TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

ORGANIZED SEWAGE COLLECTION SYSTEM & WATER POLLUTION ABATEMENT PLAN

for:

LAKE CREEK at AVERY RANCH
Austin, Texas

Prepared By:
Bleyl Engineering

SEPTEMBER 2023

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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: Lake Creek at Avery Ranch					**2. Regulated Entity No.:**				
3. Customer Name: Avery Land Investors, LP					**4. Customer No.:**				
5. Project Type: **(Please circle/check one)**	New		Modification		Extension		Exception		
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential			**8. Site (acres):**		16.33	
9. Application Fee:	$ 7,915.34		**10. Permanent BMP(s):**			2 Rain Gardens per ECM 1.6.0			
11. SCS (Linear Ft.):	2,830.67 L.F.		**12. AST/UST (No. Tanks):**			No Tanks			
13. County:	Williamson		**14. Watershed:**			Buttercup/South Brushy			

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	**X**_Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___ Round Rock

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

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review. Jason Rodgers / Bleyl Engineering
Print Name of Customer/Authorized Agent
 August 10, 2023
Signature of Customer/Authorized Agent Date

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

GENERAL INFORMATION FORM

GENERAL INFORMATION FORM

ATTACHMENT A: ROAD MAP

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: Jason K. Rodgers, P.E.

Date: August 10, 2023

Signature of Customer/Agent:

Project Information

1. Regulated Entity Name: Lake Creek at Avery Ranch
2. County: Williamson County
3. Stream Basin: Buttercup Creek/South Brushy Creek
4. Groundwater Conservation District (If applicable): N/A
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

   Contact Person: Alex Clarke
   Entity: Avery Land Investors, LP
   Mailing Address: 1000 N. Lamar Blvd., Ste. 400
   City, State: Austin, TX Zip: 78703
   Telephone: 512-247-7000 FAX: _____
   Email Address: aclarke@journeymanco.com

8. Agent/Representative (If any):

   Contact Person: Jason Rodgers
   Entity: Bleyl Engineering
   Mailing Address: 7701 San Felipe Blvd.
   City, State: Austin, TX Zip: 78727
   Telephone: 512-454-2400 FAX: _____
   Email Address: austinpermitting@bleylengineering.com

9. Project Location:

   ☒ The project site is located inside the city limits of Austin.
   ☐ 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.

    Near the intersection of US 183 A and Avery Ranch Rd. Just south of Avery Ranch Rd on North Lake Creek Parkway.

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: _____

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:

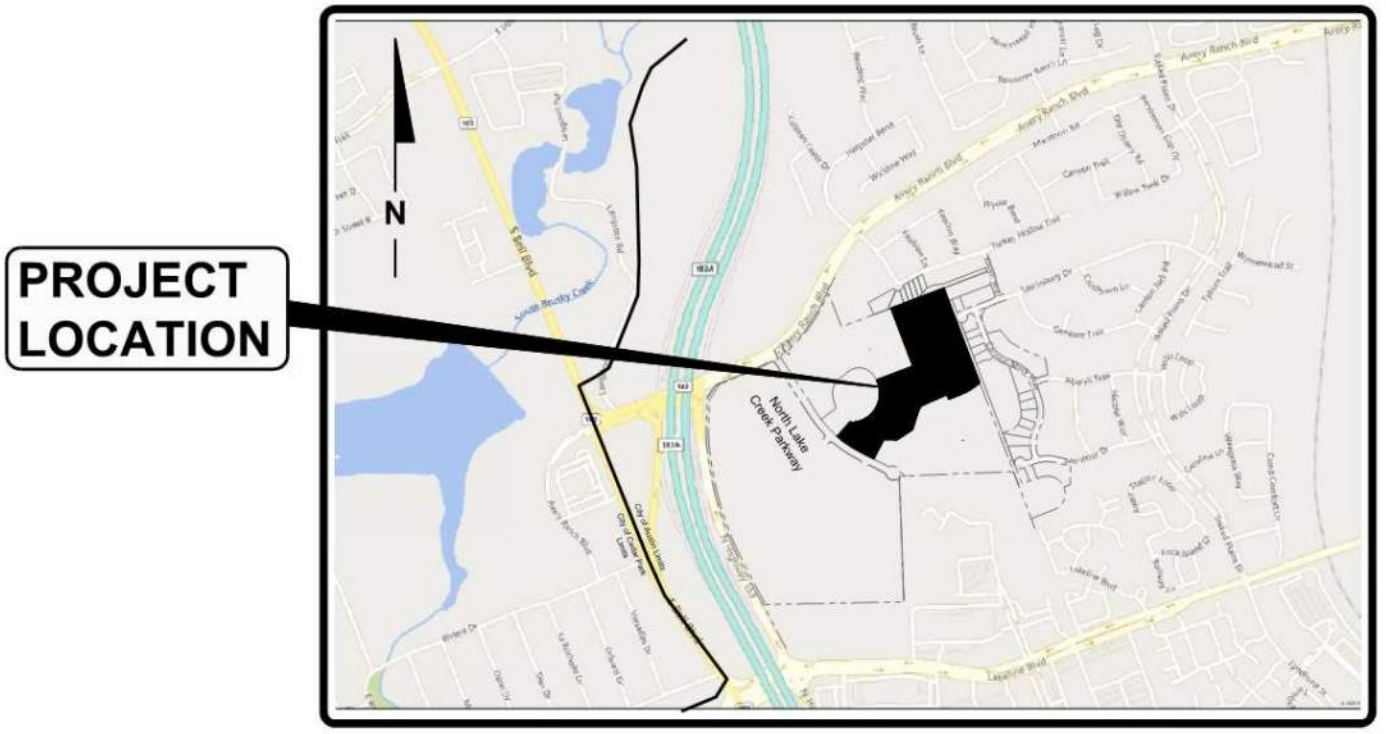
☐ TCEQ cashier
☒ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
☐ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

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.

Road Map

General Information Form: Attachment A



Project Location Map

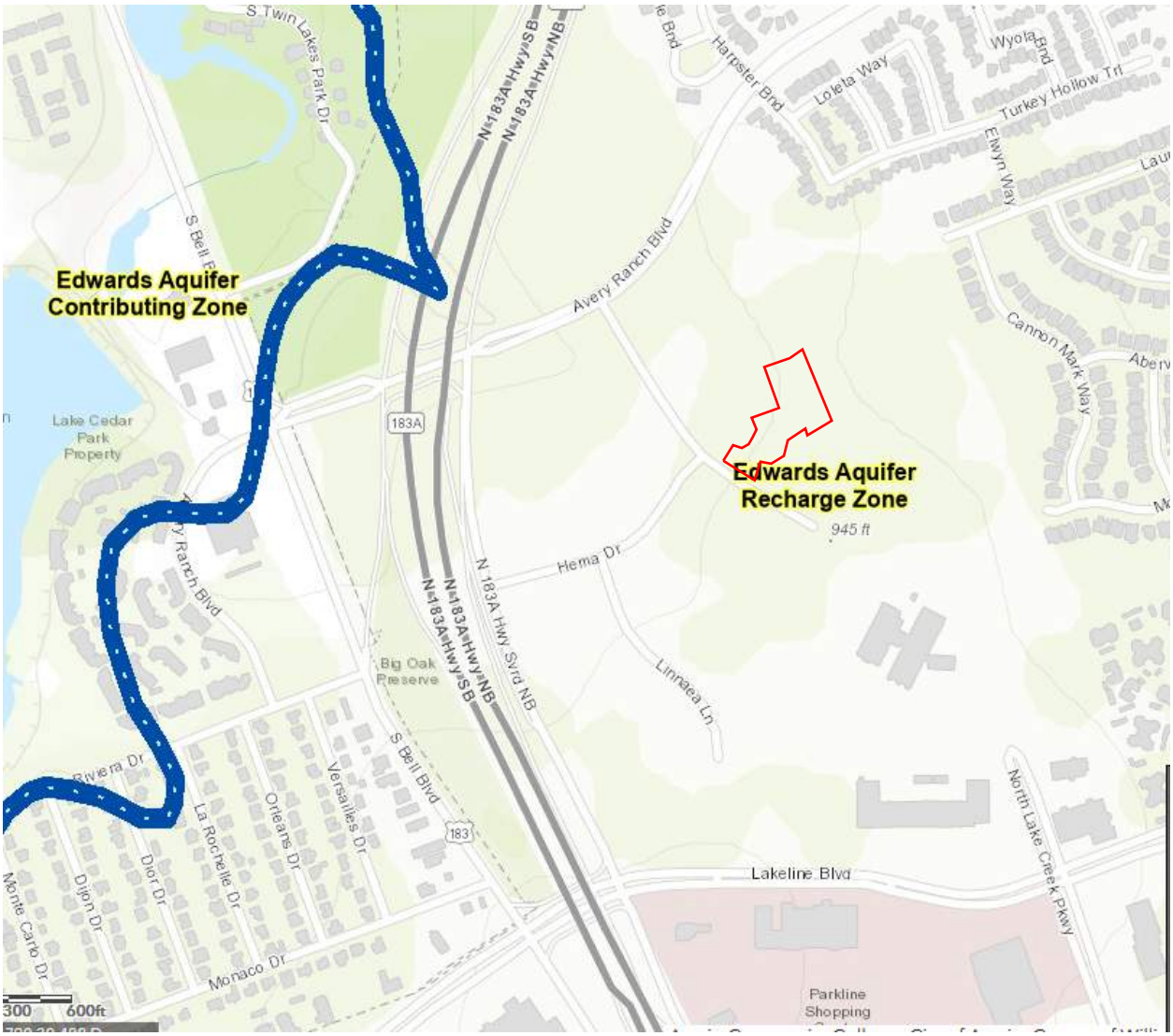
GENERAL INFORMATION FORM

ATTACHMENT B: USGS / EDWARDS RECHARGE ZONE MAP

USGS Quadrangle Map

General Information Form: Attachment B

USGS Quad Name: Jollyville



GENERAL INFORMATION FORM

ATTACHMENT C: PROJECT DESCRIPTION

Project Description

General Information Form – Attachment C

General Information

The proposed site is 16.33 acres and is located near the intersection of US 183A and Avery Ranch Boulevard at 9205 N. Lake Creek Pkwy. The proposed site is located within Austin's Full-Purpose jurisdiction. The site is located partially within the Buttercup Creek Watershed (Suburban) and the South Brushy Creek Watershed (Suburban). No portion of this tract is within the 100-year flood plain per the Flood Insurance Rate Map panel #48491C0610E, dated 09/26/2008 for Williamson County, Texas.

Existing Conditions:

The project site is undeveloped. The site's vegetation consists of shrubbery and trees and is heavily vegetated. A critical environmental feature is located on Lot 2 to the west of this lot. The setback for that feature is not encroaching on this lot. There are no slopes over 15% on the property. A Geological Assessment is included with this submittal. The reports were prepared by TxDOT prior to the sale of this land to the current owner.

Proposed Conditions:

Water Pollution Abatement Plan:

The project proposes 9 apartment buildings and 324 separate units. It will also have a clubhouse and enclosed garages and carports. Other proposed improvements include parking spaces, internal driveways, water and wastewater services and two water quality ponds (rain gardens). Total proposed impervious cover is 42%.

Runoff from the site will be collected in storm water inlets and conveyed to various storm water management systems in and around the property. Part of the site will drain to an existing storm sewer system along N Lake Creek Parkway. Another portion will drain to the existing pond developed for the adjacent Avery Oaks Phase 2 (EAPP 11002789). The project proposes two on-site rain gardens to treat the portions of the property not going to the previously mentioned management systems. All areas draining to existing systems have been analyzed to ensure that the systems have the capacity to manage the proposed runoff. See the tables below for capacity vs. runoff.

Pro 1.1 will drain to the proposed Rain Garden 1 and Pro 1.4 drains to Rain Garden 2. The rain gardens are designed using City of Austin ECM Appendix R11. There will be no detention for this area because runoff reduction due to the existing Avery Oaks Phase 2 pond is sufficient to keep the runoff below existing undeveloped conditions. The pond over detains flows by 50 cfs, so the 10.01 cfs leaving Pro 1.1 in the 100-year storm will not cause flows to exceed overall existing undeveloped runoff. The 100-year discharge from Rain Garden 2 is 12.74 cfs.

Analysis Point 1 Summary:

The flows from Avery Oaks Phase 2 and this project are collected at Analysis Point 1. This is an existing area inlet constructed to convey flows through the adjacent neighborhood. The storm system was designed to convey 191.02 cfs during the 100-year storm. The combined discharge from the Avery Oaks Phase 2 pond, the proposed rain gardens for drainage areas Pro 1.1 and Pro 1.4 including the undeveloped land in area Pro 1.3 totals 153.42 cfs. This is less than the design flow (191.02 cfs) in the downstream storm system per Avery Station, Section 1A, Phase 1 (C8-07-0043.01.3B).

Avery Oaks Phase 2 Pro DA Map and Pond Discharge

Proposed Drainage Area Calculations

Label	Area	IC		SCS CN	Tc	Atlas-14, 24 hr Storm Water Flows (cfs)			
	acres	*acres*	*%*		*hours*	*2-yr*	*10-yr*	*25-yr*	*100-yr*
Pro 1	10.98	6.510	59.3	90.67	0.273	37.59	61.38	76.89	101.81
Pro 2	6.06	3.636	60.0	90.81	0.083	31.24	50.50	63.11	83.66
Pro 3	8.71	0.000	0.0	80.00	0.186	24.66	47.49	62.99	88.09

Hydrologic Soil Group = D

Drainage Area Pro 2 assumes fully-developed impervious cover (multi-family) for future development.

Discharge Summary

Analysis Point	Atlas-14, 24 hr Storm Water Flows (cfs)			
	2-yr	*10-yr*	*25-yr*	*100-yr*
Ex Discharge	55.44	107.05	142.08	198.77
Pond Inflow	57.98	95.22	119.46	158.70
Pond Discharge	22.10	40.04	55.75	75.20
Pro Discharge	41.89	72.32	99.45	146.05

Analysis Point 2 Summary:

This project proposes to drain drainage area Pro 2 into the storm system constructed with Avery Lakeline (C8-2019-0041.1B) flows located on sheet 65. This system was designed to receive a total of 42.69 cfs from this site. This project proposes to drain 41.24 cfs to North Lake Creek Parkway. The drainage area and impervious cover were also reduced. The existing wet pond designed with the Avery Lakeline Construction Plans has capacity for these improvements associated with drainage area Pro 2. The Avery Lakeline project was designed for Atlas 14 flows.

Lake Creek at Avery Ranch Pro DA Map and Calculations

Proposed Drainage Area Calculations

Label	Area	IC		SCS CN	Tc	Lag Time	Atlas 14, 24 hr Storm Water Flows (cfs)			
	acres	*acres*	*%*		*min*	*min*	*2-yr*	*10-yr*	*25-yr*	*100-yr*
Pro 1.1	0.79	0.55	70.2	93	5.00	3.00	3.85	6.11	7.55	10.01
Pro 1.2	4.81	3.36	69.8	93	5.00	3.00	23.45	37.19	45.94	60.92
Pro 1.3	5.98	0.00	0.0	80	8.57	5.14	16.01	30.09	39.56	55.47
Pro 1.4	1.00	0.84	84.0	95	5.00	3.00	5.07	7.87	9.66	12.74
Pro 2	3.58	2.05	57.4	90	5.00	3.00	20.51	33.74	42.18	56.51

* Time of Concentration for Pro 1.1, 1.2 and Pro 2 are assumed to be 5 minutes. This is a conservative assumption.

Avery Lakeline Street Inlet Design by Jones Carter

POST-DEVELOPED RATIONAL METHOD RUNOFF CALCULATIONS								
						100-Year Storm		
Inlet / Sub-Basin Name	**Sub-Basin Area** (ac)	**Impervious Cover** (%)	**Impervious Area** (ac)	**Pervious Area** (ac)	T_c (min)	**Coefficient** (C)	**Intensity, I** (in/hr)	**Runoff, Q** (cfs)
PRO 2 (Bleyl)	3.58	57.26	2.05	1.53	5	0.75	15.32	41.24
L-4 (Jones-Carter) (Pre-Atlas)	4.24	65.00	2.76	1.48	5	0.80	12.54	42.69

Notes:

1. Rainfall Intensity obtained from City of Austin DCM Section 2.4.3, Table 2-2B.
2. Rainfall intensities account for NOAA Atlas 14

Organized Sewage Collection System:

A private lift station and force main has been added to allow for the wastewater to be pumped up to a gravity line in North Lake Creek Parkway. TCEQ Form 0624 for Lift Station and Force Mains has been included. The force main plan and profiles can be found on sheets 47, 48 and 49.

GEOLOGIC ASSESSMENT SECTION
143 ACRES

Geologic Assessment

143-Acre Property at U.S. 183 and Avery Ranch Boulevard, Williamson County, Texas

Prepared by: Zara Environmental LLC

Date: 22 May 2017

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Geologic Assessment

Texas Commission on Environmental Quality

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

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

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

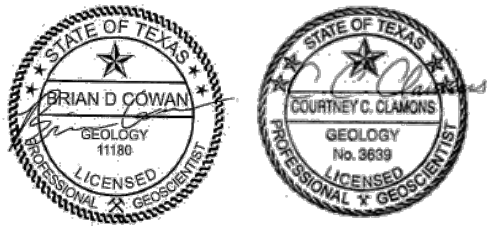
Signature

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

Print Name of Geologist: Brian D. Cowan, P.G., and C. Clover Clamons, P.G. Telephone: 512-291-4555 Fax: 866-908-9137

Date: 22 May 2017

Representing: Zara Environmental LLC/ TBPG No. 50365 (Name of Company and TBPG or TBPE registration number) Signature of Geologist:



Regulated Entity Name: 143-Acre Property at U.S. 183 and Avery Ranch Boulevard, Williamson County, Texas

Project Information

1. Date(s) Geologic Assessment was performed: 1 February 2017 – 10 February 2017
2. Type of Project
   - ☒ WPAP ☐ AST
   - ☒ SCS ☐ UST
3. Location of Project:
   - ☒Recharge Zone
   - ☐Transition Zone
   - ☐Contributing Zone within the Transition Zone

4. ☒ **Attachment A - Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group *	Thickness (ft)
EeB - Eckrant extremely stony clay, 0 to 3 percent slopes	B	0.9
ErE - Eckrant-Rock outcrop association, 1 to 10 percent slopes	B	0.9
DoC - Doss silty clay, moist, 1 to 5 percent slopes	B	1.4
DnB - Denton silty clay, 1 to 3 percent slopes	B	3.0

** Soil Group Definitions (Abbreviated)*

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

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

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

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

6. ☒ **Attachment B – Stratigraphic Column**. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

7. ☒ **Attachment C – Site Geology**. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8. ☒ **Attachment D – Site Geologic Map(s)**. The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

   Applicant's Site Plan Scale: 1" = N/A '
   Site Geologic Map Scale: 1" = 200'
   Site Soils Map Scale (if more than 1 soil type): 1" = 800'

9. Method of collecting positional data:

   ☒ Global Positioning System (GPS) technology.

   ☒ Other method(s). Please describe method of data collection: Historic features derived from other consultant reports and Texas Speleological Survey

10. ☒ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.

11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.

12. ☒ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

    Geologic or manmade features were not discovered on the project site during the field investigation.

13. ☒ The Recharge Zone boundary is shown and labeled, if appropriate.

14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

    ☐ There is _____(#) well present on the project site and the location is shown and labeled. (Check all of the following that apply.)
    ☐ The wells are not in use and have been properly abandoned.
    ☐ The wells are not in use and will be properly abandoned.
    ☐ The wells are in use and comply with 16 TAC Chapter 76.

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

See Previously Identified Feature F17

Administrative Information

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

ATTACHMENT A

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: *143-Acre Property at U.S. 183 and Avery Ranch Boulevard, Williamson County, Texas*

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 (FT)			TREND (DEGREES)	DOD	DENSITY (NO/FT)	APERTURE (FT)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	≥40	<1.6	≥1.6	
AV1	30.48322	-97.80197	CD	5	Ked	5.9	5.9	2.5	-	-	3/30ft	-	C,F	5	10	x		x		Hillside
AV2	30.48515	-97.79959	CD	5	Ked	16.4	13.1	1.6	-	-	-	-	F,O	5	10	x		x		Hilltop
AV3	30.48568	-97.80047	CD	5	Ked	7.2	7.2	1	-	-	-	-	F,O,C	5	10	x		x		Hillside
AV4	30.48637	-97.80383	SF	20	Ked	3.3	1	1.6	10	-	-	-	F,O	10	30	x		x		Hillside
AV5	30.48729	-97.80362	O	5	Ked	9.8	9.8	?	-	-	-	-	F,O,C	10	15	x		x		Drainage
AV6	30.49137	-97.80437	CD	5	Ked	9.8	16.4	1.6	-	-	-	-	F,O,C	5	10	x		x		Hilltop
AV7	30.48643	-97.80400	CD	5	Ked	4.9	4.9	1.3	-	-	-	-	F,C	5	10	x		x		Hillside
AV8	30.48654	-97.80357	SC	20	Ked	3	3.0	0.7	-	-	-	-	F,C	15	35	x		x		Hillside
AV9	30.49386	-97.80521	CD	5	Ked	4.9	6.6	0.8	-	-	-	-	F,O,C	5	10	x		x		Hilltop
AV10	30.48741	-97.80338	MB	30	Ked	0.3	0.3	10.5	-	-	-	-	N	5	35	x		x		Hillside
AV11	30.48171	-97.80103	MB	30	Ked	3.3	3.3	?	-	-	-	-	N	5	35	x		x		Hillside

* DATUM: NAD 83

2A	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.

Brian Cowan C.C. Clamons

STATE OF TEXAS — BRIAN D COWAN — GEOLOGY 11180 — LICENSED PROFESSIONAL GEOSCIENTIST

STATE OF TEXAS — COURTNEY C. CLAMONS — GEOLOGY No. 3639 — LICENSED PROFESSIONAL GEOSCIENTIST

Date 22 May 2017

Sheet 1 of 2

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

ATTACHMENT A

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: *143-Acre Property at U.S. 183 and Avery Ranch Boulevard, Williamson County, Texas*

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 (FT)			TREND (DEGREES)	DOD	DENSITY (NO/FT)	APERTURE (FT)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)	TOPOGRAPHY
						X	Y	Z		10						<40	≥40	<1.6	≥1.6	
AV12	30.48659	-97.80016	SH	20	Ked	3.3	8.2	4.9	165	-	-	-	F,O,C	25	45		x	x		Hillside
F12	30.48759	-97.80381	SC	20	Ked	3.3	1.3	1	-	-	-	-	F,O	15	35	x		x		Hilltop
F14	30.48933	-97.80139	CD	5	Ked	1.3	1.6	0.7	-	-	-	-	F,O	5	10	x		x		Hilltop
F15	30.49132	-97.80180	DC	5	Ked	5.9	5.9	1.6	-	-	-	-	F,O	5	10	x		x		Hillside
R9	30.48602	-97.79990	O	5	Ked	98	66	0	-	-	-	-	F,O,V	5	10	x		x		Hillside
X9	30.48461	-97.80084	SH	20	Ked	5.9	6.6	2.0	-	-	-	-	F,O,C	30	50		x	x		Hillside
X10	30.48395	-97.80141	SH	20	Ked	3.9	1	3.0	-	-	-	-	F,O,C	20	40		x	x		Hillside

* DATUM: NAD 83

2A	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	
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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.

Brian Cowan C.C. Clamons

STATE OF TEXAS — BRIAN D COWAN — GEOLOGY 11180 — LICENSED PROFESSIONAL GEOSCIENTIST

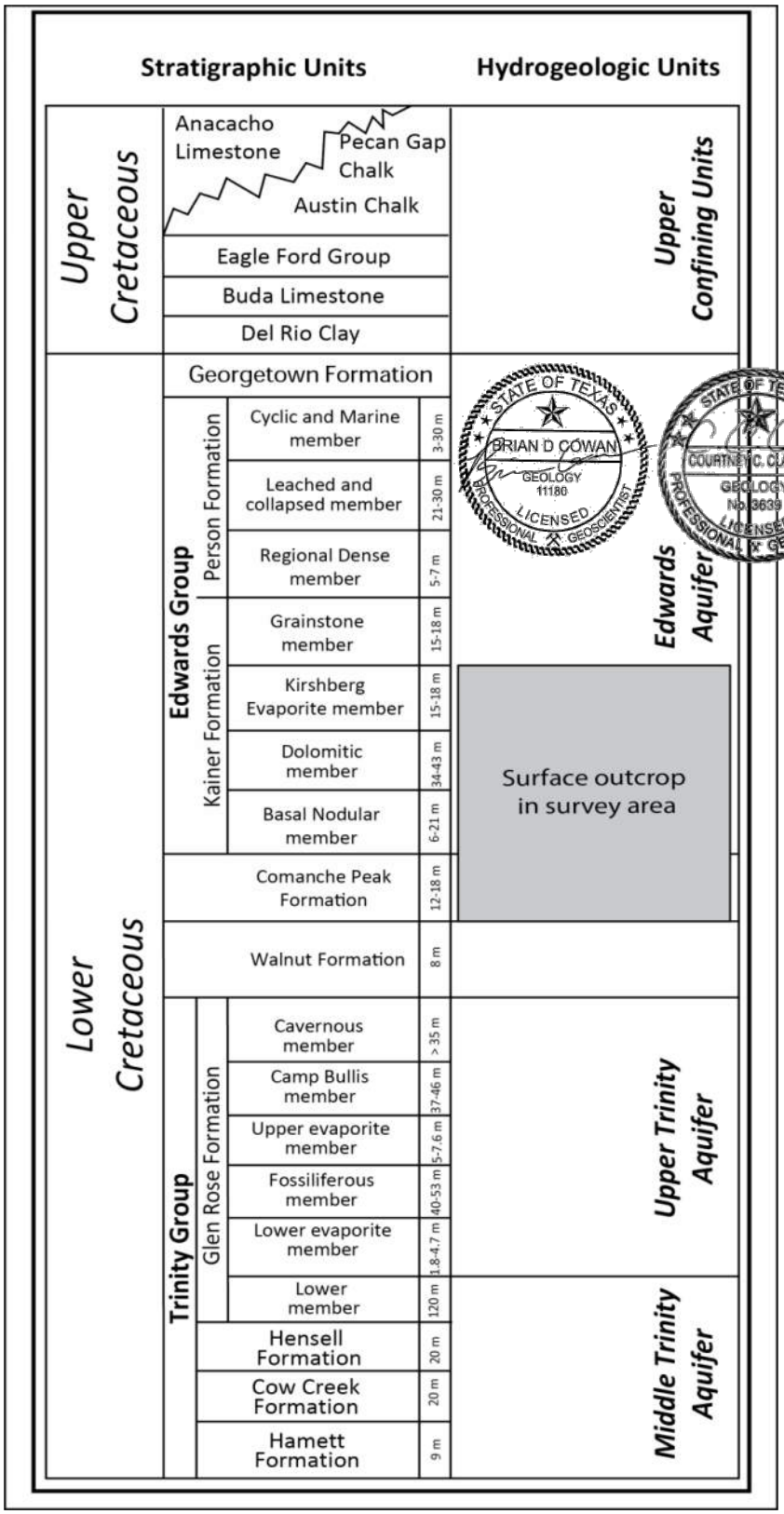
STATE OF TEXAS — COURTNEY C. CLAMONS — GEOLOGY No. 3639 — LICENSED PROFESSIONAL GEOSCIENTIST

Date 22 May 2017

Sheet 2 of 2

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

ATTACHMENT B



This stratigraphic column shows the regional geologic units and indicates the zones of rocks that outcrop in the project area. Adapted from Lindgren et al. (2004).

ATTACHMENT C

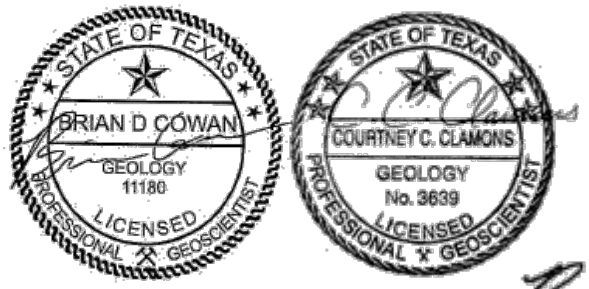
Geologist Certification

Geologic Assessment for 143-Acre Property at U.S. 183 and Avery Ranch Boulevard, Williamson County, Texas

Prepared for: Texas Department of Transportation
Prepared by: Zara Environmental LLC
Date: 22 May 2017

In accordance with the Texas Board of Professional Geologists rules at 22 Texas Administrative Code, Part 39, Chapter 851, Subchapter C, §851.156, this report is signed and sealed on the title page to assure the user that the work has been performed by or directly supervised by the following professional geologist who takes full responsibility for this work.

The computer generated seals appearing on this document were authorized by Brian D. Cowan, P.G. 11180 and C. Clover Clamons, P.G. 3639 on 22 May 2017.



Brian D. Cowan, Texas Professional Geoscientist No. 11180
C. Clover Clamons, Texas Professional Geoscientist No. 3639
Zara Environmental LLC Geoscience Firm Registration No. 50365

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ATTACHMENT C

Introduction

A Geologic Assessment (GA) was conducted within the approximately 143-acre survey area in Williamson County, Texas (Figure 1). A detailed walking survey of the entire area was conducted over four days between 1 February 2017 and 10 February 2017, documenting 17 surface features. Ten additional features were previously identified within the survey area but were not located during surveys for this GA. The majority of the survey area is inside the Edwards Aquifer Recharge Zone with small areas in the Edwards Aquifer Contributing Zone in the northern and western portions of the survey area (Figure 1).

ATTACHMENT C

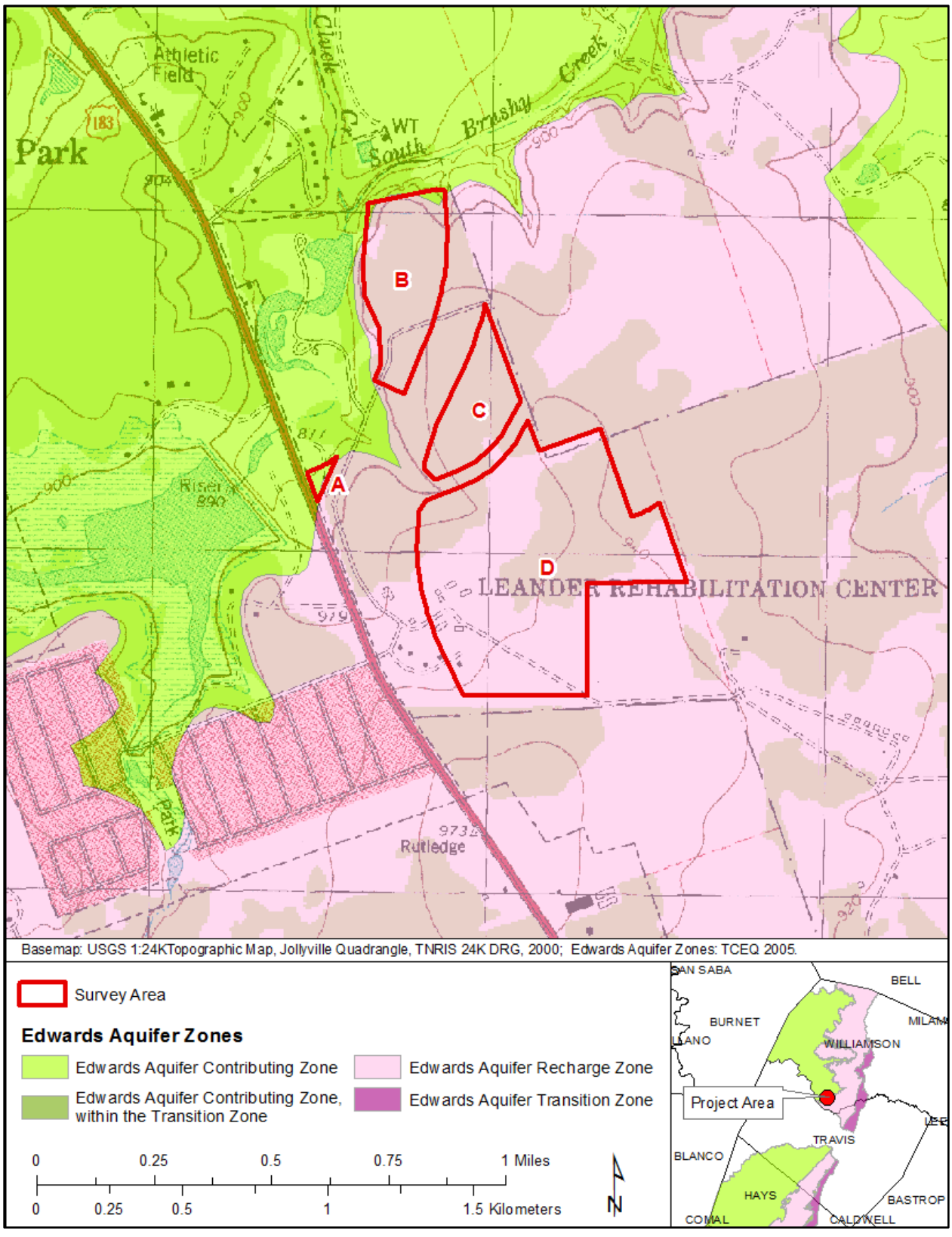

Figure 1. Location map displaying the survey area in Williamson County, Texas, and Edwards Aquifer Zones.

Methods

Background Data Collection

Surface geologic maps from the Geologic Atlas of Texas (GAT; 2010) were reviewed. Soil descriptions were compiled from the Web Soil Survey of the U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS; 2017). Available Texas Water Development Board (TWDB) and Texas Commission on Environmental Quality (TCEQ) water well information was also reviewed for the survey area. Available floodplain maps from the Federal Emergency Management Agency (FEMA) or other local/regional floodplain administrators were reviewed.

Geology staff consulted records of cave locations from the Texas Speleological Survey (TSS), Veni (2005), and Veni (1998). Staff geologists also performed an exhaustive search of TCEQ files to determine if there were any previous GAs performed in this survey area.

Field Survey

Karst survey methods followed protocols outlined in TCEQ Instructions to Geologists for Geologic Assessments (TCEQ 2004) and the U.S. Fish and Wildlife Service (USFWS) Section 10(a)(1)(A) Scientific Permit Requirements for Conducting Presence/Absence Surveys for Endangered Karst Invertebrates in Central Texas (USFWS 2015). Walking ground surveys, as defined by Veni and Reddell (2002), Barrett (2005), and TCEQ (2004) were conducted throughout the survey area and reconnaissance excavations were conducted at all potential karst features. Positions of all features were documented using Global Positioning System (GPS) technology and checked with field maps based on digital orthoimagery. All features identified were inspected by a licensed professional geologist and evaluated for potential impact to Edwards Aquifer recharge. This was completed by ranking the recharge sensitivity of each feature using the point scheme defined by TCEQ (2004). Fieldwork for the karst survey was supervised by Texas licensed professional geoscientist Brian Cowan (#11180).

Results

Background Data

Soils

Four different soil types are identified in the survey area by the USDA NRCS (Figure 2). A brief description of each soil type is included below.

Eckrant extremely stony clay, 0 to 3 percent slopes (EeB). This soil is a ridge-forming, extremely stony clay with depths of approximately 11 in. This soil has the capacity to transmit water to the subsurface at moderately low to moderately high rates (0.06 to 0.57 in/hr) through its limiting layer to the subsurface, placing it in Hydrologic Soil Group D (USDA NRCS 2017). This soil forms 90 percent of the survey area.

Eckrant-Rock outcrop association, 1 to 10 percent slopes (ErE). This association is 58 percent Eckrant and similar soils and 42 percent rock and other minor components. It is ridge-forming, cobbly to very-cobbly clay with depths of approximately 11 in. This soil has the capacity to transmit water to the subsurface at moderately low to moderately high rates 0.06 to 0.57 in/hr) through its limiting layer to the subsurface, placing it in Hydrologic Soil Group D (USDA NRCS 2017). This soil forms 7.3 percent of the survey area.

Doss silty clay, moist, 1 to 5 percent slopes (DoC). This soil is a hillslope-forming, silty clay with depths of approximately 1.4 ft. This soil has the capacity to transmit water to the subsurface at moderately low to moderately high rates (0.06 to 0.57 in/hr) through its limiting layer to the subsurface, placing it in Hydrologic Soil Group D (USDA NRCS 2017). This soil forms 2.6 percent of the survey area.

Denton silty clay, 1 to 3 percent slopes (DnB). This soil is a hillslope-forming, silty clay and gravely-silty clay with depths of approximately 3 ft. This soil has the capacity to transmit water to the subsurface at moderately low to moderately high rates (0.06 to 0.20 in/hr) through its limiting layer to the subsurface, placing it in Hydrologic Soil Group D (USDA NRCS 2017). This soil forms 0.1 percent of the survey area.

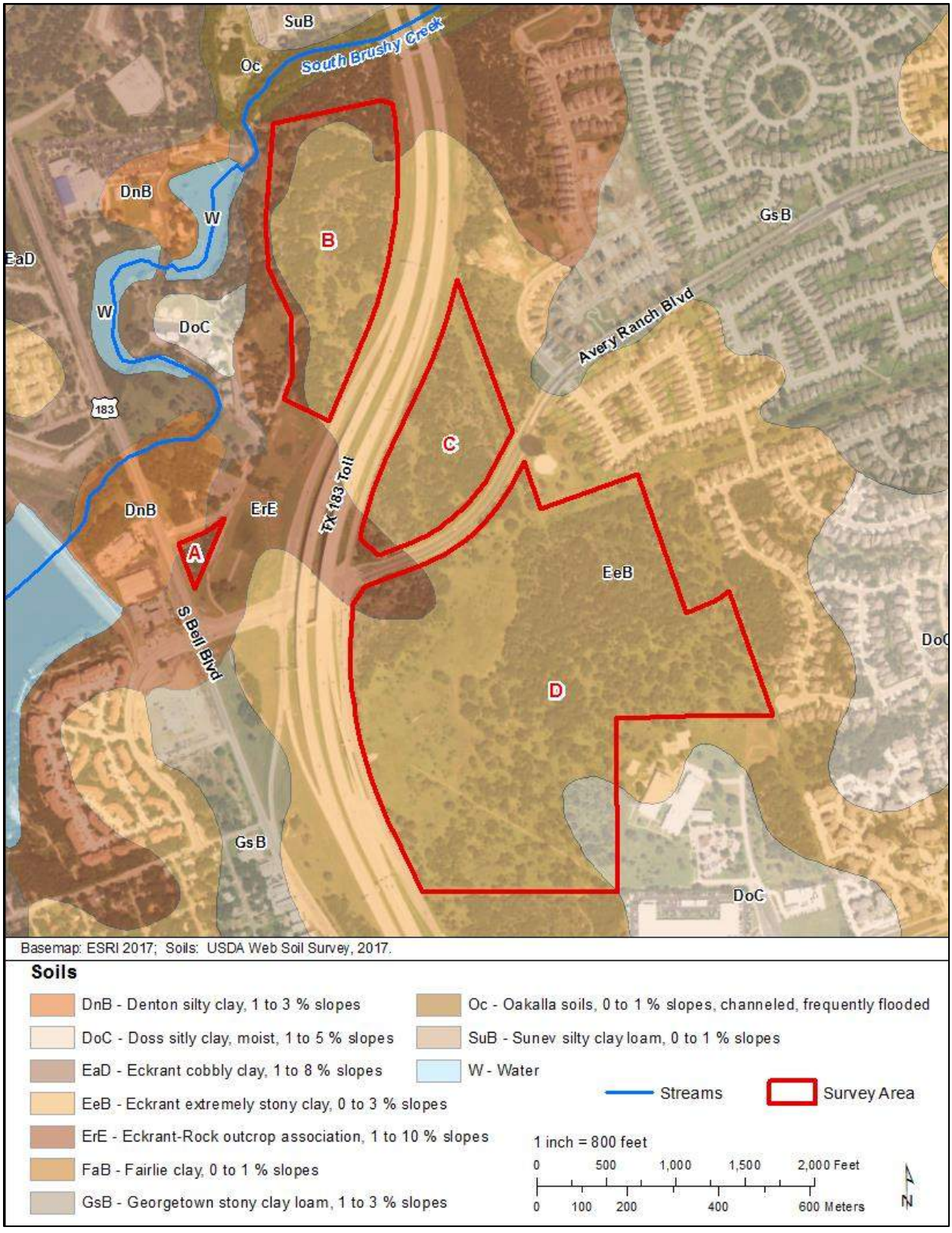

Figure 2. Soil types occurring in the survey area.

Site Geology

Site geology is generally consistent with that mapped by the GAT (2010) and shown in Figure 3 and Attachment D. Most of the survey area, with the exception of the most northwestern portion, is mapped as Edwards Limestone, which is consistent with observations made in the field. The Edwards Limestone is generally describe as a hard, crystalline, fossiliferous limestone that contains voids and caverns formed by karst processes. Stratigraphic members of the Edwards Limestone cropping out within the survey area are consistent with the Kirschberg, Basal Nodular, and Dolomitic members of the Kainer Formation, although these are generally not differentiated in maps north of the Lower Colorado River as explained in detail in the Regional Stratigraphy section.

Rock cropping out in the far northern and western portions of the survey area are consistent with the Comanche Peak Formation, particularly along cliffs formed by downcutting of South Brushy Creek. The Comanche Peak Formation is a nodular, marly, poorly permeable limestone that intergrades in wedges with the Edwards in this area. Veni (1999) describes this as the lower stratigraphic limit of cave development in the area. Small portions of the survey area are mapped as Walnut Formation, but no exposures of that unit were observed. There are no mapped faults within the survey area and no evidence of faulting was observed in the field.

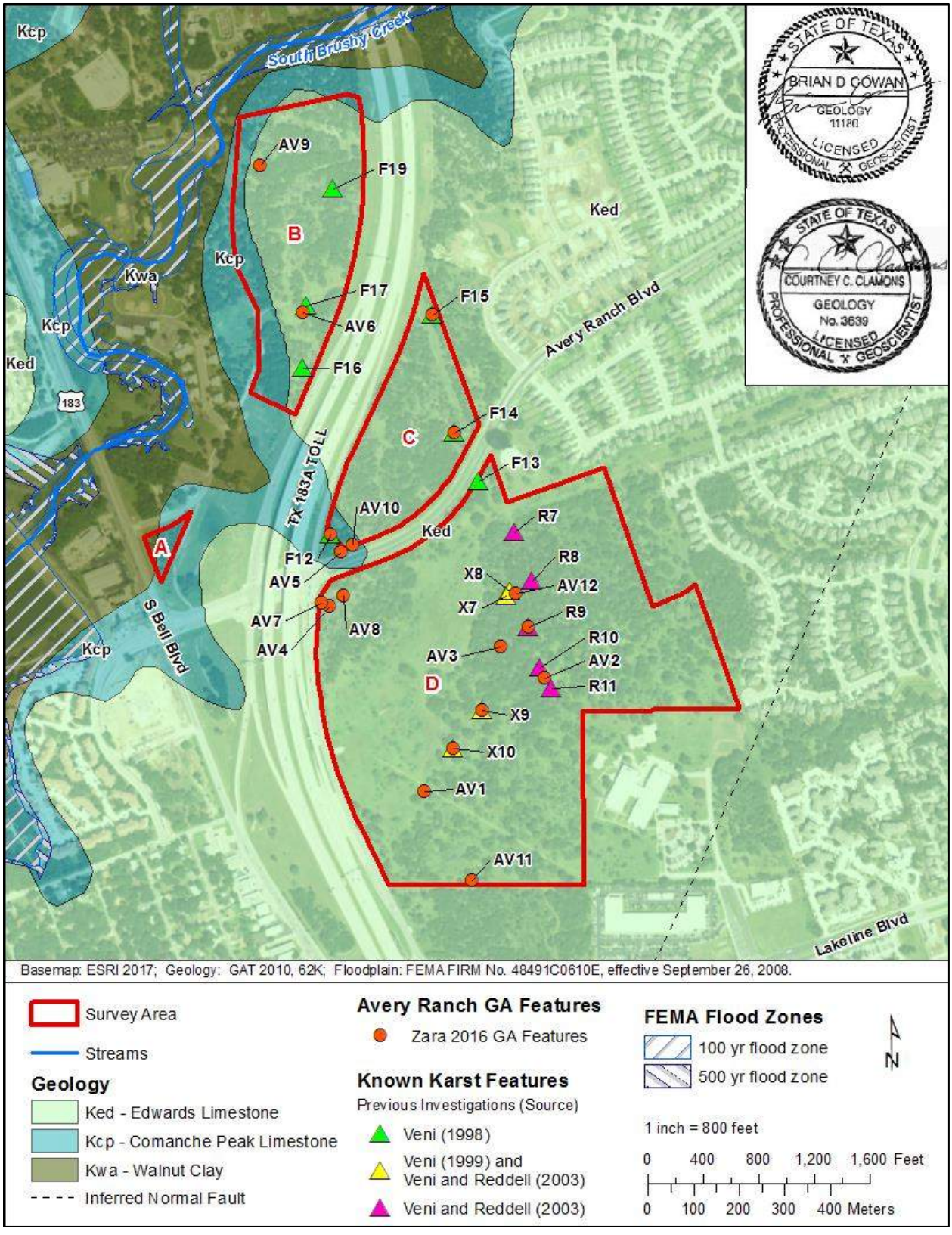

Figure 3. Geology of survey area including locations of all features discovered during pedestrian surveys.

Regional Geology

The survey area is located in the southeastern portion of the Edwards Plateau Physiographic Province of central Texas, along the Balcones Fault Zone (BFZ). The BFZ also forms the Balcones Escarpment, which is a highly eroded region bordering the Edwards Plateau on its southern and western boundaries. The region is typified by higher elevations to the north and west, generally sloping in a southeastern direction. Canyons and drainage basins were formed by surface flow of the Brazos River basin, including Brushy Creek, which drains the site.

The geologic formations occurring within the region are comprised mostly of Cretaceous age-rocks with some overlaying Quaternary alluvium along surface drainages. The soils that have formed on top of these limestones are relatively thin and offer minimal filtering capability. The limestone bedrock developed from the accumulation of thick sequences of marine sediments deposited in a lagoon environment on the San Marcos Platform protected by a barrier reef during the Cretaceous about 100 million years ago (Rose 1972). In central Texas, the Cretaceous strata slightly dip to the southeast at about 10 to 15 ft/mi toward the Gulf of Mexico.

Regional Stratigraphy

The geological formations that comprise the Edwards Aquifer are from top to bottom the Georgetown, Person, and Kainer (also known as the Edwards Group). A stratigraphic column showing the regional geology is included as Attachment B, before the Site Geology Narrative (Attachment C).

The Georgetown Formation is described as limestone and marl, but mostly limestone, fine grained, argillaceous, nodular, moderately indurated, and light gray. Some zones are hard, brittle, thick bedded, white containing some shale, marly, soft, light gray to yellowish gray in color. Marine megafossils include *Kingena wacoensis* and *Gryphaea washitaensis*. The Georgetown Formation is 30 to 80 ft thick and thins southward. It is overlain by the Del Rio Clay and underlain by the Edwards Limestone. Although permeable, it is less permeable than the underlying Edwards Limestone and is often considered the upper confining unit of the Edwards Aquifer.

The Person and Kainer Formations comprise the Edwards Group (Rose 1972). The composition of the Person Formation ranges from crystalline limestone to grainstone to mudstone and is comprised of three informal hydrogeologic units: the Cyclic and Marine members, undivided; the Leached and Collapsed members, undivided; and the Regional Dense member. Member subdivisions within the Edwards Group are not formally mapped north of the Colorado River; therefore, it is generally mapped as the Edwards Formation. Recent geologic mapping and borings by City of Austin Watershed Protection staff indicate that geologic members equivalent to those mapped south of the Colorado River are present

(Hauwert 2010), so those members are discussed below. Thicknesses of members are not well understood north of the Colorado River; therefore, no thicknesses will be given.

The Cyclic and Marine members are composed of a chert-bearing wackestone and can be somewhat variable in thickness because of the erosional unconformity between the Person and Georgetown Formations (Small et al 1996).

The Leached and Collapsed members are a light-colored wackestone with interbedded mudstone and grainstone intervals that form one of the more porous and permeable subdivisions of the Edwards Aquifer. The leached member is a dense, bioturbated micrite, and the collapsed member is composed of several zones of collapsed stromatolitic limestone that are 1 to 5 ft thick (Small et al 1996).

The lowermost member of the Person Formation is the Regional Dense Member (RDM). The RDM is composed of a dense argillaceous mudstone and is easily identified in the outcrop and on a variety of geophysical logs (Small et al 1996). Most of the fractures that penetrate the RDM do not appear to be solution enlarged. Caves that breach the RDM are not enlarged but are usually vertical shafts with horizontal caverns developed above or below the RDM. The RDM can function as a confining unit between the upper and lower portions of the Edwards Aquifer (i.e., between the Kainer and the Person Formation); however, caves, faults, and fractures may greatly reduce the vertical confining ability of the RDM. The RDM is probably not an effective barrier to lateral flow at faults because of the relatively thin section. The flow of water tends to circumvent the RDM because of the impermeable nature of this unit (Hauwert 2009).

The lithology of the Kainer Formation ranges from mudstone to miliolid grainstone to crystalline limestone. The Kainer is subdivided into four informal members that include the Grainstone, Kirschberg Evaporite, Dolomitic, and Basal Nodular members (Rose 1972).

The Grainstone member is the uppermost unit of the Kainer Formation. It is composed of thick sequences of dense, tightly cemented, miliolid grainstone (Small et al 1996). Primary matrix porosity, as measured on geophysical logs, is some of the lowest in the Edwards Aquifer. Secondary fracture porosity accounts for the bulk of effective porosity in this aquifer unit.

The Kirschberg evaporite member underlies the Grainstone member and consists of crystalline limestone and chalky pulverulite with chert nodules and lenses (Hauwert 2009). Collapse features are common. The porosity has been described as boxwork (Small et al 1996) because of the configuration of the voids and the secondary neospar and travertine deposits. The boxwork porosity does not seem to be prevalent throughout the entire

thickness or extent of the member but occurs sporadically within more massive limestone. Dissolution of evaporite minerals, such as gypsum and anhydrite, and the existence of contorted beds in the Kirschberg evaporite, result in extensive secondary porosity, which creates one of the most permeable subdivisions in the Edwards Aquifer.

The Dolomitic member is a resistant, highly-bedded wackestone with interbedded grainstone, burrowed mudstone, and some chert nodules (Small et al 1996). Effective porosity and probable pathways of water in this unit are restricted to solution enlarged bedding planes, joints, fractures, and faults.

The basal nodular member is the lowermost unit of the Edwards Group and is a fossiliferous, nodular limestone with negligible porosity and permeability (Small et al 1996) and can function as part of the lower confining unit; however, in outcrop the basal nodular member often displays extensive karstification, which has generated secondary porosity in the form of large lateral caves.

The Comanche Peak Limestone, a poorly bedded marly limestone with thin shale interfingers in wedges into the Edwards Group limestone. The Comanche Peak Limestone is 40 to 60 ft thick and underlays the Edwards Limestone and overlays the Walnut Formation. The Walnut Formation is an interbedded shale, limestone, and sandstone unit that is approximately 25 ft thick.

Regional Groundwater

The survey area is in a semi-arid environment with average annual rainfall of about 30 to 35 in/yr. Evaporation of 75 to 90 in/yr removes much of this water prior to recharging the aquifers. Many of the rainfall events occur as thermal convection thunderstorms that can produce excessive amounts of precipitation in short periods. Some of this water makes its way into the aquifers usually through concentrated areas along creeks and rivers in outcrop areas of the recharge zone.

The survey area is located in the Northern Segment of Edwards Aquifer, which stretches from the Lower Colorado River in Austin along the BFZ into central Bell County, Texas. The Northern Segment of the Edwards Aquifer is relied upon by many municipalities, businesses, and private landowners. Karst aquifers are, by their nature, extremely vulnerable to contamination. Soils in karst areas tend to be thin and patchy. Thus, the filtration of diffuse recharge afforded by soils is at best low, and is only decreased by human activity. Recharge in karst systems commonly occurs as point recharge into specific karst features, bypassing what little filtration a limited soil zone might afford.

Water Wells

One well is mapped within the survey area based on available TWDB records (see Previously Identified Feature F17; Figure 3). The first record of the well dates to 1972, but no reliable data on the date drilled, depth, construction, or current status of the well could be located in TWDB records. This well was not encountered during field surveys. Further discussion of this well is included in the Previously Identified Features Section.

Floodplains

The FEMA flood map for the survey area is number 48491C0610E, effective 26 September 2008. No portion of the survey area was mapped within a flood zone.

Previously Identified Features

Information on karst features obtained from TSS, Veni (1998), and Veni (2005) indicated additional karst features within the survey area. The following features were not located during survey for this GA.

F13

This feature was described by Veni (1998, p. 8) as:

> *This is a 1.2-m-long by 0.9-m-wide sinkhole that was dug 0.3 m to continuing loose soil fill. It captures sheetwash from a roughly 5-m-long by 1-m-wide area*.

Veni (2005) indicated that this karst feature was not excavated following the initial Veni (1998) study. It was located beyond 165 ft of the original proposed alignment of the 183A right-of-way, and therefore excavations were not completed following USFWS standards at that time (Veni 2005).

F16

This feature was described by Veni (1998, p. 9) as:

> *This solutional sinkhole is 4 m in diameter and 0.25 m deep. It captures sheetwash from an area that is roughly 20 m long by 10 m wide. It has a compact floor of rocks amid silts that settled out from slow-draining recharge*.

Veni (2005) noted that this feature is within the US 183A right-of-way alignment proposed in 1998. However, it was not excavated due to unknown circumstances (Veni 2005).

F17

This uncapped water well was described by Veni (1998, p. 9) as:

> *[The water well] has a 20-cm-diameter (8-inch) casing. The depth of the well was not measured. It is located in a square concrete pad and captures no surface drainage. A 4-m-diameter sinkhole-like feature located 20 m from the well at a bearing of 190°*

> *is likely a stock tank. Slabs of limestone were removed to create a depression that captured some surface runoff; the depression could also have been filled from the well.*

The well was recommended for proper closure in accordance with state rules (Veni 2005). No well was visible at the location indicated by Veni (1998); however, a large pile of debris was present at that location. On 9 March 2017 TxDOT provided a backhoe for excavation of karst features, and to remove debris over the well location from TWDB records. The debris was removed and the ground surface was excavated in an attempt to locate the well. The well was not located; therefore, no additional information is available on the status of the well. It is possible that the well location was not correct, or that it was sealed before the 2017 surveys and backhoe excavation. The current status of the well is unknown.

F19

This feature was described by Veni (1998, p. 9) as:

> *Originally about 6 cm in diameter and 1 cm deep, this feature is probably a solutional sinkhole. It was dug to a depth of 0.4 m, a length of 0.4, and a width of 0.3 m. Loose rocks and soil continue downward at least 0.3 m to a ledge or possible rock floor as determined by probing. A joint with a 35° bearing may guide the feature, but additional excavation is needed to determine if it is actually a joint or a parting between large buried rocks.*

The results of an excavation conducted on 8 December 1998 indicated that it was an epikarstic feature with little hydrological significance. The excavation results also indicated that the feature has no known biological significance (Veni 2005).

R7, R8, R10, R11

Feature R9 was located in the field and is described in the next section; however, the other features in this set are described by Veni and Reddell (2003, p. 14) as:

> *Features R7 and R8 were each described as a "fractured rock feature" and R9, R10, and R11 each as a "vuggy rock feature". They were all shown as aligned north to south, their boundaries nearly connecting, along the west side of the gentle ridge that extends through the study area and within the western portion of the main wooded area. Combined, they had a length of about 300 m and a width of 10-20 m. These features were re-examined during the present study and found to be an area where the hillside slopes down and through a honeycombed limestone bed that becomes highly fractured at the land surface. The rock is not "vuggy" by definition of the term, but a locally intense epikarstic pit and tunnel karren developed over a preexisting, less dense, phreatically-formed honeycomb. Of far greater permeability are the fractures through the 1- to 1.3-m-thick bed. Most formed by downslope*

slumping of the bed, many others by tree growth along those fractures that raised and further split the rock, but none seem likely to extend to a sufficient depth to make them hydrologically significant. The relatively steep gradient of the land surface in this location probably contributed to the slumping, fracturing, and subsequent soil loss and exposure of the bed. Poorly developed karren suggests that the soil was removed during geologically recently times. Since this group of features is in fact one large continuous feature, they were listed as such by Veni (1999) in the TNRCC geologic assessment at the end of that report. Veni (1999) determined this feature had a low probability of opening to a cave, and it was not excavated or further investigated during this Phase 2 study, except for Karst Feature X7, which is a distinct feature within the group.

X8

This feature was described by Veni and Reddell (2003, p. 11) as:

Located about 6 m north of Karst Feature X7, this solutionally enlarged fracture is roughly aligned with X7 but not along its exact trend. It is dissimilarly oriented with a bearing of 106°. It has a width of 0.4 m, a depth excavated during Phase 1 from 0.2 m to 0.4 m, and a length exposed for 0.6 m before its limestone walls extend beneath the soil. The floor of the feature is a compact, black, clayey soil, onto which sheetwash drains from a roughly 12-m-long by 2-m-wide area. It seemed to have little potential to open to a cave and even less now that similar, but larger X7 has been excavated and found predominantly non-karstic.

Description of Features

Results of the surface karst feature survey are presented in the TCEQ Geologic Assessment Table (Attachment A) and discussed below. All features were ranked according to TCEQ (2004) and reported in TCEQ-0585-Geologic Assessment Table (Attachment A) and Figure 3 and Attachment D. A search of the TWDB Groundwater Database indicated one well located within the survey area (see Previously Identified Feature F17), but the well was not encountered during pedestrian surveys or backhoe excavations.

Feature AV1; Non-karst Closed Depression

This non-karst closed depression is located in Parcel D (Figure 3) and measures 5.9 ft long by 5.9 ft wide and is 2.5 ft deep (Figure 4 and Figure 5). The feature was filled with compact, fine-grained, brown/tan to reddish modern soils, and cobble. The feature is located on a hillside and it has a catchment area of 0.01 ac. No airflow was detected from the feature. A reconnaissance excavation was performed and revealed a hard-packed, clay bottom. There is a very low potential for this feature to rapidly transmit water to the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 4. Overview of Feature AV1 after excavation.

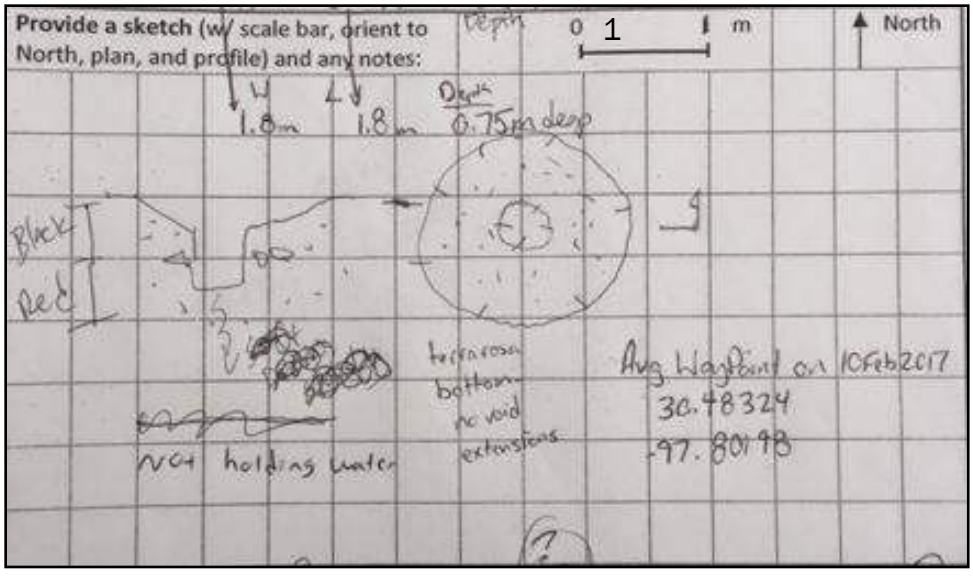

Figure 5. Field sketch of Feature AV1.

Feature AV2; Non-karst Closed Depression

This is a cluster of three non-karst closed depressions is located in Parcel D (Figure 3), with the largest measuring 16.4 ft long by 13.1 ft wide by 1.6 ft deep (Figure 6 and Figure 7). The non-karst closed depressions were filled with compact modern soils, leaf litter, and vegetation. The features are located on a hilltop and have a catchment area of 0.02 ac. No airflow was detected coming from any of the features. On 9 March 2017, the features were excavated using a backhoe to a weathered bedrock and hard clay terminus 2 ft below the ground surface (Figure 8), confirming that they are non-karst closed depressions. There is a very low potential for these features to rapidly transmit water to the subsurface; therefore, they are not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 6. Overview of Feature AV2 prior to excavation.

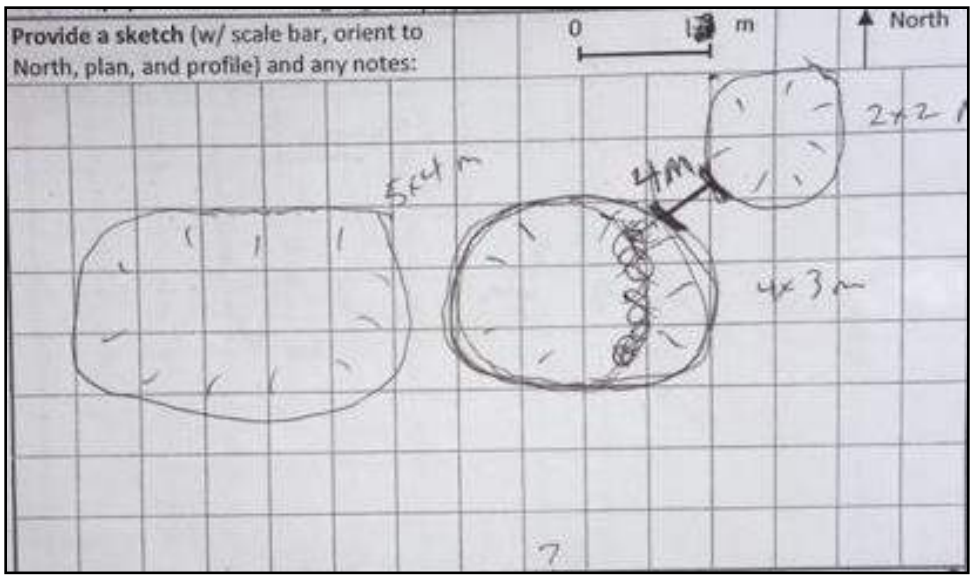

Figure 7. Field sketch of Feature AV2.

Figure 8. Overview of Feature AV2 after excavation.

Feature AV3; Non-karst Closed Depression

This non-karst closed depression is located in Parcel D (Figure 3) and measures 7.2 ft long by 7.2 ft wide and is 1 ft deep (Figure 9 and Figure 10). The feature is filled with leaf litter and brown to tan clay that is loose to a depth of 9.8 in. The feature is located on a hillside and it has a catchment area of 0.04 ac. No airflow was detected coming from the feature. A reconnaissance excavation was performed and revealed that the feature is an animal burrow with a compact clay bottom (Figure 11). There is a very low potential for this feature to rapidly transmit water to the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 9. Overview of Feature AV3 prior to excavation.

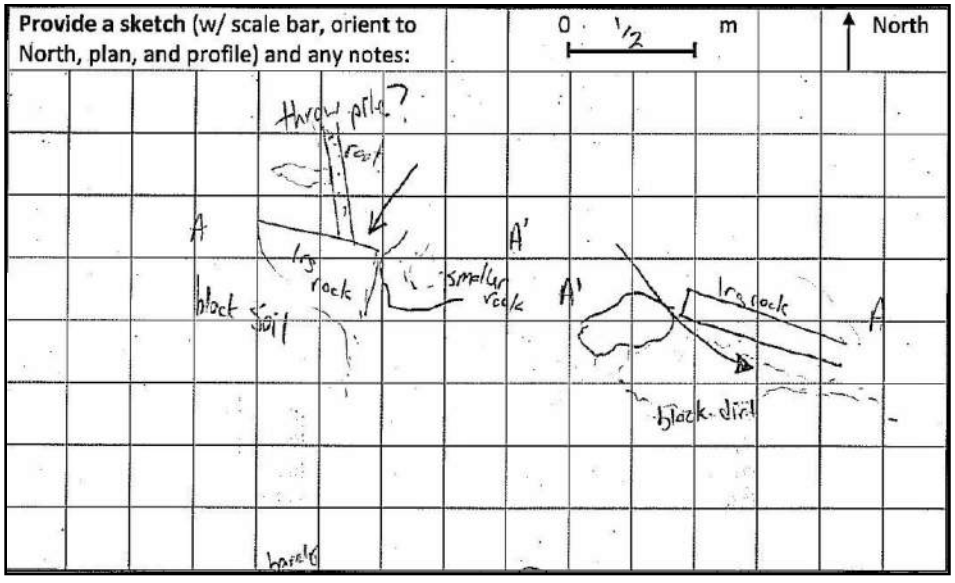

Figure 10. Field sketch of Feature AV3.

Figure 11. Overview of Feature AV3 after excavation.

Feature AV4; Solution-enlarged Fracture

This solution-enlarged fracture is located in Parcel D (Figure 3) and measures 3.3 ft by 1 ft wide and is 1.6 ft deep (Figure 12- Figure 14). It is bedrock lined and is partially filled with black modern soils and leaf litter that is loose to a depth of approximately 1.2 in. It is located on a hillside, but is raised relative to the ground surface around it; therefore, it has no catchment area. No airflow was detected coming from the feature. Excavation on 20 March 2017 with a jackhammer opened the feature up to approximately 3.3 ft wide by 4.9 ft long by 2.3 ft deep. Excavation included chiseling limestone from around the perimeter of the feature and removing a depth of 0.7 ft of black soil to reveal a solid rock bottom with considerable root growth in the bedding plane (Figure 15). Following excavation, the feature was determined to be epikarstic. There is low potential for this feature to rapidly transmit water to the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 12. Overview of Feature AV4 prior to excavation.

Figure 13. Close view of feature AV4.

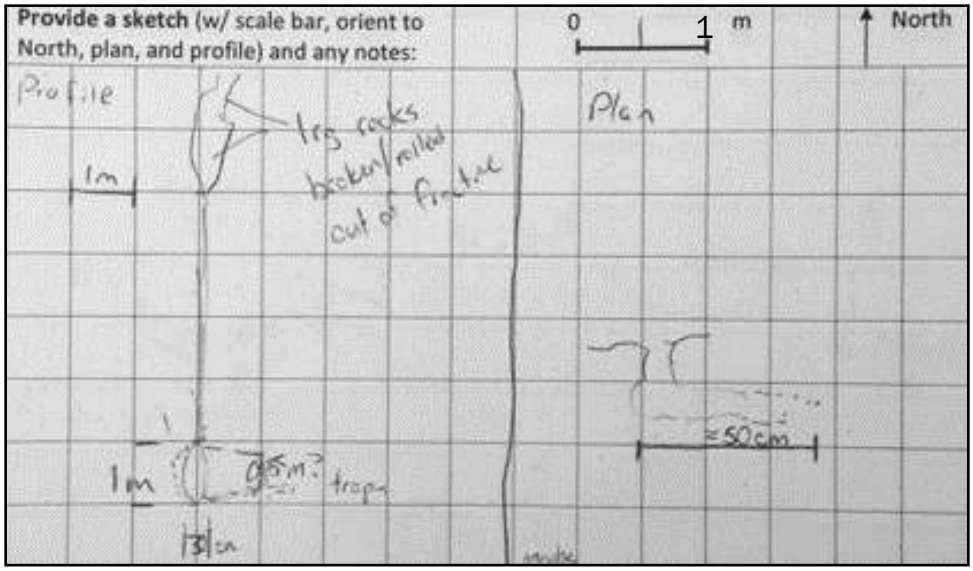

Figure 14. Field sketch of Feature AV4.

Figure 15. Feature AV4 after excavation revealed solid rock bottom with no extensions and a large root possibly contributing to the epikarstic characteristic and enlarged bedding plane.

Feature AV5; Other Natural Bedrock Feature (Spring)

This flowing spring is located just outside the survey area near Parcel C (Figure 3) but is visible from the survey area. It discharges diffusely over a large area that is 9.8 ft long by 9.8 ft wide, is flush with the ground, and extends an unknown depth into the subsurface (Figure 16- Figure 18). There is no discreet conduit visible at the surface. The spring is filled with coarse and fine sediment, organic materials, cobble, and rip-rap. It is in a drainage adjacent to Avery Ranch Boulevard. No airflow was detected coming from the feature. No reconnaissance excavation was performed. There is low potential for this feature to rapidly transmit water to the subsurface, as water was actively discharging form the feature. When found the spring was discharging at a rate of approximately 0.2 cubic feet per second. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 16. Close-up of Feature AV5.

Figure 17. Looking upstream with Avery Ranch Boulevard in the background.

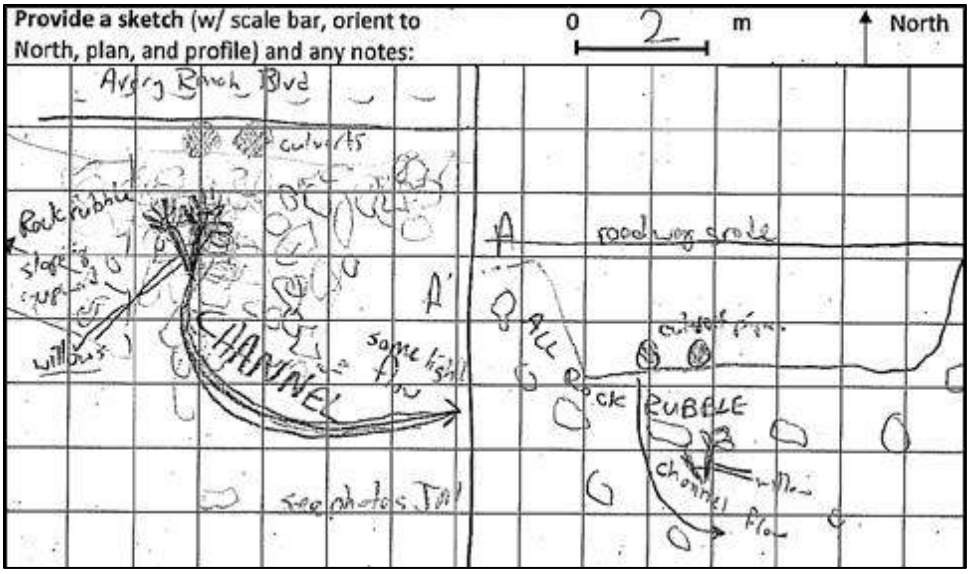

Figure 18. Field sketch of Feature AV5.

Feature AV6; Non-karst Closed Depression

This non-karst closed depression is located in Parcel B (Figure 3) and measures 9.8 ft long by 16.4 ft wide and is 1.6 ft deep (Figure 19 and Figure 20). The feature is filled with vegetation, leaf litter, rocks, and modern fine soils that are loose to a depth of approximately 11.8 in. The feature is located on a hilltop and it has a catchment area of 0.04 ac. No airflow was detected coming from the feature. Backhoe excavation of the feature was performed on 9 March 2017. Following excavation, it was confirmed that the feature was a non-karst closed depression terminating in weathered bedrock and hard clay 1.5 ft below ground surface (Figure 21). There is a very low potential for this feature to rapidly transmit water to the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 19. Overview of Feature AV6 prior to excavation.

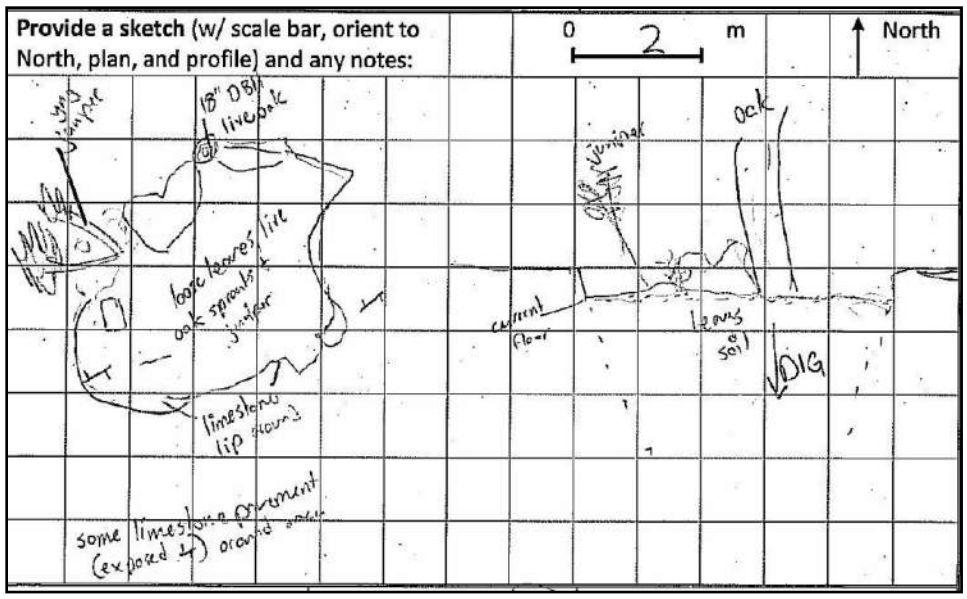

Figure 20. Field sketch of Feature AV6.

Figure 21. Overview of Feature AV6 after excavation.

Feature AV7; Non-karst Closed Depression

This non-karst closed depression is located in Parcel D (Figure 3) and measures 4.9 ft long by 4.9 ft wide and is 1.3 ft deep (Figure 22 and Figure 23). It is filled with cobble and modern soils that are loose to a depth of approximately 1.9 in, and compact beyond 2 in. The feature is located on a hillside and has a catchment area of 0.02 ac. No airflow was detected coming from the feature. A reconnaissance excavation was not performed, as the feature appeared to have been recently excavated. There is a low potential for this feature to rapidly transmit water to the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 22. Overview of Feature AV7 prior to excavation.

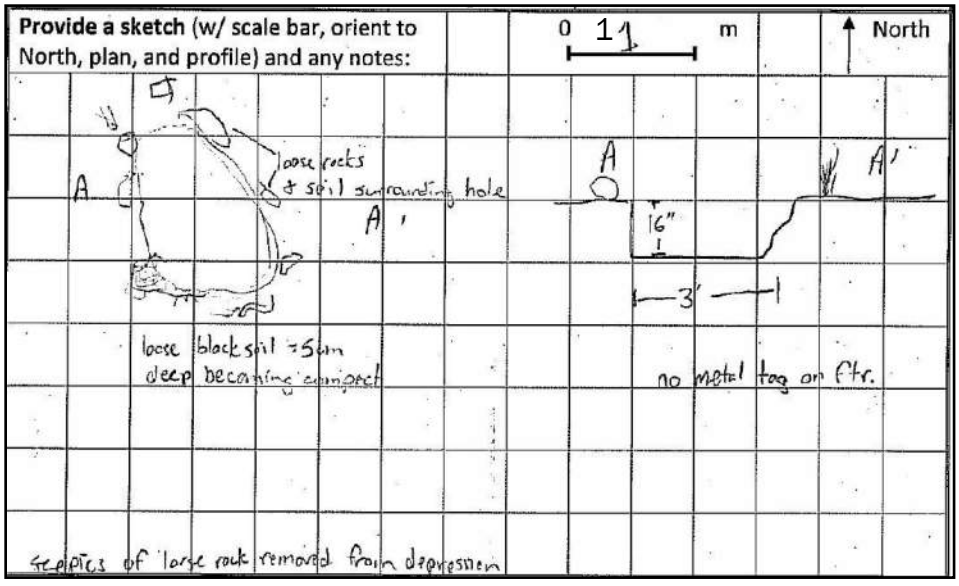

Figure 23. Field sketch of Feature AV7.

Feature AV8; Solution Cavity (Enlarged bedding plane)

This solution cavity is an enlarged bedding plane is located in Parcel D (Figure 3) and measures 3 ft long by 3 ft wide with a 0.7 ft aperture that extends 1.6 ft below the surface (Figure 24 and Figure 25). The feature is filled with rocks and compact modern soils. The feature is located on a hillside and it has a catchment area of 0.005 ac. No airflow was detected coming from the feature. A reconnaissance excavation was performed to remove the overhanging limestone boulder. Once the boulder was removed, a distinct terminus at a hard-packed soil floor (Figure 26). There is a low potential for this feature to rapidly transmit water to the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 24. Overview of Feature AV8 prior to excavation.

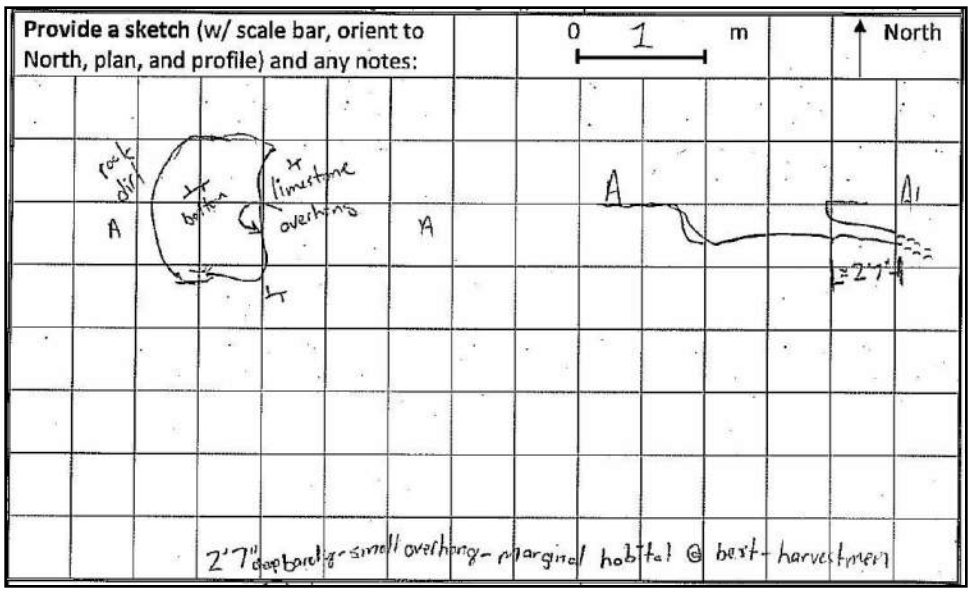

Figure 25. Field sketch of Feature AV8.

Figure 26. Feature AV8 after excavation, which revealed a hard-packed soil floor.

Feature AV9; Non-karst Closed Depression

This non-karst closed depression is located in Parcel B (Figure 3) and measures 4.9 ft long by 6.6 ft wide and 0.8 ft deep (Figure 27 and Figure 28). The feature is filled with leaf litter, vegetation, cobble, and modern soils that are compact. The feature is located on a hilltop and it has a catchment area of 0.004 ac. No airflow was detected coming from the feature. A reconnaissance excavation was conducted on 10 February 2017 revealing that the feature terminated in compact black soil. (Figure 29) There is a low potential for this feature

to rapidly transmit water to the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 27. Overview of Feature AV9 prior to excavation.

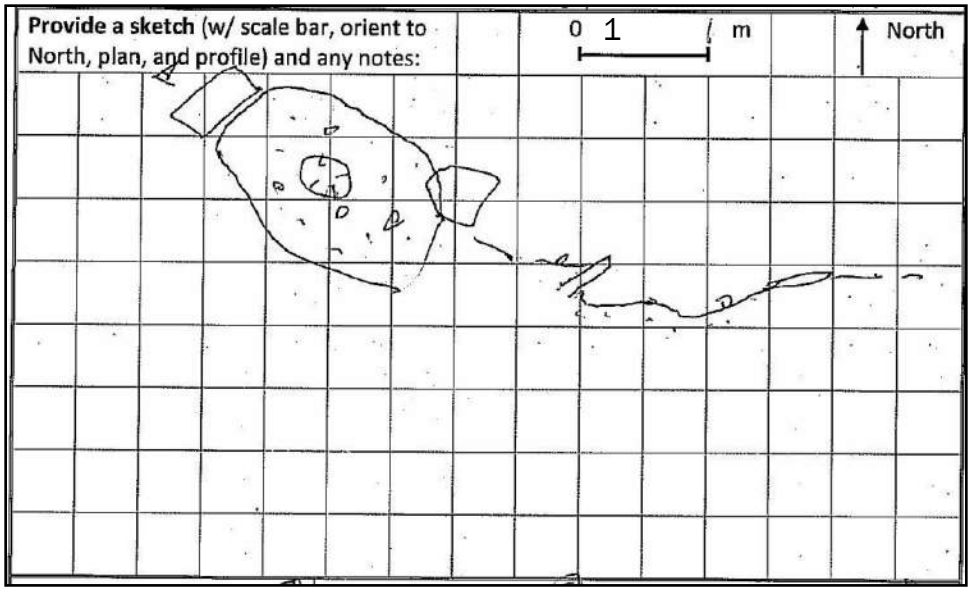

Figure 28. Field sketch of Feature AV9.

Figure 29. Close view of Feature AV9 after excavation.

Feature AV10; Manmade Feature in Bedrock (Cleanout Pipe)

This manmade feature is a polyvinyl chloride pipe likely associated with an adjacent sedimentation pond that is located in Parcel C (Figure 3). AV10 measures 0.3 ft long by 0.3 ft wide, and extends approximately 10.5 ft below the surface based on the depth of the detention pond (Figure 30 – Figure 32). The feature is surrounded by compact fill and vegetation. The feature is located on a hillside and has no catchment area, as it extends above the ground surface. Airflow was detected coming from the cleanout pipe visible in Figure 30, likely due to convective flow though the cleanout pipe network. A reconnaissance excavation was not performed. There is no potential for this feature to rapidly transmit water to the subsurface as it appears to be constructed in fill. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

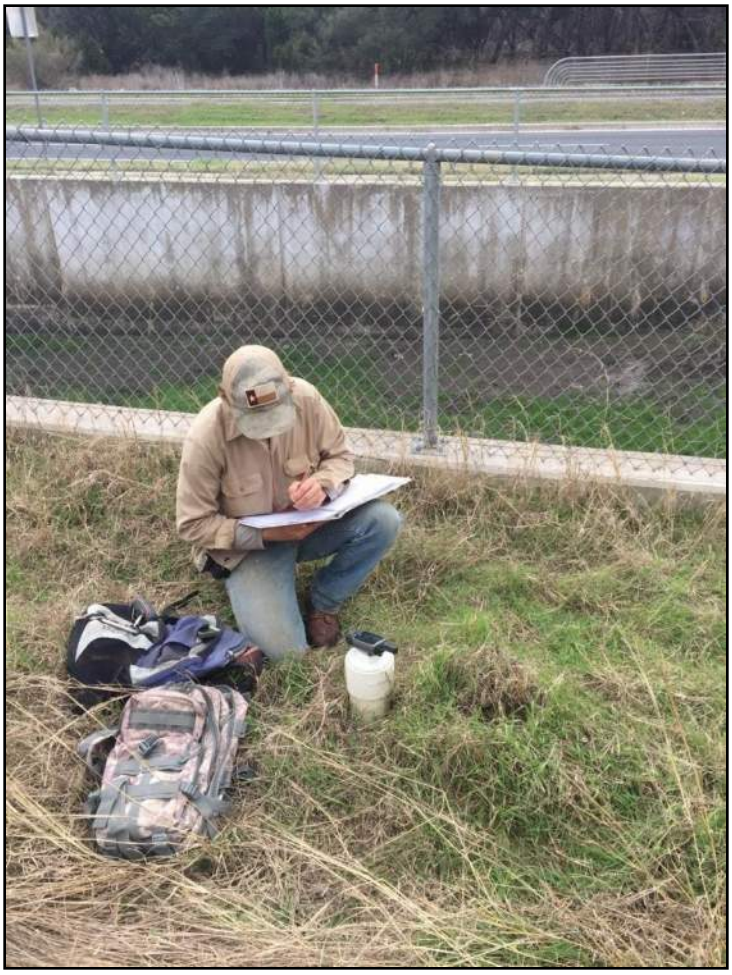

Figure 30. Overview of Feature AV10.

Figure 31. Interior of Feature AV10.

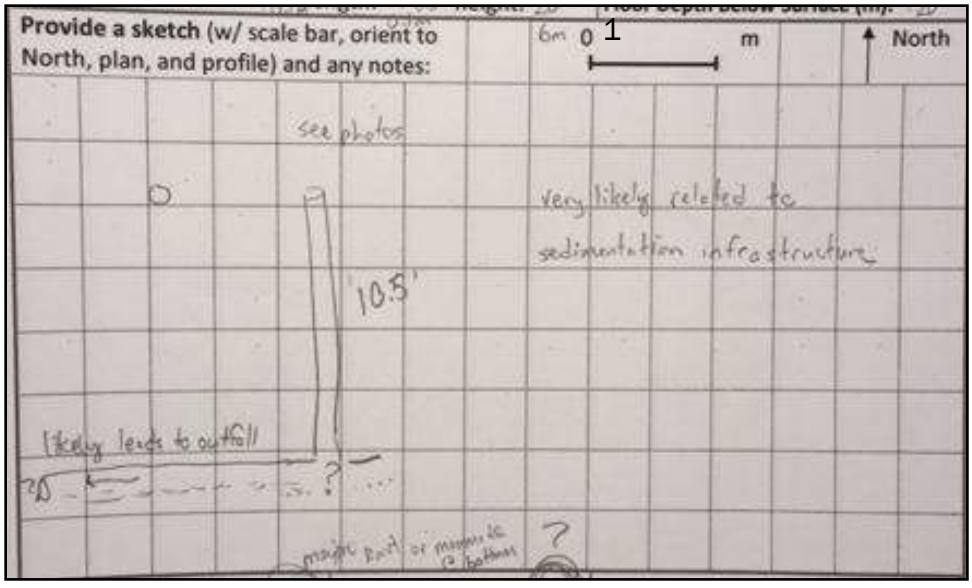

Figure 32. Field sketch of Feature AV10.

Feature AV11; Manmade Feature in Bedrock (Utility Vault)

This manmade feature is an underground utility vault set in a concrete pad that is located in Parcel D (Figure 3). Feature AV11 measures 3.3 ft long by 3.3 ft wide with an unknown depth below the surface (Figure 33 and Figure 34). It has no infill and is surrounded by compact modern soils and vegetation. It is located in a level field and has no catchment area. No airflow was detected coming from the feature. No reconnaissance excavation was perform. There is a no potential for this feature to rapidly transmit water to the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 33. Overview of Feature AV11.

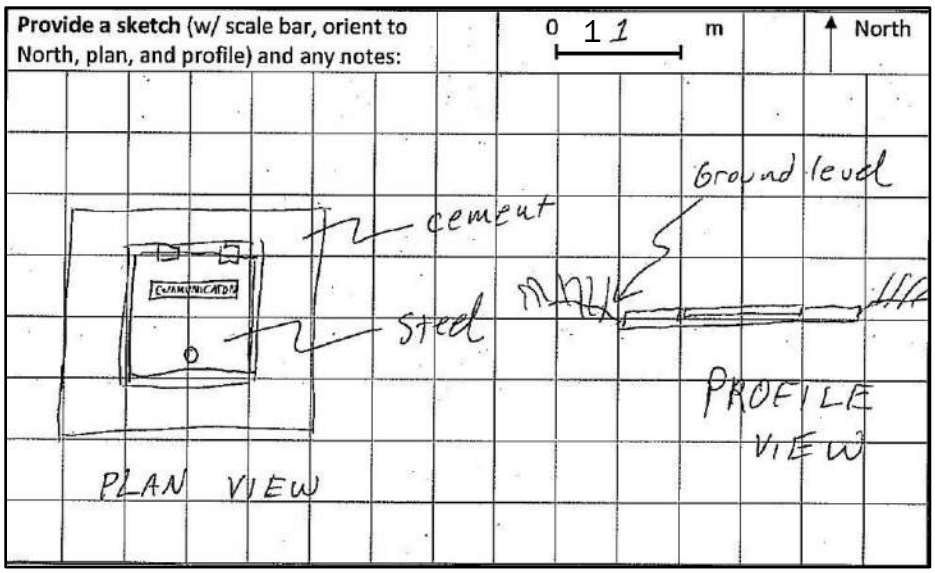

Figure 34. Field sketch of Feature AV11.

Feature AV12/X7; Sinkhole

This feature was originally described by Veni and Reddell (2003 p. 10-11) as:

> *During the Phase 1 investigation, this feature was identified as a sinkhole formed along a solutionally enlarged joint. It was 1.8 m long, up to 0.4 m wide and was excavated from 0.15 m to a depth of 0.4 m. It was suspected to extend at least another meter north to an aligned 0.2-m-diameter by 0.1-m-deep sinkhole.*
>
> *Excavation during this Phase 2 study extended the length of the sinkhole to 3 m, encompassing the aforementioned sinkhole to the north. It reached a depth of 1.5 m. Excavation ceased as the walls of the enlarged fracture narrowed with depth to 0.25 m, and the floor filled with compact medium brown clay. The excavation allowed a closer examination of the fracture which was found to strike 175° and dip 69°W. The feature is probably a solutionally enlarged stress-release fracture and warrants no further action.*

This sinkhole is located in Parcel D (Figure 3) and measures 3.3 ft wide by 8.2 ft long and extends 3.3 ft below the ground surface developed along an enlarged fracture with a bearing of 165 degrees (Figure 35- Figure 37). This feature appears to be consistent with Feature X7 as described by Veni (1999) and Veni and Reddell (2003) as reported above. The feature was filled with modern soils, leaf litter, and vegetation. It is located on a hillside and has a catchment of 0.2 ac. Airflow was not detected coming from the feature. Two days of excavation extended the feature downward to 4.9 ft in depth and exposed a narrowing crack measuring less than 4 in wide that was filled with compact black soil and roots with no apparent mesocavernous extensions and narrowed downward making further excavation

unjustifiable. Although no visible voids extended into the subsurface, this feature has a moderate potential for rapid recharge into the subsurface due to its size and orientation along a significant fracture. This feature is rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)). Because this feature is rated as sensitive, a buffer must be delineated around it. The feature has no well-defined drainages entering it and it is located in a relatively flat location; therefore, the buffer was extended 50 ft in all directions (Attachment D).

Figure 35. Overview of Feature AV12/X7 prior to excavation.

Figure 36. Feature AV12/X7 after excavation. Note the soil filled fracture potentially continuing downward. The fracture narrows downward and further excavation was not justified.

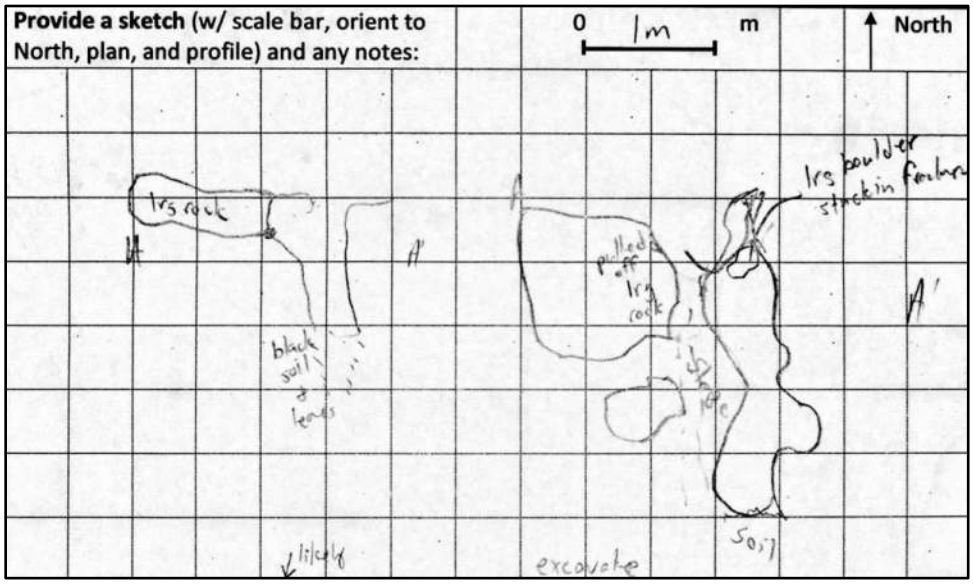

Figure 37. Field sketch of Feature AV12/X7.

Feature F12; Solution Cavity (Enlarged Bedding Plane)

Feature F12 is a previously discovered sinkhole (Veni 1998, p. 8) described as:

> *This sinkhole is 0.4 m in diameter and was dug to a depth of 0.3 m where it enters a solutionally enlarged bedding plane. Additional digging may reveal the bedding plane as large enough to be a cave, but it seems unlikely. It captures sheetwash drainage from an area roughly 5 m long by half a meter wide.*

Feature F12 is located in Parcel D (Figure 3), and when evaluated on 2 March 2017, the feature was found to measure 3.3 ft long by 1.3 ft wide by 1 ft deep (Figure 38- Figure 40). The feature was filled with modern soils, leaf litter, and roots. It is located on a hillside and it has a catchment area of 0.001 ac. Airflow was not detected coming from the feature. A reconnaissance excavation was performed and revealed a bedrock floor and no mesocavernous voids leading into the subsurface, showing that this feature is not a sinkhole as originally reported by Veni (1998 p. 8). The morphology of this feature is more similar to a solution cavity that has been filled in with sediment. There is a low potential for this feature to rapidly transmit water to the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 38. Feature F12 prior to excavation.

Figure 39. Feature F12 after excavation.

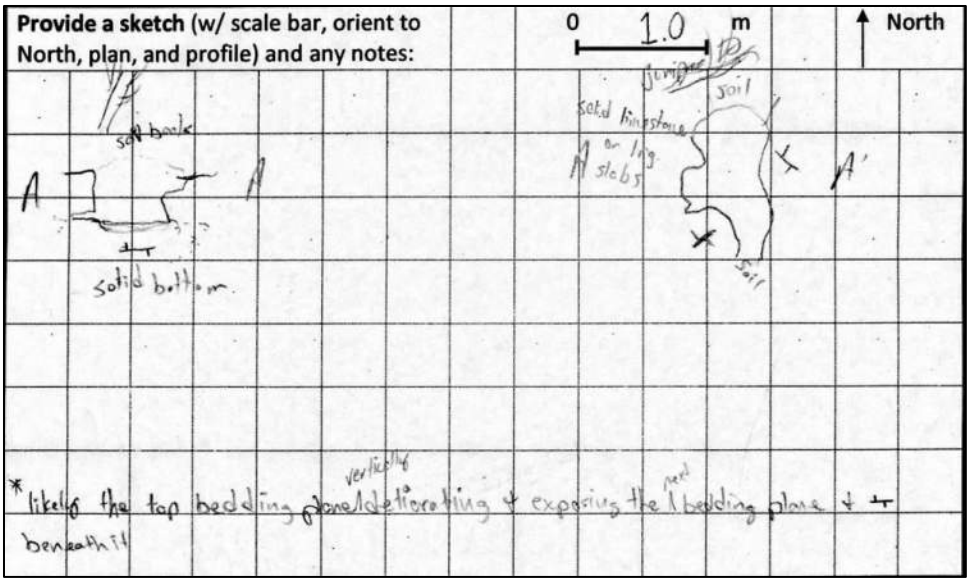

Figure 40. Field sketch of Feature F12.

Feature F14; Non-karst Closed Depression

This non-karst closed depression is located in Parcel C (Figure 3) and measures 1.3 ft long by 1.6 ft wide and is 0.7 ft deep (Figure 41- Figure 43). The feature is filled with modern soils and leaf litter. It is located on a hilltop and it has a catchment area of 0.004 ac. Airflow was not detected coming from the feature. A reconnaissance excavation was performed and revealed a hard packed soil floor, and no voids leading into the subsurface. There is a very low potential for this feature to rapidly transmit water to the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 41. Feature F14 prior to excavation.

Figure 42. Feature F14 after excavation.

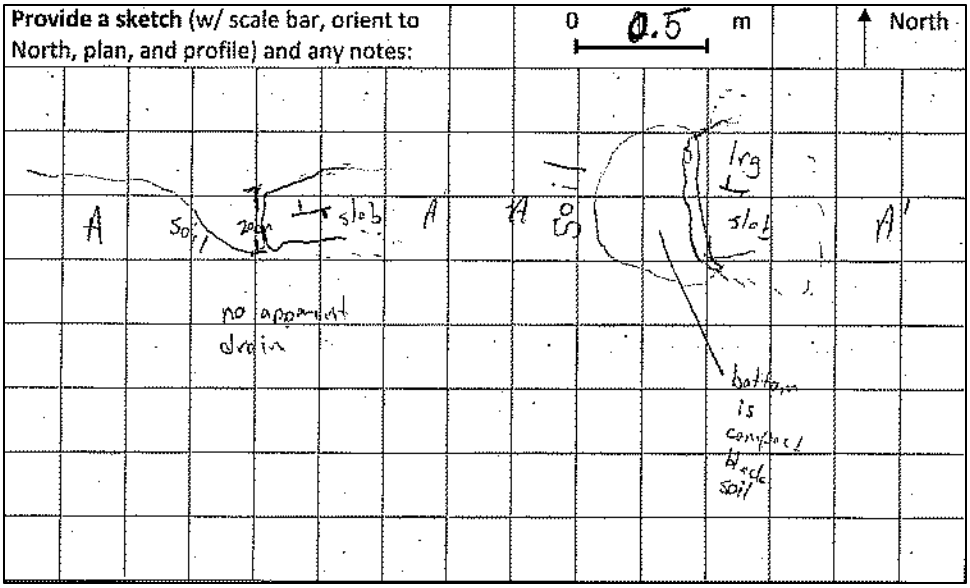

Figure 43. Field sketch of feature F14.

Feature F15; Non-karst Closed Depression

This non karst closed depression is located in Parcel C (Figure 3) and measures 5.9 ft long by 5.9 ft and is 1.6 ft deep (Figure 44 and Figure 45). The feature is filled with compact modern soils, vegetation, and leaf litter. The feature is located on a hillside and it has a catchment area of 0.01 ac. Airflow was not detected coming from the feature. A reconnaissance excavation was not performed as the floor of the feature was hard-packed soil, and no voids leading into the subsurface were present. There is a very low potential for this feature to rapidly transmit water to the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 44. Overview of feature F15.

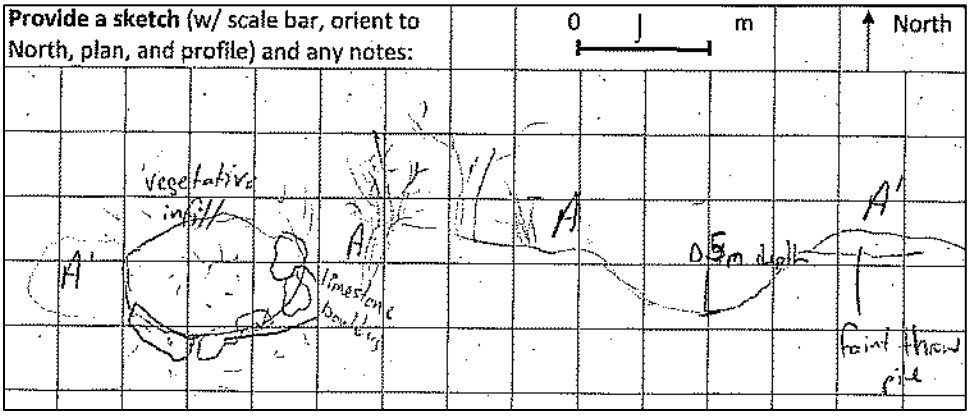

Figure 45. Field sketch of feature F15.

Feature R9; Other Natural Bedrock Feature (Vuggy Rock Outcrop)

Feature R9 is a previously discovered feature (Veni and Reddell 2003, Figure 46 and Figure 47) that is located in Parcel D (Figure 3). The vuggy area is a rocky ridge running north/south and sloping to the west and is 98 ft long and 66 ft wide. It does not appear to extend into the subsurface. Large, honeycombed rocks protrude from the ground likely due to root lift, persistent erosion, or a combination of both, which created a discernable rock ridge extending roughly from Feature AV3 to AV12. No voids extending into the subsurface were observed. Feature R9 appears to be epikarstic. There is a very low potential for this feature

to rapidly transmit water to the subsurface. This feature is not rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)).

Figure 46. Overview of Feature R9 demonstrating typical honeycombed rock protruding from ground along the vuggy rock ridge.

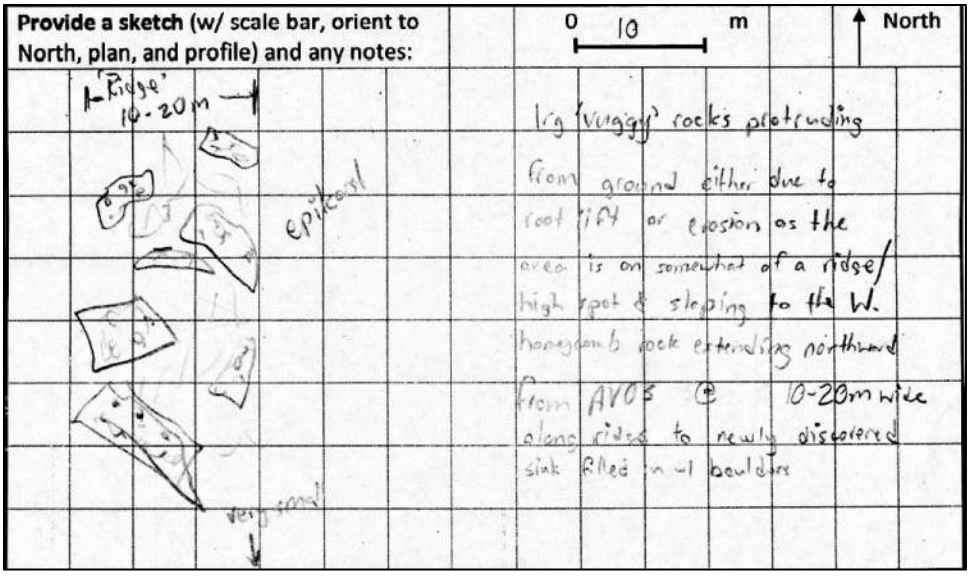

Figure 47. Field sketch of Feature R9.

Feature X9; Sinkhole

This feature was described by Veni and Reddell (2003) as:

> *A large rock initially blocked access to what appears to be a sediment-filled cave entrance. When first discovered, this collapse sinkhole was 1.3 m long, 0.6 m wide and 0.3 m deep. Sheetwash from about a 20-m-long by 2-m-wide area would drain and deposit sediment around the 1-m-long by 0.5-m-wide by 0.3-m-thick rock centered in the sinkhole. Upon the rock's removal during the Phase 1 study, a 0.1-m-high by 0.15-m-wide opening could be seen to extend north from the sinkhole for at least 0.5 m. The floor of the small passage was covered with loose rocks and soil, and further excavation seemed likely to reveal a cave.*
>
> *Excavation of the feature during this Phase 2 project enlarged it to about 2 m in diameter by 0.6 m deep. One inaccessibly small conduit was found to continue northward and was probably the source of the troglobitic species, but excavating it further was not feasible. The origin of the sinkhole is undetermined. It could be a large stump hole, but more likely it is a relict karst feature or a cavity that formed in the past and later truncated and filled by erosion of the land surface* (p. 11).

Feature X9 is located in Parcel D (Figure 3) and the feature description was confirmed on 1 February 2017 (Figure 48). This feature has a moderate potential for rapid recharge into the subsurface; therefore, it is rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)). Because this feature is rated as sensitive, a buffer must be delineated around it. The feature has no well-defined drainages entering it but it is located on a slope; therefore, the buffer was extended 50 ft in all directions except in the uphill direction where it was extended 75 ft to account for runoff flowing toward the feature (Attachment D).

Figure 48. Overview of Feature X9 from 1 February 2017.

Feature X10; Sinkhole

This feature, located near Feature X9, was described by Veni and Reddell (2003) as:

> *The general style of this feature is that of a soil-floored sinkhole sloping east under a limestone wall, similar to Karst Feature X9, except smaller and without the big rock. This sinkhole was initially 1.2 m long, 0.3 m wide and 0.3 m deep. It had a loose soil floor and drains sheetwash from an area about 12 m long by 6 m wide. Excavation of the feature during this Phase 2 investigation yielded results also similar to X9, a soil-filled cavity about 2 m in diameter by 1.4 m deep, but with no obvious open conduits*

Feature X10 is located in Parcel D (Figure 3) and the feature description was confirmed by Zara on 1 February 2017 (Figure 49 and Figure 50). Soil and organic material deposited during intervening years had apparently decreased the feature depth to 0.7 meter (2.3 ft). Hand excavation removed soils and leaf litter, extending the depth of the feature to 3.0 ft. A downhole camera was used to examine a series of small voids along the interface of the

feature's floor and wall. It was found that these pockets terminated in black soil presenting no evidence of mesocavernous voids in bedrock. No indications additional mesocavernous voids or an extension of the feature were observed. This feature is rated as sensitive according to the Edwards Aquifer Rules (30 TAC §213.5(b)(3)). Because this feature is rated as sensitive, a buffer must be delineated around it. The feature has no well-defined drainages entering it but it is located on a slope; therefore, the buffer was extended 50 ft in all directions except in the uphill direction where it was extended 75 ft to account for runoff flowing toward the feature (Attachment D).

Figure 49. Overview of Feature X10 from 01 February 2017.

