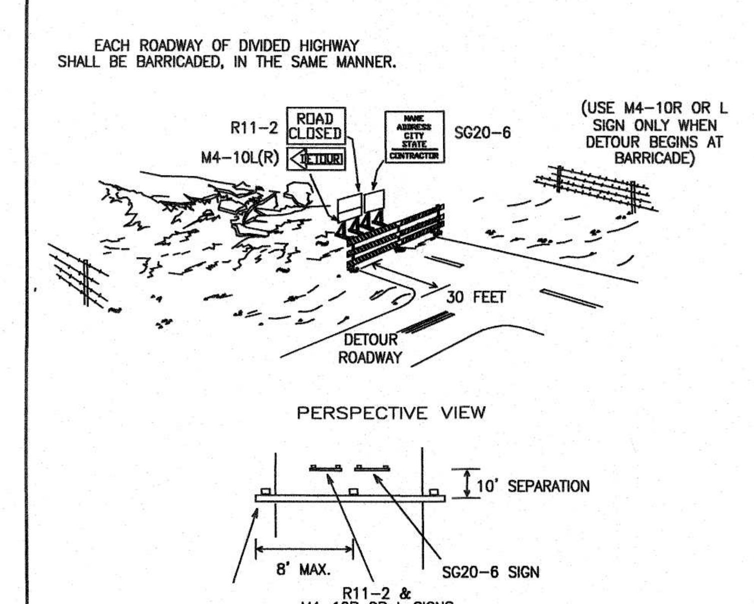
NOTES:

1. WHEN HEADWALLS AND WINGWALLS ARE REQUIRED, THEY SHALL CONFORM TO THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARDS, OR AS DIRECTED BY THE CITY.
2. ENERGY DISSIPATERS SHALL BE REQUIRED IF PIPE VELOCITY IS GREATER THAN 5.0 F.P.S. OR AS DIRECTED BY THE CITY OF GEORGETOWN.
3. SUPPORT REINFORCING WIRE MESH REQUIRED AS SUPPORT FOR APPROACH SLAB AND SHALL BE SUPPORTED BY REBAR CHAIRS OR OTHER APPROVED METHODS.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL CONCRETE RIP-RAP AT PIPE — SD19

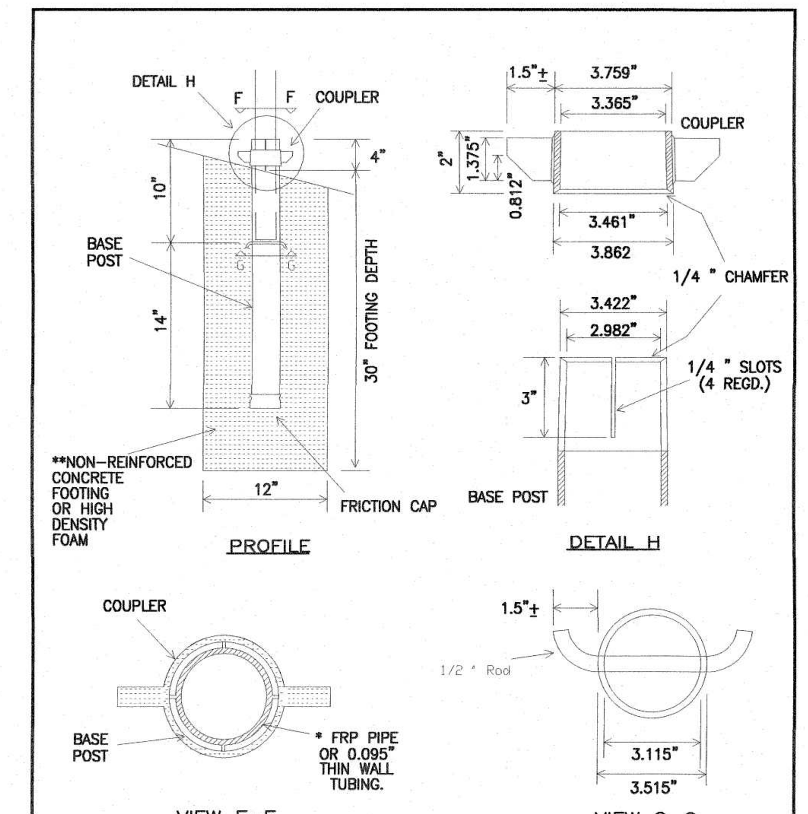


1). R11-2 AND M4-10 SIGNS SHOULD BE MOUNTED ON INDEPENDENT SUPPORTS AT 7' MOUNTING HEIGHT IN CENTER OF ROADWAY.
2). ADVANCE SIGNING, INCLYDE CONSTRUCTION WARNING, SIGNS AND DETOUR SIGNING SHALL BE AS SPECIFIED ELSEWHERE IN THE PLANS.
3). THE THREE RAILS ON TYPE III BARRICADES SHALL BE REFLECTIVE ORANGE AND REFLECTIVE WHITE STRIPES ON ONE SIDE FACING ONE-WAY TRAFFIC AND BOTH SIDES FOR TWO-WAY TRAFFIC.
4). BARRICADE STRIPING SHOULD SLANT DOWNWARD IN THE DIRECTON OF DETOUR.
5). ALL SIGNS TO BE IN CONFORMANCE WITH THE CURRENT EDITION OF THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPE III CONSTRUCTION BARRICADE — SD22



* PLASTING INSERT MUST BE USED WITH 1/16 " THIN WALL TUBING.
** FOOTING SHALL BE REMOVED AND BACKFILLED WHEN BARRICADE IS REMOVED.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
UNIVERSAL ANCHOR SYSTEM — SD23

BLUFFVIEW SUBDIVISION
PHASE 1

GENERAL DETAILS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE: 1/12/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 DT1.dwg

JUSTIN D. MIDURA 128809 LICENSED PROFESSIONAL ENGINEER
1-12-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 150
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRN-F-1386

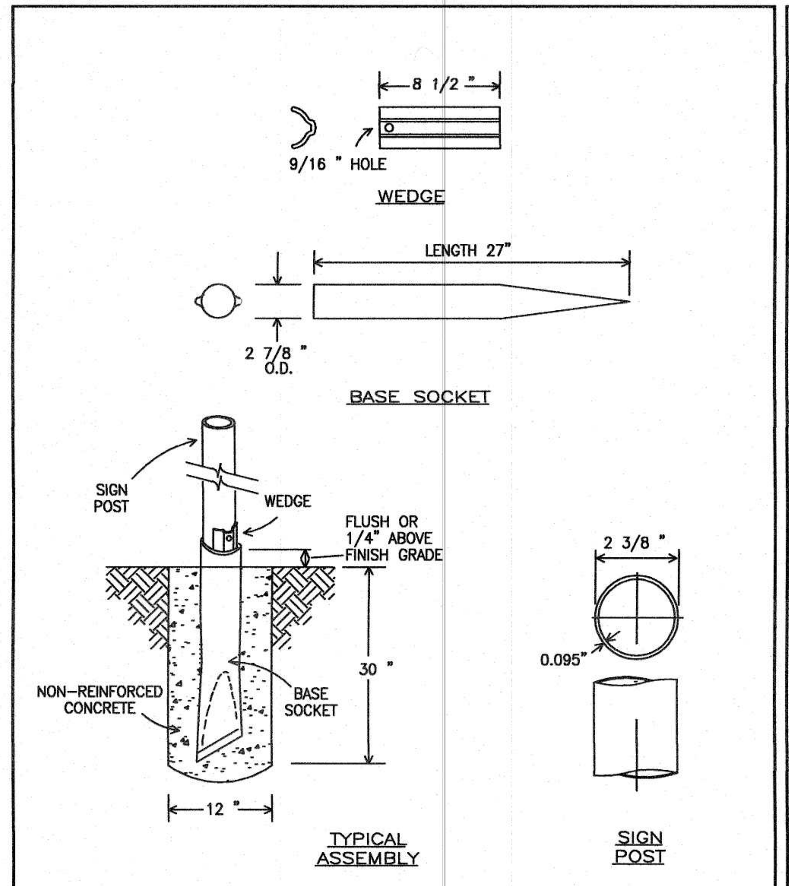
JOB NUMBER: ####

DT1

SHEET NO. 90 OF 93 SHEETS

Date/Time : Fri, 12 Jan 2024 - 2:56pm User Name : ejlopez
FileName : G:\A140-0418 Bluffview\CAD\Sheet Files\A140-0418 DT1.dwg

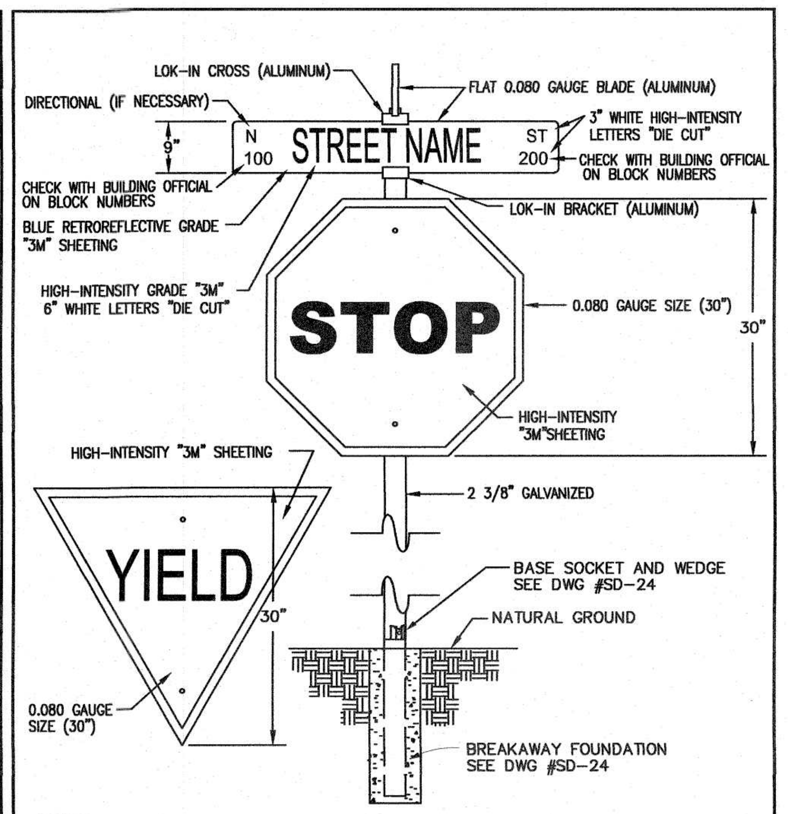
BLUFFVIEW SUBDIVISION PHASE 1
GENERAL DETAILS



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

ADOPTED 6/21/2006

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
POZ-LOC (BREAKAWAY FOUNDATION)
SD24



NOTES:

1. 7-FOOT MIN. HEIGHT FROM GROUND TO BOTTOM OF SIGN.
2. ALL SIGNS TO BE IN CONFORMANCE WITH THE CURRENT EDITION OF THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
3. ALL SIGNAGE SHEETINGS SHALL BE HIGH-INTENSITY "3M" SHEETING.

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

REVISED 1/14/2014 WBD
ADOPTED 6/21/2006 TRB

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
STANDARD STREET SIGN DETAIL
SD25

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

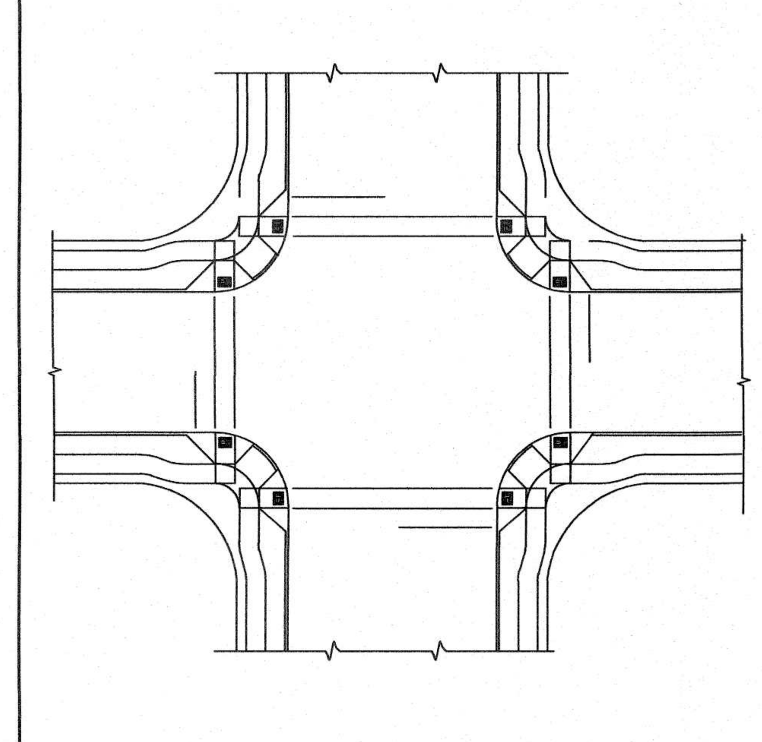
NOTES:

1. COMMERCIAL SIDEWALKS WIDTHS – 6'
   RESIDENTIAL SIDEWALKS WIDTHS – 5'
2. ALL SLOPES ARE MAXIMUM ALLOWABLE. FLATTER SLOPES THAT WILL STILL DRAIN PROPERLY ARE ENCOURAGED.
3. ALL CONCRETE SURFACES SHALL RECEIVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE IN THE PLANS.
4. FOR PURPOSES OF WARNING, THE CURB RAMPS SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRASTS WITH THAT OF ADJOINING PEDESTRIAN ROUTES.
5. TEXTURES MAY CONSIST OF PAVERS WITH TRUNCATED DOMED SURFACES. TEXTURES ARE REQUIRED TO BE DETECTABLE UNDERFOOT. SURFACES THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED.
6. COLOR CONTRAST, FOR EXAMPLE, MAY BE ACCOMPLISHED WITH COLORED CONCRETE PAVERS THAT HAVE TRUNCATED DOMES WHICH WOULD PROVIDE A CONTRAST WITH TYPICALLY LIGHT COLORED CONCRETE.
7. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, VISIBILITY AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) PREPARED AND ADMINISTERED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).
8. RAISED MEDIANS SEPARATE OPPOSING DIRECTIONS OF TRAFFIC AND PROVIDE A REFUGE AREA FOR PEDESTRIANS IF THEY ARE UNABLE TO CROSS THE ENTIRE ROADWAY IN THE ALLOTTED SIGNAL PHASE. MEDIAN CROSSING SHALL BE A MINIMUM OF 5' WIDE. MEDIANS SHIOULD BE DESIGNED TO PROVIDE ACCESSIBLE PASSAGE OVER OR TROUGH THEM.
9. ALL SIDEWALK PLANS AND DETAILS SHALL BE SUBMITTED AND APPROVED BY "REGISTERED ACCESSIBILITY SPECIALIST" (RAS).
10. ANY PART OF THE ACCESSIBLE ROUTE WITH A SLOPE GRATER THAN 1:20 (5%) SHALL BE CONSIDERED A RAMP. IF A RAMP HAS A RISE GREATER THAN 6 INCHES OR A HORIZONTAL PROJECTION GREATER THAN 72 INCHES, THEN IT SHALL MEET THE REQUIREMENTS OF A RAMP PER TAS 405.THE ONLY EXCEPTION IS AT CURB RAMPS. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. CURB RAMPS SHALL BE PROVIDED WHERE EVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
11. TRAFFIC SIGNAL OR ILLUMINATION POLES, GROUND BOXES, CONTROLLER BOXES, SIGNS, DRAINAGE FACILITIES AND OTHER ITEMS SHALL BE PLACED SO NOT TO OBSTRUCT THE ACCESSIBLE ROUTE OR ACT PROTRUDING OBJECTS.
12. ALL SIDEWALKS SHALL BE DOWELED INTO EXISTING SIDEWALKS, DRIVEWALKS, DRIVEWAYS, INLET BOXES, RETAINING WALLS, ETC.
13. ALL SIDEWALK CROSS-SLOPES SHALL NOT EXCEED 1:50, UNLESS A VARIANCE IS PROVIDED BY TDLR.

(PENETRATES) A CURB.

REVISED 6/25/2015 WBD
ADOPTED 6/21/2006 TRB

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
PEDESTRIAN RAMPS GENERAL NOTES
SD28
NTS 1/2003 MRS TRB

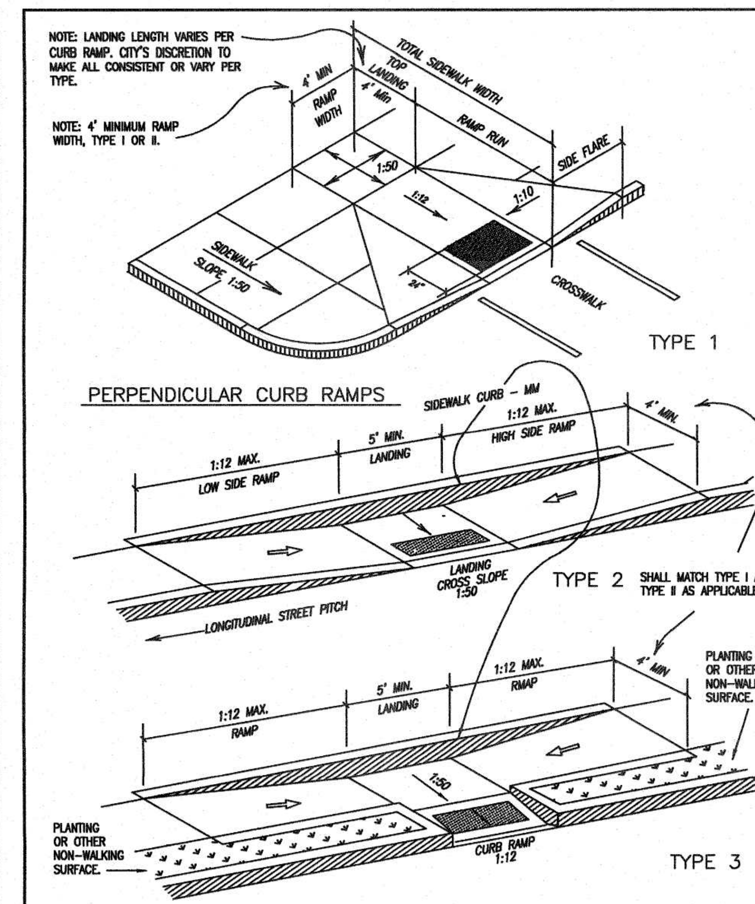


NOTE: ALL RAMPS SHALL BE CONTAINED WITHIN THE RESPECTIVE CURB RETURN RADIUS.

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

REVISED 6/29/2015 WBD
ADOPTED 6/21/2006 TRB

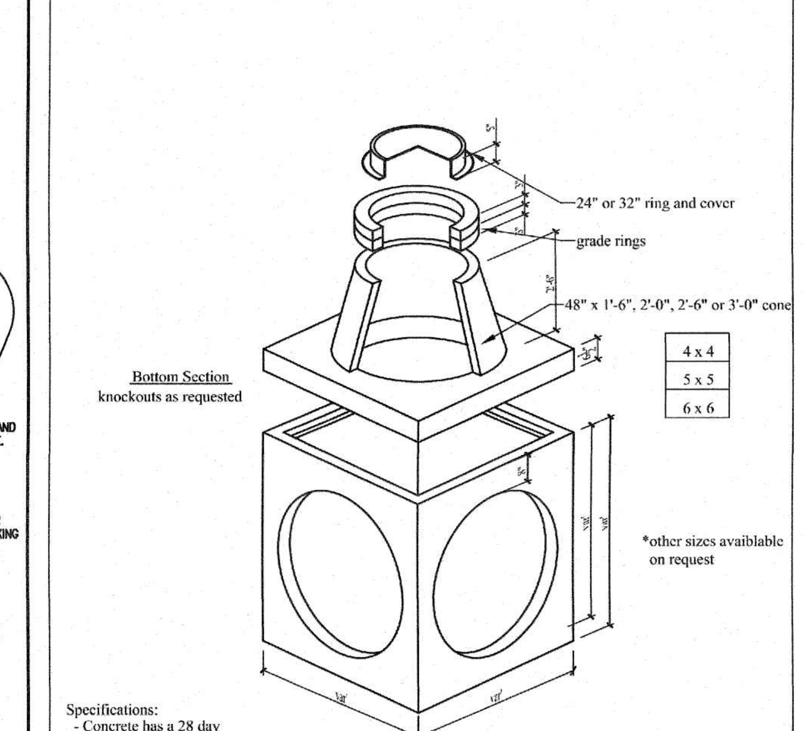
CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
TYPICAL INTERSECTON LAYOUT
SD29



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

REVISED 6/30/2015 WBD
ADOPTED 6/21/2006 TRB

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
SIDEWALK RAMP DETAILS TYPE 1-3
SD31



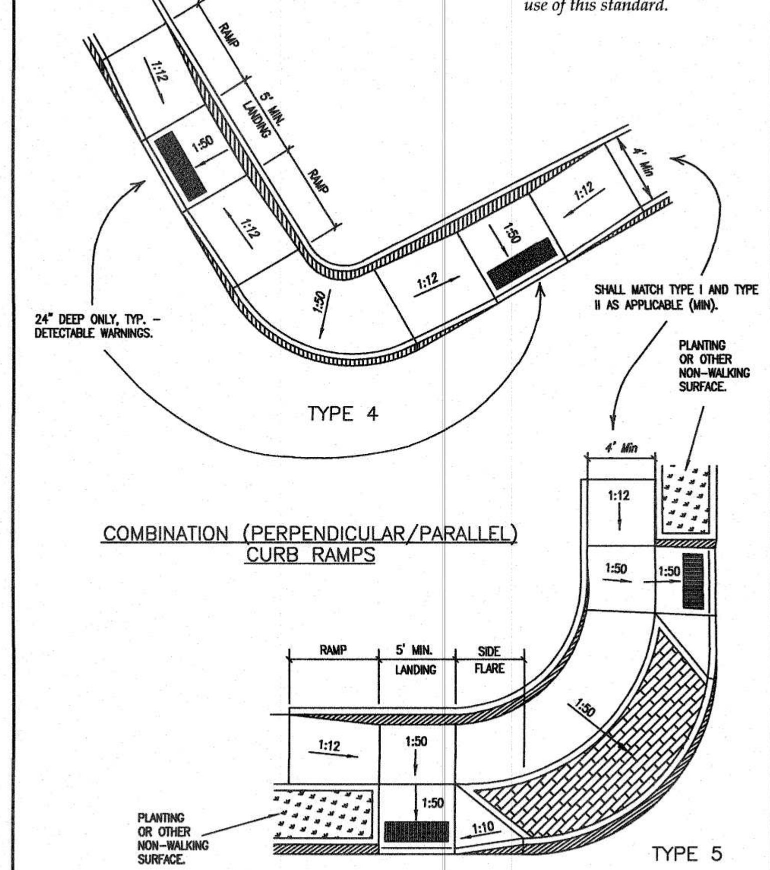
Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. — Capital Precast — Junction Box / Manhole

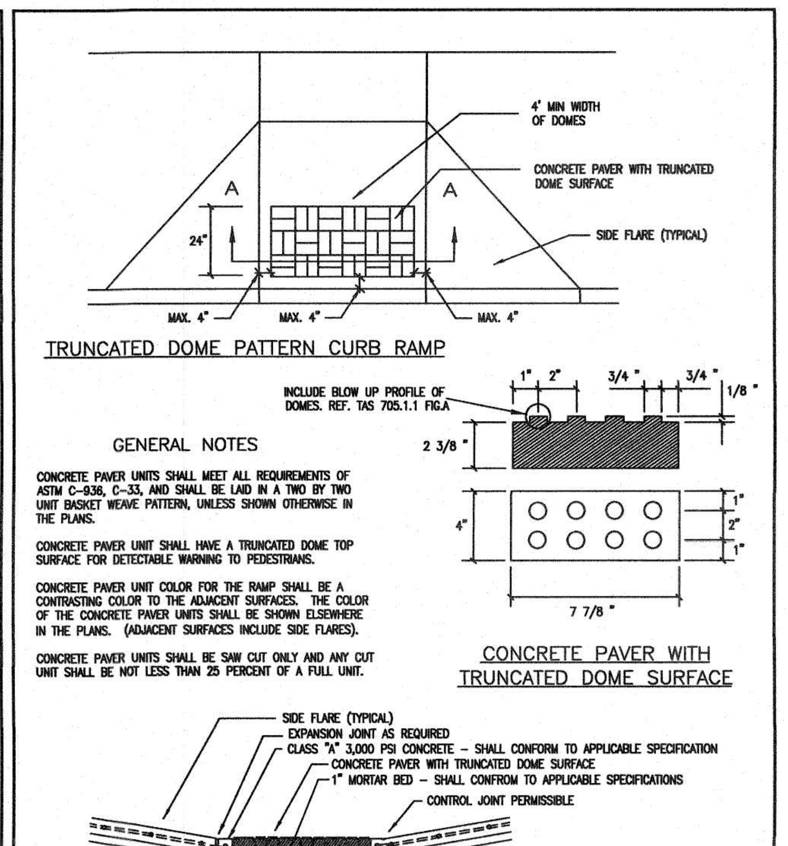
OR APPROVED EQUAL

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



REVISED 7/6/2015 WBD
ADOPTED 6/21/2006 TRB

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
SIDEWALK RAMP DETAIL TYPES 4 & 5
SD33



GENERAL NOTES

CONCRETE PAVER UNITS SHALL MEET ALL REQUIREMENTS OF ASTM C-936, C-33, AND SHALL BE LAID IN A TWO BY TWO UNIT BASKET WEAVE PATTERN, UNLESS SHOWN OTHERWISE IN THE PLANS.

CONCRETE PAVER UNIT SHALL HAVE A TRUNCATED DOME TOP SURFACE FOR DETECTABLE WARNING TO PEDESTRIANS.

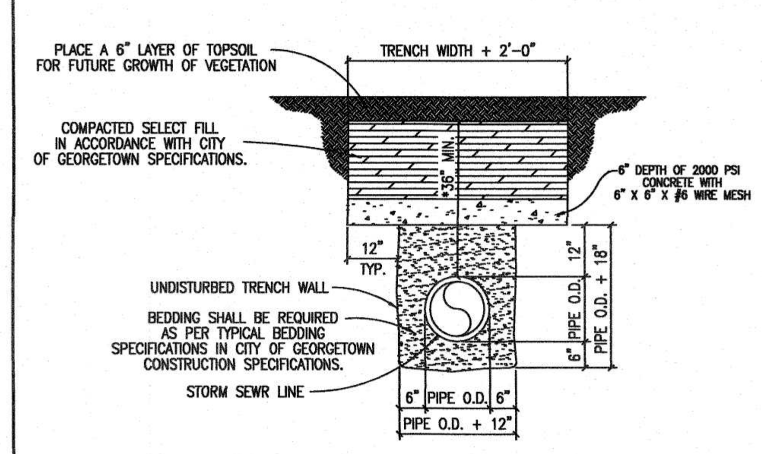
CONCRETE PAVER UNIT COLOR FOR THE RAMP SHALL BE A CONTRASTING COLOR TO THE ADJACENT SURFACES. THE COLOR OF THE CONCRETE PAVER UNITS SHALL BE SHOWN ELSEWHERE IN THE PLANS. (ADJACENT SURFACES INCLUDE SIDE FLARES).

CONCRETE PAVER UNITS SHALL BE SAW CUT ONLY AND ANY CUT UNIT SHALL BE NOT LESS THAN 25 PERCENT OF A FULL UNIT.

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

REVISED 7/7/2015 WBD
REVISED 1/14/2014 WBD
ADOPTED 6/21/2006 TRB

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
CURB RAMP TEXTURES TYPE A
SD37

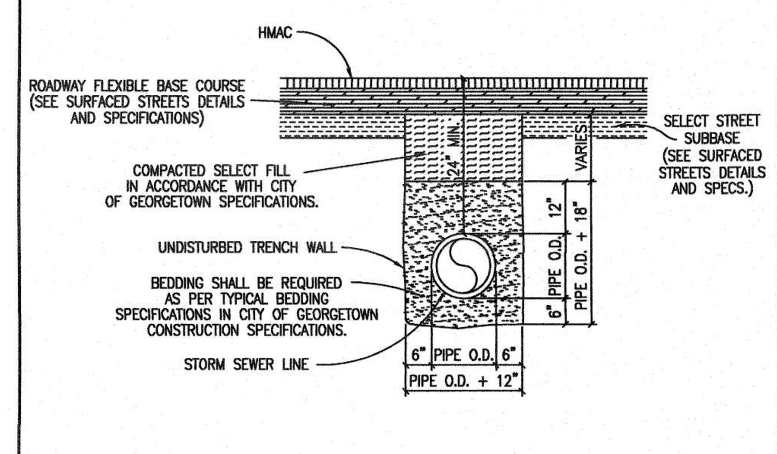


TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER 1'-0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER 2'-0" + PIPE O.D.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
CONCRETE TRANCH CAP DETAIL FOR STORM SEWER
SD39



NOTES:

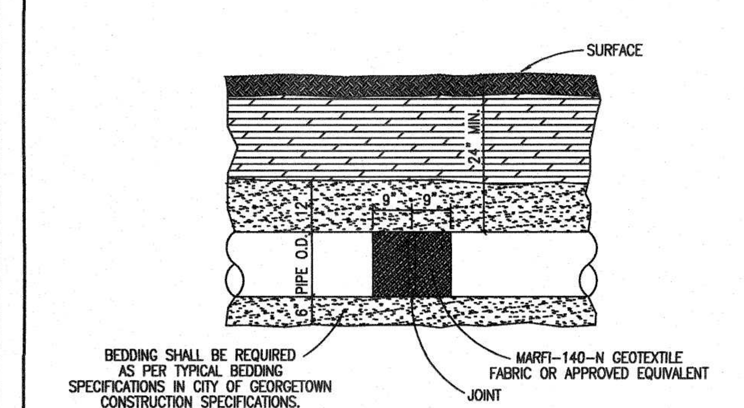
1. DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS AND STANDARDS.
2. CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL (SEE C9 FLOWABLE BACKFILL FOR THE SPECIFICATION).

TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER 1'-0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER 2'-0" + PIPE O.D.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT DETAIL UNDER PROPOSED ROADWAY FOR STORM SEWER
SD41



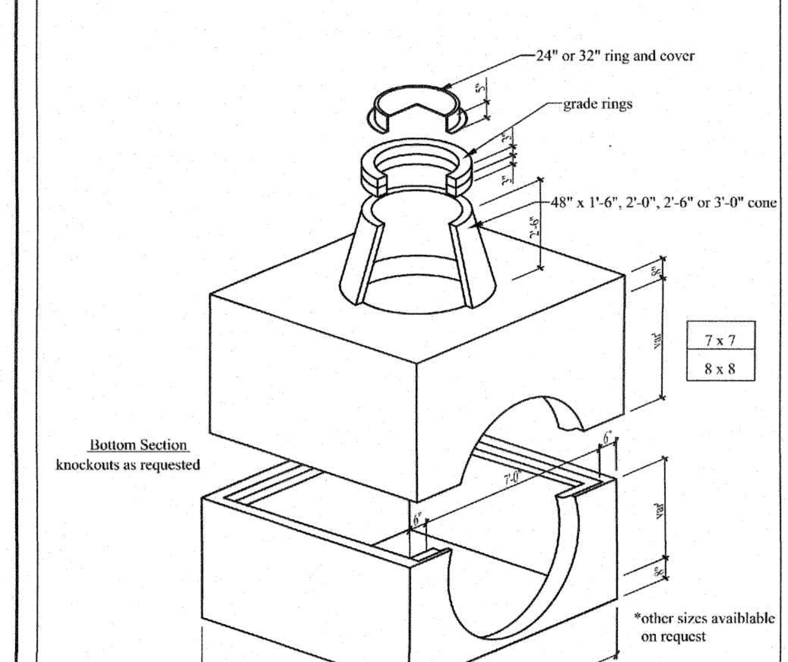
NOTES

1. PIPE SHALL BE REINFORCED CONCRETE PIPE CLASS III UNLESS THE DEPTH OF PIPE REQUIRES A STRONGER CLASS.
2. ALL FITTINGS AND WYES SHALL BE MANUFACTURED AND NOT CONSTRUCTED ON THE PROJECT WITHOUT PRIOR APPROVAL FROM THE CITY.
3. ALL JOINTS SHALL BE WRAPPED WITH MARFI-140-N GEOTEXTILE FABRIC OR APPROVED EQUIVALENT. EACH JOINT SHALL BE WRAPPED WITH 18" WIDE FABRIC CENTERED ON THE JOINT.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT DETAIL (PROFILE) FOR STORM SEWER
SD42



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

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. — Capital Precast — Junction Box / Manhole

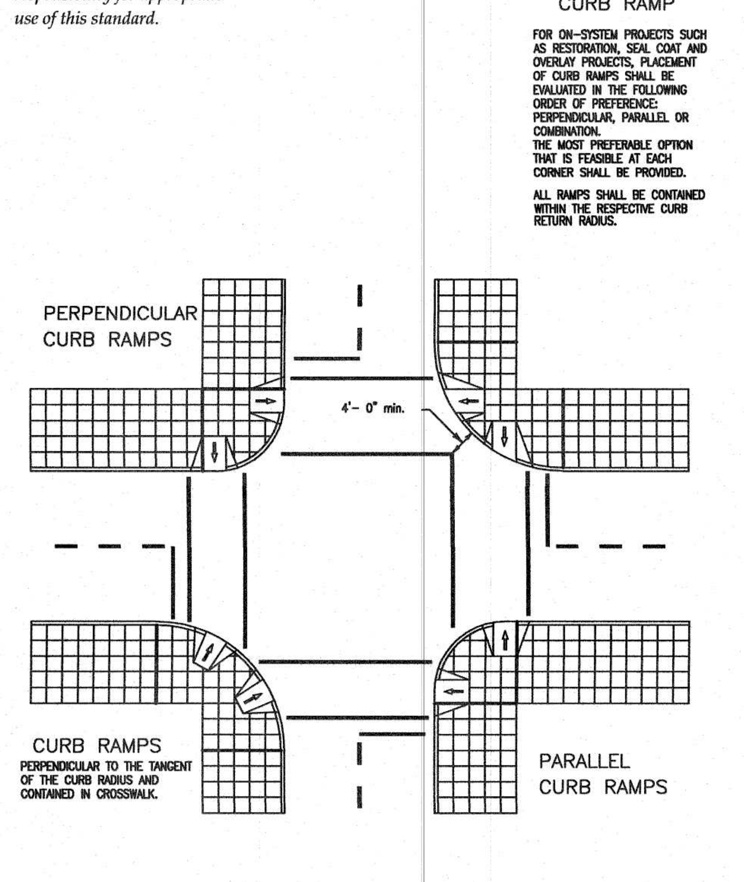
OR APPROVED EQUAL

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

CURB RAMP

FOR ON-SYSTEM PROJECTS SUCH AS RESTORATION, SEAL COAT AND OVERLAY PROJECTS, PLACEMENT OF CURB RAMPS SHALL BE EVALUATED IN THE FOLLOWING ORDER OF PREFERENCE: PERPENDICULAR, PARALLEL, OR COMBINATION. THE MOST PREFERABLE OPTION THAT IS FEASIBLE AT EACH CORNER SHALL BE PROVIDED.