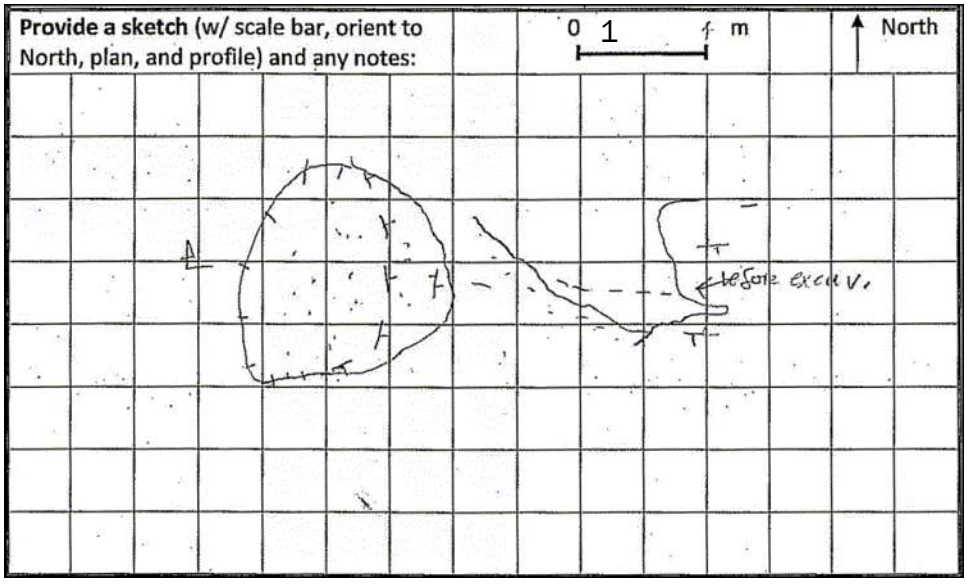

Figure 50. Field sketch of Feature X10 after excavation on 1 February 2017, showing prior floor level.

Discussion and Recommendations

The overall potential for rapid infiltration of runoff into the Edwards Aquifer within the survey area is moderate due to the thin soils that overly the bedrock. Three features (AV12/X7, X9, and X10) were rated as sensitive (i.e.; score of ≥40 points in column 10 of the Geologic Assessment Table, Attachment B). The TCEQ requires that an appropriate buffer should be placed around all features identified as The TCEQ guidelines suggest a natural buffer around each sensitive feature extending 50 ft in all directions from the footprint of the feature. When the boundary of the drainage area is more than 50 ft from the feature, the buffer should extend to the boundary of the drainage area or 200 ft, whichever is less (Barrett 2005). Because feature AV12/X7 is located in a relatively flat area and there is a lack of well-defined drainages to carry runoff to the feature, a buffer extending 50 ft in all directions was delineated for the feature. Features X9 and X10 were very similar in size, morphology and both located on a hillside. Neither feature had well defined drainages to carry runoff into the features, but because both are located on a hillside, there is some potential for runoff flowing down the hillside as sheetflow to enter the feature; therefore, the buffers around X9 and X10 were extended 50 ft in all directions except uphill, which was extended 75 ft to account for sheetflow into the features.

Care should be taken when working around sensitive features, particularly when ground disturbing work is taking place. If the property is developed in the future, an appropriate buffer should be placed around all features identified as sensitive. Proper storm water best management practices should be implemented to prevent untreated urban runoff from

entering South Brushy Creek. All excavation that may penetrate the bedrock should be performed under the supervision of a qualified Professional Geoscientist.

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ATTACHMENT C

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ATTACHMENT D

Site Geologic Maps

ATTACHMENT D

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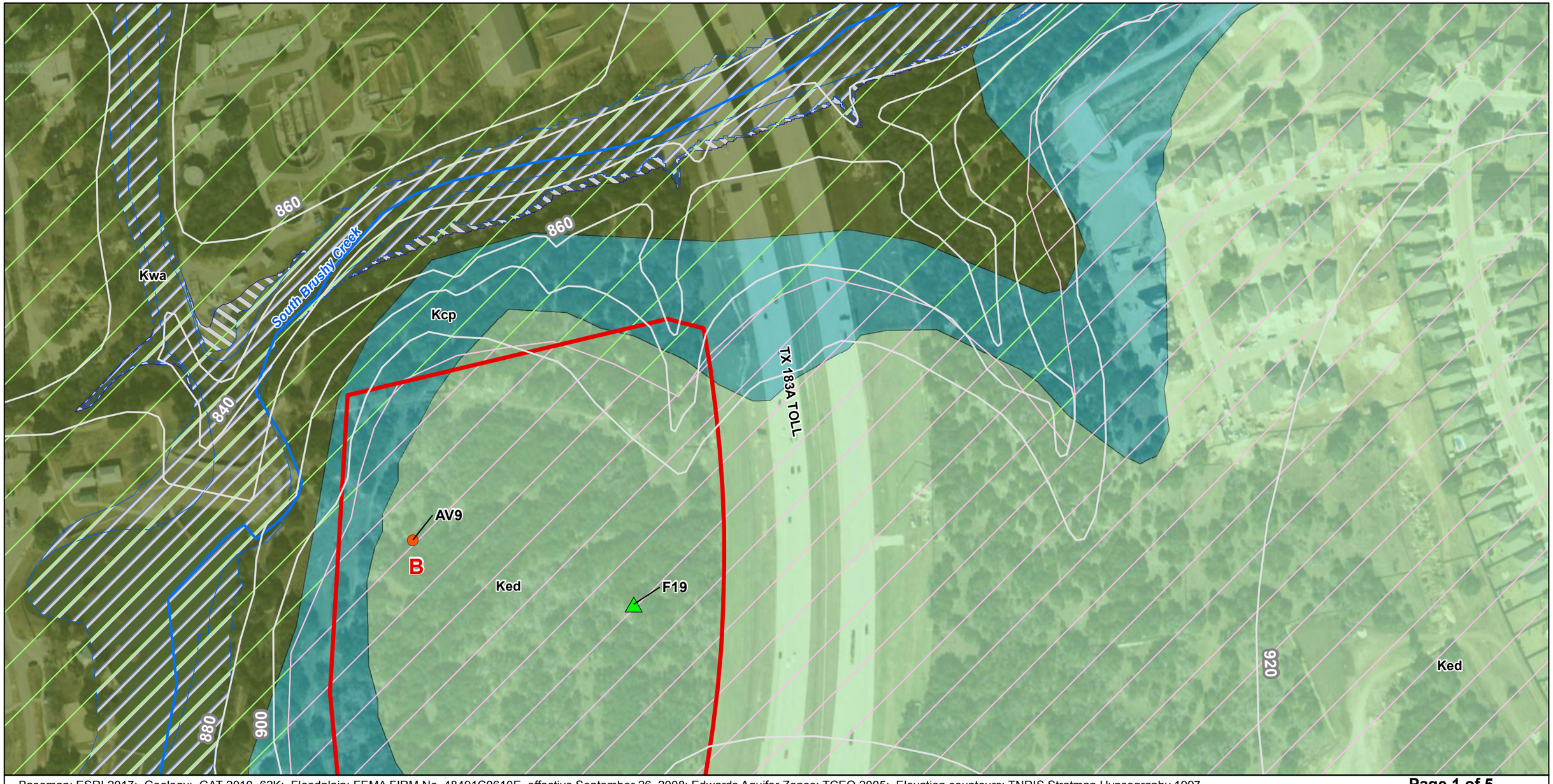

Basemap: ESRI 2017; Geology: GAT 2010, 62K; Floodplain: FEMA FIRM No. 48491C0610E, effective September 26, 2008; Edwards Aquifer Zones: TCEQ 2005; Elevation countours: TNRIS Stratmap Hypsography 1997.

Survey Area

Streams

10 ft contours

Geology

- Ked - Edwards Limestone
- Kcp - Comanche Peak Limestone
- Kwa - Walnut Clay
- Inferred Normal Fault

FEMA Flood Zones

- 100 yr flood zone
- 500 yr flood zone

Edwards Aquifer Zone

- Contributing Zone
- Recharge Zone

Known Karst Features

Previous Investigations (Source)

- Veni (1998)
- Veni (1999) and Veni and Reddell (2003)
- Veni and Reddell (2003)

Avery Ranch GA Features

- Zara 2016 GA Features

1 inch = 200 feet

0 100 200 300 400 Feet

0 20 40 80 120 Meters

N

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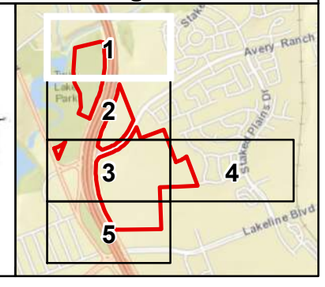

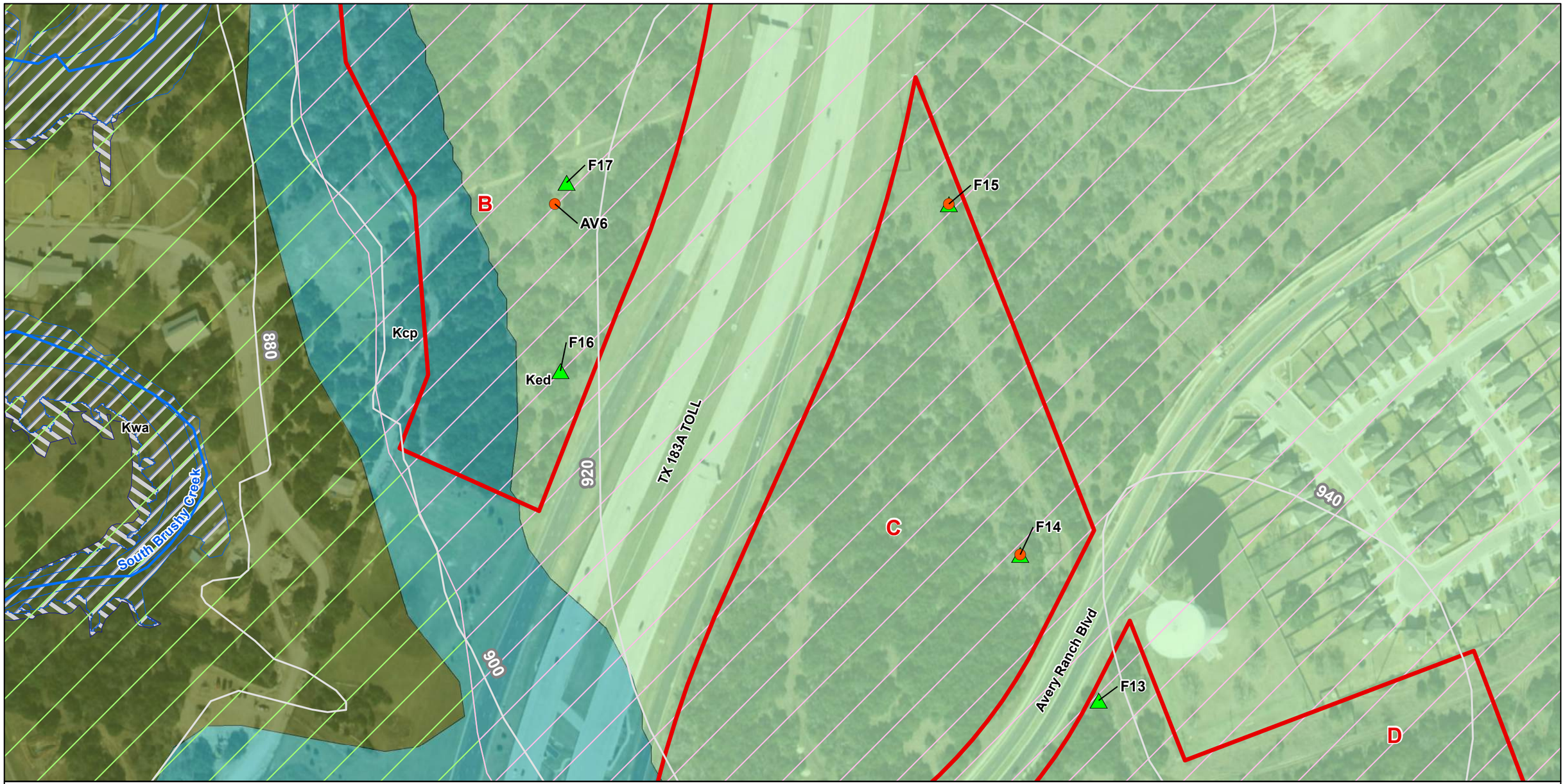

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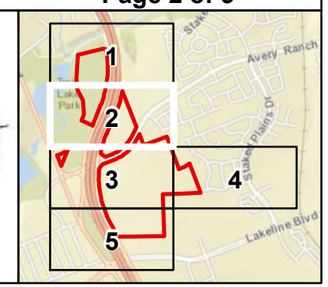

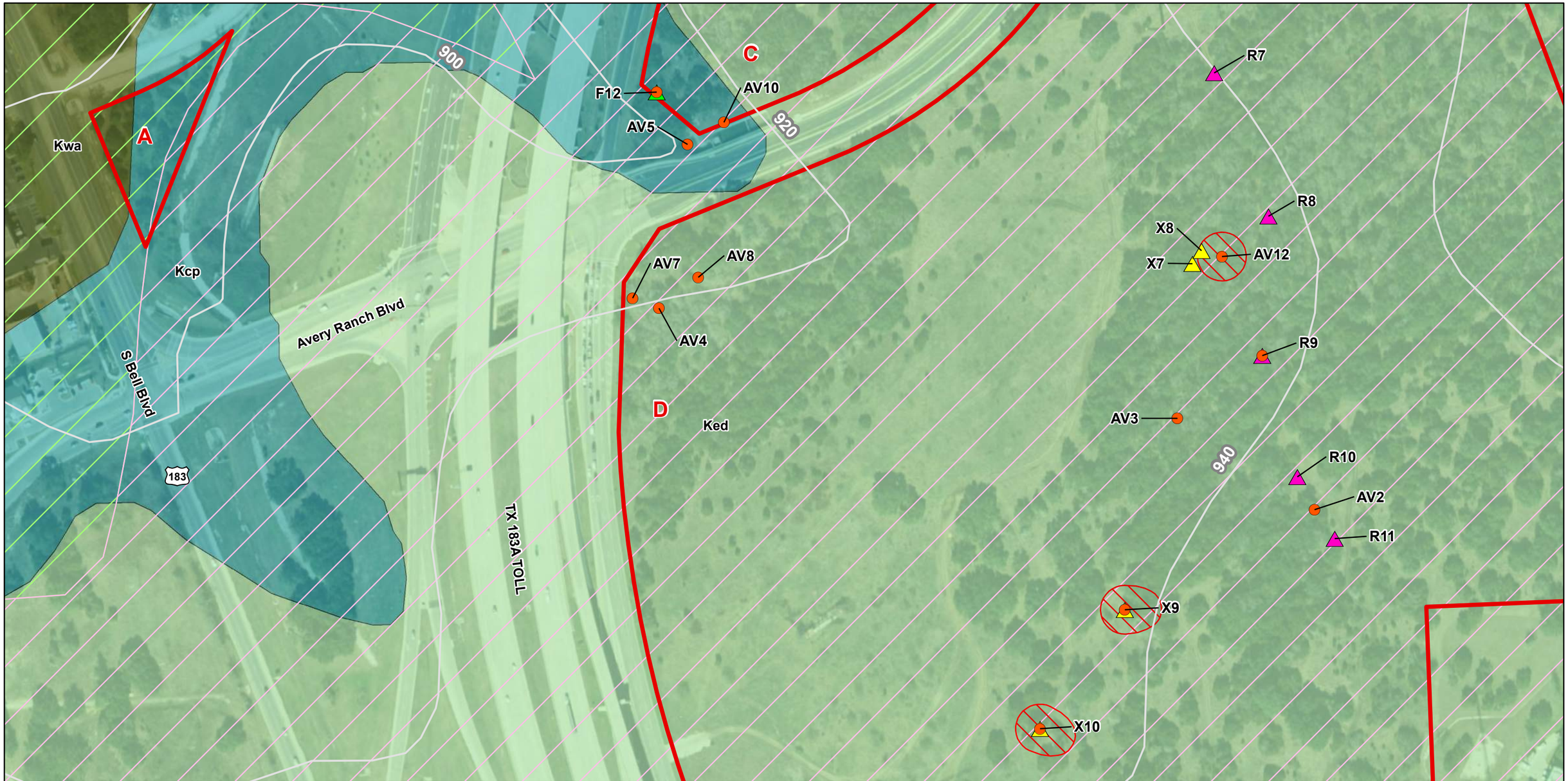

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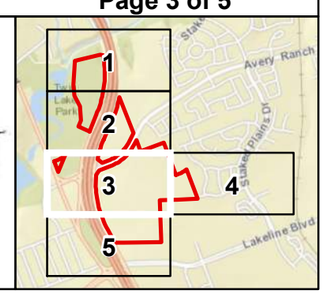

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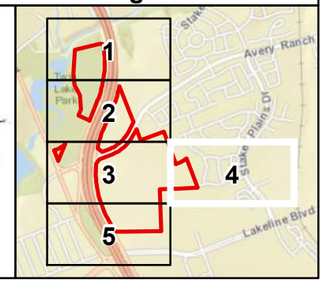

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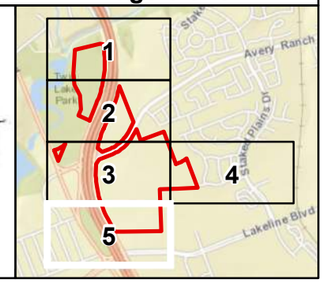


This report was written on behalf of the Texas Department of Transportation by

ZARA ENVIRONMENTAL LLC
1707 West FM 1626
Manchaca, Texas 78652
www.zaraenvironmental.com

GEOLOGIC ASSESSMENT SECTION
6.18 ACRES

Geologic Assessment

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Geologist: Russell C Ford Telephone: 512 442-1122

Date: 1/5/2022 Fax: _____

Representing: Terra Consultants, Inc. (Name of Company and TBPG or TBPE registration number)

Signature of Applicant

STATE OF TEXAS RUSSELL C. FORD GEOLOGY #1185 LICENSED PROFESSIONAL

Regulated Entity Name: TxDOT 6.177-Acres, Acery Ranch Boulevard, Austin, TX

1/5/2022

Project Information

1. Date(s) Geologic Assessment was performed: 12/9/2021
2. Type of Project:
   - ☒ WPAP
   - ☒ SCS
   - ☐ AST
   - ☐ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

4. ☒ **Attachment A - Geologic Assessment Table**. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
EeB	D	0-1

** Soil Group Definitions (Abbreviated)*

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

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

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

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

6. ☒ **Attachment B – Stratigraphic Column**. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

7. ☒ **Attachment C – Site Geology**. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

8. ☒ **Attachment D – Site Geologic Map(s)**. The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

   Applicant's Site Plan Scale: 1" = _____'
   Site Geologic Map Scale: 1" = 250'
   Site Soils Map Scale (if more than 1 soil type): 1" = _'

9. Method of collecting positional data:

   ☒ Global Positioning System (GPS) technology.
   ☐ Other method(s). Please describe method of data collection: _____

10. ☒ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.

11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.

12. ☒ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

    ☐ Geologic or manmade features were not discovered on the project site during the field investigation.

13. ☐ The Recharge Zone boundary is shown and labeled, if appropriate.

14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

    ☐ There are _ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☐ The wells are not in use and will be properly abandoned.
    - ☐ The wells are in use and comply with 16 TAC Chapter 76.

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

Administrative Information

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

Attachment A

GEOLOGIC ASSESSMENT TABLE						PROJECT NAME: TxDOT 6.177 Acres, Avery Ranch Boulevard, Austin Texas														
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	
K-1	30.488353	-97.797663	C	30	Ked	2	5	7					N	30	60		X	X		Hillside
K-2	30.488504	-97.707641	SH	20	Ked	3	1.5	2					N	20	40		X	X		Hillside
K-3	30.488692	-97.797731	C	30	Ked	3	3	6					N	30	60		X	X		Hillside
K-4	30.488395	-97.79761	SH	20	Ked	5	5	1.5					O	20	40		X	X		Hillside
K-5	30.488312	-97.797708	SF	20	Ked	4	0.3	0.5	N70W				C	20	40		X	X		Hillside
K-6	30.487437	-97.797447	SC	20	Ked	2	2	1.5					F	15	35	X		X		Hillside
K-7	30.48738	-97.79722	SC	20	Ked	1.5	1.5	0.5					F	15	35	X		X		Hillside
K-8	30.487345	-97.797021	SC	20	Ked	1	1	0.5					F	15	35	X		X		Hillside

* DATUM NAD27

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	[illegible]
CD	Non-karst closed depression	[illegible]
Z	Zone, clustered or aligned features	[illegible]

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

STATE OF TEXAS
RUSSELL C. FORD
GEOLOGY
#1186
LICENSED
PROFESSIONAL

I have read, I understood, and I have followed the Texas Natural Resource Conservation Commission'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 213

Date ____________

1/5/2022

TNRCC-0585-Table (Rev. 5-1-02)

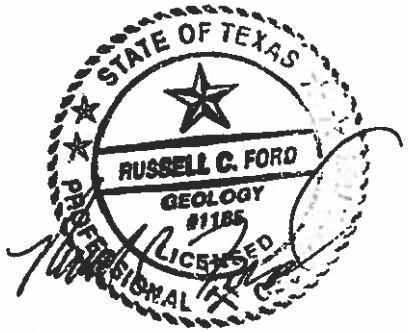
Sheet _____ of _____

Attachment B

Stratigraphic Column
TxDOT 6.177-Acres
Avery Ranch Boulevard
Austin, Texas

HYDROGEOLOGIC SUBDIVISION	FORMATION	THICKNESS (feet)	LITHOLOGY
Edwards Aquifer	Edwards Limestone	310	Mudstone to packstone, crystalline limestone, wackestone, chert

Source: Senger, Collins and Kreitler, 1990



1/5/2022

Terracon

SITE-SPECIFIC GEOLOGY

The Geologic Assessment (GA) of the TxDOT 6.177-Acres Avery site was performed by Mr. Russell C. Ford, P.G. of Terracon on December 9, 2021. The site consists of an approximate 6.177-acre tract of vacant, naturally vegetated land located south of Avery Ranch Boulevard at the western terminus of Laurinburg Drive in northwest Austin, Williamson County, Texas.

Figure 1 (attached) is a site location map depicting the site in relation to the surrounding area. The areas immediately surrounding the site are primarily undeveloped or residential properties. The site is characterized as gently sloping to the east. Site elevation ranges from about 938 feet above mean sea level (msl) to about 926 feet msl.

The surficial geologic unit present at the site has been identified as the Edwards Limestone. Figure 2 (attached) is a geologic map of the site. The Edwards consists of massive to thin bedded limestones and dolostones. The formation is characterized by honeycomb textures, collapse breccias and cavern systems, which account for most of the significant porosity within the strata that compose most of the aquifer. The site is located entirely within the recharge zone of the Edwards Aquifer. Table 1 (attached) is a stratigraphic column prepared for the site. Exposure of this unit onsite is obscured by the relatively thick soil cover and vegetation present. Several small, scattered boulders and fragments of Edwards Limestone are present on the site and adjacent to the site. The completed Geologic Assessment form is attached.

No evidence of any faulting was observed on the site, and none are shown on any published maps of the area. The closest mapped fault is located approximately 500 feet southeast of the site. The fault trends toward the northeast and is associated with the Balcones fault zone, which are comprised of en echelon, normal, high-angle faults, that are generally down thrown to the southeast and represents the dominant structural trend of the area.

Eight geologic features were observed on the site and are depicted as K-1 through K-8 on Exhibit 2. It should be noted that several of these features have been previously identified and described as contained in a 2003 report by George Veni & Associates. The features are described below.

- K-1 is classified as a cave with the main opening measuring about 2 feet wide by 5 feet long and extends vertically about 7 feet deep to the main floor of the cave. The feature, known as Scorpion Sink and previously described by Veni, is developed within the basal section of the Edwards Limestone and appears to extend horizontally toward the north. Exposed limestone is present around the opening. The feature has a limited catchment area but scored a total of 60 points on the Geologic Assessment Table and is considered to be sensitive.

- K-2 is classified as a small sinkhole measuring about 3 feet long by 1.5 feet wide by

about 2 feet deep. Exposed limestone is present around the opening and the sink is filled with loose rocks along the floor. This is feature X-5 as described in the Veni report. The feature has a limited catchment area but scored a total of 40 points on the Geologic Assessment Table and is considered to be sensitive.

- K-3 is classified as a cave with the main opening measuring approximately 3 feet in diameter and extends vertically about 6 feet deep. The feature is equipped with a locked cave grate which blocks entrance into the cave. The feature, known as Dead Dauber Pit and previously described by Veni, is developed within the basal section of the Edwards Limestone and appears to extend horizontally toward the north. Exposed limestone is present around the opening. The feature has a limited catchment area but scored a total of 60 points on the Geologic Assessment Table and is considered to be sensitive.

- K-4 is classified as a small sinkhole measuring about 5 feet in diameter by about 18-inches deep. The feature is filled with generally compacted soil. This is feature X-3 as described in the Veni report. The feature has a limited catchment area but scored a total of 40 points on the Geologic Assessment Table and is considered to be sensitive.

- K-5 is classified as a solution enlarged fracture measuring about 4 feet long by about 4-inches wide and extends vertically about 6-inches deep. The fracture trends N70°W and does not follow the dominant trend in the site vicinity. This is feature X-4 as described in the Veni report. Exposed limestone is present around the opening. The feature has a limited catchment area but scored a total of 40 points on the Geologic Assessment Table and is considered to be sensitive.

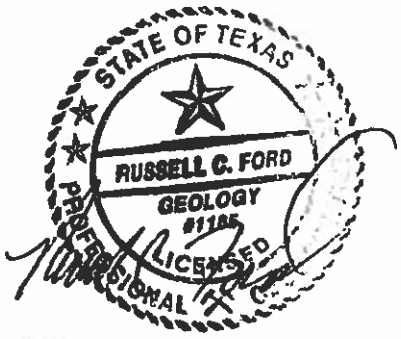
- K-6 is classified as a small solution cavity measuring approximately 2 feet in diameter by about 18-inches deep where it appears to pinch closed. This is feature X-1 as described in the Veni report. The feature is developed within the epikarst zone and is not considered a significant recharge feature. The feature has a limited catchment area and scored a total of 35 points on the Geologic Assessment Table and is not considered to be sensitive.

- K-7 is classified as a small solution cavity measuring approximately 1.5 feet in diameter by about 6-inches deep where it appears to pinch closed. The feature is developed within the epikarst zone and is not considered a significant recharge feature. The feature has a limited catchment area and scored a total of 35 points on the Geologic Assessment Table and is not considered to be sensitive.

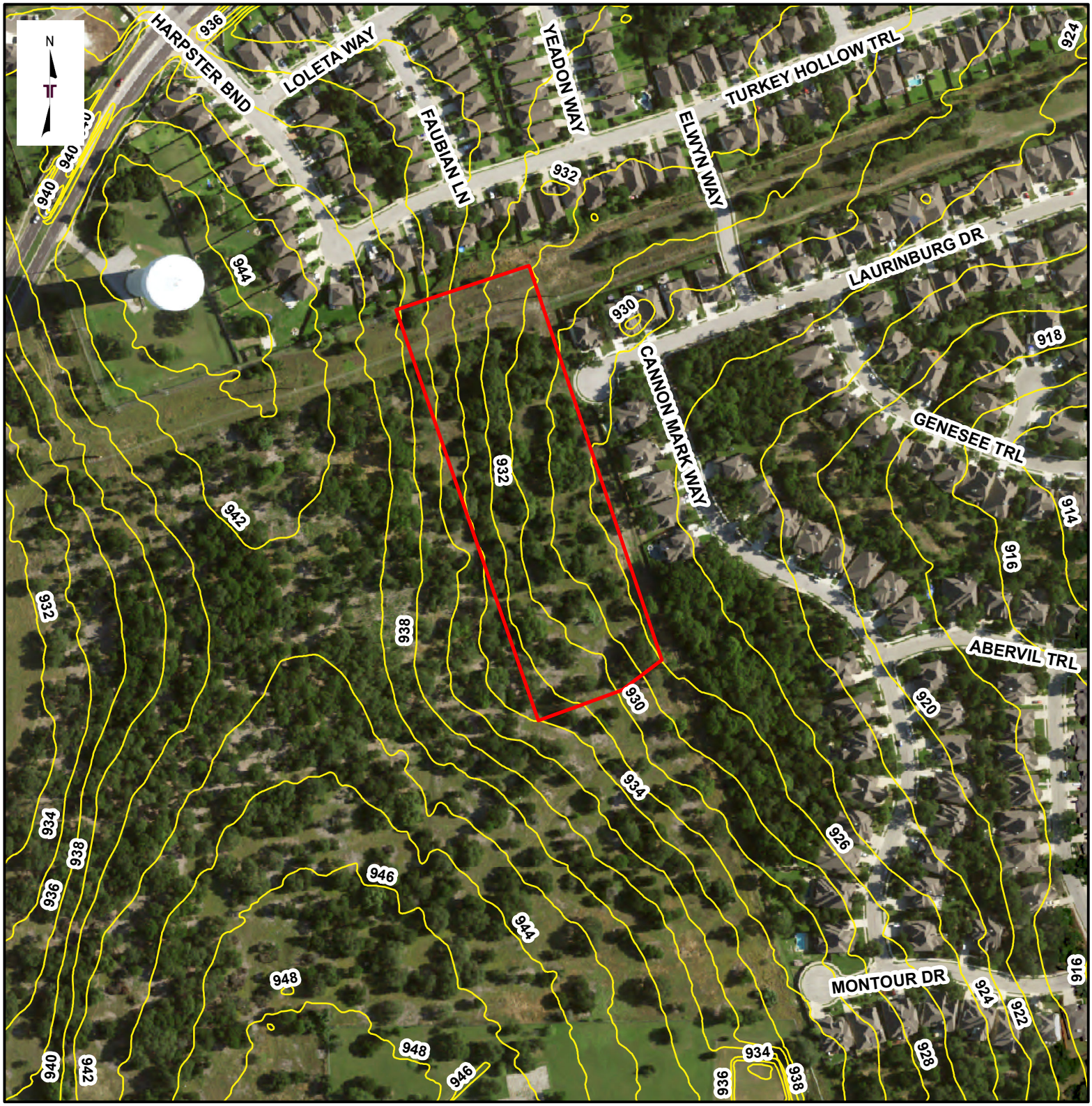
- K-8 is classified as a small solution cavity measuring approximately 1 foot in diameter by about 6-inches deep where it appears to pinch closed. The feature is developed within the epikarst zone and is not considered a significant recharge feature. The feature has a limited catchment area and scored a total of 35 points on the Geologic Assessment Table and is not considered to be sensitive.

Terracon

Based on the presence of sensitive, significant recharge features observed on the site, the potential for fluid movement to the Edwards aquifer beneath the site is considered high. Best Management Practices (BMPs) should be implemented to protect the features classified as sensitive both during site development and following development. These could include establishment of no development buffer zones along with silt fencing around each feature to protect the features from silt laden runoff during storm events. Additionally, for cave feature K-1 a permanent, locking, steel, cave grate, similar to the one installed on Feature K-3 should be considered to prevent unauthorized access into the cave.



1/5/2022



Legend

- Approximate Project Boundary
- COA 2-ft Topography

500 250 0 500

SCALE IN FEET

Sources: USDA WSS, FEMA FIRM Panel No. 48491C0610F, effective on 12/20/2019, TNRIS, TWDB, USGS, USGS MR

Project Mngr:	JM
Drawn By:	JM
Checked By:	BZ
Approved By:	AS

Project No.	96217960A
Scale:	AS SHOWN
File No.:	96217960A
Date:	Dec 15, 2021

Terracon
Consulting Engineers & Scientists
5307 INDUSTRIAL OAKS BLVD. - #160 AUSTIN, TX 78735
PH. (512) 442-1122 FAX. (512) 442-1181

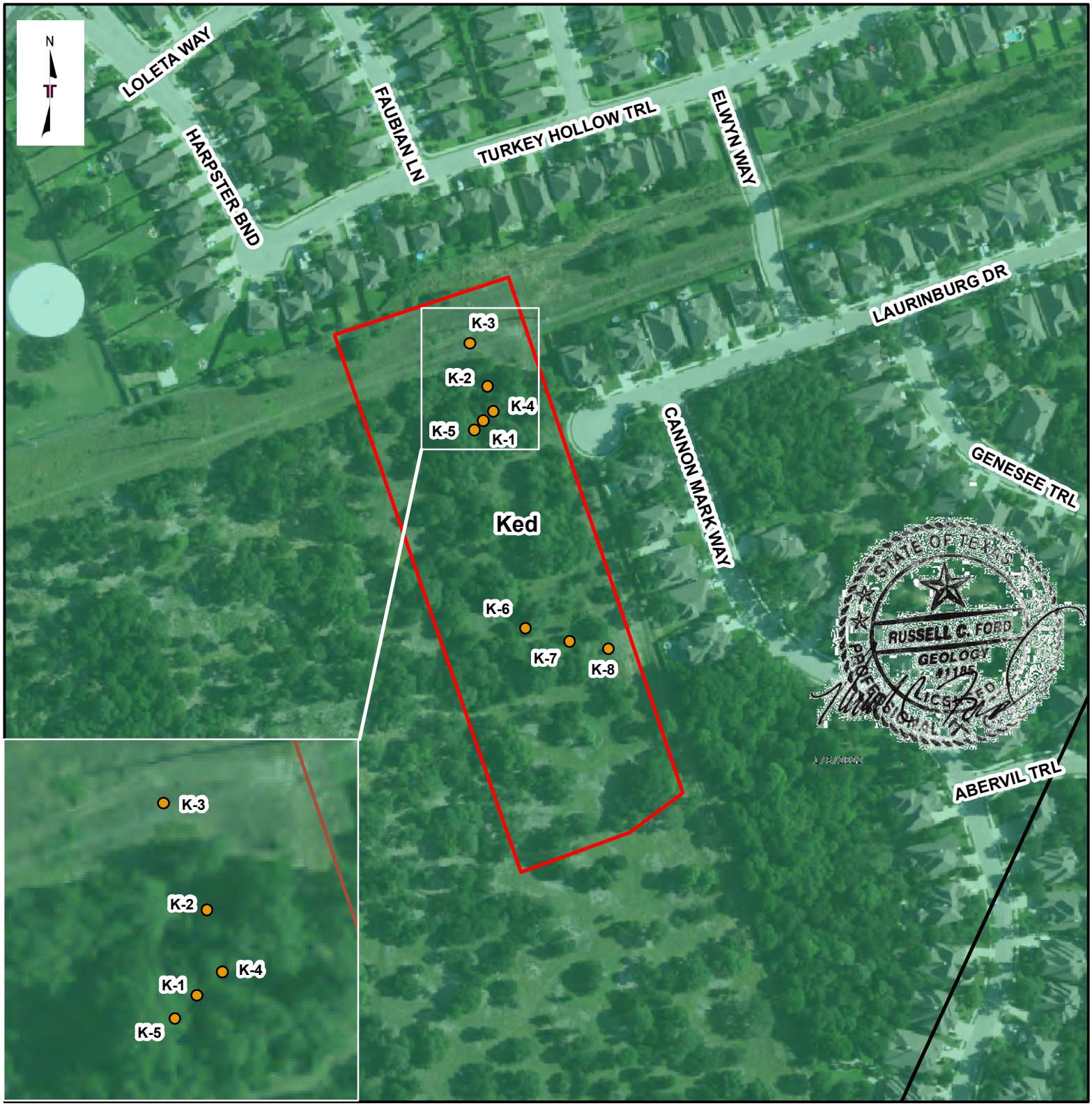
2020 Aerial with 2-ft Topography

TXDOT 6.177-acres, Avery

Avery Ranch Boulevard
Austin, Williamson County, Texas

EXHIBIT

1.0



Legend

- Approximate Project Boundary
- Karst Feature CEF

COA Geology

- Edwards Limestone (Ked)
- Fault Line

400 200 0 400

SCALE IN FEET

Sources: USDA WSS, FEMA FIRM Panel No. 48491C0610F, effective on 12/20/2019, TNRIS, TWDB, USGS, USGS MR

Project Mngr:	JM
Drawn By:	JM
Checked By:	BZ
Approved By:	AS

Project No.	96217960A
Scale:	AS SHOWN
File No.:	96217960A
Date:	Dec 15, 2021

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Site Geology and Karst Features

TXDOT 6.177-acres, Avery
Avery Ranch Boulevard
Austin, Williamson County, Texas

EXHIBIT

2.0

WATER POLLUTION ABATEMENT PLAN APPLICATION FORM

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: Jason Rodgers

Date: August 10, 2023

Signature of Customer/Agent:

Regulated Entity Name: Lake Creek at Avery Ranch

Regulated Entity Information

1. The type of project is:

   ☐ Residential: Number of Lots:_____
   ☒ Residential: Number of Living Unit Equivalents:324
   ☐ Commercial
   ☐ Industrial
   ☐ Other:_____

2. Total site acreage (size of property):16.33 acres

3. Estimated projected population:400

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	93,897	÷ 43,560 =	2.16
Parking	184,117	÷ 43,560 =	4.22
Other paved surfaces	19,364	÷ 43,560 =	0.44
Total Impervious Cover	297,389	÷ 43,560 =	6.82

Total Impervious Cover 6.82 **÷ Total Acreage** 16.33 **X 100 =** 42**% 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	171,008Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day 171,008	

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 Brushy Creek Regional (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" = 200' - A WPAP Site Plan exhibit has been prepared and is attached to this document. The plan is at 1:200 scale to match the GA. A full set of the detailed plans meeting the requirements of this section are provided separately.'.

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): Fema Firm Panel:48491C0610F

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.

F14

AV10
V5

AV8

AV4

AV12

R9

AV3

AV2

X9

KARST

KARST X5 ZARA

KARST S-4

KARST S-1
SCORPION SINK

KARST S-5

KARST S-7

KARST S-6

KARST S-8

Property Boundary

Property Boundary

Avery Ranch Boulevard

N LAKE CREEK PARKWAY

Cannon Mark Way

Montour Place

Note: This site plan is prepared specifically to address the requirements of the Water Pollution Abatement Plan Application, Items 17 - 21 of form F-0584. Reference Geologic Assessment for identification of features labeled on this plan. No features are within 50' of the project.

Detailed Plans and Specifications at 1:40 scale, addressing Items 22-28 of form F-0584 are attached separately.

WPAP Site Plan

0 200' 400'

Scale 1" = 200'

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
12007 Technology Blvd, Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com

AUSTIN BRYAN CONROE HOUSTON

Factors Affecting Surface Water Quality

Water Pollution Abatement Plan Application Form – Attachment A

Runoff from the buildings and parking areas are conveyed across the site via an underground storm sewer system as shown on the Grading and Drainage Plan.

Specific factors that affect water quality are as follows:

- Pollutants associated with runoff from the parking lot, including oil/gasoline from vehicles and petroleum distillates from the asphalt pavement
- Fertilizers (liquid and granulated) and pesticides (insecticides, herbicides, fungicides) used in the landscape areas.

Volume and Character of Stormwater

Water Pollution Abatement Plan Application Form – Attachment B

Volume

The tables below summarize the volume of storm water generated by the development and the release rates from the site for the existing and proposed conditions:

Existing Drainage Area Calculations

Label	Area	IC		SCS CN	Tc	Lag Time	Atlas 14, 24 hr Storm Water Flows (cfs)			
	acres	*acres*	*%*		*min*	*min*	*2-yr*	*10-yr*	*25-yr*	*100-yr*
Ex 1	12.72	0.00	0.0	80	13.22	7.93	31.06	59.64	79.05	111.64
Ex 2	3.62	0.00	0.0	80	5.00	3.00	11.81	22.62	29.79	41.99

Hydrologic Soil Group = D

Proposed Drainage Area Calculations

Label	Area	IC		SCS CN	Tc	Lag Time	Atlas 14, 24 hr Storm Water Flows (cfs)			
	acres	*acres*	*%*		*min*	*min*	*2-yr*	*10-yr*	*25-yr*	*100-yr*
Pro 1.1	0.79	0.55	70.2	93	5.00	3.00	3.85	6.11	7.55	10.01
Pro 1.2	4.81	3.36	69.8	93	5.00	3.00	23.45	37.19	45.94	60.92
Pro 1.3	5.98	0.00	0.0	80	8.57	5.14	16.01	30.09	39.56	55.47
Pro 1.4	1.00	0.84	84.0	95	5.00	3.00	5.07	7.87	9.66	12.74
Pro 2	3.58	2.05	57.4	90	5.00	3.00	20.51	33.74	42.18	56.51

* Time of Concentration for Pro 1.1, 1.2 and Pro 2 are assumed to be 5 minutes. This is a conservative assumption.

Hydrologic Soil Group = D

Runoff from Pro 1.1 drains to proposed Rain Garden 1. Runoff from Pro 1.2 drains to the existing biofiltration pond on the adjacent property. Runoff from Pro 1.4 drainage to proposed Rain Garden 2. Runoff from Pro 2 drains into the North Lake Creek Parkway storm system and then into a regional wet pond.

A drainage area map included in the attached plans graphically represents the above tabulated drainage areas and the water quality pond design specifications.

Quality

Runoff typically associated with a development of this type includes oil and gasoline from vehicular traffic and petroleum distillates from the asphalt pavement. Another pollutant generated by the parking and roof areas will be the dirt and silt produced by dust and falling from vehicles. Some pollutants will also be generated by fertilizers and pesticides from the landscaped areas.

The quality of water flowing out of the proposed water quality pond meets the TCEQ rules of Total Suspended Solids Removal. The City of Austin Environmental Criteria Manual Section 1.6 was used to design the rain garden and water quality ponds being used on adjacent sites.

Overall Site

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: North Lake Creek at Avery Ranch

Date Prepared: 4/19/2023

1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal = 80% of increased load

A_N = Net increase in impervious area for the project

P = Average annual precipitation, inches

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

County =	Williamson	
Total project area included in plan * =	16.33	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	6.82	acres
Total post-development impervious cover fraction * =	0.42	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	5936	lbs.

Suitability Letter from Authorized Agent

Water Pollution Abatement Plan Application Form – Attachment C

Not applicable to this project.

Exception to the Required Geologic Assessment

Water Pollution Abatement Plan Application Form – Attachment D

This attachment is not applicable to this project.

SEWAGE COLLECTION SYSTEM SECTION

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: Lake Creek at Avery Ranch

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: Alex Clarke
   Entity: Avery Land Investors, LP
   Mailing Address: 1000 N. Lamar Blvd, Ste. 400
   City, State: Austin, TX Zip: 78703
   Telephone: 512-247-7000 Fax: _____
   Email Address: aclarke@journeymanco.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: Jason K. Rodgers, P.E.
   Texas Licensed Professional Engineer's Number: 87881
   Entity: Bleyl Engineering
   Mailing Address: 7701 San Felipe Blvd.
   City, State: Austin, TX Zip: 78729
   Telephone:512-454-2400 Fax:_____
   Email Address:jrodgers@bleylengineering.com

Project Information

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

   ☐ Residential: Number of single-family lots: _____
   ☒ Multi-family: Number of residential units: 324
   ☐ Commercial
   ☐ Industrial
   ☐ Off-site system (not associated with any development)
   ☐ Other: _____

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

100% Domestic	171,008 gallons/day
_____% Industrial	_____ gallons/day
_____% Commingled	_____ gallons/day

   Total gallons/day: 171,008

6. Existing and anticipated infiltration/inflow is 12,247 gallons/day. This will be addressed by: SCS.

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

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

8. Pipe description:

Table 1 - Pipe Description

Pipe Diameter(Inches)	*Linear Feet (1)*	*Pipe Material (2)*	*Specifications (3)*
8" (WW Main A)	1049.09	SDR-26	ASTM D3034
8” (WW Main B)	448.59	SDR-26	ASTM D3034
10” (WW Main B)	66.45	SDR 26	ASTMD3034
10” (WW Main C)	189.02	SDR 26	ASTMD3034
4” (Force Main)	1077.52	Yelomine	ASTM D2241

Total Linear Feet: **2,830.67**

(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 Brushy Creek (name) Treatment Plant. The treatment facility is:

   ☒ Existing
   ☐ Proposed

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

   ☒ The City of Austin 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?*
Wastewater Main A	43 Of 67	0+73.73	MH
Wastewater Main A	43 Of 67	1+65.17	MH
Wastewater Main A	43 Of 67	3+06.41	MH
Wastewater Main A	43 Of 67	5+23.00	MH
Wastewater Main A	43 Of 67	7+00.69	MH
Wastewater Main A	44 Of 67	7+62.63	MH

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
Wastewater Main A	44 Of 67	10+49.09	MH
Wastewater Main B	45 Of 67	0+66.45	MH
Wastewater Main B	45 Of 67	1+44.74	MH
Wastewater Main B	45 Of 67	2+45.66	MH
Wastewater Main B	45 Of 67	3+34.35	MH
Wastewater Main B	45 Of 67	4+09.80	MH
Wastewater Main B	45 Of 67	6+16.01	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'. ***A separate site plan titled "SCS Site Plan" is located directly behind this document. It was prepared to match the scale of the GA map. Reference the full site plan set provided separately for more detail.***

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*
	of	to

23. 5-year floodplain:

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

Table 4 - 5-Year Floodplain

Line	*Sheet*	*Station*
	of	to

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*
Wastewater Main B	0+47.65	Crossing		12.4'
Wastewater Main B	2+77.57	Crossing		3.68'
Wastewater Main B	3+05.74	Crossing		2.28'

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*

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*
			38
			38

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***
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) **[Required]**	52 of 66
Alternate method of joining lateral to existing SCS line for potential future connections **[Required]**	NA
Typical trench cross-sections **[Required]**	51 of 66
Bolted manholes **[Required]**	52 of 66
Sewer Service lateral standard details **[Required]**	52 of 66
Clean-out at end of line **[Required, if used]**	52 of 66
Baffles or concrete encasement for shock/erosion protection **[Required, if flow velocity of any section of pipe >10 fps]**	NA
Detail showing Wastewater Line/Water Line Crossing **[Required, if crossings are proposed]**	52 of 67
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) **[Required, if Flexible Pipe is used]**	52 of 67
Drop manholes **[Required, if a pipe entering a manhole is more than 24 inches above manhole invert]**	NA

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

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

☐ Survey staking was completed on this date: _____

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

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: Jason Rodgers, P.E.

Date: August 10, 2023

Place engineer's seal here:

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

Pipe Diameter(Inches)	*% Slope required for minimum flow velocity of 2.0 fps*	*% Slope which produces flow velocity of 10.0 fps*
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)

F14

AV10
V5

AV8

AV4

AV12

R9

AV3

AV2

X9

KARST

KARST X5 ZARA

KARST S-4

KARST S-1
SCORPION SINK

KARST S-5

KARST S-7

KARST S-6

KARST S-8

WW Main B

CEF Setback

Lift Station

Force Main

WW Main C

WW Main A

Avery Ranch Boulevard

N LAKE CREEK PARKWAY

Cannon Mark Way

Montour Place

SCS Site Plan

0 200' 400'

Scale 1" = 200'

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
12007 Technology Blvd, Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com

AUSTIN BRYAN CONROE HOUSTON

H:\Jobfiles\JGD (Journeyman)\JGD 70401 (Avery Oaks Phase 4)\07 Permitting\TCEQ\WPAP & SCS Combined Application\03 - Geologic Assessment\SCS.dwg

3/15/2023

Engineering Design Report

Organized Sewage Collection System (SCS) Application Form – Attachment A

The proposed site is 16.33 acres and is located at 9502 North Lake Creek Parkway near the SE intersection of US 183A and Avery Ranch Boulevard. The proposed site is located within Austin's Full-Purpose jurisdiction. Much of the site is located within the South Brushy Creek Watershed (Suburban). No portion of this tract is within the 100-year flood plain per the Flood Insurance Rate Map Panel #48491C0610E, dated 09/26/2008 for Williamson County, Texas.

The project site is undeveloped. The site vegetation consists of shrubbery and trees and is heavily vegetated. A Geological Assessment is included with this submittal. The reports were prepared by TxDOT prior to the sale of this land to the current owner. No CEFs are found on this property or within 50' of the SCS.

The project proposes 9 apartment buildings and 324 separate units. It will also have a clubhouse and enclosed garages and carports. Other improvements include parking spaces, internal driveways, water and wastewater services. Total proposed impervious cover is 42%.

A private lift station and force main has been added to allow for the wastewater to be pumped up to North Lakeline Parkway. TCEQ form 0624 for Lift Station and Force Mains has been added. The force main plan and profiles can be found on sheets 47-49.

Table 1 - Pipe Description

Pipe Diameter(Inches)	*Linear Feet (1)*	*Pipe Material (2)*	*Specifications (3)*
8" (WW Main A)	1049.09	SDR-26	ASTM D3034
8" (WW Main B)	448.59	SDR-26	ASTM D3034
10" (WW Main B)	66.45	SDR 26	ASTMD3034
10" (WW Main C)	189.02	SDR 26	ASTMD3034
4" (Force Main)	1077.52	Yelomine	ASTM D2241

Total Linear Feet: 2,830.67

DOMESTIC WATER

Apartments (0.5 LUE/unit)	324 Units	**162.00 LUE**	
Retail space (1 LUE/1,660 sf)	- SF	**0.00 LUE**	
Office Space (1 LUE/3,000 sf)	- SF	**0.00 LUE**	
Population = 3.5 people per LUE =		**567.00 people**	
Peak Hour = 900 gal/person/day =		**354.38 GPM**	
Peak Day = 530 gal/person/day =		**208.69 GPM**	
		300510 GPD	

WASTEWATER

Average Flow = 245 gal/LUE/day	**27.56 GPM**		
Peak Dry Weather Flow = [(18+(0.0206 x F)0.5)/(4+(0.0206 x F)0.5)] x F			
F = 70 gal/person/day =	**27.56 GPM**		
[(18+(0.0206 x F)0.5)/(4+(0.0206 x F)0.5)] =	**4.00 GPM***	* Max. =	4
Peak Dry Weather Flow =	**110.25 GPM**	158760	
Inflow/Infiltration = 750 gal x 16.33 acres / 1440 min/day =	**8.51 GPM**	12247.5	
Peak Wet Weather Flows = Peak Dry Weather + I/I =	**118.76 GPM**		
	171008 GPD	171008	0.23 cfs

Pipe Loading:

Pipe loading is calculated using the Modified Iowa Equation to determine the Pipe Diametric Deflection.

MODIFIED IOWA EQUATION

$$\% \text{ DEFLECTION} = \frac{0.1\,(W' + P)\,100}{0.149\,(PS) + 0.061E'}$$

Where:

% DEFLECTION = predicted percentage of diametric deflection.

W' = **Live Load** (lbs/in^2): pressure transmitted to the pipe from traffic on the ground surface. Live Load values are found in Table 2.

P = **Prism Load** (lbs/in^2): pressure acting on the pipe from the weight of the soil column above the pipe (also called "Dead Load"). Prism Load values are found in Table 3.

PS = **Pipe Stiffness (lbs/in^2)**: a flexible pipe's resistance to deflection in an unburied state. Pipe Stiffness values for JM Eagle products are found in Table 4.

E' = Modulus of Soil Reaction (lbs/in^2): stiffness of the embedment soil. Values for Modulus of Soil Reaction are found in Table 5.

Prism loads and live loads were derived from a Technical Manual issued by JM Eagle, a pipe manufacturing company. The manual was issued January of 2009.

A depth of cover of 12' was used for the calculation. That is the *maximum* cover provided over the proposed sewer and force mains.

Live Load = 0 lbs/sq. in. using Highway H20 loading
Prism Load = 10 lbs/sq. in. – using a soil unit weight of 120 lbs/cu. ft.
Pipe Stiffness = 115 psi for gravity sewer pipe
Pipe Stiffness = 1,473 psi for pressure force main pipe
Modulus of Soil Reaction = 3,000 for compacted crushed rock

Allowable deflection for a PVC sewer pipe = 7.5%
Allowable deflection for a PVC pressure pipe = 5%

Calculated deflection for the proposed sewer main at 12' depth = 0.50% - Less than allowable
Calculated deflection for the proposed force main at 12' depth = 0.25% - Less than allowable

Allowable deflection for an SDR-26 PVC pipe = 5%
Calculated deflection for the proposed main at 6' depth = 0.32% using the Modified Iowa Equation.

Sincerely,
Jason Rodgers, PE

Bleyl Engineering 08-09-23

TBPE F-678

Justification and Calculations for Deviation in Straight Alignment Without Manholes

Organized Sewage Collection System (SCS) Application Form – Attachment B

This Attachment is not applicable to this project.

Justification for Variance from Maximum Manhole Spacing

Organized Sewage Collection System (SCS) Application Form – Attachment C

This Attachment is not applicable to this project.

Calculations for Slopes for Flows Greater Than 10.0 Feet Per Second

Organized Sewage Collection System (SCS) Application Form – Attachment D

This Attachment is not applicable to this project.

LIFT STATION/FORCE MAIN APPLICATION FORM

Lift Station / Force Main System Application

Texas Commission on Environmental Quality

for Regulated Activities On the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(c)(3)(B)and(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: Lake Creek at Avery Ranch

Customer Information

(If different than customer information provided on core data form)

1. The person(s) responsible for providing the engineering certification to the TCEQ pursuant to 30 TAC §213.5(f)(2)(C) during construction and 30 TAC §213.5 (c)(3)(D) upon completion of construction is:

   Contact Person: Jason K. Rodgers, P.E.
   Entity: Bleyl Engineering
   Mailing Address: 7701 San Felipe, Suite 200
   City, State: Austin, Texas Zip: 78729
   Telephone: 512-454-2400 Fax: _____
   Email Address: jrodgers@bleylengineering.com

2. The engineer responsible for the design of this lift station and force main:

   Contact Person: Jason Rodgers, P.E.
   Entity: Bleyl Engineering
   Mailing Address: 7701 San Felipe, Suite 200
   City, State: Austin, Texas Zip: 78729
   Telephone: 512-454-2400 Fax: _____
   Email Address: jrodgers@bleylengineering.com
   Texas Licensed Professional Engineer's Serial Number: 87881

Project Information

3. This project is for the construction or replacement of:

   ☐ Lift Station only.

☐ Lift Station and Force Main system.
☒ Lift Station, Force Main, and Gravity system.

4. The sewage collection system will convey the wastewater to the Brushy Creek Regional (name) Treatment Plant. The treatment facility is:

   ☒ Existing
   ☐ Proposed

5. All components of this lift station/force main system will comply with:

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

Site Plan Requirements

Items 6-14 must be included on the Site Plan.

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

   Site Plan Scale: 1" = 30 '.

7. ☒ Lift station/force main system layout meets all requirements of 30 TAC Chapter 217.

8. Geologic or Manmade Features:

   ☒ No geologic or manmade features were identified in the Geologic Assessment.
   ☐ All geologic or manmade features identified in the Geologic Assessment (caves, solution openings, sinkholes, fractures, joints, porous zones, etc.) which exist at the site of the proposed lift station and along the path(s) or within **50 feet of each side** of a proposed force main line are shown on the Site Plan and are listed in the table below. Designs used to protect the integrity of the sewer line crossing each feature are described and labeled on the attached page. A detailed design drawing for each feature is shown on Plan Sheet _____ of _____.
   ☐ No Geologic Assessment is required for this project.

Table 1 - Geologic or Manmade Features

Line	*Station to Station*	*Type of Feature*
	to	
	to	
	to	
	to	
	to	
	to	
	to	
	to	

9. [X] Existing topographic contours are shown and labeled. The contour interval is 1 feet. (Contour interval must not be greater than 5 feet).

10. [X] Finished topographic contours are shown and labeled. The contour interval is 1 feet. (Contour interval must not be greater than 5 feet).

    [ ] Finished topographic contours will not differ from the existing topographic configuration and are not shown.

11. 100-year floodplain boundaries

    [ ] Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.

    [X] 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): Flood Insurance Rate Map panel #48491C0610E, dated 09/26/2008 for Williamson County, Texas

12. 5-year floodplain:

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

    [ ] After construction is complete, all sections of the force main 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 2 - 5-Year Floodplain

Line	*Sheet*	*Station to Station*
	of	to
	of	to
	of	to
	of	to

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

If applicable, this must agree with Item No. 15 on the Geologic Assessment Form.

[ ] 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 plugged.
[ ] The wells are not in use and will be properly plugged.
[ ] 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.

14. [X] Legal boundaries of the site are shown.

Plan and Profile Sheets

*The construction drawings and technical specifications will not be considered for review unless they are the **final plans and technical specifications** which will be used by the contractor for bidding and construction.*

Items 15 – 18 must be included on the Plan and Profile sheets.

15. [X] The equipment installation construction plans must have a minimum scale of 1" = 10'.

    Plan sheet scale: 1" = 20 '.

16. [X] Locations, descriptions and elevations of all required equipment and piping for the lift station and force main are shown and labeled.

17. [X] Air Release/Vacuum Valves will be provided at all peaks in elevation of the proposed force main. These locations are listed in the table below and labeled on the appropriate plan and profile sheets. Valve will be provided at the lift station cleanout

Table 3 - Air Release / Vacuum Valves

Line	*Station*	*Sheet*
Force Main	0+00.00	47,51 of 67
		of
		of
		of
		of
		of

18. [X] 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.

19. [X] **Attachment A - Engineering Design Report**. An engineering design report with the following required items is attached:

    - [X] The report is dated, signed, and sealed by a Texas Licensed Professional Engineer.
    - [X] Calculations for sizing system.
    - [X] Pump head calculations, including, but not limited to, system head and pump capacity curves, head loss calculations, and minimum and maximum static head C values for normal and peak operational conditions.
    - [NA] 100-year and 25-year flood considerations.
    - [X] Total lift station pumping capacity with the largest pump out of service.
    - [X] Type of pumps, including standby units.
    - [X] Type of pump controllers, including standby air supply for bubbler controllers, as applicable.

- [X] Pump cycle time.
- [X] Type of wet well ventilation; include number of air changes for mechanical ventilation.
- [X] Minimum and maximum flow velocities for the force main.
- [X] Lift station security.
- [X] Lift station emergency provisions and reliability.

Administrative Information

20. [ ] Upon completion of the wet well excavation, a geologist must certify that the excavation was inspected for the presence of sensitive features and submit the signed, sealed, and dated certification to the appropriate regional office.

21. [X] The TCEQ Lift Stations and Force Mains General Construction Notes (TCEQ-0591) are included on the General Notes Sheet of the Final Construction Plans for this lift station and/or force main system. See Sheet 4

22. [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.

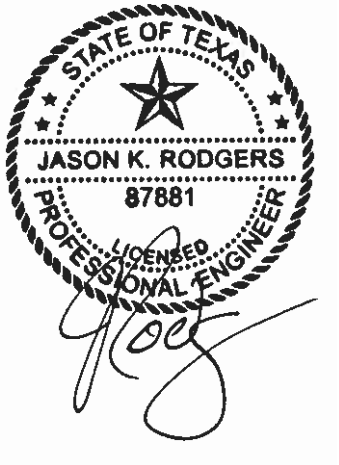
23. [X] Any modification of this lift station/force main system application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

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 **Lift Station/Force Main 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)(3)(C) and 30 TAC Chapter 217, and prepared by:

Print Name of Licensed Professional Engineer: Jason K. Rodgers, P.E.

Place engineer's seal here:



Date: March 13, 2023

Signature of Licensed Professional Engineer: _____

Engineering Design Report

Lift Station/Force Main System – Attachment A

The proposed lift station will be a private duplex grinder pump system in a 5’ diameter concrete basin. The two pumps will be Liberty LGV 3 hp rated. Lift station notes showing elevations can be found in the plans. The wet well will be ventilated with a 3” vent pipe discharging above ground. See sheet 51 for the lift station design details.

The lift station will be secured with a lockable hatch on the basin and a lockable cover on the control panel. An Omni Site XR50 cellular monitoring device will be included on the control panel. The device will notify the emergency contact via phone, text and/or email. A battery backup will be provided for power failure notification.

A sign will be provided at the lift station with the lift station name and 24-hour contact information in case of emergency. The sign will have block lettering at least 1.5" tall.

Power failure records have been provided by Pedernales Electric Cooperative. An analysis of the power failures of the main feed that will serve the lift station showed that the average power failure was less than 20 minutes in duration. Per TAC 317.63, a minimum of 20 minutes was used for emergency storage.

The following pages contain the lift station calculations, pump curve, pump control panel specifications and PEC power failure data.

Sincerely,
Jason Rodgers, PE

Bleyl Engineering
TBPE F-678

Lake Creek at Avery Ranch

Lift Station Design Calculations

LUE Calc

Apartments= 324 Units x 0.5 LUE/Unit=	**162.00 LUE**
Population = 3.5 people per LUE =	**567.00**

WASTEWATER

Average Flow = 245 gal/LUE/day

Peak Dry Weather Flow = [(18+(0.0206 x F)^0.5)/(4+(0.0206 x F)^0.5)] x F		
F = 70 gal/person/day =		**27.56 GPM**
[(18+(0.0206 x F)^0.5)/(4+(0.0206 x F)^0.5)] =	*Max = 4	**3.95 GPM***
Peak Dry Weather Flow =		**108.74 GPM**
Inflow/Infiltration = 750 gal x 12 acres / 1440 min/day =		**6.25 GPM**
Peak Wet Weather Flows = Peak Dry Weather + I/I =		**114.99 GPM**

Pump Selection

1 number of pumps running simultaneously (does not include back up)
111 GPM each pump
111 GPM "TOTAL" pump(s) output

Wet Well Design

Use:
5 ft. Diameter Well
5 minute cycle time

Volume per Foot of Well 19.63 CF per ft

Allowable volume capacity (Vc) of wet well between pump "on" and pump "off"
555.00 gal
74.20 CF

Elevations

8" gravity flowline in	923.17 '
Ground Elevation	929.84 '
Elevation of bottom of well	909.43 '
MINIMUM Distance between pump "on" & pump "off"	3.78 '

Emergency Storage Design

Average/Minimum design time for power loss: 20 mins.

Volume required for storage during power outage (based on average daily flow): 551.3 gal
73.7 cf

Depth in basin for emergency storage: 3.75 '

Force Main Calculations

Based on
105 GPM pump flow rate
4 " Yelomine
1048.09 LF of force main

Minor Losses

7	45 degree elbows @	4.7 ' pipe equivalent loss each for a total of	32.9
5	22 1/2 degree elbows @	2.35 ' pipe equivalent loss each for a total of	11.75
0	11 1/4 degree elbows @	1.18 ' pipe equivalent loss each for a total of	0
2	swing check valve @	26 ' pipe equivalent loss each for a total of	52

Total Minor Losses in units of equivalent pipe length **96.65** ft.

Pipe Flow Velocity
Q= 0.234 CFS
A= 0.087 SF
V= 2.68 FPS Velocity is within acceptable limits

Force Main Flush Time
Using average dry weather flows
Tfl= 276.98 min

Head Calculations

Static Head

FM flow line @ high point	938.83 '
Flow line @ bottom of wet well	910.93 '
Total Static Head	**27.9** '

Friction Loss (using Hazen-Williams eq.)

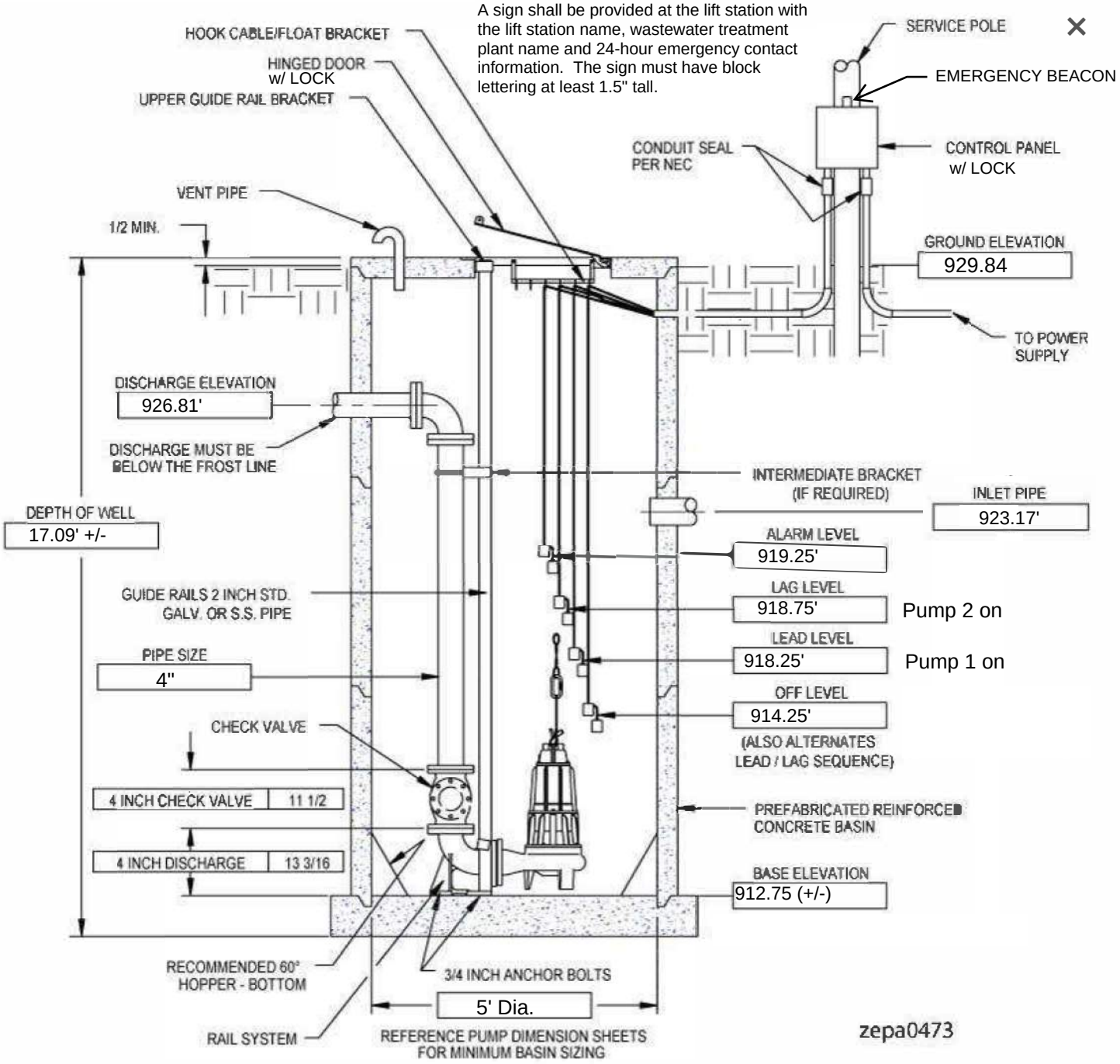
C= 100
F= 1.34 ft per 100 LF of force main length
Friction Loss= 15.30 ft

C= 140
F= 0.72 ft per 100 LF of force main length
Friction Loss= 8.21 ft

	@ C= 100	@ C= 140
Static	27.90	27.90
Friction	15.30	8.21
Total Dynamic Head	**43.20**	**36.11**

Control Panel to include Omni Site XR50 cellular monitoring device with notifications by phone, text or email. Battery back up to be provided for power failure notification.

A sign shall be provided at the lift station with the lift station name, wastewater treatment plant name and 24-hour emergency contact information. The sign must have block lettering at least 1.5" tall.



Pump Data Sheet - Liberty Pumps Inc.

Company:
Name:
Date: 02/15/2022

Liberty Pumps
Engineered Products

Pump:

Size:	(X)LGV Series 60Hz (3-'	Dimensions:	
Type:	3-15HP Grinder Pump	Suction:	---
Synch Speed:	3600 rpm	Discharge:	0 in
Dia:	4.5 in		
Curve:	Standard High Flow		
Impeller:	3 Vane High Flow		

Search Criteria:

Flow:	105 US gpm	Near Miss:	---
Head:	34.65 ft	Static Head:	0 ft

Pump Selection Warnings:

None

Fluid:

Name:	Water		
SG:	1	Vapor Pressure:	0.256 psi a
Density:	62.4 lb/ft³	Atm Pressure:	14.7 psi a
Viscosity:	1.1 cP		
Temperature:	60 °F	Margin Ratio:	1

Pump Limits:

Temperature:	104 °F	Sphere Size:	---
Wkg Pressure:	---	Power:	15 hp

Motor:

Standard:	Liberty	Size:	3 hp
Enclosure:	N/A	Speed:	3600 rpm
Frame:	---		
Sizing Criteria:	Design Point		
Min Motor Power:	3 hp		
Max Motor Power:	15 hp		

--- Duty Point ---

Flow:	111 US gpm
Head:	38.6 ft
Power:	3 hp
NPSHr:	--- ft
Speed:	3450 rpm

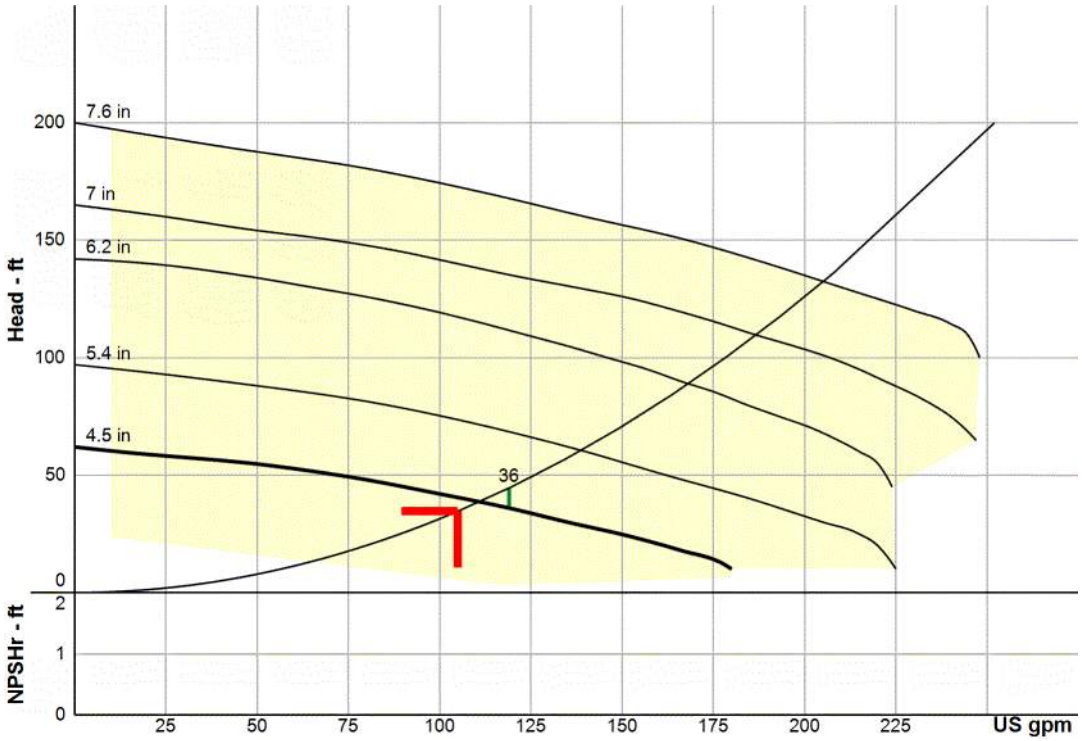
--- Design Curve ---

Shutoff Head:	62 ft
Shutoff dP:	26.9 psi
Min Flow:	--- US gpm

NOL Power:
3 hp @ 178 US gpm

--- Max Curve ---

Max Power:
15 hp @ 230 US gpm



CUSTOM IMPELLER TRIM SIZES ARE SUBJECT TO AN ADDITIONAL FEE.

Performance Evaluation:

Flow	Speed	Head	Power	NPSHr
US gpm	rpm	ft	hp	ft
126	3450	33.4	3	---
105	3450	40.4	3	---
84	3450	46.8	3	---
63	3450	51.9	3	---
42	3450	55.7	3	---

STANDARD DUPLEX LIFT STATION CONTROL PANEL

1.01 GENERAL

A. Contractor shall furnish all labor, materials, equipment and incidentals required to provide a duplex lift station motor control panel designed to automatically operate the lift station pump/motor units as specified herein.

B. The control panel shall be designed, assembled and tested by the same manufacturer supplying the pump so as to insure suitability and assurance of experience in matching controls to motors and to insure single source responsibility for the equipment.

C. The control panel shall comply with NEC and UL 508A requirements. Panel builder shall be a UL 508A shop, and display all required UL 508A listing labels on the panel.

D. The panel shall contain all components required by the pump manufacturer for starting, stopping, and protection of the lift station motors. Any protective features required by the pump manufacturer for warranty of the pump shall be included in the control panel.

E. The pump motors are rated ___ hp, ____ v, ____ph and each have a full load current rating of ____ amperes.

F. The incoming power shall be _____ volts, ____ phase, 60 hertz service.

2.01 CONSTRUCTION

A. The controls for the pump shall be contained in an enclosure meeting NEMA 3R steel (or NEMA 4X fiberglass or NEMA 4X stainless steel) requirements with a hinged door and neoprene or polyurethane gasket.

B. The enclosure shall have provisions for padlocking. A nameplate shall be permanently affixed to the panel and include the serial number, voltage, phase, hertz, ampere rating and horsepower rating. A warning label against electric shock shall be permanently affixed to the outer door.

C. A steel (or aluminum) back panel shall be provided.

D. Pump run lights and hand-off-auto switches shall be provided. Run lights and hand-off-auto switches shall be mounted on an aluminum bracket (or inner door) and be properly labeled as to function. The hand-off-auto switch shall have an electrical life of 50,000 operations. The run light shall match the hand-off-auto switch in appearance and have an electrical life of 5,000 hours. Run light shall be green.

E. Terminal blocks with box type lugs shall be supplied to terminate all wiring for floats, heat, and seal sensors for the pump, if required. The pump power leads shall also be terminated at box type terminal blocks. The terminal blocks for the pump, float, transducer, and/or sensor connections shall be on the enclosure back panel.

For single phase service furnish start capacitor, start relay, and run capacitor circuit as necessary for type of motor used.

F. A circuit breaker shall be used to protect from line faults and to disconnect the pump from the incoming power. Circuit breaker shall be UL589/UL508 thermal magnetic and sized to meet NEC requirements for motor controls.

G. The IEC (or NEMA) rated magnetic starters shall include a contactor with a minimum mechanical life of 3,000,000 operations and a minimum contact life of 1,000,000 operations. The magnetic starter shall include an overload relay which is ambient temperature compensated. The overload relay shall have test and reset buttons. The overload relay shall be capable of being set in either manual or automatic reset mode. In the manual mode, reset shall be accomplished only by the operator. At 6 times full load amps the overload relay shall trip within 10 seconds or Class 10 rated overload relays shall be required.

H. Control voltage shall be 120 VAC and may be accomplished by means of a transformer or available line voltage depending upon the power supply. (Control voltage shall be 24 VAC and shall be accomplished by means of a transformer.) A control fuse (and/or circuit breaker) shall protect the control circuit.

I. The control circuit shall operate the pump/motor in a "pump down" mode. Input shall be capable from float switches (or a pressure transducer, or an ultrasonic transducer, or a probe) to…

…start the LEAD pump
…start the LAG pump
…energize the High Water Level Alarm
…stop both LEAD and LAG pumps

(To prevent both units starting simultaneously after a power failure, furnish a LAG pump time delay relay adjustable from 0 to 60 seconds.).

J. Alarm voltage shall be 120 VAC and may be accomplished by means of a transformer or available line voltage. (or alarm voltage shall be 24 VDC with battery backup powered by DC power supply from the control circuit). A control fuse (or circuit breaker) shall protect the control circuit.

K. Panel wiring shall be UL1015 CSA style TEW tinned copper conductors rated minimum 600 volt @ 105°C with PVC or nylon insulation. Wire ties (or wiring channels) shall be used to maintain panel wiring in neat bundles for maintenance and to prevent interference with operating devices. All wiring shall be color coded to facilitate maintenance and repair of the control panel. Where a color is repeated, slip on plastic waterproof wire tags shall be added. A wiring schematic shall be permanently attached (or mounted in a drawing pocket attached) to the inside surface of the front door.

L. Duplex pump control circuit shall utilize an alternating relay with LED indication of pump selection status. (A lead pump selector switch shall be provided).

M. Box type lug connectors shall be made of phenolic or thermoplastic to reduce the effect of aging due to heat influences. Each terminal block shall be property and permanently labeled as to its purpose. Use mylar or polyester labels with clearly printed terminal number. Label shall be permanently adhered to terminal block.

N. Pump control panel shall be equipped with a flashing red high level alarm light. There shall be no external lights on the pump control panel other than the main high level light (other than seal failure alarm lights). (Alarm circuit to include horn rated 95 dB at 1 meter with silence switch.). (Alarm circuit to include horn rated 95 dB at 1 meter with pushbutton to silence).

O. (Furnish a seal failure circuit with adjustable resistance relay to sense and alarm when a circuit is made to ground thru the seal sensor probe(s) located between the pump and the motor. When this circuit is made, a red seal failure alarm light shall glow. (When this circuit is made, a red seal failure alarm light shall glow, and the external flashing red alarm light circuit shall be

energized.) (When this circuit is made, the external flashing red alarm light circuit shall also be energized).).

P. (Furnish a heat sensor circuit with automatic (manual) reset to remove power from the motor contactor in case of elevated motor winding temperature, and turn on a red heat sensor alarm light inside the panel. (For manual reset heat sensor circuits, switch load to the other pump, and energize the external alarm circuit).

Q. Light bulbs shall be incandescent 15 watt(or 40 watt) for High Water Alarm, neon for FNG/FNR bracket mounted, and LED for inner door.

3.01 FACTORY TESTING

A. Energize the control circuit and simulate input from the level sensors and verify start and stop operation of the contactors, time relays, seal sensor circuit, heat sensor circuit, and alarm levels. Attach testing check list with panel builder's signature to the inside of the outer door.

4.01 OPTIONS

A. Panel shall be equipped with the following additional features.

1. **Lead Pump Fail Lag Pump Start.** A pump failure occurs when that pump's overload or heat sensor trips. A Pump Fail indicator light will turn on and the external red light will flash. The other pump will be energized instead of the failed pump. Reset occurs when the heat sensor automatically resets and the motor overload is manually reset.
2. **Elapsed Time Meter.** Install one non-reset analog elapsed time meter per motor calibrated in "hours".
3. **Staged Start.** Furnish 0 to 60 sec adjustable time delay relay wired to prevent the lag pump from starting simultaneously with the lead pump.
4. **Lightning Arrester.** Furnish lightning arrestor with 25 nanosecond response to clamp 50,000A on 8x20 microsecond wave shape per ANSI IEEE NEMA Standard C62.1.
5. **Power Monitor.** Furnish a power monitor to remove power from motors upon sensing an under voltage of 90% and an over voltage of 110% of adjustable voltage setpoint, and 2% to 8% adjustable voltage unbalance, phase failure, and/or phase reversal. Monitor also includes a 1-30 sec. trip delay to avoid nuisance tripping and 1-500 sec. restart delay for anti-rapid cycling.
6. Lead Pump Selector Switch. Furnish a three position switch on alternator to designate selected pump as lead pump.
7. Anti-condensation Heater. Furnish a strip heater rated for adequate wattage to maintain enclosure temperature 10°F greater than room temperature. For outdoor installations, double indoor wattage. Strip heaters shall be 120v / 1 ph with automatic thermostat control.
8. **Convenience Outlet.** Furnish a 15 amp 120v 1 ph duplex GFI convenience outlet with NEMA 4 cover mounted on the inside (or outside) of the panel enclosure, and shall include its own circuit breaker.
9. **Power On Light.** Furnish an indicator light that glows white when power is applied to the incoming power terminal strip.
10. **Swing Dead Front.** Furnish an inner hinged door with lights and selector switches. The inner hinged door is furnished with a non-fused disconnect.
11. **Furnish dry contacts for**
    a. High water
    b. Lead pump fail
12. Provide telemetry system to relay alarm conditions. Unit to be Omni Site XR50 cellular monitoring device with real time monitoring. Up to 10 universal inputs. Notifications by phone, text or email. Battery back up provided for power failure notification.

Jason Rodgers

From: Norton, Dawn <Dawn.Norton@peci.com>
Sent: Wednesday, February 9, 2022 1:25 PM
To: Jason Rodgers
Subject: RE: Request for PEC Outage Information - SEC of 183A and Avery Ranch Boulevard
Attachments: KS130 OPERATIONS.xlsx

Jason:

I went back as far as I could to get the duration on these operations. Let me know if this works for you.

Thank you,

Dawn Norton | PEDERNALES ELECTRIC COOPERATIVE, INC.
Regional Service Order Coordinator
P: (800) 868-4791 ext 7477
Website | Facebook | Twitter | LinkedIn | YouTube | PEC Energy News

1949 W. Whitestone Blvd.
P.O. Box 2620
Cedar Park, TX 78613

CedarParkRSOC@peci.com

From: Jason Rodgers <jrodgers@bleylengineering.com>
Sent: Wednesday, February 9, 2022 12:39 PM
To: Norton, Dawn <Dawn.Norton@peci.com>
Subject: RE: Request for PEC Outage Information - SEC of 183A and Avery Ranch Boulevard

Do you have a cell for the duration of the outage? There are no headings on the cells.

Thanks,

Jason Rodgers, PE
Bleyl Engineering
TBPE Firm No. 678

O: 512 454 2400
M: 512 497 1482

From: Norton, Dawn <Dawn.Norton@peci.com>
Sent: Wednesday, February 9, 2022 12:07 PM
To: Jason Rodgers <jrodgers@bleylengineering.com>
Cc: Offutt, Brandon <Brandon.Offutt@peci.com>; Bonura, Patrick <patrick.bonura@peci.com>; Woods, Ben <Ben.Woods@peci.com>
Subject: RE: Request for PEC Outage Information - SEC of 183A and Avery Ranch Boulevard

Mr. Rodgers:

This is the list of operations for feeder KS130 back to 2018. Please let me know if this is what you are needing or not.

Feel free to contact me if you have any questions.

Best,

Dawn Norton | PEDERNALES ELECTRIC COOPERATIVE, INC.
Regional Service Order Coordinator
P: (800) 868-4791 ext 7477
Website | Facebook | Twitter | LinkedIn | YouTube | PEC Energy News

1949 W. Whitestone Blvd.
P.O. Box 2620
Cedar Park, TX 78613

CedarParkRSOC@peci.com

From: Jason Rodgers <jrodgers@bleylengineering.com>
Sent: Wednesday, February 9, 2022 11:08 AM
To: Norton, Dawn <Dawn.Norton@peci.com>
Subject: RE: Request for PEC Outage Information - SEC of 183A and Avery Ranch Boulevard

Dawn,

Thanks for your time and assistance!

Thank you sir,

Ben Woods|PEDERNALES ELECTRIC COOPERATIVE, INC.
Electrical Distribution Designer, Lead

Pedernales Electric Feeder Outages

FEEDER	DEVICE	DATE	TIME OFF	TIME ON	PHASES	DISTANCE	MEMBER C	FINDINGS
KS 130	SUB	6/27/2021	2:42:05	2:42:07	BCG	0.42	2201	BLOWN INSULATORS
KS 130	LR 9588	5/24/2021	16:23:31	16:23:35	CG	1.14	718	BROKEN JUMPER CAUSED FROM LIGHTNING
KS 130	SUB	6/11/2020	7:46:00	8:06:00	CG	1.32	2980	OPENED ON 1 SHOT - SQUIRREL
KS 130	SUB	5/15/2020	23:53:09	23:53:11	BCG	0.56	1920	LIGHTNING
KS-130	SUB	4/23/2020	16:30:21	16:30:23	ACG	0.82	2980	ANIMAL (BIRD) CAUSED DAMAGE TO AIR SWITCH
KS-130	SUB	12/13/2019	6:56:23	6:56:26	BG	0.38	2161	JOHN AND VICTOR ARE PATROLLING - found 2 load break open
KS-130	SUB	6/5/2019	4:22:40	N/A	BC	0.15	2161	LIGHTNING HIT ARRESTERS ON ALL 3 PHASES - LOCKED OUT
KS-130	SUB	3/13/2019	0:06:08	N/A	BC	0.13	2161	FOUND BLOWN LINE FUSE FROM STORM AT 314 S OLD HWY 183
KS-130	SUB	2/16/2019	14:36:57	N/A	BC	0.12	2160	MYLAR BALLOONS IN 2 PHASES - BLOWN RISER FUSES
KS-130	SUB	11/1/2018	19:03:53	N/A	BCG	0.1	2125	
KS-130	SUB	9/21/2018	16:51:00	N/A	CA TO G	0.23	2118	FOUND A DAMAGED POLE TOP INSULTATOR. CHANGED OUT.

TEMPORARY STORMWATER SECTION

Temporary Stormwater Section

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Jason K. Rodgers, P.E.

Date: August 10, 2023

Signature of Customer/Agent:

Regulated Entity Name: Lake Creek at Avery Ranch

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: None

   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: Buttercup/South Brushy Creek

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☒ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

Spill Response Actions

Temporary Stormwater Section - Attachment A

Spill response measures during construction are to be handled by the contractor and are as follows:

1. Any hazardous spill associated with construction that is five gallons or less is to be contained, cleaned and disposed of properly by the contractor in accordance to OSHA, municipal and state regulations. The Contractor shall verify the classification of materials in use with the appropriate manufacturer.

   Any hazardous spill associated with construction that is a Reportable Quantity (RQ) shall be reported to the TCEQ Environmental Response Hotline (1-800-832-8224) and National Response Center (1-800-424-8802) for containment, clean up, and disposal.

   RQ is determined as follows:

   (a) Hazardous substances. The reportable quantities for hazardous substances shall be:

   (1) for spills or discharges onto land--the quantity designated as the Final Reportable Quantity (RQ) in Table 302.4 in 40 CFR §302.4; or
   (2) for spills or discharges into waters in the state--the quantity designated as the Final RQ in Table 302.4 in 40 CFR §302.4, except where the Final RQ is greater than 100 pounds in which case the RQ shall be 100 pounds.

   (b) Oil, petroleum product, and used oil.

   (1) The RQ for crude oil and oil other than that defined as petroleum product or used oil shall be:
   (A) for spills or discharges onto land--210 gallons (five barrels); or
   (B) for spills or discharges directly into water in the state--quantity sufficient to create a sheen.
   (2) The RQ for petroleum product and used oil shall be:
   (A) except as noted in subparagraph (B) of this paragraph, for spills or discharges onto land--25 gallons;
   (B) for spills or discharges to land from PST exempted facilities--210 gallons (five barrels); or
   (C) for spills or discharges directly into water in the state--quantity sufficient to create a sheen.

   (c) Industrial solid waste or other substances. The RQ for spills or discharges into water in the state shall be 100 pounds.

2. Follow actions set by TAC 30.1.327.5:

(a) The responsible person shall immediately abate and contain the spill or discharge and cooperate fully with the executive director and the local incident command system. The responsible person shall also begin reasonable response actions which may include, but are not limited to, the following actions:

(1) arrival of the responsible person or response personnel hired by the responsible person at the site of the discharge or spill;

(2) initiating efforts to stop the discharge or spill;

(3) minimizing the impact to the public health and the environment;

(4) neutralizing the effects of the incident;

(5) removing the discharged or spilled substances; and

(6) managing the wastes.

(b) Upon request of the local government responders or the executive director, the responsible person shall provide a verbal or written description, or both, of the planned response actions and all actions taken before the local governmental responders or the executive director arrive. When the agency on-scene coordinator requests this information, it is subject to possible additional response action requirements by the executive director. The information will serve as a basis for the executive director to determine the need for:

(1) further response actions by the responsible person;

(2) initiating state funded actions for which the responsible person may be held liable to the maximum extent allowed by law; and

(3) subsequent reports on the response actions.

(c) Except for discharges or spills occurring during the normal course of transportation about which carriers are required to file a written report with the U.S. Department of Transportation under 49 CFR §171.16, the responsible person shall submit written information, such as a letter, describing the details of the discharge or spill and supporting the adequacy of the response action, to the appropriate TCEQ regional manager within 30 working days of the discovery of the reportable discharge or spill. The regional manager has the discretion to extend the deadline. The documentation shall contain one of the following items:

(1) A statement that the discharge or spill response action has been completed and a description of how the response action was conducted. The statement shall

include the initial report information required by §327.3(c) of this title (relating to Notification Requirements). The executive director may request additional information. Appropriate response actions at any time following the discharge or spill include use of the Texas Risk Reduction Program rules in Chapter 350 of this title (relating to Texas Risk Reduction Program).

(2) A request for an extension of time to complete the response action, along with the reasons for the request. The request shall also include a projected work schedule outlining the time required to complete the response action. The executive director may grant an extension up to six months from the date the spill or discharge was reported. Unless otherwise notified by the appropriate regional manager or the Emergency Response Team, the responsible person shall proceed according to the terms of the projected work schedule.

(3) A statement that the discharge or spill response action has not been completed nor is it expected to be completed within the maximum allowable six month extension. The statement shall explain why completion of the response action is not feasible and include a projected work schedule outlining the remaining tasks to complete the response action. This information will also serve as notification that the response actions to the discharge or spill will be conducted under the Texas Risk Reduction Program rules in Chapter 350 of this title (relating to Texas Risk Reduction Program).

Potential Sources of Contamination

Temporary Stormwater Section - Attachment B

Potential Sources of Contamination during construction are to be a concern of the contractor and are as follows:

1. After placement of asphalt, emulsion, or coatings the Contractor shall be responsible for immediate clean up should an unexpected rain occur during the curing period.

2. Any sediment build-up along the silt fences will need to be removed when it reaches a depth of six inches.

3. Dust from the construction site will be controlled by use of water.

4. Soil from construction vehicles will be removed from vehicles by having all vehicles drive over the stabilized construction entrance.

5. Oil leakage from vehicles and equipment.

6. Concrete washout water.

Sequence of Construction

Temporary Stormwater Section - Attachment C

The following is a list of construction sequencing:

1. Install temporary erosion/sedimentation control measures as shown in the plans prior to clearing, grading, excavating, etc.
2. The contractor shall contact the City of Austin and TCEQ at least 72 hours prior to any construction to arrange a pre-construction meeting.
3. Pre-construction meeting at site.
4. Demo site as indicated on the Demo Plan
   (Disturbed Area ~ 0.00 acres, use inlet protection)
5. Excavate water quality pond for use as temporary sediment basin as shown on the Water Quality Pond Plan, Profile and Details sheet.
   (Disturbed Area ~ 0.04 acres)
6. Grade the site as indicated on the Grading Plan sheets.
   (Disturbed Area ~ 0.75 acres, use silt fence, inlet protection, staging and spoils areas, and concrete truck washout)
7. Construct building pads.
   (Disturbed Area ~ 2.09 acres, use silt fence, inlet protection, staging and spoils areas, and concrete truck washout)
8. Install base material for drives and parking.
   (Disturbed Area ~ 4.32 acres, use silt fence, staging and spoils areas, and concrete truck washout)
9. Complete construction of water quality pond concrete walls as shown on the Rain Garden Pond Plan, Profile and Details sheet 38.
   (Disturbed Area ~ 0.04 acres)
10. Install all underground utilities as indicated in the Construction Plans.
    (Disturbed Area ~ 0.75 acres, use silt fence, inlet protection, staging and spoils areas, and concrete truck washout)
11. Construct buildings per Architectural Drawings.
    (Disturbed Area ~ 0.03 acres, use silt fence, inlet protection, staging and spoils areas, and concrete truck washout)
12. Construct the proposed paving and all other ancillary construction.
    (Disturbed Area ~ 0.75 acres, use silt fence, inlet protection, staging and spoils areas, and concrete truck washout)
13. Complete testing requirements for the Texas Commission on Environmental Quality and other agencies.
14. Clean site and revegetate all disturbed areas in accordance with restoration requirements of TCEQ.
15. Remove all temporary erosion and sedimentation controls upon completion of permanent revegetation of all disturbed areas.
16. At all times, contractor shall inspect temporary erosion controls on a regular basis and remove any sediment build-up and comply with the National Pollutant Discharge Elimination System Stormwater Program.

Temporary Best Management Practices and Measures

Temporary Stormwater Section - Attachment D

The BMPs to be utilized by this site include:

-Silt Fence
-Inlet Protection
-Temporary concrete washout area

Temporary erosion and sedimentation controls include Silt Fence and Inlet Protection. All temporary erosion controls shall be installed where shown on the Water Pollution Abatement Plan.

Silt Fence is to be installed immediately downstream of all disturbed areas to filter out any sediment from storm water flows due to construction.

Inlet Protection is to be installed after inlets are constructed to filter out any sediment from entering the storm sewer system during construction.

A concrete washout area is to be installed to prevent concrete wash from entering the storm sewer system during construction.

No upgradient surface water enters this site. A visual inspection of this site revealed no critical environmental features.

Request to Temporarily Seal a Feature

Temporary Stormwater Section - Attachment E

Not applicable to this project. No features exist on the site.

Structural Practices

Temporary Stormwater Section - Attachment F

Temporary special structural practices that will be utilized during construction activity on this site include:

Silt Fence is to be installed immediately downstream of all disturbed areas to filter out any sediment from storm water flows due to construction.

Inlet Protection is to be installed to filter out any sediment from entering the storm sewer system during construction.

Drainage Area Map

Temporary Stormwater Section - Attachment G

Refer to attached plan sheets 27-29. A temporary sediment basin will be constructed at the location of the proposed pond.

Temporary Sedimentation Pond Plans and Calculations

Temporary Stormwater Section - Attachment H

See sheets 30-31 for rain garden pond design. This will be rough graded to serve as a temporary sediment pond. The skimmer detail is provided on sheet 10.

Inspection and Maintenance for Temporary BMPs
Temporary Stormwater Section - Attachment I

Inspections of Controls

At least once every seven (7) days the SWP3 provides for a thorough inspection of disturbed areas of the construction site that have not been finally stabilized. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. The Contractor is required to inspect the temporary erosion controls, including silt fence and stabilized construction entrance at weekly intervals and after significant rainfall events to insure that they are functioning properly.

This site inspection will be performed by qualified personnel familiar with the site and with the authority to ensure necessary maintenance of controls. Documentation of the inspections and actions taken are provided on forms shown in the back of the SWP3.

Based on the results of the inspection, the SWP3 shall be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the SWP3 shall be completed within 7 calendar days following the inspection.

A report summarizing the scope of the inspection, name and qualification of personnel making the inspection, the date of the inspection and major observations relating to the implementation of the SWP3 shall be made and retained as part of the SWP3 for at least three years from the date the site is finally stabilized. Reports shall identify incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the SWP3. An authorized representative shall sign the report. Qualified personnel performing inspections are familiar with the BMPs, have knowledge to determine when a failed control is inadequate and needs to be replaced, have access to the construction schedule, have knowledge of stabilization, and have authority to make changes to the SWP3.

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

Personnel provided by the permittee and familiar with the SWP3 must inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, and structural controls for evidence of, or the potential for, pollutants entering the drainage system. Sediment and erosion control measures identified in the SWP3 must be inspected to ensure that they are operating correctly. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking. Inspections must be conducted at least once every fourteen (14) calendar days and within twenty four (24) hours of the end of a storm event of 0.5 inches or greater.

Where sites have been finally or temporarily stabilized, where runoff is unlikely due to winter conditions (e.g. site is covered with snow, ice, or frozen ground exists), or during

seasonal arid periods in arid areas (areas with an average annual rainfall of 0 to 10 inches) and semi-arid areas (areas with an average annual rainfall, of 10 to 20 inches), inspections must be conducted at least once every month.

As an alternative to the above-described inspection schedule of once every fourteen (14) calendar days and within twenty four (24) hours of a storm event of 0.5 inches, or greater, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur on a specifically defined day, regardless of whether or not there has been a rainfall event since the previous inspection.

As an alternative to the above-described inspection schedule of once every fourteen (14) calendar days and within twenty four (24) hours of a storm event of 0.5 inches or greater, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, the inspection must occur on a specifically defined day, regardless of whether or not there has been a rainfall event since the previous inspection.

The SWP3 must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the SWP3 must be completed within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the SWP3 and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable.

A report summarizing the scope of the inspection, names and qualifications of personnel making the inspection, the dates of the inspection, and major observations relating to the implementation of the SWP3 must be made and retained as part of the SWP3. Major observations should include: The locations of discharges of sediment or other pollutants from the site; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.

Actions taken as a result of inspections must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports)

Maintenance

All erosion and sediment control measures and other protective measures identified in the SWP3 must be maintained in effective operating condition. If through inspections the permittee determines that BMPs are not operating effectively, maintenance must be performed before the next anticipated storm event or as necessary to maintain the continued effectiveness of storm water controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.

Silt accumulation at the silt fence must be removed when the depth reaches six inches.

Retention of Records

The permittee shall retain a copy of the SWP3 at the construction site (or other accessible location) from the date of project initiation to the date of final stabilization. The permittee shall retain copies of the NOI, SWP3, all reports, and records of all data covered by the permit for three years from the date the site is finally stabilized. All NOIs, SWP3, reports, certifications, NOTs, and information that this permit requires be maintained by the permittee shall be signed by a duly authorized representative.

Schedule of Interim and Permanent Soil Stabilization Practices

Temporary Stormwater Section - Attachment J

During Construction:

A minimum of 4" topsoil shall be placed in between the curb and right-of-way line of all areas that have been disturbed because of construction. Additionally, disturbed areas with slopes greater than 15% shall be stabilized with vegetative matting once the activity is complete. Bare soils should be seeded or otherwise stabilized where construction activity has temporarily ceased for more than 21 days.

After Construction:

All disturbed areas are to be revegetated within 14 days of completion of construction activities, or as directed by the Round Rock Inspection Department. Areas that were not disturbed from construction will be left in their natural state.

Revegetation Methods:

Broadcast Seeding for Permanent Soil Stabilization:

1. From September 15 to March 1, seeding shall be with a combination of 2 pounds per 1000 SF of unhulled Bermuda and 7 pounds per 1000 SF winter rye with a purity of 95% with 90% germination.

2. From March 1 to September 14, seeding shall be with unhulled Bermuda at a rate of 2 pounds per 1000 SF with a purity of 95% and 85% germination.

Fertilizer:

3. Fertilizer shall be pelleted granular slow release with an analysis of 15-15-15. It is to be applied once at planting and once during the period of establishment at a rate of 1 pound per 1000 SF.

4. Mulch type used shall be hay, straw or mulch applied at a rate of 45 pounds per 1000 SF.

PERMANENT STORMWATER SECTION

Permanent Stormwater Section

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Jason Rodgers

Date: March 14, 2023

Signature of Customer/Agent

Regulated Entity Name: Lake Creek at Avery Ranch

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: City of Austin Environmental Criteria Manual Section 1.6.0 and amendments

☐ N/A

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

   ☐ N/A

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

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

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

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

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

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

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

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

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

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

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

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

☐ N/A

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

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

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

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

☒ Design calculations (TSS removal calculations)

☒ TCEQ construction notes

☐ All geologic features

☒ All proposed structural BMP(s) plans and specifications

☐ N/A

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

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

    ☐ N/A

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

    ☒ N/A

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

    ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

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

    ☐ N/A

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

    ☐ N/A

20% or Less Impervious Cover Waiver

Permanent Stormwater Section - Attachment A

This attachment is not applicable.

BMP's for Upgradient Stormwater

Permanent Stormwater Section - Attachment B

No upgradient stormwater crosses this site. All stormwater is generated on the site and is directed to a proposed permanent BMP (water quality pond).

BMP's for On-site Stormwater

Permanent Stormwater Section - Attachment C

Temporary BMPs: Silt fence will be placed downgradient of the disturbed construction area to prevent stormwater from carrying silt off-site in each phase. Temporary construction entrances and a spoils site with silt fence will also be located on-site to help control the runoff of silt and other pollutants for each phase. All areas disturbed during construction will be restored using Hydromulch seeding or sod for each phase. Inlet protection will be utilized to prevent sediment from entering any storm sewers in each phase. See Construction Plans.

Permanent BMPs: Two rain garden ponds will be used as a permanent BMP for a portion of this site. It will capture the required water quality volume per the TCEQ Technical Guidance Manual and will be designed per the City of Austin Environmental Criteria Manual Section 1.6.0 with amendments. The Rain Gardens is designed using City of Austin's ECM Appendix R11 spreadsheet.

Existing BMPs will be used for the remainder of the site. One drainage area will drain to a BMP on the adjacent development to the east and another area will drain into North Lake Creek Parkway and to an existing wet pond. Both ponds have been permitted through TCEQ.

Runoff typically associated with a development of this type includes oil and gasoline from vehicular traffic and petroleum distillates from the asphalt pavement. Another pollutant generated by the parking and roof areas will be the dirt and silt produced by dust and falling from vehicles. Some pollutants will also be generated by fertilizers and pesticides from the landscaped areas.

Drainage Area Pro 1.1 (Rain Garden 1)

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: North Lake Creek at Avery Ranch
Date Prepared: 4/19/2023

1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:

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

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

County =	Williamson	
Total project area included in plan * =	16.33	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	6.82	acres
Total post-development impervious cover fraction * =	0.42	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	5936	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	1	

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

Drainage Basin/Outfall Area No. =	Pro 1.1	
Total drainage basin/outfall area =	0.79	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.55	acres
Post-development impervious fraction within drainage basin/outfall area =	0.69	
$L_{M\ THIS\ BASIN}$ =	474	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Sand Filter	
Removal efficiency =	89	percent

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

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

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 proposed BMP

A_C =	0.79	acres
A_I =	0.55	acres
A_P =	0.25	acres
L_R =	541	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	474	lbs.
F =	0.88	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348

Rainfall Depth =	1.50	inches
Post Development Runoff Coefficient =	0.50	
On-site Water Quality Volume =	2132	cubic feet
Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	426	
Total Capture Volume (required water quality volume(s) x 1.20) =	2559	cubic feet
Total Capture Volume Provided =	2768	cubic feet

9. Filter area for Sand Filters Designed as Required in RG-348

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	2559	cubic feet	
Minimum filter basin area =	213	square feet	
Maximum sedimentation basin area =	853	square feet	For min water depth = 2 feet
Minimum sedimentation basin area =	53	square feet	For max water depth = 8 feet
Filter Basin Area Provided =	2035	square feet	
Sedimentation Basin Area Provided =	0	square feet	

Drainage Area Pro 1.2

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: North Lake Creek at Avery Ranch
Date Prepared: 4/19/2023

1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:

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

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

County =	Williamson	
Total project area included in plan * =	16.33	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	6.82	acres
Total post-development impervious cover fraction * =	0.42	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	5936	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	1	

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

Drainage Basin/Outfall Area No. =	Pro 1.2	
Total drainage basin/outfall area =	4.81	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	3.36	acres
Post-development impervious fraction within drainage basin/outfall area =	0.70	
$L_{M\ THIS\ BASIN}$ =	2925	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Bioretention	
Removal efficiency =	89	percent

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

RG-348 Page 3-33 Equation 3.7: 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 proposed BMP

A_C =	4.81	acres
A_I =	3.36	acres
A_P =	1.45	acres
L_R =	3333	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	2925	lbs.
F =	0.88	

This project proposes to drain drainage area Pro 1.2 into the pond constructed with Avery Oaks Phase 2 (SP-2021-0103C) and the approved EAPP ID No. 11002789 (WPAP). This pond was designed to receive a drainage area of 6.06 acres with 3.64 acres of future impervious cover from this lot. That produced a design flow of 83.66 cfs. Pro 1.2 has a drainage area of 4.81 acres with 3.36 acres of impervious cover which produces a flow rate of 60.92 cfs. This is less than the design flow. See the tables below for reference. Avery Oaks Phase 2 was designed for Atlas 14 flows.