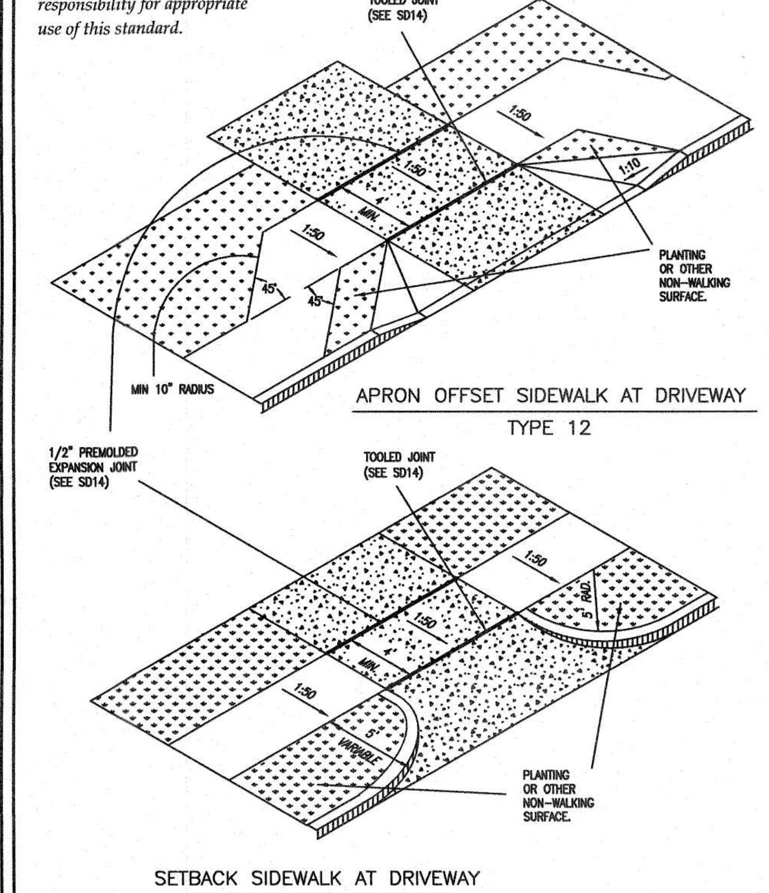
ALL RAMPS SHALL BE CONTAINED WITHIN THE RESPECTIVE CURB RETURN RADIUS.



REVISED 6/26/2015 WBD
ADOPTED 6/21/2006 TRB

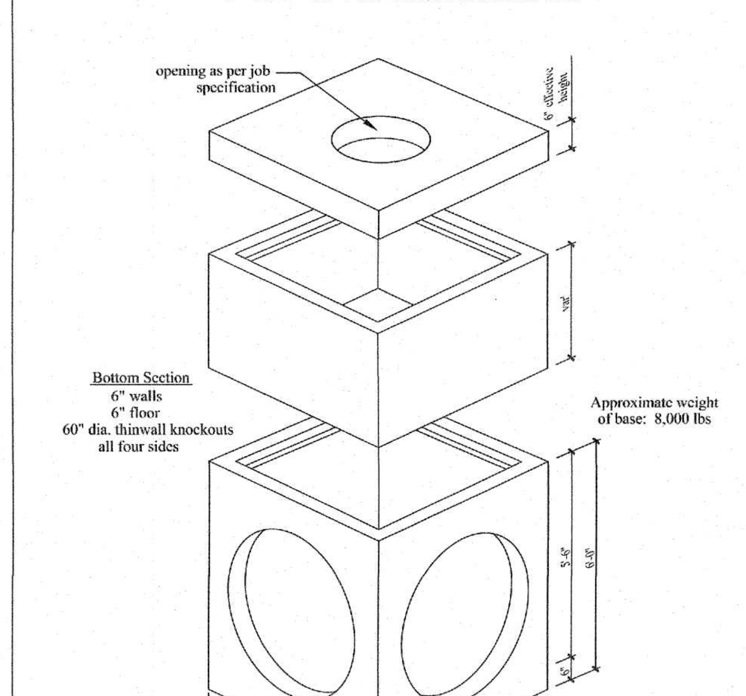
CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
CURB RAMP PLACEMENTS AT INTERSECTIONS
SD30

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

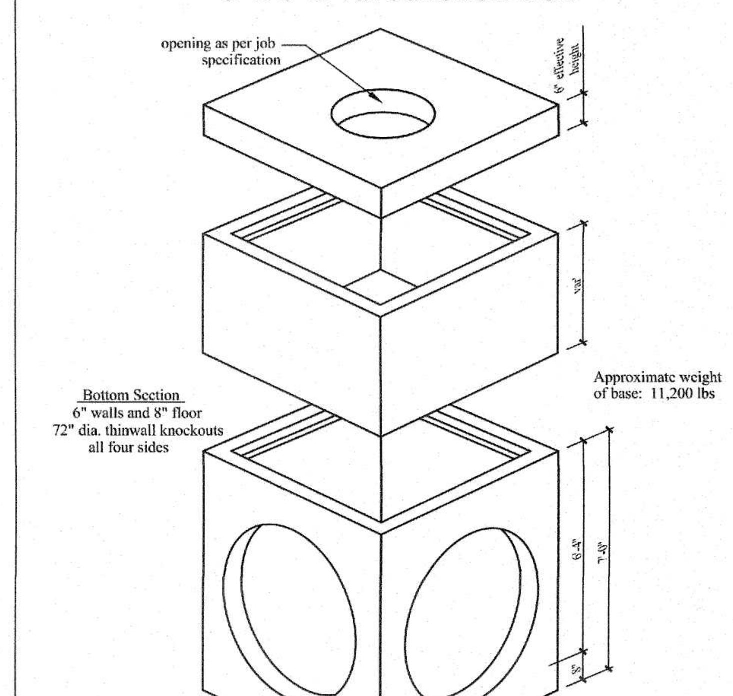


REVISED 7/7/2015 WBD
ADOPTED 6/21/2006 TRB

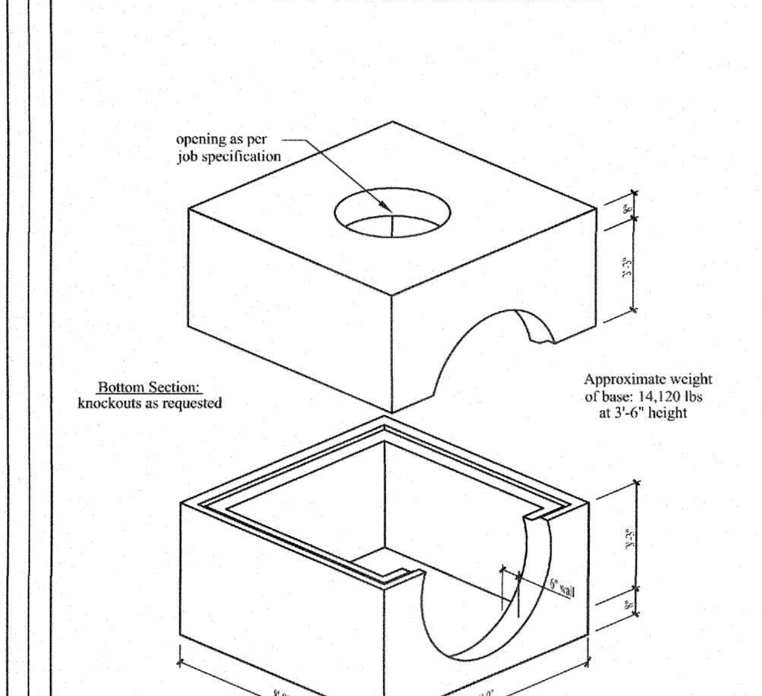
CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
DRIVEWAY APRONS TYPES 12 & 13
SD35



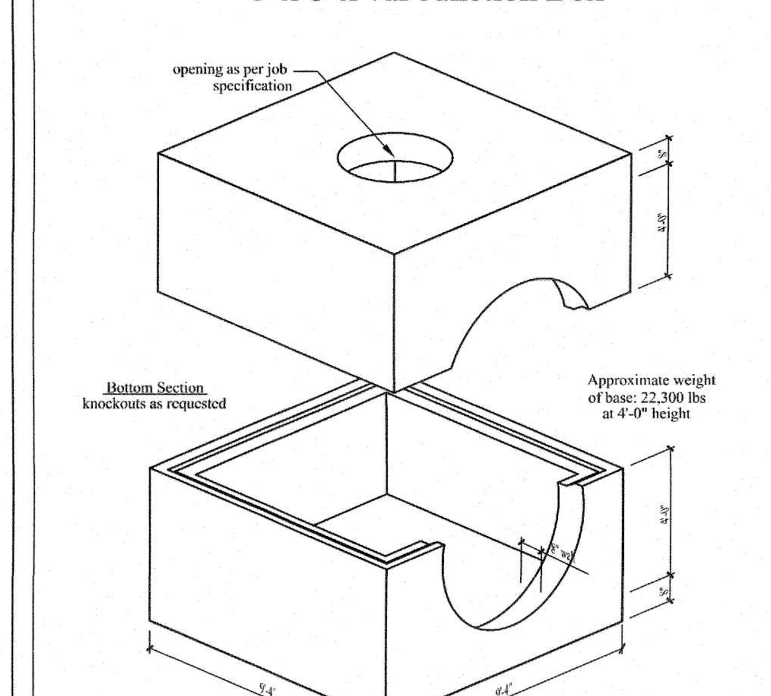
OR APPROVED EQUAL



OR APPROVED EQUAL



OR APPROVED EQUAL



OR APPROVED EQUAL

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

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC.

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 1/18/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 DT2.dwg

STATE OF TEXAS — JUSTIN D. MIDURA — 128809 — LICENSED PROFESSIONAL ENGINEER
1-17-2024

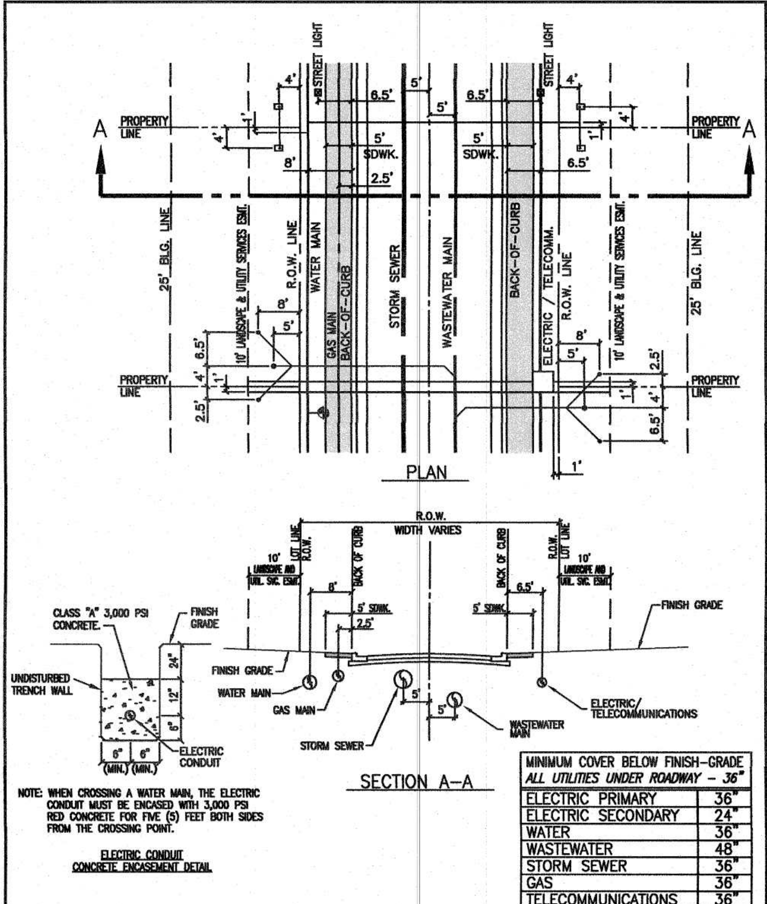
LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

DT2

BLUFFVIEW SUBDIVISION PHASE 1

GENERAL DETAILS



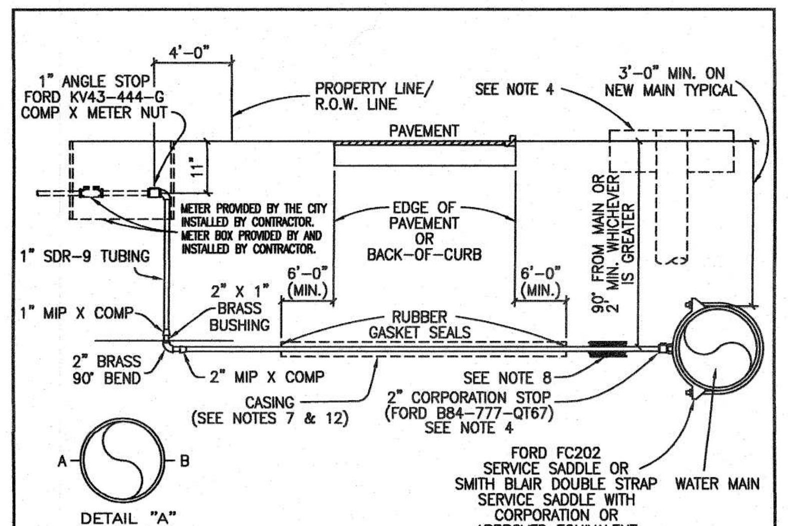
MINIMUM COVER BELOW FINISH–GRADE	
ALL UTILITIES UNDER ROADWAY – 36"	
ELECTRIC PRIMARY	36"
ELECTRIC SECONDARY	24"
WATER	36"
WASTEWATER	48"
STORM SEWER	36"
GAS	36"
TELECOMMUNICATIONS	36"

CLASSIFICATION	ROW	B–B	PVMT.
LOCAL STREET	50'	28'	24'
RESIDENTIAL STREET	60'	37'	33'
MAJOR COLLECTOR	73'	45'	41'

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
UTILITY ASSIGNMENTS FOR LOCAL STREETS, RESIDENTIAL COLLECTORS AND MAJOR COLLECTORS
W01A

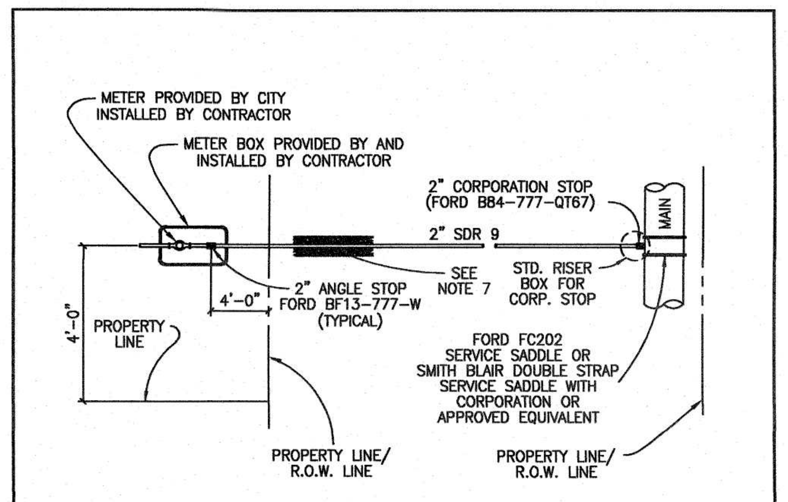


NOTES:
1. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" OFFSET AND AT THE CENTERLINE AS SHOWN ON DETAIL "A".
2. WHERE NO SIDEWALK EXISTS, METER BOXES SHALL BE SET TO CONFORM TO FINISHED GRADE.
3. AUTHORIZED SERVICE LINE MATERIAL: POLYETHYLENE TUBING SHALL BE SDR–9. CLASS 200, SDR TUBING SHALL HAVE STAINLESS STEEL STIFFENERS.
4. ROTATE THE CORPORATION STOP SO THAT THE OPERATING NUT IS ACTUATED FROM THE VERTICAL POSITION RATHER THAN THE HORIZONTAL. SEE STD. RISER FOR CORP. STOP DETAIL, (DWG # W08).
5. SERVICE LINES SHALL BE CONTINUOUS FROM CORPORATION STOP TO CORPORATION STOP WITH NO FITTINGS IN BETWEEN.
6. SERVICE CASING SHALL NOT BE INSTALLED BY WATER JETTING UNDER ROADWAY.
7. CASING REQUIRED FOR ALL PAVEMENT CROSSINGS. 4" SDR–26 REQUIRED FOR OPEN–CUT. STEEL CASING PIPE REQUIRED FOR JACK AND BORE. LIMITS OF CASING SHOULD EXTEND SIX FEET BEYOND THE EDGE OF PAVEMENT OR BACK–OF–CURB.
8. BEDDING MATERIAL AS PER CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS.
9. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.
10. METER BOX TO BE CAPABLE OF HOUSING ITRON AUTOMATIC METER READING DEVICE. USE DFW–PLASTICS, INC. PART NO. 1200.SBAMR OR APPROVED EQUAL.
11. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY. SEE DETAIL W23.
12. CASING SHALL EXTEND OUT TO WITHIN 4' INSIDE OF THE R.O.W. LINE, ON BOTH SIDES.

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

ADOPTED 01/23/2013

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL WATER SERVICE–ELEVATION
W03
NTS 1/2013

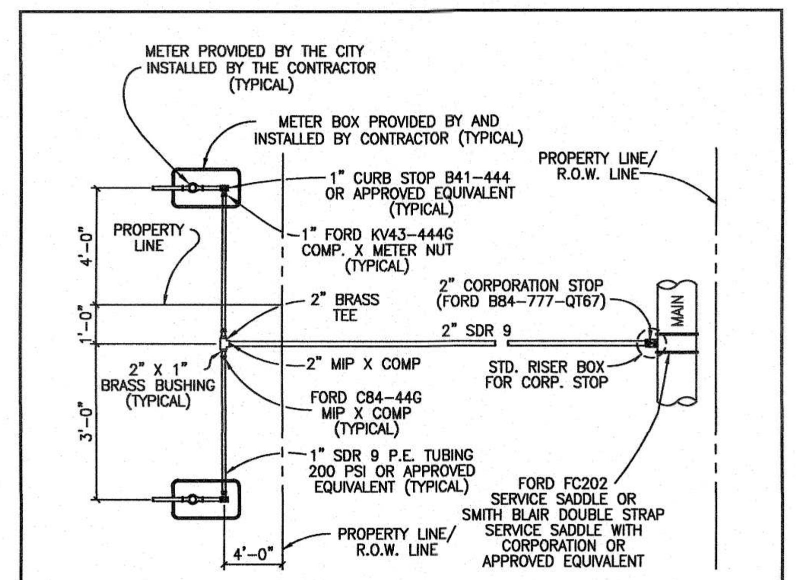


NOTES:
1. AUTHORIZED SERVICE LINE MATERIAL: POLYETHYLENE TUBING SHALL BE SDR–9. CLASS 200, SDR TUBING SHALL HAVE STAINLESS STEEL STIFFENERS.
2. ANGLE STOP SHALL BE 1" MINIMUM.
3. 1" ANGLE STOPS WITH 3/4" VALVES SHALL NOT BE PERMITTED.
4. MULTIPLE SERVICE/METER INSTALLATIONS OF MORE THAN 4 METERS PER SERVICE AND SERVICE LINES LARGER THAN 2" IN DIAMETER SHALL BE HANDLED ON AN INDIVIDUAL BASIS.
5. ANGLE STOPS 1 1/2" AND 2" IN SIZE SHALL BE PROVIDED WITH BOTH A LOCKING CAP AND METER FLANGE.
6. ANGLE STOPS SHALL BE INSTALLED 8" BELOW FINISHED GRADE AND MARKED WITH A 2" X 2" X 48" TREATED WOOD STAKE, PAINTED BLUE.
7. BEDDING MATERIAL AS PER CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS.
8. CASING REQUIREMENTS FOR SERVICE LINES CROSSING ROADWAYS SEE DETAIL W–03 NOTE #7.
9. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.
10. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY.