Drainage Area Pro 1.3

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: North Lake Creek at Avery Ranch
Date Prepared: 4/19/2023

1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:

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

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

County =	Williamson	
Total project area included in plan * =	16.33	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	6.82	acres
Total post-development impervious cover fraction * =	0.42	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	5936	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	1	

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

Drainage Basin/Outfall Area No. =	Pro 1.3	
Total drainage basin/outfall area =	5.98	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious fraction within drainage basin/outfall area =	0.00	
$L_{M\ THIS\ BASIN}$ =	0	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Sand Filter	
Removal efficiency =	89	percent

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

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

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 proposed BMP

A_C =	5.98	acres
A_I =	0.00	acres
A_P =	5.98	acres
L_R =	92	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	0	lbs.
F =	0.00	

Drainage Area Pro 1.4

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: North Lake Creek at Avery Ranch
Date Prepared: 7/12/2023

1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:

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

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

County =	Williamson	
Total project area included in plan * =	16.33	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	6.82	acres
Total post-development impervious cover fraction * =	0.42	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	5936	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	1	

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

Drainage Basin/Outfall Area No. =	Pro 1.4	
Total drainage basin/outfall area =	1.00	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.84	acres
Post-development impervious fraction within drainage basin/outfall area =	0.84	
$L_{M\ THIS\ BASIN}$ =	731	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Sand Filter	
Removal efficiency =	89	percent

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

RG-348 Page 3-33 Equation 3.7: 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 proposed BMP

A_C =	1.00	acres
A_I =	0.84	acres
A_P =	0.16	acres
L_R =	830	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	731	lbs.
F =	0.88	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348

Rainfall Depth =	1.50	inches
Post Development Runoff Coefficient =	0.68	
On-site Water Quality Volume =	3717	cubic feet
Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	743	
Total Capture Volume (required water quality volume(s) x 1.20) =	4460	cubic feet
Total Capture Volume Provided =	4488	cubic feet

9. Filter area for Sand Filters Designed as Required in RG-348

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	4460	cubic feet	
Minimum filter basin area =	372	square feet	
Maximum sedimentation basin area =	1487	square feet	For min water depth = 2 feet
Minimum sedimentation basin area =	93	square feet	For max water depth = 8 feet
Filter Basin Area Provided =	2035	square feet	
Sedimentation Basin Area Provided =	0	square feet	

Drainage Area Pro 2

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: North Lake Creek at Avery Ranch
Date Prepared: 4/19/2023

1. The Required Load Reduction for the total project: Calculations from RG-348

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

where:

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

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

County =	Williamson	
Total project area included in plan * =	16.33	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	6.82	acres
Total post-development impervious cover fraction * =	0.42	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	5936	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	1	

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

Drainage Basin/Outfall Area No. =	Pro 2	
Total drainage basin/outfall area =	3.58	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.05	acres
Post-development impervious fraction within drainage basin/outfall area =	0.57	
$L_{M\ THIS\ BASIN}$ =	1784	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Wet Basin	
Removal efficiency =	93	percent

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

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

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 proposed BMP

A_C =	3.58	acres
A_I =	2.05	acres
A_P =	1.53	acres
L_R =	2135	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	1784	lbs.
F =	0.84	

This project proposes to drain drainage area Pro 2 into the storm system constructed with the North Lake Creek Parkway for Avery Lakeline (C8-2019-0041.1B(R1)) sheet 67 and the approved EAPP ID No. 11001886 (WPAP). This system was designed to receive a total of 2.76 acres of future impervious cover from this site. This project proposes to drain 2.05 acres of impervious cover to North Lake Creek Parkway. The existing wet pond designed with the Avery Lakeline Construction Plans has capacity for these improvements associated with drainage area Pro 2. The Avery Lakeline project was designed for Atlas 14 flows.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 16, 2020

Mr. Alex Clarke
Lakeline Avery Partners, LP
1000 North Lamar Blvd
Austin, Texas 78703

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Avery Lakeline; Located Southeast of Avery Ranch Blvd. and US 183A Toll Rd., Austin, Texas

TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan (WPAP) and Organized Sewage Collection System (SCS); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Edwards Aquifer Protection Program ID Nos. 11001886 (WPAP) and 11001887 (SCS); Regulated Entity No. RN110935368

Dear Mr. Clarke:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP and SCS Applications for the above-referenced project submitted to the Austin Regional Office by Jones | Carter on behalf of Lakeline Avery Partners, LP on January 13, 2020. Final review was completed after additional material was received on March 23, 2020 and April 13, 2020. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213 and Chapter 217. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed non-residential development has a total area of approximately 97.21 acres, out of which only 76.26 will be ultimately developed. It will include the construction of streets, utilities, an off-site force main, lift station, access turn lane to US 183A, and two water quality basins. Only infrastructure is being built with this proposal. The impervious cover will be 5.11 acres (6.7 percent).

The proposed SCS consists of approximately 2,000 linear feet of 8-inch SDR 26 PVC ASTM D3034, 72 linear feet of 8-inch SDR 26 PVC ASTM D2241, 2,120 linear feet of 12-inch SDR 26 PVC ASTM D3034, and 18 linear feet of 12-inch SDR 26 PVC ASTM D2241 with associated manholes and stub-outs. The proposed force main consists of 4,740 linear feet of 8-inch Certa-Lok Yelomine SDR 26 PVC ASTM D1784.

The proposed lift station will consist of a 10-foot diameter pre-cast concrete wet well with an approximate depth of 14 feet, with two submersible wastewater pumps, and will be provided with an emergency power generator. Each pump will have a pumping capacity of 550 gallons per minute (gpm) at a total dynamic head (TDH) of 74.5 feet. Additional equipment will include a control panel, hoisting equipment, level pump controllers, and pump supports, ventilation system, discharge piping with valves located in the valve vault, and a security fence with controlled access.

The system will be connected to a proposed City of Austin wastewater line for conveyance to the existing East Brushy Creek Regional Wastewater Treatment Plant for treatment and disposal. The project is located within the City of Austin and will conform to all applicable codes, ordinances, and requirements of the City of Austin.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a wet basin and a sand filtration system with improved media (biofiltration), designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 4,448 pounds of TSS generated from the 5.11 acres of impervious cover. The proposed water quality basins are sized for future development and are designed to remove 45,000 pounds of TSS to treat stormwater runoff from a maximum of 51.70 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, three sensitive geologic features were observed. The site is underlain by the Edwards Group Limestone (Ked) in the Edwards Aquifer Recharge Zone. The sensitive feature AV12/X7 is a sinkhole. A 3.95 acres natural buffer/setback was proposed for this sensitive feature. The sensitive features X9 and X10 are sinkholes, as well. A 7.03 acres common natural buffer/setback was proposed for these sensitive features. No regulated activities (such as construction or soil disturbing activities) will take place within the natural buffer. The size is generally based on the drainage area for the sensitive feature and is illustrated on the construction plans. The TCEQ site assessment conducted on March 31, 2020 revealed the site to be generally as described by the GA.

SPECIAL CONDITIONS

1. Upon completion of any lift station excavation, a geologist shall certify that the excavation has been inspected for the presence of sensitive features. Certification that the excavation has been inspected must be submitted to the Austin Regional Office.

STANDARD CONDITIONS

2. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.
3. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations

and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.

4. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

5. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.
6. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.
7. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
8. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
9. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
10. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

11. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.

12. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.
13. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
14. No wells exist on site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
15. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
16. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
17. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
18. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.
19. No part of the system shall be used as a holding tank for a pump-and-haul operation.

<u>After Completion of Construction:</u>

20. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
21. Certification by a Texas Licensed Professional Engineer of the testing of sewage collection systems required by 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office within 30 days of test completion and prior to the new sewage collection system being put into service. The certification should include the project name as it appeared on the approved application, the program ID number, and two copies of a site

plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. 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. Should any test result fail to meet passing test criteria and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

Every five years after the initial certification, the sewage collection system shall be retested. Any lines that fail the test must be repaired and retested. Certification that the system continues to meet the requirements of 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office. The certification should include the project name as it appeared on the approved application, the program ID number and two copies of a site plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. Should any test result fail to meet passing test criteria, and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

22. If ownership of this organized sewage collection system is legally transferred (e.g., developer to city or Municipal Utility District), the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
23. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
24. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Mihaela (Miki) Chilarescu of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

Robert Sadlier, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

RCS/mec

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625

Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 1, 2021

Mr. Christopher Born
Ascension Seton
4900 Mueller Blvd.
Austin, Texas 78723

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Dell Children's Medical Center North Hospital & Medical Office Building; Located Southeast of Avery Ranch Blvd. and US 183A Toll Rd., Austin, Texas

TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan (WPAP) and an Organized Sewage Collection System (SCS); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Edwards Aquifer Protection Program ID Nos. 11002278 (WPAP) and 11002279 (SCS); Regulated Entity No. RN111134003

Dear Mr. Born:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP and SCS applications for the above-referenced project submitted to the Austin Regional Office by Garza EMC, LLC on behalf of Ascension Seton on November 13, 2020. Final review was completed after additional material was received on January 20 and February 1, 2021. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213 and Chapter 217. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

The Avery Lakeline WPAP and SCS approved by letter dated April 16, 2020 (EAPP ID Nos. 11001886 (WPAP) and 11001887 (SCS)) included the construction of streets, utilities, an off-site

force main, lift station, access turn lane to US 183A, and two water quality basins to serve a non-residential development on 97.21 acres.

The Avery Lakeline WPAP and SCS Modification (MOD) approved by letter dated February 25, 2021 (EAPP ID Nos. 11002328 (WPAP-MOD) and 11002329 (SCS-MOD)) included the construction of infrastructure, lift station, and two water quality basins to serve a non-residential development on 97.21 acres, and an increase in the impervious cover from 5.01 acres to 46.8 acres. The approved water quality basins are sized for future development and are designed to remove 44,645 pounds of total suspended solids (TSS).

PROJECT DESCRIPTION

The proposed non-residential project will have an area of approximately 26.74 acres. It will include the construction of a hospital, a medical office building, a hospital helipad, parking lots, utilities, and associated appurtenances. The impervious cover will be 12.17 acres (45.51 percent). A water quality basin and the lift station will be located on the site, but will be constructed, owned, and operated by Avery Lakeline.

The proposed SCS will consist of approximately 913 linear feet of 10-inch diameter SDR 26 PVC ASTM D3034, 72 linear feet of 12-inch diameter SDR 26 PVC AWWA C900, 20 linear feet of 16-inch diameter SDR 26 PVC AWWA C900, and 80 linear feet of 20-inch diameter steel encasement ASTM A134, with associated manholes and stub-outs. The system will be connected via a proposed lift station and force main, to a proposed City of Austin wastewater line for conveyance to the existing East Brushy Creek Regional Wastewater Treatment Plant for treatment and disposal. The project is located within the City of Austin and will conform to all applicable codes, ordinances, and requirements of the City of Austin.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a wet basin and a sand filtration system with improved media (biofiltration), designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be utilized to treat stormwater runoff. The required TSS treatment for this project is 10,591 pounds of TSS generated from the 12.17 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the Geologic Assessment (GA) included with the application, no sensitive geologic features were observed at the site. The site is underlain by the Edwards Limestone (Ked) in the Edwards Aquifer Recharge Zone. The TCEQ site assessment conducted on January 7, 2021 revealed the site to be generally as described by the GA.

SPECIAL CONDITIONS

I. All permanent pollution abatement measures shall be operational prior to occupancy of the facility.

II. All wastewater conveyance and treatment infrastructure shall be operational prior to any occupancy of the facilities and prior to any wastewater flow being introduced into the sewage collection system.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

2. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.

3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.

5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.

6. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.

8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

<u>During Construction:</u>

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.

11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.

12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

13. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.

14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.

16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

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

day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

18. No part of the system shall be used as a holding tank for a pump-and-haul operation.

After Completion of Construction:

19. 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 Austin Regional Office within 30 days of site completion.

20. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (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. A copy of the transfer of responsibility must be filed with the executive director through Austin Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

21. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

22. Certification by a Texas Licensed Professional Engineer of the testing of sewage collection systems required by 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office within 30 days of test completion and prior to the new sewage collection system being put into service. The certification should include the project name as it appeared on the approved application, the program ID number, and two copies of a site plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. 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. Should any test result fail to meet passing test criteria and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

    Every five years after the initial certification, the sewage collection system shall be retested. Any lines that fail the test must be repaired and retested. Certification that the system continues to meet the requirements of 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office. The certification should include the project name as it appeared on the approved application, the program ID number and two copies of a site plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. Should any test result fail to meet passing test criteria, and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

23. If ownership of this organized sewage collection system is legally transferred (e.g., developer to city or Municipal Utility District), the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

24. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

25. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Ms. Mihaela (Miki) Chilarescu of the Edwards Aquifer Protection Program of the Austin Regional Office at (512) 339-2929.

Sincerely,

Robert Sadlier, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

RCS/mec

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 14, 2022

Mr. Alex Clarke
Avery Land Investors, LP
1000 N. Lamar Blvd, Suite 400
Austin, TX 78703

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Avery Oaks Apartments Phase 2; Located southeast of Avery Ranch Blvd and N Lake Creek Pkwy; Austin, Texas

TYPE OF PLAN: Request for Modification of an Approved Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Regulated Entity No. RN111269668; Program ID No. 11002789

Dear Mr. Clarke:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP for the above-referenced project submitted to the Austin Regional Office by Bleyl Engineering on behalf of Avery Land Investors, LP on November 17, 2021. Final review of the WPAP was completed after additional material was received on January 12, 2022. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected, and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

The original WPAP TCEQ approval was issued September 24, 2021 for a 12.98-acre commercial property that included construction of nine apartment buildings with 288 separate units, a clubhouse, enclosed garages and carports, parking, drives and utility services. The impervious cover was approved for 6.51-acres (50.2 percent).

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 12.98 acres. It will include nine apartment buildings with 288 separate units, a clubhouse, enclosed garages and carports, parking, drives and utility services. The impervious cover will be 6.51-acres (50.2

percent). Project wastewater will be disposed of by conveyance to the existing Brushy Creek Regional Water Recycling Center owned jointly by the Cities of Austin, Round Rock and Cedar Park.

This project provides a modification of the stacked detention biofiltration pond footprint with no changes to the site layout approved by TCEQ letter dated September 24, 2021.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, one stacked detention biofiltration pond, designed using the City of Austin Environmental Criteria Manual, Section 1.6, will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 5,670 pounds of TSS generated from the 6.51-acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the geologic assessment included with the application, the site is underlain by the Edwards Limestone Group. The site assessment conducted on December 22, 2021 revealed the site was generally as described by the Project Geologist. No sensitive geologic features were identified onsite.

SPECIAL CONDITIONS

I. This modification is subject to all Special and Standard Conditions listed in the WPAP approval letter dated September 24, 2021.

II. All permanent pollution abatement measures shall be operational prior to first occupancy of the buildings.

III. All sediment and/or media removed from the water quality basins during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.
2. The holder of the approved Edwards Aquifer protection plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, Water Rights, UIC) can be required depending on the specifics of the plan.
3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the Austin Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be

included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.

5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.
6. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the Austin Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.
8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved applications, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established, and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.
9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

<u>During Construction:</u>

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity, upon which that person or entity shall assume responsibility for all provisions and conditions of this approval.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.
12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the Austin Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

13. No wells exist on site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

<u>After Completion of Construction:</u>

18. 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 Austin Regional Office within 30 days of site completion.
19. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (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. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through Austin Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.
20. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
21. An Edwards Aquifer protection plan approval or extension will expire, and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
22. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact the Edwards Aquifer Protection Program Austin Regional Office at 512-339-2929.

Sincerely,

Lillian Butler

Lillian Butler, Section Manager
Edwards Aquifer Protection Program
Texas Commission on Environmental Quality

LIB/dv

Enclosures: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Jason Rodgers, PE, Bleyl Engineering

BMP's for Surface Streams

Permanent Stormwater Section - Attachment D

Temporary BMPs: Silt fence will be placed downgradient of the disturbed construction area to prevent stormwater from carrying silt off-site in each phase. Temporary construction entrances and a spoils site with silt fence will also be located on-site to help control the runoff of silt and other pollutants for each phase. All areas disturbed during construction will be restored using Hydromulch seeding or sod for each phase. Inlet protection will be utilized to prevent sediment from entering any storm sewers in each phase. See Construction Plans.

Permanent BMPs: This site drains to multiple BMPs that have been permitted through TCEQ. The site will not increase the TSS loading to any receiving waters. No water will drain to sensitive features.

Request to Seal Features

Permanent Stormwater Section - Attachment E

There are no sensitive features on the site.

Construction Plans

Permanent Stormwater Section - Attachment F

Construction plans have been provided separately.

Inspection, Maintenance, Repair and Retrofit Plan for the Water Quality Ponds

Permanent Stormwater Section - Attachment G

PROJECT NAME: Avery Oaks Apartments Phase 4

ADDRESS: 9200-9225 North Lake Creek Parkway

CITY, STATE, ZIP: Austin, Texas 78717

Routine Maintenance:

Access:	Access is provided over the earthen berm.
Inspections	BMP facilities must be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. During each inspection, erosion areas inside and downstream of the BMP must be identified and repaired or revegetated immediately. With each inspection, any damage to the structural elements of the system (pipes, concrete drainage structures, retaining walls, etc.) must be identified and repaired immediately. Cracks, voids and undermining should be patched/filled to prevent additional structural damage. Trees and root systems should be removed to prevent growth in cracks and joints that can cause structural damage.
• Sediment Removal	Remove sediment from the inlet structure and sedimentation chamber when sediment buildup reaches a depth of 6 inches or when the proper functioning of inlet and outlet structures is impaired. Sediment should be cleared from the inlet structure at least every year and from the sedimentation basin at least every 5 years.
• Media Replacement	Maintenance of the filter media is necessary when the draw-downtime exceeds 48 hours. When this occurs, the upper layer of sand should be removed and replaced with new material meeting the original specifications. Any discolored sand should also be removed and replaced. In filters that have been regularly maintained, this should be limited to the top 2 to 3 inches. The waste material is classified as special waste and must be disposed of properly through TCEQ using Form 0152.
• Debris and Litter	Debris and litter will accumulate near the sedimentation basin outlet 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.
• Filter Underdrain	Clean underdrain piping network to remove any sediment buildup as needed to maintain design drawdown time.
• Mowing	Grass areas in and around sand filters must be mowed at least twice annually to limit vegetation height to 18 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. Vegetation on the pond embankments should be mowed as appropriate to prevent the establishment of woody vegetation.

Record Keeping:	Detailed records must be kept by the owner of the property. These records shall include information such as the name of the inspector used, the date and time of the inspection, and any maintenance performed. The owner must retain any such inspection records for a period of three years after the inspection date.
Responsible Party:	Alex Clarke, ~~Lakeline Avery Partners, LP~~ Avery Land Investors, L.P.
Mailing Address:	1000 N. Lamar Blvd., Ste. 400
City, State, Zip:	Austin, TX 78703
Telephone:	512-247-70000

Signature of Responsible Party

Date 1/3/2023

Pilot-Scale Field Testing Plan

Permanent Stormwater Section - Attachment H

Not applicable to this project.

Measures for Minimizing Surface Stream Contamination

Permanent Stormwater Section - Attachment I

Temporary erosion controls including silt fence will be used to minimize storm runoff during construction. There are no direct connections to surface streams. All flows will be directed to a BMP where they will be discharged into a storm sewer system.

AGENT AUTHORIZATION SECTION

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

I Alex Clarke, PE,
Print Name

Land Development Project Manager,
Title - Owner/President/Other

of Avery Land Investors, LP,
Corporation/Partnership/Entity Name

have authorized Jason Rodgers, PE
Print Name of Agent/Engineer

of Bleyl Engineering
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

Date 1/3/2023

THE STATE OF Texas §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Alex Clarke 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 3rd day of January, 2023.

NOTARY PUBLIC

Tiffany Marie Fincher
Notary Public, State of Texas
Comm. Expires 11/03/2024
Notary ID 1039220-1

Tiffany Marie Fincher
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 11/03/2024

APPLICATION FEE FORM SECTION

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Lake Creek at Avery Ranch
Regulated Entity Location: 3205 N. Lake Creek Pkwy
Name of Customer: Avery Land Investors, LP
Contact Person: Jason K. Rodgers, P.E. Phone: 512-454-2400
Customer Reference Number (if issued):CN _____
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☒ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

☒ Austin Regional Office
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☒ Recharge Zone ☐ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	16.33 Acres	$ 6,500.00
Sewage Collection System	2,830.67 L.F.	$ 1,415.34
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: 

Date: 8/10/2023

Application Fee Schedule

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

Project	*Cost per Linear Foot*	*Minimum Fee-Maximum Fee*
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	***Fee***
Extension of Time Request	$150

CORE DATA FORM SECTION

TCEQ Core Data Form

TCEQ Use Only

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

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 605895440		RN

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name (*If an individual, print last name first: eg: Doe, John*) *If new Customer, enter previous Customer below:*

Avery Land Investors, LP

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
803721079			

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☒ Limited
Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☐ Yes ☐ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:

1000 N. Lamar Blvd., Ste. 400

City	State	ZIP	ZIP + 4
Austin	TX	78703	

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	aclarke@journeymanco.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 247-7000		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (*If 'New Regulated Entity" is selected below this form should be accompanied by a permit application*)

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name (*Enter name of the site where the regulated action is taking place.*)

Lake Creek at Avery Ranch

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	9205 N. Lake Creek Parkway							
	City	Austin	**State**	TX	**ZIP**	78717	**ZIP + 4**	
24. County								

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Near the intersection of US 183A and Avery Ranch Road. South of Avery Ranch Road on North Lake Creek Parkway.

26. Nearest City	**State**	**Nearest ZIP Code**
Austin	TX	78717

27. Latitude (N) In Decimal:	30.484934	**28. Longitude (W) In Decimal:**	-97.796707

Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	29	11	-97	47	54

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)
7021		53111	

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Apartments - Multi-family

34. Mailing Address:	**Same as item 23**							
	City	**Round Rock**	**State**	**TX**	**ZIP**	**78731**	**ZIP + 4**	

35. E-Mail Address:	**aclarke@journeymanco.com**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** ***(if applicable)***
(512) 247-7000		**( ) -**

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

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

SECTION IV: Preparer Information

40. Name:	Jason Rodgers	**41. Title:**	Assistant Regional Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 454-2400		( ) -	jrodgers@bleylengineering.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:	Bleyl Engineering	**Job Title:**	Assistant Regional Manager
Name *(In Print):*	Jason Rodgers, PE	**Phone:**	(512) 454- **2400**
Signature:		**Date:**	03-17-23

ORIGINAL LAYOUT SIZE - 24X36

Revisions/Corrections

No.	Description	Revise (R) Add (A) Void (V) Sheet No's	Total # Sheets in Plan Set	Net Change Imp. Cover (sq. ft.)	Total Site Imp. Cover (sq. ft.)/ [%]	City of Austin Approval /Date	Date Imaged

Site Development Data Avery Oaks Apartments Phase 4

Owner: Avery Land Investors, LP
Contact Person: Alex Clarke
1000 N. Lamar Blvd., Suite 400
Austin, TX. 78703
Phone: (512) 247-7000
Email: aclarke@journeymanco.com

Engineer: Bleyl Engineering
Contact Person: Jason Rodgers
7701 San Felipe, Suite 200
Austin, Texas 78729
Phone: (512) 454-2400
Email: jrodgers@bleylengineering.com

Landscape Architect: Cross Architects, PLLC
Contact Person: Mark Leon
879 Junction Drive
Allen, TX. 75013
Phone: (979)398-6644
Email: Mleon@crossarchitects.com

Legal Description: Lot 3B-Avery Lakeline Phase 4a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 202301137
Subdivision File No. 16.332 Acres
Zoning Case No. C8-2019-0041.1A
Limits of Construction: C8-2019-0041.1A
16.14 Acres

This project is located within the Buttercup Creek Watershed & South Brushy Creek Watershed both are classified as a (Suburban Class). All storm flows from this site will be directed to the Buttercup Creek & South Brushy Creek Watersheds. No portion of this tract is within the boundaries of the 100 year flood plain of any waterway that is within the limits of study of the Federal Flood Insurance Administration FIRM panel #48491C0610F, dated December 20, 2019 for Travis County.

All temporary spoils and equipment storage areas shall have silt fence placed along the perimeter of the downslope side. Additional erosion/sedimentation controls may be required at the direction of the City's Environmental and Conservation Services Department Officer/Inspector. The contractor shall work closely with all City Personnel to insure adequacy of placement and maintenance of all erosion/sedimentation control devices. Only those construction entrances shown on the approved site plan shall be used for ingress and egress to and from site. In the event that additional entrance locations are required to facilitate placement of materials, the contractor shall construct a stabilized construction entrance in accordance with City of Austin Standard Details in order to comply with all provisions of the City's Land Development Code and Environmental Protection Ordinances.

All detention basins, water quality ponds and appurtenances which receive stormwater runoff from commercial or multi-family development shall be maintained by the record owner in accordance with the maintenance standards in the Drainage and Environmental Criteria Manual.

Contractor is responsible for filing all necessary forms with the Environmental Protection Agency for all projects involving 5 acres or more of disturbed area or part of a larger development which will eventually disturb 5 acres or more. Note The contractor and the owner both must file a Notice of Intent.

Edwards Aquifer Note This project is located within the Edwards Aquifer Recharge Zone.

This site plan is subject to Subchapter E of the Land Development Code (Commercial Design Standards). Compliance with Building Design Standards, Article 3 of Subchapter E, is required, and is to be reviewed for compliance during building code review.

All potable water system components installed after January 4, 2014, shall be essentially "lead free" according to the US Safe Drinking Water Act. Examples are valves (corporation stop, curb stop, and pressure reducing), nipples, bushings, pipe, fittings and backflow preventers. Fire hydrants, tapping saddles and 2 inch and larger gate valves are the only components exempt from this requirement. Components that are not clearly identified by the manufacturer as meeting this requirement either by markings on the component or on the packaging shall not be installed.

This project is subject to the Void and Water Flow Mitigation Rule (COA ECM 1.12.0 and COA Item No. 658S of the SSM) provision that all trenching greater than 5 feet deep must be inspected by a geologist (Texas P.G.) or a geologist's representative.

City of Austin - Water and Wastewater Utility - Special Services Division (512) 972-1060
This project has private hydrants located within the property. The property owner is required to comply with Austin Fire Code. Failure to comply may result in civil and/or criminal remedies available to the City. The performance of this obligation shall always rest with the owner or record. Fire hydrants on private property are required to serviced, maintained and flowed annually, using a contractor registered with the City to provide this service. This project includes 2 private hydrants.

Critical Environmental Feature Notes
1. The Critical Environmental Feature (CEF) buffers must be maintained per City of Austin code and criteria. Existing drainage and native vegetation shall remain undisturbed to allow the water quality function of the buffer. Inspection and maintenance of buffer shall occur semiannually in accordance to City of Austin code and criteria.
2. All activities within the Critical Environmental Feature (CEF) buffers must comply with the City of Austin Code and Criteria. The natural vegetative cover must be retained to the maximum extent practicable; construction is prohibited; and wastewater disposal or irrigation is prohibited.
3. All permanent fencing must be installed at the perimeter of the Critical Environmental Feature (CEF) buffer prior to the initiation of any construction or clearing activity. The fence material shall be in accordance with COA Item No. 701S of the SSM, unless other materials are approved by the City of Austin. A lockable access gate shall be installed for each Critical Environmental Feature (CEF) buffer.

PROTECTED STREETS
The engineer of record acknowledges and confirms the protected street status as determined by the Street and Bridge Division as of the date of the Engineer's signature. Protected street status is subject to change over time. It is the owner's / engineer of record's responsibility to confirm the street status prior to construction as protected street status will directly impact the construction costs. If protected streets are proposed to be disturbed, approval of the Street and Bridge Division is required.

Compliance with the Universal Recycling Ordinance is mandatory for multi-family complexes, businesses and office buildings.

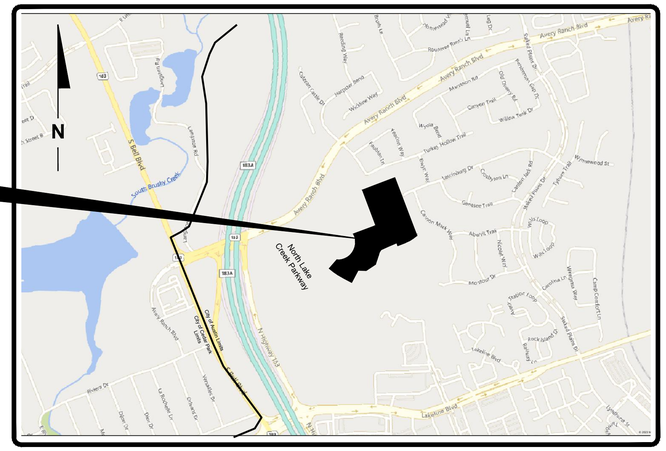
For Integrated Pest Management Plan, see agreement filed in document No. 2021183776 Official Public Records, Travis County, Texas.

Site Plan
Lake Creek at Avery Ranch

9205 N. Lake Creek Parkway
Austin, Texas 78729
Jurisdiction: Austin Full Purpose

SP-2023-0021C
Submittal Date: January 18, 2022

PROJECT LOCATION



Project Location Map
N.T.S.
Mapsco #403R
City of Austin Grid #F41

A Trail and Recreational Easement with Required Maintenance will be required to be recorded to address private maintenance responsibilities for the pedestrian trail located along the south and east property lines. The City of Austin will not be responsible for maintenance of the trail. The easement must be recorded prior to the issuance of the first certificate of occupancy.

Trail and Recreational Easement with Required Maintenance, Doc. No. _____, OPRTC

If at any time during construction of this project an underground storage tank (UST) is found, construction in that area must stop until a City of Austin UST Construction permit is applied for and approved. Any UST removal work must be conducted by a UST Contractor that is registered with the Texas Commision on Environmental Quality (TCEQ).
Contact Elizabeth Simmons at elizabeth.simmons@austintexas.gov if you have any questions. [COA Title 6]

Retaining walls over four feet in height, measured from the bottom of the footing to the top of the wall, shall be engineered and will require a separate permit (Uniform Building Code 106.2.5)

Parkland dedication has been provided for 288 units by the recordation of a trail easement and a credit for amenities to be constructed, including trail construction. Fiscal surety was posted with the City until such time as the amenities are constructed and approved by the Parks and Recreation Department.

There are no natural slopes greater than 15% on this project.

North Lake Creek Parkway is the principal roadway.

Approval of these plans by the City of Austin indicates compliance with applicable City regulations only. Approval by other governmental entities may be required prior to the start of construction. The applicant is responsible for determining what additional approvals may be necessary.

Development of structures that require a building permit within this Site Plan, or revisions thereof, are required to comply with the City of Austin Street Impact Fee Ordinances 20201220-061 https://www.austintexas.gov/edims/document.cfm?id=352887] and 20201210-062 [https://www.austintexas.gov/edims/document.cfm?id=352739], as applicable, prior to acquiring the building permit. The City shall start collecting street impact fees with all building permits issued on or after June 21, 2022. For more information please visit the Street Impact Fee website [austintexas.gov/streetimpactfee].

All responsibility for the adequacy of these plans remains with the Engineer who prepared them. In reviewing these plans, the City of Austin must rely upon the adequacy of the work of the Design Engineer.

Bleyl Engineering and its associates will not be held responsible for the accuracy of the survey or for design errors or omissions resulting from survey inaccuracies.

Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of his/her submittal, whether or not the application is reviewed for Code compliance by City engineers.

A civil engineer registered in Texas must certify a plan or plat as complete, accurate, and in compliance with Chapter 25-8 Subchapter A of the Land Development Code. The director may waive this requirement after making a determination that the plan or plat includes only minor alterations or improvement that do not require the services of an engineer.

I Jason K. Rodgers do hereby certify that the engineering work being submitted herein complies with all provisions of the Texas Engineering Practice Act, including Section 131.152(e). I hereby acknowledge that any misrepresentation regarding this certification constitutes a violation of the Act, and may result in criminal, civil and/or administrative penalties against me, as authorized by the Act. The plan or plat is complete, accurate and in compliance with Chapter 25-8 Subchapter A of the Land Development Code.
I certify that these engineering documents are complete, accurate and adequate for the intended purposes, including construction, but are not authorized for construction prior to formal City approval.

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Sheet List Table

Sheet Number	Sheet Title
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2	Subdivision Plat 1
3	Subdivision Plat 2
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5	TCEQ - WPAP & SCS Notes
6	Erosion Control
7	Erosion Control 2
8	Erosion Control 3
9	Erosion Control Notes
10	Erosion Control Details
11	Tree Removal Plan & Demo Plan 1
12	Tree Removal Plan & Demo Plan 2
13	Tree Removal Plan & Demo Plan 3
14	Building Elevations & Tabulations
15	Site Plan
16	Site Plan Notes and Calculations
17	Dimensional Control
18	Dimensional Control 2
19	Dimensional Control 3
20	Fire Protection Plan
21	Grading Plan
22	Grading Plan 2
23	Grading Plan 3
24	Storm Sewer Plan
25	Storm Sewer Plan 2
26	Storm Sewer Plan 3
27	Existing Drainage Area Map
28	Proposed Drainage Area Map
29	Proposed Drainage Calculations
30	Rain Garden 1
31	Rain Garden 2
32	Rain Garden Cross Sections
33	Austin Water Gen. Information & Construction Notes
34	Overall Utility Plan
35	Public Water Line Plan & Profile
36	Private Water Distribution Plan
37	Private Water Distribution Plan 2
38	Private Water Distribution Plan 3
39	Private Wastewater Plan
40	Private Wastewater Plan 2
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42	Private Wastewater A Plan & Profile 1
43	Private Wastewater A Plan & Profile 2
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50	Construction Details 2
51	Construction Details 3
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53	Overall Landscape Plan
54	Landscape Plan 1
55	Landscape Plan 2
56	Landscape Plan 3
57	Landscape Legend & Details
58	Tree Protection & Details
59	City Calculations
60	Overall Tree Preservation Plan
61	Tree Preservation Plan 1
62	Tree Preservation Plan 2
63	Tree Preservation Plan 3
64	Tree List 1
65	Tree List 2
66	Tree List 3

Helpful Websites:

Austin Water Pipeline Engineering
http://austintexas.gov/page/pipeline-engineering

City of Austin Easement Templates
http://www.austintexas.gov/page/common-easement-and-restrictive-covenants#pdrd

Service Extension Requests (SER)
http://www.austintexas.gov/department/service-extension-requests

Reliner Drop Manhole Resources
https://reliner.com/parts-pricing-submittals-cad-pdf

Austin Fire Department

Fire Design Codes	2021 International Fire Code Edition with City of Austin Local Amendments
Required Fire Flow Demand @ 20 psi (gpm)	3750 GPM
Intended Use	Multi-Family
Construction Classification	Type V-A
Building Fire Area (s.f.)	42,575
Automatic Fire Sprinkler System Type (If applicable)	NFPA Full 13
Reduced Fire Flow Demand @ 20 psi for having a sprinkler system (gpm)	1,500 GPM (0.75% Reduction)
Available Fire Flow @ 20 psi	7869 GPM
AFD Fire Hydrant Flow Test Date	6/8/2022
AFD Fire Hydrant Flow Test Location	9000 Blk North Lake Creek Pkwy
Private Internal Fire Sprinkler System Demand	TBD
Building Height	44
High-Rise	No

Reviewed By:

Development Services Department Date

SP-2023-0021C
Development Permit No.

City of Austin Fire Department Date

Austin Water Date

Traffic Control Plan Note
This note is being placed on the plan set in place of a temporary traffic control strategy with the full understanding that, at a minimum of 6 weeks prior to the start of construction, a temporary traffic control plan must be reviewed and approved by the Right of Way Management Division. The owner/ representative further recognizes that a review fee, as prescribed by the most current version of the City's fee ordinance, shall be paid each time a plan or plan revision is submitted to Right of Way Management Division for review.

The following must be taken into consideration when developing future traffic control strategies:

- Pedestrian and bicycle traffic access must be maintained at all times, unless otherwise authorized by Right of Way Management.
- No long-term lane closures will be authorized, unless Right of Way Management determines that adequate accommodations have been made to minimize traffic impact.
- Project should be phased so that utility installation minimally impacts existing or temporary pedestrian facilities.

Revision	Date	By	App	Comment

JGD 70401 (AVERY OAKS 4)

Prepared For:
Avery Land Investors, LP
1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
7701 San Felipe Blvd., Ste 200, Austin TX 78729
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
BRYAN CONROE HOUSTON AUSTIN

Cover

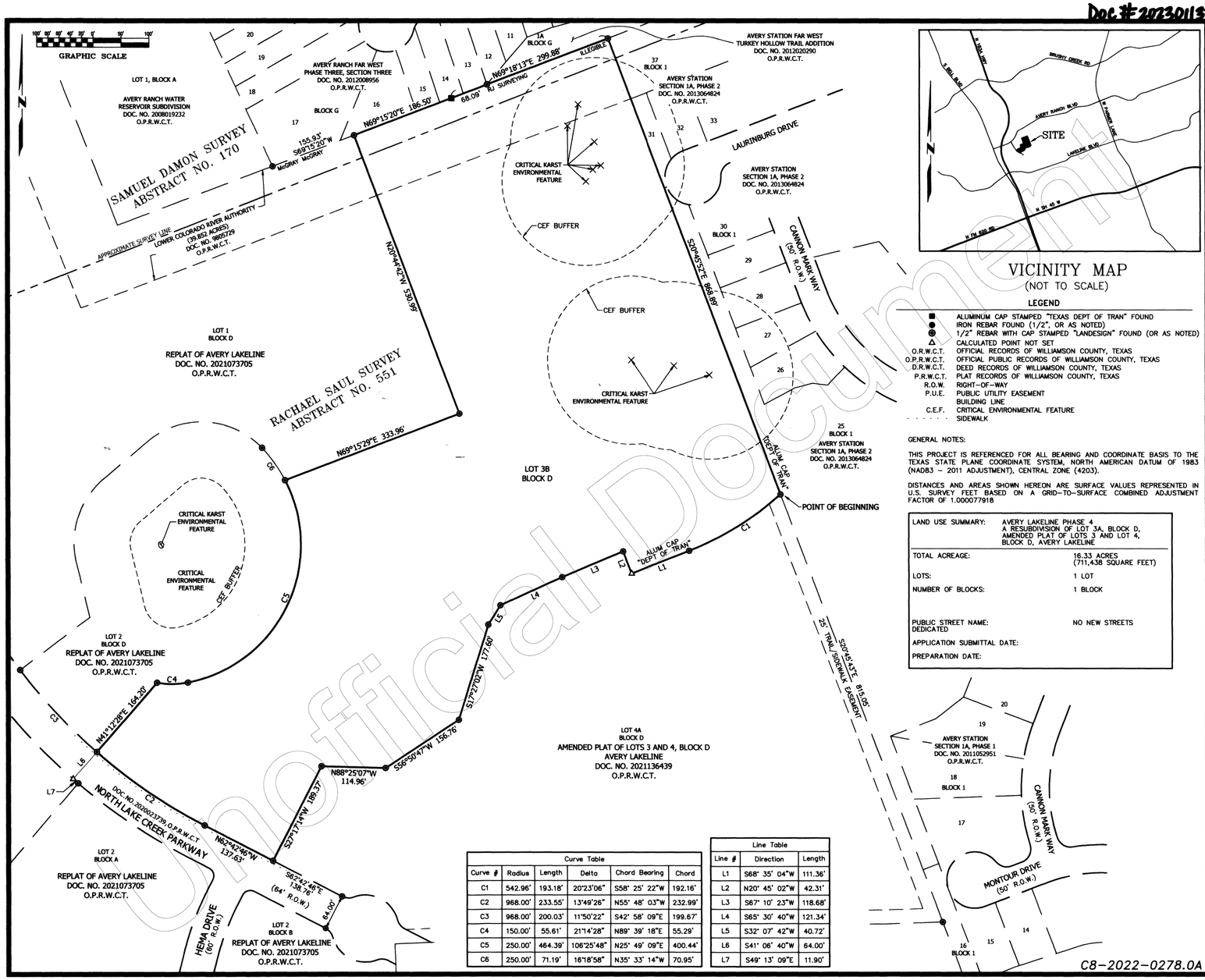
Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401

Sheet: 1 of 66
SP-2023-0021C

Doc #2023011373



Curve Table					
Curve #	Radius	Length	Delta	Chord Bearing	Chord
C1	542.96'	193.18'	20°23'06"	S58° 25' 22"W	192.16'
C2	968.00'	233.55'	13°49'26"	N55° 48' 03"W	232.99'
C3	968.00'	200.03'	11°50'22"	S42° 58' 09"E	199.67'
C4	150.00'	55.61'	21°14'28"	N89° 39' 18"E	55.29'
C5	250.00'	464.39'	106°25'48"	N25° 49' 09"E	400.44'
C6	250.00'	71.19'	16°18'58"	N35° 33' 14"W	70.95'

Line Table		
Line #	Direction	Length
L1	S68° 35' 04"W	111.36'
L2	N20° 45' 02"W	42.31'
L3	S67° 10' 23"W	118.68'
L4	S65° 30' 40"W	121.34'
L5	S32° 07' 42"W	40.72'
L6	S41° 06' 40"W	64.00'
L7	S49° 13' 09"E	11.90'

VICINITY MAP
(NOT TO SCALE)

LEGEND

■	ALUMINUM CAP STAMPED "TEXAS DEPT OF TRAN" FOUND
●	IRON REBAR FOUND (1/2", OR AS NOTED)
◉	1/2" REBAR WITH CAP STAMPED "LANDESIGN" FOUND (OR AS NOTED)
△	CALCULATED POINT NOT SET
O.R.W.C.T.	OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS
O.P.R.W.C.T.	OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS
D.R.W.C.T.	DEED RECORDS OF WILLIAMSON COUNTY, TEXAS
P.R.W.C.T.	PLAT RECORDS OF WILLIAMSON COUNTY, TEXAS
R.O.W.	RIGHT-OF-WAY
P.U.E.	PUBLIC UTILITY EASEMENT
	BUILDING LINE
C.E.F.	CRITICAL ENVIRONMENTAL FEATURE
	SIDEWALK

GENERAL NOTES:

THIS PROJECT IS REFERENCED FOR ALL BEARING AND COORDINATE BASIS TO THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83 – 2011 ADJUSTMENT), CENTRAL ZONE (4203).

DISTANCES AND AREAS SHOWN HEREON ARE SURFACE VALUES REPRESENTED IN U.S. SURVEY FEET BASED ON A GRID-TO-SURFACE COMBINED ADJUSTMENT FACTOR OF 1.000077918

LAND USE SUMMARY:	AVERY LAKELINE PHASE 4 A RESUBDIVISION OF LOT 3A, BLOCK D, AMENDED PLAT OF LOTS 3 AND LOT 4, BLOCK D, AVERY LAKELINE
TOTAL ACREAGE:	16.33 ACRES (711,438 SQUARE FEET)
LOTS:	1 LOT
NUMBER OF BLOCKS:	1 BLOCK
PUBLIC STREET NAME: DEDICATED	NO NEW STREETS
APPLICATION SUBMITTAL DATE:	
PREPARATION DATE:	

AVERY LAKELINE PHASE 4
A RESUBDIVISION OF LOT 3A, BLOCK D, AMENDED PLAT OF LOTS 3 AND 4, BLOCK D AVERY LAKELINE

LSI LANDESIGN SERVICES, INC.
10000 W HIGHWAY 29, LIBERTY HILL, TEXAS 78642
TBPELS FIRM NO. 10001800
512-238-7901

PROJECT NAME: 97 AC AVERY RANCH
JOB NUMBER: 19-002
DATE: 08/20/2022
DRAWING PATH: K:\19002 - 97 AC AVERY RANCH\CAD\DWGS\
SCALE: 1" = 100'
FIELDNOTE FILE PATH: P:\19002 - 97 ac Avery Ranch\Download
RPLS: FWF | TECH: JRM | PARTYCHIEF: N/A
CHECKED BY: HAS | FIELDBOOK: N/A

DRAWING NAME: AV LOT 3A REPLAT

SHEET 01 of 02

DRAWING PATH: K:\19002 - 97 AC AVERY RANCH\CAD\DWGS\AV LOT 3A REPLAT.DWG SHEET PLOT SIZE: ARCH FULL BLEED C (18.00 X 24.00 INCHES) LAST SAVED: 12/02/2023 2:04 PM PLOT DATE: 12/02/2023 2:04 PM

Revision	Date	By	App	Comment

Prepared For:
Avery Land Investors, LP
1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

BLEYL ENGINEERING
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AUSTIN | BRYAN | CONROE | HOUSTON

Subdivision Plat 1

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 2 of 66
SP-2023-0021C

ORIGINAL LAYOUT SIZE - 24X36

@2023 H:\JOBFILES\GD JJOURNEYMAN\GD 70401 (AVERY OAKS PHASE 4)\04 CAD\PLOT SHEETS\PLAT.DWG 6/11/2023 4:59 PM Chris Shaheen

Doc# 2023011373

STATE OF TEXAS §
COUNTY OF WILLIAMSON §

THAT AVERY LAND INVESTORS, LP BEING THE OWNER OF LOT 3A, BLOCK D, AMENDED PLAT OF LOTS 3 AND 4, BLOCK D, A SUBDIVISION OF RECORD IN DOCUMENT NO. 2021136439 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, CONVEYED BY DEED OF RECORD IN DOCUMENT NO. 2020116281 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, AND THAT AVERY LAND INVESTORS, LP BEING THE OWNER OF ALL OF A CALLED 6.1820 ACRE TRACT OF LAND RECORDED IN DOCUMENT NO. 2022107221 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS, SAID SUBDIVISION HAVING BEEN APPROVED FOR RESUBDIVISION PURSUANT TO THE PUBLIC NOTIFICATION AND HEARING PROVISIONS OF CHAPTER 212.014 OF THE LOCAL GOVERNMENT CODE, DO HEREBY RESUBDIVIDE LOT 3A AND 6.1820 ACRE TRACT IN ACCORDANCE WITH THE MAP OR PLAT ATTACHED HERETO, TO BE KNOWN AS:

AVERY LAKELINE PHASE 4
A RESUBDIVISION OF LOT 3A, BLOCK D,
AMENDED PLAT OF LOTS 3 AND 4, BLOCK D
AVERY LAKELINE

AND DO HEREBY DEDICATE TO THE PUBLIC THE USE OF ALL STREETS AND EASEMENT SHOWN HEREON, SUBJECT TO ANY AND ALL EASEMENTS OR RESTRICTIONS HERETOFORE GRANTED AND NOT RELEASED.

AVERY LAND INVESTORS, LP,
A TEXAS LIMITED PARTNERSHIP

BY: DESSAU RWB LAND GP, LLC,
A TEXAS LIMITED LIABILITY COMPANY,
ITS GENERAL PARTNER

BY:
SAM KUMAR, ITS MANAGER

STATE OF TEXAS §
COUNTY OF TRAVIS §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS, ON THIS DAY PERSONALLY APPEARED SAM KUMAR, MANAGER OF DESSAU RWB LAND GP, LLC, A TEXAS LIMITED LIABILITY COMPANY, THE GENERAL PARTNER OF AVERY LAND INVESTORS, LP, A TEXAS LIMITED PARTNERSHIP, KNOWN TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND HE ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS 30th DAY OF January, 2023.

GARRETT GILL
My Notary ID # 131546281
Expires April 30, 2026

PRINTED NAME: Garrett Gill
NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

MY COMMISSION EXPIRES: 04/30/2026

ENGINEER'S CERTIFICATION:

I, JASON RODGERS, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF ENGINEERING AND HEREBY CERTIFY THAT THIS PLAT IS FEASIBLE FROM AN ENGINEERING STANDPOINT AND COMPLIES WITH THE ENGINEERING RELATED PORTIONS OF TITLE 25 OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE, AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

NO PORTION OF THIS TRACT IS WITHIN THE BOUNDARIES OF THE 100 YEAR FLOOPLAIN OF ANY WATERWAY THAT IS WITHIN THE LIMITS OF STUDY OF THE FEDERAL FLOOD INSURANCE ADMINISTRATION FIRM PANEL #48491C0610F, DATED DECEMBER 20, 2019 FOR CITY OF AUSTIN, WILLIAMSON COUNTY, TEXAS.

02/06/2023
DATE

JASON RODGERS, P.E.
REGISTERED PROFESSIONAL ENGINEER NO. 87861
BLEYL ENGINEERS
7701 SAN FELIPE, SUITE 200
AUSTIN, TEXAS 78729
FIRM NO. F-630

STATE OF TEXAS
JASON K. RODGERS
87861
LICENSED PROFESSIONAL ENGINEER

SURVEYOR'S CERTIFICATION:

I, FRANK W. FUNK, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF SURVEYING AND HEREBY CERTIFY THAT THIS PLAT COMPLIES WITH THE SURVEY RELATED PORTIONS OF TITLE 25 OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE, AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, AND WAS PREPARED FROM AN ACTUAL ON-THE-GROUND SURVEY OF THE PROPERTY MADE UNDER MY DIRECTION AND SUPERVISION.

01/30/2023

FRANK W. FUNK
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF TEXAS NO. 6803
10090 W HIGHWAY 29
LIBERTY HILL, TEXAS 78642
TBPELS FIRM NO. 10001800

STATE OF TEXAS
FRANK WILLIAM FUNK
6803
REGISTERED PROFESSIONAL LAND SURVEYOR

THIS SUBDIVISION PLAT IS LOCATED IN THE FULL PURPOSE JURISDICTION OF THE CITY OF AUSTIN, TEXAS THIS THE 14 DAY OF February, 2023.

APPROVED, ACCEPTED AND AUTHORIZED FOR RECORD BY THE DIRECTOR, DEVELOPMENT SERVICES DEPARTMENT, CITY OF AUSTIN, COUNTY OF TRAVIS, THIS THE 14 DAY OF February 2023 AD.

CESAR ZAVALA FOR:
DENISE LUCAS, DIRECTOR
DEVELOPMENT SERVICES DEPARTMENT

METES AND BOUNDS:

BEING 16.33 ACRES OF LAND, SURVEYED BY LANDESIGN SERVICES, INC., SITUATED IN THE RACHAEL SAUL SURVEY, ABSTRACT NO. 551, AND THE SAMUEL DAMON SURVEY, ABSTRACT NO. 170, BOTH IN WILLIAMSON COUNTY, TEXAS AND BEING ALL OF A CALLED 6.177 ACRE TRACT OF LAND DESCRIBED IN A REVERSIONARY DEED WITHOUT WARRANTY TO TEXAS PARKS AND WILDLIFE DEPARTMENT, RECORDED IN DOCUMENT NO. 2012082085 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS (O.P.R.W.C.T.), AND BEING ALL OF LOT 3A, BLOCK D, AMENDED PLAT OF LOTS 3 AND 4, BLOCK D, AVERY LAKELINE, A SUBDIVISION OF RECORD IN DOCUMENT NO. 2021136439 OF SAID O.P.R.W.C.T., AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A 1/2-INCH REBAR WITH ALUMINUM CAP STAMPED "DEPT OF TRAN" FOUND FOR THE SOUTHEAST CORNER OF SAID 6.177 ACRE TRACT AND THE COMMON NORTHEAST CORNER OF LOT 4A, BLOCK D, OF SAID DOCUMENT NO. 2021136439, ALSO BEING IN THE WEST LINE OF LOT 25, BLOCK 1, AVERY STATION SECTION 1A, PHASE 2, A SUBDIVISION OF RECORD IN DOCUMENT NO. 2013064824 OF SAID O.P.R.W.C.T.;

THENCE WITH THE SOUTHERLY LINES OF SAID 6.177 ACRE TRACT AND SAID LOT 3A, AND THE COMMON NORTHERLY LINE OF SAID LOT 4A, THE FOLLOWING TEN (10) COURSES AND DISTANCES:

1. ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 542.96 FEET, AN ARC LENGTH OF 193.18 FEET, A DELTA ANGLE OF 20°23'06", AND A CHORD WHICH BEARS SOUTH 58°25'22" WEST A DISTANCE OF 192.16 FEET TO A 1/2-INCH REBAR WITH ALUMINUM CAP STAMPED "DEPT OF TRAN" FOUND;
2. SOUTH 68°35'04" WEST A DISTANCE OF 111.36 FEET TO A CALCULATED POINT;
3. NORTH 20°45'02" WEST A DISTANCE OF 42.31 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND;
4. SOUTH 67°10'23" WEST A DISTANCE OF 118.68 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND;
5. SOUTH 65°30'40" WEST A DISTANCE OF 121.34 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND;
6. SOUTH 32°07'42" WEST A DISTANCE OF 40.72 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND;
7. SOUTH 17°27'02" WEST A DISTANCE OF 177.60 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND;
8. SOUTH 56°50'47" WEST A DISTANCE OF 156.76 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SRVEY" FOUND;
9. NORTH 88°25'07" WEST A DISTANCE OF 114.96 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND; AND
10. SOUTH 27°17'14" WEST A DISTANCE OF 189.37 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND IN THE EXISTING NORTHEASTERLY RIGHT-OF-WAY LINE OF NORTH LAKE CREEK PARKWAY (64' R.O.W. – DOC. NO. 2020023739) FOR THE SOUTHERLY COMMON CORNER OF SAID LOT 3A AND OF SAID LOT 4A, FROM WHICH A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND IN THE EXISTING NORTHEASTERLY RIGHT-OF-WAY LINE OF SAID NORTH LAKE CREEK PARKWAY AND THE COMMON SOUTHWESTERLY LINE OF SAID LOT 4A, BEARS SOUTH 62°42'46" EAST A DISTANCE OF 138.76 FEET;

THENCE WITH THE SOUTHWESTERLY LINE OF SAID LOT 3A AND THE COMMON NORTHEASTERLY RIGHT-OF-WAY LINE OF SAID NORTH LAKE CREEK PARKWAY, THE FOLLOWING TWO (2) COURSES AND DISTANCES:

1. NORTH 62°42'46" WEST A DISTANCE OF 137.63 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND; AND
2. ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 968.00 FEET, AN ARC LENGTH OF 233.55 FEET, A DELTA ANGLE OF 13°49'26", AND A CHORD WHICH BEARS NORTH 55°48'03" WEST A DISTANCE OF 232.99 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND FOR THE SOUTHERLY COMMON CORNER OF SAID LOT 3A AND OF LOT 2, BLOCK D, REPLAT OF AVERY LAKELINE, A SUBDIVISION OF RECORD IN DOCUMENT NO. 20210225 OF SAID O.P.R.W.C.T.;

THENCE WITH THE WESTERLY LINE OF SAID LOT 3A AND THE COMMON EASTERLY LINES OF SAID LOT 2, BLOCK D AND LOT 1, BLOCK D, SAID DOCUMENT NO. 2021073705, THE FOLLOWING FIVE (5) COURSES AND DISTANCES:

1. NORTH 41°12'28" EAST A DISTANCE OF 164.20 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND;
2. ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET, AN ARC LENGTH OF 55.61 FEET, A DELTA ANGLE OF 21°14'28", AND A CHORD WHICH BEARS NORTH 89°39'18" EAST A DISTANCE OF 55.29 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND;
3. ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 250.00 FEET, AN ARC LENGTH OF 464.39 FEET, A DELTA ANGLE OF 106°25'48", AND A CHORD WHICH BEARS NORTH 25°49'09" EAST A DISTANCE OF 400.44 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND;
4. NORTH 69°15'29" EAST A DISTANCE OF 333.96 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND; AND
5. NORTH 20°44'42" WEST A DISTANCE OF 530.99 FEET TO A 1/2-INCH REBAR WITH CAP STAMPED "LSI SURVEY" FOUND IN THE SOUTHERLY LINE OF LOT 16, BLOCK G, AVERY RANCH FAR WEST PHASE THREE, SECTION THREE, A SUBDIVISION OF RECORD IN DOCUMENT NO. 2012008956 OF SAID O.P.R.W.C.T., FOR THE NORTHERLY COMMON CORNER OF SAID LOT 3A AND OF SAID LOT 1, FROM WHICH A 1/2-INCH REBAR WITH CAP STAMPED "MCGRAY AND MCGRAY" FOUND IN THE NORTHERLY LINE OF SAID LOT 1, FOR THE SOUTHERLY COMMON CORNER OF LOT 17, BLOCK G, OF SAID DOCUMENT NO. 2012008956 AND OF LOT 1, BLOCK A, AVERY RANCH WATER RESERVOIR SUBDIVISION, A SUBDIVISION OF RECORD IN DOCUMENT NO. 2008019232 OF SAID O.P.R.W.C.T., BEARS SOUTH 69°15'20" WEST A DISTANCE OF 155.93 FEET;

THENCE WITH THE NORTHERLY LINES OF SAID LOT 3A AND SAID 6.177 ACRE TRACT, AND THE COMMON SOUTHERLY LINE OF SAID BLOCK G, THE FOLLOWING TWO (2) COURSES AND DISTANCES:

1. NORTH 69°15'20" EAST A DISTANCE OF 186.50 FEET TO AN ALUMINUM CAP STAMPED "TEXAS DEPT OF TRAN" FOUND; AND
2. NORTH 69°18'13" EAST PASSING A 1/2-INCH REBAR WITH CAP STAMPED "RJ SURVEYING" FOUND AT A DISTANCE OF 68.09 FEET, CONTINUING FOR A TOTAL DISTANCE OF 299.88 FEET TO A 1/2-INCH REBAR WITH ILLEGIBLE CAP FOUND IN THE SOUTHERLY LINE OF LOT 1A, BLOCK G, AVERY STATION FAR WEST TURKEY HOLLOW TRAIL ADDITION, A SUBDIVISION OF RECORD IN DOCUMENT NO. 2012020290 OF SAID O.P.R.W.C.T., FOR THE NORTHERLY COMMON CORNER OF SAID 6.177 ACRE TRACT AND OF LOT 37, BLOCK 1, AVERY STATION SECTION 1A, PHASE 2, A SUBDIVISION OF RECORD IN DOCUMENT NO. 2013064824 OF SAID O.P.R.W.C.T.;

THENCE SOUTH 20°45'52" EAST WITH THE EAST LINE OF SAID 6.177 ACRE TRACT AND THE COMMON WEST LINE OF SAID BLOCK 1, A DISTANCE OF 868.89 FEET TO THE POINT OF BEGINNING AND CONTAINING 16.33 ACRES OF LAND, MORE OR LESS.

COUNTY COURT WILLIAMSON COUNTY, TEXAS

NOTES

1. PROPERTY OWNER OR HIS/HER ASSIGNS SHALL PROVIDE FOR ACCESS TO THE DRAINAGE EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY THE CITY OF AUSTIN AND/OR WILLIAMSON COUNTY FOR INSPECTION OR MAINTENANCE OF SAID EASEMENT.
2. ALL DRAINAGE EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY OWNER OR HIS/HER ASSIGNS.
3. NO OBJECTS, INCLUDING BUT NOT LIMITED TO BUILDINGS, FENCES, LANDSCAPING OR OTHER STRUCTURES ARE PERMITTED IN ANY DRAINAGE EASEMENTS, EXCEPT AS APPROVED BY THE CITY OF AUSTIN AND WILLIAMSON COUNTY.
4. BUILDING SETBACK LINES SHALL BE IN CONFORMANCE WITH CITY OF AUSTIN ZONING ORDINANCE REQUIREMENTS.
5. NO LOT SHALL BE OCCUPIED UNTIL THE STRUCTURE IS CONNECTED TO THE CITY OF AUSTIN WATER AND WASTEWATER UTILITY SYSTEM.
6. THE WATER AND WASTEWATER UTILITY SYSTEM SERVING THIS SUBDIVISION MUST BE IN ACCORDANCE WITH THE CITY OF AUSTIN UTILITY DESIGN CRITERIA. THE WATER AND WASTEWATER UTILITY PLAN MUST BE REVIEWED AND APPROVED BY AUSTIN WATER. ALL WATER AND WASTEWATER CONSTRUCTION MUST BE INSPECTED BY THE CITY OF AUSTIN. THE LANDOWNER MUST PAY THE CITY INSPECTION FEE WITH THE UTILITY CONSTRUCTION.
7. PUBLIC SIDEWALKS, BUILT TO CITY OF AUSTIN STANDARDS, ARE REQUIRED ALONG NORTH LAKE CREEK PARKWAY AND AS SHOWN BY DOTTED LINE ON THE FACE OF THE PLAT. THESE SIDEWALKS SHALL BE IN PLACE PRIOR TO THE LOT BEING OCCUPIED. FAILURE TO CONSTRUCT THE REQUIRED SIDEWALKS MAY RESULT IN THE WITHHOLDING OF CERTIFICATES OF OCCUPANCY, BUILDING PERMITS, OR UTILITY CONNECTIONS BY THE GOVERNING BODY OF UTILITY COMPANY.
8. EROSION/SEDIMENTATION CONTROLS ARE REQUIRED FOR ALL CONSTRUCTION OF EACH LOT, INCLUDING SINGLE FAMILY AND DUPLEX CONSTRUCTION.
9. THIS PROJECT IS LOCATED INSIDE THE EDWARDS AQUIFER RECHARGE ZONE ACCORDING TO THE TCEQ QUAD MAPS.
10. THE OWNER OF THIS SUBDIVISION AND THE OWNER'S SUCCESSORS AND ASSIGNS ARE RESPONSIBLE FOR CONSTRUCTION OF SUBDIVISION IMPROVEMENTS THAT COMPLY WITH (CITY OF AUSTIN, WILLIAMSON COUNTY) REGULATIONS. THE OWNER UNDERSTANDS THAT PLAT VACATION OR REPLATTING MAY BE REQUIRED, AT THE OWNER'S EXPENSE, IF PLANS TO CONSTRUCT THIS SUBDIVISION DO NOT COMPLY WITH THE REGULATIONS.
11. BY APPROVING THIS PLAT, THE CITY OF AUSTIN ASSUMES NO OBLIGATION TO CONSTRUCT ANY INFRASTRUCTURE IN CONNECTION WITH THIS SUBDIVISION. ANY SUBDIVISION INFRASTRUCTURE REQUIRED FOR THE DEVELOPMENT OF THE LOTS IN THIS SUBDIVISION IS THE RESPONSIBILITY OF THE DEVELOPER AND/OR THE OWNERS OF THE LOTS. FAILURE TO CONSTRUCT ANY REQUIRED INFRASTRUCTURE TO CITY STANDARDS MAY BE JUST CAUSE FOR THE CITY TO DENY APPLICATIONS FOR CERTAIN DEVELOPMENT PERMITS INCLUDING BUILDING PERMITS, SITE PLAN APPROVALS, AND/OR CERTIFICATES OF OCCUPANCY.
12. OFF STREET LOADING AND UNLOADING FACILITIES SHALL BE PROVIDED ON ALL COMMERCIAL AND INDUSTRIAL LOTS.
13. PRIOR TO CONSTRUCTION ON LOTS IN THIS SUBDIVISION, DRAINAGE PLANS WILL BE SUBMITTED TO THE CITY OF AUSTIN FOR REVIEW. RAINFALL RUN-OFF SHALL BE HELD TO THE AMOUNT EXISTING AT UNDEVELOPED STATUS BY PONDING OR OTHER APPROVED METHODS.
14. PRIOR TO CONSTRUCTION, EXCEPT DETACHED SINGLE FAMILY ON ANY LOT IN THIS SUBDIVISION, A SITE DEVELPMENT PERMIT MUST BE OBTAINED FROM THE CITY OF AUSTIN.
15. THIS SITE IS SUBJECT TO THE CITY OF AUSTIN'S VOID AND WATER FLOW MITIGATION RULE.
16. THE PRESENCE OF A CRITICAL ENVIRONMENTAL FEATURE ON OR NEAR A PROPERTY MAY AFFECT DEVELOPMENT. ALL ACTIVITIES WITHIN THE CEF BUFFER MUST COMPLY WITH THE CITY OF AUSTIN CODE AND CRITERIA. THE NATURAL VEGETATIVE COVER MUST BE RETAINED TO THE MAXIMUM EXTENT PRACTICABLE; CONSTRUCTION IS PROHIBITED; AND WASTEWATER DISPOSAL OR IRRIGATION IS PROHIBITED.
17. THE CEF BUFFER MUST BE MAINTAINED PER CITY OF AUSTIN CODE AND CRITERIA. EXISTING DRAINAGE AND NATIVE VEGETATION SHALL REMAIN UNDISTURBED TO ALLOW THE WATER QUALITY FUNCTION OF THE BUFFER. INSPECTION AND MAINTENANCE MUST OCCUR SEMI-ANNUALLY AND RECORDS MUST BE KEPT FOR 3 YEARS.
18. RESTRICTIVE COVENANTS FOR IMPERVIOUS COVER TRANSFERS BETWEEN LOTS HAVE BEEN RECORDED IN DOCUMENT NO. 20200019505 FOR THE TRANSFERRING TRACTS AND DOCUMENT NO. 20200019505 FOR THE RECEIVING TRACTS. THESE RESTRICTIVE COVENANTS ONLY APPLY TO THE LOT 3A, BLOCK D PORTION FOR THIS LOT.
19. ALL RESTRICTIONS AND NOTES FROM THE PREVIOUS EXISTING SUBDIVISIONS, AVERY LAKELINE RECORDED IN DOCUMENT NO. 2020023739, REPLAT OF AVERY LAKELINE RECORDED IN DOCUMENT NO. 2021073705, AND AMENDED PLAT OF LOTS 3 AND 4, BLOCK D, AVERY LAKELINE RECORDED IN DOCUMENT NO. 2021136439, ALL IN THE PLAT RECORDS OF WILLIAMSON COUNTY, TEXAS, SHALL APPLY TO THIS PLAT. THESE RESTRICTIVE COVENANTS ONLY APPLY TO THE LOT 3A, BLOCK D PORTION FOR THIS LOT.
20. EACH LOT WITHIN THIS SUBDIVISION SHALL HAVE SEPARATE SEWER TAPS, SEPARATE WATER METERS, AND THEIR RESPECTIVE PRIVATE WATER AND SEWER SERVICE LINES SHALL BE POSITIONED OR LOCATED IN A MANNER THAT WILL NOT CROSS LOT LINES.
21. PARKLAND DEDICATION IS REQUIRED PER CITY CODE 25-1-601, AS AMENDED, PRIOR TO APPROVAL OF A SITE PLAN IN THIS SUBDIVISION. AVERY LAKELINE FINAL PLAT, DOCUMENT NO. 2020023739, HAD IDENTIFIED THE PARKLAND TO BE DEDICATED PRIOR TO THIS RESUBDIVISION. ADDITIONAL PARKLAND MAY BE REQUIRED BEYOND WHAT WAS IDENTIFIED IN THE ORIGINAL SUBDIVISION FOR USES THAT HAVE YET TO FULFILL THE REQUIREMENTS.

THE STATE OF TEXAS }{ KNOW ALL MEN BY THESE PRESENTS
THE COUNTY OF WILLIAMSON }{

I, NANCY E., RISTER, CLERK OF COUNTY COURT, OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT IN WRITING, WITH ITS CERTIFICATE OF AUTHENTICATION, WAS FILED FOR RECORD IN MY OFFICE ON THE 15th DAY OF February 2023 A.D., AT 10:20 O'CLOCK A M., AND DULY RECORDED THIS THE 15th DAY OF February 2023 A.D., AT 10:34 O'CLOCK A.M., IN THE OFFICIAL PUBLIC RECORDS OF SAID COUNTY IN INSTRUMENT NO. 2023011373

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL AT THE COUNTY COURT OF SAID COUNTY, AT MY OFFICE IN GEORGETOWN, TEXAS, THE DATE LAST SHOWN ABOVE WRITTEN.

NANCY E. RISTER, CLERK, COUNTY COURT
OF WILLIAMSON COUNTY, TEXAS

BY: _____ DEPUTY

C8-2022-0278.0A

LSI LANDESIGN SERVICES, INC.
10090 W HIGHWAY 29, LIBERTY HILL, TEXAS 78642
TBPELS FIRM NO. 10001800
512-238-7901

Revision	Date	By	App	Comment

Prepared For:
Avery Land Investors, LP
1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

AVERY LAKELINE PHASE 4
A RESUBDIVISION OF LOT 3A, BLOCK D,
AMENDED PLAT OF LOTS 3 AND 4, BLOCK D
AVERY LAKELINE

PLOT DATE: 1/30/2023 2:04 PM

PROJECT NAME: 97 AC AVERY RANCH	
JOB NUMBER: 19-002	
DATE: 06/20/2022	SCALE: 1" = 100'
DRAWING FILE PATH: K:\19002 - 97 AC AVERY RANCH\Download	
FIELDNOTE FILE PATH: P:\19002 - 97 ac Avery Ranch\Download	
CRPLS: FWF	TECH: JRM / PARTYCHIEF: N/A
CHECKED BY: HAS	FIELDBOOK: N/A

DRAWING NAME: AV LOT 3A REPLAT

SHEET 02 of 02

DRAWING PATH: K:\19002 - 97 AC AVERY RANCH\DOWNSRAV LOT 3A REPLAT.DWG SHEET PLOT SIZE: ARCH FULL BLEED C (18.00 X 24.00 INCHES) LAST SAVED: 1/30/2023 2:04 PM PLOT DATE: 1/30/2023 2:04 PM

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
7701 San Felipe Blvd., Ste 200, Austin TX 78729
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com

AUSTIN	BRYAN	CONROE
HOUSTON		

Subdivision Plat 2

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 3 of 66
SP-2023-0021C

ORIGINAL LAYOUT SIZE - 24X36

ORIGINAL LAYOUT SIZE - 24X36

Site Plan Release Notes

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 Austin 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 Austin - 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. Please visit http://austintexas.gov/page/commercial-site-and-subdivision-inspections for a list of submittal requirements, information concerning fees, and contact information.
4. For slopes or trenches greater than five feet in depth, a note must be added stating; "All construction operations shall be accomplished in accordance with applicable regulations of the U.S. Occupational Safety and Health Administration." (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 also comply with Environmental requirements.
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 of 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).

Developer Information

Journeyman Group — (512) 247-7000
Owner — Phone #

1000 N. Lamar Blvd., Suite 400, Austin, TX 78703
Owner Address

Bleyl Engineering — (512) 454-2400
Owner's Representative Responsible for Plan Alterations — Phone #

TBD
Person or Firm Responsible for Erosion/Sedimentation Control Maintenance — Phone #

TBD
Person or Firm Responsible for Tree/Natural Area Protection Maintenance — Phone #

Americans with Disabilities Act

The City of Austin has reviewed this plans for compliance with City development regulations only. The applicant, property owner, and occupant of the premises are responsible for determining whether the plan complies with all other laws, regulations , and restrictions which may be applicable to the property and its use.

Right-of-Way Management Standard Notes

1. For Right-of-Way violations including but not limited to working without a permit or an expired permit within the City of Austin ROW an investigation fee will be assessed for each offense until the violation is corrected. Following is the investigation fee schedule for violations of public safety:

   a. No or Expired Permit - Equal to the cost of the permit
   b. Violation of permit conditions, restrictions limits, times and locations, on ROW Permit - $250
   c. Improper Advance Warning Sign - $250
   d. Improper Use of Device - $250
   e. Failure to Correct Deficiency - $250
   f. Restricting Traffic During Peak Hours - Equal to the cost of the permit
   g. Multiple Violations - Up to a 4 day Suspension of work

2. Contractors and their subcontractors must be licensed by the City of Austin for conducting work within the Right-of-Way.
3. Contractor must obtain Right-of-Way excavation permits from Right-of-Way Management Division, for each street prior to commencement of work. Please call (512) 974-1150 for additional information regarding permitting process and the most current right-of-way permitting fee schedule.
4. For work at signalized intersections Contractor must dial 311 or (512) 974-2000 to initiate a Citizens Service Request (CSR) for the Traffic Signals Group; to coordinate and gain approval a minimum of 1 week prior to change of project location or phase.
5. Contractor shall have an approved Right-of-Way permit on site at all times when working in the ROW.
6. Contractor must dial 311 or (512) 974-2000 to initiate a Citizens Service Request (CSR) for Right-of-Way Management a minimum of 1 week prior to start of work.
7. Contractor must provide training certification of competent person that will be responsible for the traffic control placement, to Right-of-Way Inspector, prior to start of work.
8. Storage of Equipment and/or Material within the ROW.
   a. Storage of equipment in the ROW is permissible only within the current limits or long-term or intermediate-term closures and shall be limited to the equipment required for the current work activity. This equipment shall be protected behind barricades.
   b. Storage of material in the ROW is permissible only within the current limits of long-term or intermediate-term closures and shall be limited to no more than the material required for three days of production. This material shall be protected behind water-filled barrier.
   c. Equipment or material stored in the ROW shall not create a visual barrier to traffic.
9. No more than one work zone location may be set at one time.
10. Peak Hours for arterial and collector streets are 6 a.m. to 9 p.m. and 4 p.m. to 6 p.m., Monday through Friday. No disruption or reduction of active roadway or pedestrian route capacity shall occur during these times, unless allowed by traffic control plan.
11. Excavations shall be backfilled or plated when required to open impacted traffic lanes. For excavations exceeding a transverse width of 6 feet, the Contractor shall provide an engineered plating plan to the Owner's Representative for review by Right-of-Way Management Division.
12. Approved set of plans must be submitted to ROW Management before excavation permits will be approved.
13. Existing sidewalks and beaten paths shall be maintained as ADA compliant throughout the project duration with the exception of final flatwork and utility tie-ins. Any work overhead within 25 feet of existing pedestrian pathways will require pedestrian covered walkways. Sidewalk closures for major sidewalk improvements have a 14-day maximum period and shall be completed in phases as to not close more than one block at a time.
14. "Road Work Ahead" and "Construction Entrance Ahead" signs must be placed at all approaches to Stabilized Construction Entrance. See the City of Austin standard details for sign spacing.
15. Driveways shall not be closed for more than 3 consecutive calendar days.
16. ADA compliance shall be maintained through Stabilized Construction Entrance.
17. Barrier shall be placed within guidelines set forth by the TMUTCD crash testing requirements (NCHRP Report 350) for that particular barrier used. Any modifications to that testing application shall be approved by the Engineer of Record.
18. For overnight protection of work zones within the ROW, refer to City of Austin Standard 804S-4 Series Details.
19. All temporary paving shall conform to City of Austin Standard Detail 1100S-4.
20. Initial and phase change traffic control changes shall be installed on the weekends.
21. The name and telephone number of the Contractor or Supplier shall be shown on the non-reflective surface of all channelizing devices in accordance with the City of Austin Standard 800 Series Details.
22. Approval of Site Plan does not permit any work in the Right-of-Way to be conducted without approved permit:
    a. Excavations for utilities require an Excavation Permit (EX).
    b. Driveways and concrete work require a Driveway/Sidewalk Permit (DS).
    c. Traffic control and pedestrian protection require a Temporary Use of Right-of-Way Permit (TURP).
    d. All other permits such as Building Permit (BP) must be approved before use of ROW will be allowed.

Ordinance Requirements

1. All improvements shall be made in accordance with the released site plan. Any additional improvements will require a site plan amendment and approval from the Development Services Department.
2. Approval of this site plan does not include Building Code; Fire Code approval; or building, demolition, or relocation permits approval. A City demolition or relocation permit can only be issued once the historic review process is completed.
3. All signs must comply with the requirements of the City of Austin Land Development Code.
4. The owner is responsible for all costs of relocation of, or damage to, utilities.
5. Additional electric easement may be required at a later date.
6. A Site Development Permit must be issued prior to an application for building permit for non-consolidated or Land Use Commission approved site plans.
7. Water and wastewater service will be provided by the City of Austin.
8. For construction within the right-of-way, a ROW excavation permit is required.

Electric Notes

1. Austin Energy has the right to prune and/or remove trees, shrubbery and other obstructions to the extent necessary to keep the easements clear. Austin Energy will perform all tree work in compliance with Chapter 25-8, Subchapter B of the City of Austin Land Development Code.
2. The owner/developer of this subdivision/lot shall provide Austin Energy with any easement and/or access required, in addition to those indicated, for the installation and ongoing maintenance of overhead and underground electric facilities. These easements and/or access are required to provide electric service to the building and will not be located so as to cause the site to be out of compliance with Chapter 25-8 of the City of Austin Land Development Code.
3. The owner shall be responsible for installation of temporary erosion control, revegetation and tree protection. In addition, the owner shall be responsible for any initial tree pruning and tree removal that is within ten feet of the center line of the proposed overhead electric facilities designed to provide electric service to this project. The owner shall include Austin Energy's work within the limits of construction for this project.
4. The owner of the property is responsible for maintaining clearances required by the National Electric Safety Code, Occupational Safety and Health Administration (OSHA) regulations, City of Austin rules and regulations and Texas state laws pertaining to clearances when working in close proximity to overhead power lines and equipment. Austin Energy will not render electric service unless require clearances are maintained. All costs incurred because of failure to comply with the required clearances will be charged to the owner.
5. Any relocation of electric facilities shall be at the landowner's/developer's expense.

Fire Department

1. The Austin Fire Department requires final asphalt or concrete pavement on required access roads prior to the start of 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 Criteria Manual.
2. Fire hydrants shall be installed with the center of the 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 within three (3) feet in all directions from any fire hydrant shall be free of obstructions, and 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 pervious/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 Austin 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.

Sequence of Construction

1	Temporary erosion and sedimentation controls are to be installed as indicated on the approved site plan or subdivision construction plan and in accordance with the Erosion Sedimentation Control Plan (ESC) and Stormwater Pollution Prevention Plan (SWPPP) that is required to be posted on the site. Install tree protection and initiate tree mitigation measures and conduct "Pre-Construction" tree fertilization (if applicable).
2	The Environmental Project Manager or Site Supervisor must contact the Development Services Department, Environmental Inspection, at 512-974-2278, 72 hours prior to the scheduled date of the required on-site preconstruction meeting.
3	The Environmental Project Manager, and/or Site Supervisor, and/or Designated Responsible Party, and the General Contractor will follow the Erosion Sedimentation Control Plan (ESC), Storm Water Pollution Prevention Plan (SWPPP) posted on the site. Temporary erosion and sedimentation controls will be revised, if needed, to comply with City Inspectors' directives, and revised construction schedule relative to the water quality plan requirements and the erosion plan.
4	Rough grade the pond(s) at 100% proposed capacity. Either the permanent outlet structure or a temporary outlet must be constructed prior to development of embankment or excavation that leads to ponding conditions. The outlet system must consist of a sump pit outlet and an emergency spillway meeting the requirements of the Drainage Criteria Manual and/or the Environmental Criteria Manual, as required. The outlet system shall be protected from erosion and shall be maintained throughout the course of construction until installation of the permanent water quality pond(s).
5	Temporary erosion and sedimentation controls will be inspected and maintained in accordance with the Erosion Sedimentation Control Plan and Storm Water Pollution Prevention Plan (SWPPP) posted on the site.
6	Begin site clearing/construction (or demolition) activities.
7	In the Barton Springs Zone, the Environmental Project Manager or Site Supervisor will schedule a mid-construction conference to coordinate changes in the construction schedule and evaluate effectiveness of the erosion control plan after possible construction alterations to the site. Participants shall include the City Inspector, Project Engineer, General Contractor and Environmental Project Manager or Site Supervisor. The anticipated completion date and final construction sequence and inspection schedule will be coordinated with the appropriate City Inspector.
8	Permanent water quality ponds or controls will be cleaned out and filter media will be installed prior to/concurrently with revegetation of site.
9	Complete construction and start revegetation of the site and installation of landscaping.
10	Upon completion of the site construction and revegetation of a project site, the design engineer shall submit an engineer's letter of concurrence bearing the engineer's seal, signature, and date to the Development Services Department indicating that construction, including revegetation, is complete and in substantial compliance with the approved plans. After receiving this letter, a final inspection will be scheduled by the appropriate City inspector.
11	Upon completion of landscape installation of a project site, the Landscape Architect shall submit a letter of concurrence to the Development Services Department indicating that the required landscaping is complete and in substantial conformity with the approved plans. After receiving this letter, a final inspection will be scheduled by the appropriate City inspector.
12	After a final inspection has been conducted by the City inspector and with approval from the City inspector, remove the temporary erosion and sedimentation controls and complete any necessary final revegetation resulting from removal of the controls. Conduct any maintenance and rehabilitation of the water quality ponds or controls.

Texas Commission on Environmental Quality
Lift Station and Force Main
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. This lift station and/or force main must be constructed in accordance with 30 Texas Administrative Code (TAC) §213.5(c), the Texas Commission on Environmental Quality (TCEQ) Edwards Aquifer Rules, and any local government standard specifications.

2. Any modification to the activities described in the referenced Lift Station/Force Main (LSFM) System application following the date of approval may require the submittal of a LSFM System application to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval.

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. Upon completion of any lift station excavation, a geologist must certify that the excavation has been inspected for the presence of sensitive features. The certification must be signed, sealed, and dated by the geologist preparing the certification. Certification that the excavation has been inspected must be submitted to the appropriate regional office.
   - If sensitive feature(s) are identified, all regulated activities near the sensitive feature must be suspended immediately and may not proceed until the executive director has reviewed and approved the methods proposed to protect any sensitive feature and the Edwards Aquifer from potentially adverse impacts to water quality from the lift station.
   - Construction may continue if the geologist certifies that no sensitive feature or features were present.

5. 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 discovery. A geologist's assessment of the location and extent of the feature discovered must be reported to that regional office in writing within two working days. 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.

6. All force main lines must be tested in accordance with 30 TAC §217.68. Testing method will be:
   - A pressure test must use 50 pounds per square inch above the normal operating pressure of a force main.
   - A temporary valve for pressure testing may be installed near the discharge point of a force main and removed after a test is successfully completed.
   - A pump isolation valve may be used as an opposite termination point.
   - A test must involve filling a force main with water.
   - A pipe must hold the designated test pressure for a minimum of 4.0 hours.
   - The leakage rate must not exceed 10.0 gallons per inch diameter per mile of pipe per day.

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THESE LIFT STATION AND FORCE MAINS CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

Legend

Benchmark	Property Line
Property Pin	Temporary Benchmark
Existing Easement	Easement
Record Information	Wastewater Cleanout
Existing Concrete	Wastewater Double Cleanout
Existing Light Pole	Wastewater Inspection Port
Existing Area Light	Inlet
Existing Power Pole & Down Guy	Curb Inlet
Existing Electric Meter	Trench Drain
Existing Transformer Pad	Transformer Pad
Existing Telephone Pedestal	Water AARV
Existing Cable TV Pedestal	Water Tee
Existing Overhead Electric Line	Overhead Electric Line
Existing Telephone Line	ADA Accessible Route
Existing Fiber Optic Line	ADA Ramp/Handrails
Existing Gas Riser	Firelanes
Existing Gas Line	Gas Line
Existing Gas Meter	Gas Meter
Existing Wastewater Line	Wastewater Line
Existing Wastewater Manhole	Wastewater Manhole
Existing Force Main Line	Force Main Line
Existing Water Line	Water Line
Existing Water Valve	Water Valve
Existing Water Meter	Water Meter
Existing Fire Hydrant	Fire Hydrant
Existing Irrigation Box	Water Reducer
Existing Water Plug	Water Plug
Existing Sign	Water Flush Valve
Existing 100 yr	100 yr
Existing Storm Drain Line	Storm Drain Line
Existing Contour	Contour
Erosion Hazard Zone	
Tree	Tree to be Removed

Revision	Date	By	App	Comment

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General Notes

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 4 of 66
SP-2023-0021C

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.

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

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

Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer

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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 14^{th} day of inactivity. If activity will resume prior to the 21^{st} day, stabilization measures are not required. If drought conditions or inclement weather prevent action by the 14^{th} 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.

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

Revision	Date	By	App	Comment

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TCEQ - WPAP & SCS Notes

Lake Creek at Avery Ranch
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JASON K. RODGERS
87881
REGISTERED PROFESSIONAL ENGINEER
9/11/23

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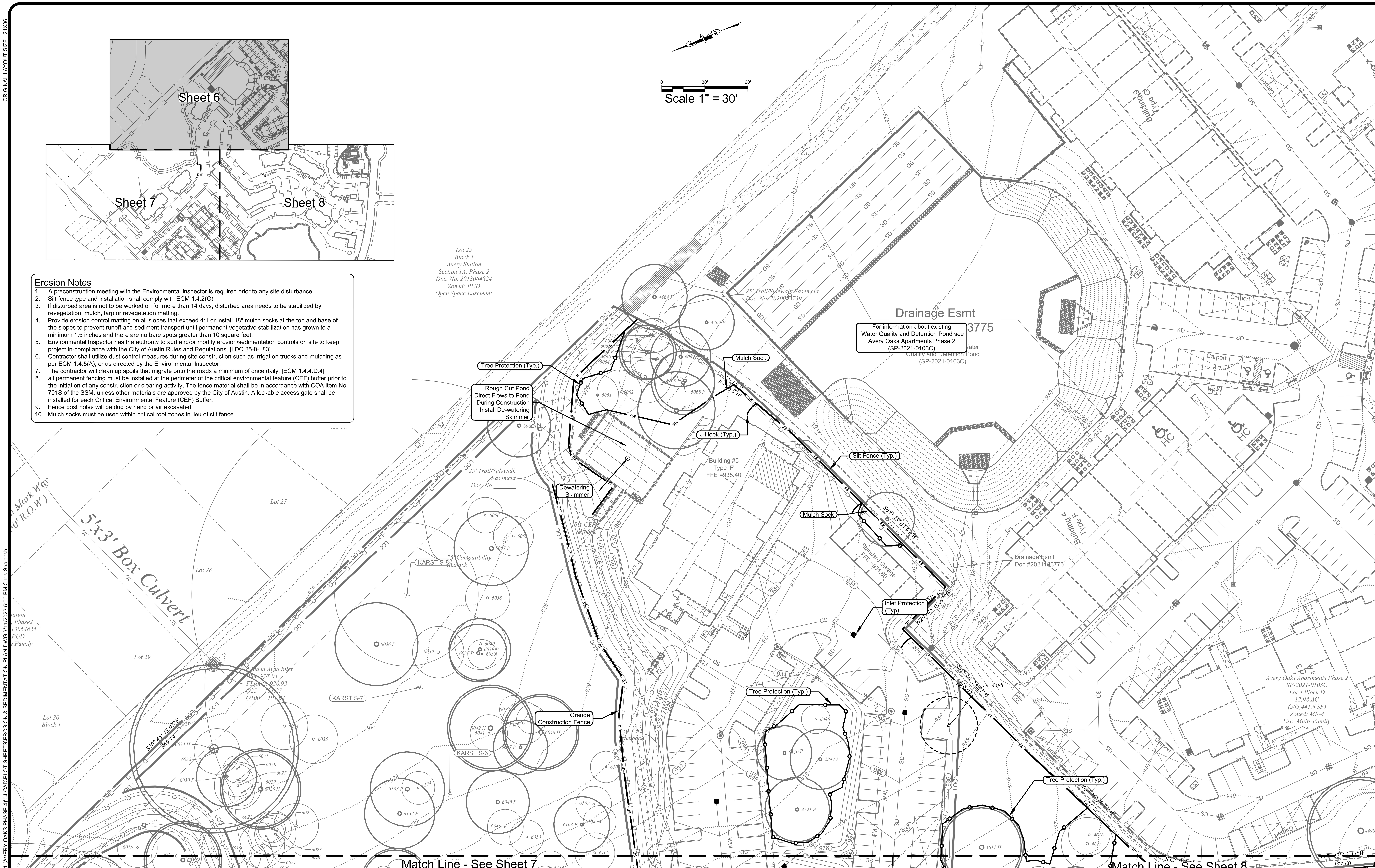
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: **5** of **66**
SP-2023-0021C



Erosion Notes

1. A preconstruction meeting with the Environmental Inspector is required prior to any site disturbance.
2. Silt fence type and installation shall comply with ECM 1.4.2(G)
3. If disturbed area is not to be worked on for more than 14 days, disturbed area needs to be stabilized by revegetation, mulch, tarp or revegetation matting.
4. Provide erosion control matting on all slopes that exceed 4:1 or install 18" mulch socks at the top and base of the slopes to prevent runoff and sediment transport until permanent vegetative stabilization has grown to a minimum 1.5 inches and there are no bare spots greater than 10 square feet.
5. Environmental Inspector has the authority to add and/or modify erosion/sedimentation controls on site to keep project in-compliance with the City of Austin Rules and Regulations. [LDC 25-8-183].
6. Contractor shall utilize dust control measures during site construction such as irrigation trucks and mulching as per ECM 1.4.5(A), or as directed by the Environmental Inspector.
7. The contractor will clean up spoils that migrate onto the roads a minimum of once daily. [ECM 1.4.4.D.4]
8. all permanent fencing must be installed at the perimeter of the critical environmental feature (CEF) buffer prior to the initiation of any construction or clearing activity. The fence material shall be in accordance with COA item No. 701S of the SSM, unless other materials are approved by the City of Austin. A lockable access gate shall be installed for each Critical Environmental Feature (CEF) Buffer.
9. Fence post holes will be dug by hand or air excavated.
10. Mulch socks must be used within critical root zones in lieu of silt fence.

Tree Note:

Per standard detail 610S-04, 2x4x6 or greater size lumber shall be strapped vertically to the tree and 8" of hardwood mulch shall be applied within the Full CRZ.

Contractor Note:

Contractor is responsible for removing any sediment transported from the LOC to the offsite detention/water quality pond(s).

Note:

Per LDC 25-8-323(C), for areas on the site that are to remain pervious after development, any soils that are compacted during site grading and construction operations must be de-compacted in compliance with the ECM and in compliance with SSM 661S.
Finished elevation for parking-lot islands, median, peninsulas, and similar landscape areas must be at least six (6) below the finished curb elevation to allow for placement of six (6) inches of topsoil [ECM 1.4.7].

Legend

Symbol	Description
LOC	Proposed Limits of Construction
SF	Proposed Silt Fence
MS	Proposed Mulch Sock
—o—o—	Proposed Tree Protection Fence
■	Proposed Inlet Protection
dashed circle	Tree to be Removed

Tree Note

See Sheet 14 for the tree list.

Texas 811

Call Before You Dig!!

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

B.M. - Nail with washer stamped "LSI Surveying" set on the back of curb along the North right-of-way of North Lake Creek Parkway, approximately 386' feet West of the intersection of North Lake Creek Parkway and Hema Drive.
N: 10150246.35, E: 3094468.89, Elev. = 932.61.

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of his/her submittal, whether or not the application is reviewed for Code compliance by City engineers.

Revision	Date	By	App	Comment

Prepared For:
Avery Land Investors, LP
1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

BLEYL ENGINEERING
Planning • Design • Management
7701 San Felipe Blvd., Ste 200, Austin TX 78729
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
Austin Bryan Conroe Houston

Erosion Control

Lake Creek at Avery Ranch

9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 6 of 66
SP-2023-0021C

Note:

Per LDC 25-8-323(C), for areas on the site that are to remain pervious after development, any soils that are compacted during site grading and construction operations must be de-compacted in compliance with the ECM and in compliance with SSM 661S.

Finished elevation for parking-lot islands, median, peninsulas, and similar landscape areas must be at least six (6) below the finished curb elevation to allow for placement of six (6) inches of topsoil [ECM 1.4.7].

Erosion Notes

1. A preconstruction meeting with the Environmental Inspector is required prior to any site disturbance.
2. Silt fence type and installation shall comply with ECM 1.4.2(G)
3. If disturbed area is not to be worked on for more than 14 days, disturbed area needs to be stabilized by revegetation, mulch, tarp or revegetation matting.
4. Provide erosion control matting on all slopes that exceed 4:1 or install 18" mulch socks at the top and base of the slopes to prevent runoff and sediment transport until permanent vegetative stabilization has grown to a minimum 1.5 inches and there are no bare spots greater than 10 square feet.
5. Environmental Inspector has the authority to add and/or modify erosion/sedimentation controls on site to keep project in-compliance with the City of Austin Rules and Regulations. [LDC 25-8-183].
6. Contractor shall utilize dust control measures during site construction such as irrigation trucks and mulching as per ECM 1.4.5(A), or as directed by the Environmental Inspector.
7. The contractor will clean up spoils that migrate onto the roads a minimum of once daily. [ECM 1.4.4.D.4]
8. all permanent fencing must be installed at the perimeter of the critical environmental feature (CEF) buffer prior to the initiation of any construction or clearing activity. The fence material shall be in accordance with COA item No. 701S of the SSM, unless other materials are approved by the City of Austin. A lockable access gate shall be installed for each Critical Environmental Feature (CEF) Buffer.
9. Fence post holes will be dug by hand or air excavated.
10. Mulch socks must be used within critical root zones in lieu of silt fence.

Contractor Note:

Contractor is responsible for removing any sediment transported from the LOC to the offsite detention/water quality pond(s).

Legend

Symbol	Description
—LOC—	Proposed Limits of Construction
—SF—	Proposed Silt Fence
—MS—	Proposed Mulch Sock
—o—o—	Proposed Tree Protection Fence
■	Proposed Inlet Protection
( )	Tree to be Removed

Texas 811

Call Before You Dig!!

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

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Tree Note:

Per standard detail 610S-04, 2x4x6 or greater size lumber shall be strapped vertically to the tree and 8" of hardwood mulch shall be applied within the Full CRZ.

Revision	Date	By	App	Comment

Prepared For:
Avery Land Investors, LP
1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

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AUSTIN BRYAN CONROE HOUSTON

Erosion Control 2

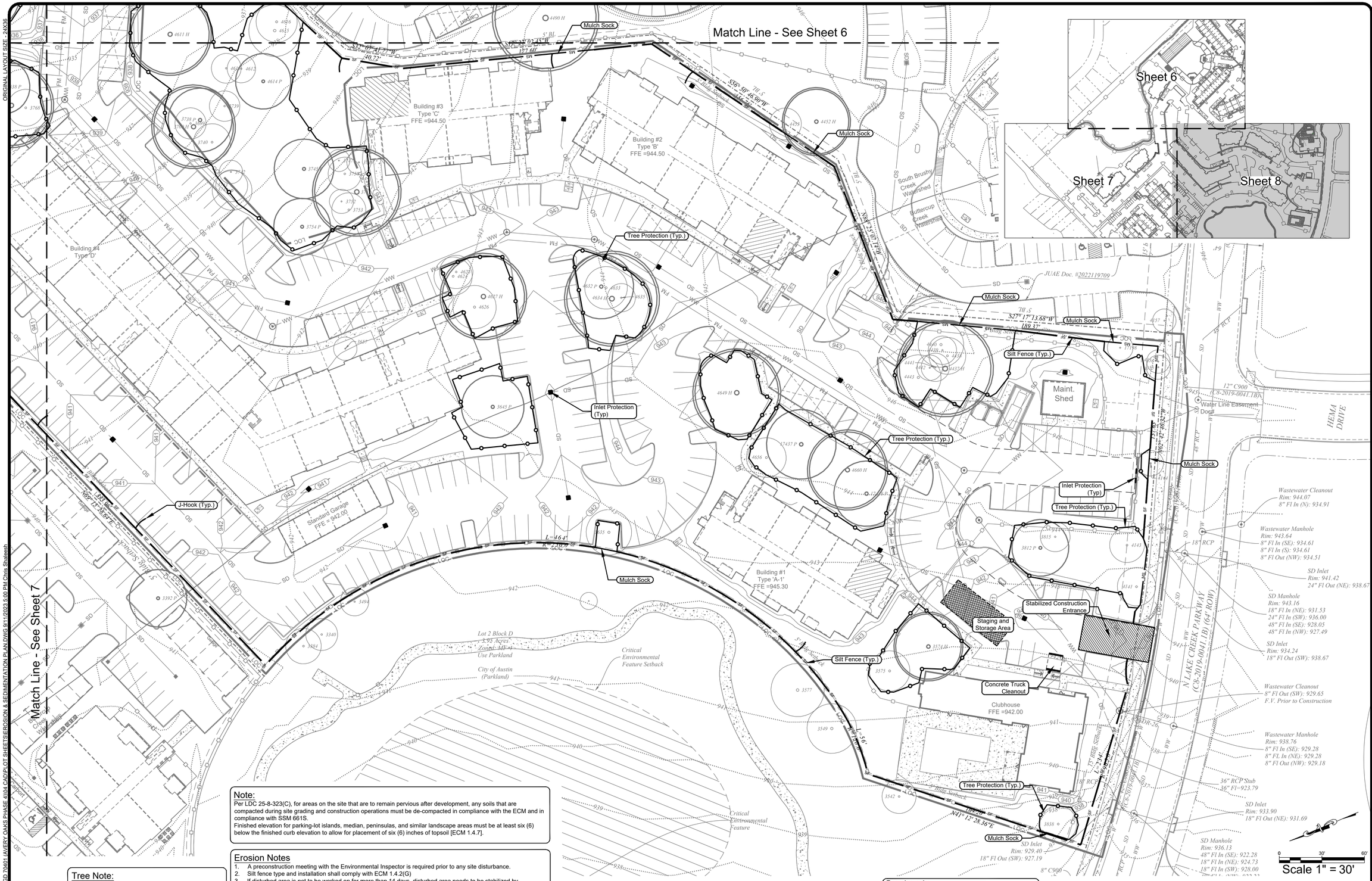
Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 7 of 66
SP-2023-0021C

ORIGINAL LAYOUT SIZE - 24X36

@2023 H:\JOBFILES\JGD (JOURNEYMAN)\JGD 70401 (AVERY OAKS PHASE 4)\04 CAD\PLOT SHEETS\EROSION & SEDIMENTATION PLAN.DWG 9/11/2023 5:00 PM Chris Shaleesh



Note:

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Finished elevation for parking-lot islands, median, peninsulas, and similar landscape areas must be at least six (6) below the finished curb elevation to allow for placement of six (6) inches of topsoil [ECM 1.4.7].

Erosion Notes

1. A preconstruction meeting with the Environmental Inspector is required prior to any site disturbance.
2. Silt fence type and installation shall comply with ECM 1.4.2(G)
3. If disturbed area is not to be worked on for more than 14 days, disturbed area needs to be stabilized by revegetation, mulch, tarp or revegetation matting.
4. Provide erosion control matting on all slopes that exceed 4:1 or install 18" mulch socks at the top and base of the slopes to prevent runoff and sediment transport until permanent vegetative stabilization has grown to a minimum 1.5 inches and there are no bare spots greater than 10 square feet.
5. Environmental Inspector has the authority to add and/or modify erosion/sedimentation controls on site to keep project in-compliance with the City of Austin Rules and Regulations. [LDC 25-8-183].
6. Contractor shall utilize dust control measures during site construction such as irrigation trucks and mulching as per ECM 1.4.5(A), or as directed by the Environmental Inspector.
7. The contractor will clean up spoils that migrate onto the roads a minimum of once daily. [ECM 1.4.4.D.4]
8. All permanent fencing must be installed at the perimeter of the critical environmental feature (CEF) buffer prior to the initiation of any construction or clearing activity. The fence material shall be in accordance with COA item No. 701S of the SSM, unless other materials are approved by the City of Austin. A lockable access gate shall be installed for each Critical Environmental Feature (CEF) Buffer.
9. Fence post holes will be dug by hand or air excavated.
10. Mulch socks must be used within critical root zones in lieu of silt fence.

Tree Note:

Per standard detail 610S-04, 2x4x6 or greater size lumber shall be strapped vertically to the tree and 8" of hardwood mulch shall be applied within the Full CRZ.

Legend

- LOC — Proposed Limits of Construction
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- MS — Proposed Mulch Sock
- Proposed Tree Protection Fence
- Proposed Inlet Protection
- Tree to be Removed

Contractor Note:

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Texas 811
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Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

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Erosion Control 3

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
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REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401

Sheet: 8 of 66

SP-2023-0021C

Erosion Control Notes

1. The contractor shall install erosion/sedimentation controls, tree/natural area protective fencing, and conduct "Pre-Construction" tree fertilization (if applicable) prior to any site preparation work (clearing, grubbing or excavation).
2. The placement of erosion/sedimentation controls shall be in accordance with the Environmental Criteria Manual and the approved Erosion and Sedimentation Control Plan. The COA ESC Plan shall be consulted and used as the basis for a TPDES required SWPPP. If a SWPPP is required, it shall be available for review by the City of Austin Environmental Inspector at all times during construction, including at the Pre-Construction meeting. The checklist below contains the basic elements that shall be reviewed for permit approval by COA EV Plan Reviewers as well as COA EV Inspectors.
   - Plan sheets submitted to the City of Austin MUST show the following:
     - Direction of flow during grading operations.
     - Location, description, and calculations for off-site flow diversion structures.
     - Areas that will not be disturbed; natural features to be preserved.
     - Delineation of contributing drainage area to each proposed BMP (e.g., silt fence, sediment basin, etc.)
     - Location and type of E&S BMPs for each phase of disturbance.
     - Calculations for BMPs as required.
     - Location and description of temporary stabilization measures.
     - Location of on-site spoils, description of handling and disposal of borrow materials, and description of on-site permanent spoils disposal areas, including size, depth of fill and revegetation procedures.
     - Describe sequence of construction as it pertains to ESC including the following elements:
       1. Installation sequence of controls (e.g. perimeter controls, then sediment basins, then temporary stabilization, then permanent, etc.)
       2. Project phasing if required (LOC greater than 25 acres)
       3. Sequence of grading operations and notation of temporary stabilization measures to be used
       4. Schedule for converting temporary basins to permanent WQ controls
       5. Schedule for removal of temporary controls
       6. Anticipated maintenance schedule for temporary controls
   - Categorize each BMP under one of the following areas of BMP activity as described below:
     - 3.1 Minimize disturbed area and protect natural features and soil
     - 3.2 Control Stormwater flowing onto and through the project
     - 3.3 Stabilize Soils
     - 3.4 Protect Slopes
     - 3.5 Protect Storm Drain Inlets
     - 3.6 Establish Perimeter Controls and Sediment Barriers
     - 3.7 Retain Sediment On-Site and Control Dewatering Practices
     - 3.8 Establish Stabilized Construction Exits
     - 3.9 Any Additional BMPs
   - Note the location of each BMP on your site map(s).
   - For any structural BMPs, you should provide design specifications and details and refer to them.
   - For more information, see City of Austin Environmental Criteria Manual 1.4.
3. The Placement of tree/natural area protective fencing shall be in accordance with the City of Austin standard Notes for Tree and Natural Area Protection and the approved Grading/Tree and Natural Area Plan.
4. A pre-construction conference shall be held on-site with the contractor, design Engineer/permit applicant and Environmental Inspector after installation of the erosion/sedimentation controls, tree/natural area protection measures and "Pre-Construction" tree fertilization (if applicable) prior to beginning any site preparation work. The owner or owner's representative shall notify the Development Services Department, (512) 974-2278 or by email at environmental.inspections@austintexas.gov at least three days prior to the meeting date. COA approved ESC Plan and TPDES SWPPP (if required) should be reviewed by COA EV Inspector at this time.
5. Any major variation in materials or locations of controls or fences from those shown on the approved plans will require a revision and must be approved by the reviewing Engineer, Environmental Specialist or City Arborist as appropriate. Major revisions must be approved by authorized COA staff. Minor changes to be made as field revisions to the Erosion and Sedimentation Control Plan may be required by the Environmental Inspector during the course of construction to correct control inadequacies.
6. The contractor is required to provide a certified inspector that is either a licensed engineer (or person directly supervised by the licensed engineer) or Certified Professional in Erosion and Sediment Control (CPESC or CPESC-IT), Certified Erosion, Sediment and Stormwater- Inspector (CESSWI or CESSWI) or Certified Inspector of Sedimentation and Erosion Controls (CISEC or CISEC-IT) certification to inspect the controls and fences at weekly or bi-weekly intervals and after one-half (1/ 2) inch or greater rainfall events to insure that they are functioning properly. The person(s) responsible for maintenance of controls and fences shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six (6) inches or one-third (1/ 3) of the installed height of the control whichever is less.
7. Prior to final acceptance by the City, haul roads and waterway crossings constructed for temporary contractor access must be removed, accumulated sediment removed from the waterway and the area restored to the original grade and revegetated. All land clearing debris shall be disposed of in approved spoil disposal sites.
8. All work must stop if a void in the rock substrate is discovered which is; one square foot in total area; blows air from within the substrate and/or consistently receives water during any rain event. At this time it is the responsibility of the Project Manager to immediately contact a City of Austin Environmental Inspector for further investigation. In addition, if the project site is located within the Edwards Aquifer, the Project Manager must notify the Travis County Balcones Canyonlands Conservation Preserve (BCCP) by email at bccp@traviscountytx.gov. Construction activities within 50 feet of the void must stop.
9. Temporary and Permanent Erosion Control: All disturbed areas shall be restored as noted below:
   A. All disturbed areas to be revegetated are required to place a minimum of six (6) inches of topsoil [see Standard Specification Item No. 601S.3(A)]. Do not add topsoil within the critical root zone of existing trees.
      - Topsoil salvaged from the existing site is encouraged for use, but it should meet the standards set forth in 601S.

      An owner/engineer may propose use of onsite salvaged topsoil which does not meet the criteria of Standard Specification 601S by providing a soil analysis and a written statement from a qualified professional in soils, landscape architecture, or agronomy indicating the onsite topsoil will provide an equivalent growth media and specifying what, if any, soil amendments are required.
      - Soil amendments shall be worked into the existing onsite topsoil with a disc or tiller to create a well-blended material.

The vegetative stabilization of areas disturbed by construction shall be as follows:

TEMPORARY VEGETATIVE STABILIZATION:

1. From September 15 to March 1, seeding shall be with or include a cool season cover crop: (Western Wheatgrass (Pascopyrum smithii) at 5.6 pounds per acre, Oats (Avena sativa) at 4.0 pounds per acre, Cereal Rye Grain (Secale cereale) at 45 pounds per acre. Contractor must ensure that any seed application requiring a cool season cover crop does not utilize annual ryegrass (Lolium multiflorum) or perennial ryegrass (Lolium perenne). Cool season cover crops are not permanent erosion control.
2. From March 2 to September 14, seeding shall be with hulled Bermuda at a rate of 45 pounds per acre or a native plant seed mix conforming to Item 604S or 609S.
   A. Fertilizer shall be applied only if warranted by a soil test and shall conform to Item No. 606S, Fertilizer. Fertilization should not occur when rainfall is expected or during slow plant growth or dormancy. Chemical fertilizer may not be applied in the Critical Water Quality Zone.
   B. Hydromulch shall comply with Table 1, below.
   C. Temporary erosion control shall be acceptable when the grass has grown at least 1½ inches high with a minimum of 95% total coverage so that all areas of a site that rely on vegetation for temporary stabilization are uniformly vegetated, and provided there are no bare spots larger than 10 square feet.
   D. When required, native plant seeding shall comply with requirements of the City of Austin Environmental Criteria Manual, and Standard Specification 604S or 609S.

Table 1: Hydromulching for Temporary Vegetative Stabilization

Material	Description	Longevity	Typical Application	Application Rates
100% or any blend of wood, cellulose, straw, and/or cotton plant material (except no mulch shall exceed 30% paper)	70% or greater Wood/Straw 30% or less Paper or Natural Fibers	0-3 months	Moderate slopes; from flat to 3:1	1500 to 2000 lbs per acres)

PERMANENT VEGETATIVE STABILIZATION:

1. From September 15 to March 1, seeding is considered to be temporary stabilization only. If cool season cover crops exist where permanent vegetative stabilization is desired, the grasses shall be mowed to a height of less than one-half (½) inch and the area shall be re-seeded in accordance with Table 2 below. Alternatively, the cool season cover crop can be mixed with Bermudagrass or native seed and installed together, understanding that germination of warm-season seed typically requires soil temperatures of 60 to 70 degrees.
2. From March 2 to September 14, seeding shall be with hulled Bermuda at a rate of 45 pounds per acre with a purity of 95% and a minimum pure live seed (PLS) of 0.83. Bermuda grass is a warm season grass and is considered permanent erosion control. Permanent vegetative stabilization can also be accomplished with a native plant seed mix conforming to Item 604S or 609S.
   A. Fertilizer use shall follow the recommendation of a soil test. See Item 606S, Fertilizer. Applications of fertilizer (and pesticide) on City-owned and managed property requires the yearly submittal of a Pesticide and Fertilizer Application Record, along with a current copy of the applicator's license. For current copy of the record template contact the City of Austin's IPM Coordinator.
   B. Hydromulch shall comply with Table 2, below.
   C. Water the seeded areas immediately after installation to achieve germination and a healthy stand of plants that can ultimately survive without supplemental water. Apply the water uniformly to the planted areas without causing displacement or erosion of the materials or soil. Maintain the seedbed in a moist condition favorable for plant growth. All watering shall comply with City Code Chapter 6-4 (Water Conservation), at rates and frequencies determined by a licensed irrigator or other qualified professional, and as allowed by the Austin Water Utility and current water restrictions and water conservation initiatives.
   D. Permanent erosion control shall be acceptable when the grass has grown at least 1½ inches high with a minimum of 95 percent for the non-native mix, and 95 percent coverage for the native mix so that all areas of a site that rely on vegetation for stability must be uniformly vegetated, and provided there are no bare spots larger than 10 square feet.
   E. When required, native plant seeding shall comply with requirements of the City of Austin Environmental Criteria Manual, Items 604S and 609S.

Table 2: Hydromulching for Permanent Vegetative Stabilization

Material	Description	Longevity	Typical Application	Application Rates
Bonded Fiber Matrix (BFM)	80% Organic defibrated fibers			
10% Tackifier		6 Months	On slopes up to 2:1 and erosive soil conditions	2,500 to 4,000 lbs per acre (see manufacturer specifications)
Fiber Reinforced Matrix (FRM)	65% Organic defibrated fibers 25% Reinforcing Fibers or less 10% Tackifier	Up to 12 months	On slopes up to 1:1 and erosive soil condition.	3000 to 4500 lbs per acre (see manufacturers recommendations)

10. Developer Information:
    Owner: Phone:
    Address: Austin, Texas 78747
    Owner's representative responsible for plan alterations:
    Bleyl Engineering Phone # (512) 454-2400
    Person or firm responsible for erosion/sedimentation control maintenance:
    TBD Phone #_____
    Person or firm responsible for tree/natural area protection Maintenance:
    TBD Phone #_____
11. The contractor shall not dispose of surplus excavated material from the site without notifying the Development Services Department at (512) 974-2278 at least 48 hours prior with the location and a copy of the permit issued to receive the material.

Natural Area Protection Standard Notes

Before Construction

1. all trees and natural areas shown on plan to be preserved shall be protected per ECM 3.6.1.
2. Tree protection shall be installed prior to the start of any site work, including demolition or site preparation. Refer to ECM 3.6.1.A.
3. Fencing for tree protection shall be chain-link mesh with a minimum height of 5 feet and shall be installed around or beyond the critical root zone except as allowed in ECM 3.6.4.B.4.
4. Unfenced sections of the critical root zone shall be covered with mulch at a minimum depth of 8 inches and a maximum depth of 12 inches per ECM 3.6.1.C.
5. Where fencing is located 5 feet or less from the truck of a perserved tree, truck wrapping shall be installed per ECM 3.6.1.D.
6. Erosion and sedimentation controls shall be installed and maintained so as not to cause impacts that exceed preservation criteria listed in ECM 3.5.3.D.

During Construction

1. Trees approved for removal shall be removed in a manner that does not exceed preseervation criteria for the trees to remain. Refer to ECM 3.5.2 A.
2. Fencing may not be temporarily moved or removed during development without prior authorization. The fenced critical root zone shall not be used for tool or material storage of any kind and shall be kept free of litter. Refer to ECM 3.6.1.B.3.
3. Pruning shall be in compliance with the current ANSI A300 standard for tree care.

After Construction

1. Tree protection shall be removed at the end of the project after all construction and final grading is complete, but before final inspection. Refer to ECM 3.6.1.A.
2. Landscape installation within the CRZ of preserved trees, including irrigation, soil and plantings, shall not exceed preservation criteria listed in ECM 3.5.2.
3. Documentation of tree work performed must be provided to inspector per ECM Appendix P-6.
4. This list is not exhaustive. Refer to appropriate ECM sections for full requirements.

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Special Construction Techniques

1. Prior to excavation within tree driplines, or the removal of trees adjacent to the other trees that are to remain, make a clean cut between the disturbed and undisturbed root zones with a rock saw or similar equipment to minimize root damage.
2. In critical root zone areas that cannot be protected during construction with fencing, and where heavy vehicular traffic is anticipated, cover those areas with four (4) inches of organic mulch to be produced on site, to minimize soil compaction.
3. Perform all grading within critical root zone areas with small equipment to minimize root damage.
4. Water all trees most heavily impacted by construction activities deeply as necessary during periods of hot, dry weather. Spray tree crowns with water periodically to reduce dust accumulation on the leaves.
5. When installing concrete adjacent to the root zone of a tree, use a plastic vapor barrier behind the concrete to prohibit leaching of lime into the soil.

Remedial Tree Care Notes

Aeration and Supplemental Nutrient requirements for trees within construction areas

As a component of an effective remedial tree care program per Environmental Criteria Manual section 3.5.4, preserved trees within the limits of construction may require soil aeration and supplemental nutrients. Soil and/or foliar analysis should be used to determine the need for supplemental nutrients. The City Arborist may require these analyses as part of a comprehensive tree care plan. Soil pH shall be considered when determining the fertilization composition as soil pH influences the tree's ability to uptake nutrients from the soil. If analyses indicate the need for supplemental nutrients, then humate/nutrient solutions with mycorrhizae components are highly recommended. In addition, soil analysis may be needed to determine if organic material or beneficial microorganisms are needed to improve soil health. Materials and methods are to be approved by the City Arborist (512-974-1876) prior to application. The owner or general contractor shall select a fertilization contractor and iensure coordination with the City Arborist.

Pre-construction treatment should be applied in the appropriate season, ideally the season preceding the proposed construction. Minimally, areas to be treated include the entire critical root zone of trees as depicted on the City approved plans. Treatment should include, but not limited to, fertilization, soil treatment, mulching, and proper pruning.

Post-construction treatment should occur during final revegetation or as determined by a qualified arborist after construction. Construction activities often result in a reduction in soil macro and micro pores and an increase in soil bulk density. To ameliorate the degraded soil conditions, aeration via water and/or air injected into the soil is needed or by other methods as approved by the City Arborist. The proposed nutrient mix specifications and soil and/or foliar analysis results need to be provided to and approved by the City Arborist prior to application (Fax # 512-974-3010). Construction which will be completed in less than 90 days may use materials at ½ recommended rates. Alternative organic fertilizer materials are acceptable when approved by the City Arborist. Within 7 days after fertilization is performed, the contractor shall provide documentation of the work performed to the City Arborist, Development Services Department. P.O. Box 1088, Austin, TX 78767. This note should be referenced as item #1 in the Sequence of Construction.

Dust Control Note

Contractor shall utilize dust control measures during site construction such as irrigation trucks and mulching as per ECM 1.4.5(A), or as directed by the Environmental Inspector.

Environmental Inspector Note

Environmental Inspector has the authority to add and/or modify erosion/sedimentation controls on site to keep project in-compliance with the City of Austin Rules and Regulations.

Spoils Control Note

All spoils will be cleaned off of all roads, driveways, and any other impervious cover located outside the LOC at the end of each day.

Sequence of Construction

1	Temporary erosion and sedimentation controls are to be installed as indicated on the approved site plan or subdivision construction plan and in accordance with the Erosion Sedimentation Control Plan (ESC) and Stormwater Pollution Prevention Plan (SWPPP) that is required to be posted on the site. Install tree protection, initiate tree mitigation measures and conduct "Pre-Construction" tree fertilization (if applicable).
2	The Environmental Project Manager or Site Supervisor must contact the Development Services Department, Environmental Inspection, at 512-974-2278, 72 hours prior to the scheduled date of the required on-site preconstruction meeting.
3	The Environmental Project Manager, and/or Site Supervisor, and/or Designated Responsible Party, and the General Contractor will follow the Erosion Sedimentation Control Plan (ESC), Storm Water Pollution Prevention Plan (SWPPP) posted on the site. Temporary erosion and sedimentation controls will be revised, if needed, to comply with City Inspectors' directives, and revised construction schedule relative to the water quality plan requirements and the erosion plan.
4	Rough grade the pond(s) at 100% proposed capacity. Either the permanent outlet structure or a temporary outlet must be constructed prior to development of embankment or excavation that leads to ponding conditions. The outlet system must consist of a sump pit outlet and an emergency spillway meeting the requirements of the Drainage Criteria Manual and/or the Environmental Criteria Manual, as required. The outlet system shall be protected from erosion and shall be maintained throughout the course of construction until installation of the permanent water quality pond(s).
5	Temporary erosion and sedimentation controls will be inspected and maintained in accordance with the Erosion Sedimentation Control Plan (ESC) and Storm Water Pollution Prevention Plan (SWPPP) posted on the site.
6	Begin site clearing/construction (or demolition) activities.
7	Permanent water quality ponds or controls will be cleaned out and filter media will be installed prior to/concurrently with revegetation of site.
8	Complete construction and start revegetation of the site and installation of landscaping.
9	Upon completion of the site construction and revegetation of a project site, the design engineer shall submit an engineer's letter of concurrence bearing the engineer's seal, signature, and date to the Development Services Department indicating that construction, including revegetation, is complete and in substantial compliance with the approved plans. After receiving this letter, a final inspection will be scheduled by the appropriate City inspector.
10	Upon completion of landscape installation of a project site, the Landscape Architect shall submit a letter of concurrence to the Development Services Department indicating that the required landscaping is complete and in substantial conformity with the approved plans. After receiving this letter, a final inspection will be scheduled by the appropriate City inspector.
11	After a final inspection has been conducted by the City inspector and with approval from the City inspector, remove the temporary erosion and sedimentation controls and complete any necessary final revegetation resulting from removal of the controls. Conduct any maintenance and rehabilitation of the water quality ponds or controls.

Revision	Date	By	App	Comment

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AUSTIN BRYAN CONROE HOUSTON

Erosion Control Notes

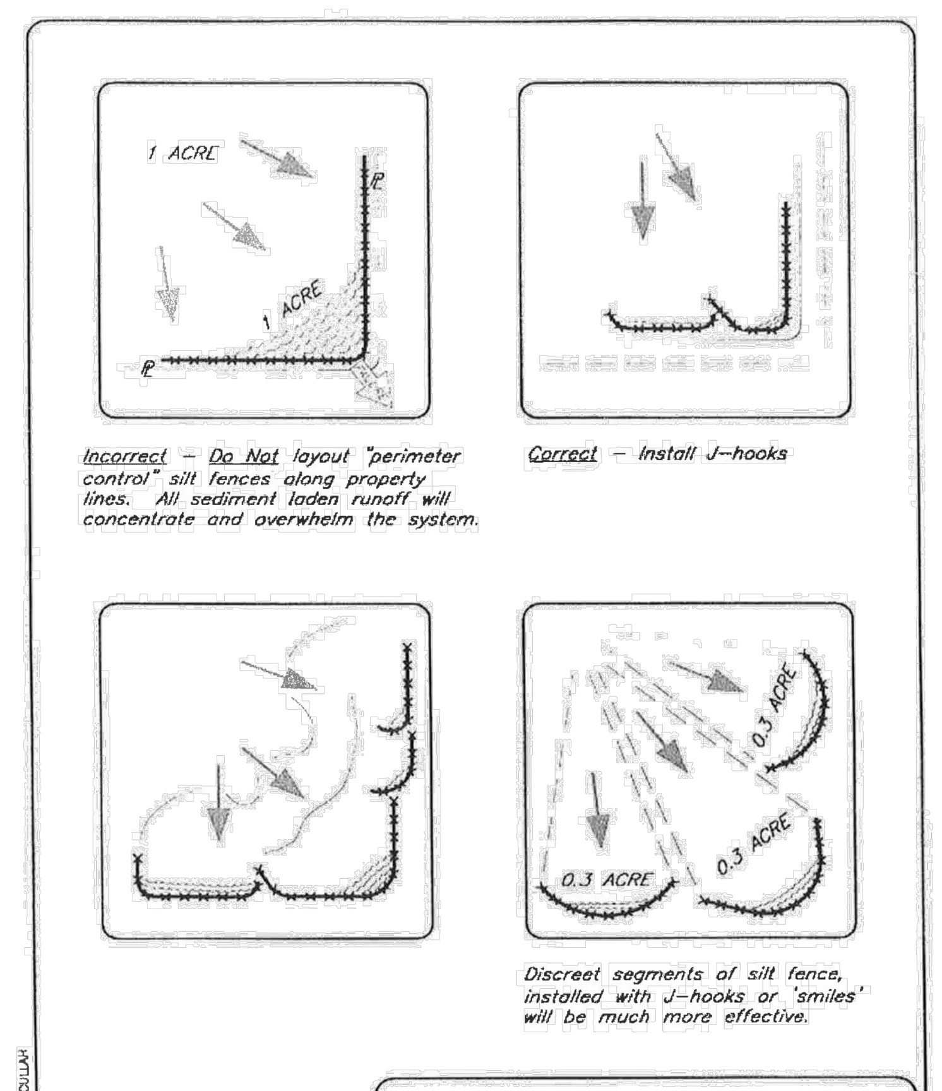
Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 97881 REGISTERED PROFESSIONAL ENGINEER
9/11/23

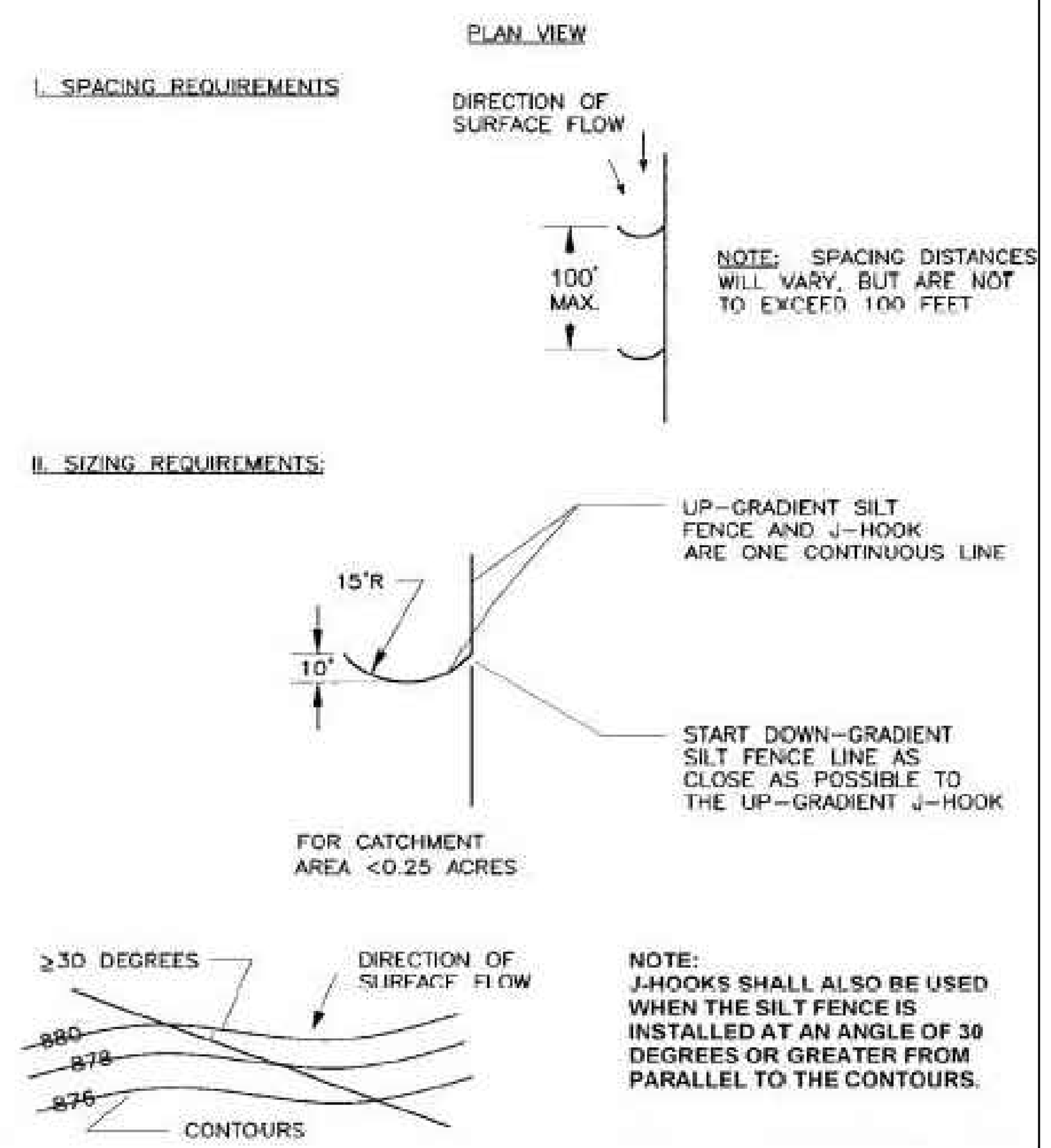
Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 9 of 66
SP-2023-0021C

ORIGINAL LAYOUT SIZE - 24X36

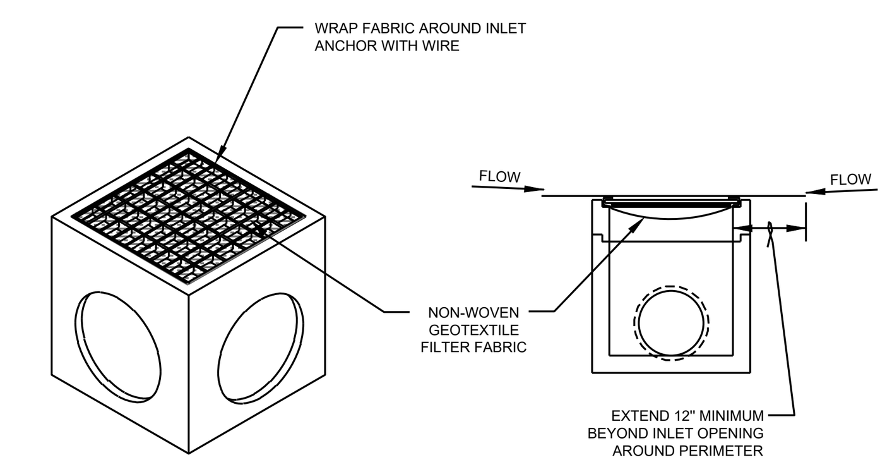
Figure 1.4.5.G.3 Silt Fence Placement for Perimeter Control



SILT FENCE PLACEMENT FOR PERIMETER CONTROL
(Figure 1.4.5.G.3)



Silt Fence J - Hook Detail
(Figure 1.4.5.G.4)



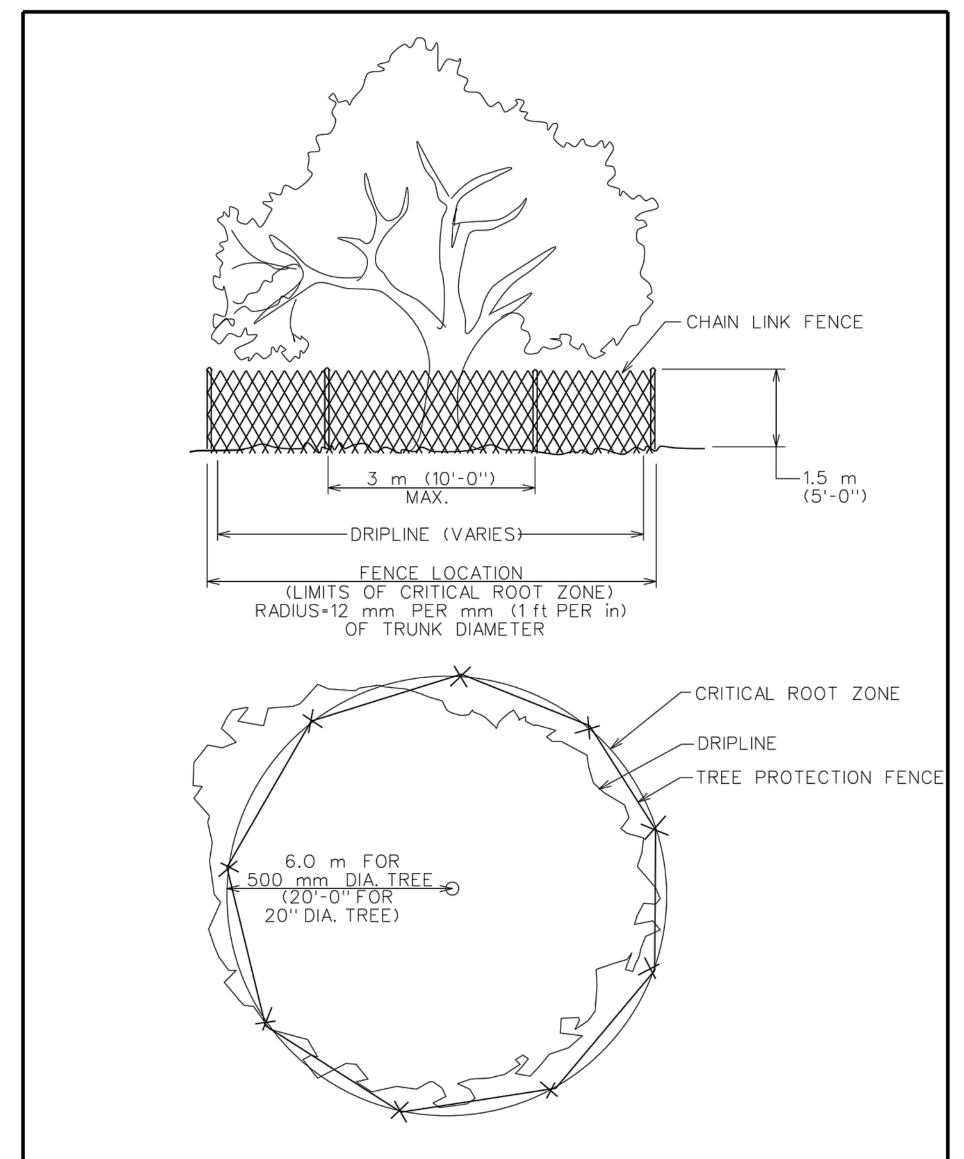
FILTER FABRIC SPECIFICATION TABLE

PROPERTY	TEST METHOD	ASTM REQUIREMENTS
FABRIC WEIGHT	D 3776	≧3.0 OUNCES/SQUARE YARD
UV RADIATION STABILITY	D 4355	70% STRENGTH RETAINED MIN., AFTER 500 HOURS IN XENON ARC DEVICE
MULLEN BURST STRENGTH	D 3786	≧120 POUND PER SQUARE INCH
WATER FLOW RATE	D 4491	≧275 GALLONS/MINUTE/SQUARE FEET

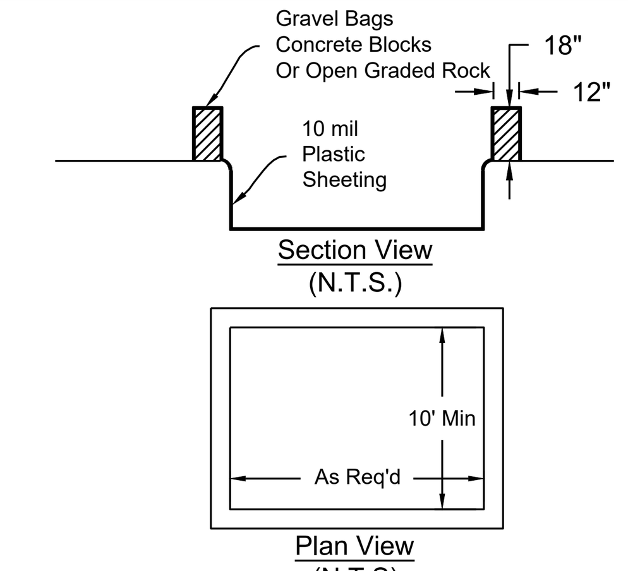
Contact GeoSolutions at 512-445-0790 for filter fabric

NOTES
1. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2". DO NOT ALLOW SILT TO ENTER STORM SYSTEM WHEN REMOVING INLET.
2. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY CLEAN THE INLET PROTECTION IF EXCESSIVE PONDING OCCURS.
3. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. — AREA INLET PROTECTION DETAIL



CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — TREE PROTECTION FENCE TYPE A - CHAIN LINK
RECORD COPY SIGNED BY J. PATRICK MURPHY — 11/15/99 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 610S-2

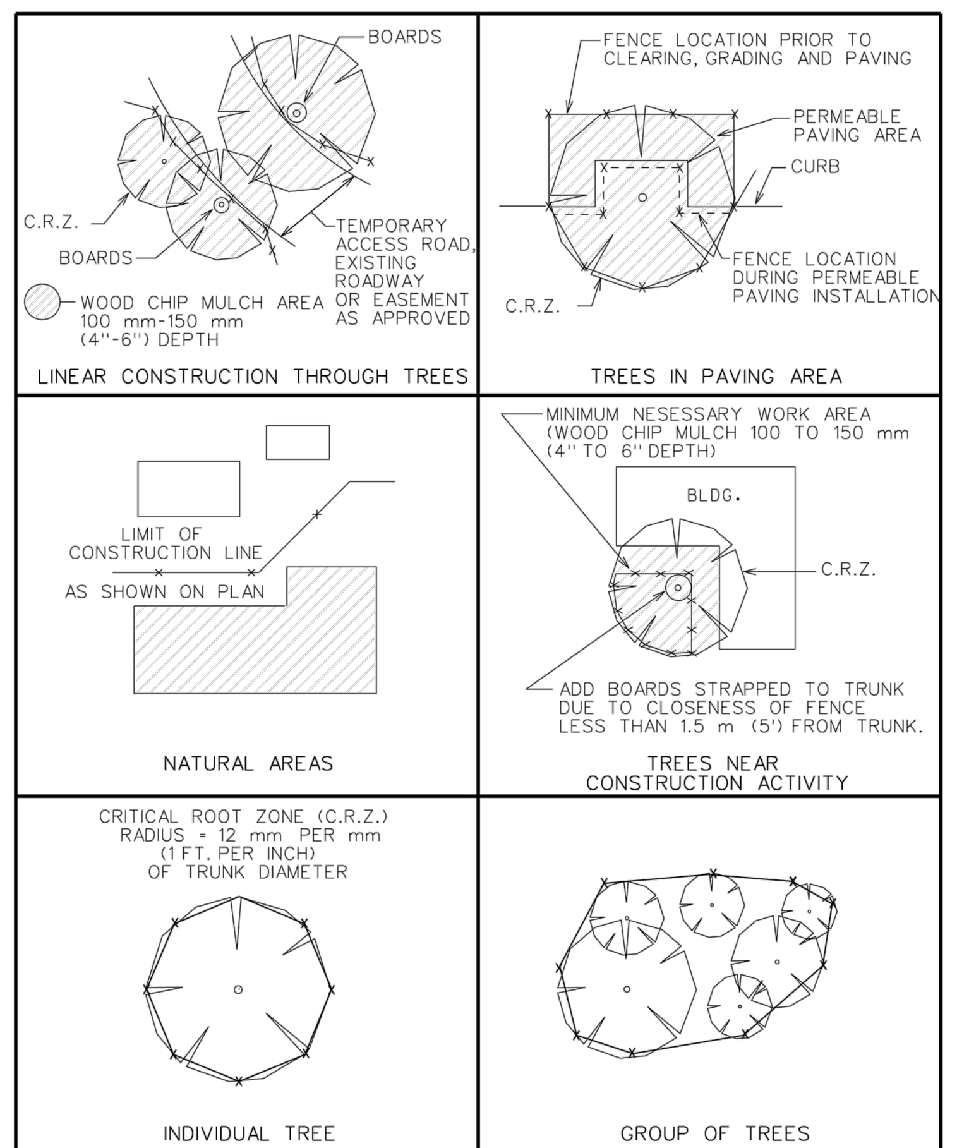


Section View
(N.T.S.)

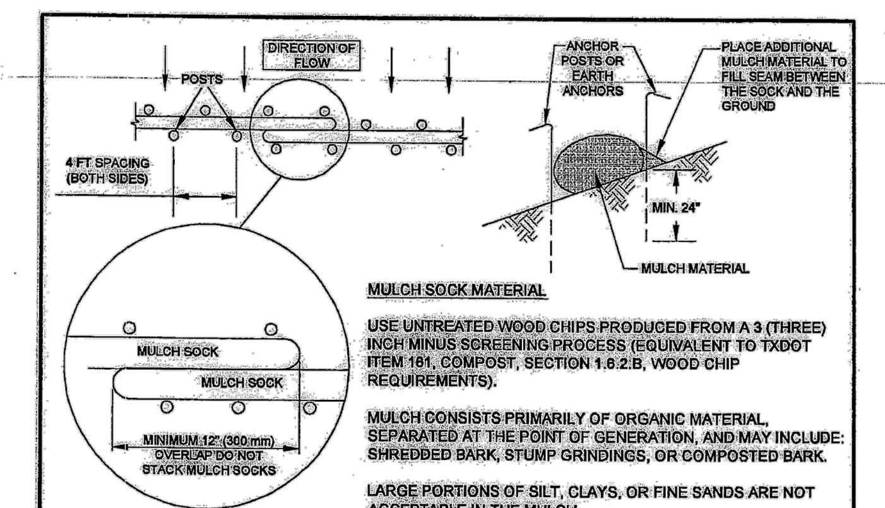
Plan View
(N.T.S)

Alternative Self-Installed Construction Site Concrete Truck Washout

1. The excavation for the concrete truck washout shall be a minimum of 10' wide and of sufficient length and depth to accommodate 7 gallons of washout water and concrete per truck per day and/or 50 gallons of washout water and concrete per pump truck per day.
2. In the event that the self-installed concrete truck washout is constructed above ground, it shall be 10' wide and 10' long with the same requirements for containment as described in item 1.
3. The containment area shall be lined with 10 mil plastic sheeting, without holes or tears. Where there are seams, these shall be secured according to manufacturers directions.
4. The plastic sheeting shall be of sufficient size so that it will overlap the top of the containment area and be wrapped around the gravel bags, concrete blocks or open graded rock as least 2 times.
5. The gravel bags or concrete blocks shall be placed abutting each other to form a continuous berm around the outer perimeter of the containment area.
6. The berm consisting of gravel bags, concrete blocks or open graded rock shall be no less than 18" high and no less that 12" wide.
7. The containment area shall not exceed 50% of capacity at any one time.
8. Solids shall be removed from containment area and disposed of properly and any damage to the plastic sheeting shall be repaired or sheeting replaced before next use.



CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — TREE PROTECTION FENCE LOCATIONS
RECORD COPY SIGNED BY J. PATRICK MURPHY — 11/15/99 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 610S-1



MULCH SOCK MATERIAL

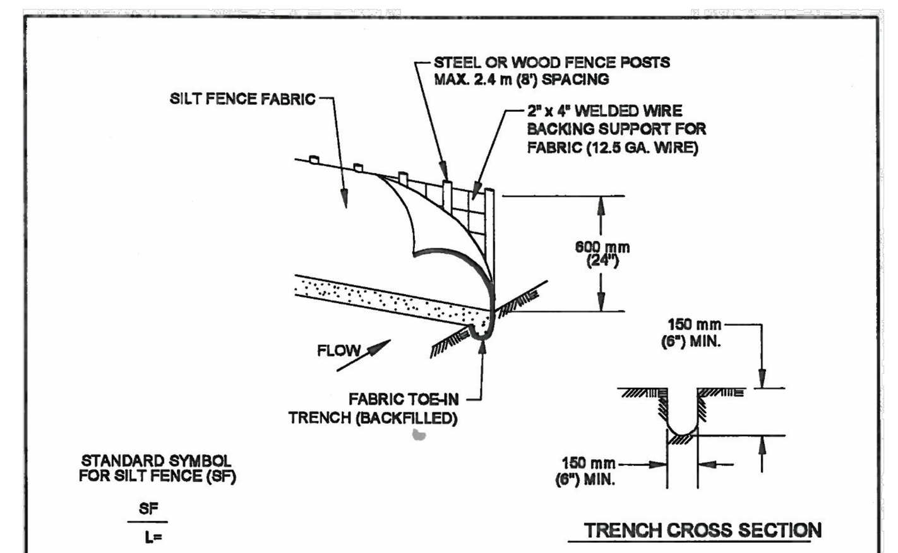
USE UNTREATED WOOD CHIPS PRODUCED FROM A 3 (THREE) INCH MINUS SCREENING PROCESS (EQUIVALENT TO TXDOT ITEM 161, COMPOST, SECTION 1.6.2.B, WOOD CHIP REQUIREMENTS).

MULCH CONSISTS PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, OR COMPOSTED BARK.

LARGE PORTIONS OF SILT, CLAYS, OR FINE SANDS ARE NOT ACCEPTABLE IN THE MULCH.

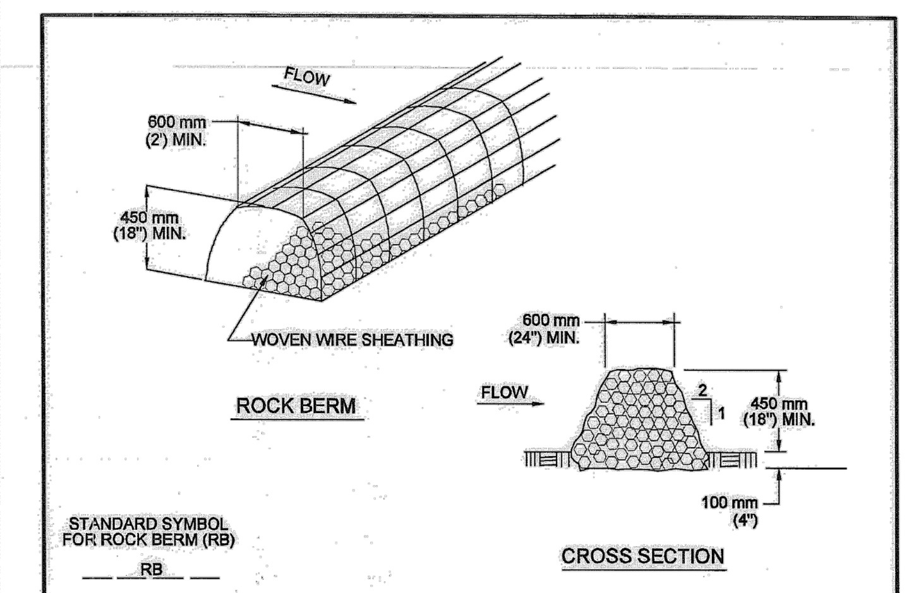
NOTES:
1. STEEL OR WOOD POSTS WHICH SUPPORT THE MULCH SOCK SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 600mm (24 inches). IF WOOD POSTS CANNOT ACHIEVE 600mm (24 inches) DEPTH, USE STEEL POSTS. EARTH ANCHORS ARE ALSO ACCEPTABLE.
2. THE TOE OF THE MULCH SOCK SHALL BE PLACED SO THAT THE MULCH SOCK IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. IN ORDER TO PREVENT WATER FROM FLOWING BETWEEN THE JOINTS OF ADJACENT ENDS OFMULCH SOCKS, LAP THE ENDS OF ADJACENT MULCH SOCKS A MINIMUM OF 300mm (12 inches).
3. MULCH MATERIAL MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH; IT IS NOT ACCEPTABLE FOR THE MULCH MATERIAL TO CONTAIN GROUND CONSTRUCTION DEBRIS, BIOSOLIDS, OR MANURE.
4. SOCK MATERIAL WILL BE 100% BIODEGRADABLE, PHOTODEGRADABLE, OR RECYCLABLE SUCH AS BURLAP, TWINE, UV PHOTOBIODEGRADABLE PLASTIC, POLYESTER, OR ANY OTHER ACCEPTABLE MATERIAL.
5. MULCH SOCKS SHOULD BE USED AT THE BASE OF SLOPES NO STEEPER THAN 2:1 AND SHOULD NOT EXCEED THE MAXIMUM SPACING CRITERIA PROVIDED IN CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL TABLE 1.4.5.F.1 FOR A GIVEN SLOPE CATEGORY.
6. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — MULCH SOCK
08/24/2010 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 648S-1



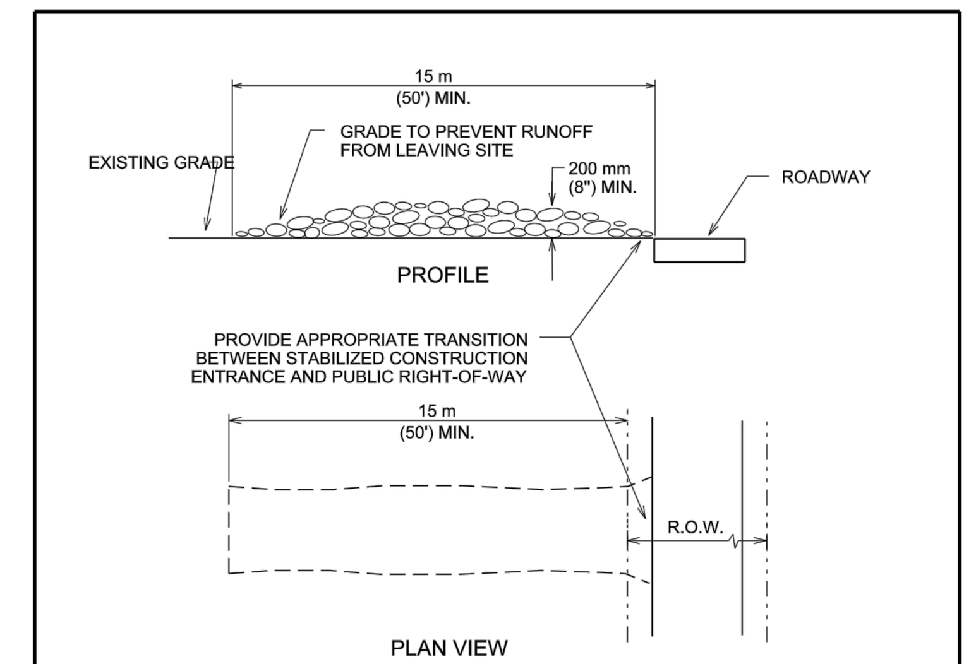
1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 inches) DEPTH, USE STEEL POSTS.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 inches) DEEP AND 150 mm (6 inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE , WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — SILT FENCE
9/1/2011 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 642S-1



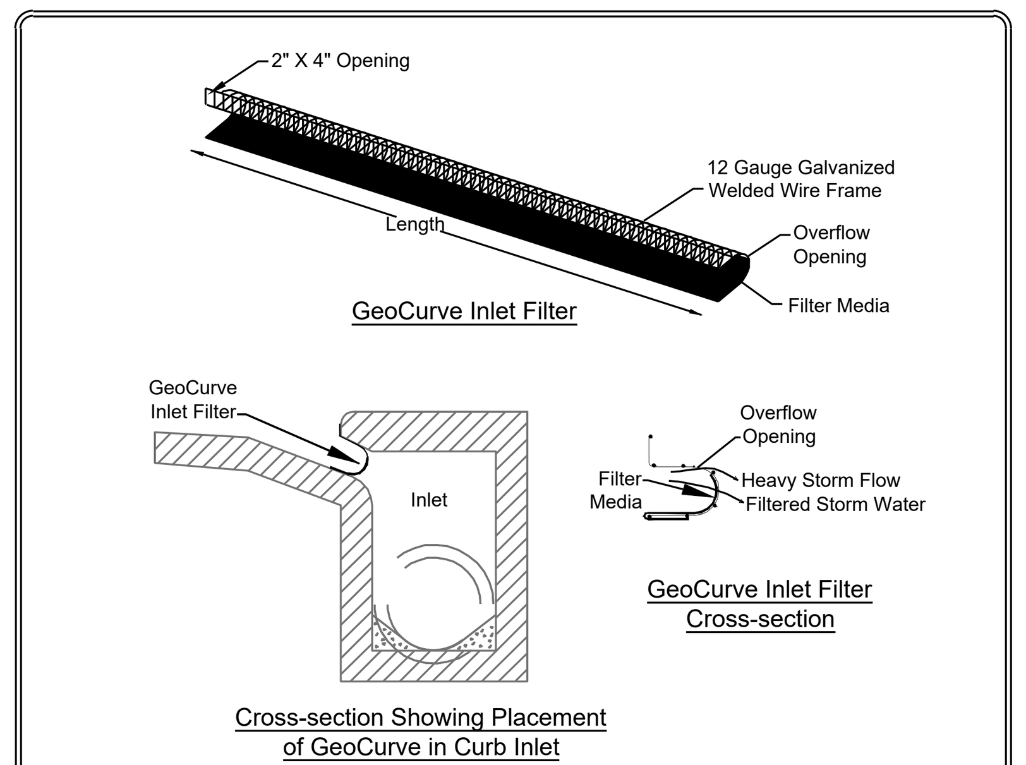
NOTES:
1. USE ONLY OPEN GRADED ROCK 75 to 125 mm (3 to 5") DIAMETER FOR ALL CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 25 mm (1") OPENING AND MINIMUM WIRE DIAMETER OF 12.9 mm (20 GAUGE).
3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. IF SEDIMENT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 150 mm (6"), WHICHEVER IS LESS, THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED,THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — ROCK BERM
8/24/2010 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 639S-1



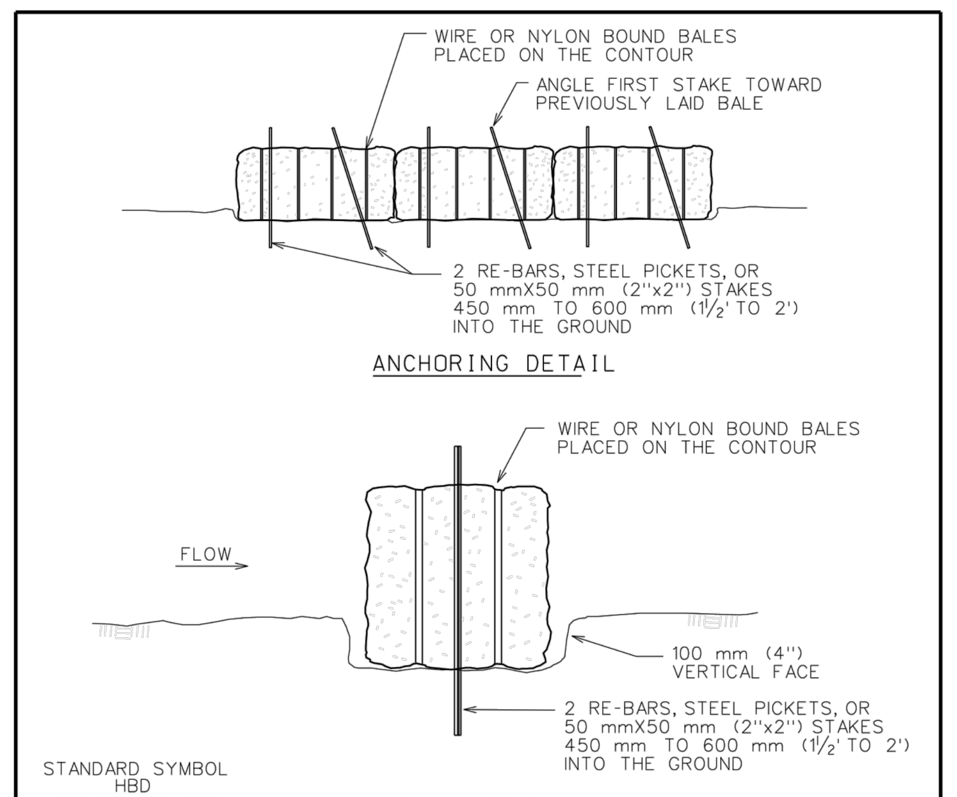
NOTES:
1. STONE SIZE: 75-125 mm (3-5") OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8").
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — STABILIZED CONSTRUCTION ENTRANCE
RECORD COPY SIGNED BY J. PATRICK MURPHY — 5/23/00 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 641S-1



Notes
1. The GeoCurve Inlet Filter shall be forced into the curb inlet to create a compression fit into the inlet.
2. The filter media for projects within City of Austin jurisdiction is to be GeoSolutions CI-1 woven filter fabric.
3. The filter media is to be attached to the wire frame with hog rings leaving an overflow opening above the filter media.
4. Inspection shall be made by the contractor and silt accumulation must be removed when the depth reaches 2 inches.
5. Inlet filter shall be removed upon stabilization of the sediment source.

GeoCurve Inlet Filter Standard Detail
April 13, 2009



GENERAL NOTES:
1. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 100 mm (4").
2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY 10M (⅜") REBAR STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
3. INSPECTION SHALL BE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
4. WHEN SILT REACHES A DEPTH OF 150 mm (6"), IT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE AS TO NOT CREATE A SILTATION PROBLEM.
5. AFTER THE DEVELOPMENT SITE IS COMPLETELY STABILIZED, THE BALE AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED SPOIL DISPOSAL SITE.

CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — HAY BALE DIKE
RECORD COPY SIGNED BY J. PATRICK MURPHY — 3/27/00 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 628S-1

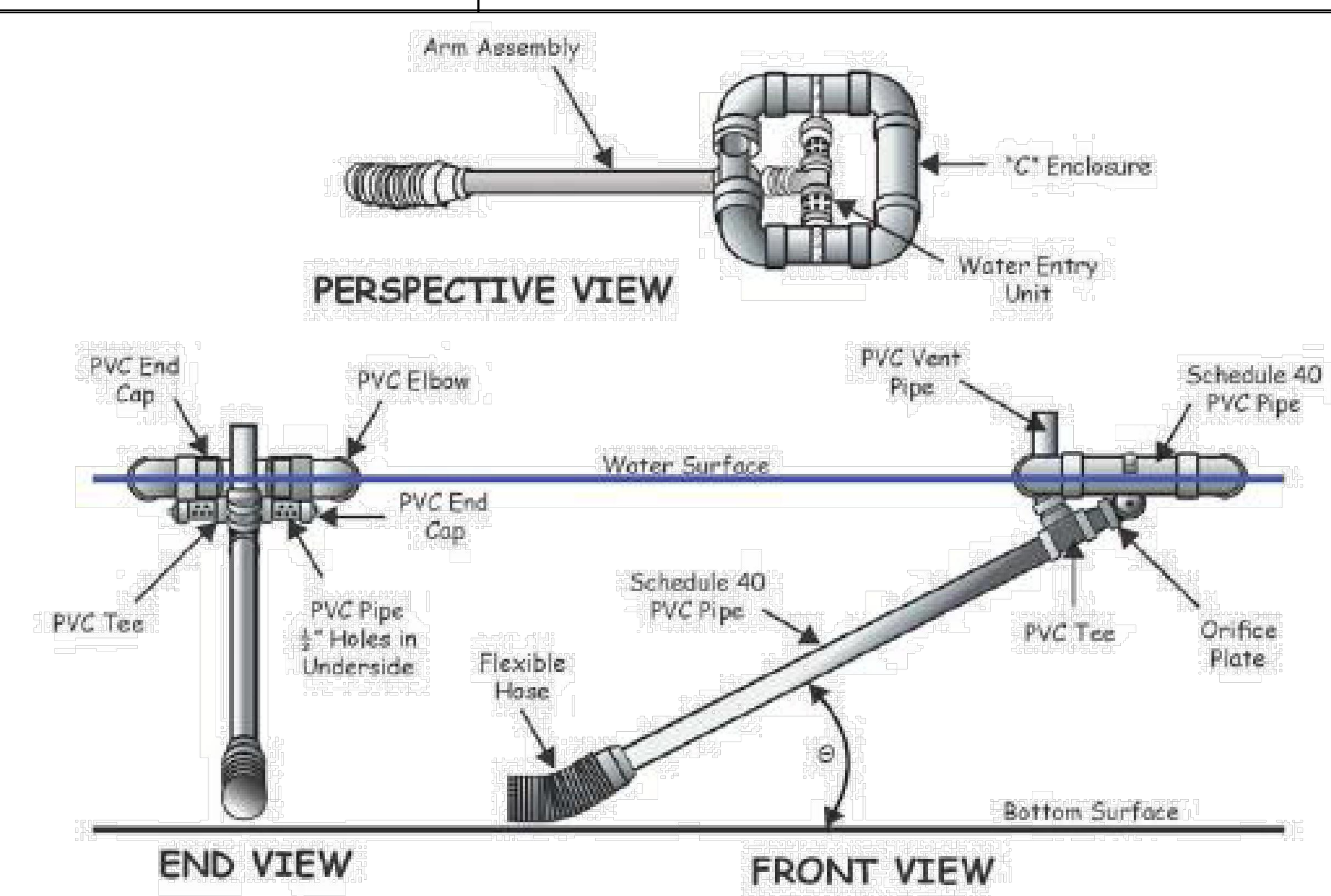
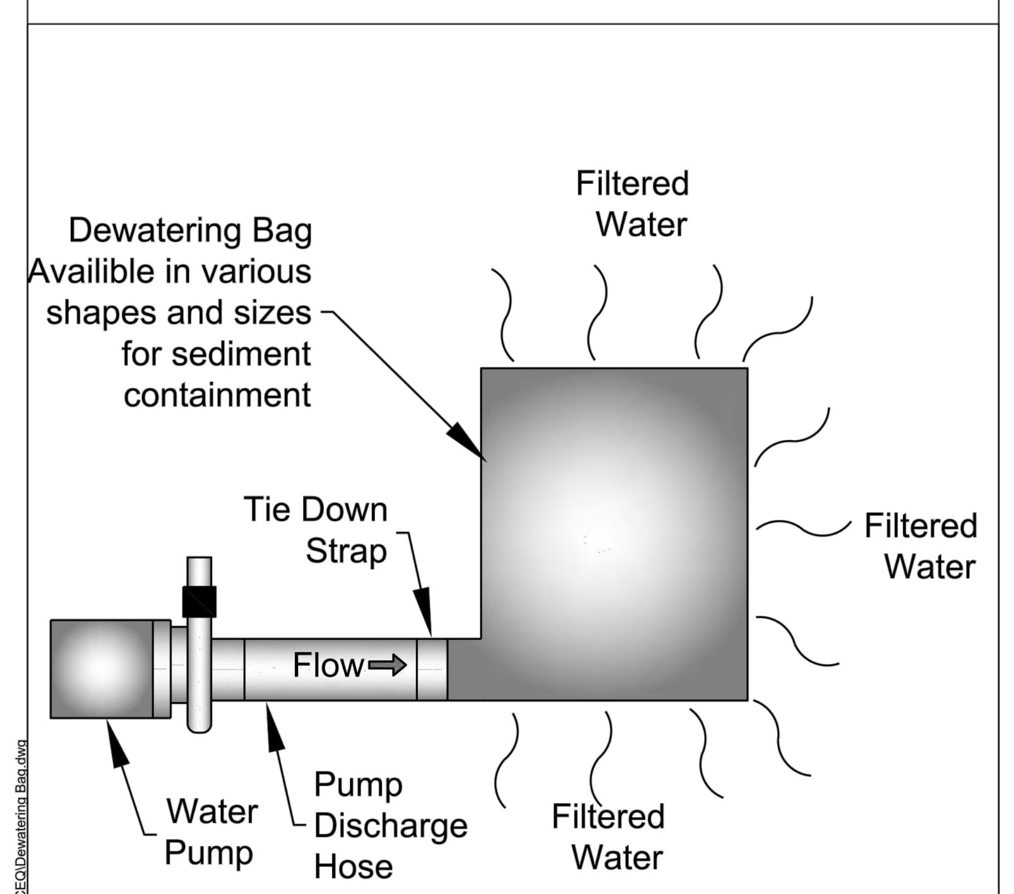


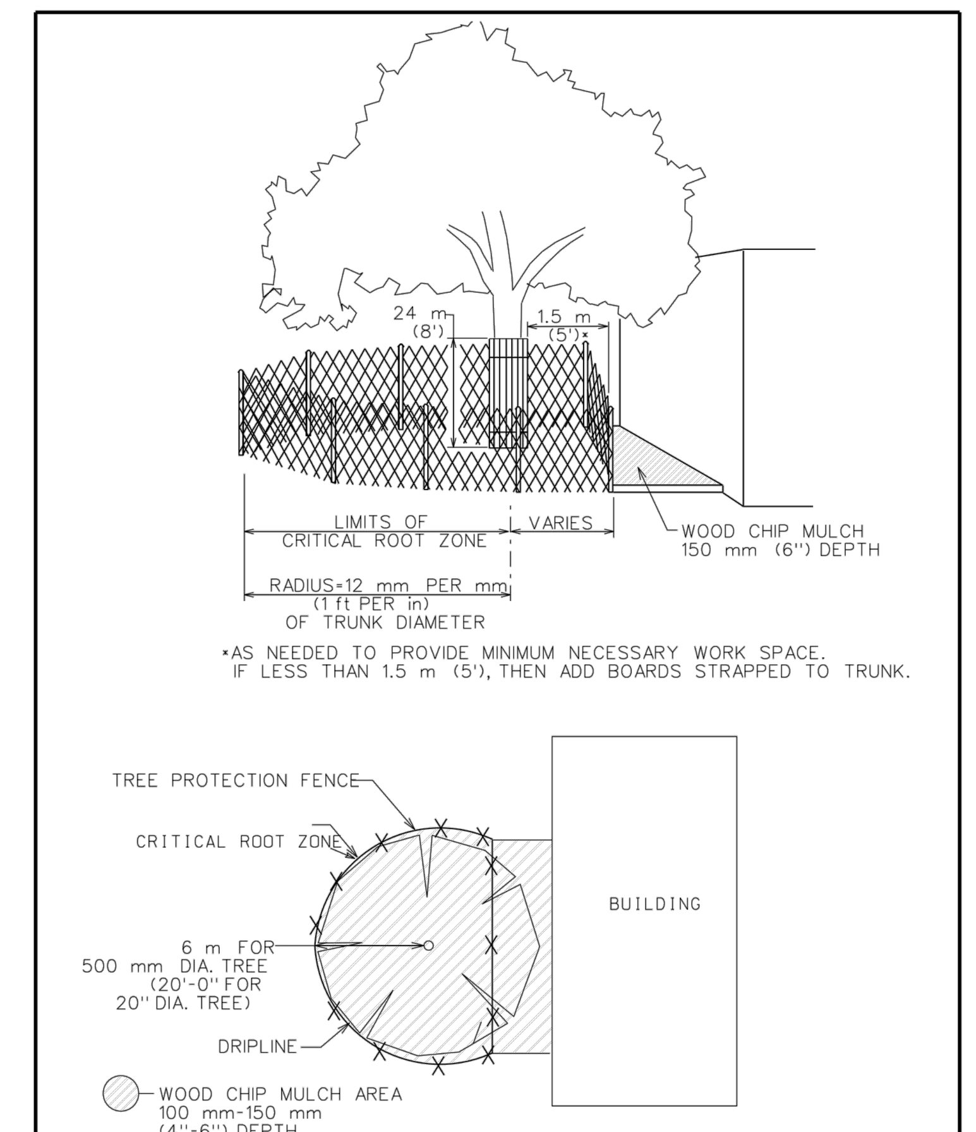
Figure 6.64a Schematic of a skimmer, from Pennsylvania Erosion and Sediment Pollution Control Manual, March, 2000.

Dewatering Skimmer
(Figure 1.4.5.K.1)

Gravity Dewatering Bag



Dewatering Bag



CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — TREE PROTECTION FENCE MODIFIED TYPE A - CHAIN LINK
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Revision	Date	By	App	Comment

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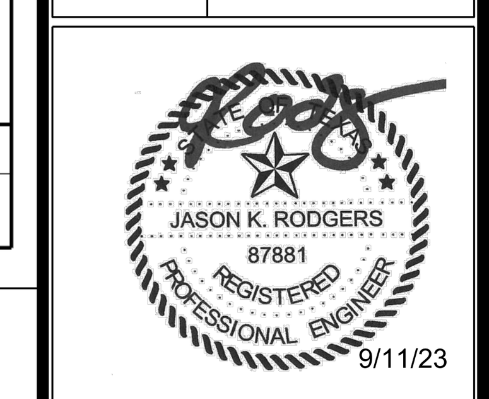
Erosion Control Details

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County



Design: JR, JG, CS
CAD: CS, JW — Review: JR, JG
Project No: JDG 70401
Sheet: 10 of 66
SP-2023-0021C

Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of his/her submittal, whether or not the application is reviewed for Code compliance by City engineers.

@2023 H:\JOBFILES\JGD\JOURNEYMAN\JGD 70401 (AVERY OAKS PHASE 4)\04 CAD\PLOT SHEETS\EROSION NOTES.DWG 9/11/2023 5:00 PM Chris Shisleash

Meter Return Note:

Coordinate with City of Austin inspector for meter return(s) to Austin Water.

Tree Legend

3447	Trees to remain	3268H	Heritage Trees
3268P	Protected Trees	3268	Trees to be Removed

Site Demolition Notes

1. Install all tree protection fencing as per sheet ?.
2. All demolition within the full critical root zone of preserved trees to be performed with hand tools only.
3. A pre-construction meeting with the Environmental Inspector is required prior to any site disturbance.
4. All abandoned piping is to be plugged.
5. Existing trees on the site are to remain unless noted otherwise.
6. Contractor is to remove all demolished materials from site, and to repair or replace any materials or items designated to remain.
7. Demolition work should be completed prior to any commencement of work on the proposed building.
8. Contractor to remove gas & water meters and return meters to respective utility companies.
9. Contractor to use "Sidewalk Closed" signs during sidewalk closures.
10. Notify contracting officer and arborist before commencement of work which may jeopardize the well-being of any trees to remain.

Tree List

See Sheet ## for the tree list.

Texas 811

Call Before You Dig!!

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

B.M. - Nail with washer stamped "LSI Surveying" set on the back of curb along the North right-of-way of North Lake Creek Parkway, approximately 386' feet West of the intersection of North Lake Creek Parkway and Hema Drive.
N: 10150246.35, E: 3094468.89, Elev. = 932.61.

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

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Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
Austin Bryan Conroe Houston

Tree Removal Plan & Demo Plan 1

Lake Creek at Avery Ranch

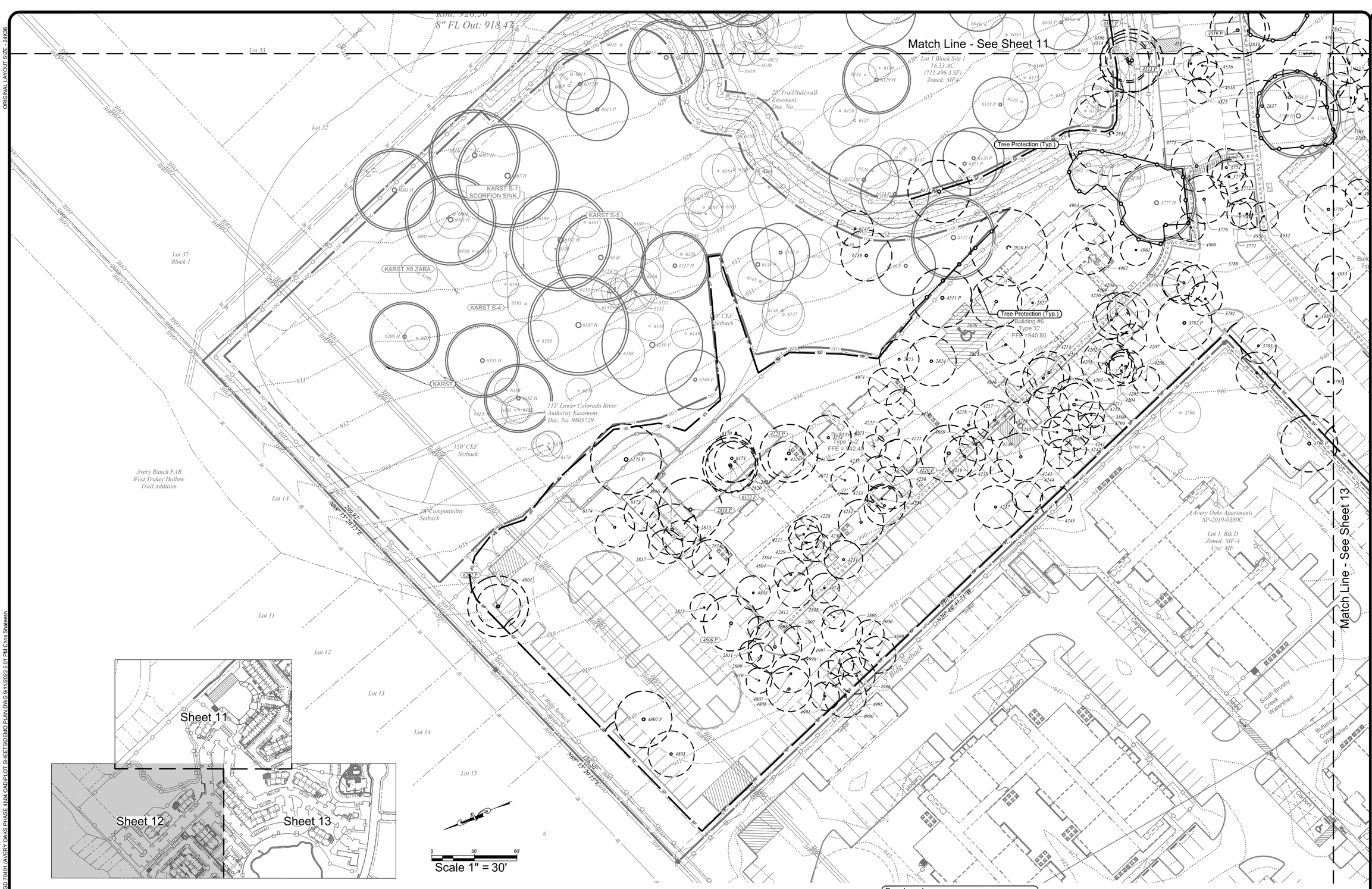
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 11 of 66
SP-2023-0021C

ORIGINAL LAYOUT SIZE - 24X36

ORIGINAL LAYOUT SIZE - 24X36



Meter Return Note:
Coordinate with City of Austin inspector for meter return(s) to Austin Water.

Tree Legend

- 3447 — Trees to remain
- 3268H — Heritage Trees
- 3268P — Protected Trees
- 3268 — Trees to be Removed

Site Demolition Notes

1. Install all tree protection fencing as per sheet ?.
2. All demolition within the full critical root zone of preserved trees to be performed with hand tools only.
3. A pre-construction meeting with the Environmental Inspector is required prior to any site disturbance.
4. All abandoned piping is to be plugged.
5. Existing trees on the site are to remain unless noted otherwise.
6. Contractor is to remove all demolished materials from site, and to repair or replace any materials or items designated to remain.
7. Demolition work should be completed prior to any commencement of work on the proposed building.
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Texas 811
Call Before You Dig!!

Legal Description
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Benchmarks
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AUSTIN BRYAN CONROE HOUSTON

Tree Removal Plan & Demo Plan 2

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401

Sheet: 12 of 66
SP-2023-0021C

Meter Return Note:

Coordinate with City of Austin inspector for meter return(s) to Austin Water.

Tree Legend

- Trees to remain
- Heritage Trees
- Protected Trees
- Trees to be Removed

Site Demolition Notes

1. Install all tree protection fencing as per sheet ?.
2. All demolition within the full critical root zone of preserved trees to be performed with hand tools only.
3. A pre-construction meeting with the Environmental Inspector is required prior to any site disturbance.
4. All abandoned piping is to be plugged.
5. Existing trees on the site are to remain unless noted otherwise.
6. Contractor is to remove all demolished materials from site, and to repair or replace any materials or items designated to remain.
7. Demolition work should be completed prior to any commencement of work on the proposed building.
8. Contractor to remove gas & water meters and return meters to respective utility companies.
9. Contractor to use "Sidewalk Closed" signs during sidewalk closures.
10. Notify contracting officer and arborist before commencement of work which may jeopardize the well-being of any trees to remain.

Tree List

See Sheet ## for the tree list.

Texas 811

Call Before You Dig!!

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

B.M. - Nail with washer stamped "LSI Surveying" set on the back of curb along the North right-of-way of North Lake Creek Parkway, approximately 386' feet West of the intersection of North Lake Creek Parkway and Hema Drive.
N: 10150246.35, E: 3094468.89, Elev. = 932.61.

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of his/her submittal, whether or not the application is reviewed for Code compliance by City engineers.

Revision	Date	By	App	Comment

Prepared For:

Avery Land Investors, LP
1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
7701 San Felipe Blvd., Ste 200, Austin TX 78729
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AUSTIN BRYAN CONROE HOUSTON

Tree Removal Plan & Demo Plan 3

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

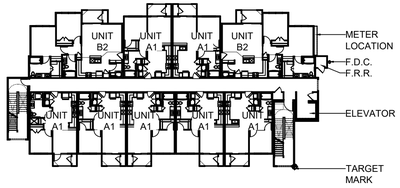
Design:	JR, JG, CS
CAD:	CS, JW
Review:	JR, JG
Project No:	JDG 70401

Sheet: 13 of 66

SP-2023-0021C

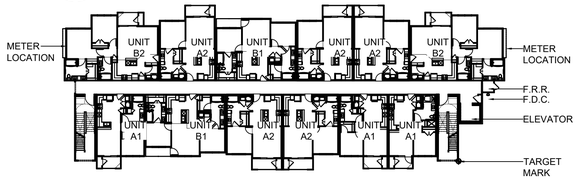
01 BUILDING TYPICAL FRONT ELEVATION

1/16" = 1'-0" — 7 REQ'D



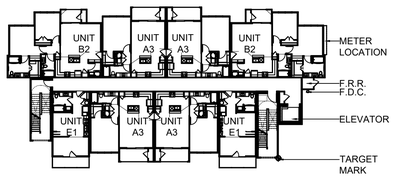
02 BUILDING 'A' 1ST FLOOR PLAN

1/32" = 1' — 1 REQ'D



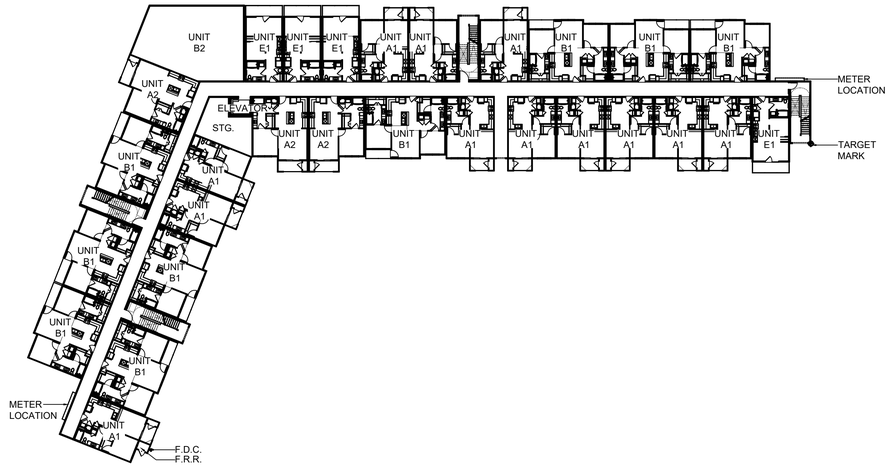
03 BUILDING 'B' 1ST FLOOR PLAN

1/32" = 1' — 1 REQ'D



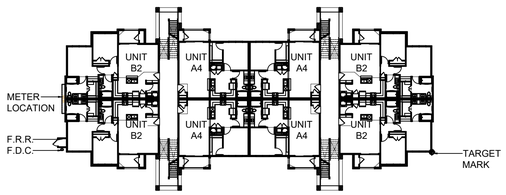
04 BUILDING 'C' 1ST FLOOR PLAN

1/32" = 1' — 2 REQ'D



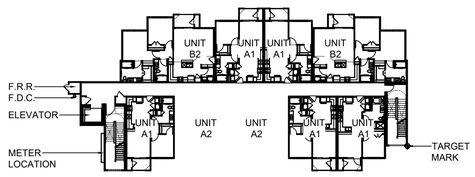
05 BUILDING 'D' 1ST FLOOR PLAN

1/32" = 1' — 1 REQ'D



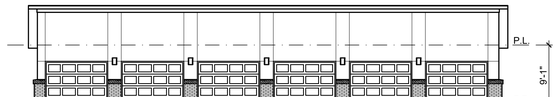
06 BUILDING 'E' 1ST FLOOR PLAN

1/32" = 1' — 1 REQ'D



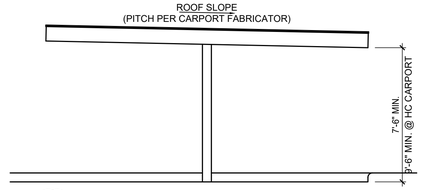
07 BUILDING 'F' 1ST FLOOR PLAN

1/32" = 1' — 1 REQ'D



08 TYPICAL GARAGE ELEVATION

3/32" = 1'



09 TYPICAL CARPORT ELEVATION

1/4" = 1'

BUILDING TABULATION
Project Name: LAKE CREEK @ AVERY RANCH
Project Number: SCHEMATIC
08.08.2023

Building #1 TYPE A [4 STORY]							UNITS PER BLDG	NUMBER OF BLDGS	NET SF PER BLDG	NET SF OF BLDGS
E1	A1	A2	A3	A4	B1	B2				
0	28	0	0	0	0	8	36	1	25,400	25,400

Building #2 TYPE B [4 STORY]							UNITS PER BLDG	NUMBER OF BLDGS	NET SF PER BLDG	NET SF OF BLDGS
E1	A1	A2	A3	A4	B1	B2				
0	12	20	0	0	8	8	48	1	37,840	37,840

Building #3 TYPE C [4 STORY]							UNITS PER BLDG	NUMBER OF BLDGS	NET SF PER BLDG	NET SF OF BLDGS
E1	A1	A2	A3	A4	B1	B2				
8	0	0	16	0	0	8	32	2	25,144	50,288

Building #4 TYPE D [4 STORY]							UNITS PER BLDG	NUMBER OF BLDGS	NET SF PER BLDG	NET SF OF BLDGS
E1	A1	A2	A3	A4	B1	B2				
16	48	12	0	0	36	4	116	1	86,640	86,640

Building #5 TYPE E [3 STORY]							UNITS PER BLDG	NUMBER OF BLDGS	NET SF PER BLDG	NET SF OF BLDGS
E1	A1	A2	A3	A4	B1	B2				
0	0	0	0	12	0	12	24	1	22,620	22,620

Building #6 TYPE F [4 STORY]							UNITS PER BLDG	NUMBER OF BLDGS	NET SF PER BLDG	NET SF OF BLDGS
E1	A1	A2	A3	A4	B1	B2				
0	20	8	0	0	0	8	36	1	26,200	26,200

Total Units							UNITS	BLDGS	NET SF
E1	A1	A2	A3	A4	B1	B2			
32	108	40	32	12	44	56	324	7	248,988

UNIT TABULATION
Project Name: LAKE CREEK @ AVERY RANCH
Project Number: SCHEMATIC
08.08.2023

Unit Type	Square Footage	Quantity	Percentage	Total Net SF
E1	560	32	9.88%	17,920
A1	600	108	33.33%	64,800
A2	700	40	12.35%	28,000
A3	754	32	9.88%	24,128
A4	810	12	3.70%	9,720
B1	1,005	44	13.58%	44,220
B2	1,075	56	17.28%	60,200

Totals	Average SF	Quantity	Percentage	Net SF
	768	324	100.00%	248,988

Total Percentage of One Bedroom Units	69.14%	224
Total Percentage of Two Bedroom Units	30.86%	100

LAKE CREEK @ AVERY RANCH APARTMENTS BUILDING ANALYSIS

R2 occupancy type (units)	2021 IBC, 2015 IFC
A3 occupancy type (clubhouse)	
VA - 1 Hour Construction	Fair Housing, 1998
Sprinklered - Yes (NFPA 13 & NFPA 13R)	2010 ADA

FIRE RATING:

Structural Frame	1 Hour
Floors & Roof	1 Hour
Occupancy Separation	1 Hour

GROSS S.F. NOTE: GROSS SQUARE FOOTAGE ARE FROM OUTSIDE FACE TO THE STUD FRAMING, AND INCLUDES THE RESIDENT UNIT PATIOS AND BUILDING BREEZEWAYS

BUILDING DATA:

BUILDING A		BUILDING B		BUILDING C	
# of Buildings:	1	# of Buildings:	1	# of Buildings:	2
# of Floors	4	# of Floors	4	# of Floors	4
Max Bldg. Height	46' 7 1/2"	Max Bldg. Height	46' 7 1/2"	Max Bldg. Height	46' 7 1/2"
Avg. Bldg. Height	44' 2"	Avg. Bldg. Height	44' 2"	Avg. Bldg. Height	44' 2"
# of Units	36	# of Units	48	# of Units	32
TOTAL GROSS AREA (S.F.)	**33,108**	**TOTAL GROSS AREA (S.F.)**	**47,161**	**TOTAL GROSS AREA (S.F.)**	**32,339**
1st Floor	8,537	1st Floor	12,032	1st Floor	8,537
2nd Floor	8,099	2nd Floor	11,638	2nd Floor	7,951
3rd Floor	8,099	3rd Floor	11,638	3rd Floor	7,951
4th Floor	8,373	4th Floor	11,853	4th Floor	8,190

BUILDING D		BUILDING E		BUILDING F	
# of Buildings:	1	# of Buildings:	1	# of Buildings:	1
# of Floors	4	# of Floors	3	# of Floors	4
Max Bldg. Height	46' 7 1/2"	Max Bldg. Height	35' 5"	Max Bldg. Height	46' 7 1/2"
Avg. Bldg. Height	44' 2"	Avg. Bldg. Height	32' - 11 1/2"	Avg. Bldg. Height	44' 2"
# of Units	16	# of Units	18	# of Units	36
TOTAL GROSS AREA (S.F.)	**108,105**	**TOTAL GROSS AREA (S.F.)**	**28,490**	**TOTAL GROSS AREA (S.F.)**	**34,227**
1st Floor	27,637	1st Floor	9,409	1st Floor	8,852
2nd Floor	26,640	2nd Floor	8,953	2nd Floor	8,382
3rd Floor	26,640	3rd Floor	9,710	3rd Floor	8,382
4th Floor	27,186			4th Floor	8,653

CLUBHOUSE		CARPORT	
# of Buildings:	1	# of Buildings:	7
# of Floors	1	S-2 Use Group	
TOTAL GROSS AREA (S.F.)	**5,409**	Max Height	15'-2"

TOTAL GROSS AREA (S.F.)	321,178

LAKE CREEK @ AVERY RANCH APARTMENTS - UNIT TYPE SUMMARY

BUILDING A

UNIT TYPE	# OF UNITS	1ST FLOOR	2ND FLOOR	3RD FLOOR	4TH FLOOR	S.F. PER UNIT	UNIT DESCRIPTION
A1	28	7	7	7	7	600 S.F.	1 BED/1 BATH
B2	8	2	2	2	2	1,075 S.F.	2 BED/2 BATH
TOTAL	**36**	**9**	**9**	**9**	**9**	**TOTAL**	**1**
TOTAL BR	44	11	11	11	11	**BUILDINGS**	

BUILDING B

UNIT TYPE	# OF UNITS	1ST FLOOR	2ND FLOOR	3RD FLOOR	4TH FLOOR	S.F. PER UNIT	UNIT DESCRIPTION
A1	12	3	3	3	3	600 S.F.	1 BED/1 BATH
A2	20	5	5	5	5	700 S.F.	1 BED/1 BATH
B1	8	2	2	2	2	1,005 S.F.	2 BED/2 BATH
B2	8	2	2	2	2	1,075 S.F.	2 BED/2 BATH
TOTAL	**48**	**12**	**12**	**12**	**12**	**TOTAL**	**1**
TOTAL BR	64	16	16	16	16	**BUILDINGS**	

BUILDING C

UNIT TYPE	# OF UNITS	1ST FLOOR	2ND FLOOR	3RD FLOOR	4TH FLOOR	S.F. PER UNIT	UNIT DESCRIPTION
E1	8	2	2	2	2	560 S.F.	1 BED/1 BATH
A3	16	4	4	4	4	754 S.F.	1 BED/1 BATH
B2	8	2	2	2	2	1,075 S.F.	2 BED/2 BATH
TOTAL	**32**	**8**	**8**	**8**	**8**	**TOTAL**	**2**
TOTAL BR	40	10	10	10	10	**BUILDINGS**	

BUILDING D

UNIT TYPE	# OF UNITS	1ST FLOOR	2ND FLOOR	3RD FLOOR	4TH FLOOR	S.F. PER UNIT	UNIT DESCRIPTION
E1	16	4	4	4	4	560 S.F.	1 BED/1 BATH
A1	48	12	12	12	12	600 S.F.	1 BED/1 BATH
A2	12	3	3	3	3	700 S.F.	1 BED/1 BATH
B1	36	9	9	9	9	1,005 S.F.	2 BED/2 BATH
B2	4	1	1	1	1	1,075 S.F.	2 BED/2 BATH
TOTAL	**116**	**29**	**29**	**29**	**29**	**TOTAL**	**1**
TOTAL BR	156	39	39	39	39	**BUILDINGS**	

BUILDING E

UNIT TYPE	# OF UNITS	1ST FLOOR	2ND FLOOR	3RD FLOOR	4TH FLOOR	S.F. PER UNIT	UNIT DESCRIPTION
A4	12	3	3	3	3	810 S.F.	1 BED/1 BATH
B2	12	3	3	3	3	1,075 S.F.	2 BED/2 BATH
TOTAL	**24**	**6**	**6**	**6**	**6**	**TOTAL**	**1**
TOTAL BR	36	9	9	9	9	**BUILDINGS**	

BUILDING F

UNIT TYPE	# OF UNITS	1ST FLOOR	2ND FLOOR	3RD FLOOR	4TH FLOOR	S.F. PER UNIT	UNIT DESCRIPTION
A1	20	5	5	5	5	600 S.F.	1 BED/1 BATH
A2	8	2	2	2	2	700 S.F.	1 BED/1 BATH
B2	8	2	2	2	2	1,075 S.F.	2 BED/2 BATH
TOTAL	**36**	**9**	**9**	**9**	**9**	**TOTAL**	**1**
TOTAL BR	44	11	11	11	11	**BUILDINGS**	

TOTAL UNITS	324
TOTAL BEDROOMS	424
TOTAL BUILDINGS	7

NOTE: COMPLIANCE WITH BUILDING DESIGN STANDARDS, ARTICLE 3 OF SUBCHAPTER E, IS REQUIRED, AND SHALL BE REVIEWED FOR COMPLIANCE DURING BUILDING CODE REVIEW.

XX.XX.2023

Cross architects

ARCHITECT:
CROSS ARCHITECTS, PLLC
879 JUNCTION DRIVE
ALLEN, TEXAS 75013
P: 972.398.6644
WWW.CROSSARCHITECTS.COM

LAKE CREEK @ AVERY RANCH
AUSTIN, TEXAS

DATE:
XX.XX.2023

PROJECT NUMBER:
SCHEMATIC

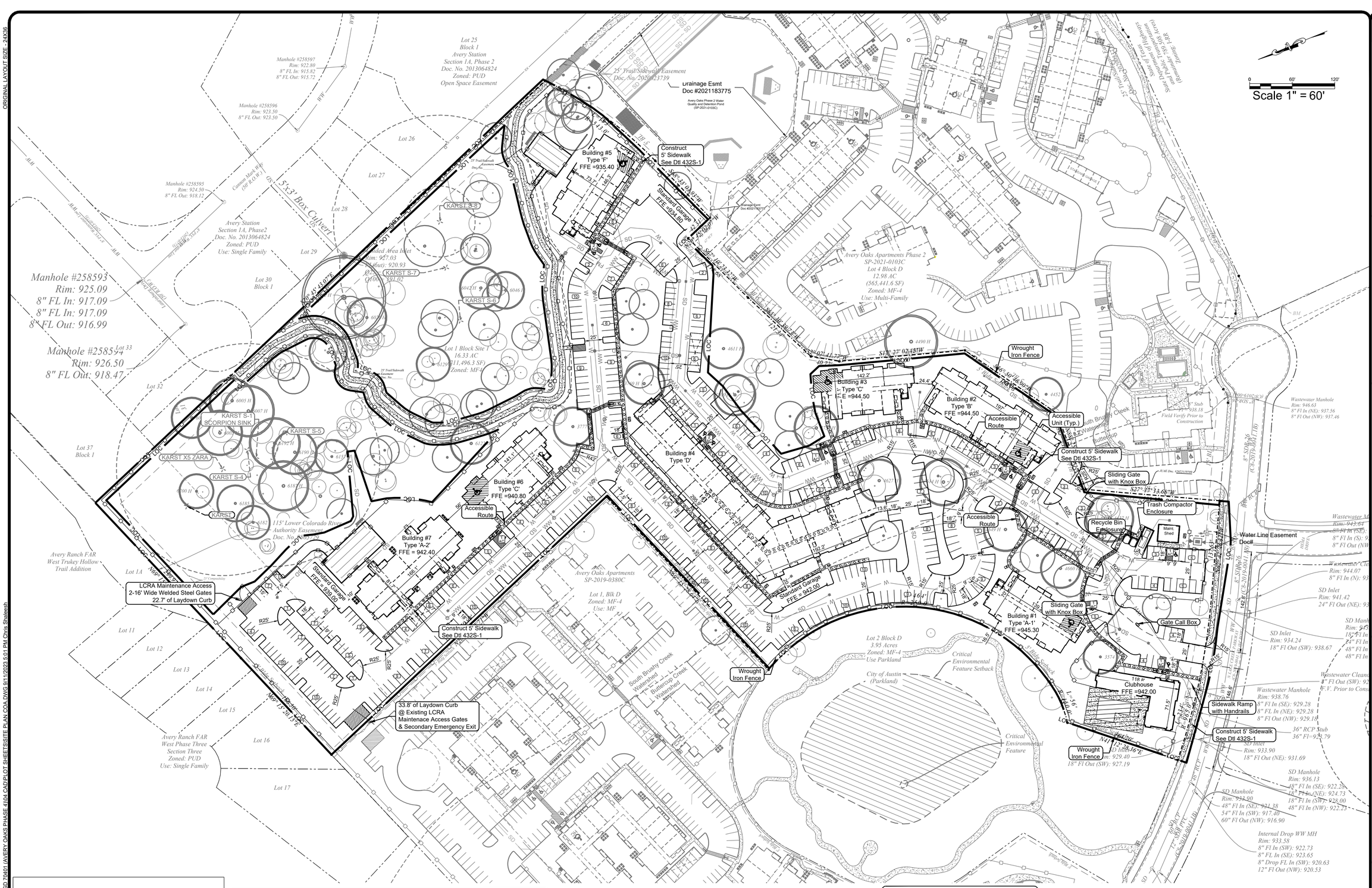
REVISIONS

NO	DATE

DRAWINGS ISSUED FOR:
REVIEW

SHEET NUMBER
A0.0
CIVIL SUBMISSION SHEET

ORIGINAL LAYOUT SIZE - 24X36



Connectivity Table	
Option	Description
Provide additional pedestrian connections from on-site buildings to adjacent streets.	Additional pedestrian connections provided to North Lake Creek Parkway and Laurinburb Dr.
Provide a public access easement for the construction of a multi-use trail connecting to or proposed in the City of Austin Trails Master Plan, Austin Parks and Recreation Long-Range Plan, Sidewalk Mater Plan or Bicycle Path.	25' Trail/ Sidewalk Easement with 8' Hike and Bike Trail.

Fence Note:
Post holes that are to be installed near the CRZ will be dug by hand. No Machinery is allowed in the CRZ and any work done in this area shall be done by hand. Add a 3-inch layer of hardwood mulch in the CRZ prior to commencing construction activities.

Compact Car Parking Note
All spaces denoted with C on Dimensional Control Plan are a compact parking space and should be marked "Small Car Only".

Long Term Bicycle Parking Note:
The Long Term Bicycle Parking will be located under each covered stairwell for each building. Layout to comply with the City of Austin Transportation Criteria Manual figure 9-18.

Texas 811
Call Before You Dig!!

Legal Description
Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks
B.M. - Nail with washer stamped "LSI Surveying" set on the back of curb along the North right-of-way of North Lake Creek Parkway, approximately 386' feet West of the intersection of North Lake Creek Parkway and Hema Drive.
N: 10150246.35, E: 3094468.89, Elev. = 932.61.

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

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AUSTIN BRYAN CONROE HOUSTON

Site Plan

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
CAD: CS, JW Review: JR, JG
Project No: JDG 70401
Sheet: 15 of 66
SP-2023-0021C

Parking Table (Multi Family)

Landuse	Efficiency	Parking Required (1 per)	1 Bedroom	Parking Required (1.5 per)	2 Bedroom	Parking Required (2 per)	3 Bedroom	Parking Required (2.5 per)	Parking Required (Total)	Parking Provided	ADA Required	ADA Provided	Compact Provided	Compact Allowed (30%)
Multi-Family	24	24	244	366	60	120	0	0	510	559	11	11	154	168

Bicycle Parking Table

Long Term Bicycle Parking Required	Long Term Bicycle Parking Provided	Short Term Bicycle Parking Required	Short Term Bicycle Parking Provided
20	22	9	18

Parking Distribution

	Standard	ADA	Total
Surface Spaces	476	11	487
Carport	54	0	54
Garage	18	0	18
Total	**548**	**11**	**559**

Site Data Table

Zoning:		**MF-4**	
Use: Multi-Family	***s.f.***	***acres***	**%**
Site Area:	711,496	16.334	
Allowable Impervious Cover:	426,898	9.800	60%
Total Impervious Cover:	297,379	6.827	42%
Allowable Building Coverage:	4,269	0.098	60%
Proposed Building Coverage:	91,066	2.091	13%
Gross Building Area	313,257		
Floor to Area Ratio Allowed	0.75:1		
Floor to Area Ratio Proposed	0.440	:	1
Building Height Allowed	60		ft
Building Height Proposed	44		ft
Building Slab Construction	Slab On Grade		
Common Open Space Required	35,575		
Common Open Space provided	37,710		

Appendix Q-2 Impervious Cover
Suburban Watersheds

Impervious cover allowed at	60%	x GSF =	9.799	Acres
Allowable Impervious Cover Breakdown by slope Category				
Total Acreage 15-25%	1%	X 10% =	0.001	Acres

Proposed Impervious Cover on Slopes

Slope Categories	Total Acres	Impervious Cover: Building and Other Impervious Cover AC.	% of Cat.	Driveways and Roadways AC.	% of Cat.
0-15%	16.305	2.600	15.9%	4.227	25.9%
15-25%	0.006	0.000	0.0%	0.000	0.0%
25-35%	0.023	0.000	0.0%	0.000	0.0%
Over 35%	0.001	0.000	0.0%	0.000	0.0%
Total Area	**16.335**	**2.600**	**15.9%**	**4.227**	**25.9%**

Site Area Calculation (LDC 25-2-563)

Unit Type	Efficiency	1 Bedroom	2+ Bedroom
Area Per Unit (sf)	560	785	1,200
Number of Units	24	244	60
Area per Type	13,440	191,540	72,000
Total Required	276,980	sf	
Total Provided	426,898	sf	

Open Spaces

Dog Park	12,950
Swimming Pool and Amenities	4,453
Hike and Bike Trail	20,307
Total	**37,710**

Building #	Type	Gross Floor Area	Building Coverage	Efficiency	1 Bed Units	2 Bed Units	3 Bed Units	Parking Required
1	A	31,077	8,065	-	32	4	-	56
2	B	42,575	10,975	-	36	12	-	78
3	C	31,175	8,109	8	20	4	-	46
4	B	42,575	10,975	-	36	12	-	78
5	C	31,175	8,109	8	20	4	-	46
6	D	33,877	8,757	-	36	4	-	62
7	A	31,077	8,065	-	32	4	-	56
8	C	31,175	8,109	8	20	4	-	46
9	E	28,492	9,843	-	12	12	-	42
	Clubhouse	4,907	4,907	-	-	-	-	-
	Maintenance	730	730	-	-	-	-	-
Totals	Garages	4,422	4,422	-	-	-	-	-
		313,257	**91,066**	**24**	**244**	**60**	**0**	**510**

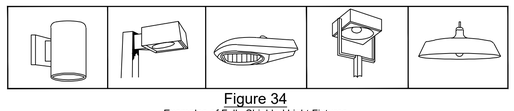

Figure 34
Examples of Fully-Shielded Light Fixtures

Lighting Note
Exterior lighting above the second floor is prohibited.

Legal Description
Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Site Plan Notes
1. All onsite paving to be concrete with integral 6" curbs. See architectural site plan for extents of colored concrete.
2. Pet yards to be 36" tall pre-finished iron fence with 36" tall gate.

Benchmarks
B.M. - Nail with washer stamped "LSI Surveying" set on the back of curb along the North right-of-way of North Lake Creek Parkway, approximately 386' feet West of the intersection of North Lake Creek Parkway and Hema Drive.
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Long Term Bicycle Parking Note:
The Long Term Bicycle Parking will be located under each covered stairwell for each building. Layout to comply with the City of Austin Transportation Criteria Manual figure 9-18.

Trash/Recycling Collection Note
A trash collection service will be provided by management to pick up trash and recyclables from the units and convey them to the trash compactor and recycle bin.

Handicap Units Note
Type A Handicap units are labeled with the handicap symbol on the unit.

Compatibility Standards Notes
1. All exterior lighting will be hooded or shielded from the view of adjacent residential property. [Section 25-2-1064]
2. All dumpsters and any permanently placed refuse receptacles will be located at a minimum of twenty (20) feet from a property used or zoned as SF-5 or more restrictive. [Section 25-2-1067].
3. The use of highly reflective surfaces, such as reflective glass and reflective metal roofs, whose pitch is more than a run of seven (7) to a rise of twelve (12), will be prohibited. [Section 25-2-1067].
4. The noise level of mechanical equipment will not exceed 70 dba at the property line adjacent to residential uses [Section 25-2-1067].

Subchapter E Compliance Notes
1. This project complies with section 2.3.1.B.2., Additional Measures to Improve Connectivity by providing the following two options:
   - Utilities in Drive Aisles
   - 10% of provided parking is within a parking structure.
2. North Lake Creek Pkwy is the Principal Roadway and is defined as a Principal Roadway.
3. Screening for solid waste collection and loading areas shall be the same as, or of equal quality to, principal building materials.
4. All exterior lighting will be full cut-off and fully shielded in compliance with Subchapter E 2.5. All site lighting to be located on the building will be in compliance with Subchapter E 2.5, and will be reviewed during building plan review. Any change or substitution of lamp/light fixtures shall be submitted to the Director for approval in accordance with Section 2.5.2.E.

Motor-Operated Gate Note:
Motor-operated gates or barricades installed across roadways shall be equipped with gate operators complying with UL 325. Gates or barricades shall comply with ASTM F2200. An approved means of opening the motor-operated gate in the event utility power is lost or disconnected is required. An approved Fire Department key switch, installed at an approved location, shall be provided to override any access control feature. The gate shall open the full width of the fire lane and shall open until the key switch has been deactivated.

Compact Car Parking Note
All spaces denoted with C on Dimensional Control Plan are a compact parking space and should be marked "Small Car Only".

Accessibility Notes
1. Approval of these plans by the City of Austin indicates compliance with applicable City regulations only. Compliance with accessibility standards such as the 2010 Standards for Accessible Design or the 2012 Texas Accessibility Standards was not verified. The applicant is responsible for compliance with all applicable accessibility standards.
2. Accessible parking spaces must be located on a surface with a slope not exceeding 1:50.
3. Accessible routes must have a cross-slope no greater than 1:50.
4. Slopes on accessible routes may not exceed 1:20 unless designed as a ramp.
5. The maximum slope of a ramp in new construction is 1:12. The maximum rise for any ramp run is 30 in. The maximum horizontal projection is 30 feet for a ramp with a slope between 1:12 and 1:15, and 40 feet for a ramp with a slope between 1:16 and 1:20.

Revision	Date	By	App	Comment

Prepared For:
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1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

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AUSTIN BRYAN CONROE HOUSTON

Site Plan Notes and Calculations

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: **16** of **66**
SP-2023-0021C

ORIGINAL LAYOUT SIZE - 24X36

Scale 1" = 30'

Accessible Unit (Typ.)
Building #5 Type 'F' FFE =935.40
Rain Garden 1
Pond Access Ramp
Pond Access Gate
Short Term Bicycle Rack 2 Spaces per Dtl. 710S-1
Concrete Paving
Standard Garage FFE =935.80
Connect Proposed Fence to Existing Fence in Avery Oaks Phase 2
Curb Stop per Dtl 739S-1
Construct 8' Concrete Sidewalk See Detail 432s-1
Compact Parking
Wall Start
Wall End
Construct 5' Sidewalk See Dtl 432S-1
Open Space (Hike and Bike Trail) 231807 sf
KARST S-8
KARST S-7
KARST S-6
Carport
Match Line - See Sheet 18
Match Line - See Sheet 19
Lot 1 Block Site 1 16.33 AC (711,496.3 SF)

Long Term Bicycle Parking Note:

The Long Term Bicycle Parking will be located under each covered stairwell for each building. Layout to comply with the City of Austin Transportation Criteria Manual figure 9-18.

Fencing Note:

- No posts or footing shall be installed within the ¼ critical root zone (CRZ) of any protected tree
- Post holes within the ¼ CRZ are to be dug by hand or air-excavated
- Post holes shall be shifted as necessary to avoid 1.5" diameter or greater roots.
- A vapor barrier is requireed between any poured concrete and the soil if within the 1.2 CRZ.

Texas 811
Call Before You Dig!!

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

B.M. - Nail with washer stamped "LSI Surveying" set on the back of curb along the North right-of-way of North Lake Creek Parkway, approximately 386' feet West of the intersection of North Lake Creek Parkway and Hema Drive.
N: 10150246.35, E: 3094468.89, Elev. = 932.61.

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

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Avery Land Investors, LP
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AUSTIN BRYAN CONROE HOUSTON

Dimensional Control

Lake Creek at Avery Ranch

9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 17 of 66
SP-2023-0021C

ORIGINAL LAYOUT SIZE - 24X36

Match Line - See Sheet 17

Match Line - See Sheet 19

Lot 1 Block Site 1
16.33 AC
(711,496.3 SF)
Zoned: MF4

Open Space
(Hike and Bike Trail)
231807 sf

KARST S-1
SCORPION SINK

KARST S-5

KARST X5 ZARA

KARST S-4

KARST

150' CEF Setback

50' CEF Setback

Construct 8' Concrete Sidewalk See Detail 432s-1

Wall End

4 Steps with Handrails

Begin Wall

Short Term Bicycle Rack 2 Spaces per Dtl. 710S-1

Curb Stop per Dtl 739S-1

Building #6
Type 'C'
FFE =940.80

Construct 5' Sidewalk See Dtl 432S-1

Concrete Paving

Compact Parking

Building #7
Type 'A-2'
FFE = 942.40

Pond Access Ramp

Pond Access Gate

Rain Garden 2

Standard Garage
FFE = 959.00

LCRA Maintenance Access
2-16' Wide Welded Steel Gates

22.7' of Laydown Curb

33.8' of Laydown Curb

LCRA Maintenance Access
& Secondary Emergency Exit
2-12' Wide Welded Steel Gates

Carport

South Brushy Creek Watershed

Buttercup Creek Watershed

Sheet 17

Sheet 18

Sheet 19

0 30' 60'

Scale 1" = 30'

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

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Long Term Bicycle Parking Note:

The Long Term Bicycle Parking will be located under each covered stairwell for each building. Layout to comply with the City of Austin Transportation Criteria Manual figure 9-18.

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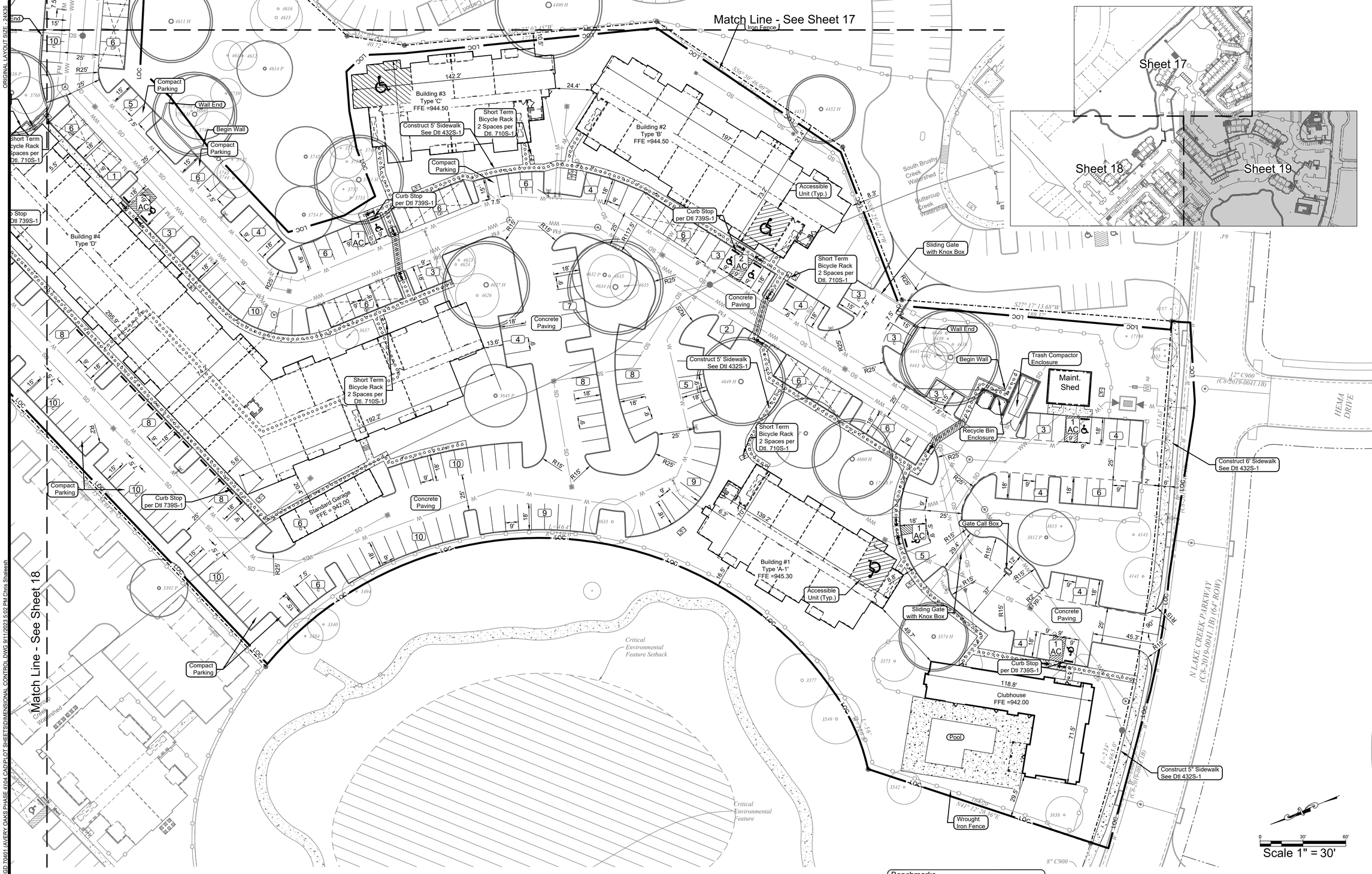
AUSTIN BRYAN CONROE HOUSTON

Dimensional Control 2

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
97881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 18 of 66
SP-2023-0021C



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Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

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Dimensional Control 3

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

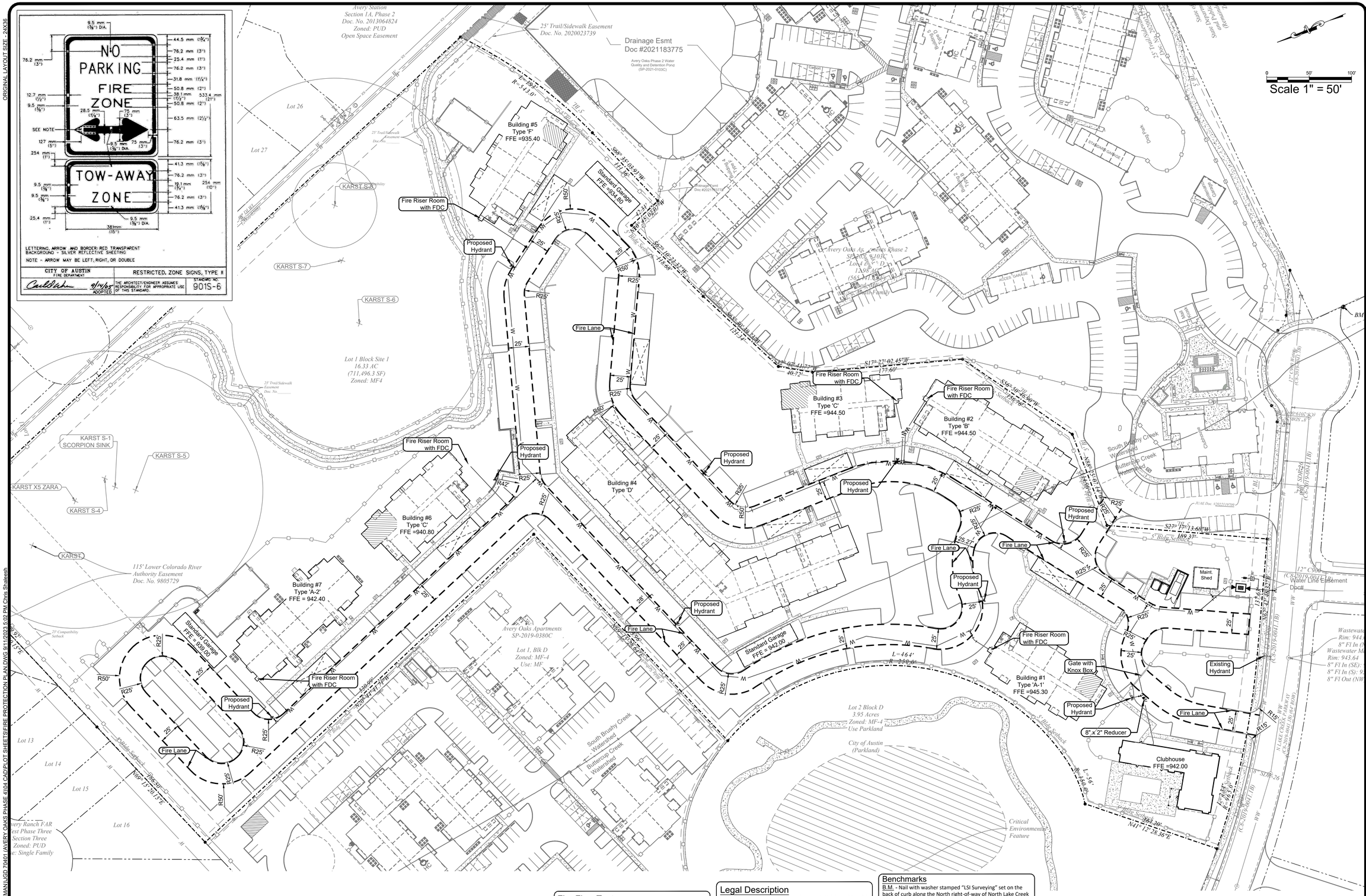
JASON K. RODGERS
87881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design:	JR, JG, CS
CAD:	CS, JW
Review:	JR, JG
Project No:	JDG 70401

Sheet: **19** of **66**

SP-2023-0021C

ORIGINAL LAYOUT SIZE - 24X36



Note
Underground mains supplying NFPA 13 sprinkler systems must be installed and tested in accordance with NFPA 13, and the Fire Code, by a licensed sprinkler contractor with a pumping permit. The entire main must be hydrostatically tested at one time, unless isolation valves are provided between tested sections.

Vertical Clearance Note:
A minimum 14' vertical clearance, including tree limbs, is required along the Fire Department access lane.

Fire Riser Room Note
All buildings are to have a NFPA 13 Sprinkler system. Each riser room will have a fire department connection facing the fire lane.

Fire Zone Note
Establish fire zone notes as shown on site by painting curb red. Stencil the words "Fire Zone/Tow-Away Zone" in white letters at least 3 inches high at 35 foot intervals along the curb. Additionally, signs shall be posted at both ends of a fire zone and at intervals of 50 feet or less. Alternate marking of the fire lanes may be approved by the Fire Chief provided the fires lanes are clearly identified at both ends and at intervals not to exceed 35 feet.

Fire Flow Test
See Sheet 33, Austin Water General Notes, for the fire flow test results.