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

ADOPTED 01/23/2013

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
SINGLE WATER SERVICE PLAN
W04

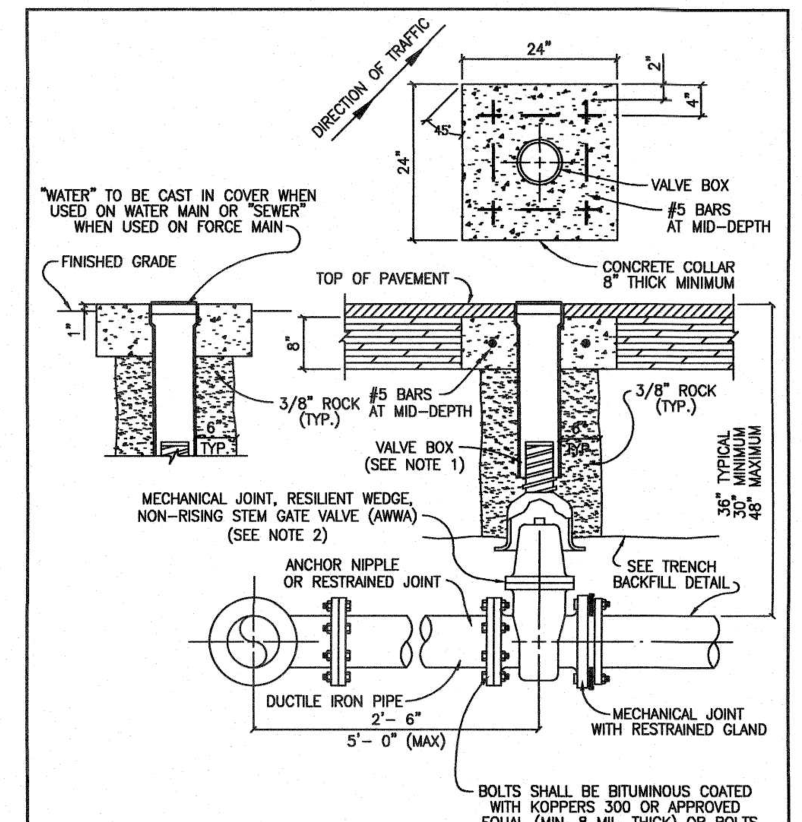


NOTES:
1. AUTHORIZED SERVICE LINE MATERIAL: POLYETHYLENE TUBING SHALL BE SDR–9. CLASS 200, SDR TUBING SHALL HAVE STAINLESS STEEL STIFFENERS.
2. ANGLE STOP SHALL BE 1" MINIMUM.
3. 1" ANGLE STOPS WITH 3/4" VALVES SHALL NOT BE PERMITTED.
4. MULTIPLE SERVICE/METER INSTALLATIONS OF MORE THAN 4 METERS PER SERVICE AND SERVICE LINES LARGER THAN 2" IN DIAMETER SHALL BE HANDLED ON AN INDIVIDUAL BASIS.
5. ANGLE STOPS 1 1/2" AND 2" IN SIZE SHALL BE PROVIDED WITH BOTH A LOCKING CAP AND METER FLANGE.
6. ANGLE STOPS SHALL BE INSTALLED 8" BELOW FINISHED GRADE AND MARKED WITH A 2" X 2" X 48" TREATED WOOD STAKE, PAINTED BLUE.
7. BEDDING MATERIAL AS PER CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS.
8. CASING REQUIREMENTS FOR SERVICE LINES CROSSING ROADWAYS SEE DETAIL W–03 NOTE #7.
9. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.
10. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY.

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

ADOPTED 01/23/2013

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
DOUBLE WATER SERVICE PLAN
W05
NTS 1/2013 – MH

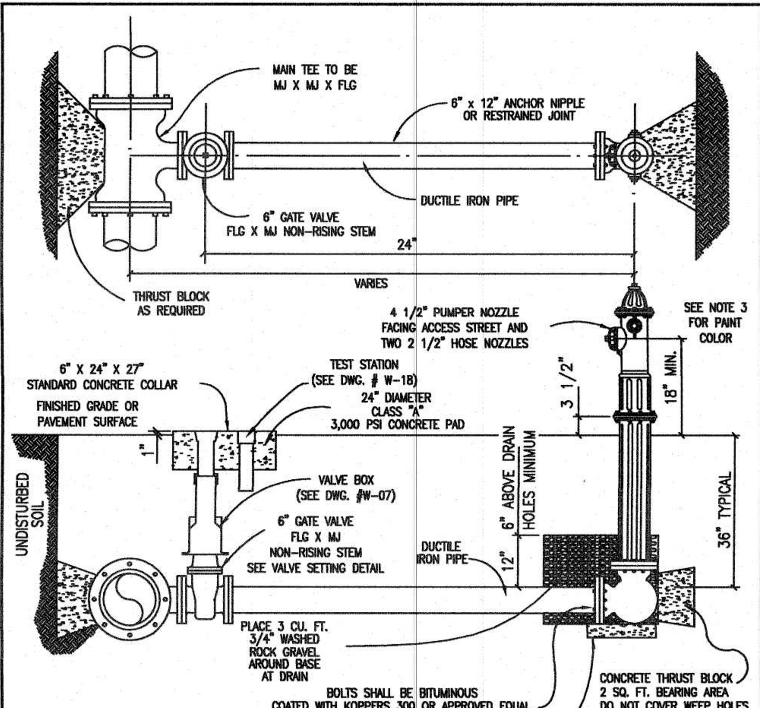


NOTES:
1. VALVE BOX SHALL BE 5 1/4" CAST IRON ADJUSTABLE HAVING AN ADJUSTABLE RANGE OF + OR – 6 INCHES FROM INSTALLED FINISH GRADE.
2. ACCEPTABLE GATE VALVES ARE:
   A. AMERICAN FLOW CONTROL – SERIES 2500
   B. MUELLER – 2360 SERIES
   C. CLOW

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL VALVE SETTING
W07

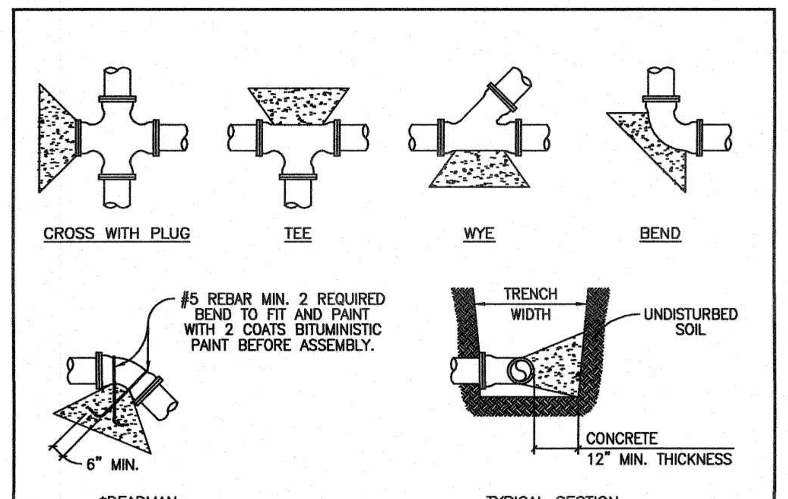


NOTES:
1. FIRE HYDRANT SHALL BE INSTALLED ON SAME SIDE OF ROAD AS WATER MAIN.
2. FIRE HYDRANT SHALL BE INSTALLED PLUMB AND TRUE.
3. ALL FIRE HYDRANT EXTERIORS SHALL BE FACTORY PRIMED AND PAINTED SILVER USING A HIGH GRADE ENAMEL.
4. HEEL AND THRUST BLOCKS TO REST IN UNDISTURBED SOIL.
5. THE ONLY FIRE HYDRANTS ACCEPTABLE ARE:
   A. KENNEDY – K81
   B. AMERICAN DARLING – B84B
   C. CLOW MEDALLION
6. DOUBLE BLUE REFLECTOR "HYE–LITES" BRAND, MANUFACTURED BY PAVEMENT MARKERS INC. TO BE INSTALLED AT CENTERLINE OF STREET PERPENDICULAR TO HYDRANT.
7. ALL METALLIC PIPES AND FITTINGS SHALL BE WRAPPED WITH 8 MILL. POLYETHELENE FILM.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL FIRE HYDRANT INSTALLATION
W10
NTS 1/2003 MRS TRB



ALL THRUST BLOCKS SHALL BE FORMED. LAID FORMS SHALL BE INSPECTED BY THE CITY OF GEORGETOWN PRIOR TO THE POURING OF CONCRETE AND SHALL ALSO BE INSPECTED BY THE CITY OF GEORGETOWN PRIOR TO COVERING. TYPICAL LOCATIONS WHICH REQUIRE CONCRETE REACTION (THRUST) BLOCKS, FOR PRESSURE MAINS FOUR INCHES (4") AND GREATER. CONCRETE SHALL HAVE 2,500 P.S.I. MINIMUM STRENGTH AT TWENTY EIGHT (28) DAYS AND BEAR AGAINST UNDISTURBED STABLE SOILS, AREA OF CONTACT SHALL BE GOVERNED BY PIPE SIZE, MAXIMUM PRESSURE IN PIPE, AND BEARING CAPACITY OF SOIL. PROTECT FITTINGS, BOLTS, ETC. BY COVERING WITH VISQUEEN OR OTHER ACCEPTABLE MATERIAL. CONCRETE SHALL BE A MINIMUM OF TWELVE INCHES (12") THICK.

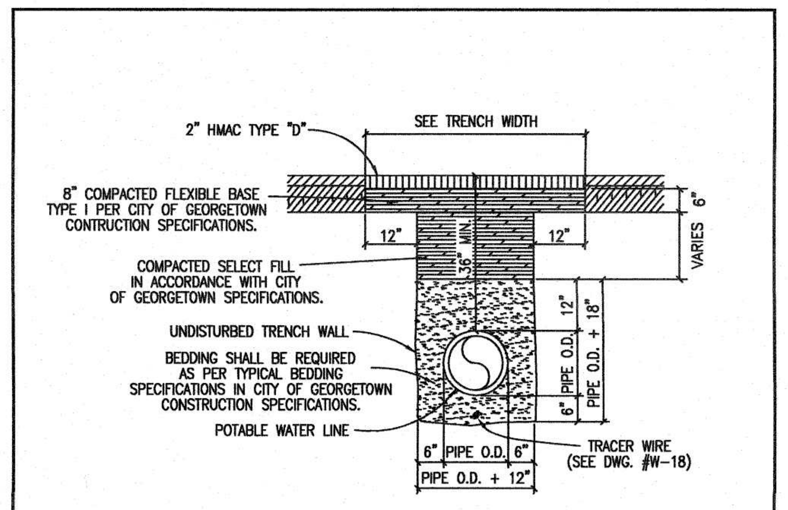
PIPE SIZE	THRUST BLOCK AREA REQUIRED	PIPE SIZE	THRUST BLOCK AREA REQUIRED	REMARKS
4"	2.0 SQ. FT.	18"	30.0 SQ. FT.	VALUES ARE FOR 90° BENDS, BASED ON 2000 P.S.F. SAFE BEARING LOAD AND PIPE PRESSURE OF 150 P.S.I. PLUS 33% SAFETY FACTOR FOR OTHER SOILS AND PRESSURES, THE AREA REQUIRED IS IN DIRECT PROPORTION.
6"	4.0 SQ. FT.	20"	37.0 SQ. FT.	
8"	6.6 SQ. FT.	24"	53.0 SQ. FT.	
10"	10.0 SQ. FT.	27"	80.0 SQ. FT.	
12"	14.0 SQ. FT.	30"	98.0 SQ. FT.	
14"	18.0 SQ. FT.	36"	127.0 SQ. FT.	
16"	24.0 SQ. FT.			

* THE ENGINEER OF RECORD SHALL CALCULATE THE SIZE OF THE DEADMAN REQUIRED AS WELL AS ANY INSTALLATION WHICH IS NOT COVERED BY THE ABOVE.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL THRUST BLOCKS FOR WATER AND FORCE MAIN
W11
NTS 1/2003 MRS TRB



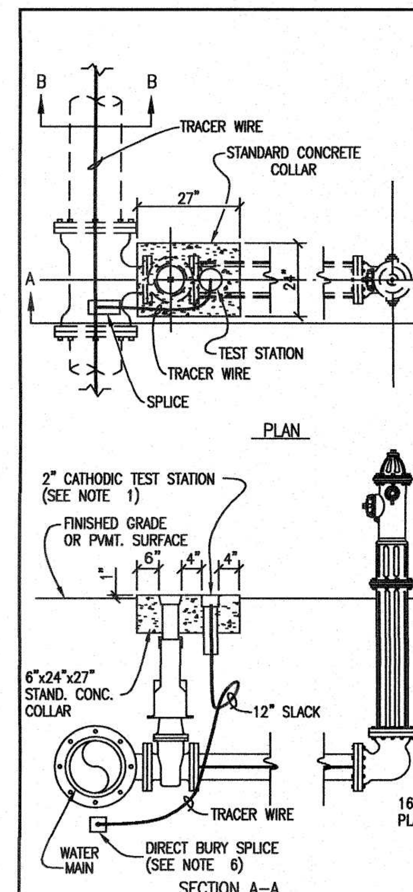
TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER 1'–0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER 2'–0" + PIPE O.D.

NOTES:
1. REPLACED BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE.
2. BASE MATERIAL SHALL BE IN LIFTS NOT TO EXCEED 6" AND EACH LIFT THOROUGHLY ROLLED OR TAMPED TO SPECIFIED MAXIMUM DENSITY.
3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
4. SURFACE MATERIAL WILL BE CONSISTENT WITH THE EXISTING SURFACE.
5. DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS AND STANDARDS.
6. CONTRACTOR OR ENGINEER MAY USE *FLOWABLE BACKFILL* AS AN ALTERNATE BACKFILL MATERIAL (SEE C9 FLOWABLE BACKFILL FOR THE SPECIFICATION).

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT AND PAVEMENT REPLACEMENT DETAIL UNDER EXISTING ROADWAY
W17

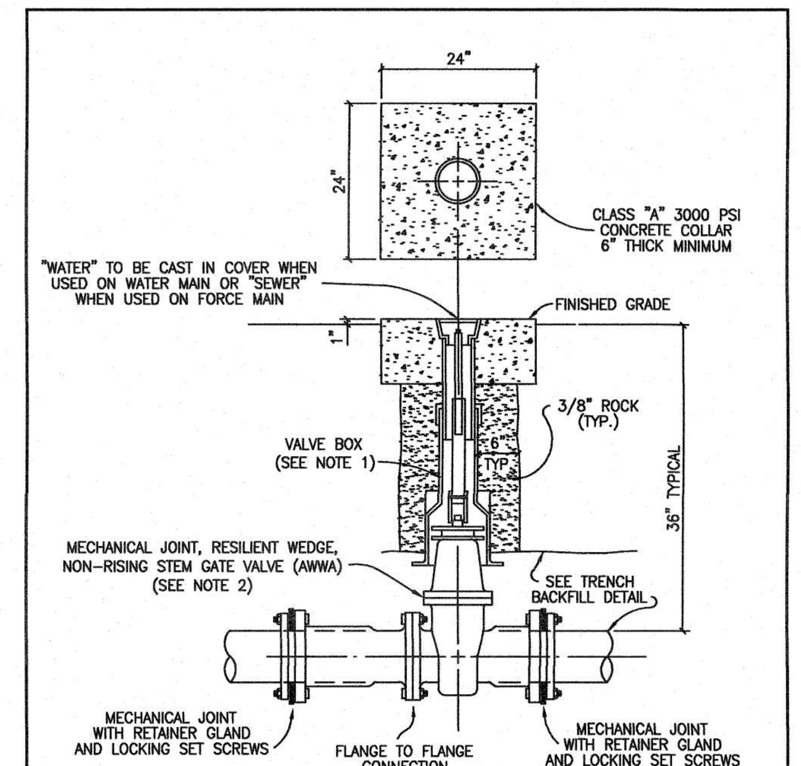


NOTES:
1. TEST STATION SHALL BE HANDLEY INDUSTRIES INC. – 2 INCH CATHODIC TEST STATIONS OR APPROVED EQUAL.
2. THE 15" ABS PLASTIC BOX SHALL BE A FLANGED TOP FOR INSTALLATION AT GROUND LEVEL.
3. ALL TERMINALS ARE TO BE MADE OF SOLID BRASS.
4. PLASTIC LIDS SHALL BE COLOR BLUE AND MARKED "WATER".
5. TEST TERMINALS ARE TO BE INCORPORATED WITH HANDLEY VALVE BOXES.
6. BURY SPLICE SHALL BE 3M DIRECT BURY SPLICE (DBR) OR APPROVED EQUAL.
7. TEST STATIONS SHALL BE INSTALLED AT EACH FIRE HYDRANT LOCATION.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRACER WIRE INSTALLATION AND TEST STATION LOCATION
W18