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Legal Description
Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

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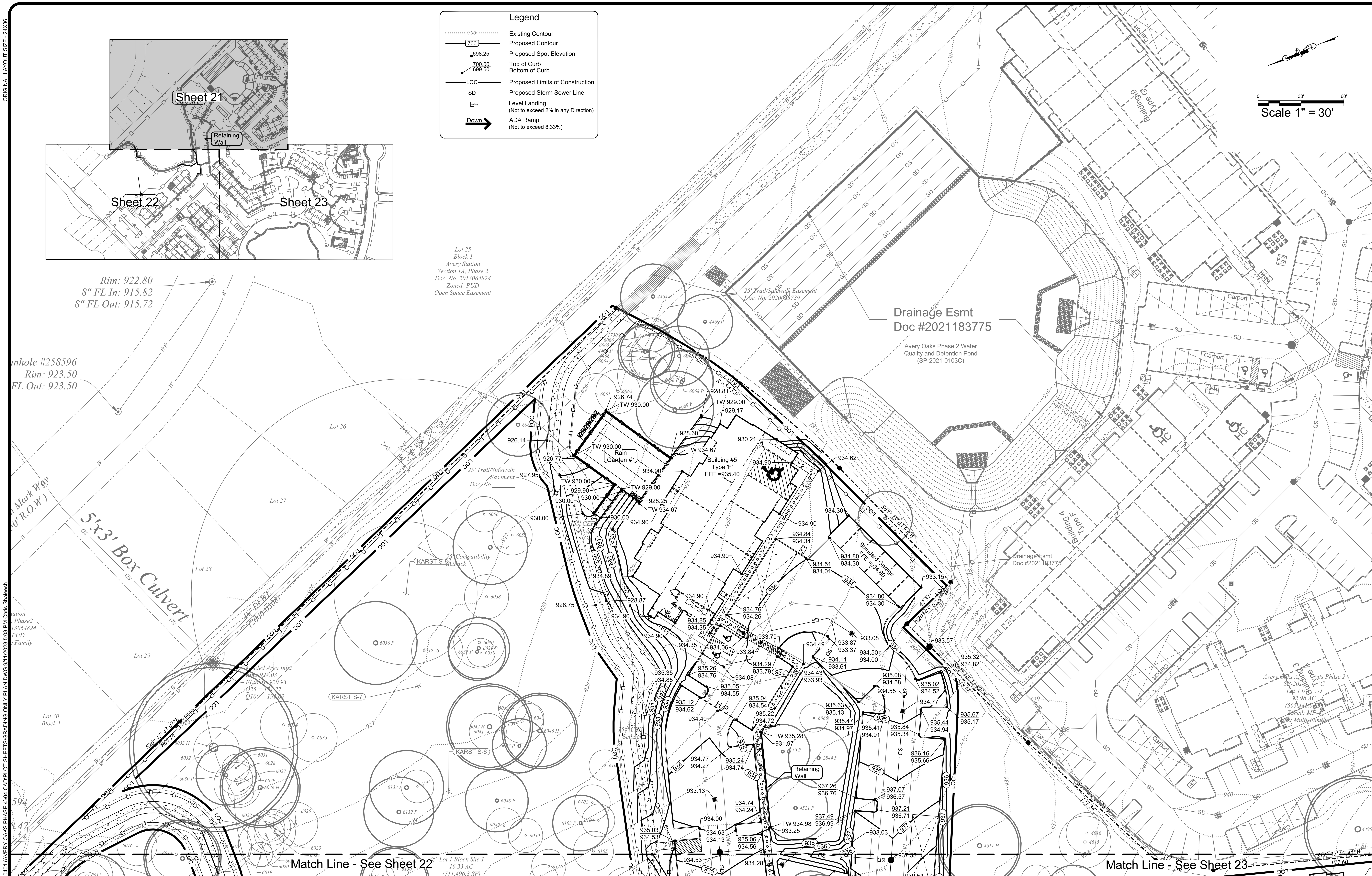
AUSTIN BRYAN CONROE HOUSTON

Fire Protection Plan

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 20 of 66
SP-2023-0021C



ORIGINAL LAYOUT SIZE - 24X36

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

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N: 10150246.35, E: 3094468.89, Elev. = 932.61.

Note:

This project is subject to the Void and Water Flow Mitigation Rule (COA ECM 1.12.0 and COA Item No. 658S of the SSM) provision that all trenching greater than 5 feet deep must be inspected by a geologist (Texas P.G.) or a geologist's representative.

Curb Note:

Grading lines that indicate flows toward the curb shall be constructed as a catch curb. Grade lines that indicate flows away from curb shall be constructed as a spill curb.

Texas 811

Call Before You Dig!!

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AUSTIN BRYAN CONROE HOUSTON

Grading Plan

Lake Creek at Avery Ranch

9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 21 of 66
SP-2023-0021C

Tree List:
See sheets 64 - 66 for the tree list.

Note:
This project is subject to the Void and Water Flow Mitigation Rule (COA ECM 1.12.0 and COA Item No. 658S of the SSM) provision that all trenching greater than 5 feet deep must be inspected by a geologist (Texas P.G.) or a geologist's representative.

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Texas 811
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Austin Bryan Conroe Houston

Grading Plan 2

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

Jason K. Rodgers 87881 Registered Professional Engineer
9/11/23

Design: JR, JG, CS
CAD: CS, JW Review: JR, JG
Project No: JDG 70401
Sheet: 22 of 66
SP-2023-0021C

Legend

Symbol	Description
700 (dotted)	Existing Contour
700 (solid)	Proposed Contour
698.25	Proposed Spot Elevation
700.00 / 699.50	Top of Curb / Bottom of Curb
LOC	Proposed Limits of Construction
SD	Proposed Storm Sewer Line
L	Level Landing (Not to exceed 2% in any Direction)
Down →	ADA Ramp (Not to exceed 8.33%)

Tree List:
See sheets 64 - 66 for the tree list.

Note:
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Curb Note:
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Texas 811
Call Before You Dig!!

Legal Description
Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

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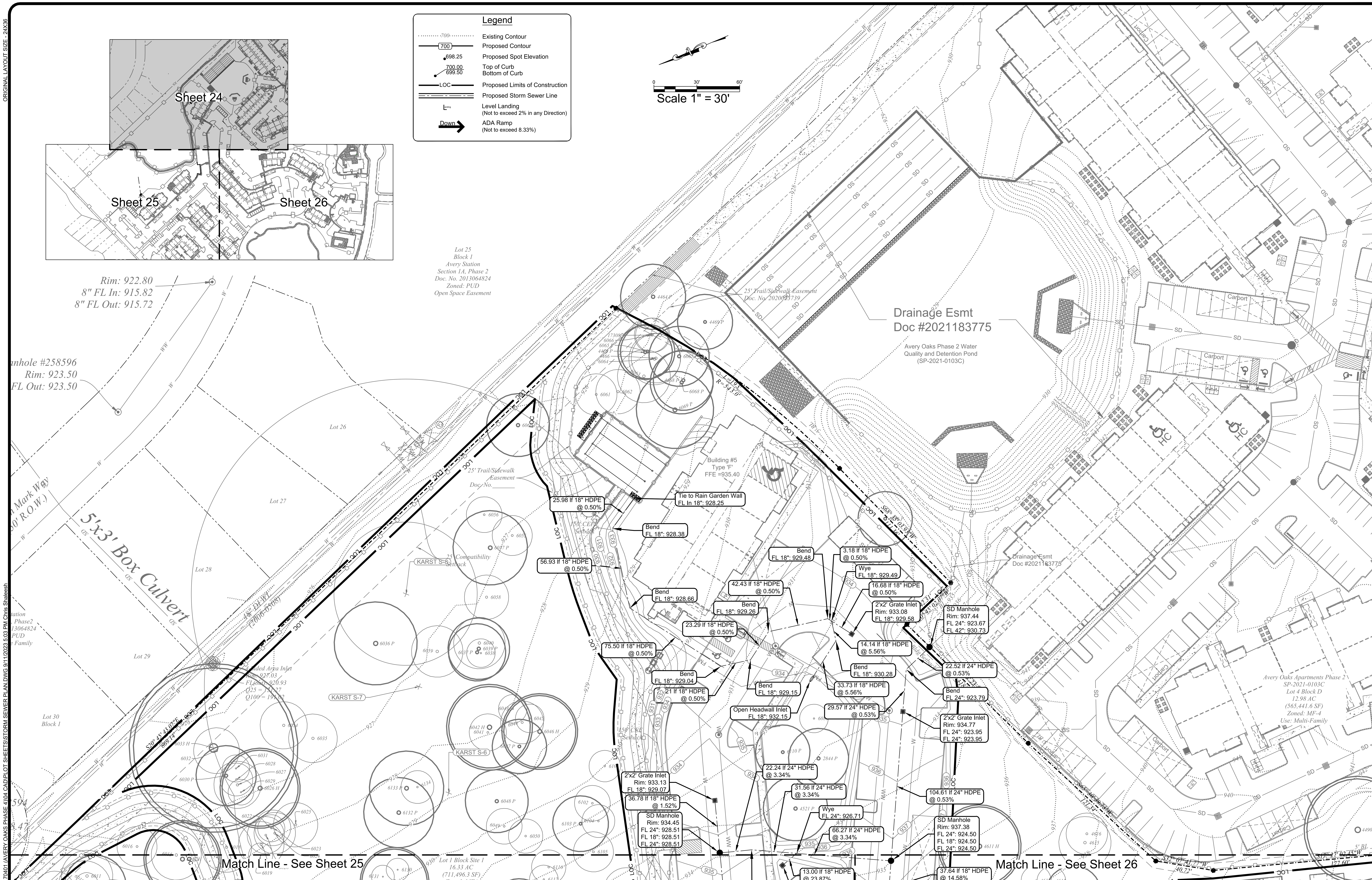
AUSTIN BRYAN CONROE HOUSTON

Grading Plan 3

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 23 of 66
SP-2023-0021C



Curb Note

Grading lines that indicate flows toward the curb shall be constructed as a catch curb. Grade lines that indicate flows away from curb shall be constructed as a spill curb.

Drainage Notes

1. Upon completion of the proposed site improvements, and prior to the release of the Certificate of Occupancy by the Watershed Protection and Development Review Department, the Design Engineer shall certify in writing that the proposed detention and filtration facilities were constructed in conformance with the approved plans.
2. Contractor shall call One Call Center (472-2822) for utility locations prior to any work in City easements or street R.O.W.

Texas 811

Call Before You Dig!!

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

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AUSTIN BRYAN CONROE HOUSTON

Storm Sewer Plan

Lake Creek at Avery Ranch

9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: **24** of **66**
SP-2023-0021C

ORIGINAL LAYOUT SIZE - 24X36

Scale 1" = 30'

Match Line - See Sheet 24

Match Line - See Sheet 26

Lot 33 | Lot 32 | Lot 37 Block 1 | Lot 1A | Lot 11 | Lot 12 | Lot 13 | Lot 14 | Lot 15 | Lot 16

Avery Ranch FAR West Trukey Hollow Trail Addition

Lot 1 Block Site 1 16.33 AC (711,496.3 SF) Zoned: MF-4

KARST S-1 SCORPION SINK | KARST S-5 | KARST X5 ZARA | KARST S-4 | KARST

28' Trail/Sidewalk Easement Doc. No.

50' CEF Setback | 150' CEF Setback | 115' Lower Colorado River Authority Easement Doc. No. 9805729 | 28' Compatibility Setback | 5' Bldg Setback

Inv. Out: 926.50
8" FL Out: 918.47

SD Manhole
Rim: 934.45
FL 24": 928.51
FL 18": 928.51
FL 24": 928.51

66.27 lf 24" HDPE @ 3.34%

13.00 lf 18" HDPE @ 23.87%

2'x2' Grate Inlet
Rim: 934.28
FL 18": 929.81

Bend
FL 24": 927.77

147.44 lf 24" HDPE @ 3.12%

Bend
FL 24": 933.11

2'x2' Grate Inlet
Rim: 940.00
FL 18": 933.40
FL 18": 933.40
FL 24": 933.40

9.23 lf 24" HDPE @ 3.12%

106.33 lf 18" HDPE @ 1.00%

Building #6
Type 'C'
FFE =940.80

65.29 lf 18" HDPE @ 1.00%

2'x2' Grate Inlet
Rim: 938.79
FL 18": 934.46
FL 18": 934.46

Building #7
Type 'A-2'
FFE = 942.40

138.71 lf 18" HDPE @ 1.00%

2'x2' Grate Inlet
Rim: 939.02
FL 18": 935.11
FL 18": 935.11

Tie to Rain Garden Wall
FL In 18": 934.00

73.18 lf 18" HDPE @ 0.47%

Bend
FL 18": 934.44

11 lf 18" HDPE @ 0.50%

2'x2' Grate Inlet
Rim: 937.04
FL 18": 934.48

Tie Header Pipe into Rain Garden Wall
FL Out 12": 933.00

Building #1
Standard Garage
FFE = 939.00

2'x2' Grate Inlet
Rim: 940.67
FL 18": 936.50

Avery Oaks Apartments SP-2019-0380C

Lot 1, Blk D
Zoned: MF-4
Use: MF

Carport | Clubhouse | South Brushy Creek Watershed | Buttercup Creek Watershed

Sheet 24 | Sheet 25 | Sheet 26

Curb Note

Grading lines that indicate flows toward the curb shall be constructed as a catch curb. Grade lines that indicate flows away from curb shall be constructed as a spill curb.

Drainage Notes

1. Upon completion of the proposed site improvements, and prior to the release of the Certificate of Occupancy by the Watershed Protection and Development Review Department, the Design Engineer shall certify in writing that the proposed detention and filtration facilities were constructed in conformance with the approved plans.
2. Contractor shall call One Call Center (472-2822) for utility locations prior to any work in City easements or street R.O.W.

Legend

- Existing Contour
- Proposed Contour
- Proposed Spot Elevation
- Top of Curb / Bottom of Curb
- Proposed Limits of Construction
- Proposed Storm Sewer Line
- Level Landing (Not to exceed 2% in any Direction)
- Down — ADA Ramp (Not to exceed 8.33%)

Texas 811
Call Before You Dig!!

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

B.M. - Nail with washer stamped "LSI Surveying" set on the back of curb along the North right-of-way of North Lake Creek Parkway, approximately 386' feet West of the intersection of North Lake Creek Parkway and Hema Drive.
N: 10150246.35, E: 3094468.89, Elev. = 932.61.

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of his/her submittal, whether or not the application is reviewed for Code compliance by City engineers.

Revision	Date	By	App	Comment

Prepared For:
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1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

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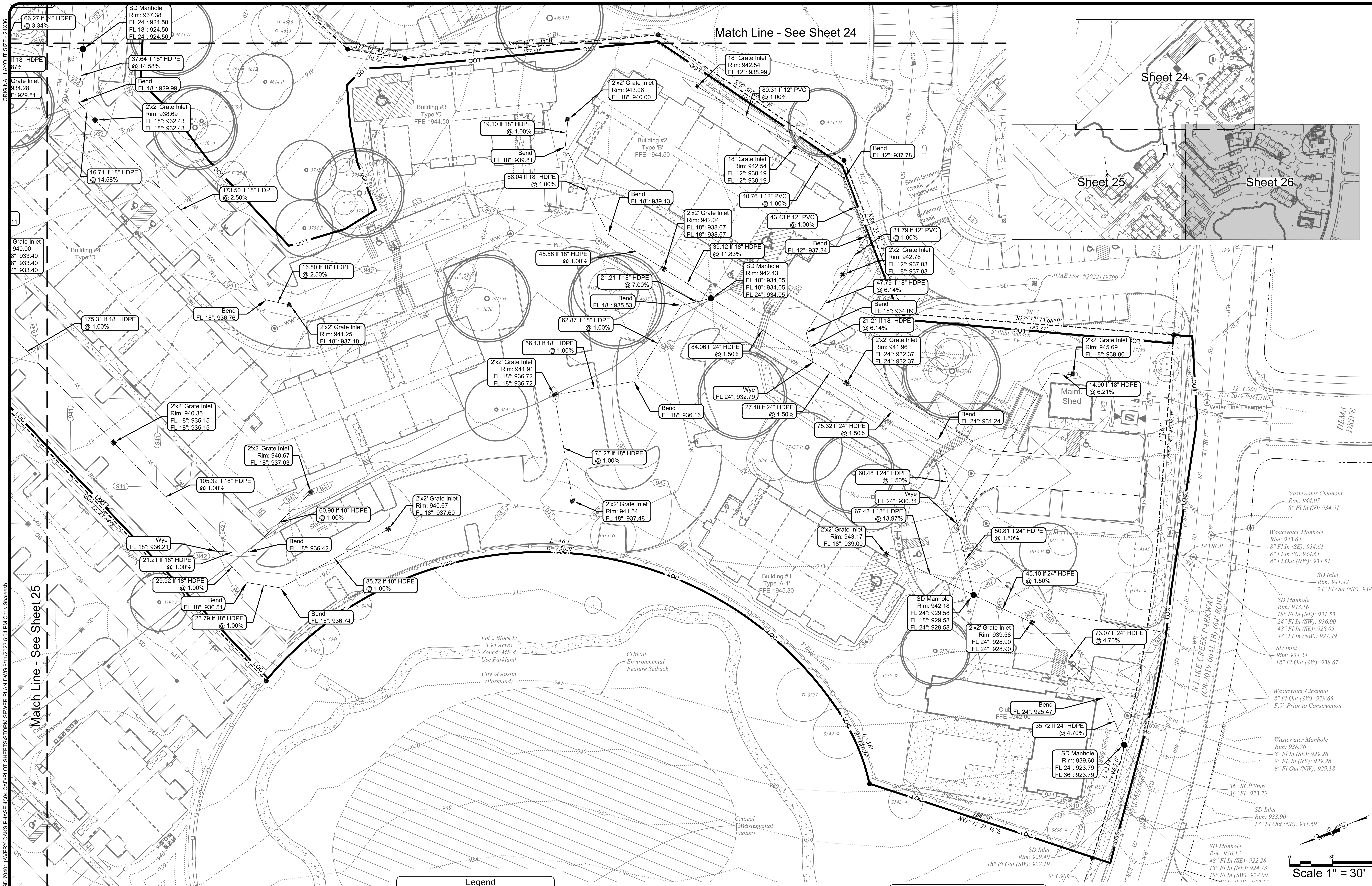
Storm Sewer Plan 2

Lake Creek at Avery Ranch

9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 25 of 66
SP-2023-0021C



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2. Contractor shall call One Call Center (472-2822) for utility locations prior to any work in City easements or street R.O.W.

Legend

Symbol	Description
700	Existing Contour
700	Proposed Contour
698.25	Proposed Spot Elevation
700.00 / 699.50	Top of Curb / Bottom of Curb
LOC	Proposed Limits of Construction
	Proposed Storm Sewer Line
	Level Landing (Not to exceed 2% in any Direction)
Down	ADA Ramp (Not to exceed 8.33%)

Texas 811

Call Before You Dig!!

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

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Storm Sewer Plan 3

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED PROFESSIONAL ENGINEER
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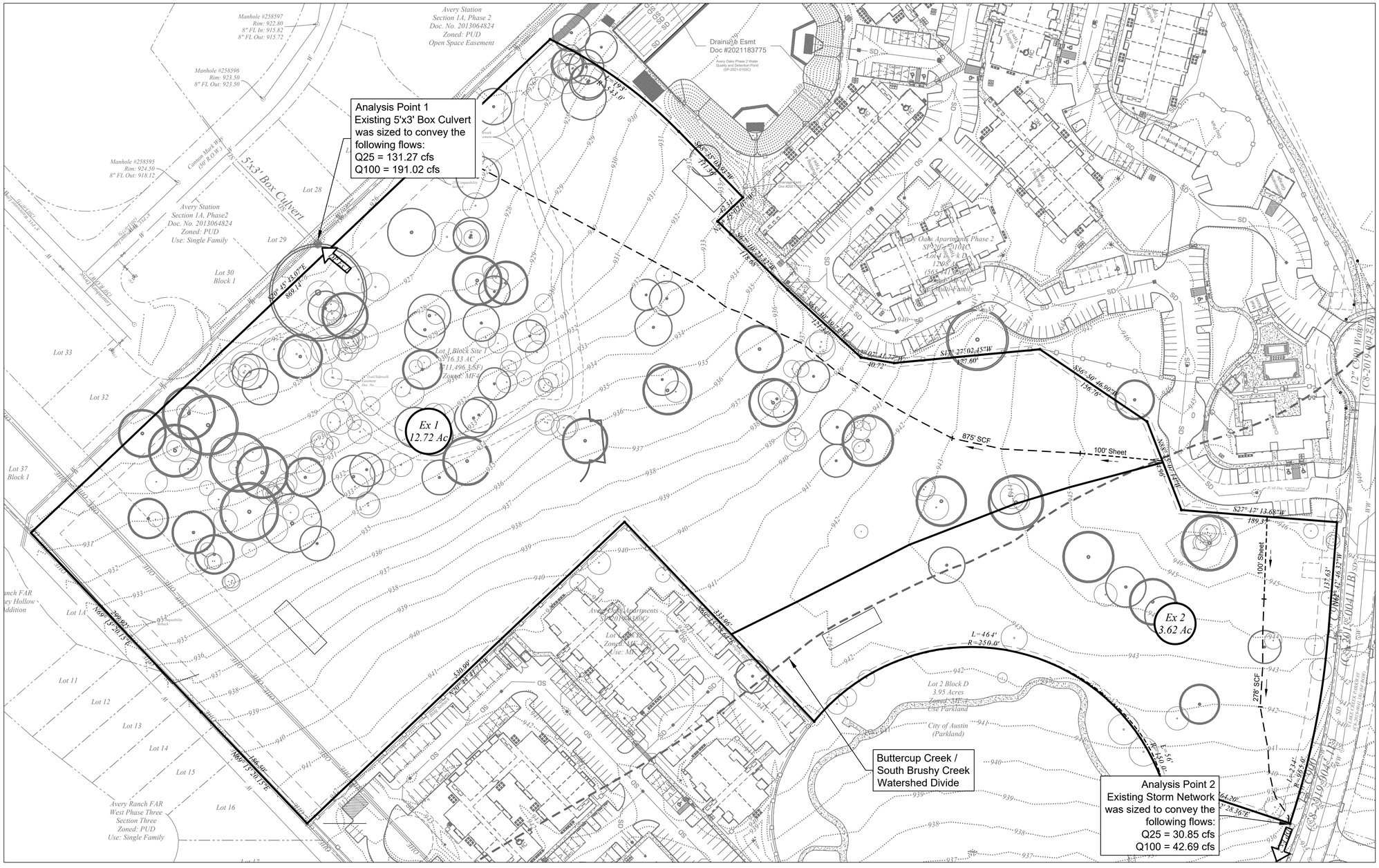

Existing Drainage Area Map

Existing Drainage Area Calculations

Label	Area	IC		SCS CN	Tc	Lag Time	Atlas 14, 24 hr Storm Water Flows (cfs)			
	acres	*acres*	*%*		*min*	*min*	*2-yr*	*10-yr*	*25-yr*	*100-yr*
Ex 1	12.72	0.00	0.0	80	13.22	7.93	31.06	59.64	79.05	111.64
Ex 2	3.62	0.00	0.0	80	5.00	3.00	11.81	22.62	29.79	41.99

Curve Numbers

Drainage Area	AREA (AC.) PER LAND USE (SOIL TYPE D)			Composite CN Value
	Total Area	Open Space (Lawns, Etc.) CN = 80 (Good)	Impervious (Paved) CN =98	
Ex 1	3.62	3.62	0.00	80
Ex 2	12.72	12.72	0.00	80

TIME OF CONCENTRATION

	OVERLAND SHEET FLOW					SHALLOW CONCENTRATED FLOW						TOTAL	TOTAL	TOTAL	TOTAL
Drainage Area ID	n	Length	P_2	Slope	Overland Travel Time	Slope	Distance	Surface ("Paved" or "Unpaved")	Velocity Coefficient	Velocity	Shallow Concentrated Flow Travel Time	Travel Distance	Time of Concentration	Time of Concentration	Lag Time
Name	none	ft	inches	ft/ft	min	ft/ft	ft	type	none	ft/s	min	ft	min	hrs	min
Ex 1	0.150	100.00	4.06	0.0120	10.67	0.0830	278.00	Unpaved	16.13	4.65	1.00	378.00	11.67	0.194	7.00
Ex 2	0.150	100.00	4.06	0.0110	11.05	0.1730	875.00	Unpaved	16.13	6.71	2.17	975.00	13.22	0.220	7.93

0 60' 120'
Scale 1" = 60'

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Prepared For:
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1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

Revision	Date	By	App	Comment

Existing Drainage Area Map

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
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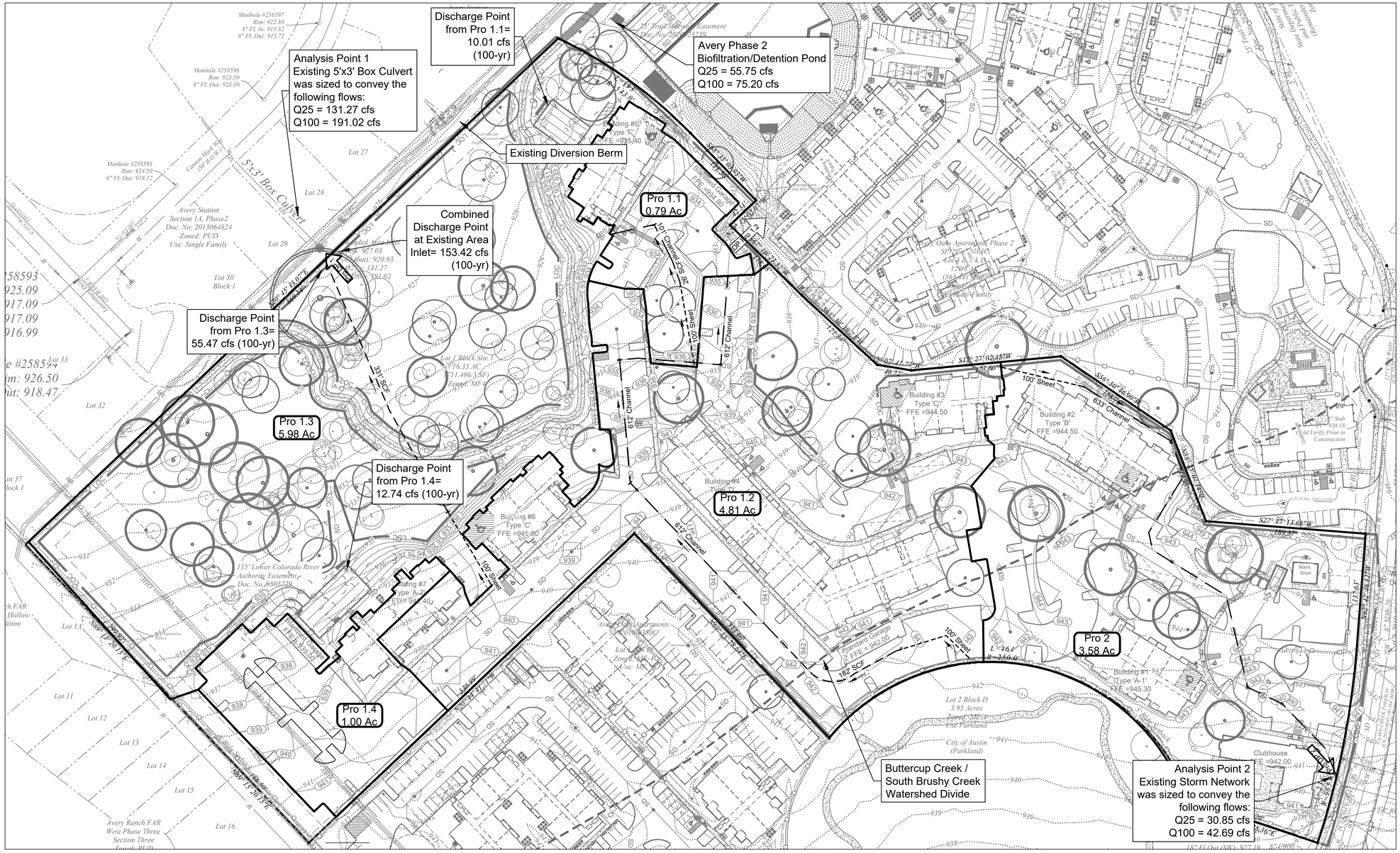
Project No: JDG 70401
Sheet: 27 of 66
SP-2023-0021C

ORIGINAL LAYOUT SIZE - 24X36



Proposed Drainage Area Map

Scale 1" = 60'

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Proposed Drainage Area Map

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
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Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

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@2023 HUDBFILES\JDG JOURNEYMAN\JDG 70401 (AVERY OAKS PHASE 4)\04 CAD\PLOT SHEETS\DRAINAGE AREA MAPS.DWG 9/11/2023 5:04 PM Chris Shaleesh

Analysis Pont 2 Drainage Summary
This project proposes to drain drainage area Pro 2 into the storm system constructed with Avery Lakeline (C8-2019-0041.1B) flows located on sheet 65. This system was designed to receive a total of 42.69 cfs from this site. This project proposes to drain 41.24 cfs to North Lake Creek Parkway. The drainage area and impervious cover were also reduced. The existing wet pond designed with the Avery Lakeline Construction Plans has capacity for these improvements associated with drainage area Pro 2. The Avery Lakeline project was designed for Atlas 14 flows.

Existing Avery Oaks Phase 2 Pond Drainage Note
This project proposes to drain drainage area Pro 1.2 into the pond constructed with Avery Oaks Phase 2 (SP-2021-0103C) and the approved EAPP ID No. 11002789 (WPAP). This pond was designed to receive a drainage area of 6.06 acres with 3.64 acres of future impervious cover from this lot. That produced a design flow of 83.66 cfs. Pro 1.2 has a drainage area of 4.81 acres with 3.36 acres of impervious cover which produces a flow rate of 60.92 cfs. This is less than the design flow. See the tables below for reference. Avery Oaks Phase 2 was designed for Atlas 14 flows.

Analysis Point 1 Drainage Summary
The flows from Avery Oaks Phase 2 and this project are collected at Analysis Point 1. This is an existing area inlet constructed to convey flows through the adjacent neighborhood. The storm system was designed to convey 191.02 cfs during the 100-year storm. The combined discharge from the Avery Oaks Phase 2 pond, the proposed rain gardens for drainage areas Pro 1.1 and Pro 1.4 including the undeveloped land in area Pro 1.3 totals 153.42 cfs. This is less than the design flow (191.02 cfs) in the downstream storm system per Avery Station, Section 1A, Phase 1 (C8-07-0043.01.3B).

Avery Lakeline Drainage Area Comparison Calculations with Jones Carter

POST-DEVELOPED RATIONAL METHOD RUNOFF CALCULATIONS

Inlet / Sub-Basin Name	Sub-Basin Area (ac)	Impervious Cover (%)	Impervious Area (ac)	Pervious Area (ac)	T_c (min)	100-Year Storm Coefficient (C)	100-Year Storm Intensity, I (in/hr)	100-Year Storm Runoff, Q (cfs)
PRO 2 (Bleyl)	3.58	57.26	2.05	1.53	5	0.75	15.32	41.24
L-4 (Jones-Carter) (Pre-Atlas)	4.24	65.00	2.76	1.48	5	0.80	12.54	42.69

Notes:
1. Rainfall Intensity obtained from City of Austin DCM Section 2.4.3, Table 2-2B.
2. Rainfall intensities account for NOAA Atlas 14

Avery Oaks Phase 2 Pro DA Map and Pond Discharge

Proposed Drainage Area Calculations

Label	Area (acres)	IC (acres)	IC (%)	SCS CN	Tc (hours)	Atlas-14, 24 hr Storm Water Flows (cfs) 2-yr	10-yr	25-yr	100-yr
Pro 1	10.98	6.510	59.3	90.67	0.273	37.59	61.38	76.89	101.81
Pro 2	6.06	3.636	60.0	90.81	0.083	31.24	50.50	63.11	83.66
Pro 3	8.71	0.000	0.0	80.00	0.186	24.66	47.49	62.99	88.09

Hydrologic Soil Group = D

Drainage Area Pro 2 assumes fully-developed impervious cover (multi-family) for future development.

Discharge Summary

Analysis Point	Atlas-14, 24 hr Storm Water Flows (cfs) 2-yr	10-yr	25-yr	100-yr
Ex Discharge	55.44	107.05	142.08	198.77
Pond Inflow	57.98	95.22	119.46	158.70
Pond Discharge	22.10	40.04	55.75	75.20
Pro Discharge	41.89	72.32	99.45	146.05

Lake Creek at Avery Ranch Pro DA Map and Calculations

Proposed Drainage Area Calculations

Label	Area (acres)	IC (acres)	IC (%)	SCS CN	Tc (min)	Lag Time (min)	Atlas 14, 24 hr Storm Water Flows (cfs) 2-yr	10-yr	25-yr	100-yr
Pro 1.1	0.79	0.55	70.2	93	5.00	3.00	3.85	6.11	7.55	10.01
Pro 1.2	4.81	3.36	69.8	93	5.00	3.00	23.45	37.19	45.94	60.92
Pro 1.3	5.98	0.00	0.0	80	8.60	5.16	16.01	30.09	39.56	55.47
Pro 1.4	1.00	0.84	84.0	95	5.00	3.00	5.07	7.87	9.66	12.74
Pro 2	3.58	2.05	57.4	90	5.00	3.00	20.51	33.74	42.18	56.51

* Time of Concentration for Pro 1.1, 1.2, 1.4 and Pro 2 are assumed to be 5 minutes. This is a conservative assumption.

TIME OF CONCENTRATION

Drainage Area ID	OVERLAND SHEET FLOW n	Length	P_2	Slope	Overland Travel Time	SHALLOW CONCENTRATED FLOW Slope	Distance	Surface ("Paved" or "Unpaved")	Velocity Coefficient	Velocity	Shallow Concentrated Flow Travel Time	TOTAL Travel Distance	TOTAL Time of Concentration	TOTAL Time of Concentration	TOTAL Lag Time
Name	none	ft	inches	ft/ft	min	ft/ft	ft	type	none	ft/s	min	ft	min	hrs	min
Pro 1.1	TC Assumed 5 minutes												5.00	0.083	3.00
Pro 1.2	TC Assumed 5 minutes												5.00	0.083	3.00
Pro 1.3	0.150	100.00	4.06	0.0400	6.59	0.0300	331.00	Unpaved	16.13	2.79	1.97	431.00	8.60	0.143	5.16
Pro 1.4	TC Assumed 5 minutes												5.00	0.083	3.00
Pro 2	TC Assumed 5 minutes												5.00	0.083	3.00

Curve Numbers

Drainage Area	Total Area	AREA (AC.) PER LAND USE (SOIL TYPE D) Open Space (Lawns, Etc.) CN = 80 (Good)	Impervious (Paved) CN =98	Composite CN Value
Pro 1.1	0.79	0.24	0.55	93
Pro 1.2	4.81	1.45	3.36	93
Pro 1.3	5.98	5.98	0.00	80
Pro 1.4	1.00	0.16	0.84	95
Pro 2	3.58	1.53	2.05	90

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Proposed Drainage Calculations

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
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Project No: JDG 70401
Sheet: 29 of 66
SP-2023-0021C

ORIGINAL LAYOUT SIZE - 24X36

Rain Garden 1

APPENDIX R-11 (modified)
RAIN GARDEN CALCULATIONS
FOR DEVELOPMENT PERMITS

DRAINAGE AREA DATA:		
Drainage Area to Control	0.79 ac	
Drainage Area Impervious Cover	0.54 ac	
Drainage Area Percent Impervious Cover	68%	
Capture Depth (0.5"+((IC-20)/100))	0.98 in	
WATER QUALITY CONTROL CALCULATIONS:	**Required**	**Provided**
Water Quality Volume (WQV = CD*DA*3630)	1,928 cf	2,768 cf
100 year Peak Flow Rate (Q100)	12.74 cfs	
Filtration Area (Af)	2035 sf	2035 sf
Ponding Depth (D)	Max. 1.0 ft	1.00 ft
Depth of Filtration Media (L)	Min. 1.5 ft	1.50 ft
Effective Porosity Water Quality Volume (WQVe = 0.24*Af*		733 cf
Ponded Water Quality Volume (WVPp = WQV-WQVe)		2035 cf
Total WQV		2768 cf
Water Quality Elevation		929.25 ft msl
Elevation of Overflow Weir (>WQ elev)		929.25 ft msl
Top of Pond		930.00 ft msl
Weir Information Q = (3.33*L*H)^3/2		
Length of Overflow Weir		11.00 ft
Required Head to pass the Peak Flow (Q100)	Max. 0.5 ft	0.49 ft
Pond Freeboard Provided to pass Peak Flow (Q100)	Min. 0.25 ft	0.26 ft

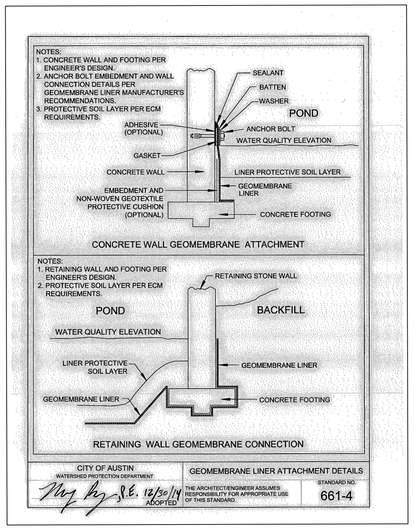
Falling Head Orifice Calculator

Surface Area (sq. ft.)	2035
Orifice coefficient (use 0.6 per DCM)	0.6
h_1 (ft)	2.5
h_2 (ft)	0
t (hrs.)	48
A_o orifice area (sq. ft.)	0.008
Orifice diameter (in.)	1.19

$$A_o = \frac{-2A}{C_d * t * \sqrt{2g}} * \left[\sqrt{h_2} - \sqrt{h_1}\right]$$

Rain Garden 1

Entrance Velocity Calculation		D50 Rock Rip-Rap Calculation	
Q100=	10.01 cfs	D50 =	0.04 feet
L=	10 feet	Q100 =	10.01 cfs
D=	0.5 feet	A=	5.0 sf
V=	2.00 fps	V=	2.00 fps



Membrane and Fabric Specifications

The geotextile filter fabric must comply with Specification 620S, Table 2, High Flow Filter Fabric Requirements.

TABLE 2: HIGH FLOW FILTER FABRIC REQUIREMENTS

Property	Test Method	Requirements
Fabric weight	D 3776	3.0 ounces/square yard, minimum
Ultraviolet (UV) Radiation Stability	D 4355	70% strength retained minimum, After 500 hours in xenon arc device
Mullen burst strength	D- 3786	120 pound per square inch minimum
Water Flow Rate	D-4491	275 gallons/minute/square feet, minimum

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: North Lake Creek at Avery Ranch
Date Prepared: 4/19/2023

1. The Required Load Reduction for the total project: Calculations from RG-348

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

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

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

County =	Williamson
Total project area included in plan * =	16.33 acres
Predevelopment impervious area within the limits of the plan * =	0.00 acres
Total post-development impervious area within the limits of the plan* =	6.82 acres
Total post-development impervious cover fraction * =	0.42
P =	32 inches
$L_{M\ TOTAL\ PROJECT}$ =	5936 lbs.
Number of drainage basins / outfalls areas leaving the plan area =	1

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

Drainage Basin/Outfall Area No. =	Pro 1.1
Total drainage basin/outfall area =	0.79 acres
Predevelopment impervious area within drainage basin/outfall area =	0.00 acres
Post-development impervious area within drainage basin/outfall area =	0.55 acres
Post-development impervious fraction within drainage basin/outfall area =	0.69
$L_{M\ THIS\ BASIN}$ =	474 lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Sand Filter
Removal efficiency =	89 percent

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

RG-348 Page 3-33 Equation 3.7: 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 proposed BMP

A_C =	0.79 acres
A_I =	0.55 acres
A_P =	0.25 acres
L_R =	541 lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	474 lbs.
F =	0.88

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348

Rainfall Depth =	1.50	inches
Post Development Runoff Coefficient =	0.50	
On-site Water Quality Volume =	2132	cubic feet
Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	426	
Total Capture Volume (required water quality volume(s) x 1.20) =	2559	cubic feet
Total Capture Volume Provided =	2768	cubic feet

9. Filter area for Sand Filters Designed as Required in RG-348

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	2559	cubic feet
Minimum filter basin area =	213	square feet
Maximum sedimentation basin area =	853	square feet — For min water depth = 2 feet
Minimum sedimentation basin area =	53	square feet — For max water depth = 8 feet
Filter Basin Area Provided =	2035	square feet
Sedimentation Basin Area Provided =	0	square feet

Recommended Plant Species

Botanical Name	Common Name
Andropogon gerardii	Big bluestem
Buchloe dactyloides	Buffalo grass
Elymus canadensis	Canada wildrye
Helianthus maximiliani	Maximilian sunflower
Muhlenbergia capillaris	Gulf coast muhly
Muhlenbergia filipes	Purple muhly
Muhlenbergia dumosa	Pine muhly
Muhlenbergia lindheimeri	Big muhly
Muhlenbergia rigens	Deer muhly
Panicum virgatum	Switchgrass
Penstemon tenuis	Brazos penstemon
Physostegia spp.	Obedient plant
Schizachyrium scoparium	Little bluestem
Sorghastrum nutans	Indian grass
Sporobolus airoides	Alkali sacaton
Stenotaphrum secundatum	St. Augustine grass
Tripsacum dactyloides	Eastern gama grass

Rain Garden Biofiltration Media and Planting Notes (ECM 1.6.7(C)):

In order to provide acceptable drainage and plant growth characteristics, the Biofiltration medium shall meet the following performance criteria:

Percent Organic Matter (by weight) of 0.5 - 5.0%
Texture Analysis (particle size distribution):
- Percent Sand 70 - 90%
- Percent Clay 3 - 10%
- Percent Silt plus Clay < 27%

Creating Biofiltration Mixture

The Biofiltration media should be a mixture of sand and other ingredients. Recognizing the difficulty in determining the correct types and proportions of various ingredients, the City has tested various media in order to characterize physical and chemical properties. The recommendations below reflect the test results and research conducted by the City and other stormwater professionals.

The following mixture (% by volume) should create an appropriate Biofiltration media, subject to specific characteristics of the topsoil and compost ingredients, which may exhibit considerable variability:
- o 70-80% concrete sand and/or screened decomposed granite sand
- o 20-30% screened bulk topsoil (chocolate loam is also acceptable)
- o The source materials must be free of stones, roots, or other similar objects larger than two inches.

Additionally, it should be free of trash, other undesirable material, and should not contain weeds or weed seeds.
- o The ingredients must be well-mixed to create a homogenous media.

*Some shrinkage of the media is to be expected after installation, in the range of 5-15%. As a general recommendation, about 20 inches of media should be installed to achieve the required depth of 18 inches. Wetting of the media at the time of installation is needed in order to determine actual shrinkage and amount of "make-up" material needed.

Rock rubble shall be installed at the inflow locations of each rain garden such that the runoff velocity does not exceed 2 ft/sec.

To determine the minimum required quantity of plants, multiply the total surface area (in square feet) of the Biofiltration basin by twenty percent (0.2). This number represents the minimum number of plants to be placed in the Biofiltration basin. Additional vegetation beyond this minimum is encouraged.

Plant Spacing.
1. Containerized plants should be spaced based on mature size to allow room for growth and avoid over crowding conditions that will cause plant mortality or impenetrable barriers for maintenance personnel.
2. Contiguous areas of sod should be planted end to end, allowing no bare soil.
3. At the time of planting, an 18" inch gap should be provided between the vegetative base (stems) of containerized plants and turf grass/groundcovers to allow room for growth and avoid overcrowding.

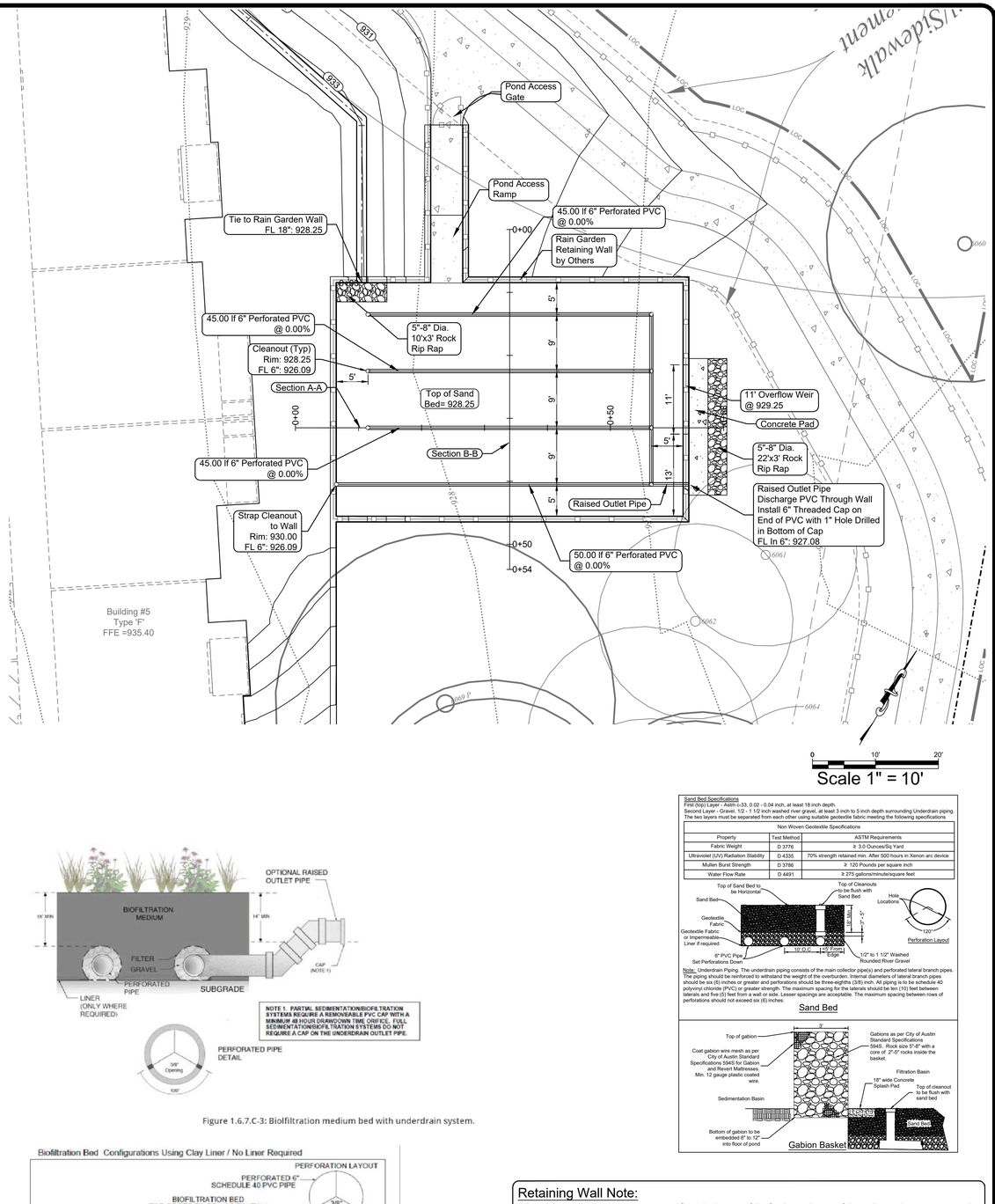
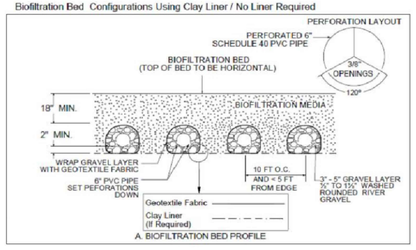


Figure 1.6.7.C-3: Biolfiltration medium bed with underdrain system.



Retaining Wall Note:
All retaining walls 4' or greater measured from the bottom of the footing to the top of the wall must have an approved building permit.

Rain Garden Maintenance Notes:
1. Accumulated paper, trash and debris should be removed every six (6) months or as necessary.
2. Vegetation within the basin should not be allowed to exceed eighteen (18) inches in height at any time.
3. Corrective maintenance is required any time draw-down does not occur within forty-eight (48) hours after the rain garden has emptied.
4. The basin(s) should be inspected annually and repairs should be made if necessary.

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

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Revision	Date	By	App	Comment

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1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

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Tel. 512-454-2400
www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

Rain Garden 1

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401

Sheet: 30 of 66

SP-2023-0021C

Rain Garden 2

APPENDIX R-11 (modified)
RAIN GARDEN CALCULATIONS
FOR DEVELOPMENT PERMITS

DRAINAGE AREA DATA:		
Drainage Area to Control	1.00 ac	
Drainage Area Impervious Cover	0.84 ac	
Drainage Area Percent Impervious Cover	84%	
Capture Depth (0.5"+((IC-20)/100))	1.14 in	
WATER QUALITY CONTROL CALCULATIONS:	Required	Provided
Water Quality Volume (WQV = CD*DA*3630)	3,482 cf	4,488 cf
100 year Peak Flow Rate (Q100)	12.74 cfs	
Filtration Area (Af)	3300 sf	3300 sf
Ponding Depth (D)	Max. 1.0 ft	1.00 ft
Depth of Filtration Media (L)	Min. 1.5 ft	1.50 ft
Effective Porosity Water Quality Volume (WQVe = 0.24*Af*		1188 cf
Ponded Water Quality Volume (WVPp = WQV-WQVe)		3300 cf
	Total WQV	4488 cf
Water Quality Elevation		935.00 ft msl
Elevation of Overflow Weir (>WQ elev)		935.00 ft msl
Top of Pond		936.00 ft msl
Weir Information Q = (3.33*L*H)^3/2		
Length of Overflow Weir		11.00 ft
Required Head to pass the Peak Flow (Q100)	Max. 0.5 ft	0.49 ft
Pond Freeboard Provided to pass Peak Flow (Q100)	Min. 0.25 ft	0.51 ft

Falling Head Orifice Calculator

Surface Area (sq. ft.)	3300
Orifice coefficient (use 0.6 per DCM)	0.6
h_1 (ft)	2.50
h_2 (ft)	0
t (hrs.)	48
A_o orifice area (sq. ft.)	0.013
Orifice diameter (in.)	1.52

$$A_o = \frac{-2A}{C_d * t * \sqrt{2g}} * \left[\sqrt{h_2} - \sqrt{h_1}\right]$$

Rain Garden 2

Entrance Velocity Calculation		D50 Rock Rip-Rap Calculation	
Q100=	12.74 cfs	D50 =	0.04 feet
L=	13 feet	Q100 =	12.74 cfs
D=	0.5 feet	A=	1.5 sf
V=	1.96 fps	V=	1.96 fps

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: North Lake Creek at Avery Ranch
Date Prepared: 7/12/2023

1. The Required Load Reduction for the total project: Calculations from RG-348

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

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

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

County =	**Williamson**	
Total project area included in plan * =	**16.33**	acres
Predevelopment impervious area within the limits of the plan * =	**0.00**	acres
Total post-development impervious area within the limits of the plan* =	**6.82**	acres
Total post-development impervious cover fraction * =	**0.42**	
P =	**32**	inches
$L_{M\ TOTAL\ PROJECT}$ =	**5936**	lbs.
Number of drainage basins / outfalls areas leaving the plan area =	**1**	

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

Drainage Basin/Outfall Area No. =	**Pro 1.4**	
Total drainage basin/outfall area =	**1.00**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**0.84**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.84**	
$L_{M\ THIS\ BASIN}$ =	**731**	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	**Sand Filter**	
Removal efficiency =	**89**	percent

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

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

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 proposed BMP

A_C =	**1.00**	acres
A_I =	**0.84**	acres
A_P =	**0.16**	acres
L_R =	**830**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	**731**	lbs.
F =	**0.88**	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348

Rainfall Depth =	**1.50**	inches
Post Development Runoff Coefficient =	**0.68**	
On-site Water Quality Volume =	**3717**	cubic feet
Off-site area draining to BMP =	**0.00**	acres
Off-site Impervious cover draining to BMP =	**0.00**	acres
Impervious fraction of off-site area =	**0**	
Off-site Runoff Coefficient =	**0.00**	
Off-site Water Quality Volume =	**0**	cubic feet
Storage for Sediment =	**743**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**4460**	cubic feet
Total Capture Volume Provided =	**4488**	cubic feet

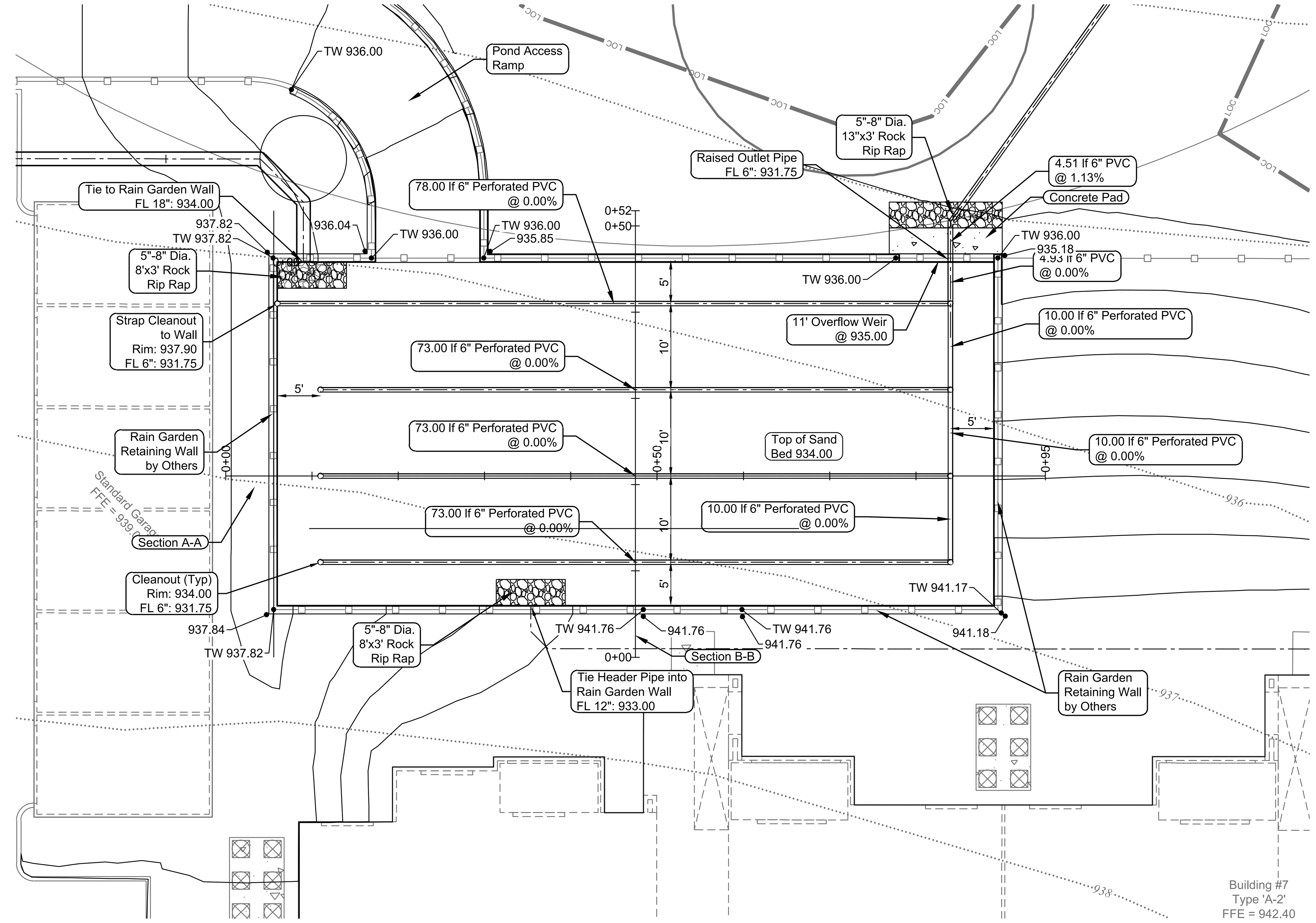
9. Filter area for Sand Filters Designed as Required in RG-348

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	**4460**	cubic feet	
Minimum filter basin area =	**372**	square feet	
Maximum sedimentation basin area =	**1487**	square feet	**For min water depth = 2 feet**
Minimum sedimentation basin area =	**93**	square feet	**For max water depth = 8 feet**
Filter Basin Area Provided =	**2035**	square feet	
Sedimentation Basin Area Provided =	**0**	square feet	

Recommended Plant Species

Botanical Name	Common Name
Andropogon gerardii	Big bluestem
Buchloe dactyloides	Buffalo grass
Elymus canadensis	Canada wildrye
Helianthus maximiliani	Maximilian sunflower
Muhlenbergia capillaris	Gulf coast muhly
Muhlenbergia filipes	Purple muhly
Muhlenbergia dumosa	Pine muhly
Muhlenbergia lindheimeri	Big muhly
Muhlenbergia rigens	Deer muhly
Panicum virgatum	Switchgrass
Penstemon tenuis	Brazos penstemon
Physostegia spp.	Obedient plant
Schizachyrium scoparium	Little bluestem
Sorghastrum nutans	Indian grass
Sporobolus airoides	Alkali sacaton
Stenotaphrum secundatum	St. Augustine grass
Tripsacum dactyloides	Eastern gama grass



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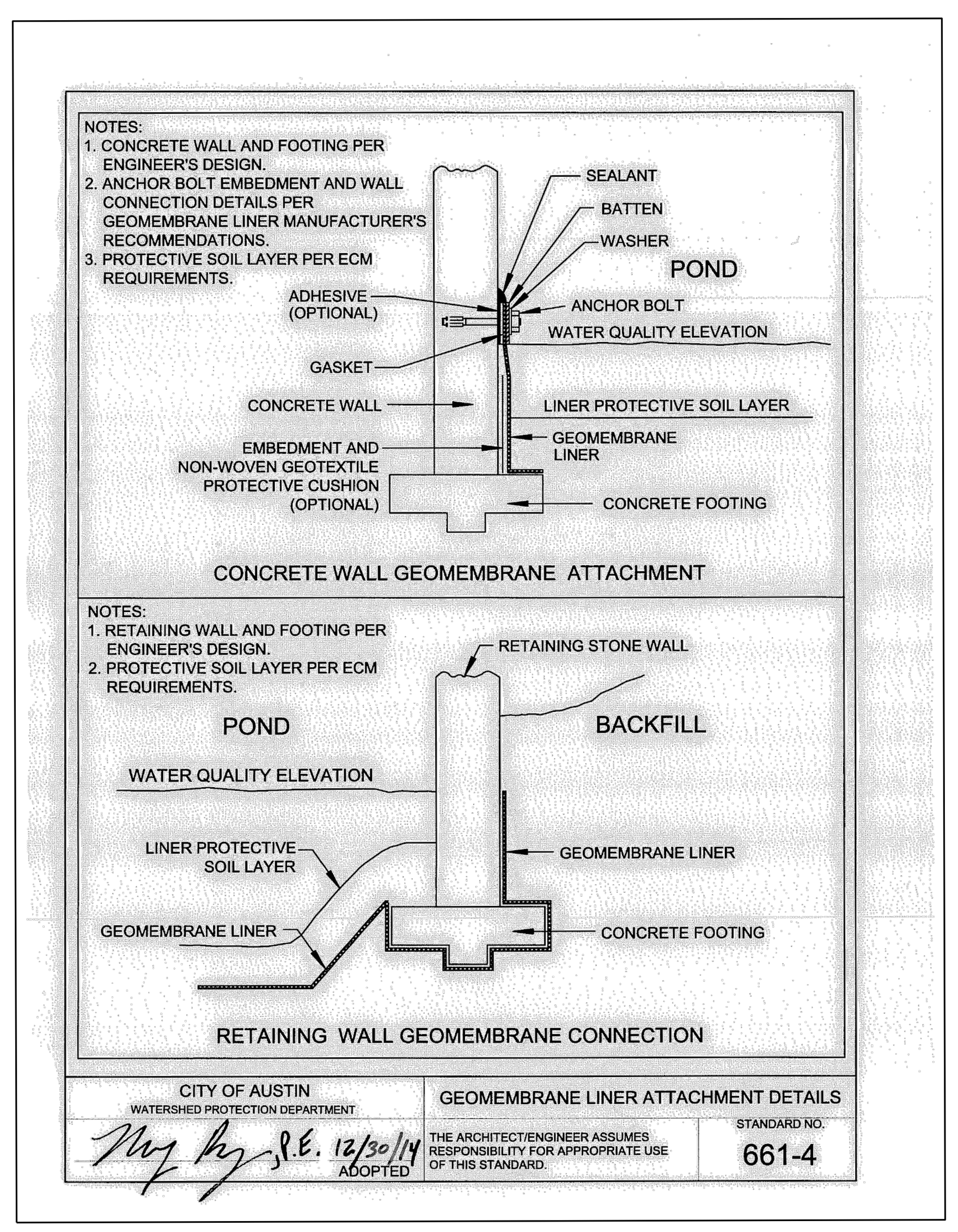


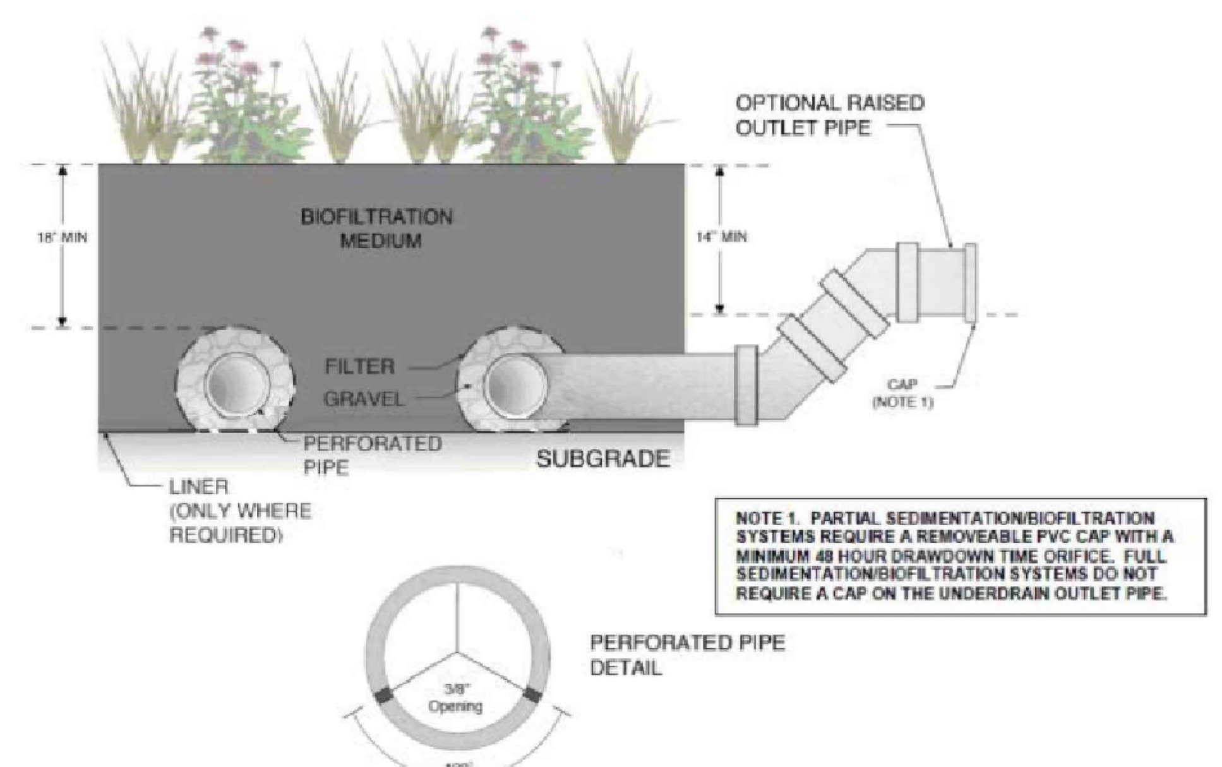
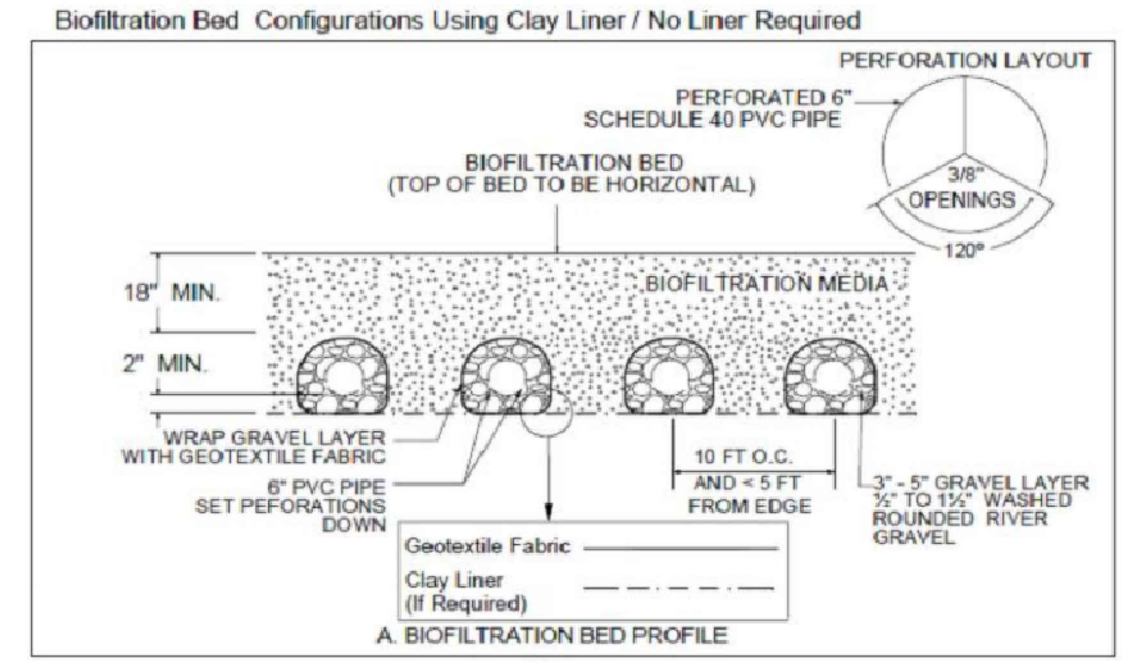
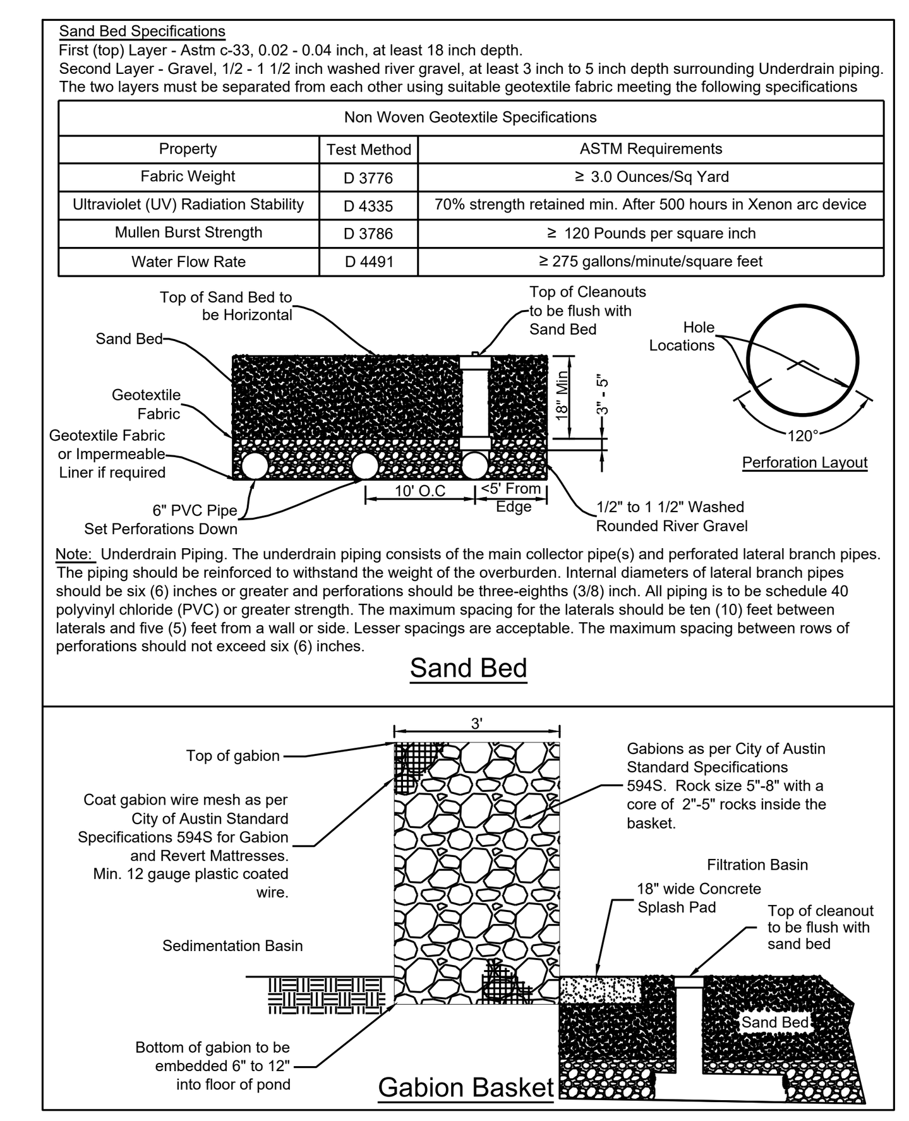


Figure 1.6.7.C-3: Biofiltration medium bed with underdrain system.

Biofiltration Bed Configurations Using Clay Liner / No Liner Required





Membrane and Fabric Specifications

The geotextile filter fabric must comply with Specification 620S, Table 2, High Flow Filter Fabric Requirements.

TABLE 2: HIGH FLOW FILTER FABRIC REQUIREMENTS

Property	Test Method	Requirements
Fabric weight	D 3776	3.0 ounces/square yard, minimum
Ultaviolet (UV) Radiation Stability	D 4355	70% strength retained minimum, After 500 hours in xenon arc device
Mullen burst strength	D- 3786	120 pound per square inch minimum
Water Flow Rate	D-4491	275 gallons/minute/square feet, minimum

Rain Garden Biofiltration Media and Planting Notes (ECM 1.6.7(C)):

In order to provide acceptable drainage and plant growth characteristics, the Biofiltration medium shall meet the following performance criteria:

Percent Organic Matter (by weight) of 0.5 - 5.0%

Texture Analysis (particle size distribution):

- Percent Sand 70 - 90%
- Percent Clay 3 - 10%
- Percent Silt plus Clay < 27%

Creating Biofiltration Mixture

The Biofiltration media should be a mixture of sand and other ingredients. Recognizing the difficulty in determining the correct types and proportions of various ingredients, the City has tested various media in order to characterize physical and chemical properties. The recommendations below reflect the test results and research conducted by the City and other stormwater professionals.

The following mixture (% by volume) should create an appropriate Biofiltration media, subject to specific characteristics of the topsoil and compost ingredients, which may exhibit considerable variability:

- o 70-80% concrete sand and/or screened decomposed granite sand
- o 20-30% screened bulk topsoil (chocolate loam is also acceptable)
- o The source materials must be free of stones, roots, or other similar objects larger than two inches.

Additionally, it should be free of trash, other undesirable material, and should not contain weeds or weed seeds.

- o The ingredients must be well-mixed to create a homogenous media.

*Some shrinkage of the media is to be expected after installation, in the range of 5-15%. As a general recommendation, about 20 inches of media should be installed to achieve the required depth of 18 inches. Wetting of the media at the time of installation is needed in order to determine actual shrinkage and amount of "make-up" material needed.

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1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

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Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
HOUSTON CONROE BRYAN AUSTIN

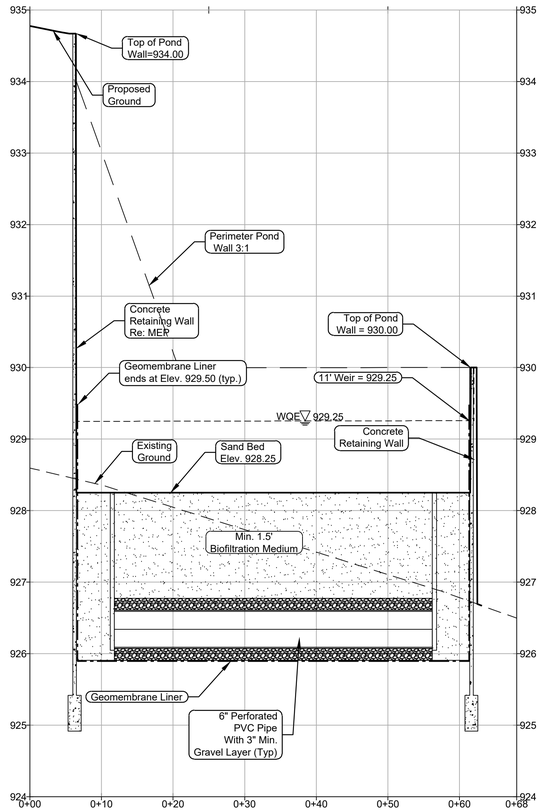
Rain Garden 2

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

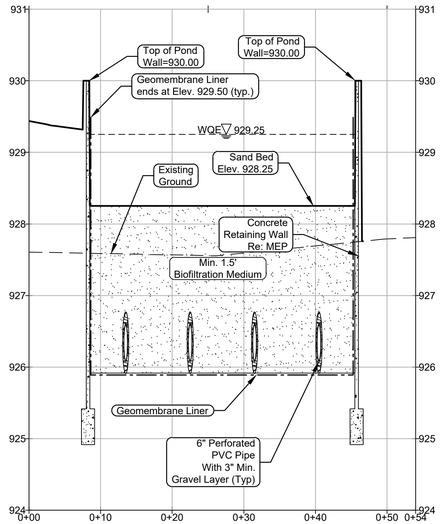
JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 31 of 66
SP-2023-0021C

Scale 1" = 10'
Vertical 1" = 1'



Pond 1 Section 'A-A'



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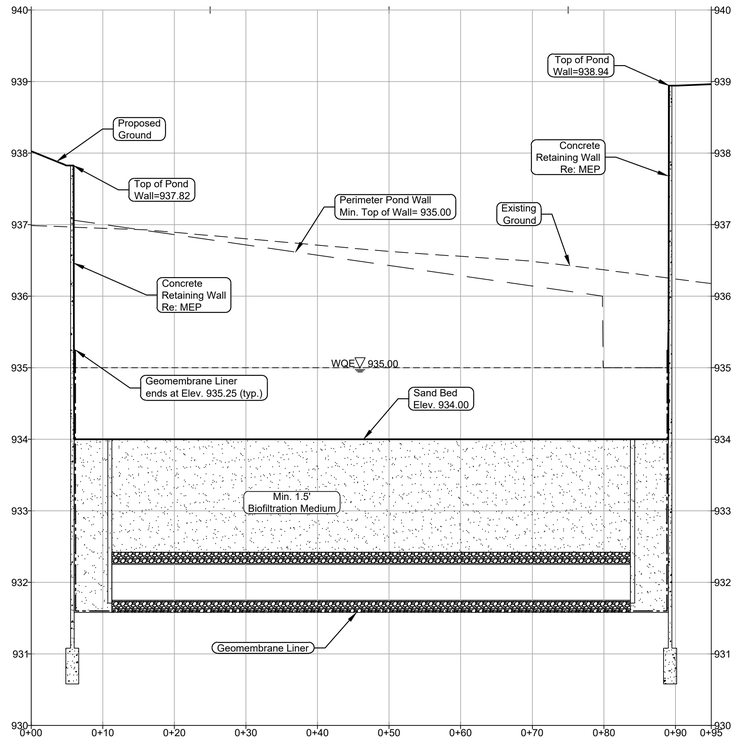

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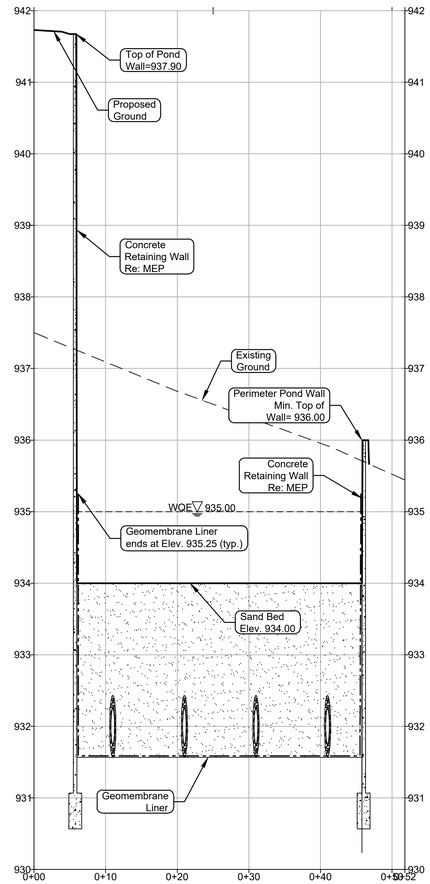

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Rain Garden Cross Sections

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 32 of 66
SP-2023-0021C

GENERAL NOTES

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER. APPROVAL OF THESE PLANS BY THE CITY OF AUSTIN DOES NOT REMOVE THESE RESPONSIBILITIES.

"REVIEWED BY AUSTIN WATER" APPLIES ONLY TO AW PUBLIC FACILITIES. ALL OTHER WATER AND WASTEWATER FACILITIES INSIDE PRIVATE PROPERTY ARE UNDER THE JURISDICTION OF BUILDING INSPECTIONS.

Use of Electronic Files General Disclaimer: Use of the attached files in any manner indicates your acceptance of terms and conditions as set forth below. If you do not agree to all of the terms and conditions, please contact Austin Water pipeline engineering, project coordinator prior to use of the referenced information. Please be advised that the attached files are in a format that can be altered by the user. Due to this fact, any reuse of the data will be at the user's sole risk without liability or legal exposure to The City of Austin and user shall indemnify and hold harmless The City of Austin from all claims, damages, losses and expenses including attorney's fees arising out of or resulting from using the digital file. In addition, it is the responsibility of the user to compare all data with the PDF version of this drawing. In the event there is a conflict between the PDF version drawing and the electronic file, the PDF version drawing shall prevail.

INSPECTION NOTES

Please call Development Services Department, Site and Subdivision Inspection at 512.974.6360 for arrangements for payment of Inspection fees and job assignment for Inspection of the public utilities to this site. Inspection fees must be paid before any Pre-construction meeting can be held.

FIRE FLOW TEST DATA

AUSTIN FIRE DEPARTMENT
FIRE PREVENTION DIVISION
6310 Wilhelmina Delco Dr., Austin, Texas 78752
afd.hydrants@austintexas.gov

Hydrant Flow Test Report

TEST DATE	06/08/2022	FIRE BOX	3404	COMPANY	PREVENTION
TIME	645 HRS	MAP GRID ID	F41	AFD STAFF	NIXON, KIER

RESIDUAL HYDRANT

RESIDUAL HYDRANT #	870903	MAIN SIZE (in.)	12

BLK #	DIRECTION	STREET NAME	TYPE
9000		NORTH LAKE CREEK	PKWY

STATIC PRESSURE (PSI)	84	RESIDUAL PRESSURE (PSI)	82

FLOW HYDRANT

FLOW HYDRANT #	870893	MAIN SIZE (in.)	12

BLK #	DIRECTION	STREET NAME	TYPE
9000		NORTH LAKE CREEK	PKWY

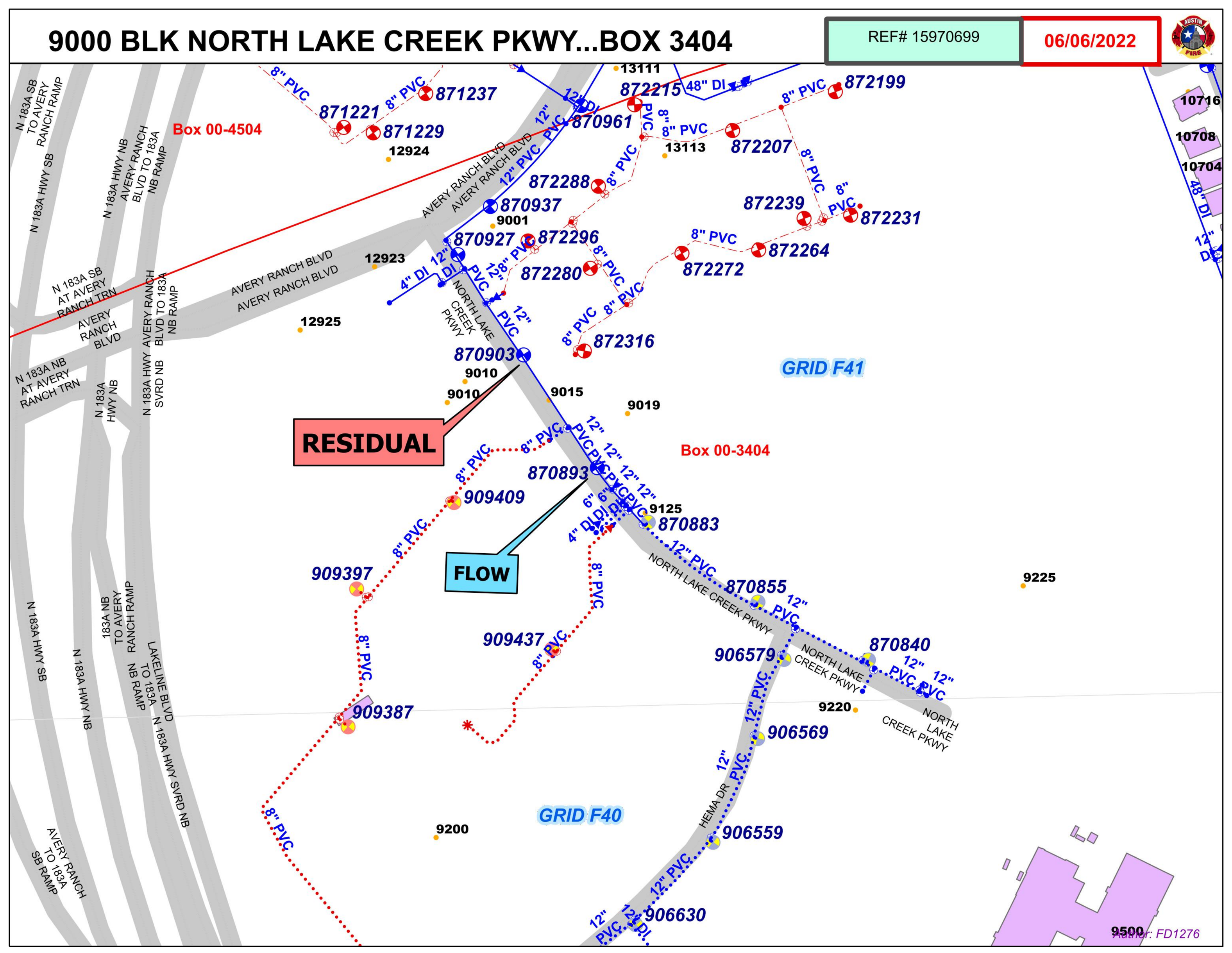
STATIC PRESSURE (PSI)	82	RESIDUAL PRESSURE (PSI)	75

Comments	dc = discharge coefficient straight 2½" butt = 0.9 w/ 45° elbow = 0.75	0.75
	FLOW RATE (GPM) =	1211

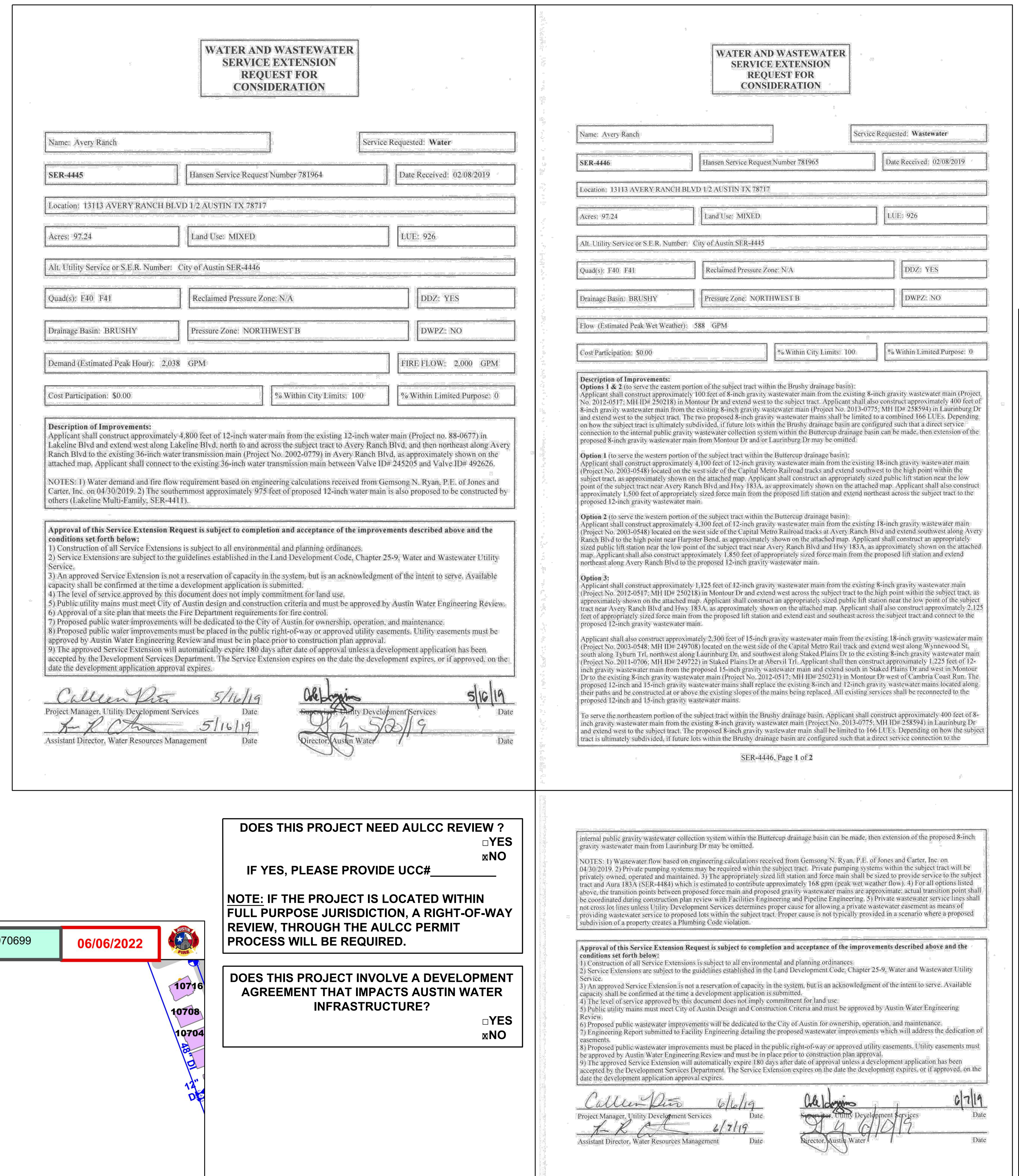
NOTE: This information represents the water supply characteristics in the immediate area on the date and time tested. The City of Austin does not guarantee this data will be representative of the water supply characteristics at any time in the future. It is the requesting party's responsibility to ensure that this test information is appropriate to the location of the project in question and that any differences in elevation between the test location and project are accounted for and included in the hydraulic calculations.

HFTR #15980778

FIRE FLOW MAP



SERVICE EXTENSION REQUESTS



WATER AND WASTEWATER SERVICE EXTENSION REQUEST FOR CONSIDERATION

SER-4446, Page 1 of 2

internal public gravity wastewater collection system within the Buttercup drainage basin can be made, then extension of the proposed 8-inch gravity wastewater main from Laurinburg Dr may be omitted.

NOTES: 1) Wastewater flow based on engineering calculations received from Gemsong N. Ryan, P.E. of Jones and Carter, Inc. on 04/30/2019. 2) Private pumping systems may be required within the subject tract. Private pumping systems within the subject tract will be privately owned, operated and maintained. 3) The appropriately sized lift station and force main shall be sized to provide service to the subject tract and Aura 183A (SER-4484) which is estimated to contribute approximately 168 gpm (peak wet weather flow). 4) For all options listed above, the transition points between proposed force main and proposed gravity wastewater mains are approximate; actual transition point shall be coordinated during construction plan review with Facilities Engineering and Pipeline Engineering. 5) Private wastewater service lines shall not cross lot lines unless Utility Development Services determines proper cause for allowing a private wastewater easement as means of providing wastewater service to proposed lots within the subject tract. Proper cause is not typically provided in a scenario where a proposed subdivision of a property creates a Plumbing Code violation.

Approval of this Service Extension Request is subject to completion and acceptance of the improvements described above and the conditions set forth below:
1) Construction of all Service Extensions is subject to all environmental and planning ordinances.
2) Service Extensions are subject to the guidelines established in the Land Development Code, Chapter 25-9, Water and Wastewater Utility Service.
3) An approved Service Extension is not a reservation of capacity in the system, but is an acknowledgment of the intent to serve. Available capacity shall be confirmed at the time a development application is submitted.
4) The level of service approved by this document does not imply commitment for land use.
5) Public utility mains must meet City of Austin Design and Construction Criteria and must be approved by Austin Water Engineering Review.
6) Proposed public wastewater improvements will be dedicated to the City of Austin for ownership, operation, and maintenance.
7) Engineering Report submitted to Facility Engineering detailing the proposed wastewater improvements which will address the dedication of easements.
8) Proposed public wastewater improvements must be placed in the public right-of-way or approved utility easements. Utility easements must be approved by Austin Water Engineering Review and must be in place prior to construction plan approval.
9) The approved Service Extension will automatically expire 180 days after date of approval unless a development application has been accepted by the Development Services Department. The Service Extension expires on the date the development expires, or if approved, on the date the development application approval expires.

Project Manager, Utility Development Services — 6/6/19 — Date
Supervisor, Utility Development Services — 6/7/19 — Date
Assistant Director, Water Resources Management — 6/7/19 — Date
Director, Austin Water — 6/10/19 — Date

DOES THIS PROJECT NEED AULCC REVIEW ?
☐YES
☒NO
IF YES, PLEASE PROVIDE UCC#__________

NOTE: IF THE PROJECT IS LOCATED WITHIN FULL PURPOSE JURISDICTION, A RIGHT-OF-WAY REVIEW, THROUGH THE AULCC PERMIT PROCESS WILL BE REQUIRED.

DOES THIS PROJECT INVOLVE A DEVELOPMENT AGREEMENT THAT IMPACTS AUSTIN WATER INFRASTRUCTURE?
☐YES
☒NO

OPTIONAL TABLE FOR TACKING SER LUEs ON MULTI-PHASE DEVELOPMENTS.

AW INFRASTRUCTURE INFORMATION

Proposed Product Type (To Be Installed)	Length of Pipe (L.F.)	Size of Pipe (Inch)	No. of Services
Water Main			1
Wastewater Main			1
Reclaimed Water Main			NA
Water Service	11.5	12" PVC	
Wastewater Service	0	NA	
Reclaimed Water Service	NA	NA	

CITY OF AUSTIN
AUSTIN WATER
October 2021
VERSION 2.0
STANDARD NO.
1 OF 1

PROJECT INFORMATION

Fire, Domestic and Irrigation Demand Data	
Grid Number:	F41
Mapsco Number:	403R
AW Intersection Number:	36360
Building Size in Square Feet:	42,575
Building Type per IFC:	Type V-A
Building Height:	44
Available Fire Flow Calcs at 20 PSI:	7869
Required Building Fire Flow per IFC Table B105.1(2):	3750 GPM
Reduced Fire Flow Per__% Fire Sprinkler Reduction per IFC Table B105.2:	75%
Minimum Fire Flow (See Note #2 Below):	1,500 GPM
Domestic Water Demand in GPM:	680 GPM
Water Supply Fixture Units (WSFU) Flush Tanks or Flushometers (Circle Applicable Item):	5049 (Flush Tank)
Austin Water Pressure Zone:	Northwest B
Static Water Pressure in PSI:	84
Static Pressure at the Highest Lot Served in PSI:	56
Static Pressure at the Lowest Lot Served in PSI:	86
Maximum Irrigation Demand:	30 GPM
Fire Line Velocity: 8" Size of Fire Line	9.57
Domestic Line Velocity: 8" Size of Domestic Line	9.57

Note

LOTS WITH 65 PSI OR GREATER REQUIRE A PRV TO BE INSTALLED ON THE PROPERTY OWNERS SIDE OF THE DOMESTIC WATER METER.

1. WITH THE EXCEPTION OF PROVIDING THE REQUIRED INFORMATION, DO NOT REVISE THESE TABLES IN ANYWAY.
2. ON MINIMUM FIRE FLOW, FOR COMMERCIAL DEVELOPMENT, DESIGN ENGINEER MUST INCLUDE 1500 GALLONS PER MINUTE OR REDUCED FIRE FLOW AMOUNT, WHICHEVER IS GREATER AND 1000 GALLONS PER MINUTE ON RESIDENTIAL DEVELOPMENT/SUBDIVISION.

Meter Notice:

Meter 1.5 inches and larger must be purchased and ordered 90 days in advance of installation.

Meter(s) Requirement for Project:
Address: N. Lake Creek Parkway
Proposed Use: Domestic
Type: Combination
Size: 8"x2" GPM Range: 35-2800
Service Units: 67.5

Meter(s) Requirement for Project:
Address: N. Lake Creek Parkway
Proposed Use: Irrigation
Type: Turbine
Size: 1.5" GPM Range: 4-120
Service Units: 9

Meter Release Not Approved
See Note on This Sheet for Details

Reclaimed Meter(s) Requirement for Project:
Address:
Proposed Use:
Type:
Size: GPM Range:

Note: The meter notice will be cleared of comments and meter release approved when related project infrastructure has been installed, tested, and deemed serviceable.

STANDARD CONSTRUCTION NOTES — October 1, 2021

1. THE CITY STANDARD CONSTRUCTION SPECIFICATIONS CURRENT AT THE TIME OF BIDDING SHALL COVER MATERIALS AND METHODS USED TO DO THIS WORK.
2. CONTRACTOR MUST OBTAIN A ROW PERMIT FROM AUSTIN TRANSPORTATION DEPARTMENT, RIGHT OF WAY MANAGEMENT DIVISION BEFORE BEGINNING CONSTRUCTION WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR ALLEY. ACTIVITY WITHIN RIGHT-OF-WAY SHALL COMPLY WITH APPROVED TCP.
3. AT LEAST 48 HOURS PRIOR TO BEGINNING ANY UTILITY CONSTRUCTION ACTIVITY IN PUBLIC R.O.W. OR PUBLIC EASEMENT, THE CONTRACTOR SHALL NOTIFY THE APPLICABLE CITY OF AUSTIN INSPECTION GROUP (AUSTIN TRANSPORTATION, DEVELOPMENT SERVICES, OR PUBLIC WORKS). SEE CURRENT NOTIFICATION REQUIREMENS AT WWW.AUSTINTEXAS.GOV.
4. THE CONTRACTOR SHALL CONTACT THE AUSTIN AREA "ONE CALL" SYSTEM AT 1-800-344-8377 FOR EXISTING UTILITY LOCATIONS PRIOR TO ANY EXCAVATION IN ADVANCE OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES TO BE EXTENDED, TIED TO, OR ALTERED, OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS. THE CITY OF AUSTIN WATER AND WASTEWATER MAINTENANCE RESPONSIBILITY ENDS AT R.O.W./EASEMENT LINES.
5. NO OTHER UTILITY SERVICE/APPURTENANCES SHALL BE PLACED NEAR THE PROPERTY LINE, OR OTHER ASSIGNED LOCATION DESIGNATED FOR WATER AND WASTEWATER UTILITY SERVICE THAT WOULD INTERFERE WITH THE WATER AND WASTEWATER SERVICES.
6. MINIMUM TRENCH SAFETY MEASURE SHALL BE PROVIDED, AS REQUIRED BY OSHA, CITY SPECIFICATION ITEM 509S, AND CITY/COUNTY CONSTRUCTION INSPECTORS.
7. ALL MATERIALS TESTS ORDERED BY THE OWNER FOR QUALITY ASSURANCE PURPOSES, SHALL BE CONDUCTED BY AN INDEPENDENT LABORATORY AND FUNDED BY THE OWNER IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 1804S.04.
8. PRESSURE TAPS SHALL BE ALLOWED ON A CASE BY CASE BASIS, AS DETERMINED BY THE DIRECTOR'S DESIGNEE. NORMALLY PRESSURE TAPS 4 INCHES AND LARGER SHALL BE ALLOWED IN THE FOLLOWING CASES: A) A TEST SHUT OUT INDICATES AN ADEQUATE SHUT OUT TO PERFORM THE WORK IS NOT FEASIBLE B) MORE THAN 30 CUSTOMERS OR A SINGLE CRITICAL CUSTOMER (AS DEFINED BY AUSTIN WATER) WOULD BE IMPACTED BY THE SHUT OUT OR C) THE EXISTING WATER LINE WARRANTS IT.
9. THRUST RESTRAINT SHALL BE IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 510.3(22) AND SPL WW 27-A and WW 27-F.
10. FIRE HYDRANTS SHALL BE SET IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 511S.4 AND SHALL BE PAINTED FLYNT ALUMINUM OR EQUAL. FIRE HYDRANTS AND ASSOCIATED VALVES, TEN (10) YEARS AND OLDER WILL BE REQUIRED TO BE REPLACED WITH A NEW FIRE HYDRANT AND APPERTENUNANCES.
11. WATER LINE TESTING AND STERILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEMS 510.3 (27)-(29). FORCE MAIN PRESSURE TESTING SHALL BE CONDUCTED AND FALL UNDER THE SPECIFICATIONS AS WATER LINES (PRESSURE PIPE) OR AT THE PRESSURES SHOWN ON THE APPROVED PLANS.
12. ALL MATERIAL USED ON THIS PROJECT MUST BE LISTED ON THE STANDARD PRODUCTS LISTING. ANY MATERIAL NOT LISTED HAS TO GO THROUGH THE REVIEW OF THE STANDARDS COMMITTEE FOR REVIEW AND APPROVAL PRIOR TO START OF PROJECT. TESTING AND EVALUATION OF PRODUCTS ARE REQUIRED BEFORE APPROVAL WILL BE GIVEN ANY CONSIDERATION.
13. WHEN WATER SERVICES ARE DAMAGED AND THE SERVICE MATERIAL IS PE, THE LINE SHALL BE REPAIRED ONLY BY HEAT FUSION WELD OR REPLACED THE FULL LENGTH WITH TYPE K COPPER MATERIAL. ANY TIME PB IS DAMAGED OR TAMPERED WITH IN ANY WAY, THE SERVICE LINE SHALL BE REPLACED FULL LENGTH WITH TYPE K COPPER MATERIAL. NOTE: FULL LENGTH IS FROM CORPORATION STOP TO METER.
14. WHEN AN EXISTING WATERLINE SHUT OUT IS NECESSARY AND POSSIBLE, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTOR WHO WILL THEN NOTIFY AUSTIN WATER DISPATCH AND THE AFFECTED CUSTOMERS A MINIMUM OF SEVENTY-TWO (72) HOURS IN ADVANCE.
15. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTOR SO THAT HE CAN NOTIFY THE AUSTIN WATER AT 972-0000 AT A MINIMUM OF 72 HOURS PRIOR TO RELOCATING ANY DOMESTIC OR FIRE DEMAND WATER METERS. THE CONTRACTOR SHALL CAREFULLY REMOVE ALL METERS AND METERS BOXES THAT ARE INDICATED TO BE RELOCATED OR SALVAGED. THE CONTRACTOR SHALL INSTALL THE REMOVED METER OR CITY PROVIDED METER AT THE NEW LOCATION INDICATED ON THE CONSTRUCTION PLANS.
16. WATER AND WASTE WATER SERVICES WILL NEED TO BE REPLACED UP TO THE MAIN. REPAIR COUPLINGS ARE NOT ALLOWED ON NEW INSTALLATIONS.
17. ALL MANHOLES IN UNPAVED AREAS PROVIDING DIRECT ACCESS TO A WASTEWATER LINE SHALL BE WATERTIGHT AND BEAR THE WORDING AND INSIGNIA FOR THE CITY OF AUSTIN.
18. THE CONTRACTOR SHALL VERIFY ALL VERTICAL AND HORIZONTAL LOCATIONS OF EXISTING UTILITIES, BELOW GROUND AND OVERHEAD, PRIOR TO STARTING ONSITE UTILITY WORK.
19. ALL WATER AND WASTEWATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE SEPARATION DISTANCES INDICATED IN CHAPTER 290 - DRINKING WATER STANDARDS, CHAPTER 217 - DESIGN CRITERIA FOR SEWERAGE SYSTEMS AMD CHAPTER 210 - DESIGN CRITERIA FOR RECLAIMED SYSTEMS OF TCEQ RULES.
20. CONTRACTOR'S PERSONNEL THAT PERFORM BUTT FUSION AND ELECTROFUSION ON OR TO HDPE PIPE AND FITTINGS MUST HAVE CURRENT QUALIFICATION TRAINING CERTIFICATE ISSUED BY MCELROY OR COMPARABLE TRAINING PROGRAM.
21. SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL STRUCTURAL ENGINEER, REGISTERED IN THE STATE OF TEXAS, SHALL BE SUBMITTED FOR AUSTIN WATER APPROVAL FOR LARGE DIAMETER PRE-CAST MANHOLES, JUNCTION BOXES, WET WELLS, AND SIMILAR STRUCTURES. THE SHOP DRAWINGS SHALL INCLUDE FLOWLINE ELEVATIONS OF ALL INCOMING AND OUTGOING PIPES, ELEVATION OF TRANSITION FROM LARGE DIAMETER SECTIONS TO 48" ID SECTION, TOP OF MANHOLE ELEVATION, SURROUNDING GROUND ELEVATION, AS WELL AS SPECIAL CONSTRUCTION CONSIDERATIONS THAT ARE SPECIFIED IN THE CONTRACT DRAWINGS.
22. VALVE STEM EXTENSIONS SHALL CONSIST OF A SINGLE PIECE OF IRON ROD OF THE REQUIRED LENGTH WITH A SOCKET ON ONE END AND NUT ON THE OTHER.
23. ALL POTABLE WATER SYSTEM COMPONENTS INSTALLED AFTER JANUARY 4, 2014, SHALL BE ESSENTIALLY "LEAD FREE" ACCORDING TO THE US SAFE DRINKING WATER ACT. EXAMPLES ARE VALVES (CORPORATION STOP, CURB STOP, AND PRESSURE REDUCING), NIPPLES, BUSHINGS, PIPE, FITTINGS, BACKFLOW PREVENTERS AND FIRE HYDRANTS. TAPPING SADDLES AND 2 INCH AND LARGER GATE VALVES ARE THE ONLY COMPONENTS EXEMPT FROM THIS REQUIREMENT. COMPONENTS THAT ARE NOT CLEARLY IDENTIFIED BY THE MANUFACTURER AS MEETING THIS REQUIREMENT EITHER BY MARKINGS ON THE COMPONENT OR ON THE PACKAGING SHALL NOT BE INSTALLED.
24. ALL FIRE HYDRANTS AND VALVES THAT ARE TO BE ABANDONED SHALL BE REMOVED, SALVAGED AND RETURNED TO AUSTIN WATER. NOTICE SHOULD BE GIVEN 48 HOURS PRIOR TO RETURN TO: PIPELINE OPERATIONS DISTRIBUTION SYSTEM MAINTENANCE, VALVES AND HYDRANT SERVICES, SUPERVISING AW PIPELINE TECHNICIAN AT 512-972-1133
25. ALL EXISTING WATER METERS IDENTIFIED TO BE RELOCATED OR ABANDONED AT THE DEVELOPMENT, SHALL BE REMOVED FROM THE METER BOX PRIOR TO CONSTRUCTION AND GIVEN IMMEDIATELY TO THE DSD INSPECTOR.
26. THE ENGINEER SHALL CALL OUT THE SIZE, TYPE AND USE (DOMESTIC OR IRRIGATION) OF ALL EXISTING WATER METERS TO BE RELOCATED OR REPURPOSED. WATER METER NUMBERS WILL NOT BE REQUIRED TO BE PLACED ON THE PLAN SHEET. A SEPARATE AUSTIN WATER TAPS OFFICE FORM WILL BE USED TO PROVIDE RELEVANT INFORMATION FOR THE EXISTING INFORMATION ON EXISTING METERS TO RECEIVE APPROPRIATE CREDITS. THIS FORM SHALL BE DIRECTLY SUBMITTED TO AUSTIN WATER TAPS OFFICE FOR REVIEW AND PROCESSING.
27. NO CONNECTION MAY BE MADE BETWEEN THE PRIVATE PLUMBING AND AUSTIN WATER INFRASTRUCTURE UNTIL A CITY APPROVED WATER METER HAS BEEN INSTALLED.
28. ALL GRAVITY LINES SHALL BE INSTALLED DOWNSTREAM TO UPSTREAM.
29. METER BOXES AND CLEAN OUTS SHALL NOT BE LOCATED WITHIN PAVED AREAS SUCH AS DRIVEWAYS AND SIDEWALKS.
30. PROTECTED STREET STATUS IS SUBJECT TO CHANGE OVER TIME. IT IS THE OWNER'S RESPONSIBILITY TO CONFIRM THE STREET STATUS PRIOR TO CONSTRUCTION AS PROTECTED STREET STATUS WILL DIRECTLY IMPACT THE CONSTRUCTION COSTS. IF PROTECTED STREETS ARE PROPOSED TO BE DISTURBED, APPROVAL FROM THE STREET AND BRIDGE DIVISION OF THE TRANSPORTATION DEPARTMENT IS REQUIRED.

AUSTIN WATER REVIEW BLOCK

Revision	Date	By	App	Comment

Prepared For:
Avery Land Investors, LP
1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

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AUSTIN BRYAN CONROE HOUSTON

Austin Water Gen. Information & Construction Notes

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
CAD: CS, JW Review: JR, JG
Project No: JDG 70401
Sheet: 33 of 66
SP-2023-0021C

ORIGINAL LAYOUT SIZE - 24X36

@2023 H:\JOBFILES\JGD\JOURNEYMAN\JGD 70401 (AVERY OAKS PHASE 4)\04 CAD\PLOT SHEETS\LIT-A WAT GEN INFO & CONST NOTES.DWG 9/11/2023 5:05 PM Chris Shaleesh

ORIGINAL LAYOUT SIZE - 24X36

Scale 1" = 60'

Legend

- W — Existing Water Line
- W — Proposed Water Line
- Single Water Service
- Double Water Service
- WW — Existing Wastewater Line
- WW — Proposed Wastewater Line
- Wastewater Service
- RW — Existing Reclaimed Water Line
- RW — Proposed Reclaimed Water Line
- E — Proposed Underground Electric
- SD — Proposed Storm Drain
- Fire Hydrant
- Gate Valve
- AARV
- T — Transformer Pad

Lift Station Note:

Install duplex grinder pump system in 60" diameter basin. Contact Smith Pump at 512-310-1480 for detailed pump and basin design. Pumps to be Liberty LGV 3 HP. See lift station schematic details on sheet 50.

Rim = 929.84 — Peak Wet Weather Flow = 116.25 gpm
Bottom = 913.75 — Total Dynamic Head = 42.82' (C=100)
Outlet = 926.81
Inlet = 923.17

Notes

1. Underground mains feeding NFPA 13 sprinkler systems must be installed and tested in accordance with NFPA 13, and the Fire Code, by a licensed sprinkler contractor with a plumbing permit. The entire main must be hydrostatically tested at one time, unless isolation valves are provided between tested sections.
2. Underground mains feeding private hydrants must be installed and tested in accordance with NFPA 24, and the Fire Code, by a licensed contractor with a plumbing permit. The entire main must be hydrostatically tested at one time, unless isolation valves are provided between tested sections.

Note

This project is subject to the Void and Water Flow Mitigation Rule (COA ECM 1.12.0 and COA Item No. 658S of the SSM) provision that all trenching greater than 5 feet deep must be inspected by a geologist (Texas P.G.) or a geologist's representative.

PRV Note

Lots/Structure with 65 psi or greater require a pressure reducing valve, set at 65 psi, to be installed on the property owner's side of the right of way.

Texas 811
Call Before You Dig!!

Restrained Joints for all Water Line Bends, Tees, Gate Valves & Ends

All horizontal and vertical water line bends, tee's, gate valves and dead end's shall be restrained to the water main using factory restrained joint pipe as approved in SPL WW-27F, or, mechanical joint restraint devices as approved in SPL WW-27A.

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

B.M. - Nail with washer stamped "LSI Surveying" set on the back of curb along the North right-of-way of North Lake Creek Parkway, approximately 386' feet West of the intersection of North Lake Creek Parkway and Hema Drive.
N: 10150246.35, E: 3094468.89, Elev. = 932.61.

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of his/her submittal, whether or not the application is reviewed for Code compliance by City engineers.

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AUSTIN BRYAN CONROE HOUSTON

Overall Utility Plan

Lake Creek at Avery Ranch

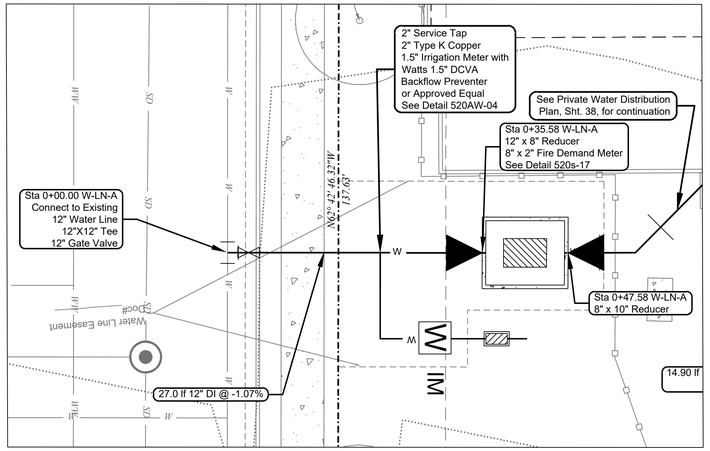
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

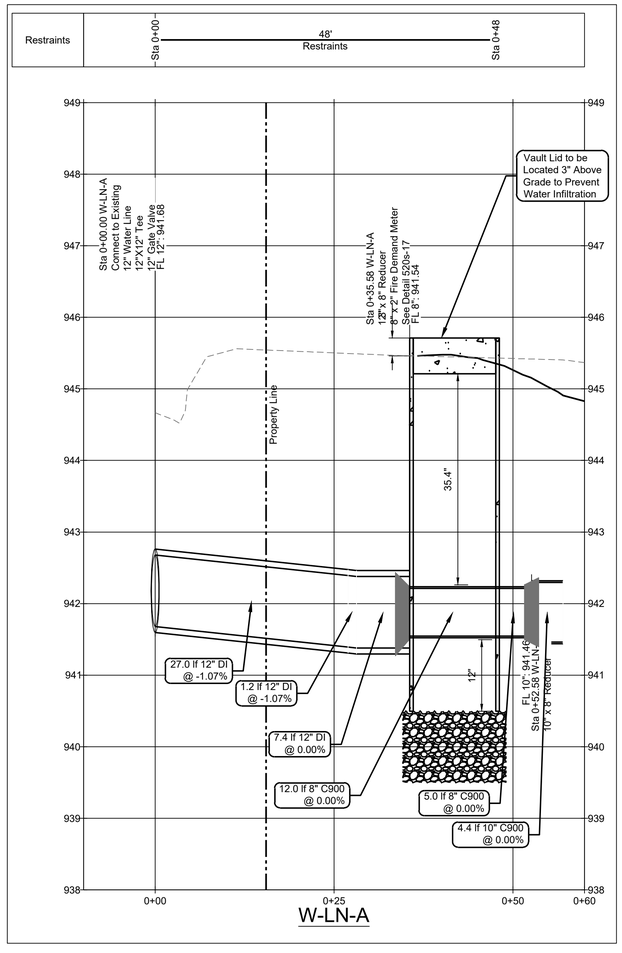
JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

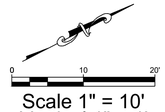
Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401

Sheet: 34 of 66

SP-2023-0021C







Scale 1" = 10'
Vertical 1" = 1'

Water Notes

1. Contractor shall verify horizontal and vertical location of existing utilities prior to construction.
2. Contractor shall verify location of existing line, point of connection and notify engineer of any conflicts/discrepancies prior to installation of improvements.

Call Before You Dig!!

Meter Note:
Contractor and City Insspector to confirm meter manufacturer and associated vault configuration prior to installation. Austin Water change of meter providers may require further review and/or correction to provide reconciled design.

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

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AUSTIN BRYAN CONROE HOUSTON

Public Water Line Plan & Profile

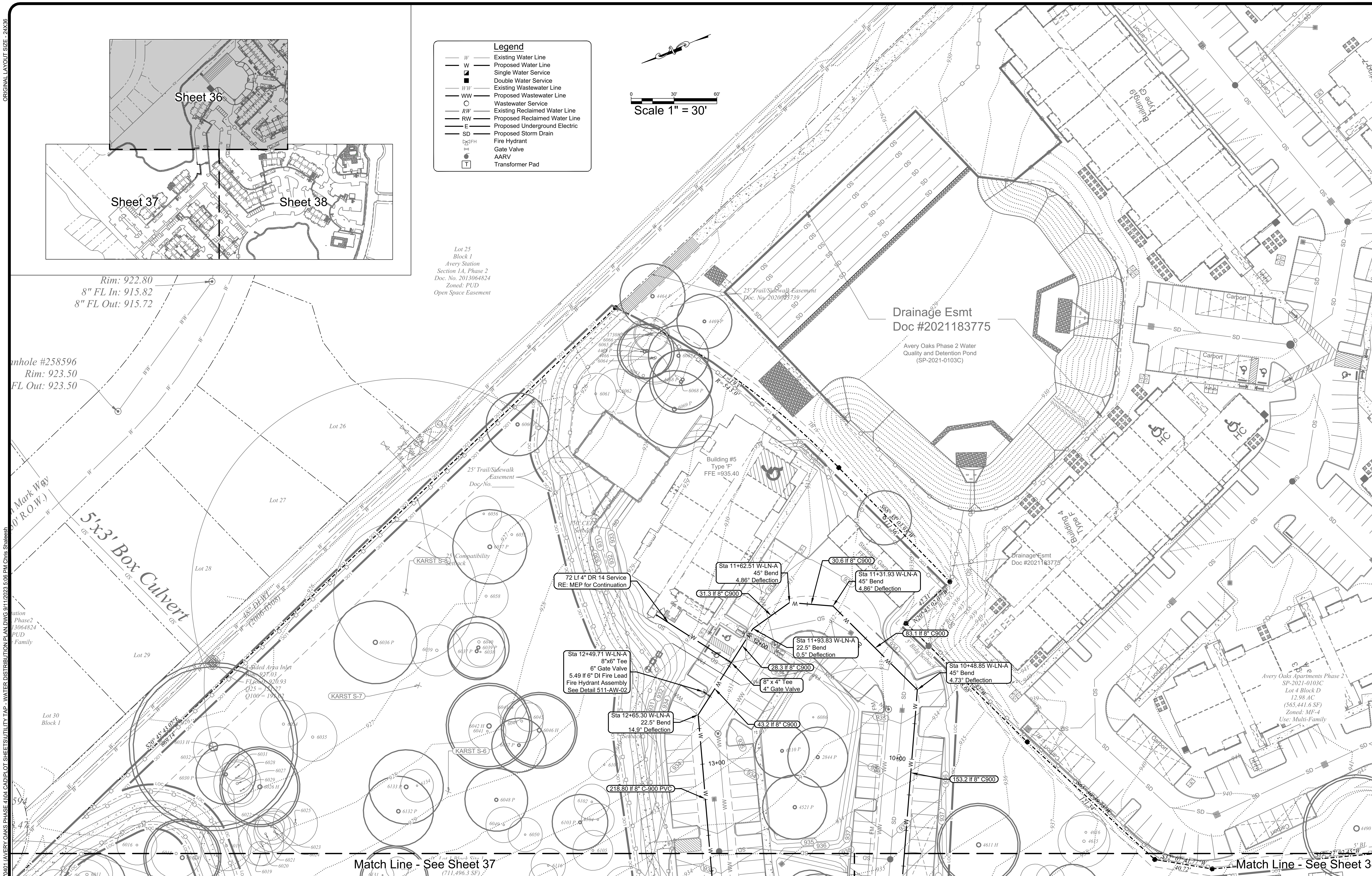
Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401

Sheet: 35 of 66

SP-2023-0021C



Notes

1. Underground mains feeding NFPA 13 sprinkler systems must be installed and tested in accordance with NFPA 13, and the Fire Code, by a licensed sprinkler contractor with a plumbing permit. The entire main must be hydrostatically tested at one time, unless isolation valves are provided between tested sections.
2. Underground mains feeding private hydrants must be installed and tested in accordance with NFPA 24, and the Fire Code, by a licensed contractor with a plumbing permit. The entire main must be hydrostatically tested at one time, unless isolation valves are provided between tested sections.

PRV Note

Lots/Structure with 65 psi or greater require a pressure reducing valve, set at 65 psi, to be installed on the property owner's side of the right of way.

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

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Texas 811

Call Before You Dig!!

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Note

This project is subject to the Void and Water Flow Mitigation Rule (COA ECM 1.12.0 and COA Item No. 658S of the SSM) provision that all trenching greater than 5 feet deep must be inspected by a geologist (Texas P.G.) or a geologist's representative.

Restrained Joints for all Water Line Bends, Tees, Gate Valves & Ends

All horizontal and vertical water line bends, tee's, gate valves and deadend's shall be restrained to the water main using factory restrained joint pipe as approved in SPL WW-27F, or, mechanical joint restraint devices as approved in SPL WW-27A.

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www.bleylengineering.com
Austin | Bryan | Conroe | Houston

Private Water Distribution Plan

Lake Creek at Avery Ranch

9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

Jason K. Rodgers 87881 Registered Professional Engineer 9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 36 of 66
SP-2023-0021C

Match Line - See Sheet 36

Scale 1" = 30'

Lot 33 | Lot 32 | Lot 37 Block 1 | Lot 12 | Lot 13 | Lot 14 | Lot 15 | Lot 16

Lot 1 Block Site 1
16.33 AC
(711,496.3 SF)
Zoned: MF-4

Avery Ranch FAR
West Trukey Hollow
Trail Addition

KARST S-1
SCORPION SINK
KARST S-5
KARST X5 ZARA
KARST S-4
KARST

25' Trail/Sidewalk Easement Doc. No.

150' CEF Setback

115' Lower Colorado River Authority Easement Doc. No. 9805729

28' Compatibility Setback

5' Bldg Setback

Building #6
Type 'C'
FFE =940.80

Building #7
Type 'A-2'
FFE = 942.40

1 Standard Garage
FFE = 939.00

Avery Oaks Apartments
SP-2019-0380C

Lot 1, Blk D
Zoned: MF-4
Use: MF

218.80 lf 8" C-900 PVC

Sta 14+84.10 W-LN-A
45° Bend
6.37° Deflection
23.9 lf 8" C900

Sta 8+22.51 W-LN-B
8"x6" Tee
6" Gate Valve
33.32 lf 6" DI Fire Lead
Fire Hydrant Assembly
See Detail 511-AW-02

Sta 7+86.16 W-LN-B
8" x 8" Tee
2 - 8" Gate Valves
318.72 lf 8" C-900 PVC

42 Lf 4" DR 14 Service
RE: MEP for Continuation

33.4 lf 8" C900

355.0 lf 8" C900

50 Lf 4" DR 14 Service
RE: MEP for Continuation

Sta 12+05.83 W-LN-B
8"x6" Tee
6" Gate Valve
8.40 lf 6" DI Fire Lead
Fire Hydrant Assembly
See Detail 511-AW-02

15.1 lf 8" C900

Sta 12+20.95 W-LN-B
8" Plug

Sta 11+87.91 W-LN-B
8" x 4" Tee
4" Gate Valve

17.9 lf 8" C900

Match Line - See Sheet 38

Sheet 36 | Sheet 37 | Sheet 38

Legend

W	Existing Water Line
W	Proposed Water Line
	Single Water Service
	Double Water Service
WW	Existing Wastewater Line
WW	Proposed Wastewater Line
	Wastewater Service
RW	Existing Reclaimed Water Line
RW	Proposed Reclaimed Water Line
E	Proposed Underground Electric
SD	Proposed Storm Drain
IFH	Fire Hydrant
	Gate Valve
	AARV
T	Transformer Pad

Note

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PRV Note

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Texas 811
Call Before You Dig!!

Legal Description

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Benchmarks

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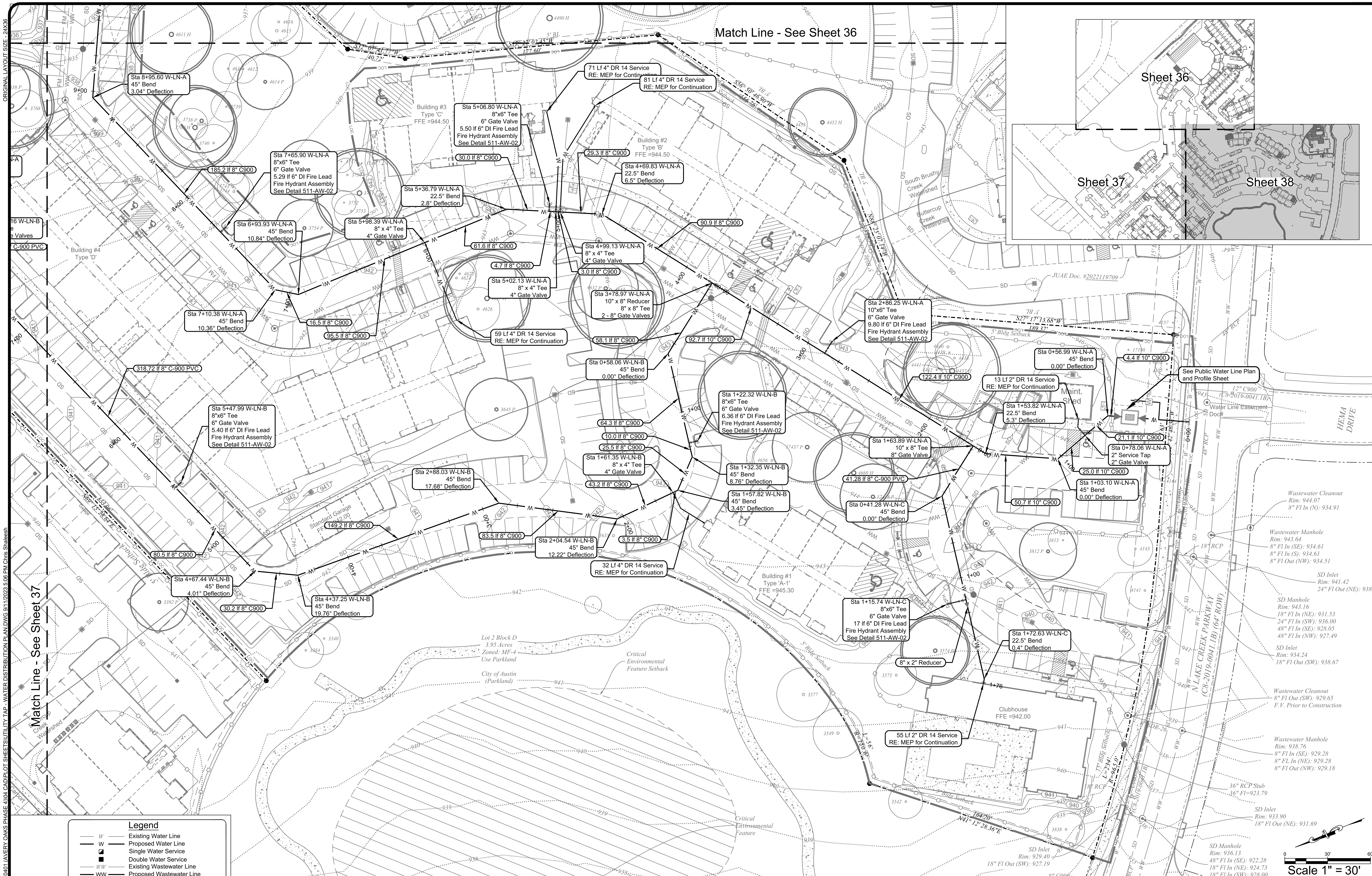
AUSTIN | BRYAN | CONROE | HOUSTON

Private Water Distribution Plan 2

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 37 of 66
SP-2023-0021C



Legend

W	Existing Water Line
W	Proposed Water Line
	Single Water Service
	Double Water Service
WW	Existing Wastewater Line
WW	Proposed Wastewater Line
	Wastewater Service
RW	Existing Reclaimed Water Line
RW	Proposed Reclaimed Water Line
E	Proposed Underground Electric
SD	Proposed Storm Drain
FH	Fire Hydrant
	Gate Valve
	AARV
T	Transformer Pad

Note

This project is subject to the Void and Water Flow Mitigation Rule (COA ECM 1.12.0 and COA Item No. 658S of the SSM) provision that all trenching greater than 5 feet deep must be inspected by a geologist (Texas P.G.) or a geologist's representative.

Restrained Joints for all Water Line Bends, Tees, Gate Valves & Ends

All horizontal and vertical water line bends, tee's, gate valves and deadend's shall be restrained to the water main using factory restrained joint pipe as approved in SPL WW-27F, or, mechanical joint restraint devices as approved in SPL WW-27A.

Notes

1. Underground mains feeding NFPA 13 sprinkler systems must be installed and tested in accordance with NFPA 13, and the Fire Code, by a licensed sprinkler contractor with a plumbing permit. The entire main must be hydrostatically tested at one time, unless isolation valves are provided between tested sections.
2. Underground mains feeding private hydrants must be installed and tested in accordance with NFPA 24, and the Fire Code, by a licensed contractor with a plumbing permit. The entire main must be hydrostatically tested at one time, unless isolation valves are provided between tested sections.

PRV Note

Lots/Structure with 65 psi or greater require a pressure reducing valve, set at 65 psi, to be installed on the property owner's side of the right of way.

Texas 811

Call Before You Dig!!

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

B.M. - Nail with washer stamped "LSI Surveying" set on the back of curb along the North right-of-way of North Lake Creek Parkway, approximately 386' feet West of the intersection of North Lake Creek Parkway and Hema Drive.
N: 10150246.35, E: 3094468.89, Elev. = 932.61.

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Prepared For:
Avery Land Investors, LP
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Austin, TX 78703

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Austin Bryan Conroe Houston

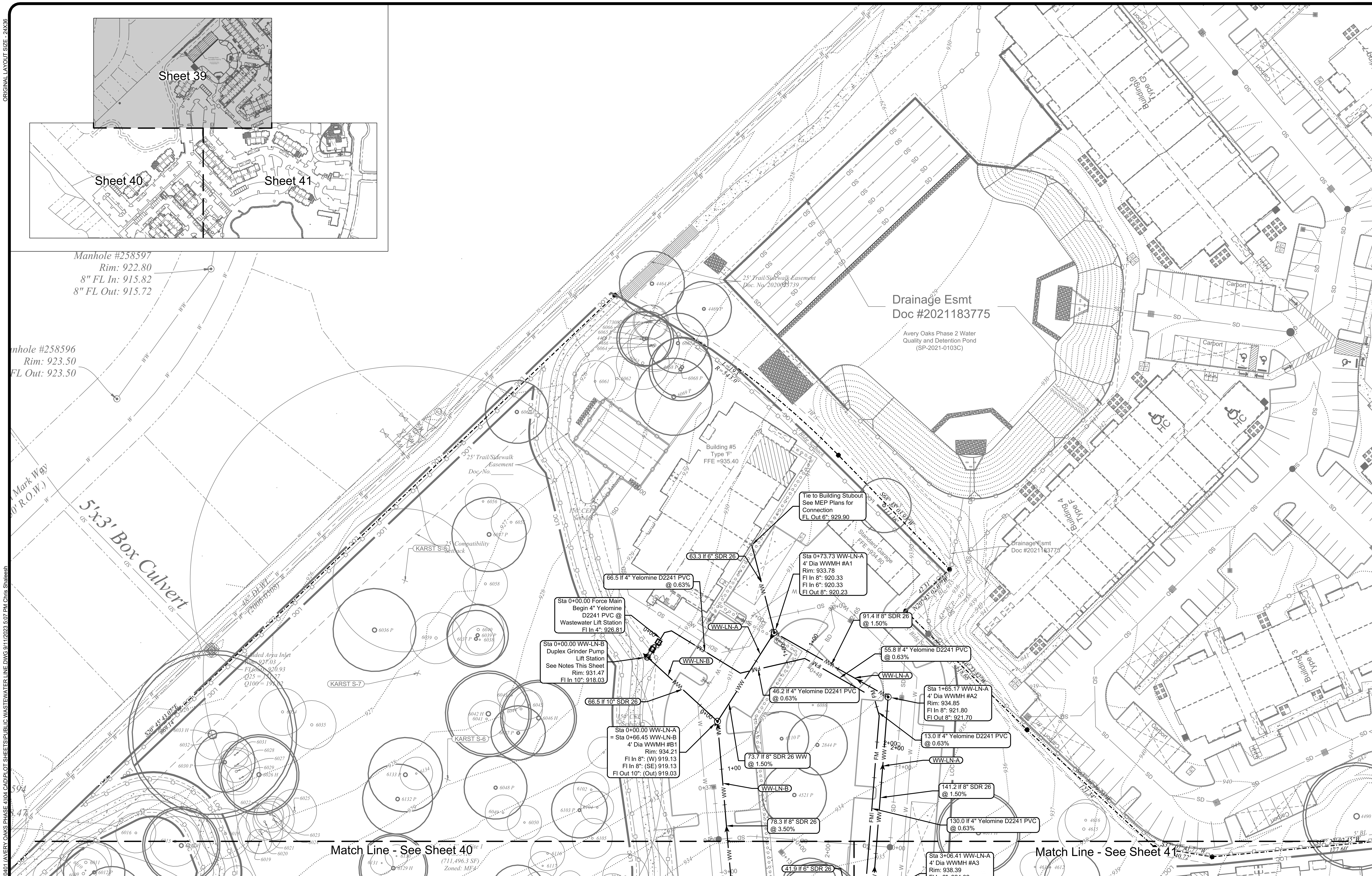
Private Water Distribution Plan 3

Lake Creek at Avery Ranch

9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

Jason K. Rodgers 87881 Registered Professional Engineer 9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 38 of 66
SP-2023-0021C



Note:
All wastewater work to be done is Private. No new connections or modifications are to take place in the ROW.

Wastewater Notes
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Scale 1" = 30'
Vertical 1" = 3'

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AUSTIN BRYAN CONROE HOUSTON

Private Wastewater Plan

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9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 39 of 66
SP-2023-0021C

Match Line - See Sheet 39

Match Line - See Sheet 41

Lot 1 Block Site 1
16.33 AC
(711,496.3 SF)
Zoned: MF-4

25' Trail/Sidewalk Easement Doc. No.

KARST S-1 SCORPION SINK

KARST S-5

KARST X5 ZARA

KARST S-4

KARST

115' Lower Colorado River Authority Easement Doc. No. 9805729

150' CEF Setback

50' CEF Setback

28' Compatibility Setback

5' Bldg Setback

Building #6
Type 'C'
FFE =940.80

Building #7
Type 'A-2'
FFE = 942.40

Standard Garage
FFE = 939.00

Sta 7+86.16 W-LN-B
4' Dia WWMH #B2
Rim: 938.02
FI In 8": 925.51
FI Out 8": 925.41

78.3 lf 8" SDR 26
@ 3.50%

41.9 lf 6" SDR 26

Tie to Building Stubout
See MEP Plans for
Connection
FL Out 6": 936.50

88.7 lf 8" SDR 26
@ 3.51%

WW-LN-B

Tie to Building Stubout
See MEP Plans for
Connection
FL Out 6": 932.30

48.3 lf 6" SDR 26

Sta 3+34.35 WW-LN-B
4' Dia WWMH #B3
Rim: 939.95
FI In 8": 928.72
FI Out 8": 928.62

75.4 lf 8" SDR 26
@ 1.10%

WW-LN-B

Sta 4+09.80 WW-LN-B
4' Dia WWMH #B4
Rim: 938.97
FI In 8": 929.65
FI In 6": 929.56
FI Out 8": 929.55

Tie to Building Stubout
See MEP Plans for
Connection
FL Out 6": 936.90

55.9 lf 6" SDR 26

206.2 lf 8" SDR 26
@ 1.10%

Sta 6+16.01 WW-LN-B
4' Dia WWMH #B5
Rim: 940.88
FI In 6": 932.03
FI Out 8": 931.93

Sheet 39

Sheet 40

Sheet 41

0 30' 60'

Scale 1" = 30'
Vertical 1" = 3'

Legal Description

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AUSTIN BRYAN CONROE HOUSTON

Private Wastewater Plan 2

Lake Creek at Avery Ranch

9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
97881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design:	JR, JG, CS		
CAD:	CS, JW	Review:	JR, JG
Project No:	JDG 70401		

Sheet: **40** of **66**

SP-2023-0021C

Match Line - See Sheet 39
Match Line - See Sheet 40
130.0 lf 4" Yelomine D2241 PVC @ 0.63%
Sta 3+06.41 WW-LN-A
4' Dia WWMH #A3
Rim: 938.39
Fl In 8": 924.02
Fl In 6": 924.02
Fl Out 8": 923.92
56.1 lf 4" Yelomine D2241 PVC @0.63%
49.6 lf 4" Yelomine D2241 PVC @ 0.63%
136.5 lf 4" Yelomine D2241 PVC @ 0.63%
177.7 lf 8" SDR 26 WW @ 1.50%
Tie to Building Stubout See MEP Plans for Connection FL Out 6": 939.00
62.3 lf 6" SDR 26
Sta 7+00.69 WW-LN-A
4' Dia WWMH #A6
Rim: 942.96
Fl In 8": 930.14
Fl In 6": 930.14
Fl Out 8": 930.04
Sta 7+62.63 WW-LN-A
4' Dia WWMH #A7
Rim: 942.61
Fl In 6": 931.17
Fl Out 8": 931.07
Tie to Building Stubout See MEP Plans for Connection FL Out 6": 939.00
45.7 lf 6" SDR 26
43.5 lf 6" SDR 26 @ 1.97%
Wye FL 6": 932.02
61.9 lf 8" SDR 26 @ 1.50%
59.4 lf 4" Yelomine D2241 PVC @ 0.63%
Sta 5+23.00 WW-LN-A
4' Dia WWMH #A5
Rim: 941.47
Fl In 8": 927.37
Fl Out 8": 927.27
150.0 lf 4" Yelomine D2241 PVC @ 0.63%
263.3 lf 6" SDR 26 @ 1.81%
86.3 lf 4" Yelomine D2241 PVC @ 2.44%
197.9 lf 4" Yelomine D2241 PVC @ 2.44%
30.1 lf 4" Yelomine D2241 PVC @ 1.00%
Tie to Building Stubout See MEP Plans for Connection FL Out 6": 939.40
6" Cleanout Traffic Bearing FL Out 6": 937.65
Tie to Building Stubout See MEP Plans for Connection FL Out 6": 939.30
128.1 lf 6" SDR 26
Sta 1+89.02 WW-Ln-C
4" x 10" Reducer
FL Out 10": 938.83
FL Out 4": 938.83
22.3 lf 10" SDR 26 @ 5.47%
Sta 1+66.71 WW-Ln-C
4' Dia. Polymer Manhole #C3
Rim: 944.19
Fl In 10": 937.61
Fl Out 10": 937.51
126.7 lf 10" SDR 26 @ 4.00%
Wye FL 10": 932.44 FL 6": 932.44
40.0 lf 10" SDR 26 @ 4.00%
Tie to Building Stubout See MEP Plans for Connection
37.1 lf Existing 8" WW Line @ 1.27%
33.3 lf 6" SDR 26
Sta 0+00.00 WW-Ln-C
4' Dia WWMH #C1
Connect to Existing Stub
Rim: 940.86
Fl In 10": 930.84
Fl Out 6": 929.75
Building #3 Type 'C' FFE =944.50
Building #2 Type 'B' FFE =944.50
Building #1 Type 'A-1' FFE =945.30
Clubhouse FFE =942.00
Standard Garage FFE =942.00
Clubhouse
Critical Environmental Feature Setback
Critical Environmental Feature
SD Inlet Rim: 929.40 18" Fl Out (SW): 927.19
Sheet 39
Sheet 40
Sheet 41
Scale 1" = 30'
Vertical 1" = 3'

Legal Description

Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks

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AUSTIN BRYAN CONROE HOUSTON

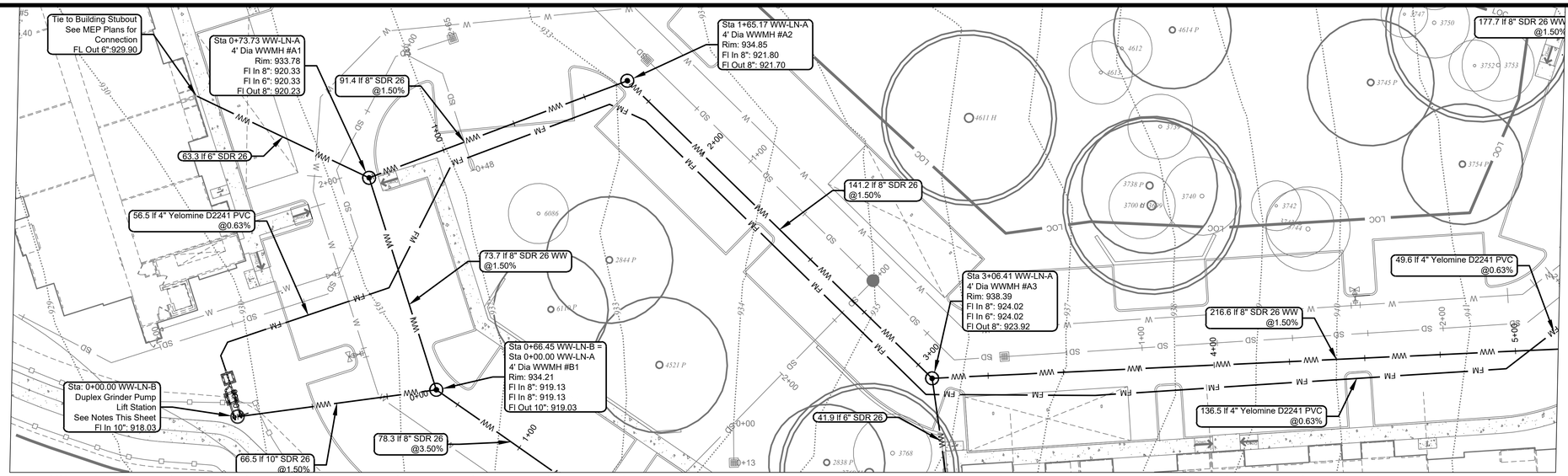
Private Wastewater Plan 3

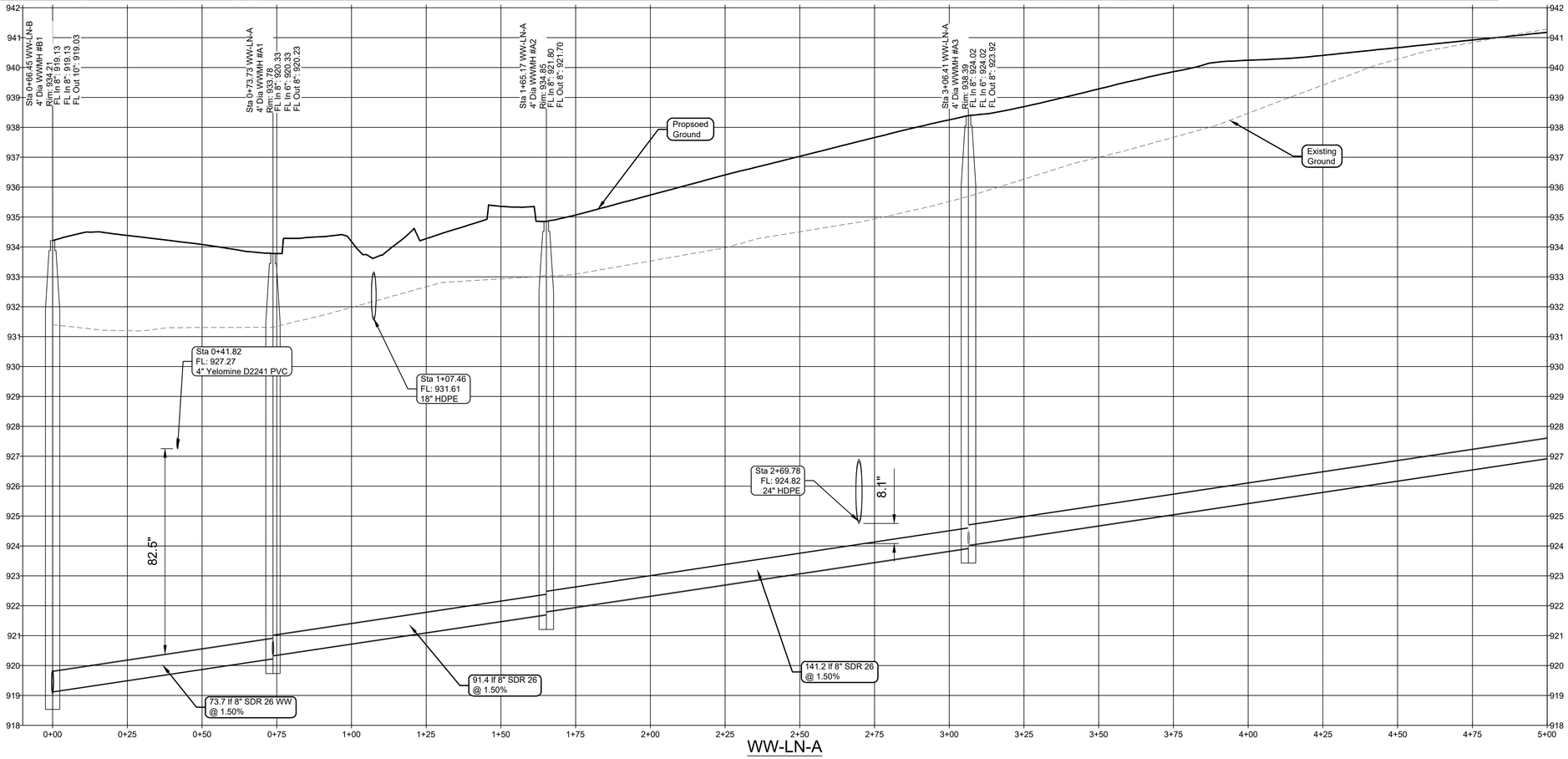
Lake Creek at Avery Ranch

9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: **41** of **66**
SP-2023-0021C





Scale 1" = 20'
Vertical 1" = 2'

Legal Description

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Private Wastewater A Plan & Profile 1

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
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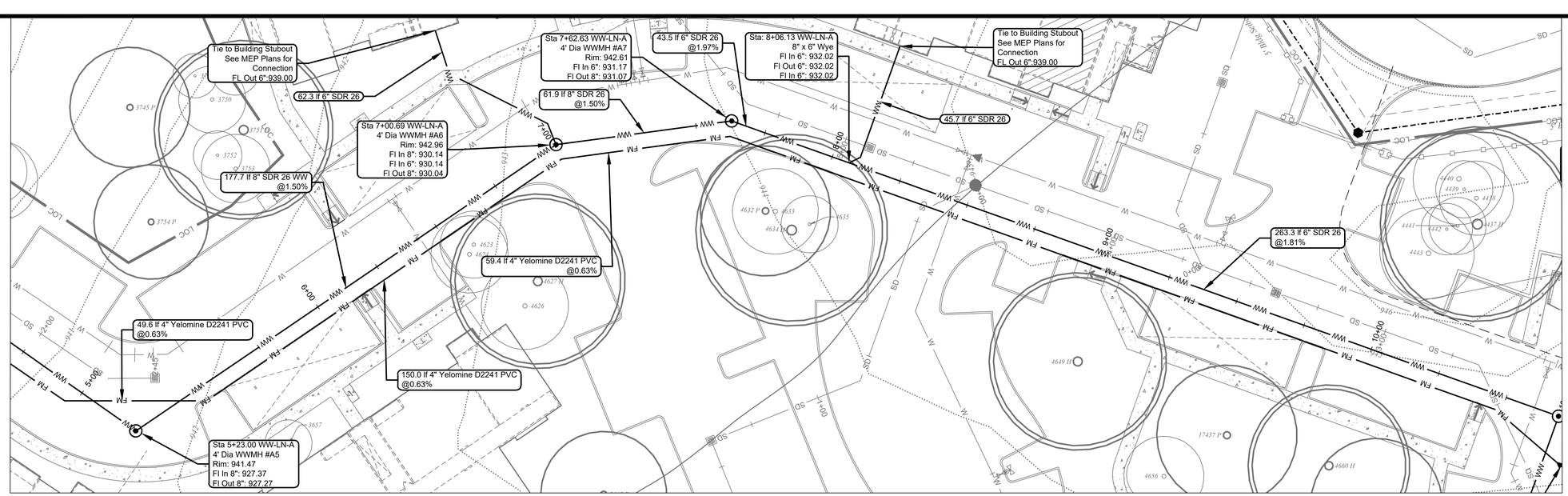
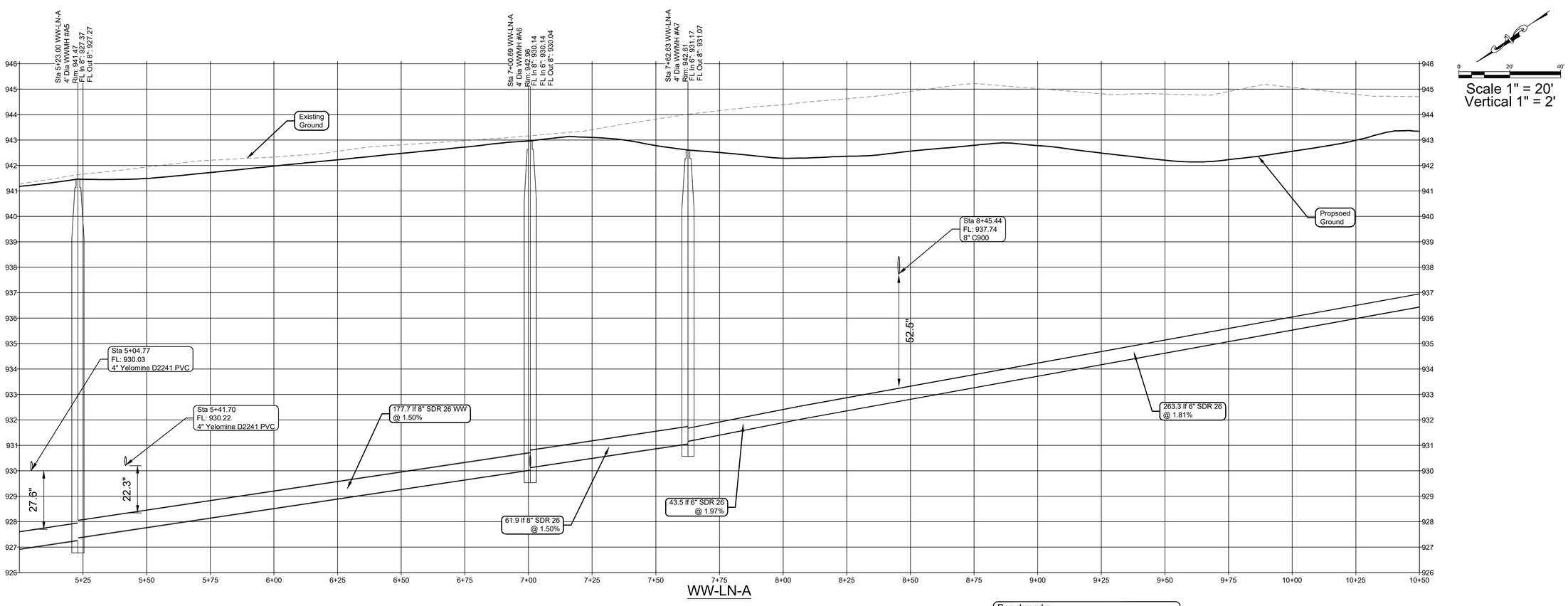
Project No: JDG 70401

Sheet: 42 of 66

SP-2023-0021C





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Private Wastewater A Plan & Profile 2

Lake Creek at Avery Ranch
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Austin, Texas 78729
Williamson County

JASON K. RODGERS
97881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design:	JR, JG, CS
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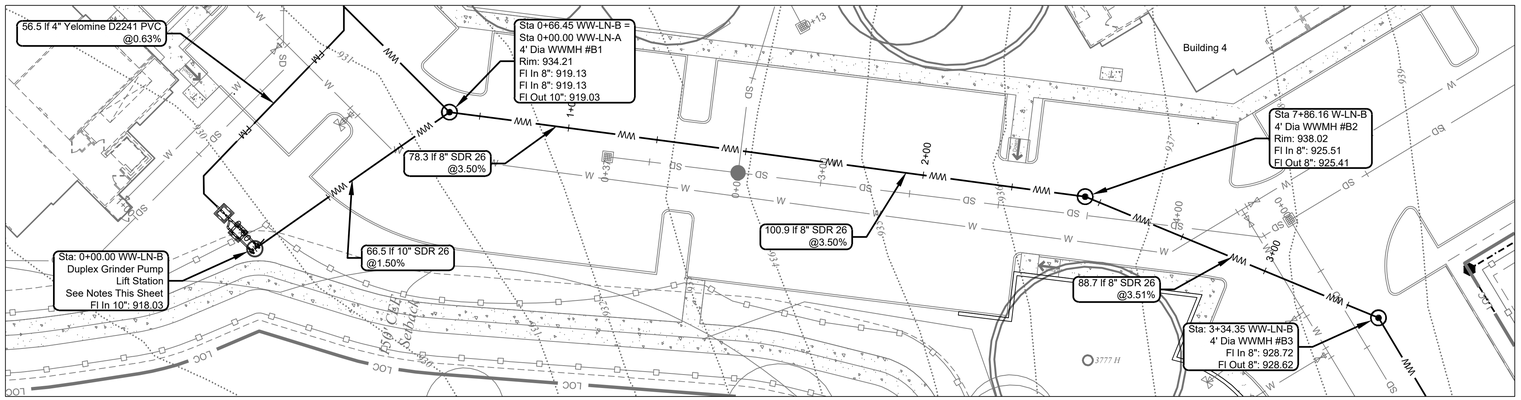
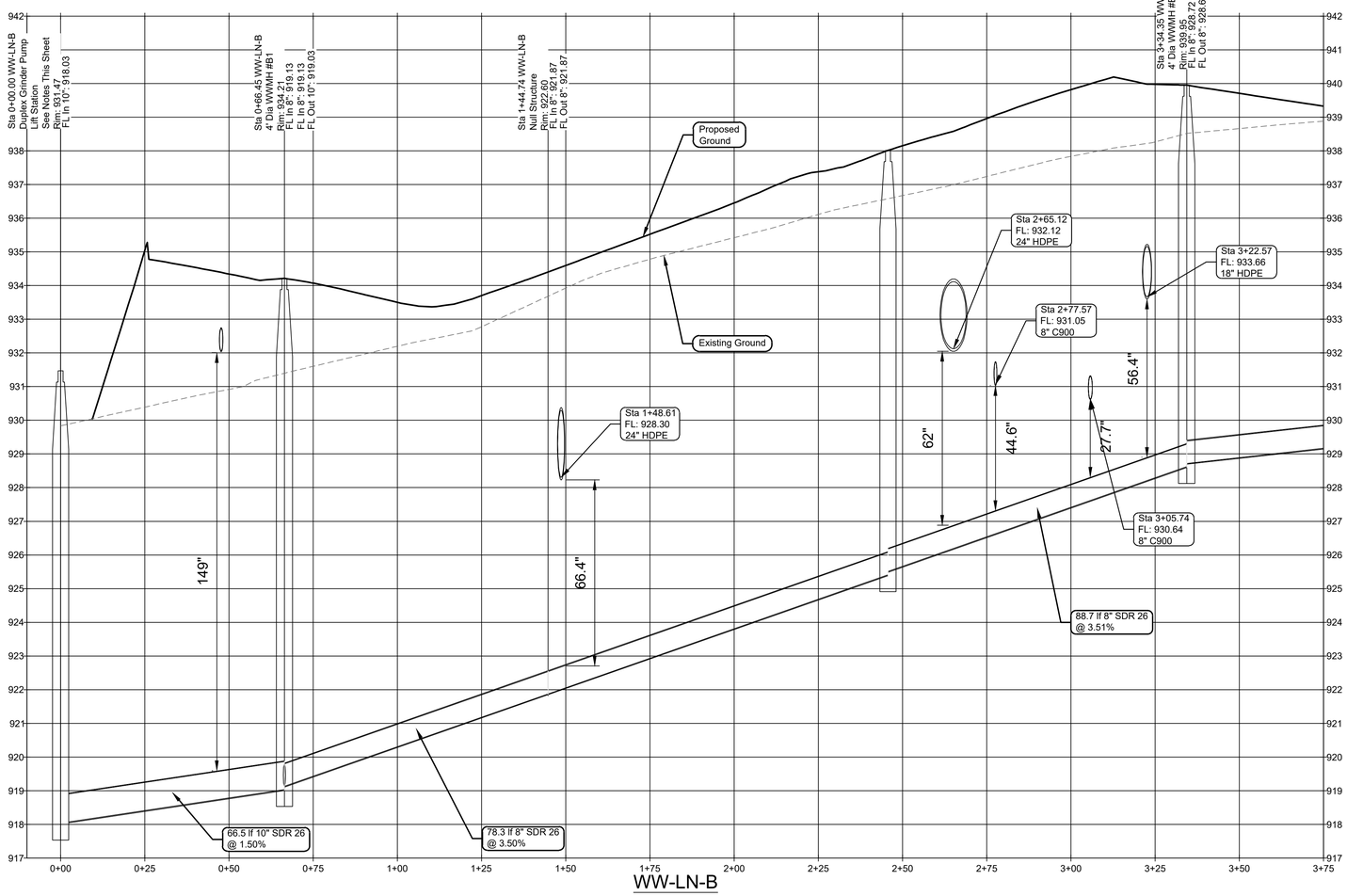
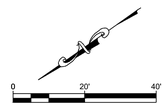
Review:	JR, JG
Project No:	JDG 70401

Sheet: **43** of **66**

SP-2023-0021C







Scale 1" = 20'
Vertical 1" = 2'

Lift Station Note:

Install duplex grinder pump system in 60" diameter basin. Contact Smith Pump at 512-310-1480 for detailed pump and basin design. Pumps to be Liberty LGV 3 HP. See lift station schematic details on sheet 50.

Rim = 929.84
Bottom = 913.75
Outlet = 926.81
Inlet = 923.17

Peak Wet Weather Flow = 116.25 gpm
Total Dynamic Head = 42.82' (C=100)

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Private Wastewater B Plan & Profile 1

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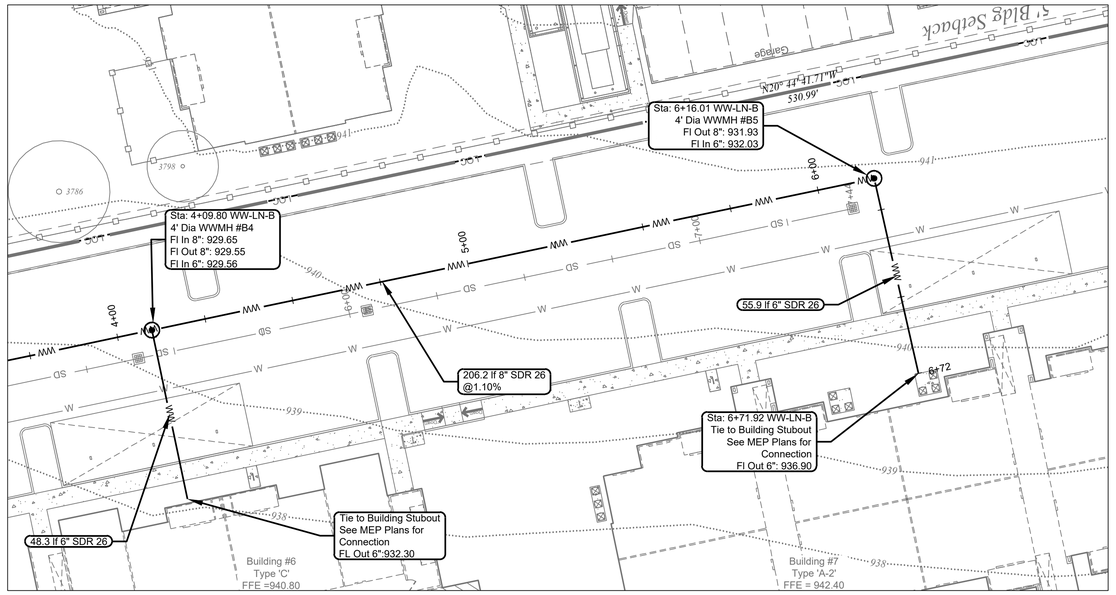
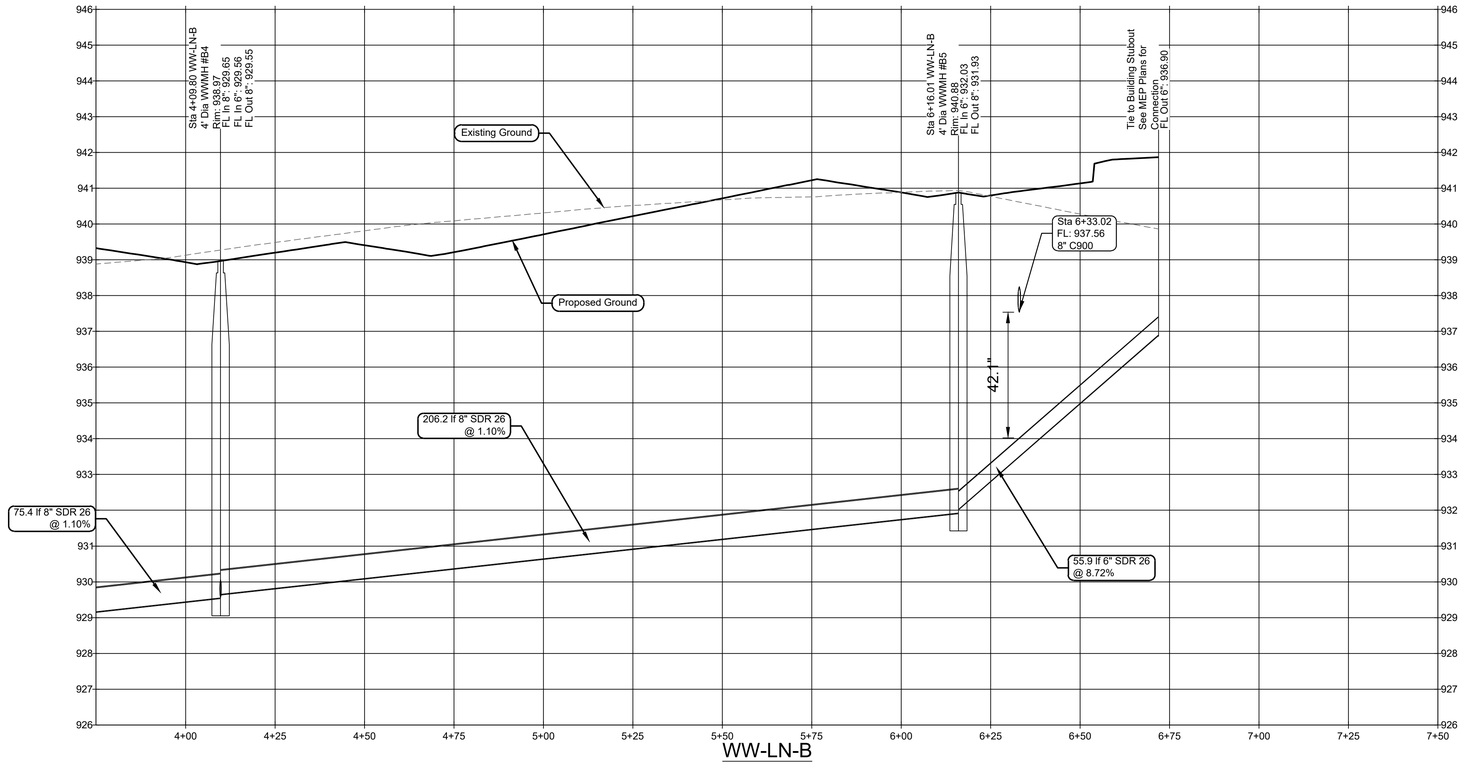
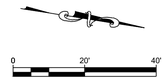




WW-LN-B



Scale 1" = 20'
Vertical 1" = 2'

Note:
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Wastewater Notes
1. Contractor shall verify horizontal and vertical location of existing utilities prior to construction.
2. Contractor shall verify location of existing line, point of connection and notify engineer of any conflicts/discrepancies prior to installation of improvements.

Call Before You Dig!!

Legal Description
Lot 3B-Avery Lakeline Phase 4 a resubdivision of Lot 3A, Block D Amended Plat of Lots 3 and 4, Block D, Avery Lakeline as recorded in Doc. 2023011373 OPRTCT

Benchmarks
B.M. - Nail with washer stamped "LSI Surveying" set on the back of curb along the North right-of-way of North Lake Creek Parkway, approximately 386' feet West of the intersection of North Lake Creek Parkway and Hema Drive.
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Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com

AUSTIN BRYAN CONROE HOUSTON

Prepared For:
Avery Land Investors, LP
1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

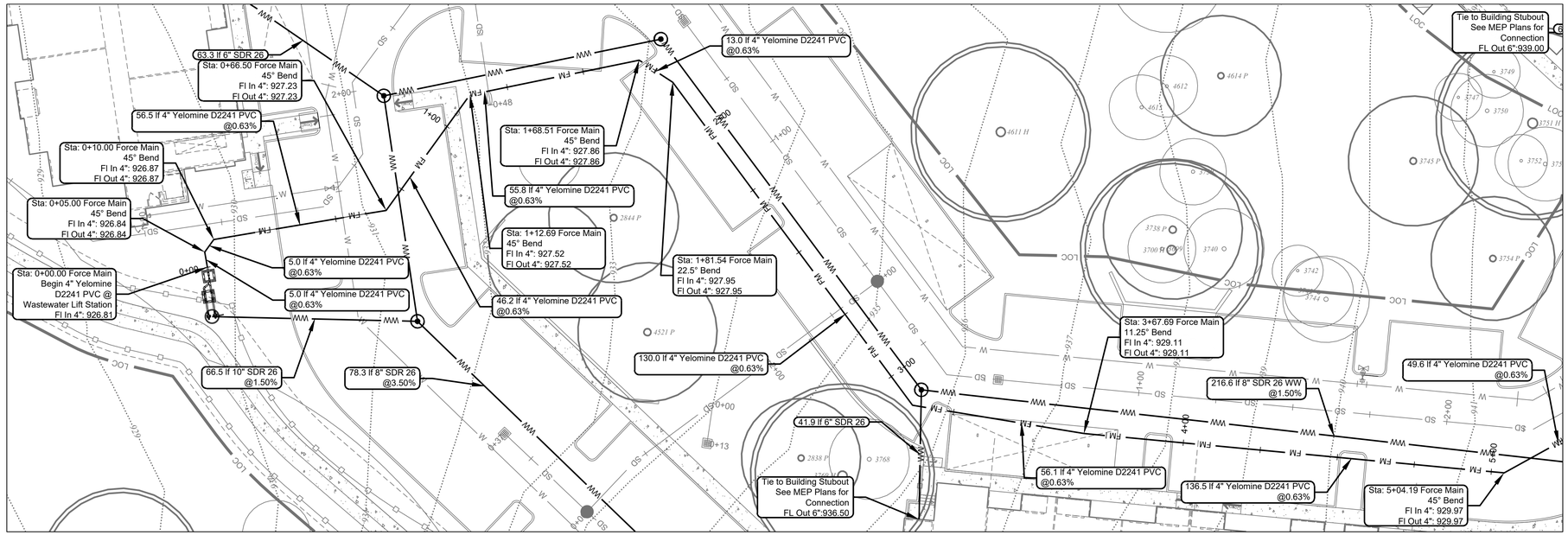
Revision	Date	By	App	Comment

Private Wastewater B Plan & Profile 2

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 45 of 66
SP-2023-0021C



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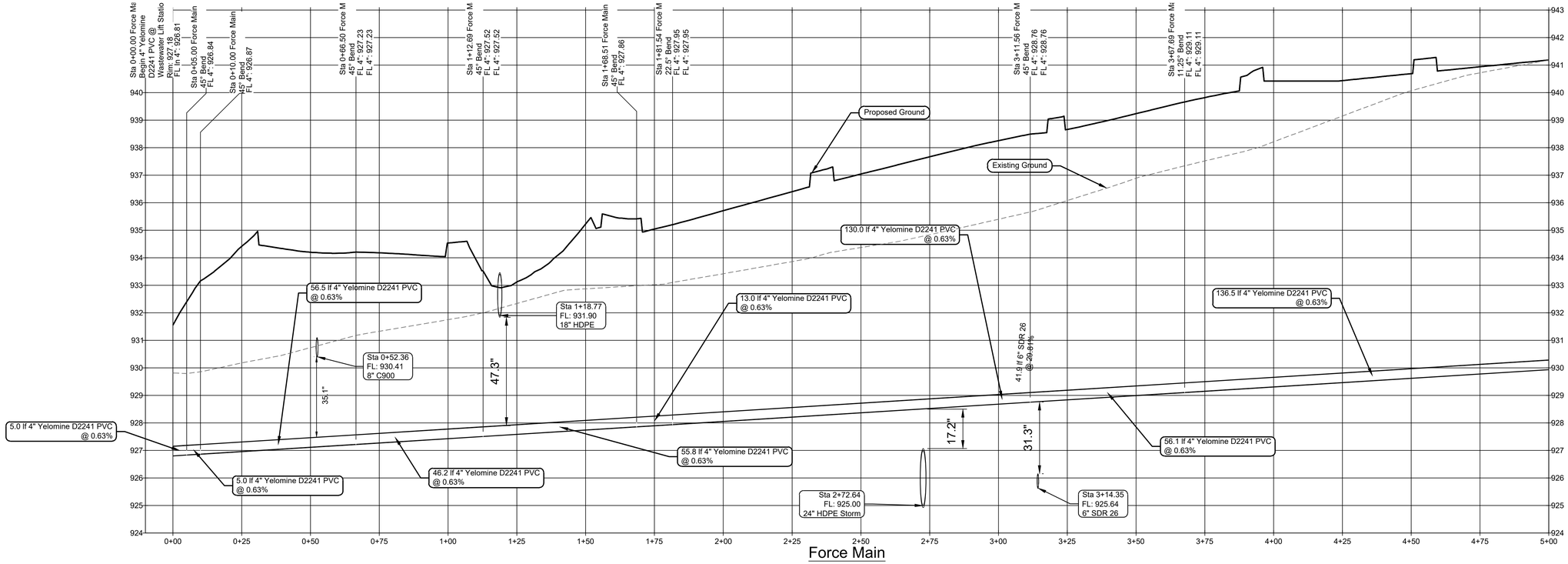

Force Main

Lift Station Note:
Install duplex grinder pump system in 60" diameter basin. Contact Smith Pump at 512-310-1480 for detailed pump and basin design. Pumps to be Liberty LGV 3 HP. See lift station schematic details on sheet 50.
Rim = 929.84
Bottom = 913.75
Outlet = 926.81
Inlet = 923.17
Peak Wet Weather Flow = 116.25 gpm
Total Dynamic Head = 42.82' (C=100)

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Texas 811
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Private Wastewater Forcemain Plan & Profile 1

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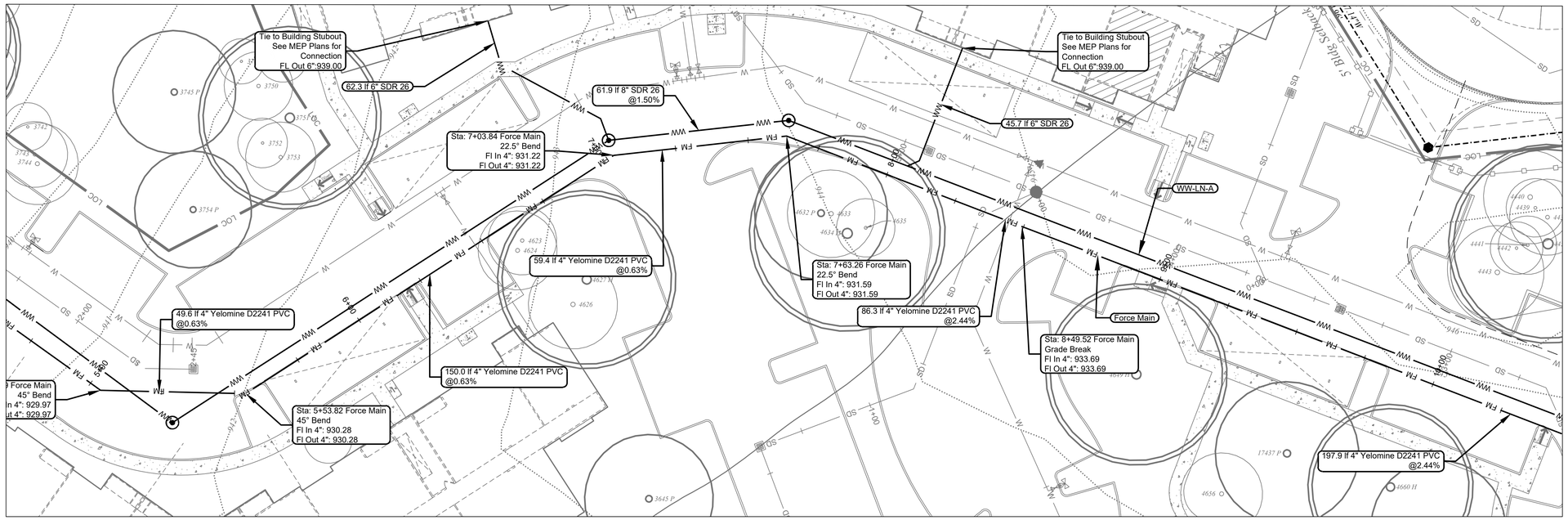
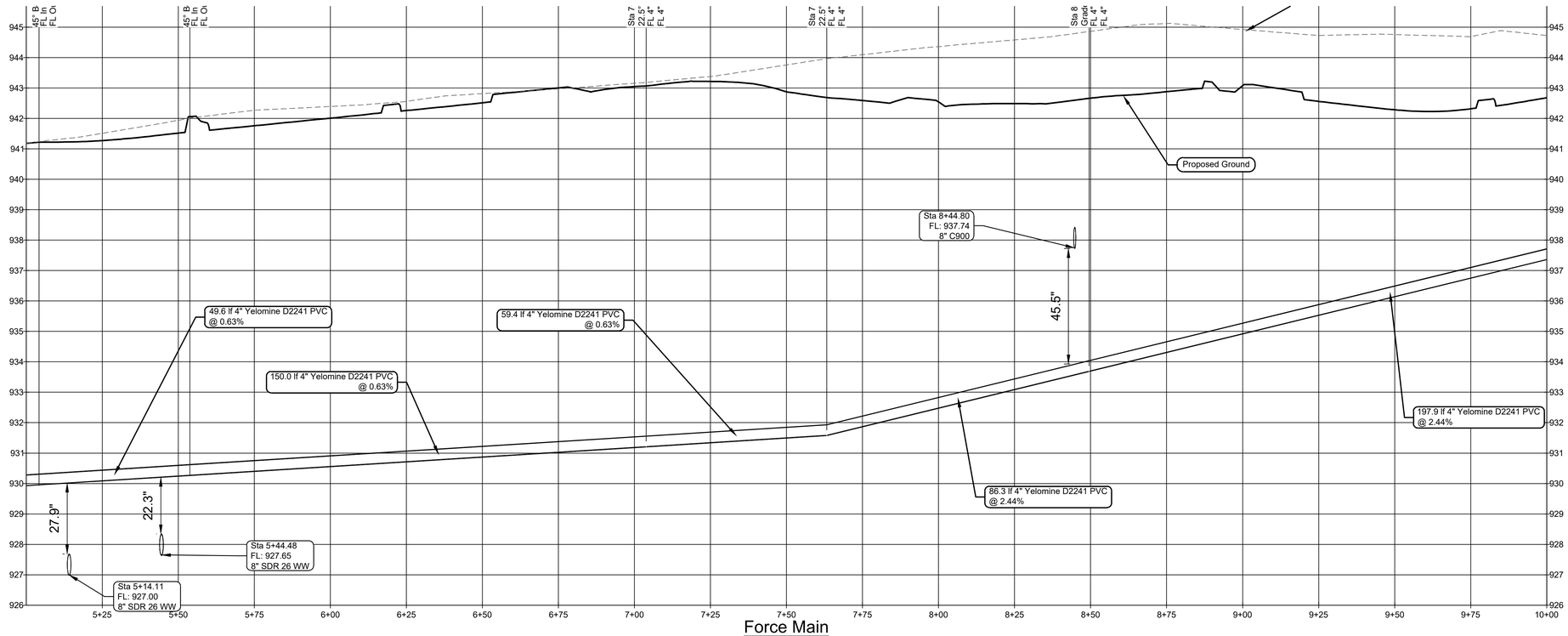
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED
PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 46 of 66
SP-2023-0021C





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Private Wastewater Forcemain Plan & Profile 2

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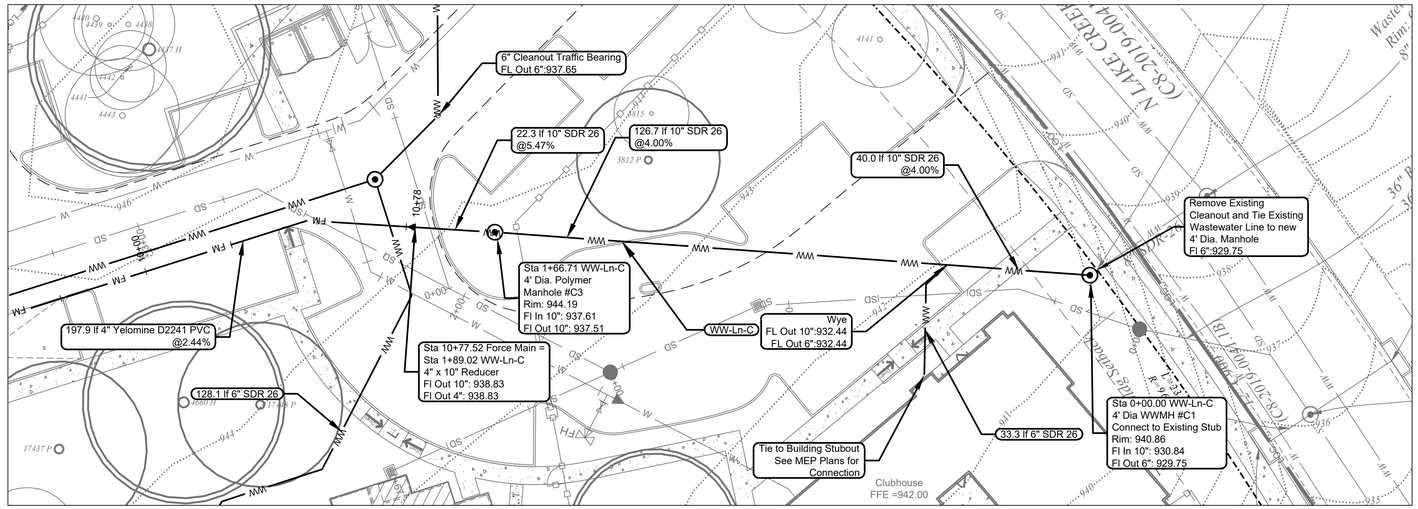

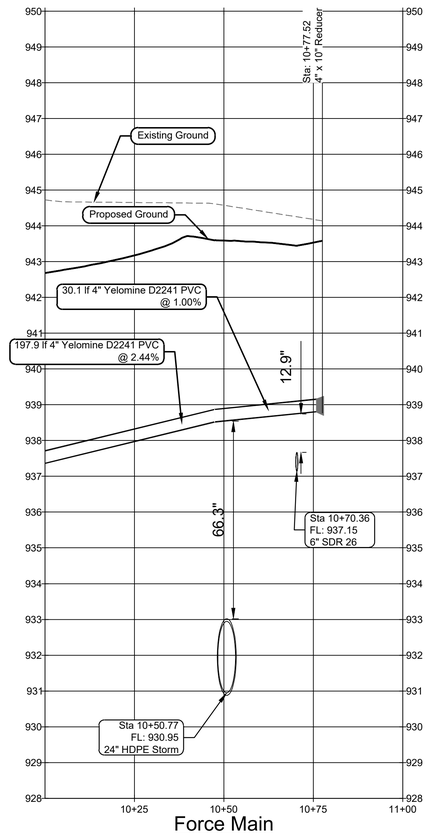

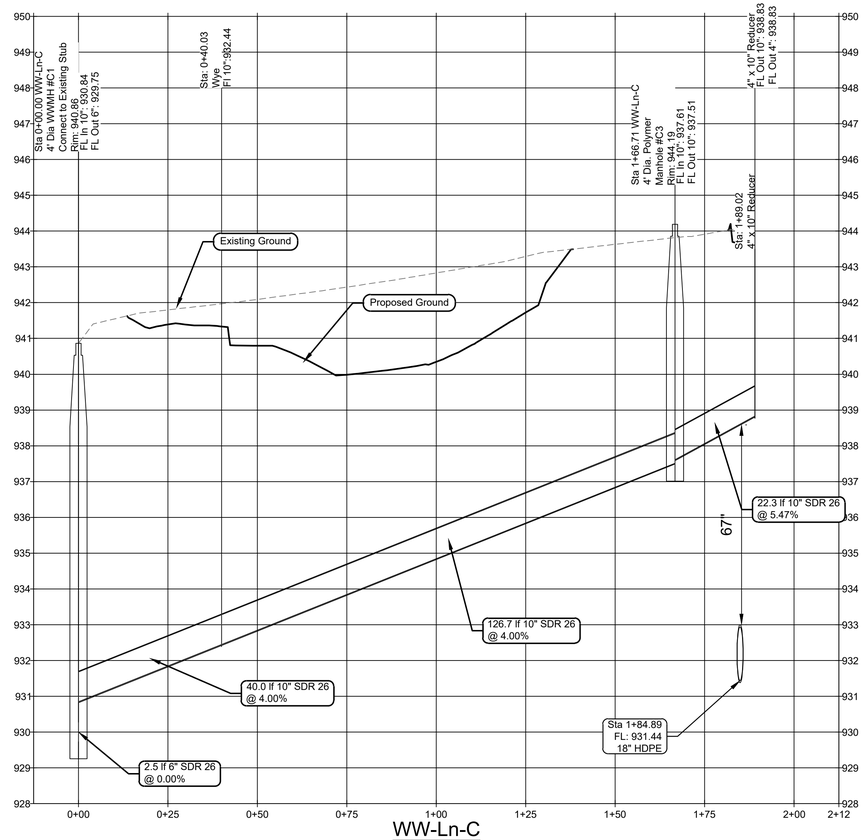

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Private Wastewater Forcemain Plan & Profile 3

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Project No: JDG 70401

Sheet: **48** of **66**

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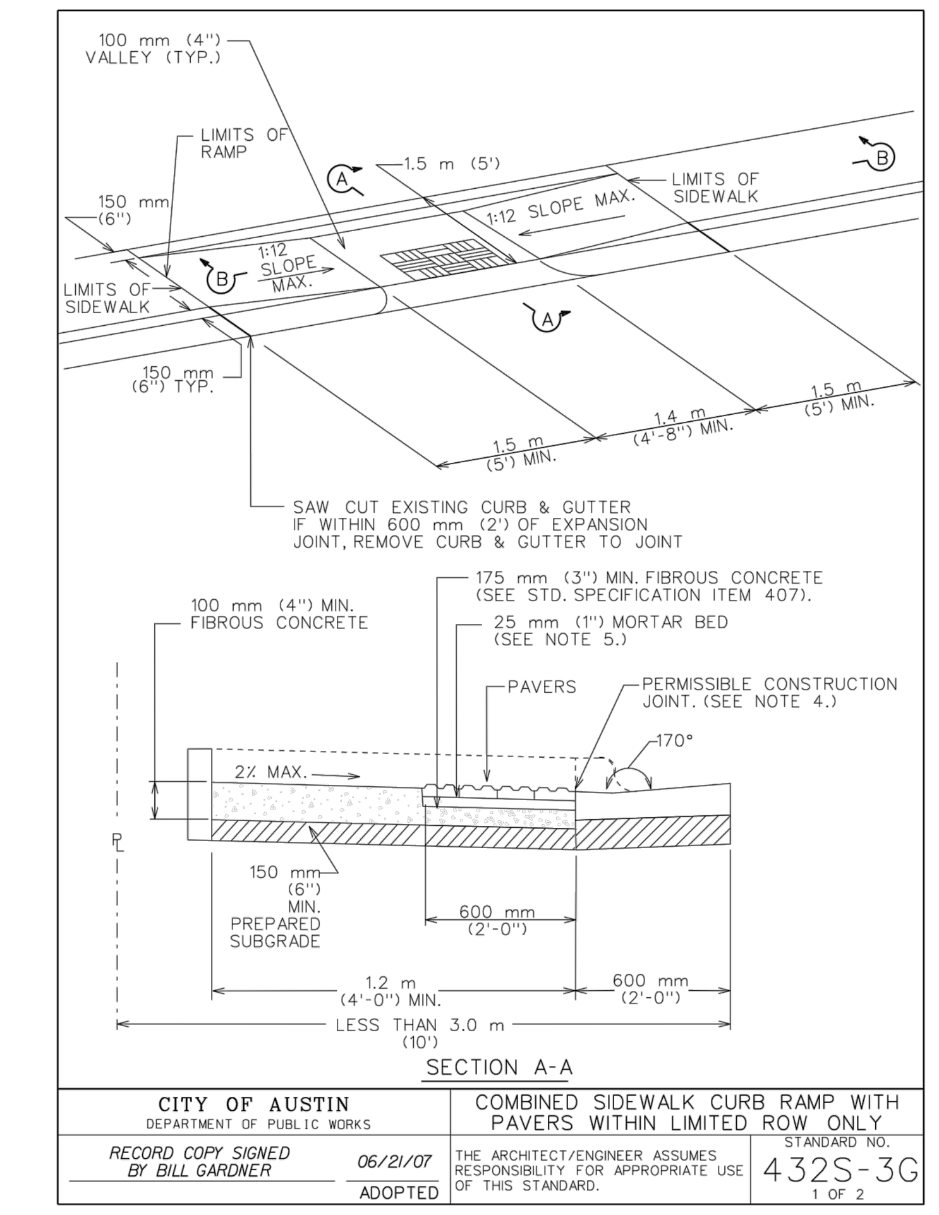
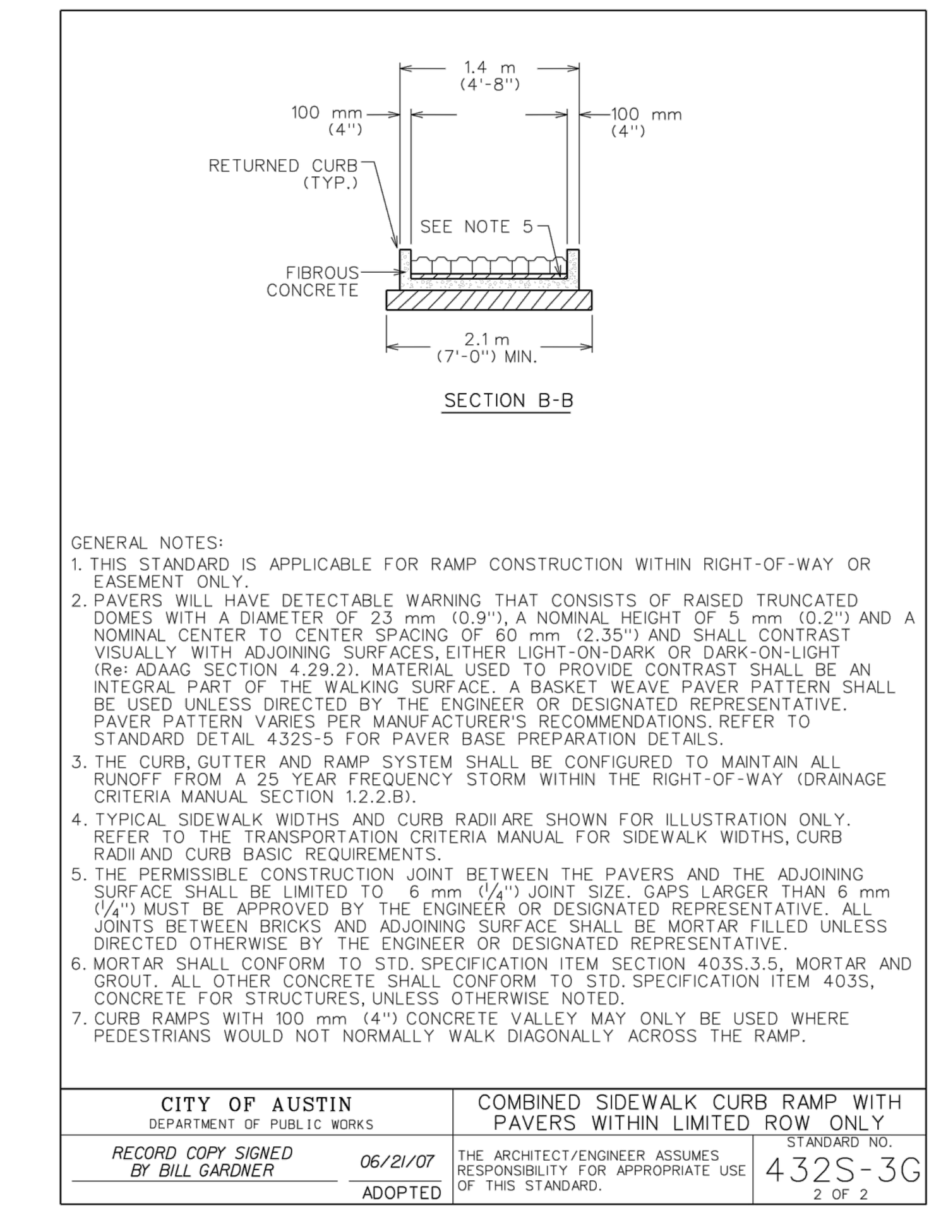
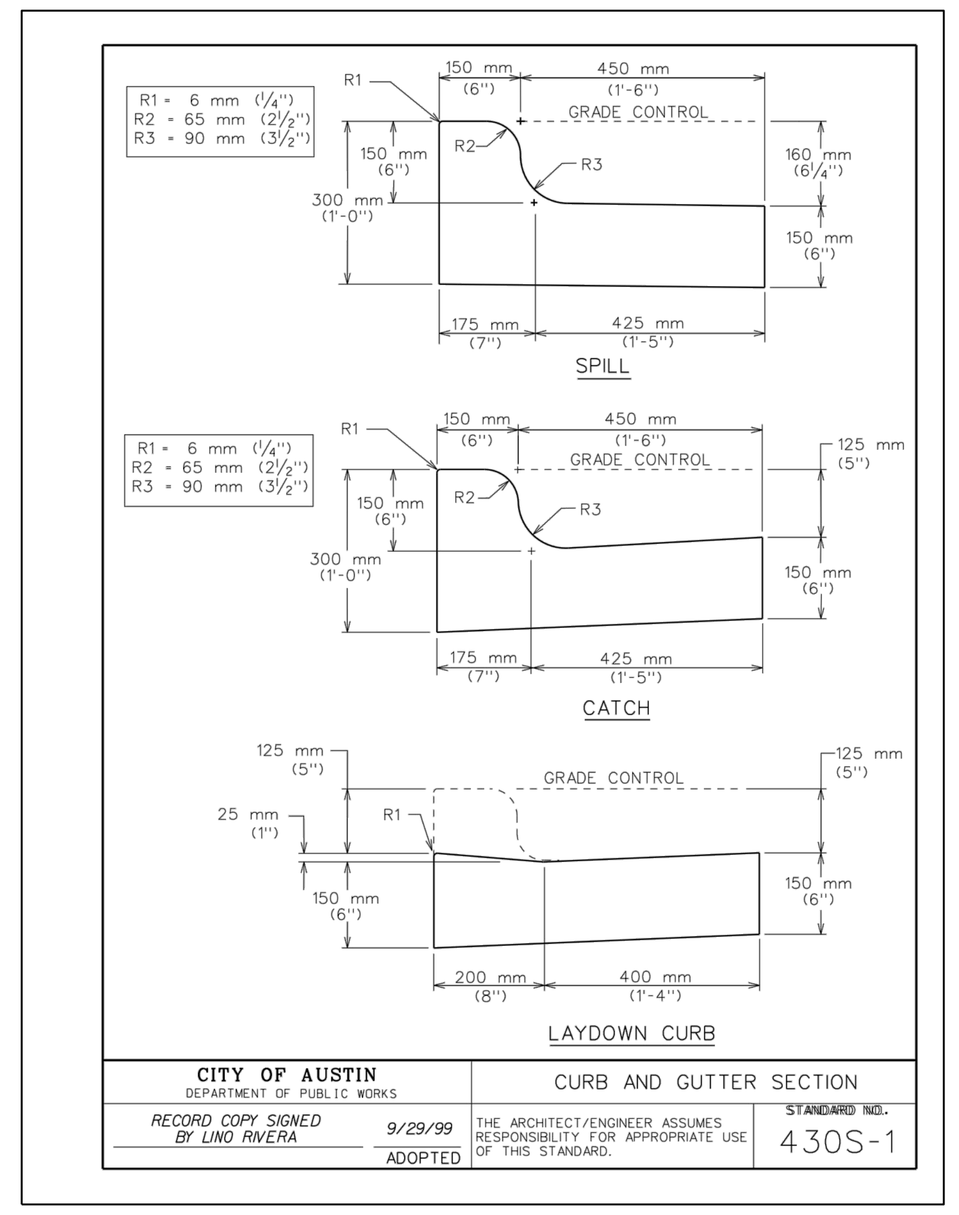
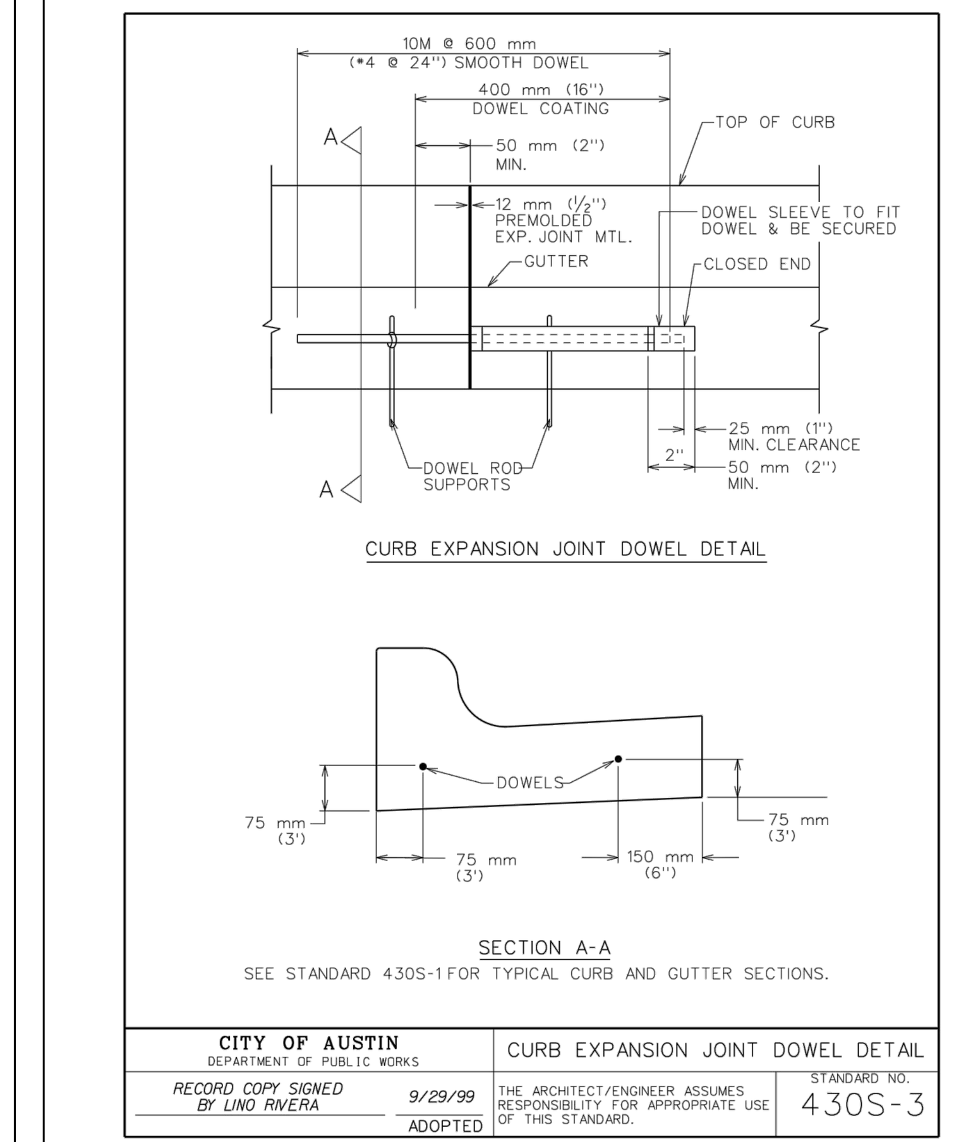
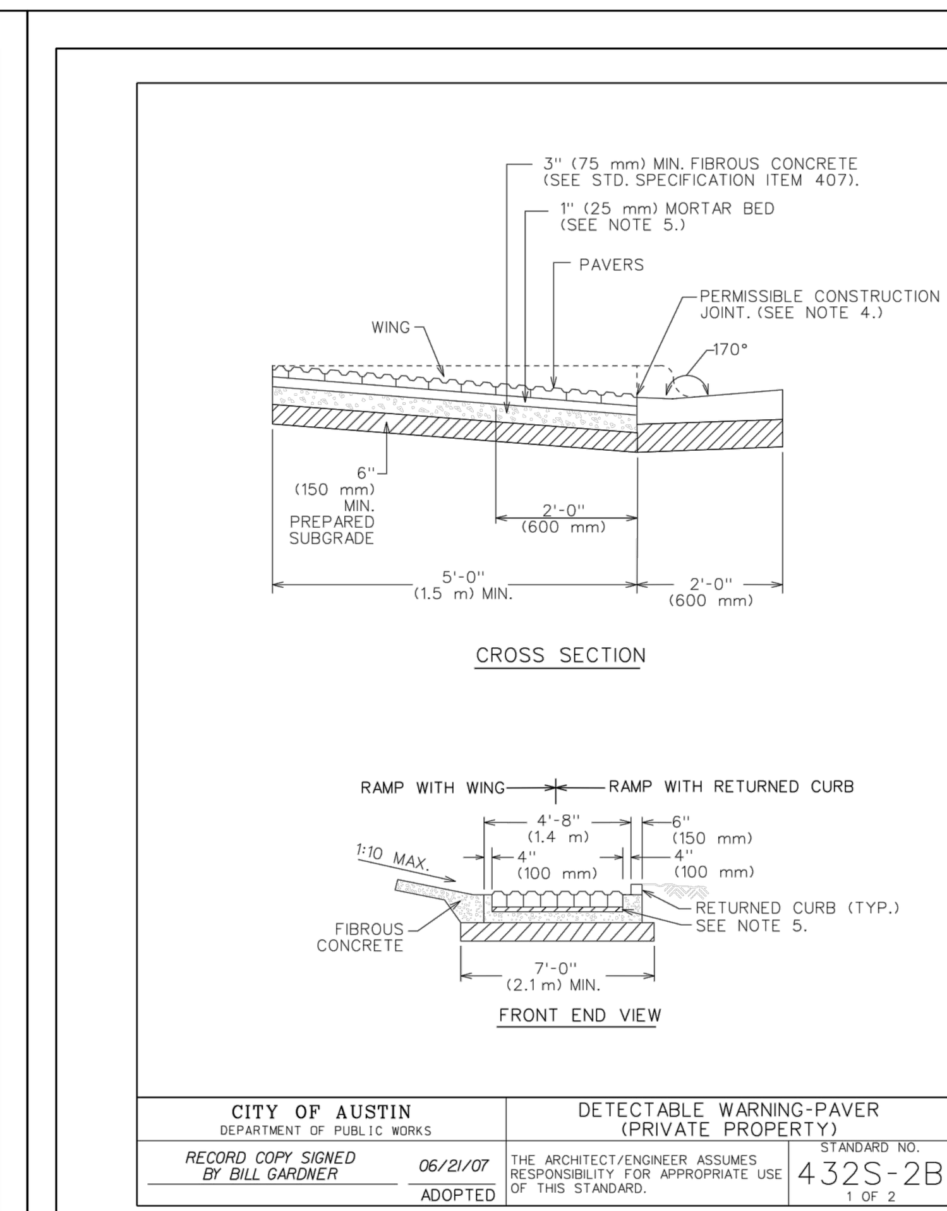
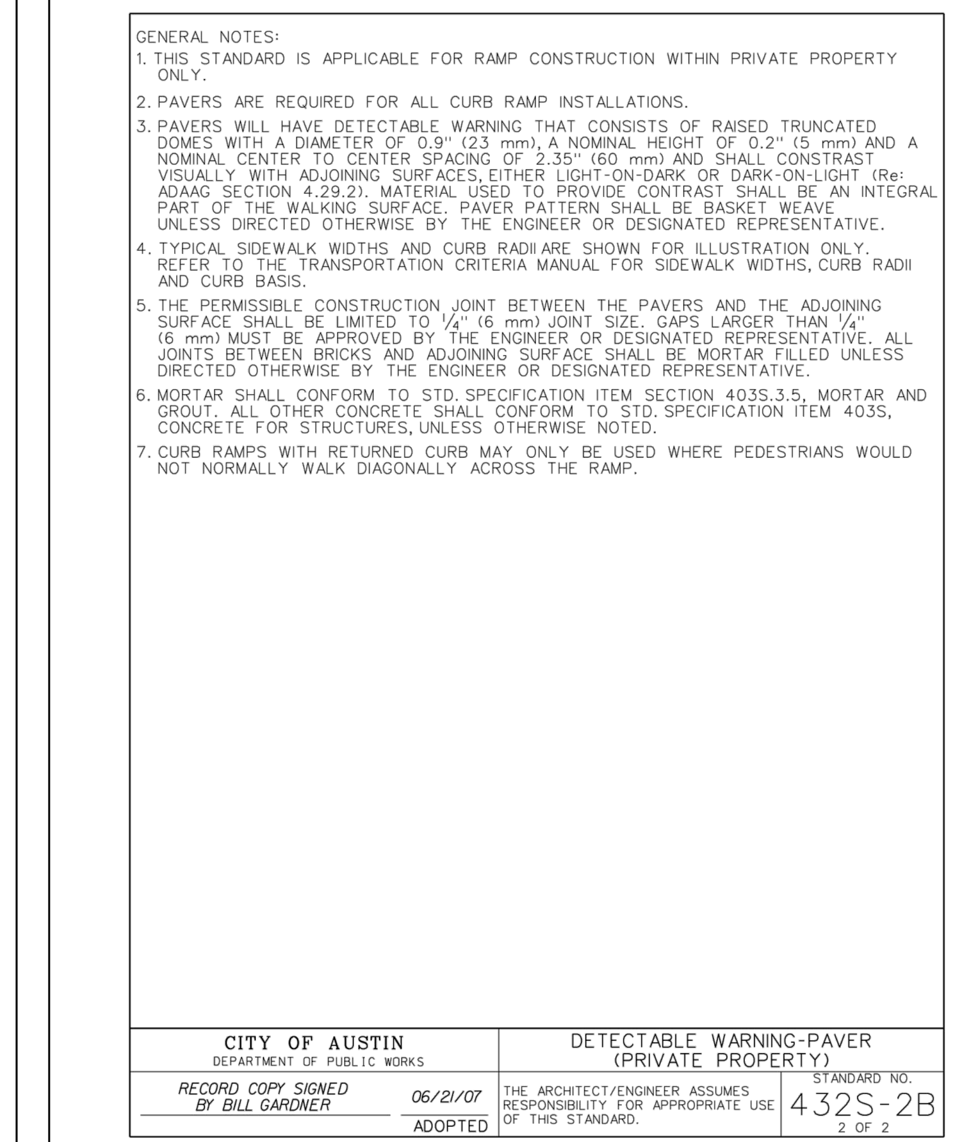