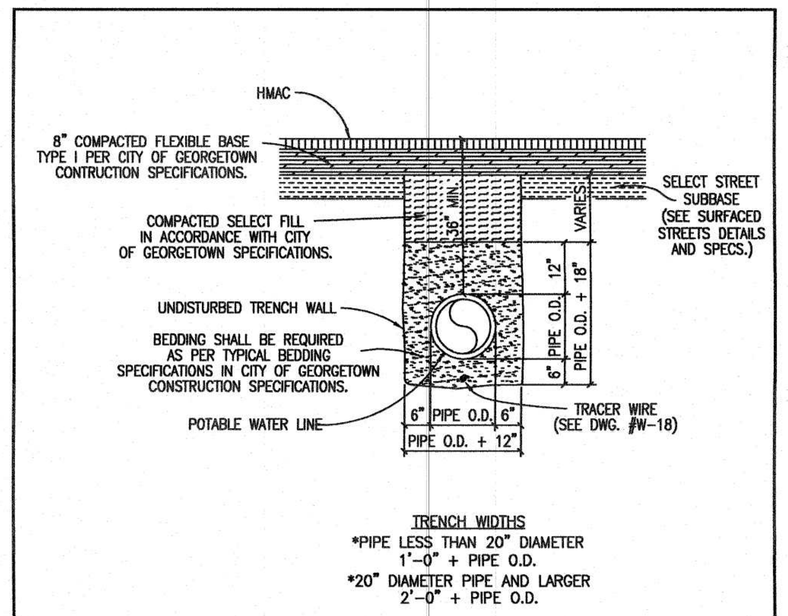


NOTES:
1. SEE VALVE SETTING DETAIL, DWG. #W–07.
2. ACCEPTABLE GATE VALVES ARE:
   A. MUELLER – 2360 SERIES
   B. CLOW

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
INLINE VALVE INSTALLATION
W21



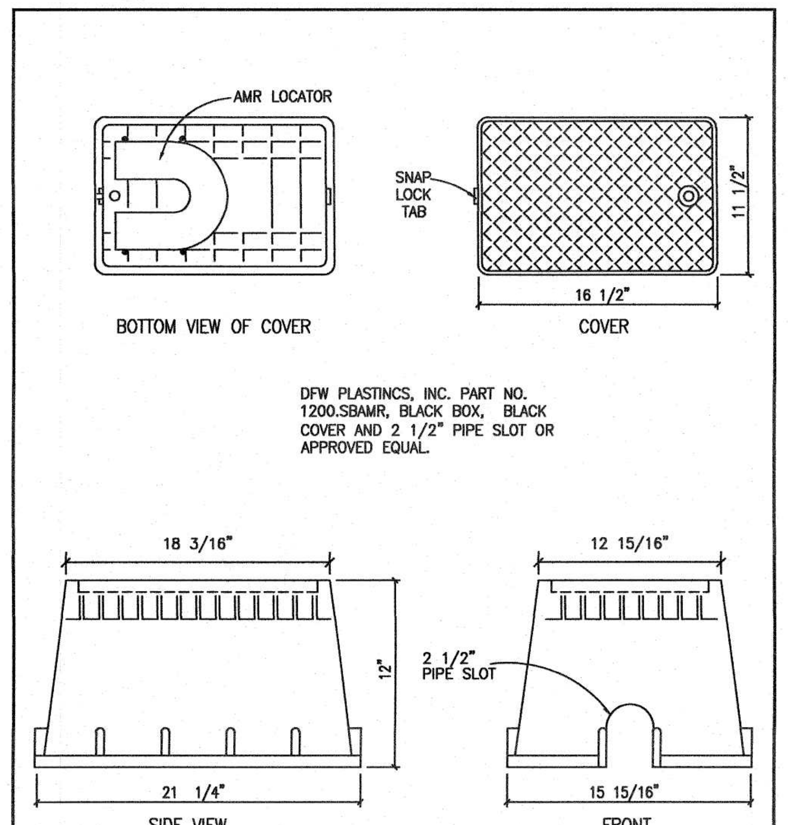
TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER 1'–0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER 2'–0" + PIPE O.D.

NOTES:
1. DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS AND STANDARDS.
2. CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL (SEE C9 FLOWABLE BACKFILL FOR THE SPECIFICATION).

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT DETAIL UNDER PROPOSED ROADWAY
W22

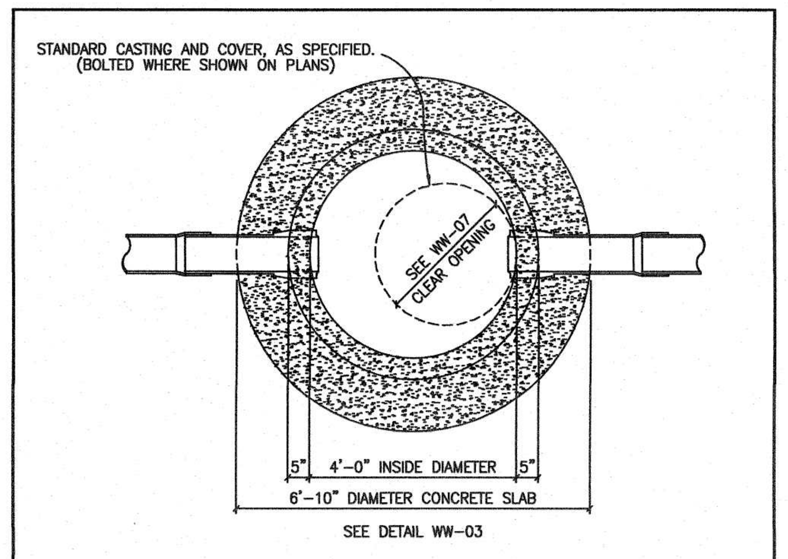


DFW PLASTICS, INC. PART NO. 1200.SBAMR, BLACK BOX, BLACK COVER AND 2 1/2" PIPE SLOT OR APPROVED EQUAL.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
METER BOX (NON–TRAFFIC AREAS)
W23



SEE DETAIL WW–03

MANHOLE PLAN

CITY OF GEORGETOWN NOTES:

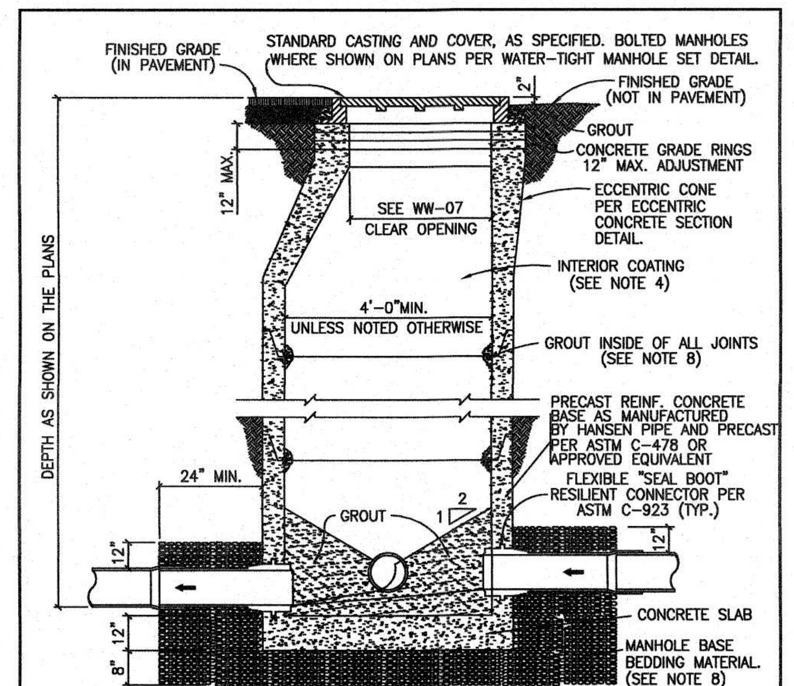
MANHOLE DETAILS SHALL REFLECT THE CITY'S MINIMUM SPECIFICATIONS, AS STATED BELOW:

A. ALL MANHOLES SHALL BE 48" I.D., R.C.P., CLASS III, WITH RUBBER PROFILE GASKET – SINGLE OFF–SET JOINT CONFORMING TO ASTM C478, C433 AND C76.
B. ALL MANHOLES SHALL HAVE FRAME AND COVER, AS MANUFACTURED BY EAST JORDAN IRON WORKS (AS PER DETAIL # WW–07) OR APPROVED EQUIVALENT.
C. ALL MANHOLES SHALL BE CONCRETE WITH CAST IRON FRAME AND COVER.
D. ALL MANHOLES SHALL HAVE AN ECCENTRIC CONE.
E. MANHOLES MAY HAVE A FLAT LID, IF APPROVED BY CITY OF GEORGETOWN, BEING 12" THICK WITH A MINIMUM 30" OPENING, AS MANUFACTURED BY HANSEN PIPE AND PRECAST OR APPROVED EQUAL M.F.G. CONFORMING TO ASTM C478, 5000 P.S.I. CONCRETE, TRAFFIC BEARING AND WITH PROFILE GASKET – SINGLE OFF–SET JOINT CONFORMING TO ASTM C443.
F. INVERTS AND FLEXIBLE SEAL BOOTS, PER ASTM C–923, SHALL BE CAST INTO BASE SECTION.
G. MINIMUM DROP BETWEEN INVERTS SHALL BE ONE–TENTH OF A FOOT (0.1').
H. GRADE RINGS WITH AN I.D. TO MATCH FRAMES CLEAR OPENING WITH A MAXIMUM ADJUSTMENT OF 12" ARE ALLOWED.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD MANHOLE – PLAN
WW02
NTS 1/2003

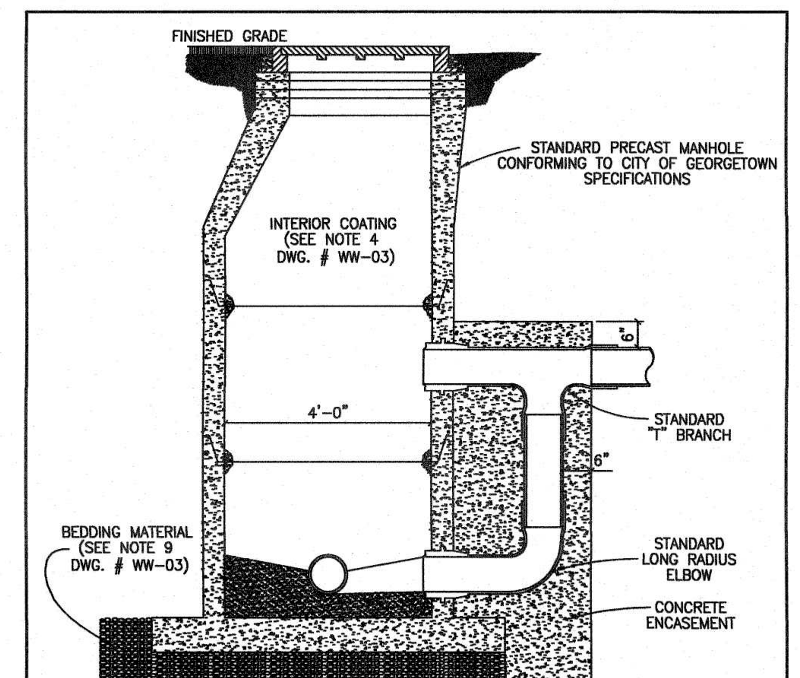


NOTES:
1. MANHOLES SHALL BE PRECAST ASTM C–478 BELL AND SPIGOT WITH PROFILE GASKET – SINGLE OFF–SET JOINTS.
2. SEE PLANS AND MANHOLE SCHEDULE, FOR MANHOLE SIZE, LOCATION, CONFIGURATION, TYPE OF TOP SECTION, VENTING REQUIREMENTS, PIPE SIZE AND TYPES.
3. SEE SPECIFICATIONS ON MATERIALS AND CONSTRUCTION.
4. AN 80 MIL. COAT OF RAVEN LINING SYSTEMS, RAVEN 405 ULTRA HIGH BUILD EPOXY COATING, OR SPRAY WALL EPOXY COATING, OR APPROVED EQUAL, TO BE APPLIED TO ENTIRE INTERIOR OF EACH WASTEWATER MANHOLE AND UNDERSIDE OF FLAT TOPS.
5. ALL MANHOLE COVERS SHALL BE BOLTED AND GASKETTED WHEN MANHOLES ARE LOCATED OUT FROM PAVEMENT.
6. MANHOLES TO BE VENTED ARE IDENTIFIED ON MANHOLE SCHEDULE. REFERENCE MANHOLE VENT DETAIL.
7. MANHOLES ARE TO BE DESIGNED TO RESIST LATERAL AND VERTICAL SOIL FORCES RESULTING FROM MANHOLE DEPTH. ADDITIONALLY, MANHOLES LOCATED IN PAVEMENT TO BE DESIGNED FOR HS–20 TRAFFIC LOADS.
8. GROUT SHALL MEET THE REQUIREMENTS AS STATED BY THE COATING MANUFACTURER.
9. MANHOLE BASE BEDDING MATERIAL SPECS. FOR 3/4" WASHED GRAVEL:
   SIEVE SIZE 2", PERCENT (%) RETAINED 0
   SIEVE SIZE 1 1/2", % RETAINED 0–10
   SIEVE SIZE 1", % RETAINED 45–80
   SIEVE SIZE 3/4", % RETAINED 85–100
   SIEVE SIZE 3/8", % RETAINED 95–100

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD MANHOLE – SECTION
WW03
NTS 1/2003 MRS TRB



NOTES:
1. CONCRETE ENCASEMENT FOR DROP CONNECTION TO BE POURED INTEGRALLY WITH BOTH MANHOLE SLAB AND WALL.
2. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT SEWER IS LOCATED TWO FEET (2') OR MORE ABOVE THE MAIN INVERT CHANNEL.
3. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO FLOW STREAM.
4. WHEN P.V.C. IS USED IN SANITARY SEWER LINES, SOLVENT TYPE JOINT P.V.C. FITTINGS MAY BE UTILIZED IN THE DROP ASSEMBLY ONLY.
5. MINIMUM PIPE SIZE FOR DROP IS EIGHT INCHES (8").
6. SEE STANDARD MANHOLE DETAIL (DWG. # WW–03) FOR ADDITIONAL REQUIREMENTS.

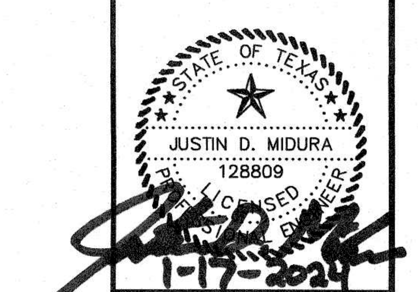
The Architect/Engineer assumes responsibility for appropriate use of this standard.

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
DROP CONNECTION–PRECAST MANHOLE TYPE "A"
WW04
NTS 1/2003

NO.	DESCRIPTION	BY	DATE
REVISIONS			

DATE: 1/12/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 DT3.dwg



LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 150
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: ####

DT3

SHEET NO. 92 OF 93 SHEETS

Date/Time : Fri, 12 Jan 2024 - 2:58pm
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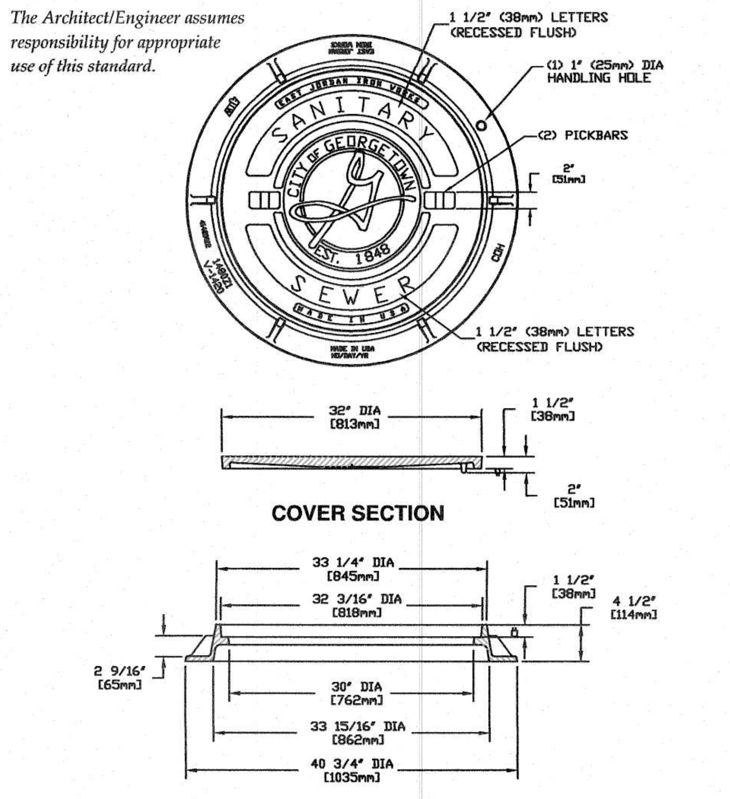
PathName : G:\A140-0418 Bluffview\CADD\Sheet Files\A140-0418 DT3.dwg



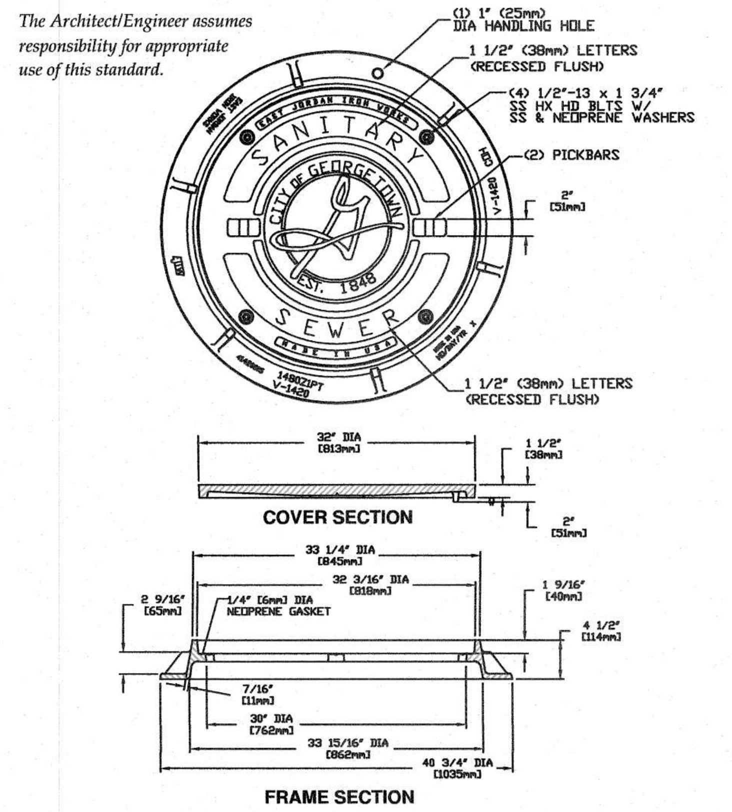
NOTES:

1. STANDARD WASTEWATER MANHOLE SET TO BE EAST JORDAN IRON WORKS, INC. CATALOG NO. 1480A V-1420/1480Z1, COVER TO BE STAMPED WITH "SANITARY SEWER".
2. STANDARD WASTEWATER MANHOLE SET TO BE HEAVY DUTY LOAD RATED.
3. FOR MORE DETAILED SPECIFICATIONS REFER TO EAST JORDAN IRON WORKS, INC. REFERENCE PRODUCT DRAWING 41420012 00148390.
4. FOR BOLTED WASTEWATER MANHOLE SET REFER TO DETAIL WW07A.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
STANDARD WASTEWATER MANHOLE SET
WW07 | NTS | 1/2003 | MRS | TRB



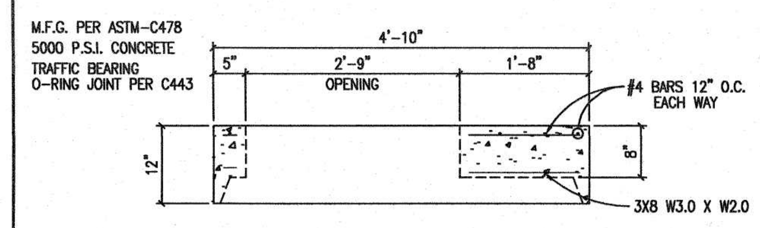
NOTES:

1. BOLTED WASTEWATER MANHOLE SET TO BE EAST JORDAN IRON WORKS, INC. CATALOG NO. 1480APT V-1420/1480Z1PT, COVER TO BE STAMPED WITH "SANITARY SEWER".
2. BOLTED WASTEWATER MANHOLE SET TO BE HEAVY DUTY LOAD RATED.
3. FOR MORE DETAILED SPECIFICATIONS REFER TO EAST JORDAN IRON WORKS, INC. REFERENCE PRODUCT DRAWING 00148392 41420015.
4. FOR STANDARD WASTEWATER MANHOLE SET REFER TO DETAIL WW07.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
BOLTED WASTEWATER MANHOLE SET
WW07A | NTS | 1/2006 | MRS | TRB



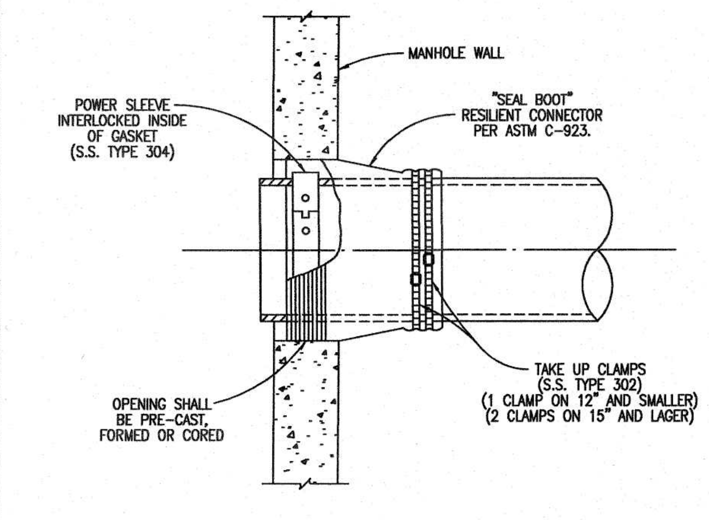
NOTES:

1. AVAILABLE WITH CAST IRON RING AND COVER CAST IN PLACE.
2. PERMITTED ONLY WITH WRITTEN APPROVAL FROM GEORGETOWN UTILITY SYSTEMS, CITY OF GEORGETOWN

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

ADOPTED 6/21/2006

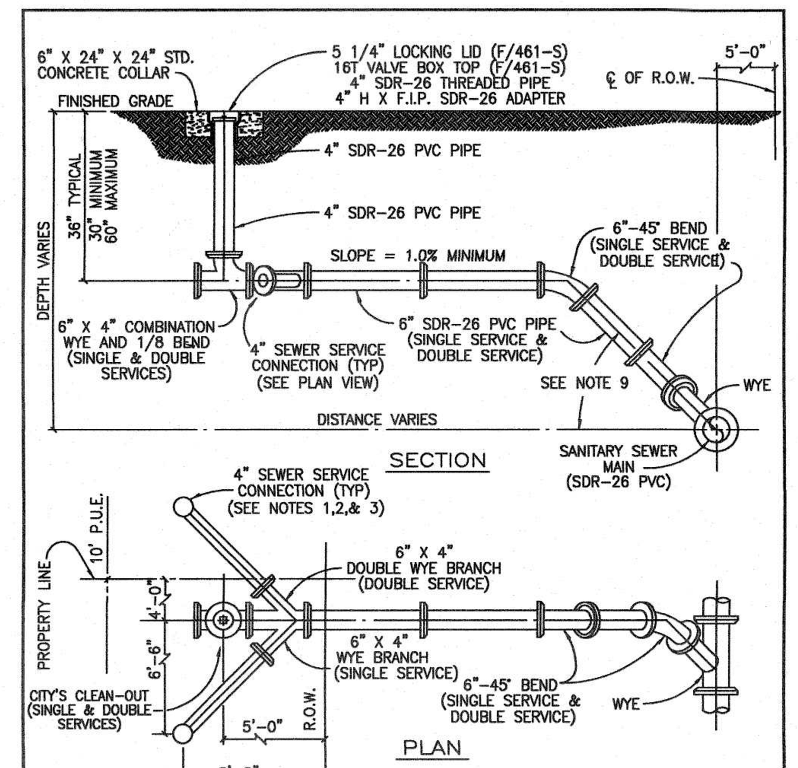
CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
48" MANHOLE FLAT LID
WW09 | NTS | 1/2003 | MRS | TRB



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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
FLEXIBLE "SEAL BOOT" CONNECTOR
WW10 | NTS | 1/2003 | MRS | TRB



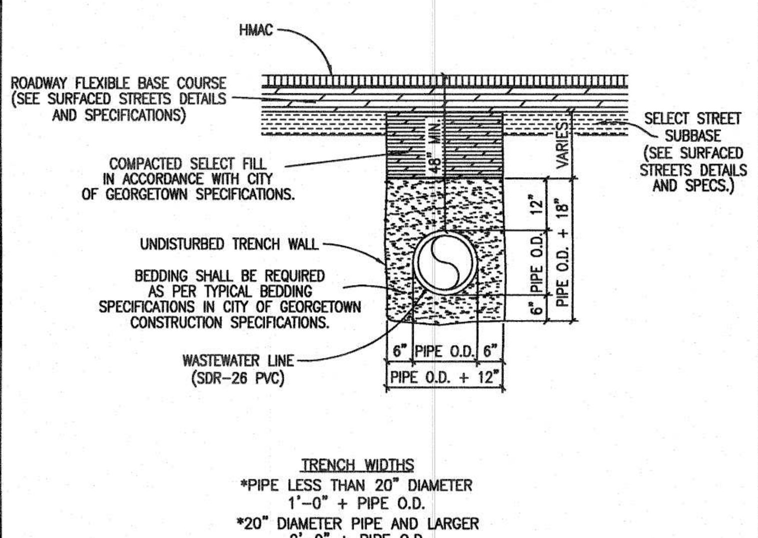
NOTES:

1. SERVICE CONNECTION RISERS SHALL TERMINATE 8' INSIDE THE PROPETY LINE.
2. THE END OF EACH SERVICE CONNECTION RISER SHALL BE EXTENDED 12" ABOVE FINISH GRADE.
3. EACH SERVICE CONNECTION SHALL BE PLUGGED WATERTIGHT WITH AN APPROVED CAP OR PLUG.
4. FOR P.V.C. INSTALLATIONS, CONNECT TO EXISTING "BELL END" AND CONNECT OPPSITE END WITH P.V.C. TO P.V.C. KNOCK ON SLEEVE.
5. SOLIDLY TAMP BACKFILL AT LEAST ONE FOOT (1'-0") ABOVE TOP OF PIPE. SERVICES UNDER PAVED AREAS SHALL BE BACKFILLED TO THE SAME SPECIFICATIONS AS SHOWN ON PAVEMENT REPLACEMENT DETAIL.
6. CONTRACTOR SHALL MARK ON A CLEAN SET OF PLANS THE FINAL STATIONING OR DISTANCE AND DIRECTION FROM MANHOLE TO EACH SERVICE LATERAL AND GIVE TO ENGINEER FOR RECORD DRAWING PURPOSES.
7. ANY DEVIATION FROM THESE METHODS MUST BE APPROVED BY THE CITY OF GEORGETOWN ENGINEERING DEPARTMENT.
8. SERVICE LINE MATERIAL SHALL BE P.V.C., SDR-26.
9. SEWER SERVICE SLOPE TO BE 45° OFF CENTERLINE OF MAIN.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
SEWER SERVICE CONNECTIONS
WW13 | NTS | 1/2003 | MRS | TRB



TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER 1'-0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER 2'-0" + PIPE O.D.

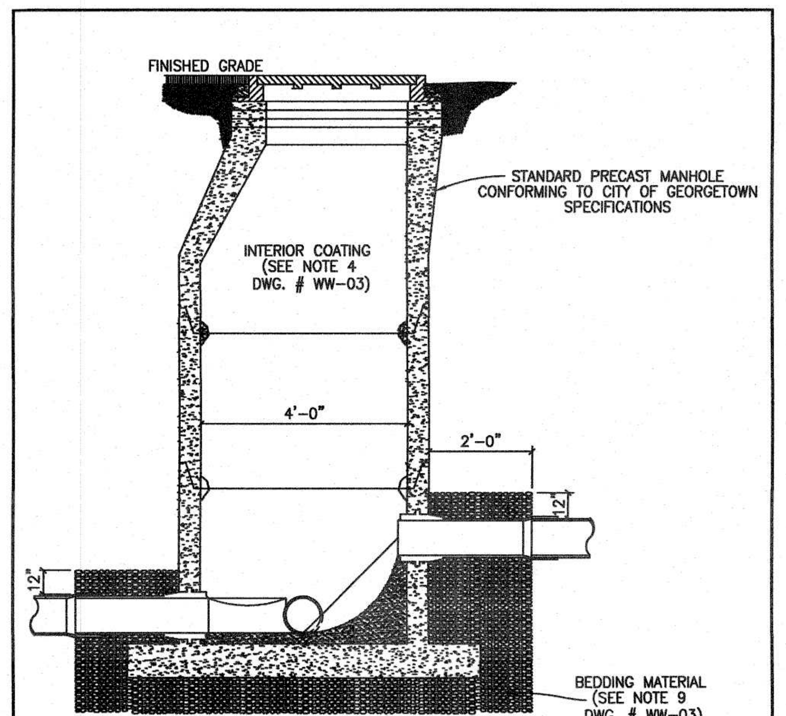
NOTES:

1. DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS AND STANDARDS.
2. CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL (SEE C9 FLOWABLE BACKFILL FOR THE SPECIFICATION).

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT DETAIL UNDER PROPOSED ROADWAY
WW18 | NTS | 1/2003 | MRS | TRB



NOTES:

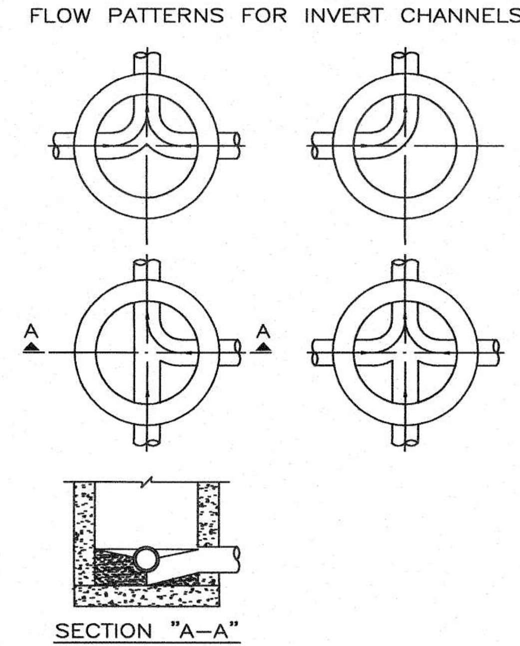
1. TO BE USED WHERE DROP IS SIX INCHES (6") TO TWO FEET (2'-0").
2. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO FLOW STREAM.
3. CONSTRUCTION OF DROP SHALL PROVIDE AN OVERSIZED SLAB TO EXTEND UNDER THE DROP CONNECTION.
4. MINIMUM PIPE SIZE FOR DROP IS EIGHT INCHES (8").
5. SEE STANDARD MANHOLE DETAIL (DWG. # WW-03) FOR ADDITIONAL REQUIREMENTS.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
DROP CONNECTION–PRECAST MANHOLE TYPE "B"
WW05 | NTS | 1/2003 | MRS | TRB

FLOW PATTERNS FOR INVERT CHANNELS



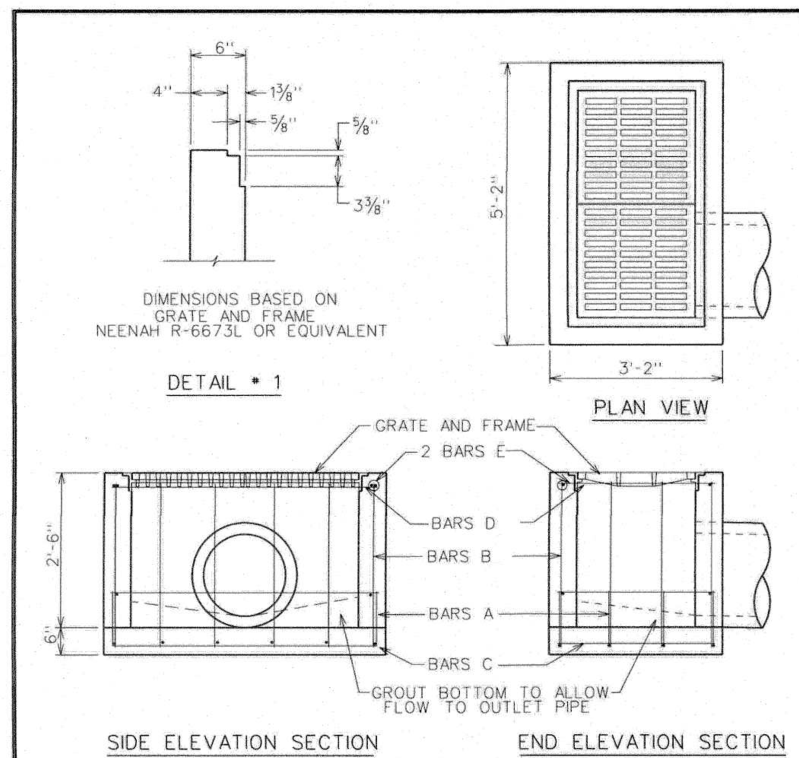
NOTES:

1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
2. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOW.
3. CHANNELS FOR FUTURE CONSTRUCTIONS (STUBS) SHALL BE CONSTRUCTED, FILLED WITH SAND, AND COVERED WITH 1" OF MORTAR.
4. SLOPE MANHOLE ITSELF WITH A 1:2 SLOPE FROM MANHOLE WALL TO CHANNEL.
5. INVERT SHALL BE A MINIMUM OF 1/2 THE DIAMETER OF THE LARGEST PIPE OR 4" DEEP.

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

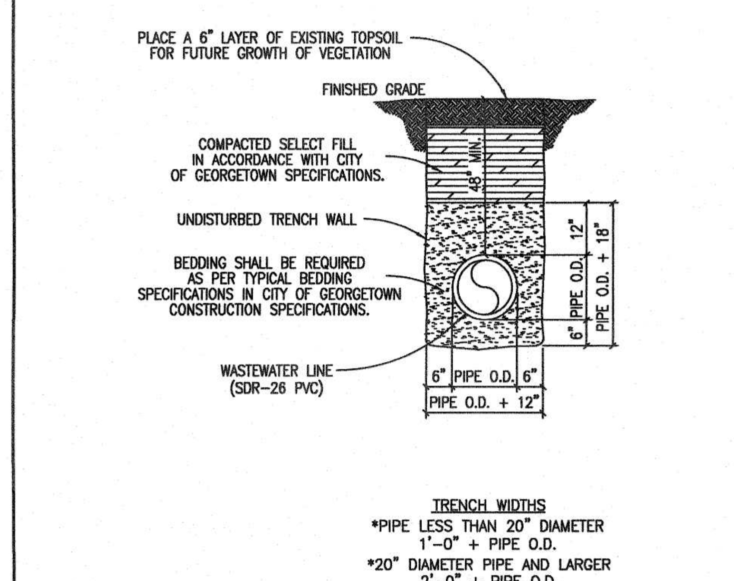
ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
FLOW PATTERNS FOR INVERT CHANNELS
WW06 | NTS | 1/2003 | MRS | TRB



REINFORCING STEEL SCHEDULE					
BAR	QTY	SIZE	SPACING	LENGTH	WEIGHT
A	4	4	12"	6'-8"	18
B	16	4	12"	3'-0"	32
C	8	4	12"	2'-10"	15
D	4	4	12"	5'-2"	14
E	4	5	12"	2'-10"	12
				TOTAL WEIGHT---91 LB.	

CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW
STANDARD DROP INLET
RECORD COPY SIGNED BY ALLEN BRECHER 5/24/88 ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508-11

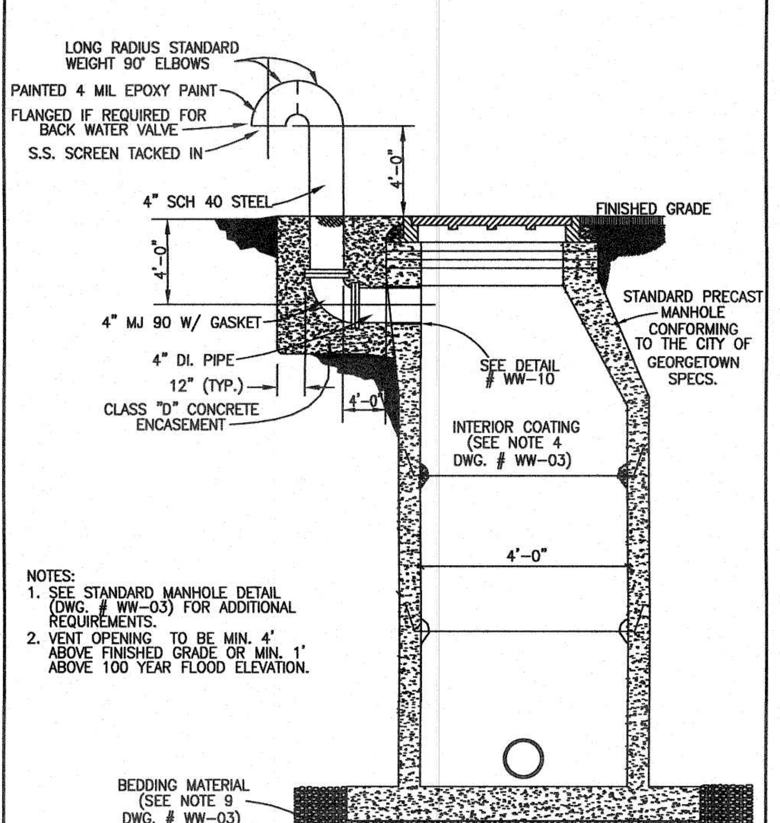


TRENCH WIDTHS
*PIPE LESS THAN 20" DIAMETER 1'-0" + PIPE O.D.
*20" DIAMETER PIPE AND LARGER 2'-0" + PIPE O.D.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TRENCH AND EMBEDMENT DETAIL UNDER NON-PAVED AREAS
WW16 | NTS | 1/2003 | MRS | TRB



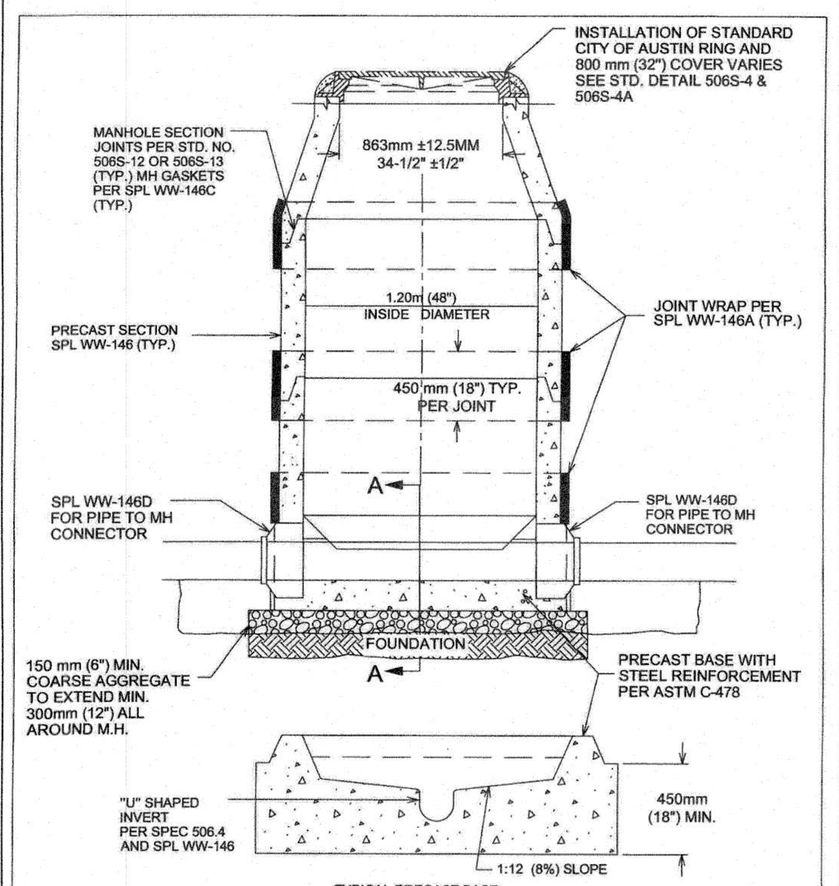
NOTES:

1. SEE STANDARD MANHOLE DETAIL (DWG. # WW-03) FOR ADDITIONAL REQUIREMENTS.
2. VENT OPENING TO BE MIN. 4' ABOVE FINISHED GRADE OR MIN. 1' ABOVE 100 YEAR FLOOD ELEVATION.

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

ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS
TYPICAL MANHOLE WITH VENT
WW19 | NTS | 11/2003 | MRS | TRB



NOTE:
1. THE MANHOLE BASE SHALL BE BEDDED ON 150 mm (6") COARSE AGGREGATE. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE.
2. MANHOLE FOUNDATION SHALL MEET OR EXCEED SPEC. 506.5B.

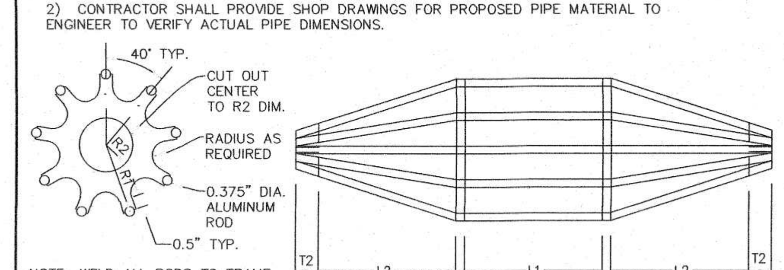
CITY OF AUSTIN
AUSTIN WATER UTILITY
WATER TIGHT WASTEWATER MANHOLE ON PRECAST BASE
Kathi L Flowers 8/31/2011
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 506S-6

NOTE:
ALL WASTEWATER LINES SHALL BE TESTED IN ACCORDANCE TO TCEQ 30 TAC 217.57(b) AND (c) SPECIFICATIONS BY THE CONTRACTOR INITIALLY AFTER CONSTRUCTION IS COMPLETE, AND BY OWNER 5 YEARS AFTER CONSTRUCTION. MANDRELS SHALL BE SIZED ACCORDING TO THE TABLE SHOWN HEREON. FOR PIPE RUNS CONSISTING OF MULTIPLE PIPE MATERIALS AND/OR ADAPTORS, THE LARGER MANDREL DIAMETER SHALL BE USED FOR THE ENTIRE RUN.

MANDREL DIAMETER SIZES

PIPE MATERIAL	NOMINAL DIAMETER	AVGERAGE ID	5% DEF. MANDREL DIAMETER
SDR 26	6"	5.764"	5.48"
SDR 26	8"	7.715"	7.33"
SDR 26	10"	9.644	9.16"
SDR 26	12"	11.480"	10.91"

NOTE:
1) DIMENSIONS TAKEN FROM UNI-BELL PVC PIPE ASSOCIATION HANDBOOK OF PVC PIPE, SECOND EDITION, OCTOBER 1983.
2) CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR PROPOSED PIPE MATERIAL TO ENGINEER TO VERIFY ACTUAL PIPE DIMENSIONS.

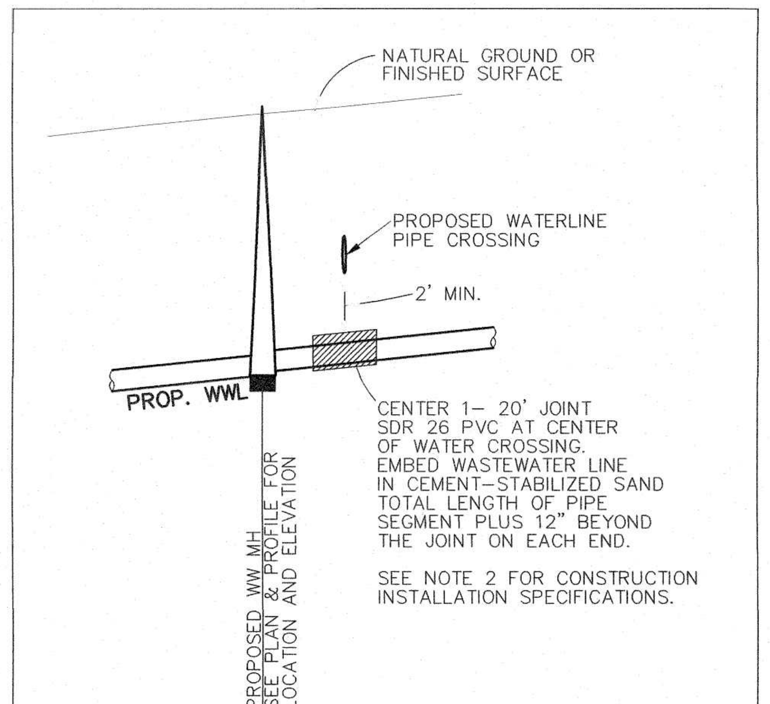


NOTE: WELD ALL RODS TO FRAME

DIMENSIONS

PIPE SIZE	L1	L2	R2	T1	T2	ROD DIA.	5% R1
6"	6"	6"	0.75"	0.375"	1.0"	0.375"	2.78"
8"	6"	6"	1.25"	0.375"	1.0"	0.375"	3.73"
10"	8"	8"	1.50"	0.375"	1.0"	0.375"	4.66"
12"	8"	8"	1.75"	0.375"	1.0"	0.375"	5.55"
15"	9"	9"	2.00"	0.375"	1.0"	0.375"	6.79"

TYPICAL MANDREL DETAIL



WATER AND WASTEWATER CROSSING DETAIL

NOT TO SCALE

NOTES:
1) THIS DETAIL TO BE USED FOR WATER AND WASTEWATER CROSSING PIPES WITHIN NINE FEET, WHERE THE WASTEWATER COLLECTION SYSTEM PIPE IS BELOW THE WATER SUPPLY PIPE.
2) CEMENT-STABILIZED SAND FOR ENCASING COLLECTION SYSTEM PIPES MUST:
   i. INCLUDE AT LEAST 160 POUNDS OF CEMENT FOR EVERY CUBIC YARD OF SAND;
   ii. BE INSTALLED BEGINNING ONE-QUARTER PIPE DIAMETER BELOW THE CENTERLINE OF THE COLLECTION SYSTEM PIPE;
   iii. BE INSTALLED ENDING ONE FULL PIPE DIAMETER ABOVE THE TOP OF THE COLLECTION SYSTEM PIPE, OR 12 INCHES ABOVE THE TOP OF THE COLLECTION SYSTEM PIPE, WHICHEVER IS GREATER.

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Path\Name : G:\A140-0418 Bluffview\ACAD\Sheet Files\A140-0418 DT4.dwg

BLUFFVIEW SUBDIVISION
PHASE 1
GENERAL DETAILS

REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 2/13/2024
DESIGNED BY:
DRAWN BY:
CHECKED BY:
DRAWING NAME: A140-0418 DT4.dwg

STATE OF TEXAS
JUSTIN D. MIDURA
128809
LICENSED PROFESSIONAL ENGINEER
2-13-2024

LJA Engineering, Inc.
2700 La Frontera Blvd.
Suite 200
Round Rock, Texas 78681
Phone 512.439.4700
Fax 512.439.4716
FRB-F-1386

JOB NUMBER: A140-0418

DT4

SHEET NO. 93 OF 93 SHEETS

Permanent Stormwater Section
ATTACHMENT G

TCEQ WPAP & APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Inspection, Maintenance, Repair and Retrofit Plan

Temporary BMP's:
Best Management Practices (BMP's) installed during construction will be maintained in accordance with the requirements of the EPA's NPDES stormwater pollution prevention program. The construction superintendent will inspect temporary erosion controls on a regular basis and adjust the controls and/or remove any sediment buildup in accordance with the erosion/sedimentation control notes and as otherwise directed by the owner or his designated representative. Temporary erosion controls should be inspected, maintained, and repaired, at a minimum, every seven (7) days and within 24 hours of a storm of 0.5 inches or more rainfall depth. Sediment shall be removed from controls when 50% of the design height is exceeded. Following inspection of the BMP's, deficiencies shall be noted and corrected by the contractor.

Permanent BMP's:
Extended Batch Detention, Vegetated Filter Strips, Grassy Swale

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.

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.

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.

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.

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).

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.

Ultimately, these facilities will be owned, operated and maintained by Bluffview HOA.

Acknowledged by: ______________________

Bennett Holcomb
Authorized Signatory/Applicant
Lamy 2243 LTD.

Permanent Stormwater Section

ATTACHMENT I

TCEQ WPAP APPLICATION

Bluffview Subdivision Phase 1
Williamson County, Texas

Measures for Minimizing Surface Stream Contamination:

The development minimizes surface stream contamination by maintaining the natural sheet, and shallow concentrated flows across the lots to storm inlets. Drainage from this development will be directed to the proposed extended batch detention ponds, vegetative filter strips, and grassy swale.

Since the proposed design of stormwater management features reduces developed flow rates to below existing conditions for the 2, 10, 25, 100-yr design storm, there is no increase to the volumetric rate or change to the flow path at which stormwater will enter the South Fork San Gabriel River watershed.

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

I Bennett Holcomb,
Print Name

Authorized Signatory,
Title - Owner/President/Other

of Lamy 2243 LTD,
Corporation/Partnership/Entity Name

have authorized Justin Midura, P.E.
Print Name of Agent/Engineer

of LJA Engineering, Inc.
Print Name of Firm

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

I also understand that:

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

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

2/13/2024
Date

THE STATE OF Texas §
County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Bennett Holcomb 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 13th day of February, 2024.

NOTARY PUBLIC STATE OF TEXAS
Angela R Olvera
My Commission Expires
04/21/2025
ID No. 6808733

NOTARY PUBLIC

Angela R. Olvera
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 04.21.2025

Owner Authorization Form

for Required Signature for submitting and signing an application for an Edwards Aquifer Protection Plan (Plan) and conducting regulated activities in accordance with an approved Plan.

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
Relating to the Edwards Aquifer Rules of Title 30 of the Texas Administrative Code (30 TAC), Chapter 213
Effective June 1, 1999

Land Owner Authorization

I, Michael R. Weir of A.C. Weir Properties, LTD
Land Owner Name (Individual) — Firm (applicable to Legal Entities)

am the Owner of Record or Title Holder of the property located at:

Property described on the attached Exhibit A
(Legal description of the property referenced in the application)

and being duly authorized under 30 TAC § 213.4(c)(2) and § 213.4(d)(1) or § 213.23(c)(2) and § 213.23(d) to submit and sign an application for a Plan, do hereby authorize:

Lamy 2243, LTD
(Applicant Name / Plan Holder (Legal Entity or Individual))

to conduct:

WWL, parking lot, grading, and trail improvements described in the submitted WPAP & SCS
(Description of the proposed regulated activities)

on the property described above or at:

Property described on the attached Exhibit A
(If applicable to a precise location for the authorized regulated activities)

Land Owner Acknowledgement

I, Michael R. Weir of A.C. Weir Properties, LTD
Land Owner Name (Individual) — Firm (applicable to Legal Entities)

understand that while Lamy 2243, LTD
Applicant Name / Plan Holder (Legal Entity or Individual)

is responsible for compliance with the approved or conditionally approved Plan and any special conditions of the approved Plan through all phases of Plan implementation, I, Michael R. Weir of A.C. Weir Properties, LTD

Land Owner Name (Individual) — Firm (applicable to Legal Entities)

as Owner of Record or Title Holder of the property described above, I am ultimately responsible for ensuring that compliance with the approved or conditionally approved Plan and any special conditions of the approved Plan, through all phases of Plan implementation, is achieved even if the responsibility for compliance and the right to possess and control of the property referenced in the application has been contractually assumed by another legal entity.

I, Michael R. Weir of A.C. Weir Properties, LTD

Land Owner Name (Individual) — Firm (applicable to Legal Entities)

further understand that any failure to comply with any condition of the Executive Director's approval is a violation and is subject to administrative rule or orders and penalties as provided under 30 TAC § 213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Land Owner Signature

MRWeir

Land Owner Signature

Apr 9, 2024

Date

THE STATE OF § Texas

County of § Williamson

BEFORE ME, the undersigned authority, on this day personally appeared 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 9th day of April 2024.

SUZANNE BLACKBURN
Notary Public, State of Texas
Comm. Expires 11-01-2024
Notary ID 129187921

Suzanne Blackburn

NOTARY PUBLIC

Suzanne Blackburn

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: Nov. 1, 2024

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☒ Other legally binding document

Applicant Acknowledgement

I, Bennett Holcomb of Lamy 2243, LTD

Applicant Name (Individual) — Firm (applicable to Legal Entities)

acknowledge that Michael R. Weir

Land Owner Name (Legal Entity or Individual)

has provided Lamy 2243, LTD

Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer Protection Plan (Plan).