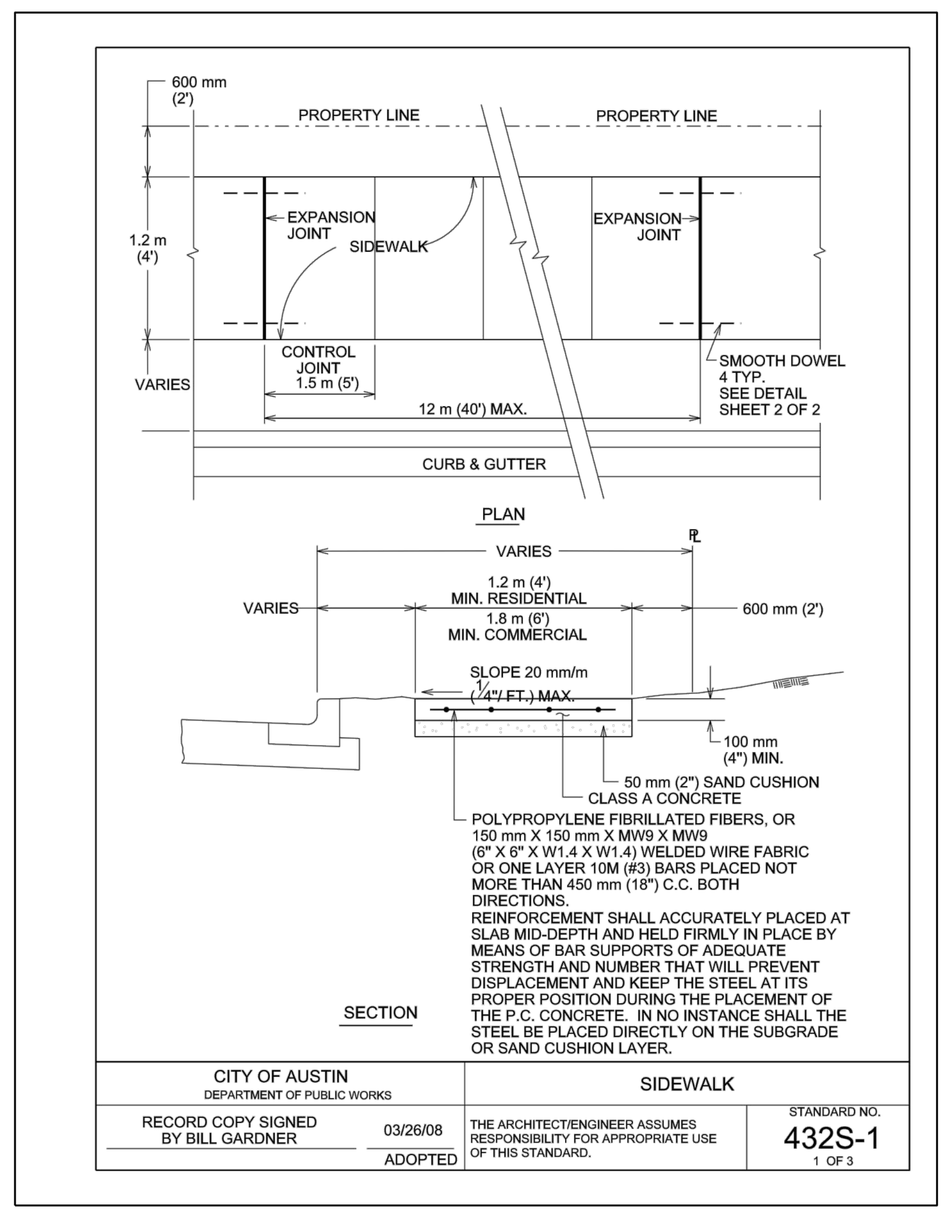


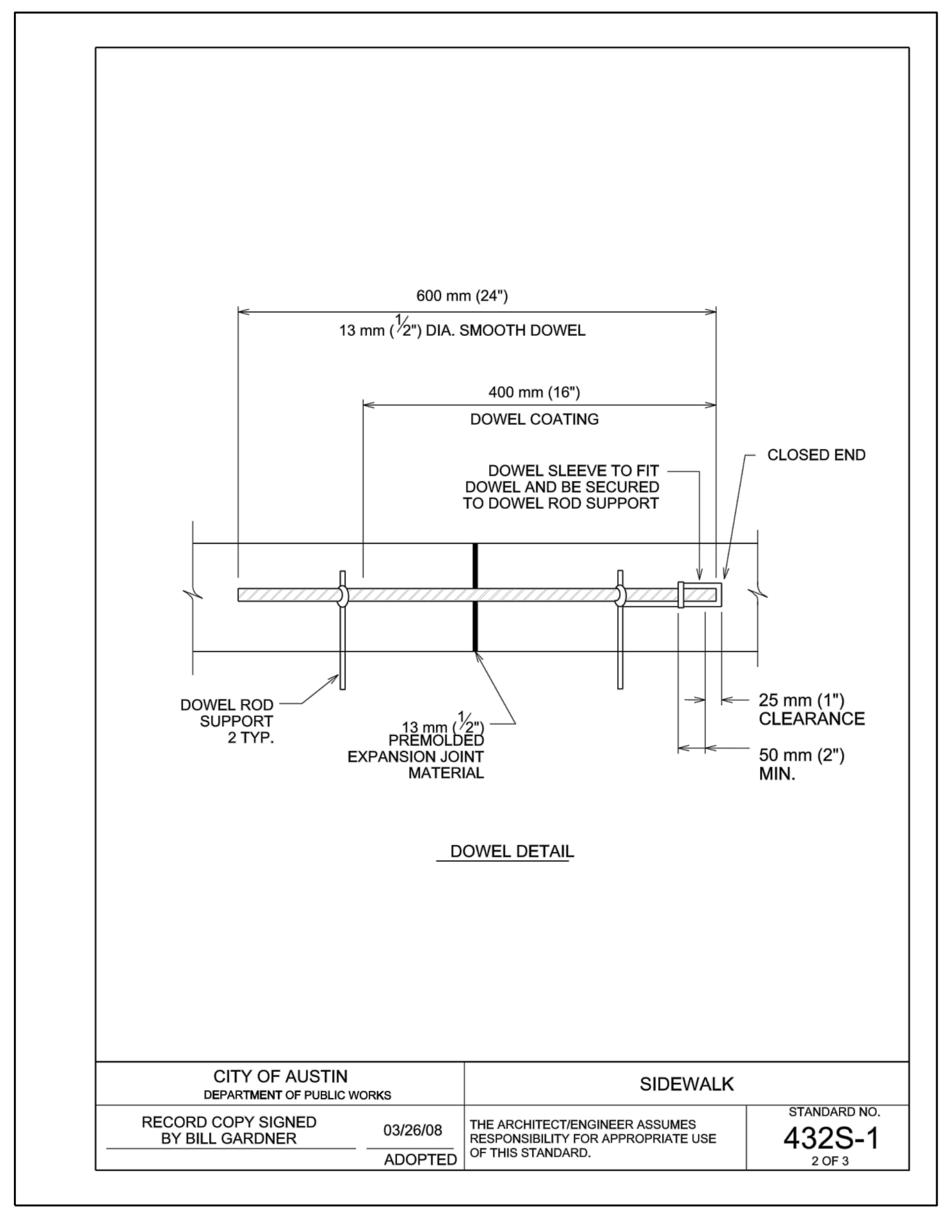


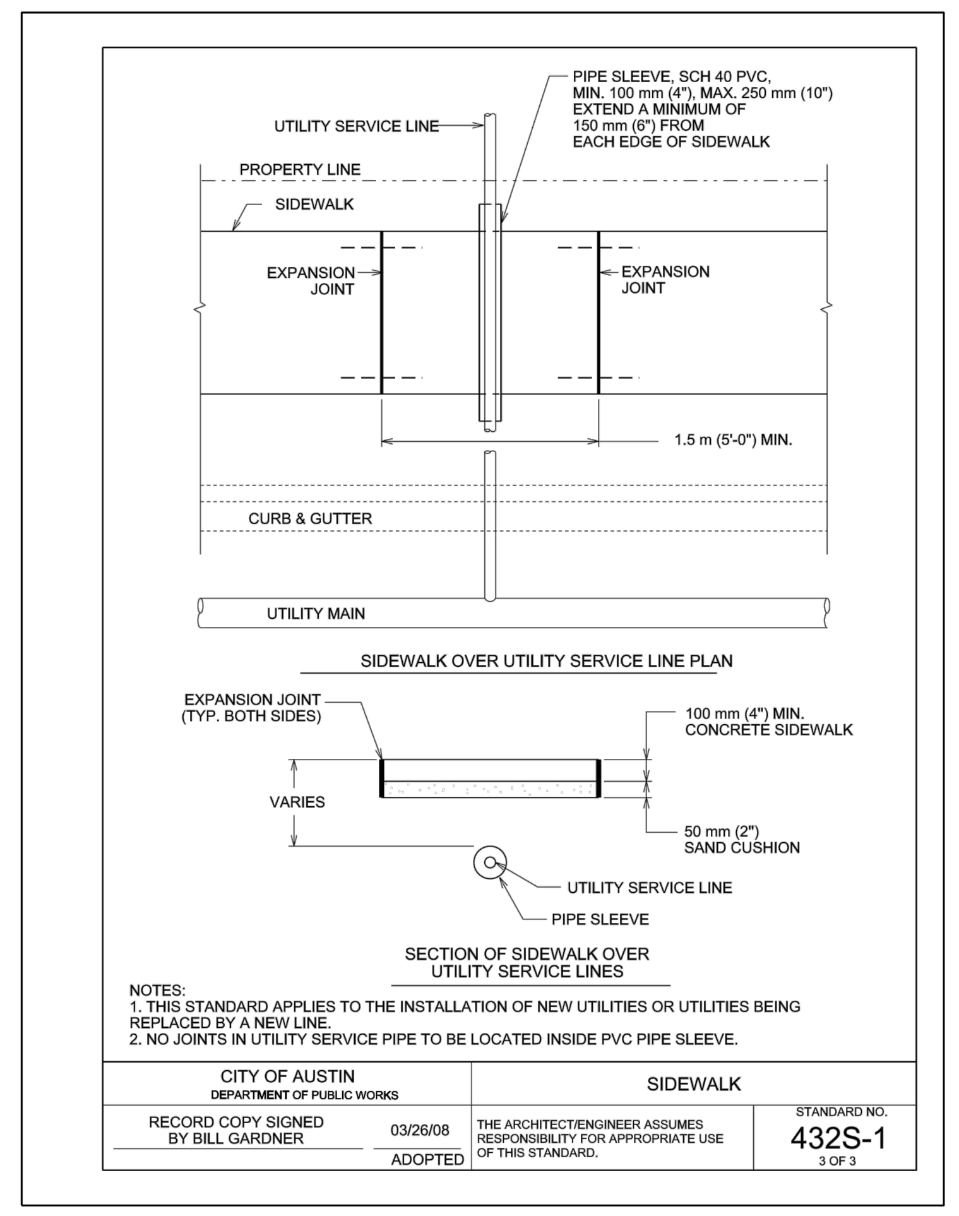


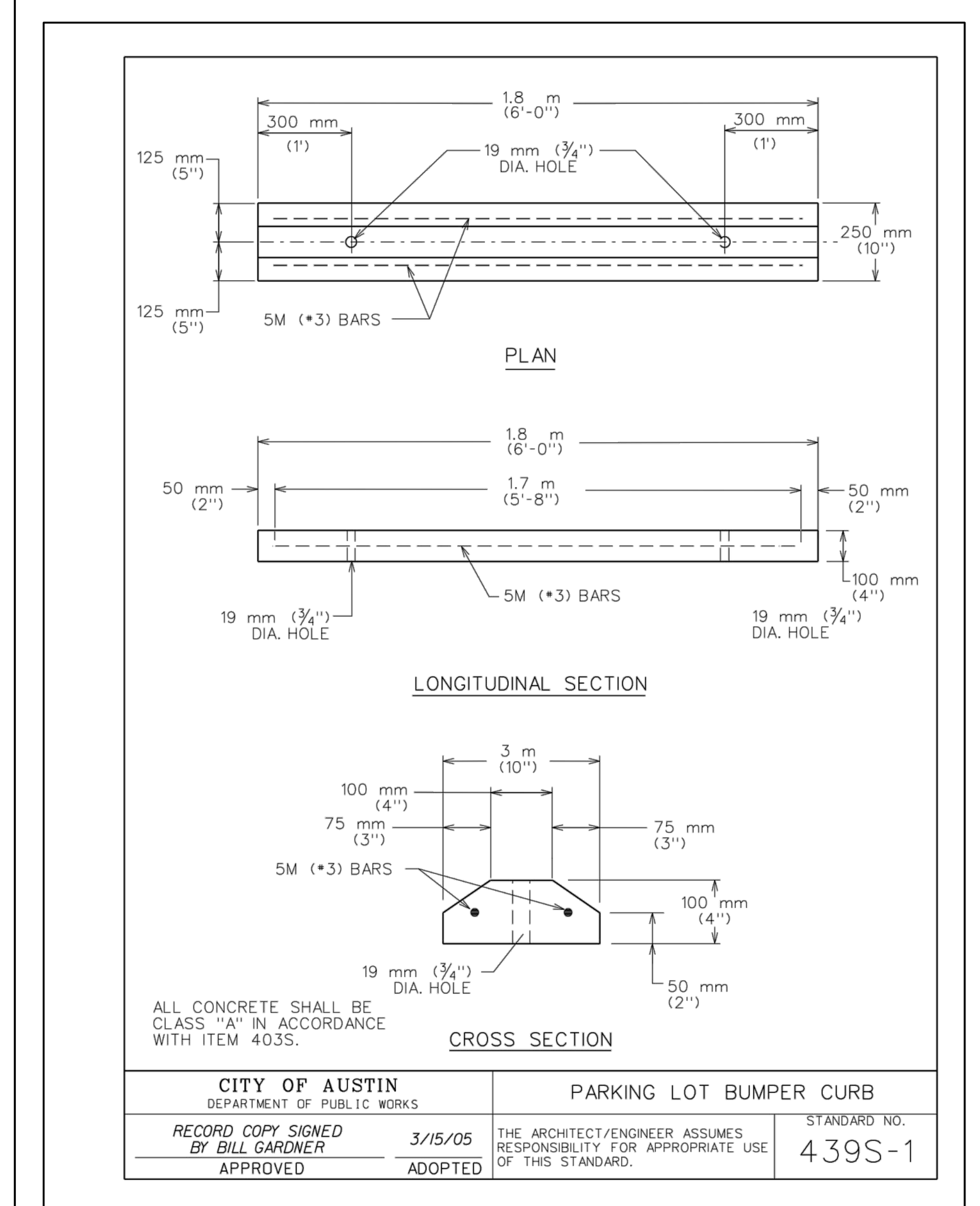


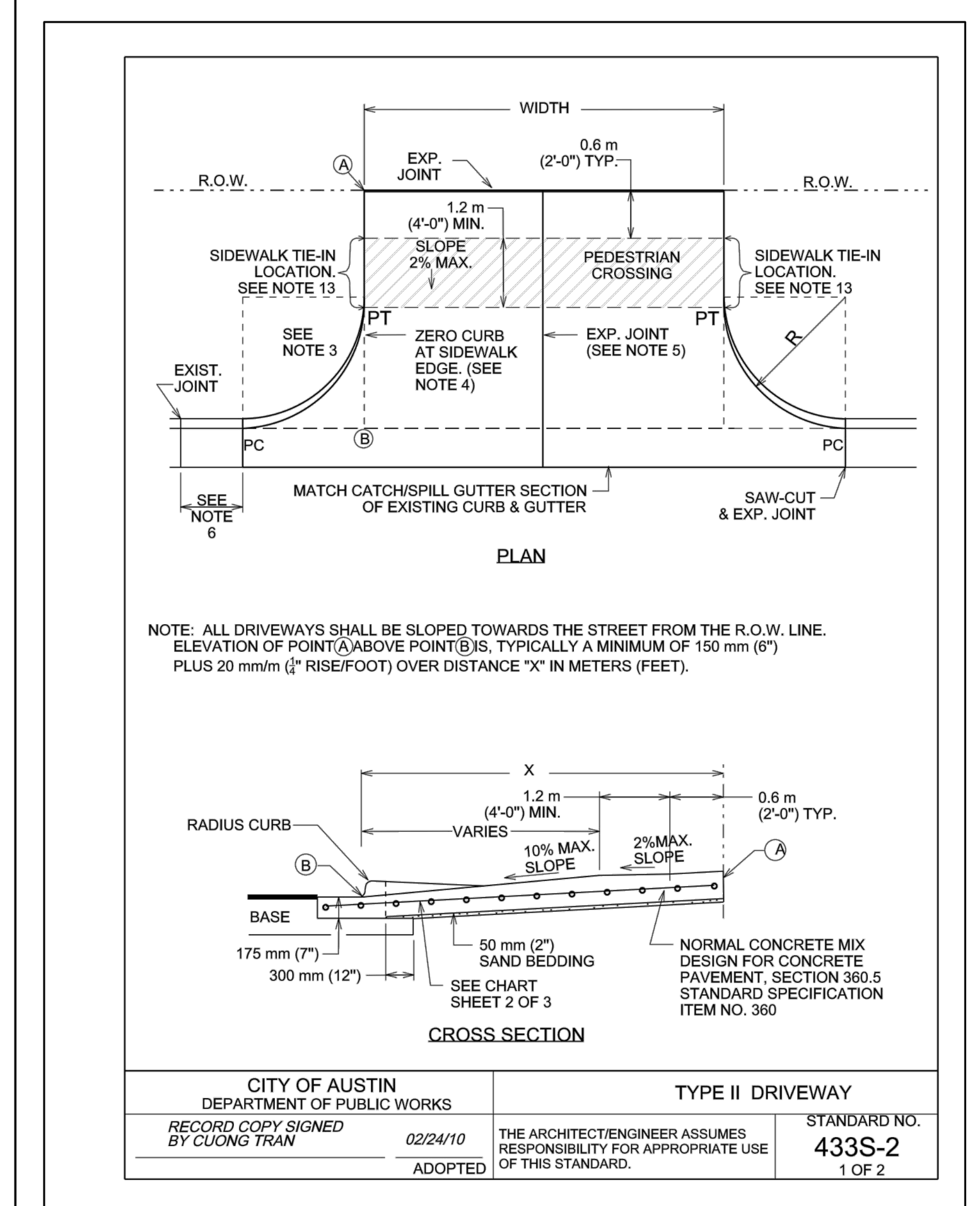


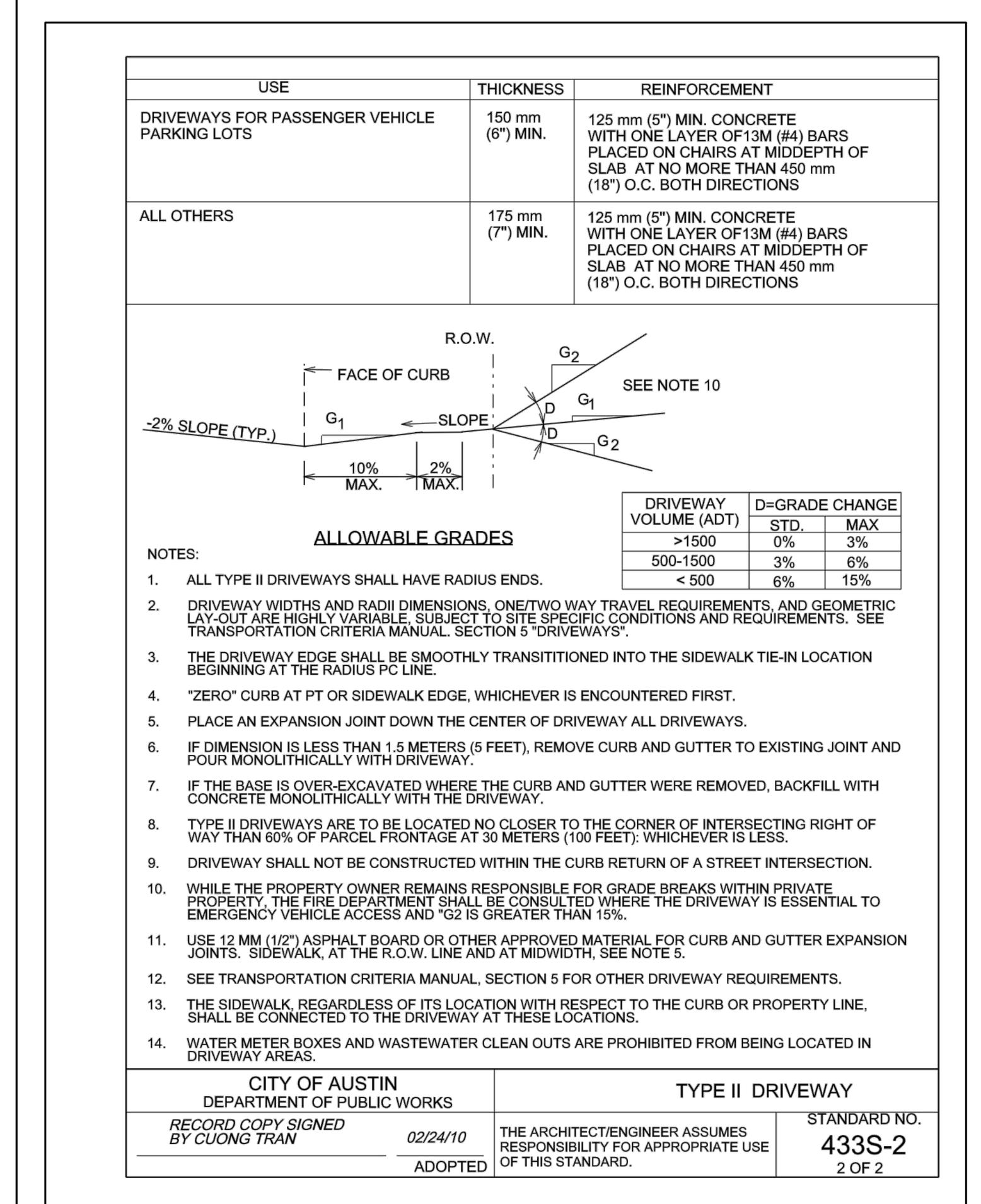


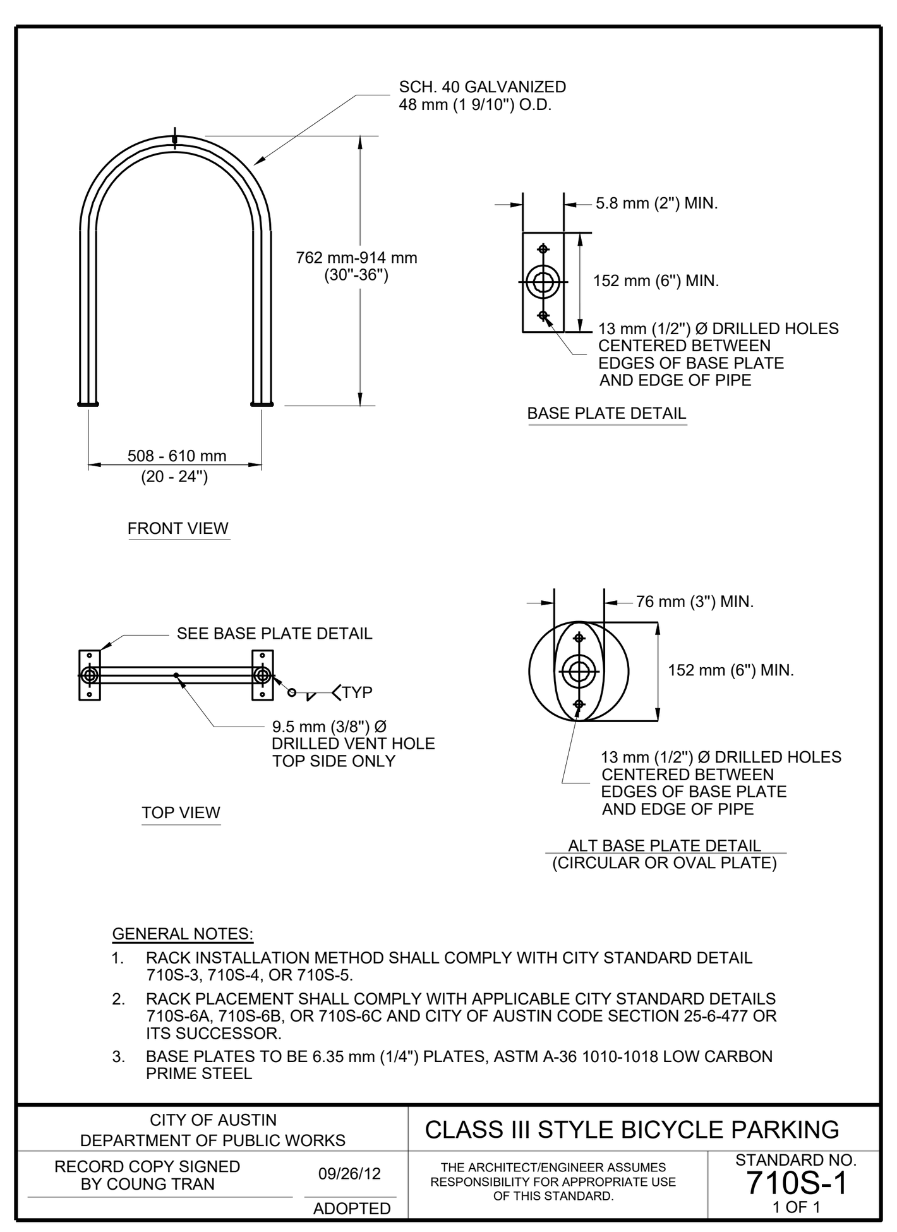


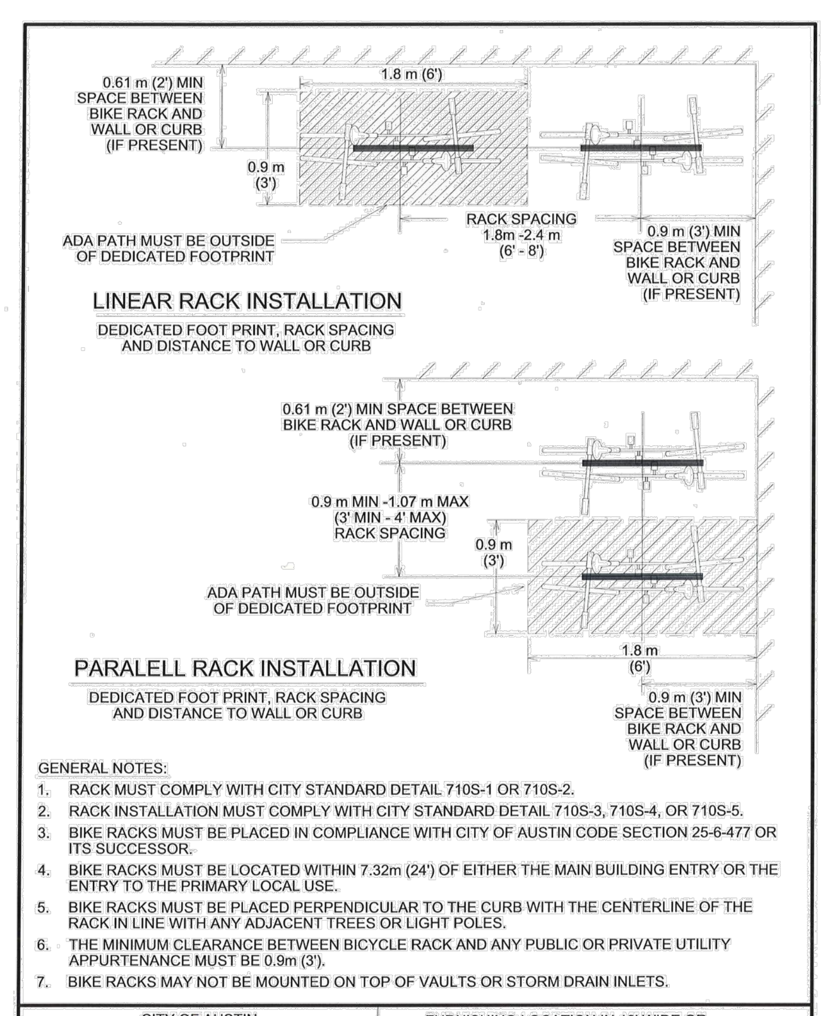


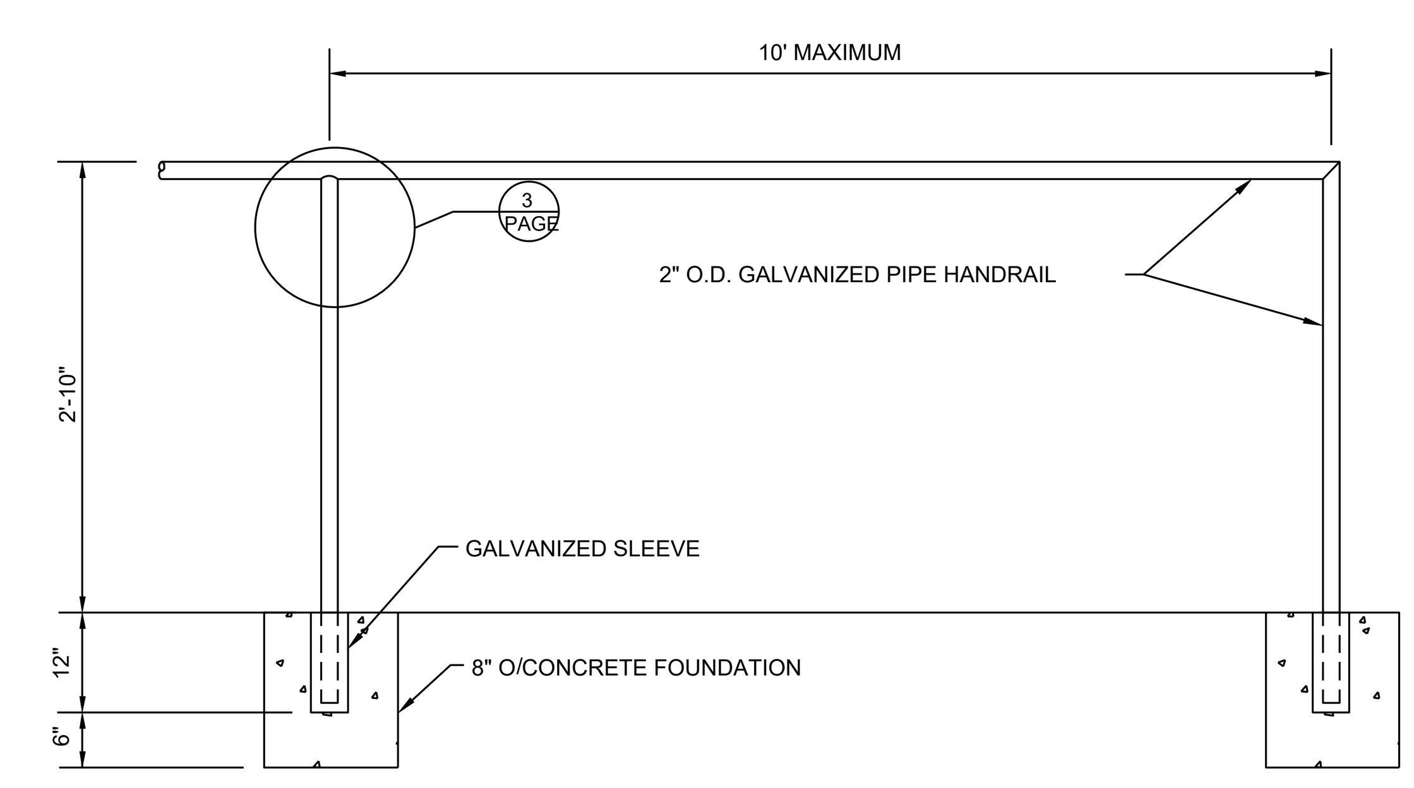






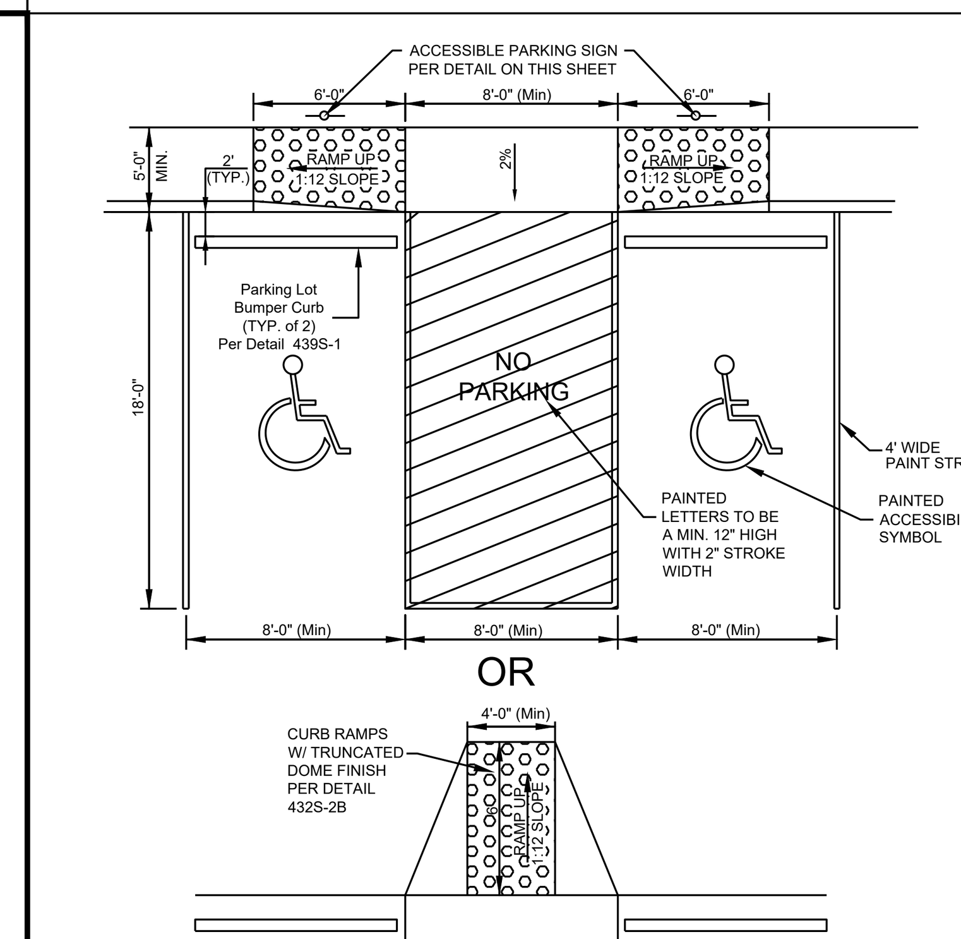






NOTE: WELDED JOINTS ON HANDRAILS SHALL BE GROUND SMOOTH AND COATED IN ACCORDANCE WITH STANDARD SPECIFICATION ITEM NO. 706.5 PARAGRAPH 4.

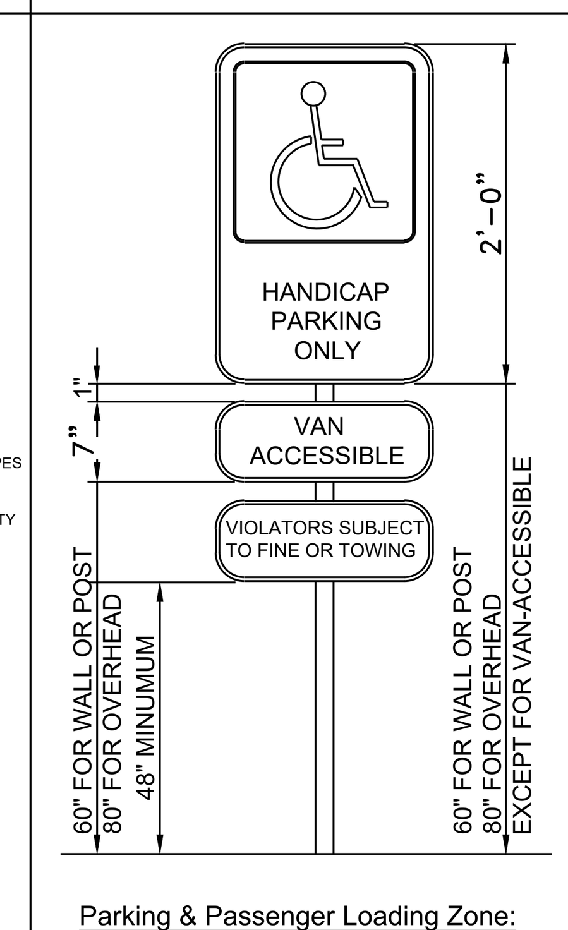
HANDRAIL DETAIL
N.T.S.



Construction Notes:

1. Maximum slope of a curb ramp system shall be 1:12 (8.33% Maximum).
2. Maximum slope of the curb ramp's "flared side" shall be 1:10 (1.0%).
3. Slope and crosslope of a sidewalk leading into a curb ramp system shall be a maximum of 1:50 (2% Maximum).
4. Maximum slope of a handicapped accessible route along a sidewalk leading into a curb ramp, before it must be considered a ramp is 1:20 (5% Maximum).
5. All sloped surfaces at curb ramp systems must conform to Texas Accessibility Standards Section 4.7.

Handicapped Parking Spaces (Van)
N.T.S.



Parking & Passenger Loading Zone:
Provide wheel stops where vehicle overhang would obstruct any access route. Parking spaces, access aisle & vehicle standing spaces shall be level, with sloped surfaces not exceeding 1:50 (2%) in all directions & cannot include a ramp or sloped area.

Parking Identification Sign
N.T.S.

Prepared For:
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AUSTIN BRYAN CONROE HOUSTON

Revision	Date	By	App	Comment

Construction Details 1

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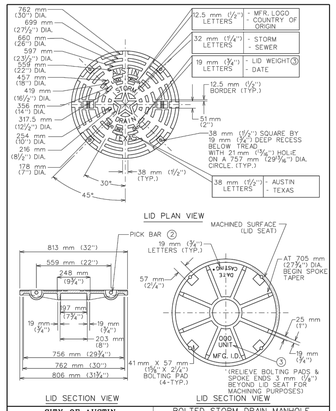

CITY OF AUSTIN	BOLTED STORM DRAIN MANHOLE RING AND 813 mm (32") COVER	
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		STANDARD NO.
RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	503S-5S
ADOPTED		1 OF 3

CITY OF AUSTIN	BOLTED STORM DRAIN MANHOLE RING AND 813 mm (32") COVER	
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		STANDARD NO.
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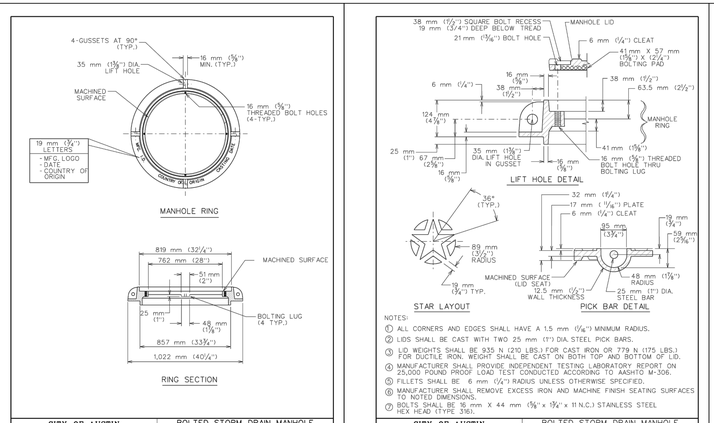
ADOPTED		2 OF 3



NOTES:
① ALL CORNERS AND EDGES SHALL HAVE A 1.5 mm (1/16") MINIMUM RADIUS.
② LIDS SHALL BE CAST WITH TWO 25 mm (1") DIA.STEEL PICK BARS.
③ LID WEIGHTS SHALL BE 935 N (210 LBS.) FOR CAST IRON OR 779 N (175 LBS.) FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF LID.
④ MANUFACTURER SHALL PROVIDE INDEPENDENT TESTING LABORATORY REPORT ON 25,000 POUND PROOF LOAD TEST CONDUCTED ACCORING TO AASHTO M-306.
⑤ FILLETS SHALL BE 6 mm (¼") RADIUS UNLESS OTHERWISE SPECIFIED.
⑥ MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
⑦ BOLTS SHALL BE 16 mm X 44 mm (⅝" x 1¾" x 11 N.C.) STAINLESS STEEL HEX HEAD (TYPE 316).

CITY OF AUSTIN	BOLTED STORM DRAIN MANHOLE RING AND 813 mm (32") COVER	
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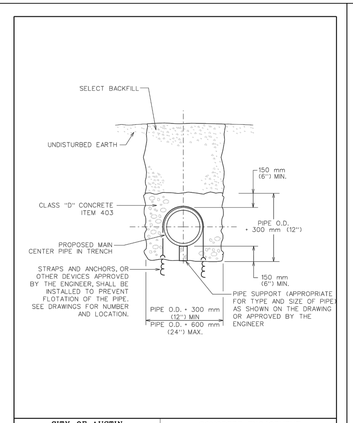
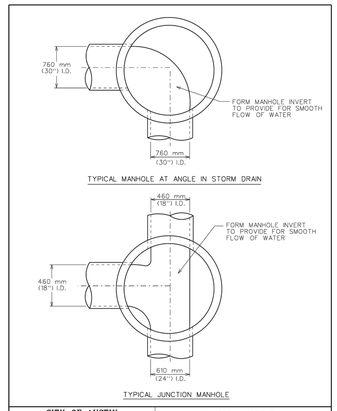
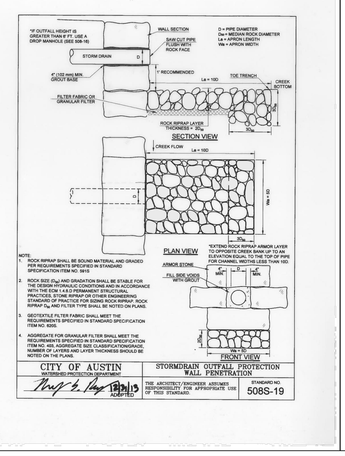
RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	503S-5S
ADOPTED		3 OF 3



CITY OF AUSTIN	CONCRETE ENCASEMENT	
WATER AND WASTEWATER UTILITY		STANDARD NO.
RECORD COPY SIGNED BY LEON BARBA 8/18/00	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	505S-1
ADOPTED		

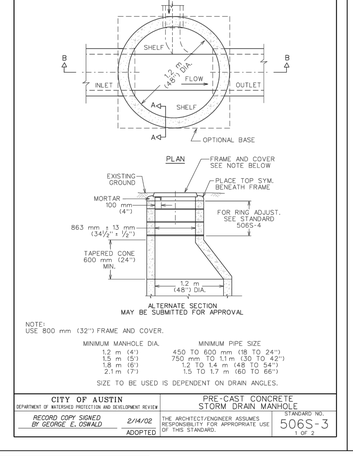


CITY OF AUSTIN	MANHOLE INVERT PLAN	
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		STANDARD NO.
RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	506S-1
ADOPTED		



NOTE:
1. ROCK RIPRAP SHALL BE SOUND MATERIAL AND GRADED PER REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 5910.
2. ROCK SIZE (D_{50}) AND GRADATION SHALL BE STABLE FOR THE DESIGN HYDRAULIC CONDITIONS AND IN ACCORDANCE WITH HEC-11, "DESIGN OF RIPRAP REVETMENT PRACTICES, STONE RIPRAP OR OTHER ENGINEERING STANDARD OF PRACTICE FOR SIZING ROCK RIPRAP. ROCK RIPRAP (D_{50}) AND FILTER TYPE SHALL BE NOTED ON PLANS.
3. GEOTEXTILE FILTER FABRIC SHALL MEET THE REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 5935.
4. AGGREGATE FOR GRANULAR FILTER SHALL MEET THE REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 5935. GRADATION, SIZE CLASSIFICATION/RANGE, NUMBER OF LAYERS AND LAYER THICKNESS SHOULD BE NOTED ON THE PLANS.

CITY OF AUSTIN	STORMDRAIN OUTFALL PROTECTION WALL PENETRATION	
WATERSHED PROTECTION DEPARTMENT		STANDARD NO.
ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	508S-19

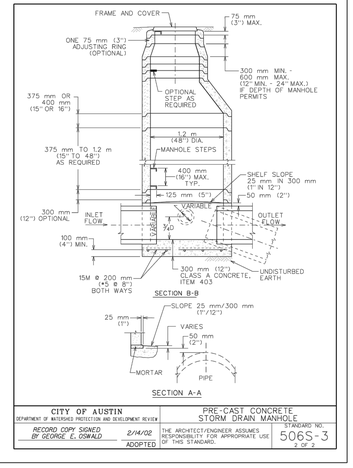


NOTE:
USE 800 mm (32") FRAME AND COVER.

MINIMUM MANHOLE DIA.	MINIMUM PIPE SIZE
1.2 m (4')	450 TO 600 mm (18" TO 24")
1.5 m (5')	750 mm TO 1.1 m (30" TO 42")
1.8 m (6')	1.2 TO 1.4 m (48" TO 54")
2.1 m (7')	1.5 TO 1.7 m (60" TO 66")

SIZE TO BE USED IS DEPENDENT ON DRAIN ANGLES.

CITY OF AUSTIN	PRE-CAST CONCRETE STORM DRAIN MANHOLE	
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		STANDARD NO.
RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	506S-3
ADOPTED		1 OF 2



CITY OF AUSTIN	PRE-CAST CONCRETE STORM DRAIN MANHOLE	
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		STANDARD NO.
RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	506S-3
ADOPTED		2 OF 2

Pump Data Sheet - Liberty Pumps Inc.

Company:
Name:
Date: 02/15/2022

Liberty Pumps
Engineered Products

Pump:

Size:	(X)LGV Series 60Hz (3-	Dimensions:	
Type:	3-15HP Grinder Pump	Suction:	---
Synch Speed:	3600 rpm	Discharge:	0 in
Dia:	4.5 in		
Curve:	Standard High Flow		
Impeller:	3 Vane High Flow		

Search Criteria:

Flow:	105 US gpm	Near Miss:	---
Head:	34.65 ft	Static Head:	0 ft

Pump Selection Warnings:
None

Fluid:

Name:	Water		
SG:	1	Vapor Pressure:	0.256 psi a
Density:	62.4 lb/ft³	Atm Pressure:	14.7 psi a
Viscosity:	1.1 cP		
Temperature:	60 °F	Margin Ratio:	1

Pump Limits:

Temperature:	104 °F	Sphere Size:	---
Wkg Pressure:	---	Power:	15 hp

Motor:

Standard:	Liberty	Size:	3 hp
Enclosure:	N/A	Speed:	3600 rpm
Frame:	---		
Sizing Criteria:	Design Point		
Min Motor Power:	3 hp		
Max Motor Power:	15 hp		

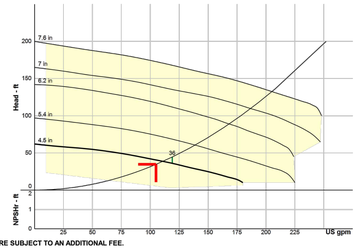
--- Duty Point ---

Flow:	111 US gpm
Head:	38.6 ft
Power:	3 hp
NPSHr:	--- ft
Speed:	3450 rpm

--- Design Curve ---

Shutoff Head:	62 ft
Shutoff dP:	26.9 psi
Min Flow:	--- US gpm
NOL Power:	3 hp @ 178 US gpm

--- Max Curve ---
Max Power:
15 hp @ 230 US gpm

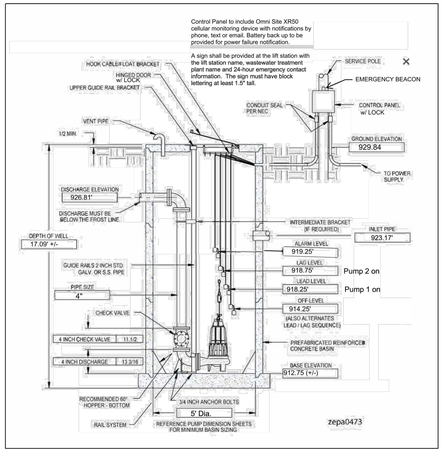


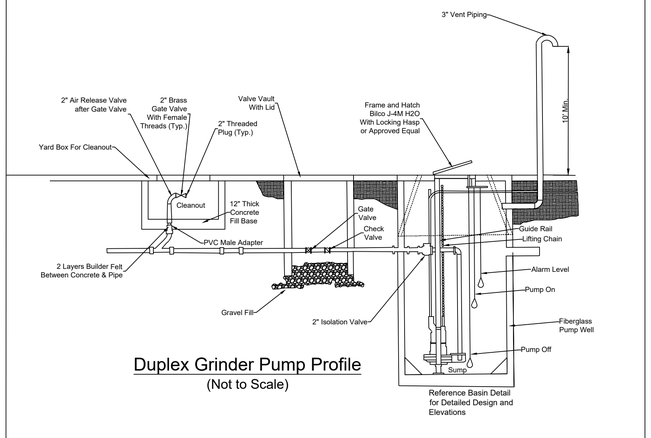
CUSTOM IMPELLER TRIM SIZES ARE SUBJECT TO AN ADDITIONAL FEE.

Performance Evaluation:

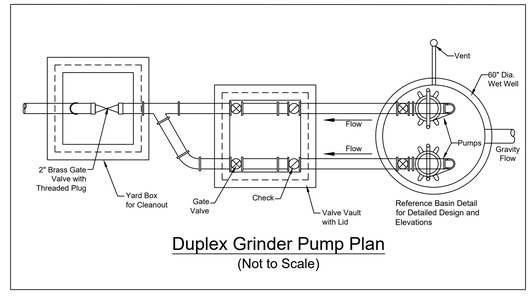
Flow	Speed	Head	Power	NPSHr
US gpm	rpm	ft	hp	ft
126	3450	33.4	3	---
105	3450	40.4	3	---
84	3450	46.8	3	---
63	3450	51.9	3	---
42	3450	55.7	3	---

Selected from catalog: 60Hz LEP Grinder Pumps, Vers V1.0.0





Duplex Grinder Pump Profile
(Not to Scale)



Duplex Grinder Pump Plan
(Not to Scale)

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
7701 San Felipe Blvd., Ste 200, Austin TX 78729
Texas Firm Registration No. F-678
Tel. 512-454-2400
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CONROE HOUSTON
AUSTIN BRYAN

Revision	Date	By	App	Comment

Prepared For:
Avery Land Investors, LP
1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

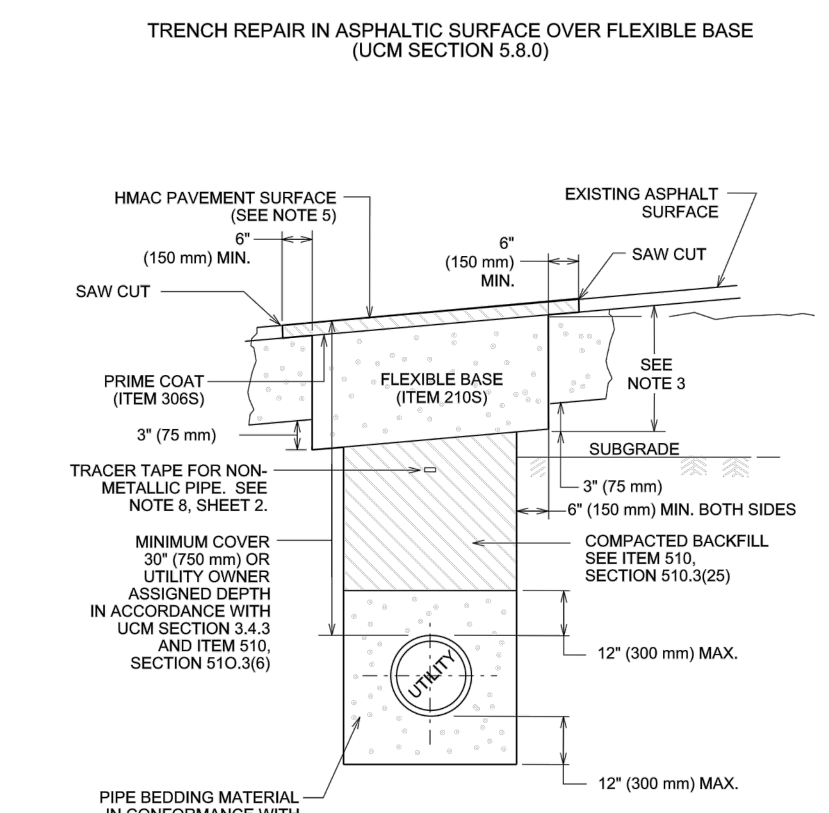
Construction Details 2

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS
87881
REGISTERED PROFESSIONAL ENGINEER
9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 50 of 66
SP-2023-0021C

TRENCH REPAIR IN ASPHALTIC SURFACE OVER FLEXIBLE BASE (UCM SECTION 5.8.0)

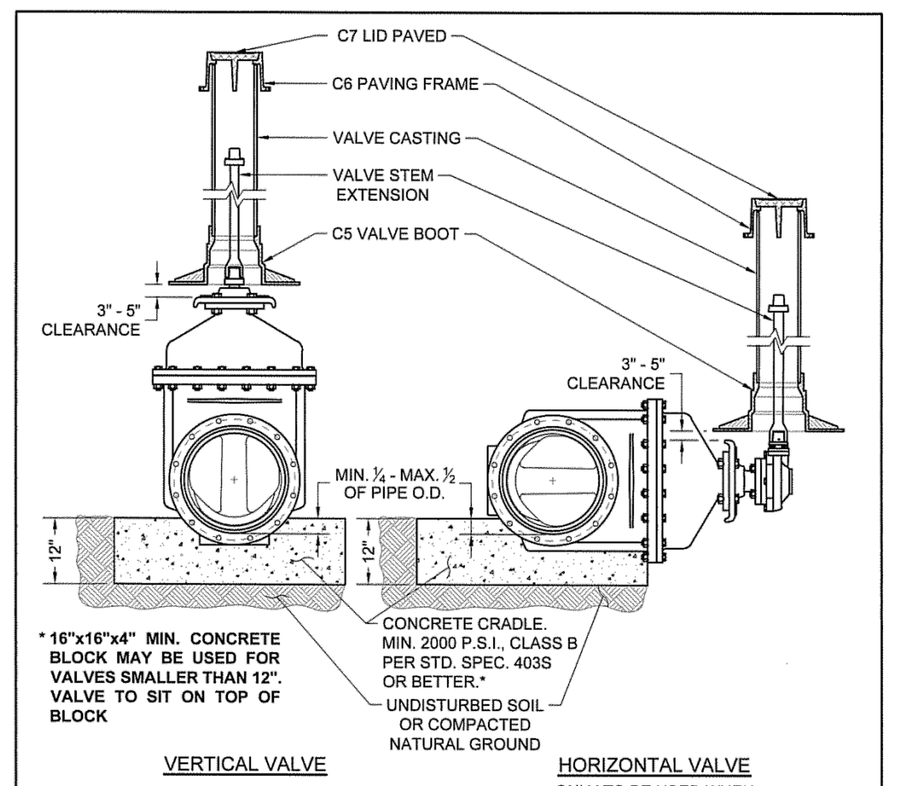


CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	FLEXIBLE BASE WITH ASPHALT SURFACE TRENCH REPAIR-EXISTING PAVEMENT	
RECORD COPY SIGNED BY KERI JUAREZ 01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-2 1 OF 2

NOTES:

1. THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE, A MINIMUM OF 12" (300 mm) WIDER THAN UNDISTURBED SIDES OF THE TRENCH AND SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
2. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX AC OR TEMPORARY HMAC. TEMPORARY MIX SHALL BE PLACED OVER FLEXIBLE BASE.
3. ROAD BASE SHALL BE REPLACED IN KIND WITH BASE THICKNESS EQUAL TO EXISTING BASE THICKNESS PLUS 3" (75 mm), BUT IN NO CASE LESS THAN 12" (300 mm).
4. DAMAGED PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH A BASE THICKNESS OF 10" (250 mm) OR A THICKNESS MATCHING EXISTING, WHICHEVER IS GREATER.
5. REPLACEMENT AC SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
   a) MIN. 2" (50 mm) HMAC TYPE "D" FOR TRENCH REPAIR IN LOCAL/RESIDENTIAL STREETS.
   b) MIN. 3" (75 mm) HMAC TYPE "C" FOR TRENCH REPAIR IN COLLECTOR/ARTERIAL STREETS.
   SEE ITEM 340S, SECTION 340S.4.
6. CLASS "J" PC CONCRETE (ITEM 403S) OR CONTROLLED LOW STRENGTH MATERIAL (CLSM) MAY BE SUBSTITUTED IN THESE REPAIRS FOR THE FLEXIBLE BASE AND COMPACTED BACKFILL. PC CONCRETE GREATER THAN A 2 SACK MIX WILL NOT BE ALLOWED.
7. TACK COAT ALL EXPOSED EDGES AND SURFACES (SPEC ITEM 307S).
8. AS PER CITY OF AUSTIN STANDARD SPECIFICATION 510, SECTION 510.2(8)(K)5, FOR ALL NON-METALLIC PIPE, DIRECTLY ABOVE THE CENTERLINE OF THE PIPE AND A MINIMUM OF 12" (300 mm) BELOW THE SUBGRADE, OR A MINIMUM OF 18" (450 mm) BELOW FINISHED GRADE ON AREAS OUTSIDE THE LIMITS OF PAVEMENT, SHALL BE PLACED INDUCTIVE TRACER TAPE IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. THE TAPE SHALL BE ENCASED IN A PROTECTIVE, INERT, PLASTIC JACKET AND COLOR CODED IN ACCORDANCE WITH APWA UNIFORM COLOR CODE.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	FLEXIBLE BASE WITH ASPHALT SURFACE TRENCH REPAIR-EXISTING PAVEMENT	
RECORD COPY SIGNED BY KERI JUAREZ 01/04/11 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1100S-2 2 OF 2

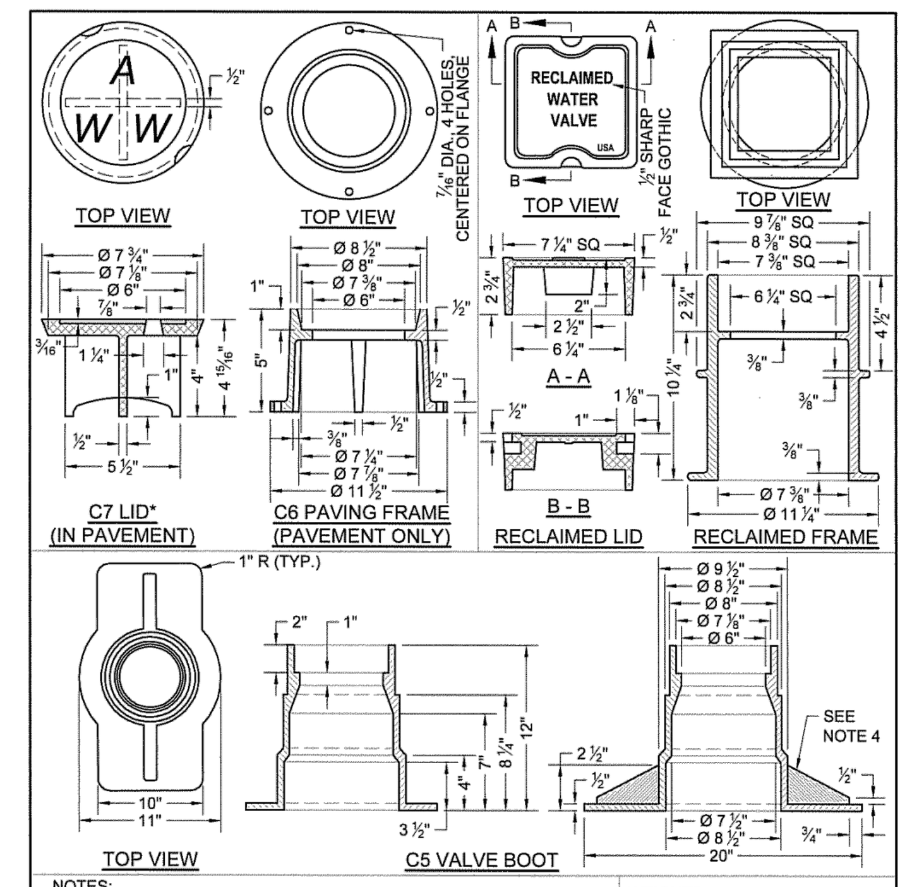


NOTES:

1. WELD SOCKET 2½" x 2" DEEP TO 1" SCH. 40 CARBON STEEL ROUND STEM EXTENSION, FITTED ON OPERATING NUT, [SCH. 80 FOR LENGTHS OVER 10'.]
2. VALVE CASTING SHALL BE 6" DI PIPE WITH BELL OR COLLAR CENTERED OVER VALVE BOOT.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
4. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 12" AND 18" FROM FINISHED GRADE.

RECLAIMED WATER: ALL RECLAIMED PVC PIPE SHALL BE MANUFACTURED PURPLE PIPE. HDPE PIPE SHALL BE MANUFACTURED WITH PURPLE STRIPES. ALL OTHER PIPE AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL PIPE AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 1 OF 4



NOTES:

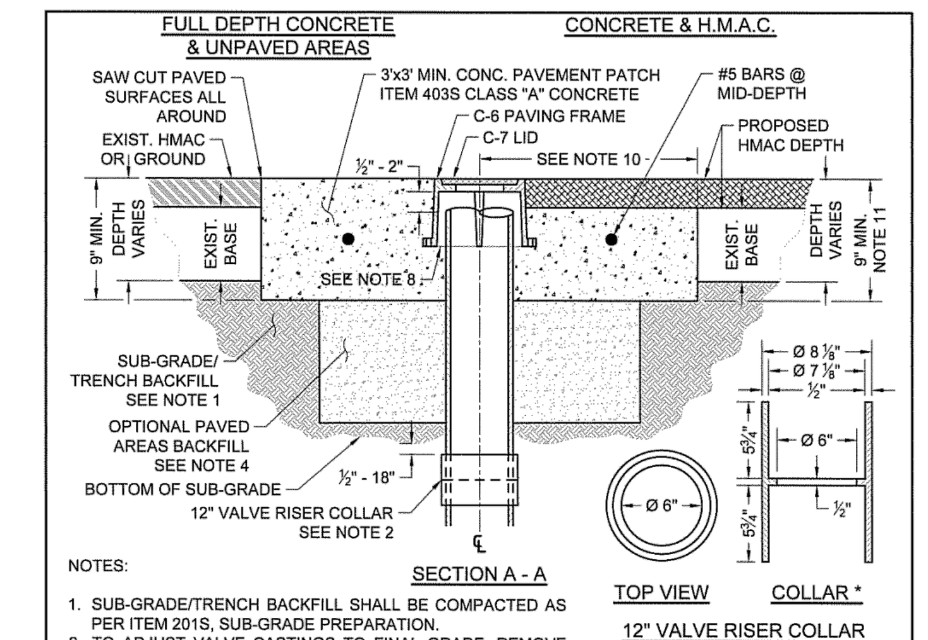
1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID, FRAME, COLLAR AND BASE.
3. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
4. CASTING FINISH BY MANUFACTURER SHALL INCLUDE REMOVAL OF FINS AND FLASHING, AND PAINT WITH BLACK ASPHALT COATING.

WEIGHTS:

C7 LID: 13 LBS
RECLAIMED LID: 15 LBS
C6 FRAME: 23 LBS
RECLAIMED FRAME: 33 LBS
C5 BASE: 78 LBS

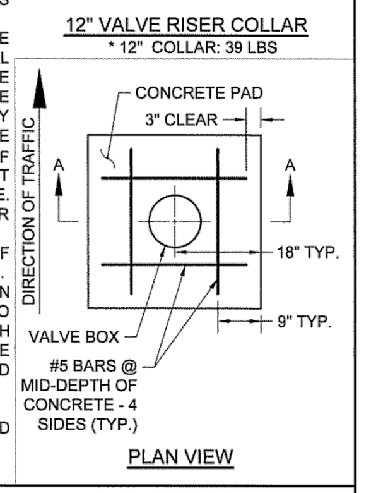
* LETTERING SHALL BE 1½" 2 PICK BAR SLOTS REQUIRED

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 2 OF 4



NOTES:

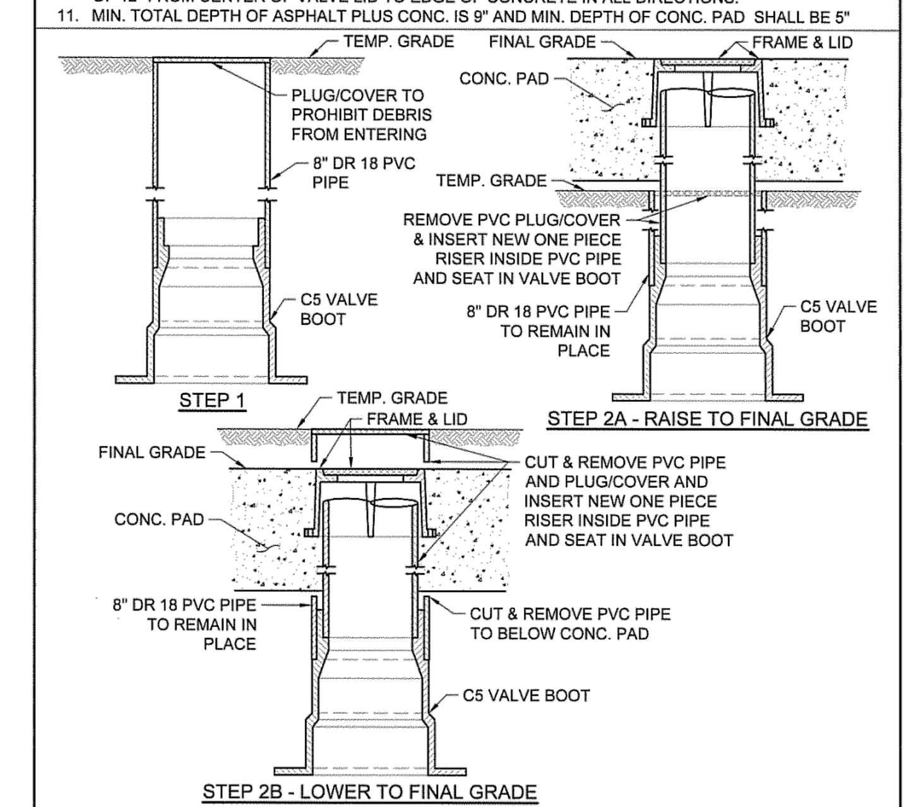
1. SUB-GRADE/TRENCH BACKFILL SHALL BE COMPACTED AS PER ITEM 201S, SUB-GRADE PREPARATION.
2. TO ADJUST VALVE CASTINGS TO FINAL GRADE, REMOVE RISER PIPE BELOW SUB-GRADE AND INSTALL APPROPRIATE LENGTH OF NEW RISER PIPE TO ACHIEVE FINAL GRADE. CONNECT THE TWO PIECES OF RISER PIPE WITH A 6" COLLAR MIN. 12" LENGTH APPROXIMATELY CENTERED ON THE JOINT WITH THE TOP OF SLEEVE LOCATED ½" - 18" BELOW SUB-GRADE. THE INSIDE "LIP" OF COLLAR TO BE PAINTED WITH FLUORESCENT WHITE PAINT OR COVERED WITH FLUORESCENT WHITE TAPE. ALTERNATE: FOR OPTIONAL SINGLE PIECE RISER INSTALLATION SEE SHEET 4 OF 4.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE NUT OF THE VALVE; NUT SHALL OPERATE WITH NO OBSTRUCTION.
4. WHERE CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20" DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL (SPEC. ITEM 402S) TO THE UNDERSIDE OF THE CONCRETE. PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
5. REINFORCING STEEL SHALL MEET SPEC. ITEM 406S.7.
6. NO MORE THAN 2 SECTIONS OF PIPE SHALL BE USED FROM VALVE TO FINAL GRADE.
7. BELL AND SPIGOT IS ACCEPTABLE FOR DEPTH OVER 18'.



CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 3 OF 4

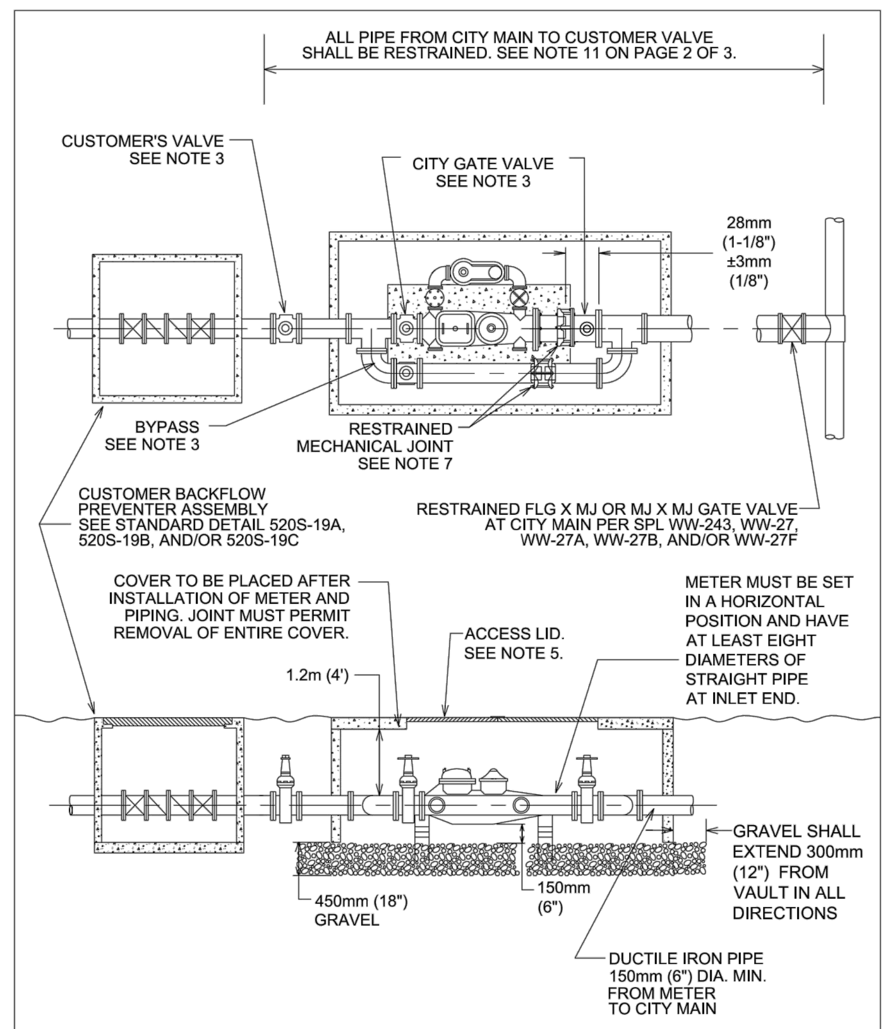
NOTES (CON'T):

8. PAVING FRAME SHALL BE FLUSH WITH THE CONC. PAD AND PLACED ½" - 2" ABOVE RISER PIPE (FRAME SHALL NOT REST ON RISER.)
9. IN UNPAVED AREAS, INSTALL ONE DELINEATOR STAKE IMMEDIATELY ADJACENT TO THE EDGE OF THE CONCRETE PAD. DELINEATOR SHALL BE BLUE FOR POTABLE WATER AND PURPLE FOR RECLAIMED WATER AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE IN COLOR, TYPE I REFLECTIVE TAPE MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES.
10. VALVE SHALL TYPICALLY BE CENTERED IN CONCRETE DIAMOND BUT MAY BE OFFSET WITH A MIN. OF 12" FROM CENTER OF VALVE LID TO EDGE OF CONCRETE IN ALL DIRECTIONS.
11. MIN. TOTAL DEPTH OF ASPHALT PLUS CONC. IS 9" AND MIN. DEPTH OF CONC. PAD SHALL BE 5"



OPTIONAL ONE PIECE VALVE CASTING INSTALLATION

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 4 OF 4



CITY OF AUSTIN AUSTIN WATER UTILITY	FIRE LINE METER INSTALLATION	
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-17 1 OF 3

NOTES:

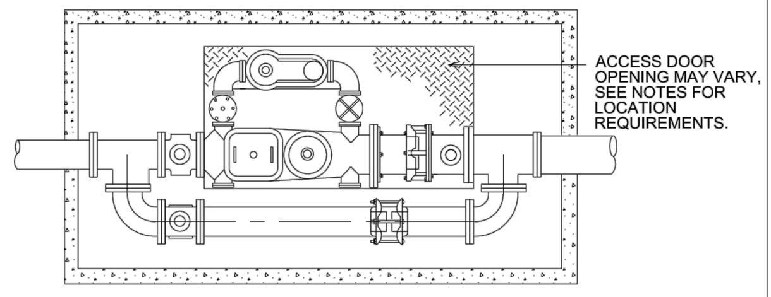
1. VAULT PER SPL WW-298 OR APPROVED EQUAL. VAULT SHALL INCLUDE THRUST COLLAR WALL PIPES IF CAST IN PLACE. ALL PIPE SHALL BE RESTRAINED REGARDLESS IF VAULT PRE-CAST OR CAST IN PLACE, RESTRAINED BOTH WAYS. H20 LOADING REQUIRED FOR ALL VAULTS.
2. METER VAULT SHALL BE BEHIND CURB AND/OR WALK, AND NOT IN VEHICULAR TRAFFIC AREA.
3. MAIN LINE AND BYPASS GATE VALVES WILL BE RESILIENT SEAT TYPE WITH CORROSION RESISTANT FUSION BONDED EPOXY COATING INSIDE AND OUTSIDE, NON-RISING STEM. MAIN LINE VALVES SHALL HAVE HAND-WHEELS. BYPASS VALVES SHALL HAVE HAND-WHEELS. PROPERTY OWNER'S VALVE SHALL NOT BE LOCATED IN THE CITY OF AUSTIN METER VAULT. HAND-WHEEL EXCEPTION: IF HAND-WHEEL IS NOT LOCATED WITHIN 300mm (12") HORIZONTALLY OF ACCESS HATCH, GATE VALVE SHALL BE INSTALLED WITH OPERATING NUT ACCESSIBLE FROM RING AND COVER LOCATED ON VAULT LID PER SPL WW-622.
4. APPROVAL REQUIRED IF HEIGHT OF VAULT EXCEEDS 1.8m (72"), CONTACT THE PIPELINE ENGINEERING DIVISION OF AUSTIN WATER UTILITY. METER SHALL BE LEGIBLE TO READ FROM TOP OF VAULT.
5. ACCESS LID SHALL BE 1.2 m x 1.8 m (4'x6') DOUBLE LEAF PER SPL WW-614 (H2O LOADING REQUIRED) WITH SLAM LOCK BY HALLIDAY PRODUCTS OR APPROVED EQUAL. LOCK TO INCLUDE SECURITY OPERATOR.
6. ALL BURIED PIPE SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY CITY OF AUSTIN STANDARD SPECIFICATIONS 510.3 (14); BACKFILL ABOVE GRANULAR BEDDING AS REQUIRED BY 510.3 (25). ALL BURIED PIPE SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT PER SPL WW-27D.
7. FITTINGS IN VAULT SHALL BE FLANGED WITH EXCEPTION OF ONE RESTRAINED MJ ON MAIN AND BYPASS LINES EACH PER SPL WW-27A.
8. VOIDS AT PIPE WALL HOLES SHALL BE FILLED WITH NON-SHRINK GROUT, OR OTHER SEAL OR SEALANT PER SPL WW-146A.
9. THE TOP OF THE METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT. ADDITIONAL DRAINAGE CONSIDERATION SUCH AS CONNECTION OF VAULT TO STORM SEWER, LATERAL DRAIN LINES FROM GRAVEL BED OR OTHER MEANS SHALL BE REQUIRED IF CONDITIONS CAUSE WATER TO COLLECT IN VAULT.
10. BYPASS AND MAIN PIPE SHALL BE SAME DIAMETER. ALL PIPE FROM CITY MAIN TO CUSTOMERS VALVE SHALL BE D.I.
11. ALL EQUIPMENT IN VAULT SHALL BE REMOVABLE WITHOUT ADDITIONAL RESTRAINT OR SUPPORT OF PIPE.
12. ALL CLEARANCES INDICATED ARE MINIMUM, ADDITIONAL CONSIDERATION SHALL BE MADE FOR ACCESS TO ALL COMPONENTS IN VAULT. ALL CLEARANCES SHALL BE INCLUDED ON PLANS SUBMITTED FOR APPROVAL TO AUSTIN WATER UTILITY.
13. LOCATION OF ACCESS DOORS ARE SHOWN TO INDICATE POSSIBLE LOCATION. AN ENGINEER LICENSED BY THE STATE OF TEXAS SHALL DETERMINE SIZE OF VAULT, LOCATION OF ACCESS DOOR AND/OR VALVE CASINGS APPROPRIATE FOR EQUIPMENT, ACCESS, MAINTENANCE AND CLEARANCES. METER VAULTS PER SPL WW-298 ARE ACCEPTABLE IF ALL DESIGN PARAMETERS ARE MET AND SO DETERMINED BY TEXAS LICENSED ENGINEER.

CITY OF AUSTIN AUSTIN WATER UTILITY	FIRE LINE METER INSTALLATION	
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-17 2 OF 3

NOTES:

14. IN ALL CASES, MINIMUM CLEARANCE FROM WALL TO TEST PORTS SHALL BE 600mm (24"). LICENSED ENGINEER SHALL CONFIRM WITH METER MANUFACTURER LOCATION OF TEST PORTS PRIOR TO SUBMITTAL OF PLANS TO AUSTIN WATER UTILITY FOR APPROVAL. PLANS SHALL INDICATE LOCATION OF TEST PORTS.
15. VAULT SIZES INDICATED ON WATER METER SCHEDULE ARE SUGGESTIONS. ACTUAL EQUIPMENT, PIPE LAYOUT, CLEARANCE, ACCESS AND OTHER INFORMATION SHALL BE TAKEN INTO CONSIDERATION BY AN ENGINEER LICENSED BY THE STATE OF TEXAS.

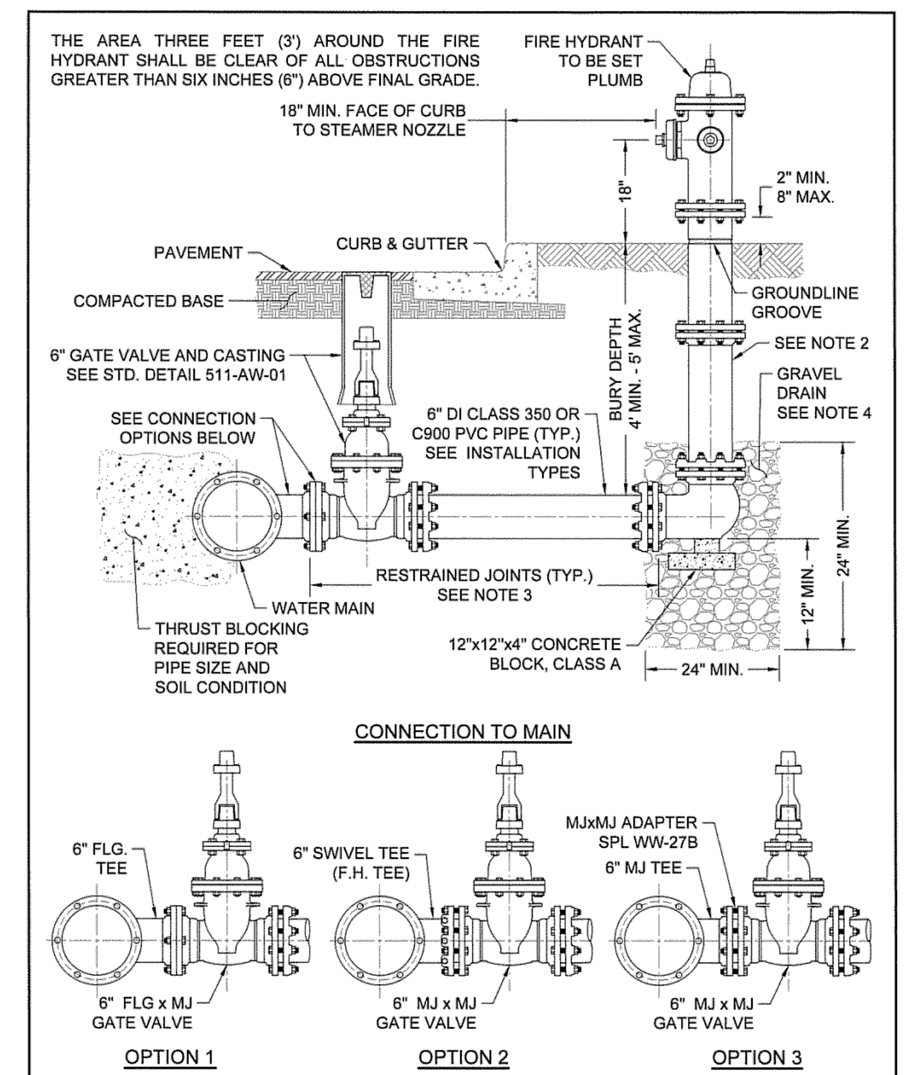
MINIMUM CLEARANCES	
6"	-FLOOR TO ANY PART OF FIRELINE METER ASSEMBLY -INTERIOR WALL TO FLANGE.
12"	-INTERIOR WALL TO PARALLEL PIPE, VALVE OR METER. -ALL AROUND FIRELINE METER ASSEMBLY
24"	-INTERIOR WALL TO TEST PORTS
48"	-TOP OF PIPE TO INTERIOR TOP OF VAULT



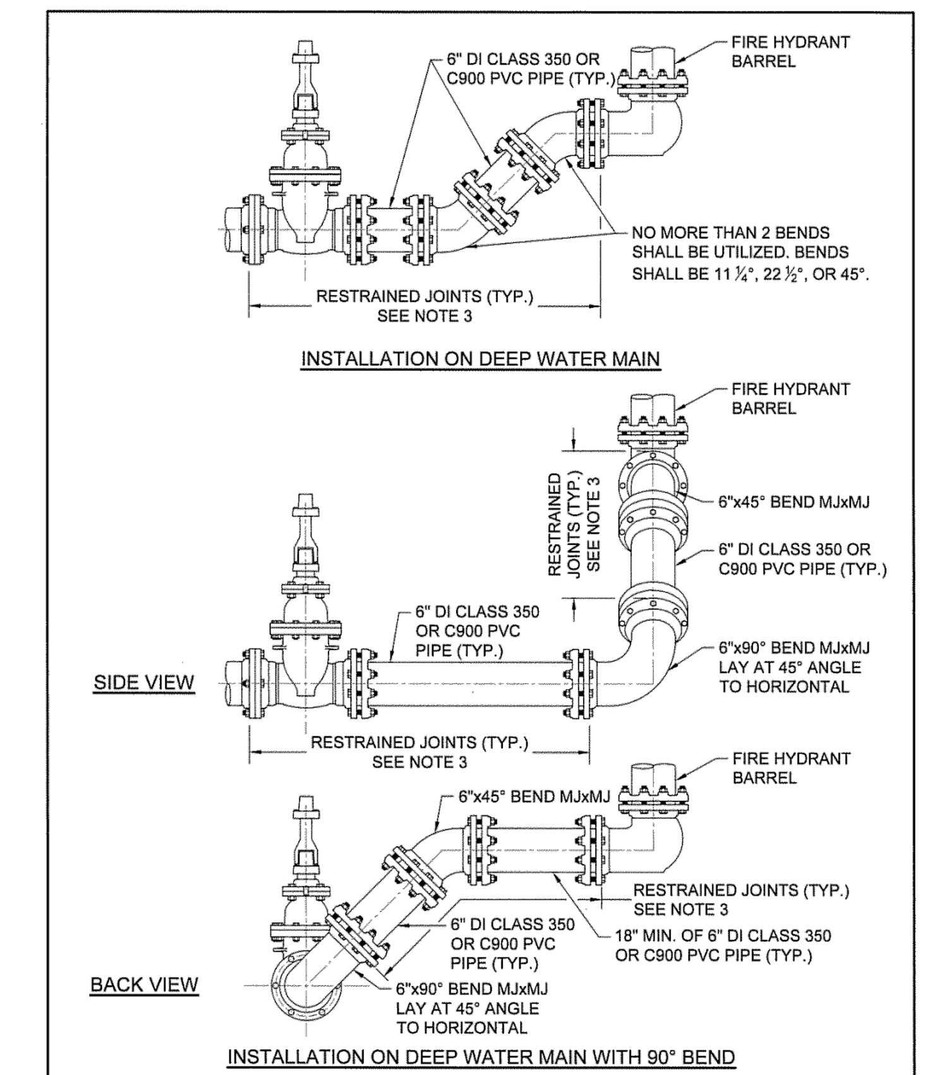
WATER METER SCHEDULE

WATER METER SIZE	SIZE OF BY-PASS	BY-PASS VALVE W/HANDWHEEL	MAIN LINE VALVE WITH HANDWHEEL	VAULT SIZE PER SPL WW-298. SEE NOTE 15
150 mm x 50 mm (6" x 2")	150 mm (6")	150 mm (6")	150 mm (6")	2.4m x 3.6m (8' x 12')
200 mm x 50 mm (8" x 2")	200 mm (8")	200 mm (8")	200 mm (8")	3.0m x 3.6m (10' x 12')
250mm x 50mm (10" x 2")	250 mm (10")	250 mm (10")	250 mm (10")	3.0m x 4.5m (10' x 15')

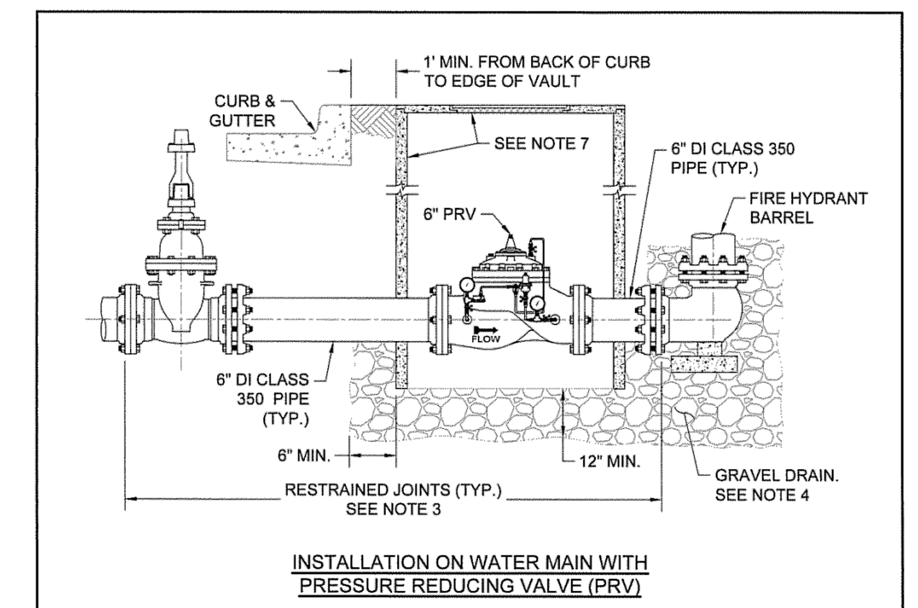
CITY OF AUSTIN AUSTIN WATER UTILITY	FIRE LINE METER INSTALLATION	
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-17 3 OF 3



CITY OF AUSTIN AUSTIN WATER	FIRE HYDRANT	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-02 1 OF 3



CITY OF AUSTIN AUSTIN WATER	FIRE HYDRANT	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-02 2 OF 3

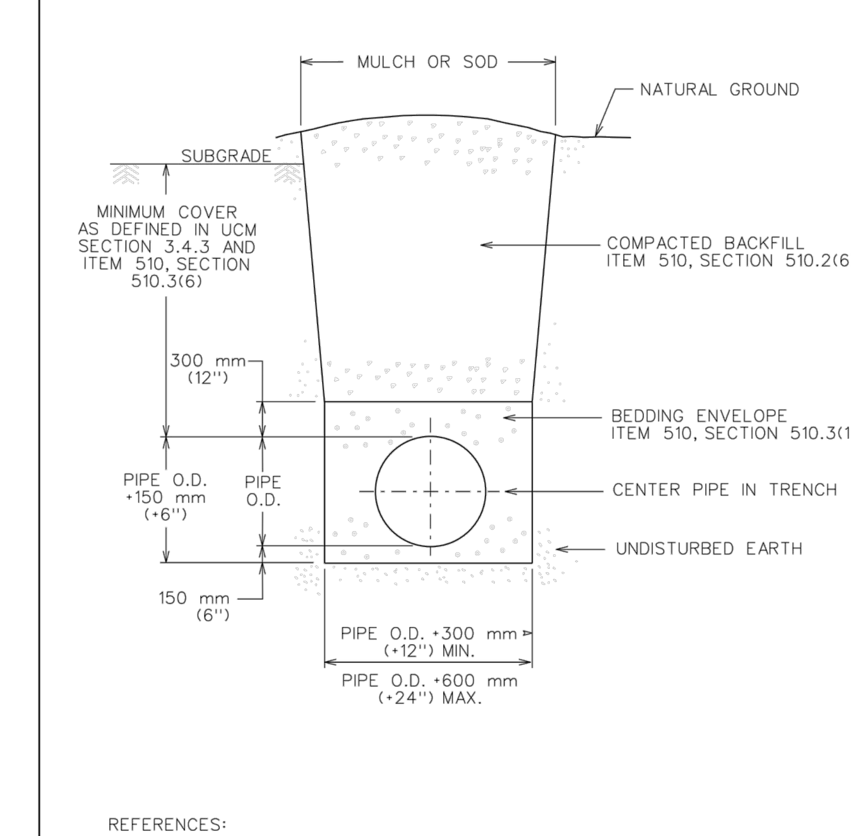


INSTALLATION ON WATER MAIN WITH PRESSURE REDUCING VALVE (PRV)

NOTES: APPLICABLE TO ALL INSTALLATION TYPES.

1. NO PART OF A HYDRANT OR ITS NOZZLE CAPS SHALL BE WITHIN 6" OF ANY SIDEWALK OR PEDESTRIAN RAMP. ANY FIRE HYDRANT PLACED NEAR A STREET CORNER SHALL BE LOCATED OUTSIDE THE CURVE RADIUS AND A MINIMUM OF 4' FROM RAMPS.
2. ONE BARREL EXTENSION NOT EXCEEDING 2' LENGTH MAY BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT IN ORDER TO MEET THE REQUIRED BURY DEPTH OF 4' - 5'. BREAK AWAY BOLTS (SHOE TYPES) SHALL BE PROPERLY SPACED AND PLACED.
3. FIRE LINE SHALL HAVE ALL JOINTS RESTRAINED FROM MAIN TO FIRE HYDRANT. JOINTS SHOWN MAY VARY. SEE SPL WW-27, WW-27A, AND WW-27B FOR RESTRAINT OPTIONS.
4. BELOW EACH HYDRANT, A DRAINAGE PIT 24" IN DIAMETER AND 12" DEEP SHALL BE EXCAVATED AND FILLED WITH COMPACTED COARSE GRAVEL OR BROKEN STONE MIXED WITH COARSE SAND UNDER AND AROUND THE BOWL OF THE HYDRANT, AND TO A LEVEL 12" ABOVE THE HYDRANT DRAIN OPENING (SEE STD. SPEC. 510). THE HYDRANT DRAINAGE PIT SHALL NOT BE CONNECTED TO A SANITARY SEWER. THE DRAIN GRAVEL SHALL BE COVERED WITH FILTER FABRIC PER STD. SPEC. 620S. FOR PRV, GRAVEL SHALL EXTEND UNDER THE PRV VAULT 12" MIN. DEPTH UNDER THE VAULT AND 6" MIN. BEYOND VAULT.
5. FOR FIRE HYDRANT LEADS AT A MAIN OUTLET LARGER THAN 6" DIAMETER, OUTLET SHALL BE FLANGED AND A FLG x FLG REDUCER SHALL BE INSTALLED DIRECTLY ON THE OUTLET.
6. WRAP 8 MIL. POLY-FILM WRAP ON ALL BURIED PIPE AND FITTINGS.
7. FOR HYDRANTS WITH PRV: CLASS III RCP VAULT 60" MIN. I.D. WITH REINFORCED PRECAST CONCRETE LID (AASHTO H-20 LOADING) WITH COA FRAME AND 32" COVER WITH LETTERING MODIFIED FOR WATER.

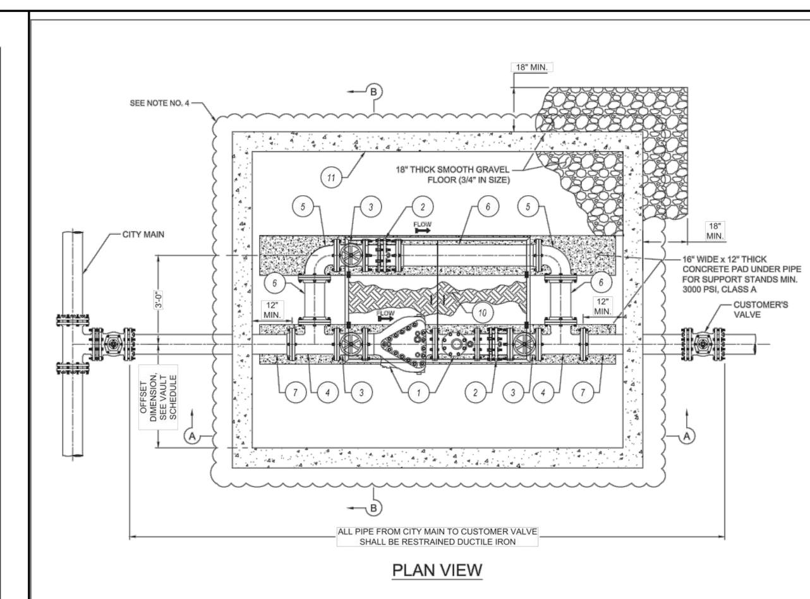
CITY OF AUSTIN AUSTIN WATER	FIRE HYDRANT	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-02 3 OF 3



REFERENCES:

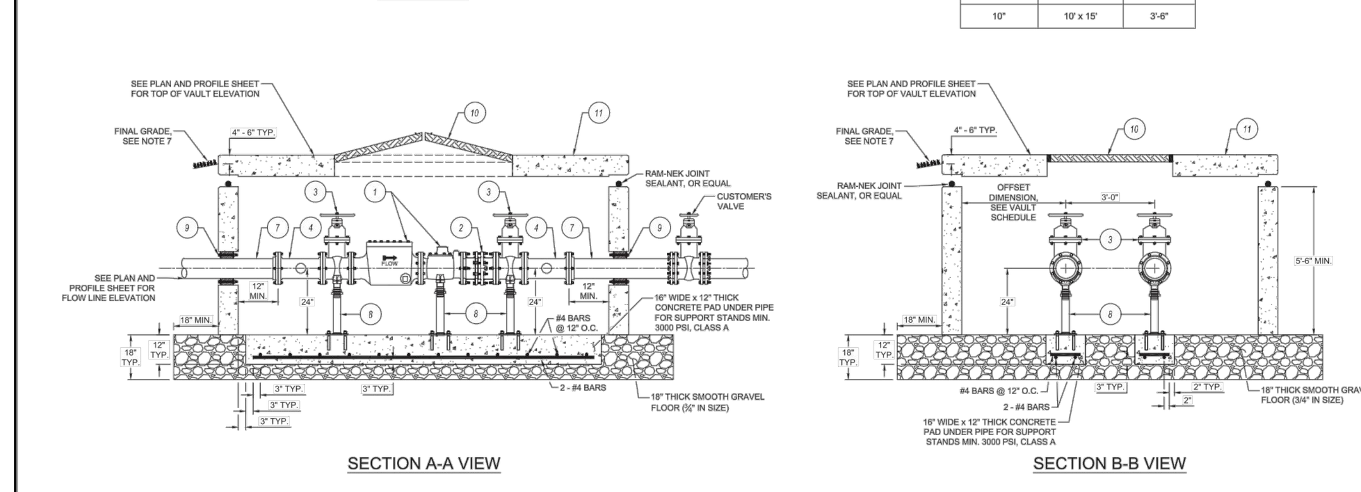
1. UTILITY CRITERIA MANUAL SECTION 3.4.3, "FINAL DESIGN"
2. STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(6), "TRENCH DEPTH AND DEPTH OF COVER"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL TRENCH DETAIL WITH UNFINISHED SURFACE	
RECORD COPY SIGNED BY BILL GARDNER 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-5



6", 8" OR 10" SENSUS OMNI F2 FIRE LINE METER MATERIAL LIST			
ITEM	DESCRIPTION	SIZE	TYPE
1	FIRE LINE METER AND STRAINER (PROVIDED BY AUSTIN WATER)	6", 8" OR 10"	FLG x FLG
2	DISMANTLING JOINT PER COA SPL WW-27J	6", 8" OR 10"	FLG x FLG
3	RESILIENT-SEATED GATE VALVE (w/HAND WHEEL) PER COA SPL WW-700	6", 8" OR 10"	FLG x FLG
4	TEE PER COA SPL WW-27C	6", 8" OR 10"	FLG x FLG
5	90° BEND PER COA SPL WW-27C	6", 8" OR 10"	FLG x FLG
6	DUCTILE IRON CLASS 53 PIPE PER COA SPL WW-27E	6", 8" OR 10"	FLG x FLG
7	DUCTILE IRON CLASS 53 PIPE PER COA SPL WW-27E	6", 8" OR 10"	FLG x PE
8	PIPE SADDLE SUPPORT AND STANCHION PER COA SPL WW-614B (USE 5/8" DIA. x 6" LONG STAINLESS STEEL WEDGE-ALL ANCHOR, TYP.)	NA	NA
9	LINK-SEAL MODULAR SEALS SERIES LS-525 FOR 6" PIPE, LS-500 FOR 8" PIPE AND LS-650 FOR 10" PIPE w/STAINLESS STEEL HARDWARE, OR EQUAL	NA	NA
10	48" x 72" ACCESS HATCH PER COA SPL WW-614A	NA	NA
11	CONCRETE VAULT PER COA SPL WW-298 (SEE VAULT SCHEDULE)	NA	NA

VAULT SCHEDULE		
FIRE LINE METER SIZE	VAULT SIZE (INSIDE DIMENSION)	OFFSET DIMENSION
6"	8' x 12'	3'-0"
8"	10' x 12'	3'-6"
10"	10' x 15'	3'-6"



NOTES:

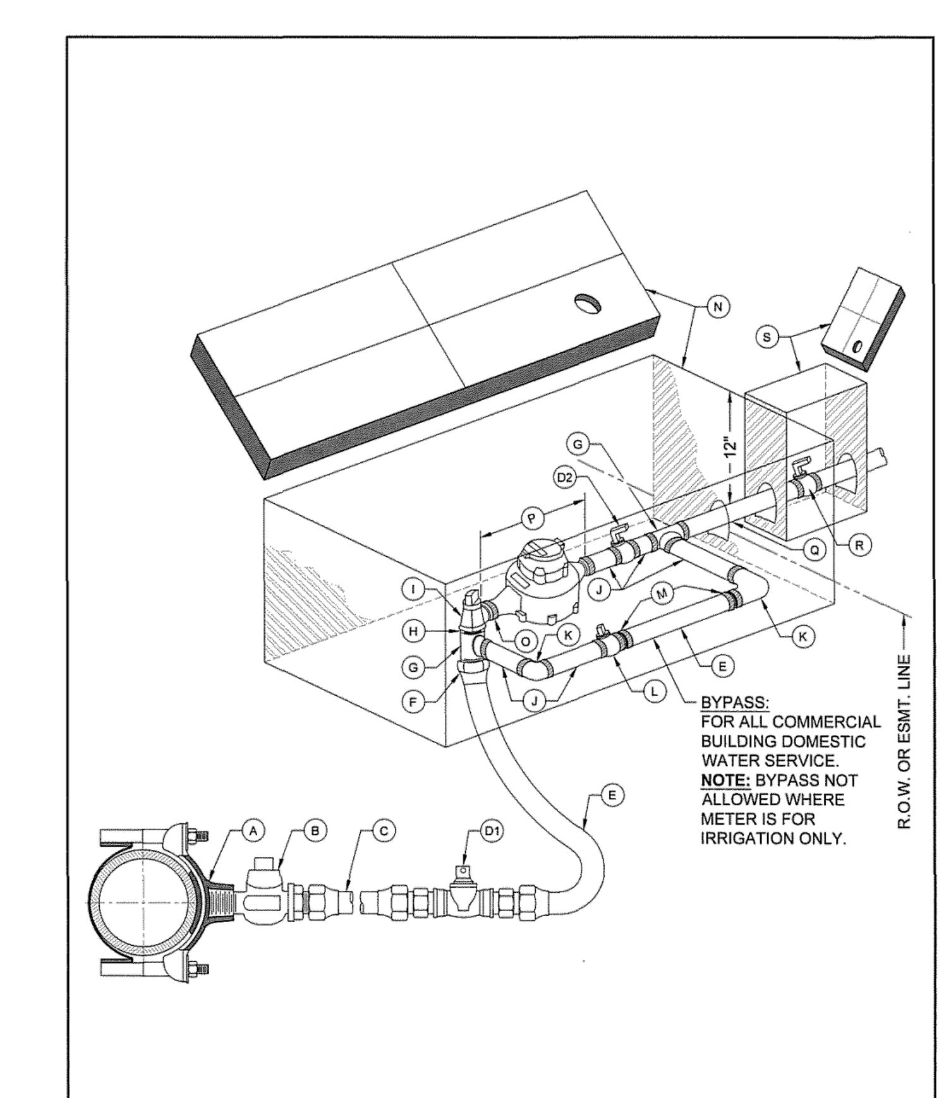
1. CONCRETE VAULT SHALL NOT BE INSTALLED IN A TRAFFIC AREA.
2. HIGH STRENGTH LOW ALLOY (HSLA) BOLTS AND NUTS USED THROUGHOUT ASSEMBLY.
3. FULL FACE 1/8" THICK RED RUBBER GASKETS USED THROUGHOUT ASSEMBLY.
4. ALL ITEMS IN MATERIAL LIST, INCLUDING VAULT AND ALL COMPONENTS WITHIN VAULT, TO BE IN COMPLIANCE WITH ITEM No. 512, PRE-CAST WATER UTILITY VAULTS. ALL PIPING, VALVES AND APPURTENANCES OUTSIDE VAULT TO BE SHOWN IN PLAN AND PROFILE SHEET, AND SHALL BE IN COMPLIANCE WITH ITEM Nos. 510 AND 511.
5. IF NECESSARY, WALL PENETRATION LOCATION IS ALLOWED TO MOVE HORIZONTALLY IN ACCORDANCE WITH SPL WW-298. MINIMUM 18" CLEARANCE SHALL BE PROVIDED BETWEEN VAULT WALL AND BYPASS PIPING OR FIRE LINE METER COMPONENTS, UNLESS NOTED OTHERWISE.
6. ALL BURIED PIPE AND FITTINGS SHALL BE BEDDED, BACKFILLED, AND WRAPPED IN POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH COA STANDARDS.
7. THE TOP OF THE VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT. ADDITIONAL DRAINAGE CONSIDERATIONS SUCH AS CONNECTION OF VAULT DRAINAGE TO STORM SEWER, LATERAL DRAIN LINES FROM GRAVEL FLOOR, OR OTHER MEANS SHALL BE REQUIRED IF CONDITIONS CAUSE WATER TO COLLECT IN VAULT.
8. BYPASS AND MAIN PIPE SHALL BE SAME DIAMETER.

USE OF THIS STANDARD

THIS STANDARD DRAWING ONLY APPLIES TO FIRE LINE METER VAULTS SATISFYING BOTH OF THE FOLLOWING STIPULATIONS; OTHERWISE, A PROJECT-SPECIFIC DESIGN MUST BE PREPARED. THE VAULT ITSELF MUST BE DESIGNED BY A TEXAS-LICENSED PROFESSIONAL ENGINEER (STRUCTURAL).

1. THE CONDITIONS AT THE SITE OF THE PROPOSED FIRE LINE METER, THE LOADS AFFECTING A PRE-CAST CONCRETE VAULT AT THAT SITE, AND THE COMPONENTS AND PHYSICAL FEATURES OF THE VAULT FOR THAT SITE ARE ALL ADEQUATELY AND RELIABLY REPRESENTED BY THE STRUCTURAL DESIGN CRITERIA, DESIGN LOADS, AND DETAILS INCLUDED WITH SPL WW-298.
2. THE PIPING AND VALVES FOR THE PROPOSED FIRE LINE METER ARE THE SAME MATERIAL, TYPE, SIZE, AND ORIENTATION AS THOSE SHOWN IN THIS STANDARD.

CITY OF AUSTIN AUSTIN WATER	6", 8" AND 10" FIRE LINE METER	
JEFF A. KYLE 11/07/2022 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 512-AW-02 1 OF 1



CITY OF AUSTIN AUSTIN WATER	1½" - 2" METER INSTALLATION SHOWING OPTIONAL BYPASS	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-04 1 OF 2

MATERIALS LIST:

- A. 2" SERVICE CLAMP
- B. 2" CORPORATION STOP MALE THREAD INLET BY COMPRESSION OUTLET
- C. 2" COPPER WATER SERVICE TUBING EXTENDED BEYOND PAVEMENT
- D1. 2" BALL VALVE, SPL WW-275
- D2. 2" BALL VALVE, SPL WW-275
- E. 2" COPPER SERVICE TUBING
- F. 2" BRASS COUPLING - COMPRESSION TO MALE IPT
- G. 2" BRASS TEE
- H. 2" BRASS CLOSE-NIPPLE
- I. 2" ANGLE METER STOP; SERVICE TUBING INLET x FLANGED OUTLET
- J. 2" BRASS NIPPLE
- K. 2" BRASS ELBOW
- L. 2" LOCKABLE CURB STOP - FEMALE IPT INLET BY COMPRESSION OUTLET
- M. 2" BRASS COUPLING - SERVICE TUBING TO MALE IPT
- N. RECTANGULAR METER BOX AND COVER, SPL WW-145A
- O. BRASS ADAPTER (2" x 1½") FOR 1½" METER ONLY
- P. WATER METER. LENGTH 13", (PURCHASED FROM AUSTIN WATER)
- Q. 2" COPPER SERVICE TUBING (PRIVATE PLUMBING PER CODE)
- R. CUSTOMER CUT-OFF VALVE
- S. CUSTOMER VALVE BOX AND LID

NOTES:

1. SERVICE CLAMP SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
2. BRANCH CONNECTIONS AND ALL ANGLE METER STOPS MUST BE INSTALLED PRIOR TO ANY METER INSTALLATION.
3. TOP OF BOXES SHOULD BE 1" ABOVE GROUND.
4. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY SECTION 510.3 (14) OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS; BACKFILL ABOVE GRANULAR BEDDING AS REQUIRED BY SECTION 510.3 (25).
5. BOX MUST BE BEHIND CURB NEXT TO PROPERTY LINE OR EASEMENT AND OUT OF VEHICULAR TRAFFIC AREA AND SIDEWALK.
6. BALL VALVE "D1" SHALL NOT BE LOCATED UNDER SIDEWALK, CURB, OR PAVEMENT, AND NOT BE LOCATED MORE THAN 24" HORIZONTALLY FROM METER BOX OR 36" BELOW FINAL GRADE.
7. COPPER SERVICE SHALL BE COPPER TUBING SIZE ANNEALED SEAMLESS TYPE "K" MEETING ASTM B88 WITH NO SWEAT OR SOLDERED JOINTS.

RECLAIMED WATER:

FOR RECLAIMED WATER SERVICES AND METERS, ALL RECLAIMED TUBING SHALL BE MANUFACTURED PURPLE TUBING. ALL OTHER TUBING AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL TUBING AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	1½" - 2" METER INSTALLATION SHOWING OPTIONAL BYPASS	
Kathi L. Flowers 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-04 2 OF 2

Revision	Date	By	App	Comment

Prepared For:

Avery Land Investors, LP
1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

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PLANNING • DESIGN • MANAGEMENT
7701 San Felipe Blvd., Ste 200, Austin TX 78729
Texas Firm Registration No. F-678
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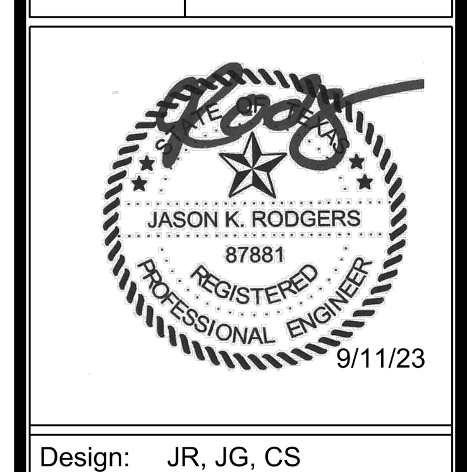
www.bleylengineering.com
AUSTIN BRYAN CONROE HOUSTON

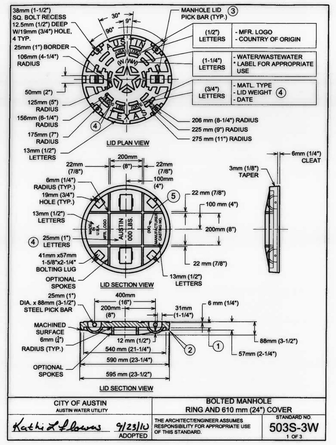
Construction Details 3

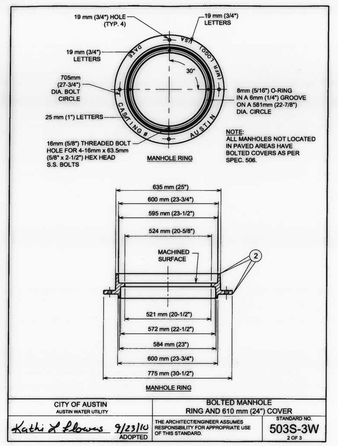
Lake Creek at Avery Ranch

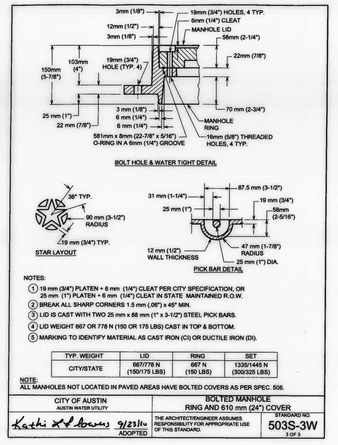
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

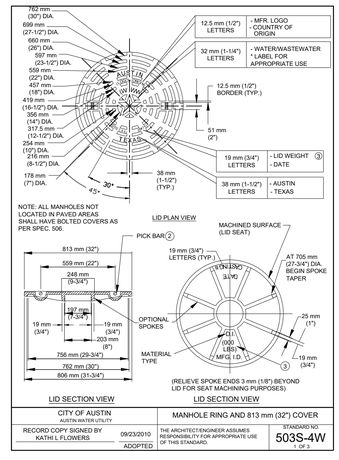


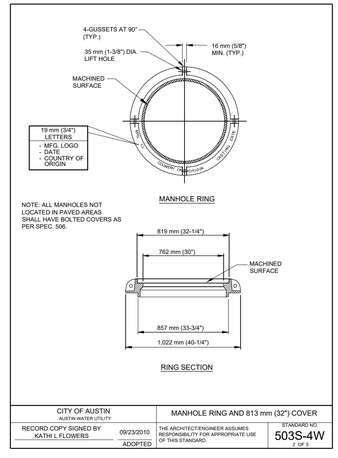
Design: JR, JG, CS	
CAD: CS, JW	Review: JR, JG
Project No: JDG 70401	
Sheet: **51** of **66**	
SP-2023-0021C	

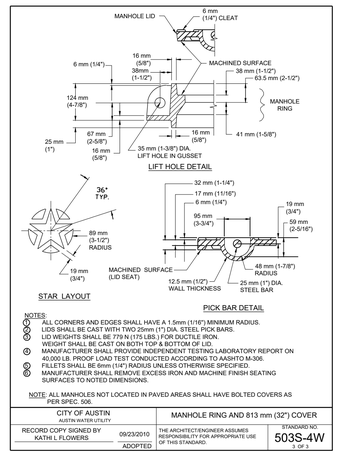












NOTE: WELD ALL RODS TO FRAME

NOTE: MANDREL DIMENSIONS SHOWN ARE FOR ASTM 3034 SDR 26 PVC SEWER PIPE								
PIPE SIZE	A (MIN.)	L2	T1	T2	ROD DIA.	R1	R2	DIA.
6"	4.34"	6"	.375"	1.0"	.375"	2.75"	0.75"	5.60"
8"	5.82"	6"	.375"	1.0"	.375"	3.68"	1.25"	7.37"
10"	7.27"	6"	.375"	1.0"	.375"	4.60"	1.50"	9.21"
12"	8.65"	8"	.375"	1.0"	.375"	5.48"	1.75"	10.96"

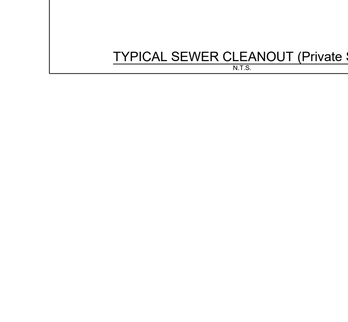
SPECIFICATIONS

1. MANDREL SIZING. MANDREL SHALL HAVE AN OUTSIDE DIAMETER EQUAL TO 95%% OF THE INSIDE DIAMETER OF THE PIPE, THE INSIDE OF THE PIPE SHALL BE MEASURED AS THE AVERAGE OUTSIDE DIAMETER MINUS TWO MINIMUM WALL THICKNESS FOR O.D. CONTROLLED PIPE AND THE AVERAGE INSIDE DIAMETER FOR I.D. CONTROLLED PIPE.
2. MANDREL DESIGN. MANDREL SHALL BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200 psi WITHOUT BEING DEFORMED. THE MANDREL SHALL HAVE 9 OR MORE RUNNERS (LEGS) AS LONG AS THE TOTAL NUMBER OF LEGS IS AN ODD NUMBER. THE BARREL SECTION OF THE MANDREL SHALL HAVE A LENGTH OF AT LEAST 75%% OF THE INSIDE DIAMETER OF THE PIPE. A PIVOT RING SHALL BE PROVIDED AND USED FOR EACH SIZE MANDREL IN USE.
3. METHOD OPTIONS. ADJUSTABLE OR FLEXIBLE MANDRELS ARE PROHIBITED. A TELEVISION INSPECTION IS NOT A SUBSTITUTE FOR THE DEFLECTION TEST. A DEFLECTOMETER MAY BE APPROVED FOR USE ON A CASE-BY-CASE BASIS. MANDRELS WITH REMOVABLE LEGS OR RUNNERS MAY BE ACCEPTED ON A CASE-BY-CASE BASIS.

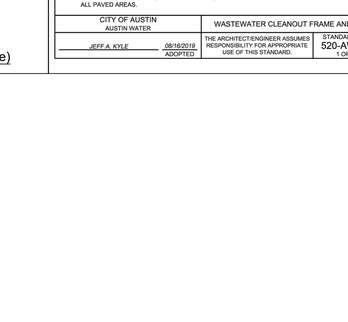
TYPICAL MANDREL DETAILS
N.T.S.