I understand that Lamy 2243, LTD

Applicant Name (Legal Entity or Individual)

is responsible, contractually or not, for compliance with the approved or conditionally approved Plan and any special conditions of the approved Plan through all phases of Plan implementation. I further understand that failure to comply with any condition of the Executive Director's approval is a violation and is subject to administrative rule or orders and penalties as provided under § 213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

Applicant Signature

Applicant Signature — Date: 4/9/2024

THE STATE OF § Texas

County of § Travis

BEFORE ME, the undersigned authority, on this day personally appeared 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 9th day of April

NOTARY PUBLIC

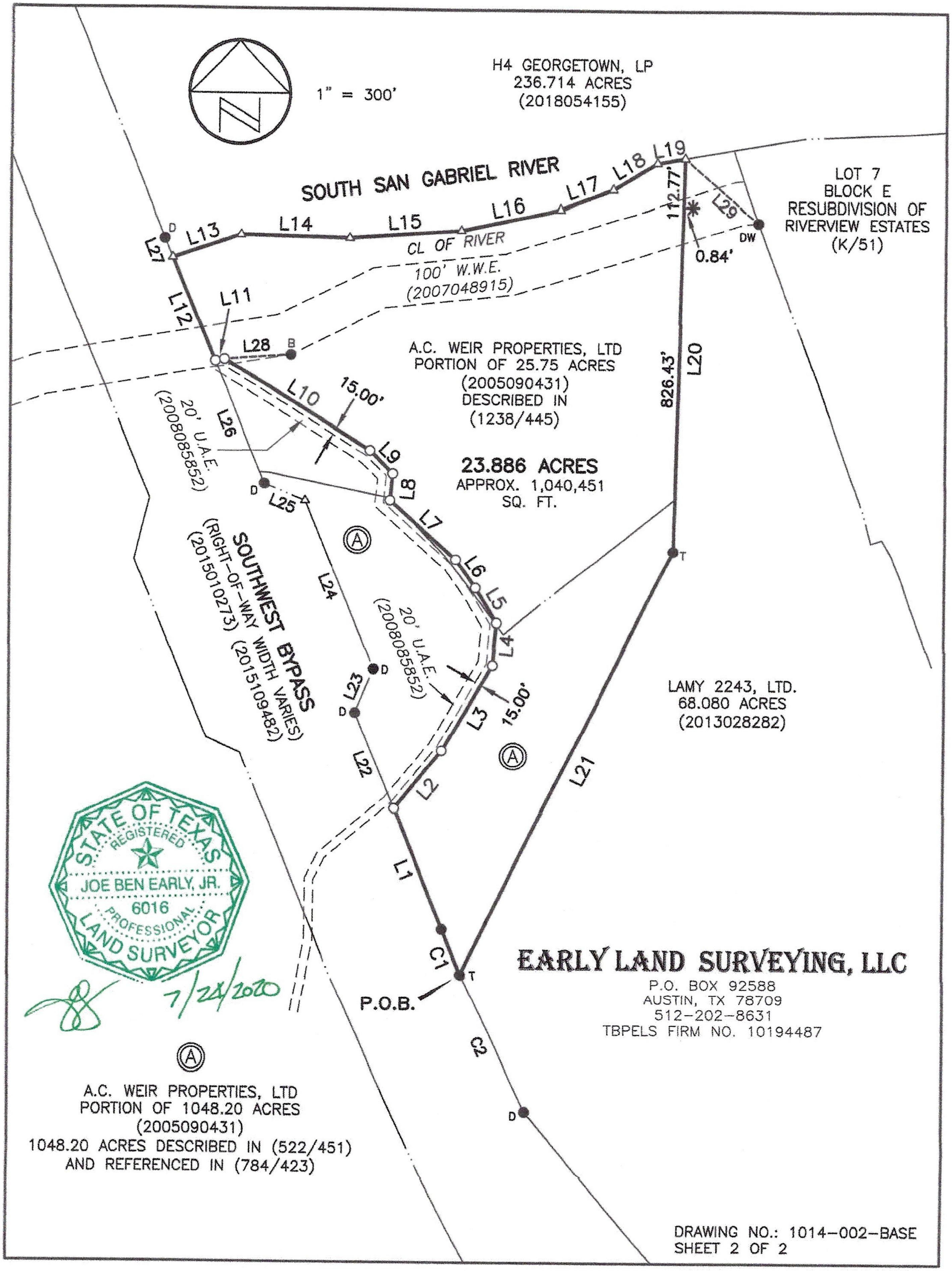
Angela R Olvera
My Commission Expires
04/21/2025
ID No. 6808733
NOTARY PUBLIC STATE OF TEXAS

Angela R. Olvera

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 04/21/2025

EXHIBIT A


1" = 300'
H4 GEORGETOWN, LP
236.714 ACRES
(2018054155)
SOUTH SAN GABRIEL RIVER
CL OF RIVER
100' W.W.E.
(2007048915)
LOT 7
BLOCK E
RESUBDIVISION OF
RIVERVIEW ESTATES
(K/51)
112.77'
0.84'
L29
DW
826.43'
L20
A.C. WEIR PROPERTIES, LTD
PORTION OF 25.75 ACRES
(2005090431)
DESCRIBED IN
(1238/445)
23.886 ACRES
APPROX. 1,040,451
SQ. FT.
15.00'
20' U.A.E.
(2008085852)
SOUTHWEST BYPASS
(RIGHT-OF-WAY WIDTH VARIES)
(2015010273) (2015109482)
LAMY 2243, LTD.
68.080 ACRES
(2013028282)
L1 L2 L3 L4 L5 L6 L7 L8 L9 L10 L11 L12 L13 L14 L15 L16 L17 L18 L19 L21 L22 L23 L24 L25 L26 L27 L28
C1 C2
P.O.B.
STATE OF TEXAS
REGISTERED
JOE BEN EARLY, JR.
6016
PROFESSIONAL
LAND SURVEYOR
7/24/2020
EARLY LAND SURVEYING, LLC
P.O. BOX 92588
AUSTIN, TX 78709
512-202-8631
TBPELS FIRM NO. 10194487
A.C. WEIR PROPERTIES, LTD
PORTION OF 1048.20 ACRES
(2005090431)
1048.20 ACRES DESCRIBED IN (522/451)
AND REFERENCED IN (784/423)
DRAWING NO.: 1014-002-BASE
SHEET 2 OF 2

EARLY LAND SURVEYING, LLC
P.O. Box 92588, Austin, TX 78709
512-202-8631
earlysurveying.com
TBPELS Firm No. 10194487

23.886 ACRES
WILLIAMSON COUNTY, TEXAS

A DESCRIPTION OF 23.886 ACRES (APPROXIMATELY 1,040,451 SQ. FT.) IN THE JOSEPH THOMPSON SURVEY, ABSTRACT NO. 608 IN WILLIAMSON COUNTY, TEXAS, BEING A PORTION OF A 1048.20 ACRE TRACT AND A PORTION OF A 25.75 ACRE TRACT CONVEYED TO A.C. WEIR PROPERTIES, LTD. IN A SPECIAL WARRANTY DEED DATED JULY 20, 2005 AND RECORDED IN DOCUMENT NO. 2005090431 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS; SAID 1048.20 ACRE TRACT DESCRIBED IN VOLUME 522, PAGE 451 AND REFERENCED IN VOLUME 784, PAGE 423 OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS; SAID 25.75 ACRE TRACT DESCRIBED IN VOLUME 1238, PAGE 445 OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS; SAID 23.886 ACRES BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a 1/2" rebar with "Terra Firma" cap found in the east right-of-way line of Southwest Bypass (right-of-way width varies) as described in Document Nos. 2015010273 and 2015109482 of the Official Public Records of Williamson County, Texas, being the westernmost corner of a 68.080 acre tract described in Document No. 2013028282 of the Official Public Records of Williamson County, Texas, from which a 1/2" rebar found with "Diamond Surveying" cap found for an angle point in the the east right-of-way line of Southwest Bypass and the west line of the said 68.080 acre tract, bears with a curve to the left, having a radius of 6870.00 feet, an arc length of 368.84 feet, a delta angle of 03°04'34", and a chord which bears South 24°53'48" East, a distance of 368.80 feet;

THENCE with the east right-of-way line of Southwest Bypass and crossing the said 1048.20 acre tract, the following two (2) courses and distances:

1. With a curve to the right, having a radius of 6870.00 feet, an arc length of 114.63 feet, a delta angle of 00°57'22", and a chord which bears North 22°52'50" West, a distance of 114.62 feet to a 1/2" rebar found;

2. North 22°22'11" West, a distance of 308.82 feet to a 1/2" rebar with "Early Boundary" cap set, from which a 1/2" rebar found with "Diamond Surveying" cap found for an angle point in the east right-of-way line of Southwest Bypass, bears North 22°22'11" West, a distance of 252.27 feet;

THENCE crossing the said 1048.20 acre tract and the said 25.75 acre tract, the following ten (10) courses and distances:

1. North 38°56'20" East, a distance of 181.93 feet to a 1/2" rebar with "Early Boundary" cap set;

2. North 30°13'34" East, a distance of 238.98 feet to a 1/2" rebar with "Early Boundary" cap set;

3. North 05°36'31" East, a distance of 100.72 feet to a 1/2" rebar with "Early Boundary" cap set;

4. North 31°09'39" West, a distance of 98.36 feet to a 1/2" rebar with "Early Boundary" cap set;

5. North 34°41'33" West, a distance of 84.88 feet to a 1/2" rebar with "Early Boundary" cap set;

6. North 48°01'59" West, a distance of 215.06 feet to a 1/2" rebar with "Early Boundary" cap set;

7. North 06°20'22" East, a distance of 64.75 feet to a 1/2" rebar with "Early Boundary" cap set;

8. North 45°26'26" West, a distance of 77.47 feet to a 1/2" rebar with "Early Boundary" cap set;

9. North 58°43'03" West, a distance of 411.20 feet to a 1/2" rebar with "Early Boundary" cap set, from which a 1/2" rebar with "Bury" cap found for an angle point in a 100 foot wide wastewater easement described in Document No. 2007048915 of the Official Public Records of Williamson County, Texas, bears North 85°42'54" East, a distance of 159.75 feet;

10. South 80°19'38" West, a distance of 22.03 feet to a 1/2" rebar with "Early Boundary" cap set in the east right-of-way line of Southwest Bypass, from which a 1/2" rebar found with "Diamond Surveying" cap found for an angle point in the east right-of-way line of Southwest Bypass, bears South 22°23'02" East, a distance of 314.68 feet;

THENCE North 22°23'02" West with the east right-of-way line of Southwest Bypass and crossing the said 25.75 acre tract, a distance of 269.50 feet to a calculated point in the centerline of the South San Gabriel River, being in the north line of the said 25.75 acre tract, being the southwest corner of a 236.714 acre tract described in Document No. 2018054155 of the Official Public Records of Williamson County, Texas, from which a 1/2" rebar with "Diamond Surveying" cap found in the east right-of-way line of

Southwest Bypass and the west line of the said 236.714 acre tract, bears North 22°23'02" West, a distance of 50.07 feet;

THENCE with the centerline of the South San Gabriel River, same being the north line of the said 25.75 acre tract and the south line of the said 236.714 acre tract, the following seven (7) courses and distances:

1. North 71°09'02" East, a distance of 173.04 feet to a calculated point;
2. South 88°44'51" East, a distance of 261.33 feet to a calculated point;
3. North 85°58'39" East, a distance of 269.27 feet to a calculated point;
4. North 77°49'02" East, a distance of 243.17 feet to a calculated point;
5. North 70°07'47" East, a distance of 135.27 feet to a calculated point;
6. North 59°30'47" East, a distance of 122.13 feet to a calculated point;
7. North 80°20'51" East, a distance of 68.14 feet to a calculated point for the northwest corner of the said 68.080 acre tract, from which a 1/2" rebar with "Dean Woodley" cap found in the east line of the said 68.080 acre tract, being in the west line of Lot 7, Block E, Resubdivision of Riverview Estates, a subdivision of record in Cabinet K, Slide 51 of the Plat Records of Williamson County, Texas, being also the southeast termination of the said 100 foot wide wastewater easement, bears South 49°57'54" East, a distance of 231.63 feet;

THENCE crossing the said 1048.20 acre tract and the said 25.75 acre tract and with the west line of the said 68.080 acre tract, the following two (2) courses and distsances:

1. South 01°28'00" West passing a cotton spindle found at a distance of 112.77 feet and 0.84 feet left of line and continuing for a total distance of 939.20 feet to a 1/2" rebar with "Terra Firma" cap found;
2. South 26°29'53" West, a distance of 1134.99 feet to the **POINT OF BEGINNING**, containing 23.886 acres of land, more or less.

Surveyed on the ground on July 24, 2020. Bearing Basis: The Texas Coordinate System of 1983 (NAD83), Central Zone, utilizing the SmartNet North America Network. Attachments: Survey Drawing No. 1014-002-BASE

Joe Ben Early, Jr. Date
Registered Professional Land Surveyor
State of Texas No. 6016

7/24/2020

STATE OF TEXAS
REGISTERED
JOE BEN EARLY, JR.
6016
PROFESSIONAL
LAND SURVEYOR

SKETCH TO ACCOMPANY A DESCRIPTION OF 23.886 ACRES (APPROXIMATELY 1,040,451 SQ. FT.) IN THE JOSEPH THOMPSON SURVEY, ABSTRACT NO. 608 IN WILLIAMSON COUNTY, TEXAS, BEING A PORTION OF A 1048.20 ACRE TRACT AND A PORTION OF A 25.75 ACRE TRACT CONVEYED TO A.C. WEIR PROPERTIES, LTD. IN A SPECIAL WARRANTY DEED DATED JULY 20, 2005 AND RECORDED IN DOCUMENT NO. 2005090431 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS; SAID 1048.20 ACRE TRACT DESCRIBED IN VOLUME 522, PAGE 451 AND REFERENCED IN VOLUME 784, PAGE 423 OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS; SAID 25.75 ACRE TRACT DESCRIBED IN VOLUME 1238, PAGE 445 OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS.

CURVE TABLE

CURVE	RADIUS	DELTA	ARC	BEARING	CHORD	(RECORD CHORD)
C1	6870.00'	0°57'22"	114.63'	N22°52'50"W	114.62'	
C2	6870.00'	3°04'34"	368.84'	S24°53'48"E	368.80'	(S24°52'26"E 368.87')

BEARING BASIS: THE TEXAS COORDINATE SYSTEM OF 1983 (NAD83), CENTRAL ZONE, UTILIZING THE SMARTNET NORTH AMERICA NETWORK.

ATTACHMENTS: METES AND BOUNDS DESCRIPTION 1014-002-BASE

LEGEND

●	1/2" REBAR FOUND (OR AS NOTED)
B●	1/2" REBAR WITH "BURY" CAP FOUND
D●	1/2" REBAR WITH "DIAMOND SURVEYING" CAP FOUND
DW●	1/2" REBAR WITH "DEAN WOODLEY" CAP FOUND
T●	1/2" REBAR WITH "TERRA FIRMA" CAP FOUND
○	1/2" REBAR WITH "EARLY BOUNDARY" CAP SET
✱	COTTON SPINDLE FOUND
△	CALCULATED POINT
W.W.E.	WASTEWATER EASEMENT
U.A.E.	UTILITY ACCESS EASEMENT
( )	RECORD INFORMATION

LINE TABLE

LINE	BEARING	DISTANCE	(RECORD)
L1	N22°22'11"W	308.82'	
L2	N38°56'20"E	181.93'	
L3	N30°13'34"E	238.98'	
L4	N05°36'31"E	100.72'	
L5	N31°09'39"W	98.36'	
L6	N34°41'33"W	84.88'	
L7	N48°01'59"W	215.06'	
L8	N06°20'22"E	64.75'	
L9	N45°26'26"W	77.47'	
L10	N58°43'03"W	411.20'	
L11	S80°19'38"W	22.03'	
L12	N22°23'02"W	269.50'	
L13	N71°09'02"E	173.04'	(N71°09'02"E 173.04')
L14	S88°44'51"E	261.33'	(S88°44'51"E 261.33')
L15	N85°58'39"E	269.27'	(N85°58'39"E 269.27')
L16	N77°49'02"E	243.17'	(N77°49'02"E 243.17')
L17	N70°07'47"E	135.27'	(N70°07'47"E 135.27')
L18	N59°30'47"E	122.13'	(N59°30'47"E 122.13')
L19	N80°20'51"E	68.14'	
L20	S01°28'00"W	939.20'	(S01°27'46"W 911.03')
L21	S26°29'53"W	1134.99'	(S26°29'39"W 1134.86')
L22	N22°22'11"W	252.27'	
L23	N22°40'24"E	113.52'	(N22°37'10"E 113.58')
L24	N22°22'14"W	438.04'	(N22°22'50"W 438.04')
L25	N67°22'14"W	105.09'	(N67°22'50"W 105.09')
L26	S22°23'02"E	314.68'	
L27	N22°23'02"W	50.07'	(N22°22'50"W 50.00')
L28	N85°42'54"E	159.75'	
L29	S49°57'54"E	231.63'	

7/24/2020

STATE OF TEXAS
REGISTERED
JOE BEN EARLY, JR.
6016
PROFESSIONAL
LAND SURVEYOR

EARLY LAND SURVEYING, LLC
P.O. BOX 92588
AUSTIN, TX 78709
512-202-8631
TBPELS FIRM NO. 10194487

DATE OF SURVEY: 7/24/20
PLOT DATE: 7/24/20
DRAWING NO.: 1014-002-BASE
DRAWN BY: JBE
SHEET 1 OF 2

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Bluffview Subdivision Phase 1
Regulated Entity Location: NE corner of FM 2243 and SW Bypass intersection Georgetown, TX
Name of Customer: Bennett Holcomb
Contact Person: Justin Midura, P.E. Phone: 512-534-9265
Customer Reference Number (if issued):CN 604833822
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☒ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

☒ Austin Regional Office
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	*Size*	*Fee Due*
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	91.97 Acres	$ 6,500.00
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	$
Sewage Collection System	8,550 L.F.	$ 4,275.00
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Total $10,775.00

Signature: [signature] Date: 4-10-2024

Application Fee Schedule

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

Project	*Cost per Linear Foot*	*Minimum Fee-Maximum Fee*
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal (*Core Data Form should be submitted with the renewal form*) ☐ Other

2. Customer Reference Number (*if issued*)	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** (*if issued*)
CN 604833822		RN 108389727

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name (*If an individual, print last name first: eg: Doe, John*) — *If new Customer, enter previous Customer below:*

Lamy 2243 LTD (EXISTING CUSTOMER)

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** (*if applicable*)
ON FILE	ON FILE	ON FILE	

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☒ Limited

Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?

☒ **Yes** ☐ **No**

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☒ Owner ☐ Operator ☐ Owner & Operator ☐ Other:
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant

15. Mailing Address:							
	1717 West 6th Street						
	Ste 390						
City	Austin	**State**	TX	**ZIP**	78703	**ZIP + 4**	

16. Country Mailing Information (*if outside USA*)	**17. E-Mail Address** (*if applicable*)
	bholcomb@riversideresources.com

18. Telephone Number	**19. Extension or Code**	**20. Fax Number** (*if applicable*)

(512) 534-9265		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Bluffview Subdivision Phase 1

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	900 LEANDER ROAD						
	City	GEORGETOWN	**State**	TX	**ZIP**	78628	**ZIP + 4**
24. County							

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

25. Description to Physical Location:	North of FM 2243, east of Southwest Bypass, west of Riverview Subdivision, and south of The South Fork San Gabriel River.

26. Nearest City	**State**	**Nearest ZIP Code**
Georgetown	TX	78628

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:	30.61103611		**28. Longitude (W) In Decimal:**	97.7112	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	36	39.73	97	42	40.32

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
6552		237210	

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Residential- Subdivision

34. Mailing Address:	**1717 West 6th Street**							
	Ste 390							
	City	**Austin**	**State**	**TX**	**ZIP**	**78703**	**ZIP + 4**	
35. E-Mail Address:								

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(303) 720-4436		**( ) -**

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

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

SECTION IV: Preparer Information

40. Name:	Justin Midura, P.E.		**41. Title:**	Project Manager
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**	
(512) 439-4700		( ) -	Jmidura@lja.com	

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	LJA Engineering, Inc.	**Job Title:**	Project Manager
Name *(In Print)*:	Justin Midura, P.E.	**Phone:**	(512) 439- 4700
Signature:	Justin D. Midura	**Date:**	2-15-2024