NOTES:

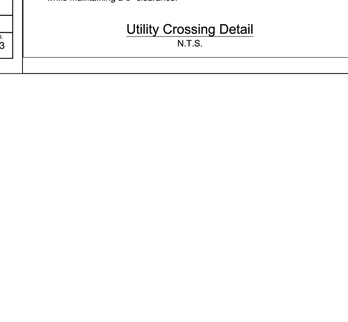
1. DURING SUBDIVISION CONSTRUCTION, UTILITY CONTRACTOR INSTALLS WASTEWATER TEE CONNECTION TO MAIN, 6" STUB, HORIZONTAL WYE FOR DOUBLE SERVICES, 6" SERVICE BRANCH WITH TWO-WAY CLEANOUT(S) AND RISER, FRAME, AND COVER. CLEANOUT(S) TO BE PLUGGED AT PROPERTY LINE OR EASEMENT LINE END. ALL WASTEWATER PIPING SHALL HAVE ELASTOMERIC GASKET TYPE JOINTS AND SLOPE DOWNWARD TO MAIN 1% MIN. TO 45° MAX. DEPTH OF SERVICE AT PROPERTY LINE WILL BE SHOWN ON PLANS BY ENGINEER IF GREATER THAN 4', OTHERWISE THE INSTALLED DEPTH WILL BE 4' MIN. AND 6' MAX. AT PROPERTY LINE. IF WASTEWATER SERVICE LINE TO MAIN REQUIRES DEFLECTION EXCEEDING 45°, SEE SHEET 3 OF 4.
2. PIPING IN STREET RIGHT-OF-WAY AND IN EASEMENT AREA SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY CITY OF AUSTIN STANDARD SPECIFICATION 510.3 (14); MATERIALS SHALL BE AS SPECIFIED IN 510.2 (2)(A) AND (3)(B); BACKFILL ABOVE THE GRANULAR BEDDING SHALL BE AS REQUIRED BY SECTION 510.3 (25). SERVICE LINES IN THESE AREAS SHALL HAVE A MIN. COVER BELOW FINAL STREET GRADE OF 42".
3. PLUMBER SHALL REMOVE PLUG AND CONNECT TO TWO-WAY CLEANOUT. NO CONNECTION TO CLEANOUT STACK IS ALLOWED.



CITY OF AUSTIN AUSTIN WATER	SINGLE AND DOUBLE WASTEWATER SERVICE CONNECTION
RECORD COPY SIGNED JEFF A. KYLE 11/07/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 520-AW-01C 2 OF 4



CITY OF AUSTIN AUSTIN WATER	SINGLE AND DOUBLE WASTEWATER SERVICE CONNECTION
RECORD COPY SIGNED JEFF A. KYLE 11/07/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 520-AW-01C 3 OF 4



INSTALLATION IN LINED PIPE:

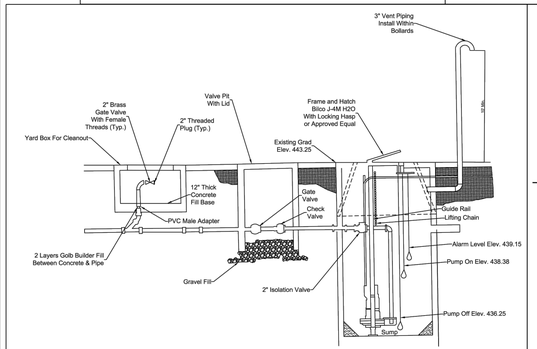
1. MARK LOCATION OF TAP.
2. BREAK & REMOVE HOST PIPE SO THAT OPENING IS AT LEAST 2" BUT NO MORE THAN 3" WIDER THAN DIAMETER OF THE SERVICE ADAPTOR.
3. DO NOT DAMAGE LINER.
4. CORE HOLE THROUGH LINER USING ADAPTOR MANUFACTURER RECOMMENDED BIT.
5. INSTALL SERVICE ADAPTOR.
6. HOLES CUT IN HOST PIPE SHALL BE PACKED WITH NON-SHRINK GROUT (ASTM C1107 GRADE). SEE DETAIL "B"

NOTES:

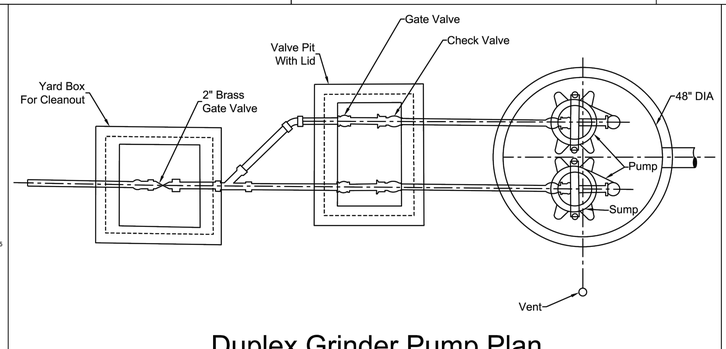
1. USE ONLY TO TAP EXISTING LINED PIPE.
2. SEE APPROPRIATE STD. FOR SERVICE LINE INFORMATION.
3. THE EDGE OF THE CORE HOLE MUST BE AT LEAST 3" FROM THE ENDS OF THE PIPE, ANY OTHER CORE SERVICE CONNECTIONS, AND ANY FITTINGS.
4. FOR DEEP SERVICE APPLICATIONS SEE SHEET 3 OF 4, EXCEPT SUBSTITUTE A CORED HOLE, AND SERVICE ADAPTOR FOR THE TEE OR WYE.
5. SERVICE CONNECTIONS TO MANHOLES MUST BE MADE USING A PIPE-TO-MANHOLE CONNECTOR WHICH LIMITS THE PIPE SLOPE INTO THE MANHOLE TO 12% MAX.

6" WASTEWATER CONNECTION TO EXISTING LINED MAIN

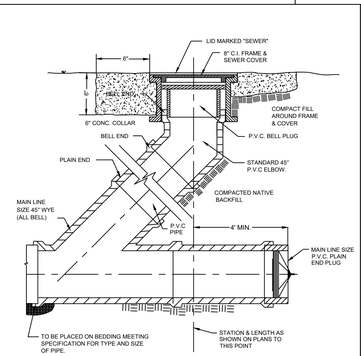
CITY OF AUSTIN AUSTIN WATER	SINGLE AND DOUBLE WASTEWATER SERVICE CONNECTION
RECORD COPY SIGNED JEFF A. KYLE 11/07/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 520-AW-01C 4 OF 4



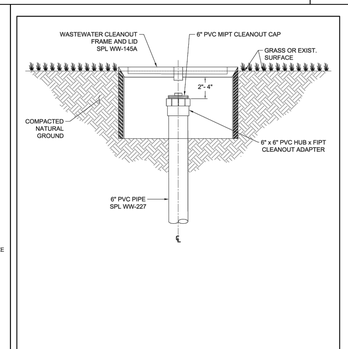
Duplex Grinder Pump Profile
N.T.S.



Duplex Grinder Pump Plan
N.T.S.



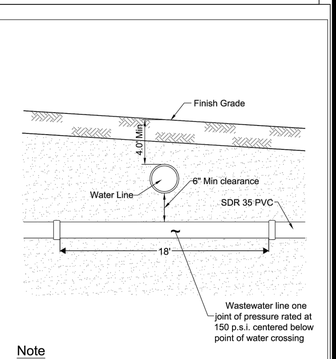
TYPICAL SEWER CLEANOUT (Private Side)
N.T.S.



NOTE:

1. WASTEWATER CLEANOUT FRAME AND LID SHALL NOT BE PLACED IN PAVED AREAS, INCLUDING SIDEWALKS, DRIVEWAYS, OR PARKING LOTS, AND MUST BE LOCATED A MINIMUM OF 6" FROM ALL PAVED AREAS.

CITY OF AUSTIN AUSTIN WATER	WASTEWATER CLEANOUT FRAME AND LID
JEFF A. KYLE 09/16/2019 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. STANDARD NO. 520-AW-03 1 OF 1



Note
If 4' cover over waterline cannot be achieved, then waterline must be routed under the conflicting utility while maintaining a 6" clearance.

Utility Crossing Detail
N.T.S.

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
7701 San Felipe Blvd., Ste 200, Austin TX 78729
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com
AUSTIN CONROE HOUSTON BRYAN

Prepared For:
Avery Land Investors, LP
1000 N. Lamar Blvd., Suite 400
Austin, TX 78703

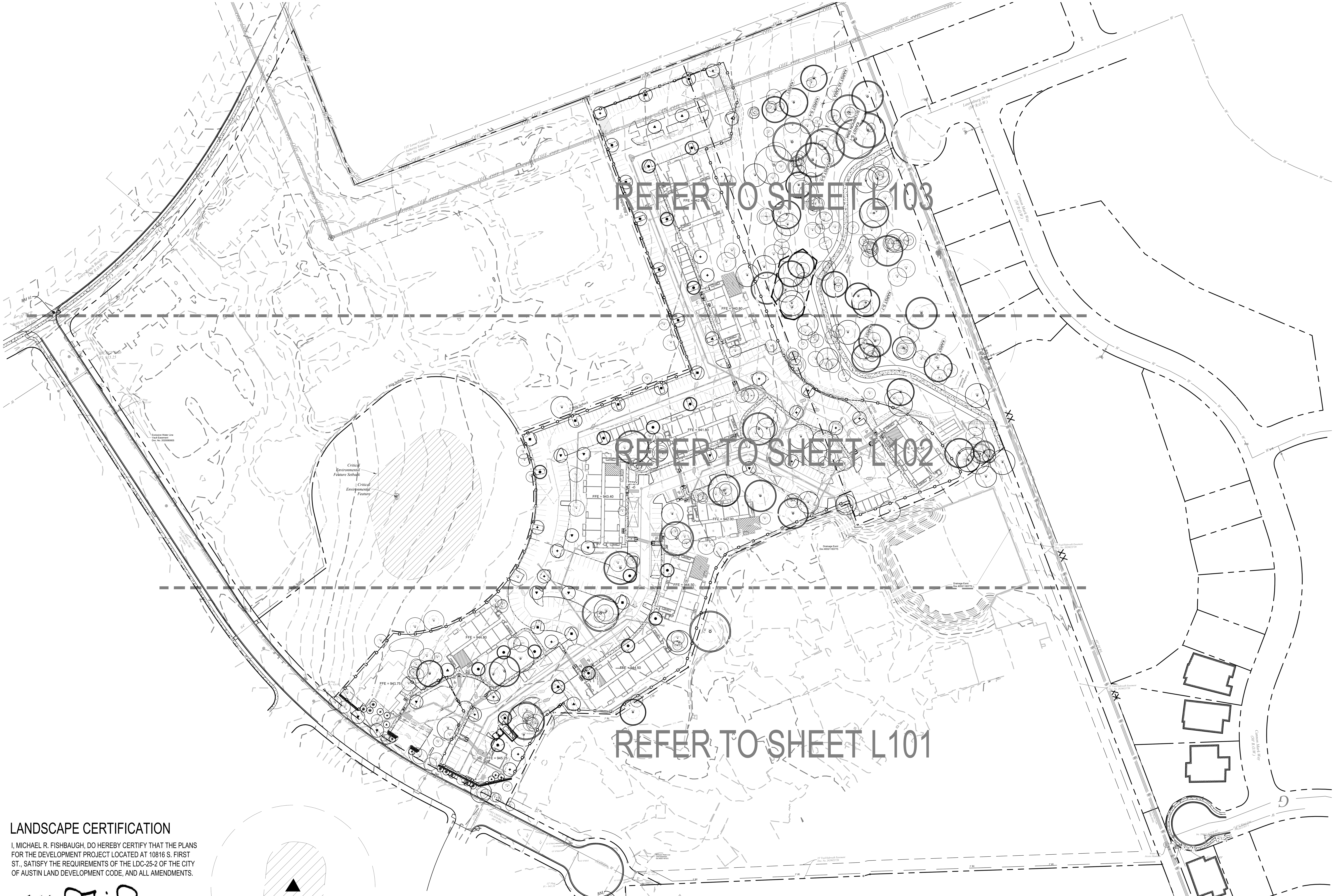
Revision	Date	By	App	Comment

Construction Details 4

Lake Creek at Avery Ranch
9205 N. Lake Creek Parkway
Austin, Texas 78729
Williamson County

JASON K. RODGERS 87881 REGISTERED PROFESSIONAL ENGINEER 9/11/23

Design: JR, JG, CS
CAD: CS, JW | Review: JR, JG
Project No: JDG 70401
Sheet: 52 of 66
SP-2023-0021C



LANDSCAPE CERTIFICATION

I, MICHAEL R. FISHBAUGH, DO HEREBY CERTIFY THAT THE PLANS FOR THE DEVELOPMENT PROJECT LOCATED AT 10816 S. FIRST ST., SATISFY THE REQUIREMENTS OF THE LDC-25-2 OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE, AND ALL AMENDMENTS.

01/06/2023

MICHAEL R. FISHBAUGH DATE

BLU FISH COLLABORATIVE INC.

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE LANDSCAPE ARCHITECT WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY OF AUSTIN MUST RELY ON THE ADEQUACY OF THE WORK OF THE LANDSCAPE ARCHITECT.

BF COLLABORATIVE
LANDSCAPE ARCHITECTURE
BLU FISH COLLABORATIVE, INC.
P.O. BOX 40792, Austin, TX 78704
Phone: (512)388-4115

PROFESSIONAL SEAL:

REGISTERED LANDSCAPE ARCHITECT MICHAEL R. FISHBAUGH 2453 STATE OF TEXAS

DATE SEALED: 01/06/2023

PROJECT NAME:
LAKE CREEK AT AVERY RANCH

OWNER:
LAKELINE AVERY PARTNERS, LP

PROJECT LOCATION:
9205 NORTH LAKE CREEK PARKWAY AUSTIN, TEXAS 78729

REVISIONS:

SITE PLAN APPROVAL Sheet 46 of 59
FILE NO: SP-XXX APPLICATION DATE: XXX
APPROVED BY COMMISSION ON ____ UNDER SECTION 112 OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE
EXPIRATION DATE (25-5-81, LDC) ____ CASE MANAGER XXX
PROJECT EXPIRATION DATE (ORD. #970905-A) ____ DWPZ ____ DDZ ____
Director, Development Services Department
RELEASED FOR GENERAL COMPLIANCE: ____ ZONING MF-4
Rev. 1 ____ Correction 1 ____
Rev. 2 ____ Correction 2 ____
Rev. 3 ____ Correction 3 ____
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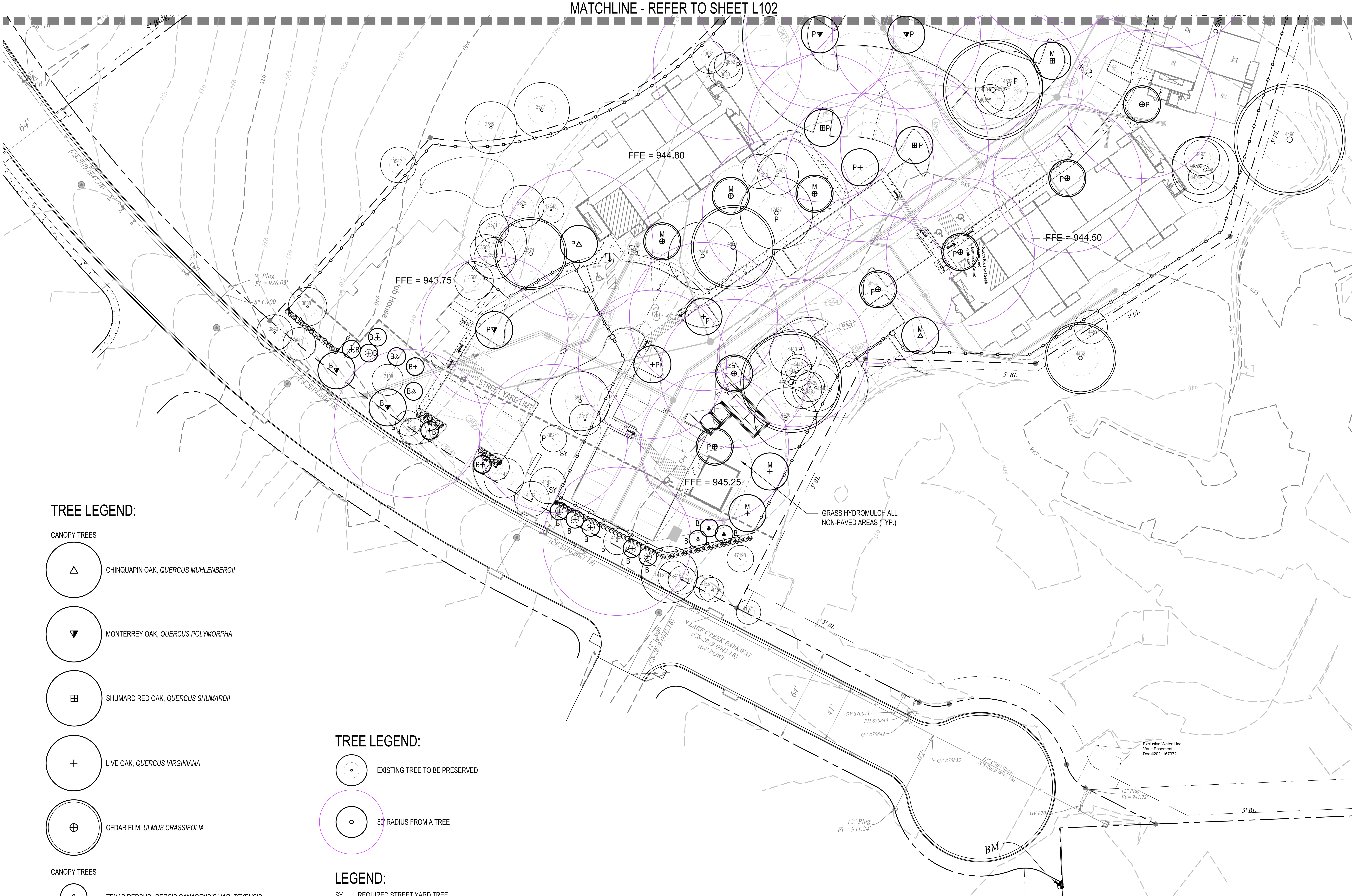
PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:
OVERALL LANDSCAPE PLAN

SHEET NO.:
L100

SP-XXXX



TREE LEGEND:

CANOPY TREES

- CHINQUAPIN OAK, *QUERCUS MUHLENBERGII*
- MONTERREY OAK, *QUERCUS POLYMORPHA*
- SHUMARD RED OAK, *QUERCUS SHUMARDII*
- LIVE OAK, *QUERCUS VIRGINIANA*
- CEDAR ELM, *ULMUS CRASSIFOLIA*

CANOPY TREES

- TEXAS REDBUD, *CERCIS CANADENSIS VAR. TEXENSIS*
- TREE YAUPON HOLLY, *ILEX VOMITORIA*
- WAXMYRTLE, *MYRICA CERIFERA*

TREE LEGEND:

- EXISTING TREE TO BE PRESERVED
- 50' RADIUS FROM A TREE

LEGEND:

SY — REQUIRED STREET YARD TREE
EXISTING TREE

B — REQUIRED BUFFERING TREE
4" TREE WITH EXCESS TOWARDS MITIGATION
2" TREE WITH EXCESS TOWARDS MITIGATION

P — REQUIRED PARKING LOT TREE
4" TREE WITH EXCESS 2.5" TOWARDS MITIGATION

M — MITIGATION TREE
PROPOSED NEW 4" CANOPY TREE

BF COLLABORATIVE
LANDSCAPE ARCHITECTURE
BLU FISH COLLABORATIVE, INC.
P.O. BOX 40792, Austin, TX 78704
Phone: (512)388-4115

PROFESSIONAL SEAL:
REGISTERED LANDSCAPE ARCHITECT
MICHAEL R. FISHBAUGH
2453
STATE OF TEXAS
DATE SEALED: 01/06/2023

PROJECT NAME:
LAKE CREEK AT AVERY RANCH

OWNER:
LAKELINE AVERY PARTNERS, LP

PROJECT LOCATION:
9205 NORTH LAKE CREEK PARKWAY
AUSTIN, TEXAS 78729

REVISIONS:

SITE PLAN APPROVAL		Sheet 47	of 59
FILE NO: SP-XXX		APPLICATION DATE:	XXX
APPROVED BY COMMISSION ON ______		UNDER SECTION 112 OF	
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE			
EXPIRATION DATE (25-5-81, LDC) ______		CASE MANAGER	XXX
PROJECT EXPIRATION DATE (ORD. #970905-A) ______		DWPZ ______	DDZ ______
Director, Development Services Department			
RELEASED FOR GENERAL COMPLIANCE: ______		ZONING	MF-4
Rev. 1 ______		Correction 1 ______	
Rev. 2 ______		Correction 2 ______	
Rev. 3 ______		Correction 3 ______	

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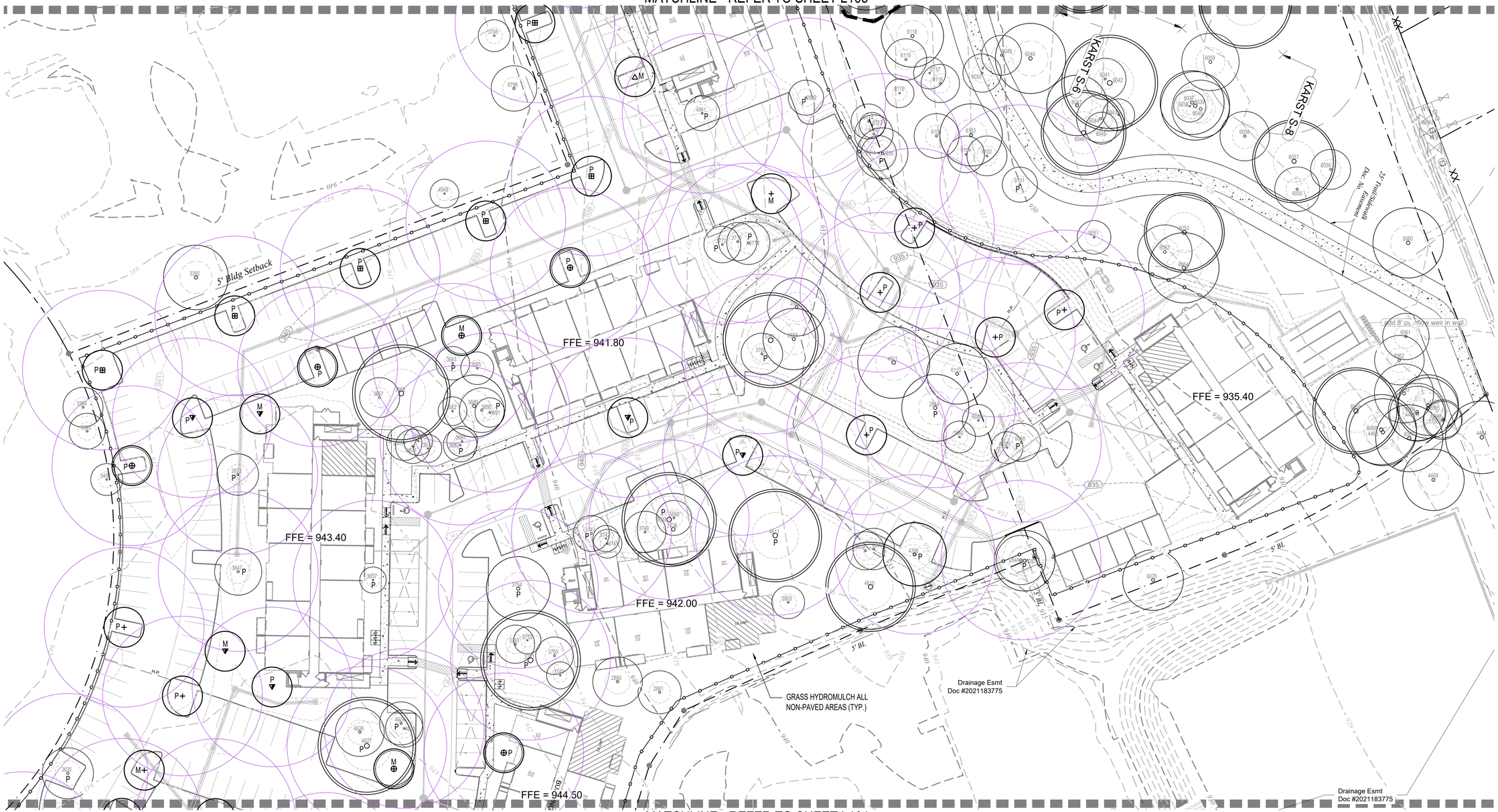
PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:
LANDSCAPE PLAN

SHEET NO.:
L101

SP-XXXX

MATCHLINE - REFER TO SHEET L103



MATCHLINE - REFER TO SHEET L101

TREE LEGEND:

CANOPY TREES

- CHINQUAPIN OAK, *QUERCUS MUHLENBERGII*
- MONTERREY OAK, *QUERCUS POLYMORPHA*
- SHUMARD RED OAK, *QUERCUS SHUMARDII*
- LIVE OAK, *QUERCUS VIRGINIANA*
- CEDAR ELM, *ULMUS CRASSIFOLIA*

CANOPY TREES

- TEXAS REDBUD, *CERCIS CANADENSIS VAR. TEXENSIS*
- TREE YAUPON HOLLY, *ILEX VOMITORIA*
- WAXMYRTLE, *MYRICA CERIFERA*

LEGEND:

- P REQUIRED PARKING LOT TREE
  4" TREE WITH EXCESS 2.5" TOWARDS MITIGATION
- M MITIGATION TREE
  PROPOSED NEW 4" CANOPY TREE

TREE LEGEND:

- EXISTING TREE TO BE PRESERVED
- 50' RADIUS FROM A TREE

NORTH

SCALE IN FEET (1"=30'-0")

0 15 30 60 90

SITE PLAN APPROVAL Sheet 48 of 59
FILE NO: SP-XXX APPLICATION DATE: XXX
APPROVED BY COMMISSION ON _____ UNDER SECTION 112 OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE
EXPIRATION DATE (25-5-81, LDC) _____ CASE MANAGER XXX
PROJECT EXPIRATION DATE (ORD. #970905-A) _____ DWPZ _____ DDZ _____
Director, Development Services Department
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Rev. 1 _____ Correction 1 _____
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BF COLLABORATIVE
LANDSCAPE ARCHITECTURE
BLU FISH COLLABORATIVE, INC.
P.O. BOX 40792, Austin, TX 78704
Phone: (512)388-4115

PROFESSIONAL SEAL:

REGISTERED LANDSCAPE ARCHITECT MICHAEL R. FISHBAUGH 2453 STATE OF TEXAS

DATE SEALED: 01/06/2023

PROJECT NAME:
LAKE CREEK AT AVERY RANCH

OWNER:
LAKELINE AVERY PARTNERS, LP

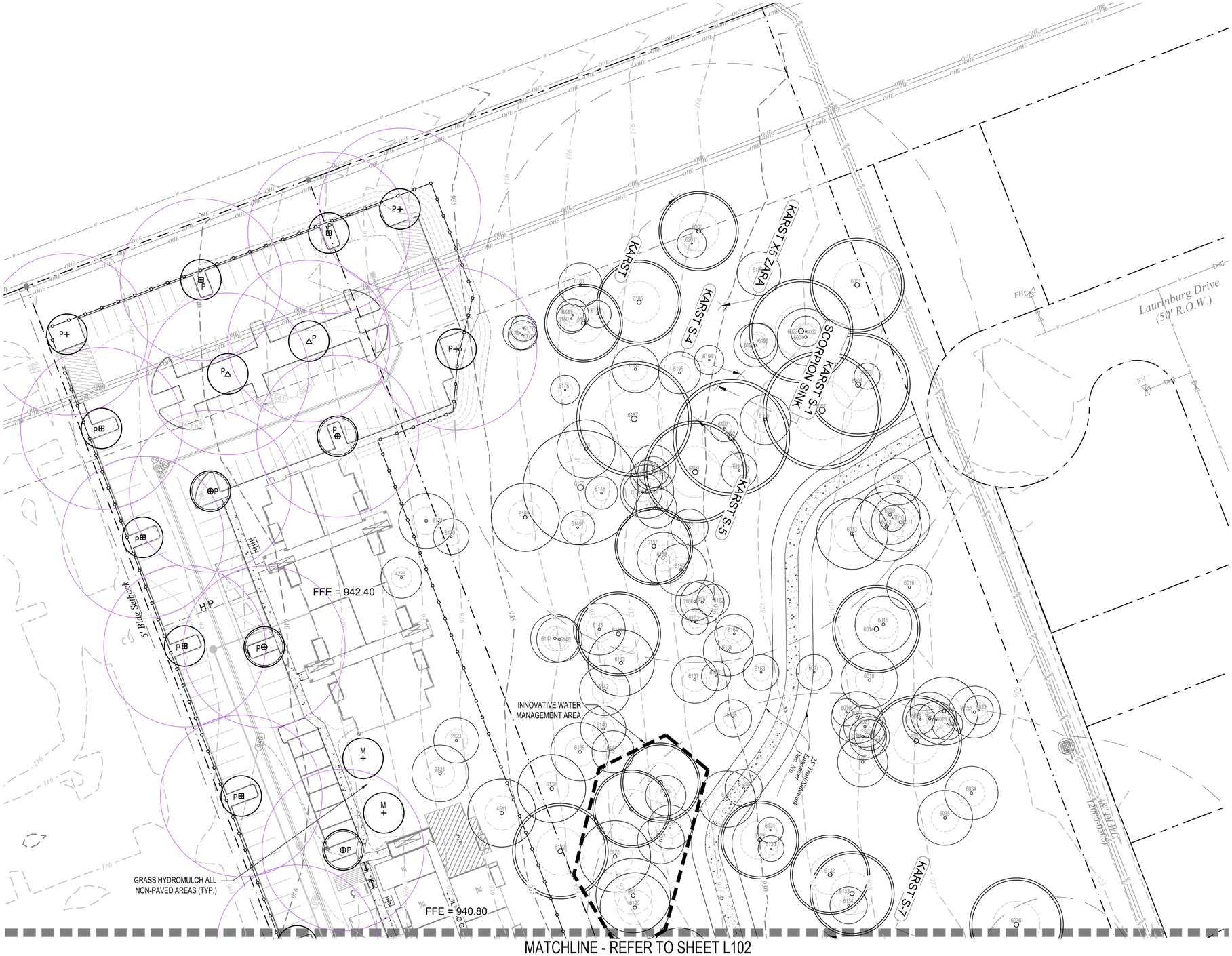
PROJECT LOCATION:
9205 NORTH LAKE CREEK PARKWAY AUSTIN, TEXAS 78729

REVISIONS:

PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:
LANDSCAPE PLAN

SHEET NO.:
L102
56 OF 67

SP-XXXX



TREE LEGEND:

CANOPY TREES

- △ CHINQUAPIN OAK, *QUERCUS MUHLENBERGII*
- ⊞ SHUMARD RED OAK, *QUERCUS SHUMARDII*
- \+ LIVE OAK, *QUERCUS VIRGINIANA*
- ⊕ CEDAR ELM, *ULMUS CRASSIFOLIA*

LEGEND:

- P REQUIRED PARKING LOT TREE
  4" TREE WITH EXCESS 2.5" TOWARDS MITIGATION
- M MITIGATION TREE
  PROPOSED NEW 4" CANOPY TREE

TREE LEGEND:

- EXISTING TREE TO BE PRESERVED
- 50' RADIUS FROM A TREE

NORTH

SCALE IN FEET (1"=30'-0")

0 15 30 60 90

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LANDSCAPE ARCHITECTURE
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PROFESSIONAL SEAL:

REGISTERED LANDSCAPE ARCHITECT
MICHAEL R. FISHBAUGH
2453
STATE OF TEXAS

DATE SEALED: 01/06/2023

PROJECT NAME:
LAKE CREEK AT AVERY RANCH

OWNER:
LAKELINE AVERY PARTNERS, LP

PROJECT LOCATION:
9205 NORTH LAKE CREEK PARKWAY
AUSTIN, TEXAS 78729

REVISIONS:

SITE PLAN APPROVAL Sheet 49 of 59
FILE NO: SP-XXX APPLICATION DATE: XXX
APPROVED BY COMMISSION ON _____ UNDER SECTION 112 OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE
EXPIRATION DATE (25-5-81, LDC) _____ CASE MANAGER XXX
PROJECT EXPIRATION DATE (ORD. #970905-A) _____ DWPZ ____ DDZ ____
Director, Development Services Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING MF-4
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PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:
LANDSCAPE PLAN

SHEET NO.:
L103
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SP-XXXX

LANDSCAPE LEGEND:

NOTES:
1. THE CONTRACTORS (GENERAL AND SUBCONTRACTORS) SHALL PROVIDE UNIT COSTS FOR ALL SOFTSCAPE AND HARDSCAPE MATERIAL SPECIFIED ON THE DRAWINGS AND SPECIFICATIONS. UNIT COSTS SHALL BE PROVIDED FOR MATERIALS AND INSTALLATION SEPARATELY. UNIT COSTS SHALL BE: 'EACH' FOR PLANT MATERIAL, 'SQUARE FOOT' OR 'SQUARE YARD' FOR PAVEMENTS, LINEAR FOOT FOR WALL AND FENCE, 'EACH' FOR SITE FURNISHINGS AND SITE AMENITIES, 'CUBIC YARD' OR 'CUBIC FOOT' FOR SOIL, MULCH AND OTHER BULK PRODUCTS AND 'EACH' OR 'LUMP SUM' FOR MISCELLANEOUS ITEMS. THE UNIT COST SHALL BE FORMATTED TO HAVE COLUMNS FOR; ITEMS, UNIT, UNIT COST, TOTAL ITEM COST.
2. PLANT QUANTITIES ARE PROVIDED FOR OWNER CONVENIENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND PROVIDING PLANT QUANTITIES SHOWN ON THE LANDSCAPE PLAN.
3. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND SECURING TREE AND PLANT MATERIAL IN ADVANCE. BECAUSE OF THE LONG LEAD TIME ON THIS INSTALLATION AND THE RECENT SHORTAGE ON TREE CROP, CONTRACTOR SHALL RESERVE OR CONTRACT GROW TREES WITH A GROWER.

SHADE TREES

SYM.	QTY.	COMMON NAME, *BOTANICAL NAME*	SPEC.
△	5	CHINQUAPIN OAK, *QUERCUS MUHLENBERGII*	100 GAL., 4" CAL., 14' HT. MINIMUM, CONTAINER GROWN
▽	11	MONTERREY OAK, *QUERCUS POLYMORPHA*	100 GAL., 4" CAL., 14' HT. MINIMUM, CONTAINER GROWN
⊞	15	SHUMARD RED OAK, *QUERCUS SHUMARDII*	100 GAL., 4" CAL., 16' HT. MINIMUM, CONTAINER GROWN
+	19	LIVE OAK, *QUERCUS VIRGINIANA*	100 GAL., 4" CAL., 16' HT. MINIMUM, CONTAINER GROWN
⊕	19	CEDAR ELM, *ULMUS CRASSIFOLIA*	100 GAL., 4" CAL., 14' HT. MINIMUM, CONTAINER GROWN

ORNAMENTAL TREES

SYM.	QTY.	COMMON NAME, *BOTANICAL NAME*	SPEC.
⁂	5	TEXAS REDBUD, *CERCIS CANADENSIS VAR. TEXENSIS*	30 GAL., 2" CAL., 6' HT. MINIMUM, CONTAINER GROWN, SINGLE
+	3	TREE YAUPON HOLLY (FEMALE), *ILEX VOMITORIA*	30 GAL., 2" CAL. TOTAL, 7' HT., CONTAINER GROWN, MULTI
⊕	8	WAX MYRTLE - TREE FORM, *MYRICA CERIFERA*	30 GAL., 2" CAL. TOTAL, 6' HT., CONTAINER GROWN, MULTI

SHRUBS

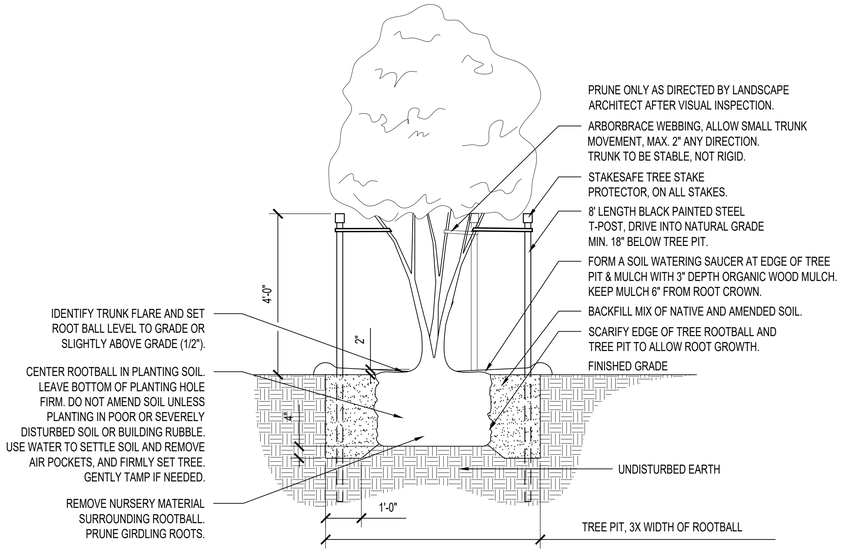
SYM.	QTY.	COMMON NAME, *BOTANICAL NAME*	CONTAINER	SPACING
(RY)	11	RED YUCCA, *HESPERALOE PARVIFLORA*	5 GALLON	3' O.C.
(YH)	13	DWARF YAUPON HOLLY, *ILEX VOMITORIA 'STOKES DWARF'*	5 GALLON	3' O.C.
(TS)	43	TEXAS SAGE, *LEUCOPHYLLUM FRUTESCENS* 'GREEN CLOUD'	5 GALLON	3' O.C.
(DM)	20	DWARF WAX MYRTLE, *MYRICA CERIFERA VAR. PUMILA*	5 GALLON	3' O.C.

TURF GRASS

SYM.	QTY.	COMMON NAME, *BOTANICAL NAME*	TYPE
	SEE PLAN	BERMUDAGRASS, *CYNODON DACTYLON*	HYDROMULCH

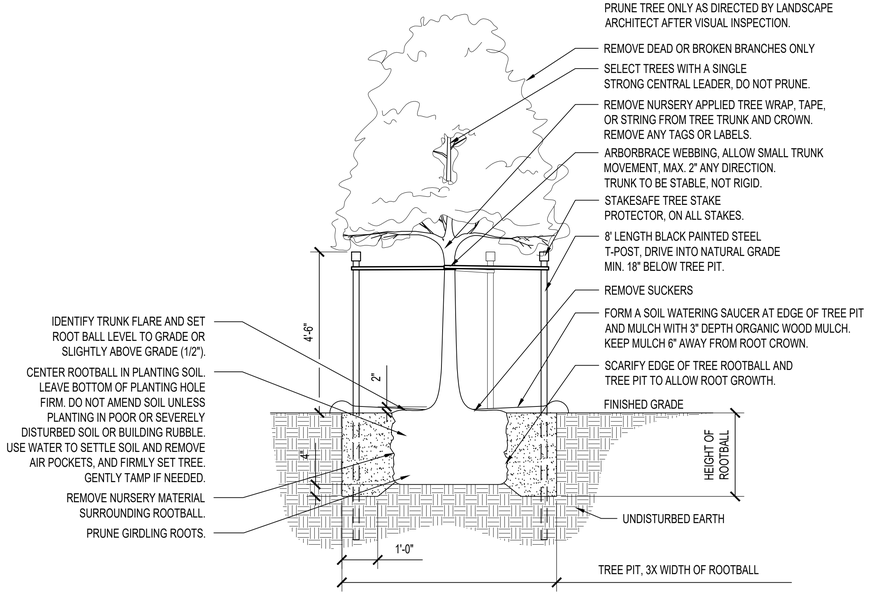
LANDSCAPE PLANTING NOTES:

1. ALL WEEDS WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE REMOVED AND TAKEN OFF SITE BY THE CONTRACTOR. ROOT SYSTEMS SHOULD BE ERADICATED.
2. FINISH GRADES OF PLANT BED AREAS (TOP OF MULCH), SOD (TOP OF SOD), HYDROMULCH (TOP OF TOPSOIL), SHALL BE FLUSH WITH ADJACENT PAVING.
3. TRENCHING AND SITE WORK PERFORMED WITHIN THE PROMINENT ROOT ZONES OF EXISTING TREES SHALL BE DONE BY HAND OR AIR SPADE UNLESS OTHERWISE SPECIFIED BY THE LANDSCAPE ARCHITECT. NO ROOTS OVER 1" DIA. SHALL BE CUT.
4. VERIFY PLANT COUNTS AND SQUARE FOOTAGES: IF QUANTITIES ON PLANT SCHEDULE DIFFER FROM GRAPHIC INDICATIONS, THEN GRAPHICS SHALL PREVAIL.
5. LANDSCAPE ARCHITECT TO REVIEW PLANT MATERIALS AT SOURCE OR BY PHOTOGRAPHS OF ACTUAL MATERIAL TO BE PLANTED PRIOR TO PURCHASE, DIGGING, OR SHIPPING OF PLANT MATERIALS.
6. PROVIDE MATCHING FORMS AND SIZES FOR PLANT MATERIALS WITHIN EACH SPECIES AND SIZE DESIGNATED ON THE DRAWINGS.
7. PLANT NAMES USED ON THE PLANS COMPLY WITH STANDARD HORTICULTURAL NOMENCLATURE, AND NAMES GENERALLY ACCEPTED IN THE NURSERY TRADE. THE LANDSCAPE ARCHITECT, OR OWNERS REPRESENTATIVE SHALL REVIEW ALL PLANTS AT THE TIME OF DELIVERY TO THE SITE. IF THE CONTRACTOR FAILS TO NOTIFY THE LANDSCAPE ARCHITECT, OR OWNERS REPRESENTATIVE FORTY-EIGHT (48) HOURS IN ADVANCE OF THE DELIVERY TIME, AND/OR DOES NOT CALL FOR OBSERVATION OF THE MATERIAL, THE CONTRACTOR SHALL BE LIABLE FOR ALL REMOVAL AND REPLACEMENT COSTS OF THE PLANT MATERIAL. THE PLANT MATERIAL WILL BE JUDGED AND ACCEPTED OR REJECTED ON BASIS OF THE FOLLOWING CRITERIA:
   a. PROVIDE PLANTS OF QUALITY, SIZE, GENUS, SPECIES, AND VARIETY AS INDICATED ON THE PLANS AND AS COORDINATED WITH THE LANDSCAPE ARCHITECT.
   b. PLANTS SHALL BE FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS, CONFORMING TO ANSI Z60.1
   c. TREE CANOPIES SHALL HAVE AN INTACT AND UNDAMAGED CENTRAL LEADER.
   d. TREES ARE REQUIRED TO STAND UPRIGHT WITH NO SUPPORT AND HAVE PROPER TRUNK CALIPER AND TAPER. TREES HAVING "BROOM STICK" TRUNKS WITH "POODLE" TOPS WILL NOT BE ACCEPTED.
   e. BARK SHALL BE DAMAGE FREE WITH ALL MINOR CUTS AND ABRASIONS SHOWING HEALING TISSUE. FOLIAGE, ROOTS AND STEMS OF ALL PLANTS SHALL BE OF VIGOROUS HEALTH AND NORMAL HABIT OF GROWTH FOR ITS SPECIES. ALL PLANTS SHALL BE FREE OF INSECT INFESTATIONS AND DISEASES. TOP GROWTH SHALL BE PROPORTIONATE TO BOTTOM GROWTH.
   f. SHRUBS TRANSPLANTED IN AN UP-SIZED CONTAINER LARGER THAN SPECIFIED SIZE, SHALL HAVE BEEN GROWN IN THAT CONTAINER FOR A SUFFICIENT LENGTH OF TIME TO DEVELOP NEW FIBROUS ROOTS, SO THAT ROOT MASS WILL FILL THE CONTAINER.
   g. AREAS DISTURBED BY CONSTRUCTION AND ARE NOT SCHEDULED TO BE IMPROVED SHALL BE REPAIRED TO THE STATE THAT IT WAS PRIOR TO THE START OF CONSTRUCTION.
8. ALIGN AND EQUALLY SPACE IN ALL DIRECTIONS PLANTS SO DESIGNATED PER THESE NOTES AND DRAWINGS.
9. EXACT LOCATIONS OF PLANT MATERIALS TO BE APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD PRIOR TO INSTALLATION. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO DIRECT THE ADJUSTMENT OF PLANTS TO EXACT LOCATION IN FIELD.
10. IF PLANT MATERIAL IS BALL AND BURLAP, CUT AND REMOVE BURLAP FROM TOP 1/3 OF BALL. CONTAINER GROWN STOCK WILL HAVE THE OUTSIDE EDGE OF THE ROOTBALL LOOSENED BY HAND AFTER REMOVING FROM THE CONTAINER.
11. PRUNE NEWLY PLANTED TREES ONLY AS DIRECTED BY LANDSCAPE ARCHITECT.
12. PROVIDE SPECIFIED EDGING AS DIVIDER BETWEEN PLANTING BEDS AND LAWN AREAS.
13. PLANT SPACING LISTED IN PLANT SCHEDULE IS A MAXIMUM TYPICAL SPACING. IF PLANTS ARE SHOWN CLOSER ON THE PLAN THEY SHOULD BE INSTALLED PER THE PLAN.
14. ALL PROPOSED TURF GRASS AREAS SHALL HAVE 6" DEPTH OF CLEAN (NO WEEDS, ROOTS, DEBRIS, VEGETATION) TOPSOIL, UNLESS A LESSOR DEPTH IS REQUIRED BY THE LOCAL JURISDICTION. TOP SOIL SHOULD BE ATTAINED FROM A REPUTABLE SOURCE LOCATED WITHIN 50 MILES OF THE PROJECT SITE.
15. ALL PLANTING BED SOIL MIX SHALL BE AMENDED TOPSOIL. CONTRACTOR TO PROVIDE A SOILS TEST RESULT TO THE LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL OF TOPSOIL TO BE USED, AND THE APPROPRIATE AMENDMENTS TO BE ADDED TO THE TOPSOIL TO PROVIDE OPTIMUM GROWING CONDITIONS. ALL TOPSOIL SHALL BE FREE OF ROCKS LARGER THAN $\frac{3}{4}$" DIAMETER, DELETERIOUS MATERIAL AND ANY DEBRIS.



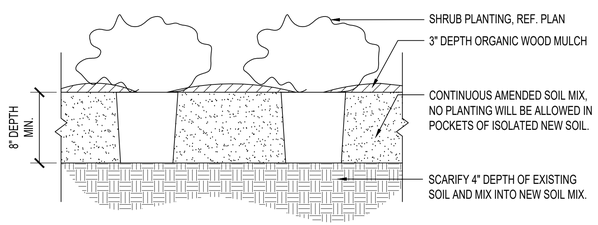
3 MULTI-TRUNK TREE PLANTING

SCALE: 1/2" = 1'-0"



2 TREE PLANTING

Scale: 1/2" = 1'-0"



NOTE:
CONTRACTOR TO REMOVE DIRT, DEBRIS, & FILL AS NECESSARY TO ALLOW FOR AMENDED SOIL MIX. LANDSCAPE CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND EARTHWORK CONTRACTOR TO ENSURE THAT THE PROPER GRADES AND MATERIALS ARE PROVIDED. IF MATERIAL IS REQUIRED TO BE BROUGHT IN AS FILL OR REMOVED FROM SITE AS CUT, THEN THE CONTRACTORS SHALL BE RESPONSIBLE FOR COORDINATING THAT WORK.

1 SHRUB PLANTING

Scale: 1/2" = 1'-0"

BF COLLABORATIVE
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Phone: (512)388-4115

PROFESSIONAL SEAL:

REGISTERED LANDSCAPE ARCHITECT MICHAEL R. FISHBAUGH 2453 STATE OF TEXAS

DATE SEALED: 01/06/2023

PROJECT NAME:
LAKE CREEK AT AVERY RANCH

OWNER:
LAKELINE AVERY PARTNERS, LP

PROJECT LOCATION:
9205 NORTH LAKE CREEK PARKWAY AUSTIN, TEXAS 78729

REVISIONS:

SITE PLAN APPROVAL Sheet 50 of 59
FILE NO: SP-XXX APPLICATION DATE: XXX
APPROVED BY COMMISSION ON _____ UNDER SECTION 112 OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE
EXPIRATION DATE (25-5-81, LDC) _____ CASE MANAGER XXX
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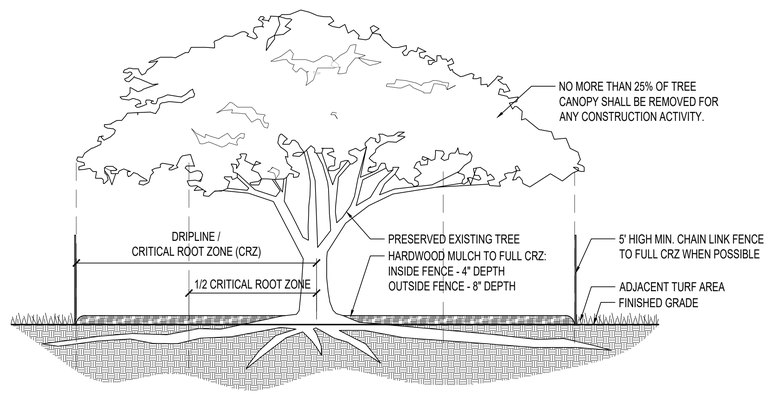
PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:
LANDSCAPE LEGEND & DETAILS

SHEET NO.:
L104
58 OF 67
SP-XXXX

TREE PROTECTION GENERAL NOTES:

1. ALL TREE WORK SHALL BE PERFORMED BY OR UNDER THE SUPERVISION OF A CERTIFIED ARBORIST. SUBMIT ARBORIST QUALIFICATIONS AS PART OF THE SUBMITTALS. ARBORIST WORK PERFORMED INCLUDE TREE HEALTH CARE, BRANCH OR ROOT PRUNING, FERTILIZING, MULCHING, WATERING, DRAINAGE ASSESSMENT, & CONTINUOUS EVALUATION OF GENERAL TREE HEALTH.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES ON PROJECT SITE PRIOR TO WORK. ANY DAMAGES TO UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT OWN COST. CALL TEXAS 811 FOR UTILITY LOCATES WHERE NECESSARY.
3. CONTRACTOR SHALL COORDINATE ALL TREE WORK ACTIVITIES WITH OTHER TRADES TO PREVENT ANY WORK CONFLICTS.
4. TREE PROTECTION FENCING
   a. ALL INDIVIDUAL OR GROUPS OF TREES, SHRUBS, AND NATURAL AREAS SHOWN TO BE PROTECTED ON THE DRAWINGS OR IDENTIFIED IN THE FIELD AS TO BE PROTECTED BY THE CITY, SHALL BE PROTECTED DURING CONSTRUCTION WITH TREE PROTECTION FENCING AS INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE CITY.
   b. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE PREPARATION WORK (CLEARING, DEMOLITION, GRUBBING, EXCAVATION, OR GRADING, ETC.), AND SHALL BE MAINTAINED IN FUNCTIONING CONDITION THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
   c. ACCEPTABLE FENCE MATERIAL SHALL BE A 5 FOOT HIGH MIN. CHAIN LINK FENCE.
   d. APPLY A 6" DEPTH LAYER OF MULCH UNDER THE TREE WITHIN THE TREE PROTECTION FENCE IF THERE IS BARE SOIL OR WHEN THERE IS ANY ENCROACHMENT IN THE CRITICAL ROOT ZONE. KEEP MULCH AWAY FROM THE TREE TRUNK & ROOT FLARES.
   e. ENSURE THAT TREE FENCE LOCATIONS IN CLOSE PROXIMITY TO INTERSECTING STREETS OR DRIVES SHALL NOT IMPEDE MOTORIST SIGHT LINES FOR SAFETY.
5. TREE PROTECTION FENCES SHALL BE PLACED AT THE TREE DRIP LINE (OUTERMOST LIMITS OF THE TREE CROWN) OR TO THE EDGE OF THE CRITICAL ROOT ZONE (CRZ) AREA, WHICHEVER IS GREATER. FENCING MUST ALSO BE AT LEAST A DISTANCE OF 5 FT FROM THE TREE TRUNK. CRZ IS DEFINED AS THE ROOT ZONE AREA MEASURED WITH A RADIUS OUT FROM THE TRUNK AT A RATE OF 12 INCHES FOR EACH DIAMETER INCH OF TRUNK (TRUNK DIAMETER MEASURED AT 4 1/2 FEET ABOVE GRADE). FOR EXAMPLE, A 10 INCH DIAMETER TREE WILL HAVE A 10 FT RADIUS CRZ. FENCING CAN ALSO BE INSTALLED AROUND A GROUP OF TREES INSTEAD OF INDIVIDUALLY.
   a. TREE ARMOR:
      WHEN FENCING ENCROACHES INTO THE 1/2 CRZ, INSTALL TREE ARMOR IN ADDITION TO TREE FENCING.
   b. TREE ARMOR SHALL BE 2X4X6 LUMBER STRAPPED SECURELY TO TREE WITH STEEL BANDS. STEEL BANDS MUST BE INSPECTED EVERY 6 MONTHS & LOOSENED IF THEY HAVE BECOME TIGHT.
6. REMOVE ALL TREES IN A MANNER THAT WILL NOT DAMAGE ADJACENT TREES OR ANY STRUCTURES, IF PRESENT.
7. LIMITATIONS TO CONSTRUCTION ACTIVITIES IN THE CRITICAL ROOT ZONE (CRZ)
   a. LIMIT CONSTRUCTION DISTURBANCE IN THE ENTIRE CRZ AREA WHENEVER POSSIBLE.
   b. NO CUT OR FILL IS PERMITTED WITHIN THE 1/4 CRITICAL ROOT ZONE.
   c. CUT OR FILL IS LIMITED TO 4 INCHES FROM THE 1/2 CRITICAL ROOT ZONE TO TO THE 1/4 CRITICAL ROOT ZONE.
   d. NO DISTURBANCE TO NATURAL GRADE SUCH AS GRADING, TRENCHING, OR EXCAVATION CAN OCCUR CLOSER TO THE TREE THAN ONE-HALF THE RADIUS OF THE CRZ OR WITHIN 5 FEET OF THE TRUNK, WHICHEVER IS GREATER.
   e. LIMIT SOIL COMPACTION IN THE CRITICAL ROOT ZONE AREA. VEHICULAR OR FOOT TRAFFIC, STORAGE OF EQUIPMENT OR MATERIALS, AND OPERATING EQUIPMENT ARE NOT PERMITTED IN THE CRZ.
   f. SITE SOILS OR SPOILS SHALL NOT BE DISPOSED OF IN THE CRZ AREA.
   g. PREVENT DAMAGE TO EXPOSED ROOTS, TRUNKS, OR LIMBS BY MECHANICAL EQUIPMENT.
   h. PREVENT CONTAMINATION AND OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CONCRETE TRUCK CLEANING, FIRES, AND POURING OF SOLVENTS AND OTHER LIQUIDS IN THE CRZ.
   i. WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, USE A PLASTIC VAPOR BARRIER BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE SOIL. NO CONCRETE CLEAN-OUT AREAS SHALL BE CONSTRUCTED SO THAT THE MATERIAL WILL BE IN OR MIGRATE TO THE CRITICAL ROOT ZONE.
   j. NO WIRES, NAILS, OR OTHER MATERIALS MAY BE ATTACHED TO PROTECTED TREES.
   k. ALL EXCAVATION OR TRENCHING IN THE 1/2 CRZ SHALL BE DONE BY HAND TOOLS, DIRECTIONAL BORING, AIR EXCAVATION TOOL, OR WITH OTHER LOW IMPACT EQUIPMENT TO MINIMIZE DAMAGE TO TREE ROOTS.
   l. IF TREE ROOTS ARE EXPOSED FOR A PROLONGED PERIOD OF TIME, THEN ROOTS SHALL BE COVERED WITH SOIL, MULCH, OR WET BURLAP AND KEPT MOIST AT ALL TIMES TO PREVENT DRYING.
   m. WHEN CONSTRUCTION ACTIVITIES IN THE CRZ ARE UNAVOIDABLE, INSTALLATION OF ADDITIONAL GROUND PROTECTION MAY BE REQUIRED. GROUND PROTECTION SHALL CONSIST OF:
      LIGHT FOOT TRAFFIC - INSTALLING A LAYER OF FILTER FABRIC UNDER 6 INCHES OF MULCH
      LIGHT VEHICLE TRAFFIC - INSTALLING GEOGRID UNDER 8 INCHES OF MULCH
      HEAVY VEHICLE TRAFFIC - INSTALLING A LAYER OF GEOGRID UNDER 8 TO 12 INCHES OF MULCH WITH PLACEMENT OF GROUND PROTECTION MATS OVER MULCH.
   n. FOR PERIMETER AND PRIVACY FENCES PROPOSED ON SITE, FENCE POSTS SHALL NOT BE LOCATED INSIDE THE 1/4 CRZ OF ANY TREE TO REMAIN. IF POSTS MUST BE LOCATED INSIDE THE 1/2 CRZ, THEN THE ARBORIST WILL BE REQUIRED TO AIR-EXCAVATE THE POST LOCATIONS TO AVOID SEVERING ROOTS 1.5 INCH DIAMETER AND GREATER. THE POSTS MUST BE ABLE TO SHIFT OUT IN THE FIELD IF ANY ROOTS OF THIS SIZE ARE ENCOUNTERED.
8. TREE OR ROOT PRUNING AND REPAIR OF TREE DAMAGE
   a. ALL TREE OR ROOT PRUNING TO PROVIDE CLEARANCE FOR SITE WORK AND/OR TO REMOVE HAZARDS, SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF A CERTIFIED ARBORIST AND SHALL FOLLOW STANDARDS IDENTIFIED IN ANSI A300 (PART 1), "PRUNING".
   b. DURING SITE WORK ACTIVITIES SUCH AS EXCAVATION OR GRADING WITHIN THE CRZ, AVOID CUTTING TREE ROOTS GREATER THAN 1" IN DIAMETER. CONTACT THE LANDSCAPE ARCHITECT FOR DIRECTION WHEN NECESSARY. CUT TREE ROOTS GREATER THAN 1" IN DIAMETER CLEANLY. NO TORN OR JAGGED ROOTS ARE ALLOWED.
   c. ALL CONSTRUCTION ACTIVITIES INSIDE THE 1/2 AND 1/4 CRZ OF EXISTING TREES MUST BE DONE WITH HAND TOOLS TO AVOID SEVERING ROOTS 1.5 INCHES IN DIAMETER AND LARGER.
   d. TREES SHALL BE LIMITED TO A MAXIMUM REMOVAL OF 25% OF THE VIABLE PORTION OF THE CROWN.
   e. IF TREE DAMAGE COMPROMISES A TREE'S STRUCTURAL INTEGRITY, THEN THE AREA SHALL BE ADEQUATELY SECURED UNTIL A CERTIFIED ARBORIST MAKES AN ASSESSMENT OF THE TREE AND CORRECTIVE ACTIONS ARE COMPLETED WITH APPROVAL FROM THE CITY.
   f. ALL TREE DAMAGES RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
   g. TREES LOCATED EITHER ON-SITE OR OFF-SITE WHICH ARE REMOVED OR LOST BY THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE LANDSCAPE ARCHITECT'S & CITY'S SATISFACTION.
9. WATERING OF PROTECTED TREES
   a. ADEQUATE WATER SHALL BE PROVIDED TO ALL TREES TO BE PROTECTED DURING THE ENTIRE CONSTRUCTION PERIOD. PERIODICALLY TEST THE SOIL MOISTURE CONTENT WITHIN THE ROOT ZONE. ADEQUATE MOISTURE IS DEFINED AS MAINTAINING SOIL MOISTURE ABOVE THE PERMANENT WILTING POINT TO A DEPTH OF 8 INCHES OR GREATER.
   b. PERIODICALLY WASH TREE FOLIAGE TO REDUCE DUST OR DEBRIS ACCUMULATION ON TREES.
10. FERTILIZER APPLICATION
    a. FERTILIZER SHALL BE APPLIED ONLY WHEN DIRECTED BY THE CONSULTING ARBORIST OR CITY ARBORIST.
11. OAK WILT PREVENTION
    a. AVOID TRIMMING, PRUNING, OR WOUNDING LIVE OAKS AND RED OAKS (SPANISH, SHUMARD, TEXAS RED, AND BLACKJACK OAKS) FROM FEBRUARY THROUGH JUNE.
    b. AT ALL TIMES AND IRRESPECTIVE OF LIMB SIZE, ALL CUTS AND WOUNDS TO OAK TREES SHALL BE DRESSED WITHIN 20 MINUTES USING A NON-PHYTOTOXIC TREE WOUND DRESSING. STUMP CUTS AND DAMAGED ROOTS (BOTH ABOVE AND BELOW GROUND) SHALL ALSO BE DRESSED.
    c. DISINFECTION OF PRUNING TOOLS, SAWS, AND RELATED EQUIPMENT IS MANDATORY DURING THE TRIMMING OR PRUNING OF OAK TREES. DISINFECTION OF TREE REMOVAL AND TRIMMING EQUIPMENT SHALL OCCUR BEFORE WORK BEGINS IN A PROJECT AREA, BETWEEN WORK IN INDIVIDUAL OAK TREES, AND AGAIN PRIOR TO LEAVING A PROJECT AREA. ACCEPTABLE DISINFECTANTS INCLUDE EITHER AEROSOL DISINFECTANT OR A 10 PERCENT BLEACH-WATER SOLUTION.
12. FINAL CLEANUP
    a. ALL TREE PRESERVATION AND PROTECTION MEASURES SHALL BE REMOVED WHEN CONSTRUCTION IS COMPLETED AND ANY MULCH APPLICATIONS SHALL BE REMOVED OR REDUCED TO NO MORE THAN 3 INCHES IN DEPTH.

NOTES:
1. PLACE A 5 FT. HIGH CHAIN LINK TREE PROTECTION FENCE UP TO THE FULL CRITICAL ROOT ZONE (CRZ) OF THE TREE WHEN POSSIBLE.
2. ANY PORTION OF THE CRZ THAT IS NOT PROTECTED BY THE TREE FENCE SHALL BE MULCHED WITH AN 8 INCH LAYER OF HARDWOOD MULCH.
3. IF FENCING ENCROACHES INTO THE 1/2 CRZ, THEN TREES SHALL HAVE TREE ARMOR. STRAP 2" X 4" X 6' PLANKS SECURELY AROUND THE TREE TRUNK.



1 MULCH AT EXISTING TREES

Scale: 1/2" = 1'-0"

BF COLLABORATIVE
LANDSCAPE ARCHITECTURE
BLU FISH COLLABORATIVE, INC.
P.O. BOX 40792, Austin, TX 78704
Phone: (512)388-4115

PROFESSIONAL SEAL:

REGISTERED LANDSCAPE ARCHITECT MICHAEL R. FISHBAUGH 2453 STATE OF TEXAS

DATE SEALED: 01/06/2023

PROJECT NAME:
LAKE CREEK AT AVERY RANCH

OWNER:
LAKELINE AVERY PARTNERS, LP

PROJECT LOCATION:
9205 NORTH LAKE CREEK PARKWAY
AUSTIN, TEXAS
78729

REVISIONS:

SITE PLAN APPROVAL Sheet 51 of 59
FILE NO: SP-XXX APPLICATION DATE: XXX
APPROVED BY COMMISSION ON _____ UNDER SECTION 112 OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE
EXPIRATION DATE (25-5-81, LDC) _____ CASE MANAGER XXX
PROJECT EXPIRATION DATE (ORD. #970905-A) _____ DWPZ ____ DDZ ____
Director, Development Services Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING MF-4
Rev. 1 _____ Correction 1 _____
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PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:
TREE PROTECTION & DETAILS

SHEET NO.:
L105
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SP-XXXX

SITE DEVELOPMENT PERMIT
LANDSCAPE NOTES:

1. ALL LANDSCAPED AREAS TO BE PROTECTED BY 6 INCH CURBS, WHEEL-STOPS OR OTHER APPROVED BARRIERS AS PER ECM 2.4.7(A).
2. THE OWNER WILL CONTINUOUSLY MAINTAIN THE REQUIRED LANDSCAPING IN ACCORDANCE WITH LDC 25-2-984.
3. EXISTING TREES TO BE SAVED SHALL BE PROTECTED BY FENCING BEFORE CONSTRUCTION BEGINS. NO EQUIPMENT OR MATERIALS SHALL BE STORED OR OPERATED WITHIN THE FENCED-IN AREAS. FENCES SHALL BE AT THE DRIP LINE AND COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES. NO BURNING OF DEBRIS, CLEANING FLUIDS, CONCRETE SPILLS, ETC. WILL BE ALLOWED WITHIN THESE AREAS.
4. BUFFERING OF THE STREET YARD WILL BE ACCOMPLISHED THROUGH THE COMBINATION OF TREES AND SHRUBS.
5. GRADE CHANGES THAT DO NOT APPEAR ON THE SITE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT BY THE GENERAL CONTRACTOR PRIOR TO CONSTRUCTION.
6. TRENCHING SHALL NOT OCCUR WITHIN THE FENCED DRIP LINE AREAS OF EXISTING TREES.
7. SHRUB MATERIAL NOT TO EXCEED 36" O.C. UNLESS OTHERWISE SPECIFIED. DURING THE TIME OF MARCH 15-OCTOBER 15 INSTALLATION OF HYDROMULCH SHALL BE COMMON BERMUDA. FOR OCTOBER 16 -MARCH 14 INSTALLATION OF HYDROMULCH SHALL BE ANNUAL OR PERENNIAL RYE WITH A SPRING APPLICATION OF COMMON BERMUDA.
8. ALL LAWN AREAS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE RE-VEGETATED WITH BERMUDA HYDROMULCH, UNLESS NATIVE RESTORATION MIX IS SPECIFIED.
9. NOT MORE THAN 50% OF THE TREES AND 50% OF SHRUBS PROPOSED WILL BE OF THE SAME SPECIES.
10. AN AUTOMATIC IRRIGATION SYSTEM SHALL BE INSTALLED. SEE IRRIGATION NOTES IN THESE DRAWINGS FOR REQUIREMENT.
11. IF ESTABLISHING VEGETATION DURING ANY STAGE OF DROUGHT, SECTION 6-4-30 MAY REQUIRE A VARIANCE. CONTACT AUSTIN WATER CONSERVATION STAFF AT (512-974-2199 OR AT WATERUSECOMPVAR@AUSTINTEXAS.GOV.

SITE DEVELOPMENT PERMIT
IRRIGATION NOTES:

AUTOMATIC IRRIGATION SYSTEMS SHALL COMPLY WITH TCEQ CHAPTER 344, AS WELL AS THE FOLLOWING REQUIREMENTS:

1. THESE REQUIREMENTS SHALL BE NOTED ON THE SITE DEVELOPMENT PERMIT AND SHALL BE IMPLEMENTED AS PART OF THE LANDSCAPE INSPECTION:
   a. THE SYSTEM MUST PROVIDE A MOISTURE LEVEL ADEQUATE TO SUSTAIN GROWTH OF THE PLANT MATERIALS;
   b. THE SYSTEM DOES NOT INCLUDE SPRAY IRRIGATION ON AREAS LESS THAN TEN (10) FEET WIDE (SUCH AS MEDIANS, BUFFER STRIPS, AND PARKING LOT ISLANDS);
   c. CIRCUIT REMOTE CONTROL VALVES HAVE ADJUSTABLE FLOW CONTROLS;
   d. SERVICEABLE IN-HEAD CHECK VALVES ARE ADJACENT TO PAVED AREAS WHERE ELEVATION DIFFERENCES MAY CAUSE LOW HEAD DRAINAGE;
   e. A MASTER VALVE INSTALLED ON THE DISCHARGE SIDE OF THE BACKFLOW PREVENTER;
   f. ABOVE-GROUND IRRIGATION EMISSION DEVICES ARE SET BACK AT LEAST SIX (6) INCHES FROM IMPERVIOUS SURFACES;
   g. AN AUTOMATIC RAIN SHUT-OFF DEVICE SHUTS OFF THE IRRIGATION SYSTEM AUTOMATICALLY AFTER MORE THAN A ONE-HALF INCH (1/2") RAINFALL; AND
   h. NEWLY PLANTED TREES SHALL HAVE PERMANENT IRRIGATION CONSISTING OF DRIP BUBBLERS.
2. THE IRRIGATION INSTALLER SHALL DEVELOP AND PROVIDE AN AS-BUILT DESIGN PLAN TO THE CITY AT THE TIME THE FINAL IRRIGATION INSPECTION IS PERFORMED;
   a. UNLESS FISCAL SECURITY IS PROVIDED TO THE CITY FOR THE INSTALLATION OF THE SYSTEM, IT MUST BE OPERATIONAL AT THE TIME OF THE FINAL LANDSCAPE INSPECTION.
3. THE IRRIGATION INSTALLER SHALL ALSO PROVIDE EXHIBITS TO BE PERMANENTLY INSTALLED INSIDE OR ATTACHED TO THE IRRIGATION CONTROLLER, INCLUDING;
   a. A LAMINATED COPY OF THE WATER BUDGET CONTAINING ZONE NUMBERS, PRECIPITATION RATE, GALLONS PER MINUTE AND THE LOCATION OF THE ISOLATION VALVE; AND AN AS BUILT PLAN.
4. THE IRRIGATION INSTALLER SHALL PROVIDE A REPORT TO THE CITY ON A FORM PROVIDED BY AUSTIN WATER CERTIFYING COMPLIANCE WITH SUBSECTION 1. WHEN THE FINAL PLUMBING INSPECTION IS PERFORMED BY THE CITY.

CITY OF AUSTIN
LANDSCAPE CALCULATIONS:

STREET YARD AREA:

	REQUIRED	PROVIDED
TOTAL SITE AREA	N/A	711,496.28 SF (16.33 ACRES)
TOTAL STREET-YARD AREA	N/A	17,248 SF
STREET-YARD / LANDSCAPE (20%)	3,449.6 SF	12,027.38 SF (69.73%)

STREET YARD TREES:

REQUIRED - 4 TREES

EXISTING TREE CREDIT - 2 TREES X 2 = 4 TREES
TREE 3824 - 9" LIVE OAK
TREE 4143 - 12" CEDAR ELM

TREES PROVIDED - 4 TREES

LANDSCAPE IN PARKING LOTS:

90 SF / 12 PARKING SPACES LOCATED IN STREETYARD

REQUIRED	PROVIDED
(16 / 12) X 90 = 120 SF	506 SF

60 SF / 12 PARKING SPACES LOCATED IN NON SREETYARD

REQUIRED	PROVIDED
(554 / 12) X 60 = 2,770 SF	21,441 SF

LANDSCAPE ISLAND MUST BE WITHIN 50' OF EACH SPACE, 8' MIN. INSIDE WIDTH

1 TREE MUST BE WITHIN 50' OF EACH SPACE

51 NEW TREES & 32 EXISTING TREES

BUFFERING POINTS:

371 REQUIRED POINTS

	SIZE	QTY	PREFERRED	PROVIDED
LARGE TREES	4" CAL.	2	9 PTS.	18 PTS.
SMALL TREES	2" CAL.	16	6 PTS.	96 PTS.
MEDIUM SHRUBS	5 GAL.	87	3 PTS.	261 PTS.

INNOVATIVE WATER MANAGEMENT:

	REQUIRED	
LANDSCAPE AREA (SECTION 2.4.9.1)	3,450 + 2,770 = 6,220 SF	
50 PERCENT OF LANDSCAPE AREA	6,220 X 0.5 = 3,110 SF	
	REQUIRED	PROVIDED
UNDISTURBED EXISTING TREES	3,110 SF	6,994 SF

COA REQUIRED TREE CHART

	REQUIRED TREES	REQUIRED TREE INCHES*
STREET YARD	0 (1.5" TREES)	0
BUFFER	2 (4" TREES)	2 X 4 = 8
BUFFER	16 (2" TREES)	16 X 2 = 32
PARKING LOT	83 (1.5" TREES)	83 X 1.5 = 124.5
TOTAL INCHES REQUIRED (A)		164.5 TREE INCHES

* Every required tree must be at least 1.5 caliper inches.

PROPOSED SITE TREE CHART

	PROPOSED TREE INCHES
CANOPY TREES - 4"	69 X 4 = 276
SMALL TREES - 2"	16 X 2 = 32
TOTAL INCHES PROPOSED (B)	308 INCHES

PROPOSED MITIGATION CHART

TOTAL MITIGATION INCHES REQUIRED	3,559 INCHES
COA REQUIRED TREE INCHES (A)	164.5
PROPOSED TREE INCHES (B)	308 INCHES
TOTAL MITIGATION INCHES PROPOSED (B - A)	143.5 INCHES

CITY OF AUSTIN
TREE PRESERVATION CALCULATIONS:

EXISTING TREES	
TREE CATEGORY	**INCHES**
ECM APPENDIX F - 24" AND GREATER - HERITAGE	1261
ECM APPENDIX F - 24" AND GREATER - NON-HERITAGE	175
ECM APPENDIX F - 19" TO 23.9"	1685.75
ECM APPENDIX F - 8" TO 18.9"	7586.055
NON-ECM APPENDIX F - 19" AND GREATER	0
NON-ECM APPENDIX F - 8" TO 18.9"	0
TOTAL INCHES	**10,707.81**

REMOVED TREES	
TREE CATEGORY	**INCHES**
ECM APPENDIX F - 24" AND GREATER - HERITAGE	143
ECM APPENDIX F - 24" AND GREATER - NON-HERITAGE	115
ECM APPENDIX F - 19" TO 23.9"	812.25
ECM APPENDIX F - 8" TO 18.9"	4939.78
NON-ECM APPENDIX F - 19" AND GREATER	0
NON-ECM APPENDIX F - 8" TO 18.9"	0
TOTAL INCHES	**6,010.03**

REQUIRED MITIGATION INCHES	
TREE CATEGORY	**INCHES**
ECM APPENDIX F - 24" AND GREATER - HERITAGE (300%)	429
ECM APPENDIX F - 24" AND GREATER - NON-HERITAGE (100%)	73.5
ECM APPENDIX F - 19" TO 23.9" (100%)	730
ECM APPENDIX F - 8" TO 18.9" (50%)	2469.89
NON-ECM APPENDIX F - 19" AND GREATER (50%)	0
NON-ECM APPENDIX F - 8" TO 18.9" (25%)	0
TOTAL INCHES	**3,702.39**

URBAN FORESTRY INFORMATION	
TREE CATEGORY	**INCHES**
TOTAL ECM APPENDIX F TREE INCHES SURVEYED	10707.805
TOTAL ECM APPENDIX F TREE INCHES REMOVED	6010.03
TOTAL INVASIVE TREE INCHES REMOVED	0
TOTAL MITIGATION INCHES REQUIRED	**3,702.39**
TOTAL MITIGATION INCHES PLANTED ON SITE	**143.5**
MITIGATION DEFICIT	**3,558.89**
AMOUNT TO BE PAID INTO TREE FUND (AT $200 PER INCH)	**$711,778.00**

BF COLLABORATIVE
LANDSCAPE ARCHITECTURE
BLU FISH COLLABORATIVE, INC.
P.O. BOX 40792, Austin, TX 78704
Phone: (512)388-4115

PROFESSIONAL SEAL:

REGISTERED LANDSCAPE ARCHITECT
MICHAEL R. FISHBAUGH
2453
STATE OF TEXAS

DATE SEALED: 01/06/2023

PROJECT NAME:
LAKE CREEK AT AVERY RANCH

OWNER:
LAKELINE AVERY PARTNERS, LP

PROJECT LOCATION:
9205 NORTH LAKE CREEK PARKWAY
AUSTIN, TEXAS
78729

REVISIONS:

SITE PLAN APPROVAL Sheet 52 of 59
FILE NO: SP-XXX APPLICATION DATE: XXX
APPROVED BY COMMISSION ON _____ UNDER SECTION 112 OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE
EXPIRATION DATE (25-5-81, LDC) _____ CASE MANAGER XXX
PROJECT EXPIRATION DATE (ORD. #970905-A) _____ DWPZ ____ DDZ ____
Director, Development Services Department
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Rev. 1 _____ Correction 1 _____
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PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:
CITY CALCULATIONS

SHEET NO.:
L106
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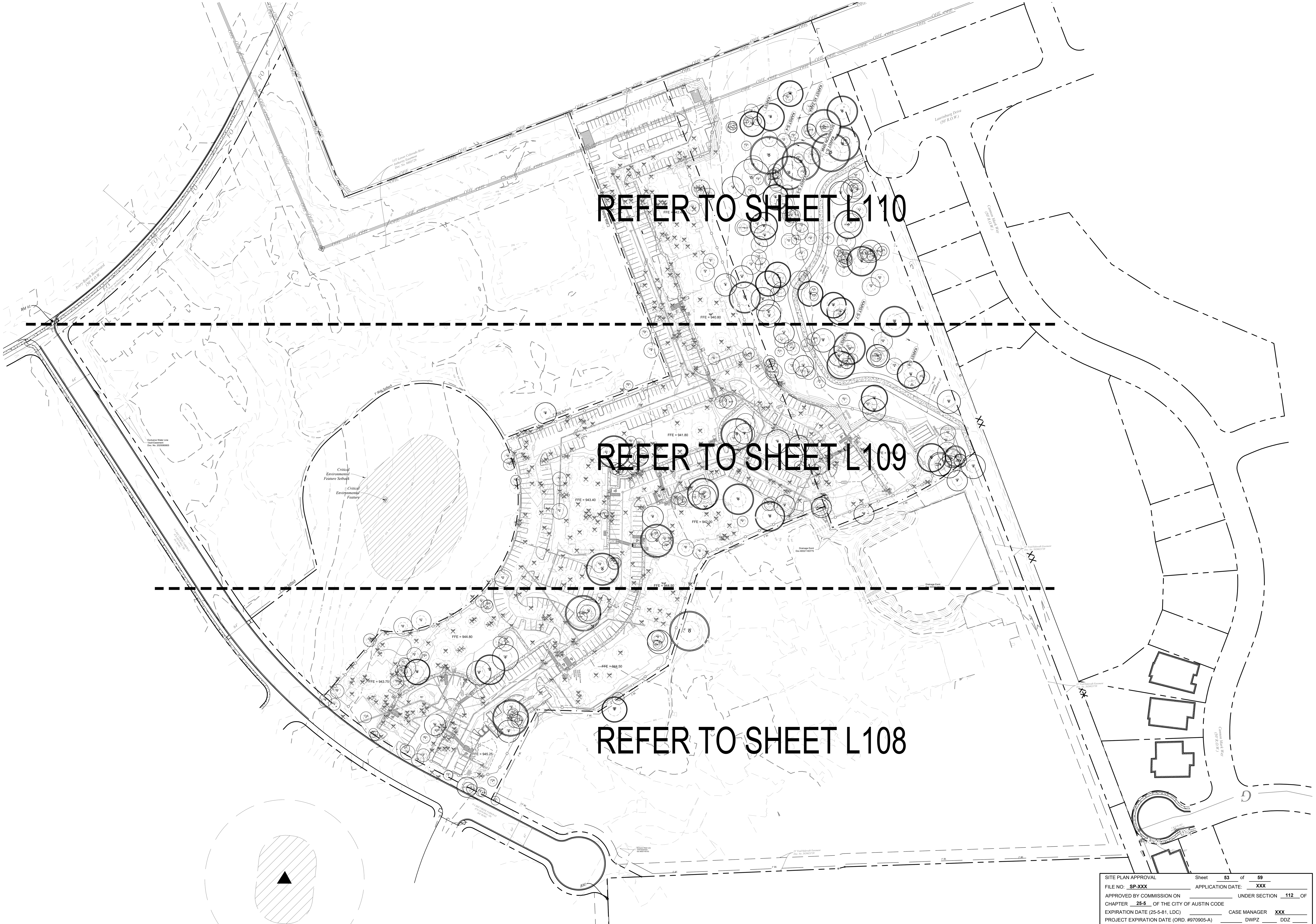
SP-XXXX



NORTH

SCALE IN FEET (1"=80'-0")

0 40 80 160 240

LANDSCAPE ARCHITECTURE

BLU FISH COLLABORATIVE, INC.
P.O. BOX 40792, Austin, TX 78704
Phone: (512)388-4115

PROFESSIONAL SEAL:

REGISTERED LANDSCAPE ARCHITECT MICHAEL R. FISHBAUGH 2453 STATE OF TEXAS

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OWNER:
LAKELINE AVERY PARTNERS, LP

PROJECT LOCATION:
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REVISIONS:

SITE PLAN APPROVAL	Sheet 53 of 59
FILE NO: SP-XXX	APPLICATION DATE: XXX
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PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:

OVERALL TREE PRESERVATION PLAN

SHEET NO.:
L107
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SP-XXXX

LEGEND

- EXISTING TREE - REMAIN
- EXISTING TREE - HALF CRITICAL ROOT ZONE
- EXISTING TREE - REMOVE
- EXISTING TREE - HALF CRITICAL ROOT ZONE

NORTH

SCALE IN FEET (1"=30'-0")

0 15 30 60 90

SITE PLAN APPROVAL	Sheet 54 of 59
FILE NO: SP-XXX	APPLICATION DATE: XXX
APPROVED BY COMMISSION ON ______	UNDER SECTION 112 OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE	
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P.O. BOX 40792, Austin, TX 78704
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OWNER:
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PROJECT LOCATION:
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REVISIONS:

PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:

TREE PRESERVATION PLAN

SHEET NO.:
L108
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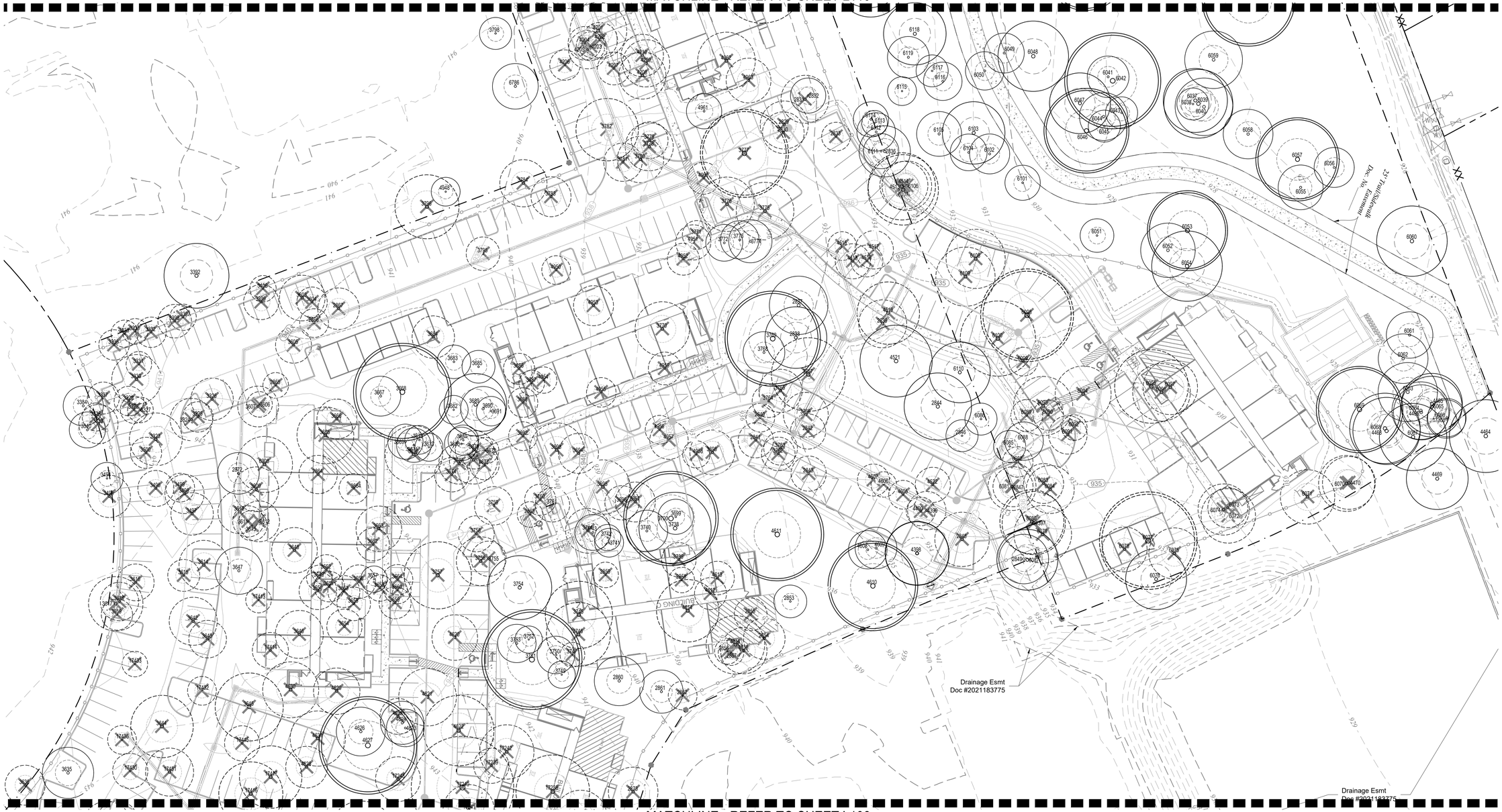
MATCHLINE - REFER TO SHEET L110



MATCHLINE - REFER TO SHEET L108

LEGEND

- EXISTING TREE - REMAIN
- EXISTING TREE - HALF CRITICAL ROOT ZONE
- EXISTING TREE - REMOVE
- EXISTING TREE - HALF CRITICAL ROOT ZONE

NORTH

SCALE IN FEET (1"=30'-0")

0 15 30 60 90

SITE PLAN APPROVAL Sheet 55 of 59
FILE NO: SP-XXX APPLICATION DATE: XXX
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STATE OF TEXAS

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REVISIONS:

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DRAWING TITLE:
TREE PRESERVATION PLAN

SHEET NO.:
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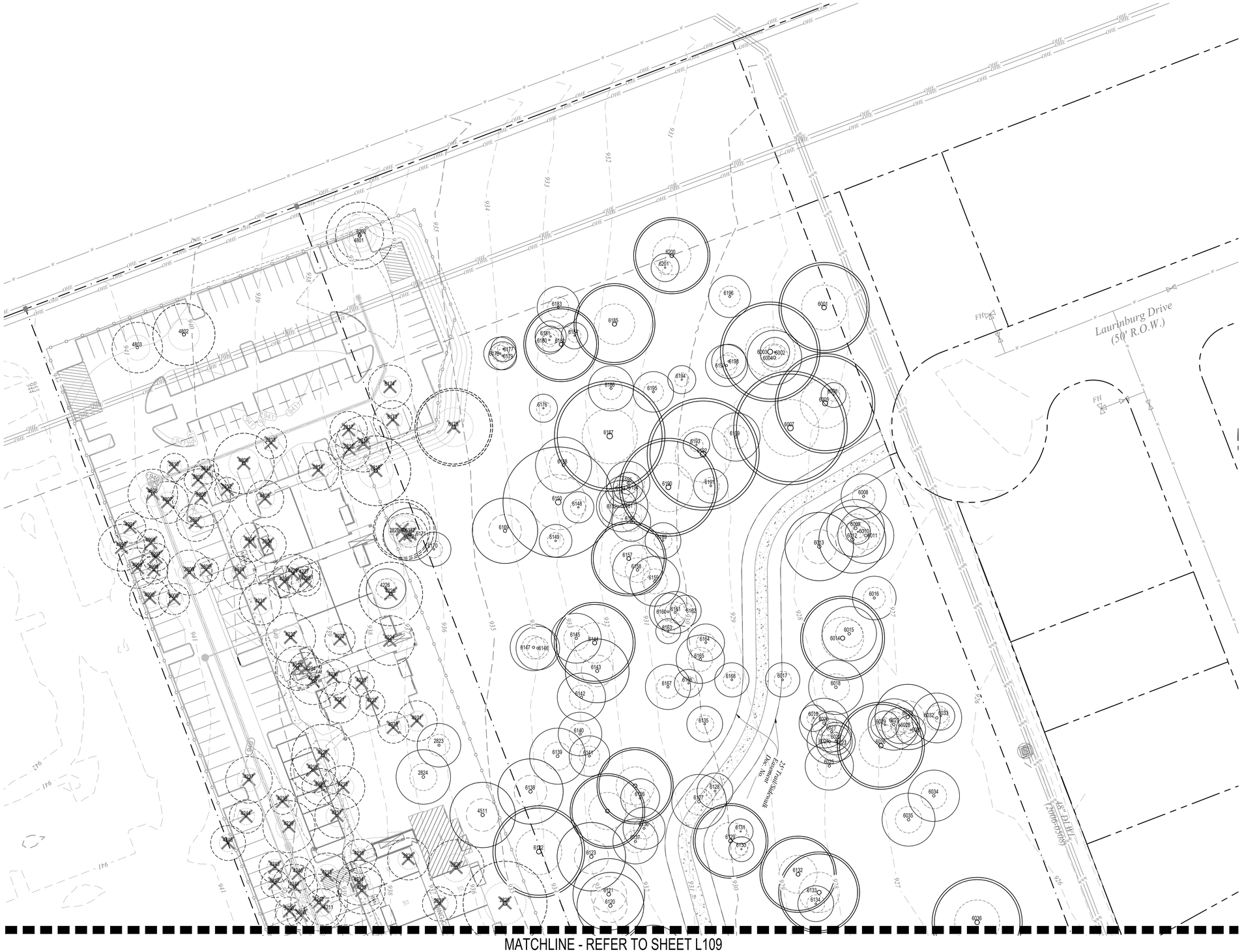

LEGEND

- EXISTING TREE - REMAIN
- EXISTING TREE - HALF CRITICAL ROOT ZONE
- EXISTING TREE - REMOVE
- EXISTING TREE - HALF CRITICAL ROOT ZONE

NORTH

SCALE IN FEET (1"=30'-0")

0 15 30 60 90

SITE PLAN APPROVAL Sheet 56 of 59

FILE NO: SP-XXX APPLICATION DATE: XXX

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Director, Development Services Department

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PROFESSIONAL SEAL:

REGISTERED LANDSCAPE ARCHITECT
MICHAEL R. FISHBAUGH
2453
STATE OF TEXAS

DATE SEALED: 01/06/2023

PROJECT NAME:
LAKE CREEK AT AVERY RANCH

OWNER:
LAKELINE AVERY PARTNERS, LP

PROJECT LOCATION:
9205 NORTH LAKE CREEK PARKWAY
AUSTIN, TEXAS 78729

REVISIONS:

PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:
TREE PRESERVATION PLAN

SHEET NO.:
L110
64 OF 67

SP-XXXX

TREE NO.	TREE INCHES	TREE SPECIES	STATUS	PROPOSED MITIGATION	HERITAGE TREE	APPENDIX F (Y/N) OR INVASIVE (I) TREE
3	13	Live Oak	Remove	0.50	No	Y
2804	12	Juniper	Remove	0.50	No	Y
2805	8	Juniper	Remove	0.50	No	Y
2806	14.5	Juniper	Remove	0.50	No	Y
2807	12	Juniper	Remove	0.50	No	Y
2808	18.75	Juniper	Remove	0.50	No	Y
2809	9	Juniper	Remove	0.50	No	Y
2810	9	Juniper	Remove	0.50	No	Y
2811	8	Juniper	Remove	0.50	No	Y
2812	8	Juniper	Remove	0.50	No	Y
2813	10	Juniper	Remove	0.50	No	Y
2814	13	Juniper	Remove	0.50	No	Y
2815	13.5	Juniper	Remove	0.50	No	Y
2816	18	Juniper	Remove	0.50	No	Y
2817	12	Juniper	Remove	0.50	No	Y
2818	22.5	Juniper	Remove	1.00	No	Y
2820	17.75	Juniper	Remove	0.50	No	Y
2821	14.5	Juniper	Remove	0.50	No	Y
2823	14	Juniper	Remain	0.50	No	Y
2824	17.5	Juniper	Remain	0.50	No	Y
2825	13.5	Juniper	Remove	0.50	No	Y
2826	18	Juniper	Remove	0.50	No	Y
2827	11	Juniper	Remove	0.50	No	Y
2828	27	Juniper	Remove	0.50	No	Y
2829	15	Juniper	Remove	0.50	No	Y
2830	13	Juniper	Remove	0.50	No	Y
2831	15	Juniper	Remove	0.50	No	Y
2832	11	Juniper	Remain	0.50	No	Y
2833	9	Juniper	Remove	0.50	No	Y
2836	16	Juniper	Remain	0.50	No	Y
2837	18.25	Juniper	Remain	0.50	No	Y
2838	19.25	Juniper	Remain	1.00	No	Y
2839	15	Juniper	Remove	0.50	No	Y
2840	9	Juniper	Remove	0.50	No	Y
2841	11	Juniper	Remove	0.50	No	Y
2842	11	Juniper	Remove	0.50	No	Y
2843	11	Juniper	Remove	0.50	No	Y
2844	21	Juniper	Remain	0.50	No	Y
2846	10	Juniper	Remain	0.50	No	Y
2847	12.5	Juniper	Remove	0.50	No	Y
2848	17	Juniper	Remove	0.50	No	Y
2849	15.5	Juniper	Remain	0.50	No	Y
2853	10.25	Juniper	Remain	0.50	No	Y
2854	13	Juniper	Remove	0.50	No	Y
2855	10.25	Juniper	Remove	0.50	No	Y
2856	8	Juniper	Remove	0.50	No	Y
2857	8	Juniper	Remove	0.50	No	Y
2858	8	Juniper	Remove	0.50	No	Y
2859	8	Juniper	Remove	0.50	No	Y
2860	15.5	Juniper	Remain	0.50	No	Y
2861	13.5	Juniper	Remain	0.50	No	Y
2862	9	Juniper	Remove	0.50	No	Y
2863	8	Juniper	Remove	0.50	No	Y
2864	12	Juniper	Remove	0.50	No	Y
2865	8	Juniper	Remove	0.50	No	Y
2866	9	Juniper	Remove	0.50	No	Y
2867	13	Juniper	Remove	0.50	No	Y
2872	13	Juniper	Remain	0.50	No	Y
2873	15.5	Juniper	Remove	0.50	No	Y
2990	12.5	Juniper	Remove	0.50	No	Y
3323	16.5	Live Oak	Remove	0.50	No	Y
3324	13.25	Cedar Elm	Remove	0.50	No	Y
3325	9.5	Cedar Elm	Remove	0.50	No	Y
3326	13.25	Live Oak	Remove	0.50	No	Y
3327	8	Cedar Elm	Remove	0.50	No	Y
3328	8.5	Cedar Elm	Remove	0.50	No	Y
3329	9.25	Live Oak	Remove	0.50	No	Y
3330	15.5	Cedar Elm	Remove	0.50	No	Y
3331	8	Cedar Elm	Remove	0.50	No	Y
3332	9.5	Cedar Elm	Remove	0.50	No	Y
3333	8	Cedar Elm	Remove	0.50	No	Y
3335	8.5	Cedar Elm	Remove	0.50	No	Y
3336	9.5	Cedar Elm	Remove	0.50	No	Y
3337	10	Live Oak	Remove	0.50	No	Y
3338	8.75	Live Oak	Remove	0.50	No	Y
3339	12.25	Live Oak	Remove	0.50	No	Y
3340	11.25	Cedar Elm	Remain	0.50	No	Y
3384	12.5	Live Oak	Remain	0.50	No	Y
3392	20.25	Live Oak	Remain	1.00	No	Y
3397	8.25	Cedar Elm	Remove	0.50	No	Y
3398	10.5	Cedar Elm	Remove	0.50	No	Y
3399	11	Cedar Elm	Remove	0.50	No	Y
3400	8.25	Cedar Elm	Remove	0.50	No	Y
3494	10	Cedar Elm	Remain	0.50	No	Y
3495	13.25	Live Oak	Remove	0.50	No	Y
3496	11.25	Cedar Elm	Remove	0.50	No	Y
3497	13.25	Cedar Elm	Remove	0.50	No	Y
3498	12.25	Live Oak	Remove	0.50	No	Y
3499	9	Cedar Elm	Remove	0.50	No	Y
3500	9.75	Cedar Elm	Remove	0.50	No	Y
3542	12	Live Oak	Remain	0.50	No	Y
3543	13.25	Live Oak	Remove	0.50	No	Y
3547	11.5	Live Oak	Remove	0.50	No	Y
3548	11	Live Oak	Remove	0.50	No	Y
3549	17.5	Live Oak	Remain	0.50	No	Y
3550	10.5	Live Oak	Remove	0.50	No	Y
3551	12	Post Oak	Remove	0.50	No	Y
3552	17	Post Oak	Remove	0.50	No	Y
3553	14.75	Live Oak	Remove	0.50	No	Y
3554	10	Cedar Elm	Remove	0.50	No	Y
3555	11.5	Cedar Elm	Remove	0.50	No	Y
3556	16.5	Cedar Elm	Remove	0.50	No	Y
3557	9.25	Live Oak	Remove	0.50	No	Y
3558	9	Live Oak	Remove	0.50	No	Y
3559	13.25	Live Oak	Remove	0.50	No	Y
3560	10.5	Live Oak	Remove	0.50	No	Y
3561	8.75	Live Oak	Remove	0.50	No	Y
3562	11	Live Oak	Remove	0.50	No	Y
3563	9.5	Live Oak	Remove	0.50	No	Y
3564	10.25	Live Oak	Remove	0.50	No	Y
3565	11.5	Cedar Elm	Remove	0.50	No	Y

TREE NO.	TREE INCHES	TREE SPECIES	STATUS	PROPOSED MITIGATION	HERITAGE TREE	APPENDIX F (Y/N) OR INVASIVE (I) TREE
3566	13	Live Oak	Remain	0.50	No	Y
3567	16	Live Oak	Remove	0.50	No	Y
3568	12.5	Live Oak	Remove	0.50	No	Y
3569	11	Live Oak	Remain	0.50	No	Y
3570	13	Live Oak	Remove	0.50	No	Y
3571	10	Cedar Elm	Remain	0.50	No	Y
3572	17.25	Cedar Elm	Remain	0.50	No	Y
3573	14	Live Oak	Remain	0.50	No	Y
3574	24.25	Live Oak	Remain	3.00	Yes	Y
3575	14.25	Live Oak	Remain	0.50	No	Y
3576	10.75	Cedar Elm	Remove	0.50	No	Y
3577	18.75	Live Oak	Remain	0.50	No	Y
3599	19	Live Oak	Remove	0.50	No	Y
3600	9.5	Cedar Elm	Remove	0.50	No	Y
3603	14.25	Cedar Elm	Remove	0.50	No	Y
3604	9.5	Cedar Elm	Remove	0.50	No	Y
3605	11.25	Cedar Elm	Remove	0.50	No	Y
3606	8	Cedar Elm	Remove	0.50	No	Y
3607	12.75	Cedar Elm	Remove	0.50	No	Y
3608	17.5	Post Oak	Remove	0.50	No	Y
3609	14	Cedar Elm	Remove	0.50	No	Y
3610	13.5	Cedar Elm	Remove	0.50	No	Y
3611	9.75	Cedar Elm	Remove	0.50	No	Y
3612	12.75	Live Oak	Remove	0.50	No	Y
3613	9.5	Live Oak	Remove	0.50	No	Y
3614	15.5	Live Oak	Remove	0.50	No	Y
3615	10	Cedar Elm	Remove	0.50	No	Y
3616	11.5	Cedar Elm	Remove	0.50	No	Y
3617	17	Live Oak	Remove	0.50	No	Y
3618	12	Live Oak	Remove	0.50	No	Y
3619	9.75	Live Oak	Remove	0.50	No	Y
3630	23	Live Oak	Remove	0.50	No	Y
3631	11	Live Oak	Remain	0.50	No	Y
3632	8.75	Cedar Elm	Remain	0.50	No	Y
3633	11.5	Cedar Elm	Remain	0.50	No	Y
3634	15.5	Cedar Elm	Remove	0.50	No	Y
3635	16	Live Oak	Remain	0.50	No	Y
3636	12.5	Cedar Elm	Remove	0.50	No	Y
3642	15	Cedar Elm	Remove	0.50	No	Y
3643	11.75	Cedar Elm	Remove	0.50	No	Y
3644	19.5	Live Oak	Remove	1.00	No	Y
3645	21.25	Live Oak	Remove	1.00	No	Y
3646	15	Cedar Elm	Remove	0.50	No	Y
3647	14.75	Live Oak	Remain	0.50	No	Y
3648	14.25	Cedar Elm	Remove	0.50	No	Y
3649	8	Live Oak	Remove	0.50	No	Y
3650	11.75	Live Oak	Remove	0.50	No	Y
3651	9.5	Live Oak	Remove	0.50	No	Y
3652	9.5	Live Oak	Remove	0.50	No	Y
3653	10	Live Oak	Remove	0.50	No	Y
3654	11	Live Oak	Remove	0.50	No	Y
3655	10.5	Live Oak	Remove	0.50	No	Y
3656	10.5	Live Oak	Remove	0.50	No	Y
3657	8.25	Live Oak	Remain	0.50	No	Y
3658	8.25	Live Oak	Remove	0.50	No	Y
3659	10	Live Oak	Remove	0.50	No	Y
3660	8.5	Live Oak	Remove	0.50	No	Y
3661	9.5	Live Oak	Remove	0.50	No	Y
3662	10.25	Live Oak	Remove	0.50	No	Y
3663	14.25	Cedar Elm	Remove	0.50	No	Y
3664	9.25	Live Oak	Remove	0.50	No	Y
3665	17.75	Live Oak	Remove	0.50	No	Y
3666	12.5	Live Oak	Remove	0.50	No	Y
3667	12.5	Live Oak	Remain	0.50	No	Y
3668	30.5	Live Oak	Remain	3.00	Yes	Y
3669	11	Live Oak	Remain	0.50	No	Y
3670	18	Live Oak	Remove	0.50	No	Y
3671	10.75	Live Oak	Remain	0.50	No	Y
3672	9	Live Oak	Remain	0.50	No	Y
3673	8.75	Live Oak	Remain	0.50	No	Y
3674	10.75	Live Oak	Remove	0.50	No	Y
3675	12.75	Live Oak	Remove	0.50	No	Y
3676	15	Live Oak	Remove	0.50	No	Y
3677	9.25	Live Oak	Remove	0.50	No	Y
3678	8.25	Live Oak	Remove	0.50	No	Y
3679	12	Live Oak	Remove	0.50	No	Y
3680	10.5	Live Oak	Remain	0.50	No	Y
3681	9.5	Live Oak	Remain	0.50	No	Y
3682	9	Live Oak	Remain	0.50	No	Y
3683	10.5	Live Oak	Remain	0.50	No	Y
3684	13.25	Live Oak	Remove	0.50	No	Y
3685	10.25	Live Oak	Remain	0.50	No	Y
3686	9.75	Live Oak	Remove	0.50	No	Y
3687	8	Live Oak	Remove	0.50	No	Y
3688	9.25	Post Oak	Remove	0.50	No	Y
3689	19.5	Post Oak	Remain	1.00	No	Y
3690	14	Post Oak	Remain	0.50	No	Y
3691	9.25	Live Oak	Remain	0.50	No	Y
3692	9	Gum Bumelia	Remove	0.50	No	Y
3693	17	Live Oak	Remove	0.50	No	Y
3694	12.5	Live Oak	Remove	0.50	No	Y
3695	17	Live Oak	Remove	0.50	No	Y
3696	10.75	Live Oak	Remove	0.50	No	Y
3697	12.5	Live Oak	Remove	0.50	No	Y
3698	14	Live Oak	Remove	0.50	No	Y
3699	11	Cedar Elm	Remain	0.50	No	Y
3700	29.5	Live Oak	Remain	3.00	Yes	Y
3738	22.5	Live Oak	Remain	1.00	No	Y
3739	10.75	Live Oak	Remove	0.50	No	Y
3740	13	Live Oak	Remain	0.50	No	Y
3741	9	Live Oak	Remain	0.50	No	Y
3742	8.25	Live Oak	Remain	0.50	No	Y
3743	11.25	Live Oak	Remain	0.50	No	Y
3744	14	Live Oak	Remove	0.50	No	Y
3745	21	Live Oak	Remove	0.50	No	Y
3746	20	Cedar Elm	Remove	0.50	No	Y
3747	7.75	Live Oak	Remove	0.50	No	Y
3749	8.5	Live Oak	Remain	0.50	No	Y
3750	11.775	Live Oak	Remain	0.50	No	Y
3751	31.25	Live Oak	Remain	3.00	Yes	Y
3752	8.5	Live Oak	Remain	0.50	No	Y

TREE NO.	TREE INCHES	TREE SPECIES	STATUS	PROPOSED MITIGATION	HERITAGE TREE	APPENDIX F (Y/N) OR INVASIVE (I) TREE
3753	12	Live Oak	Remain	0.50	No	Y
3754	20	Live Oak	Remain	1.00	No	Y
3755	11	Live Oak	Remove	0.50	No	Y
3756	15.25	Live Oak	Remove	0.50	No	Y
3757	21	Cedar Elm	Remove	1.00	No	Y
3758	11.25	Live Oak	Remove	0.50	No	Y
3759	12	Live Oak	Remove	0.50	No	Y
3760	9.75	Live Oak	Remove	0.50	No	Y
3761	10.75	Live Oak	Remove	0.50	No	Y
3762	10.5	Live Oak	Remove	0.50	No	Y
3763	10.5	Live Oak	Remove	0.50	No	Y
3764	10.25	Live Oak	Remove	0.50	No	Y
3765	13.5	Live Oak	Remove	0.50	No	Y
3766	14	Live Oak	Remove	0.50	No	Y
3767	23	Live Oak	Remove	1.00	No	Y
3768	13	Live Oak	Remain	0.50	No	Y
3769	29.75	Pecan	Remain	3.00	Yes	Y
3770	17	Live Oak	Remove	0.50	No	Y
3771	9	Live Oak	Remove	0.50	No	Y
3772	11.5	Live Oak	Remain	0.50	No	Y
3773	12	Live Oak	Remain	0.50	No	Y
3774	13.5	Live Oak	Remain	0.50	No	Y
3775	18	Live Oak	Remove	0.50	No	Y
3776	17	Live Oak	Remove	0.50	No	Y
3777	27.5	Live Oak	Remove	3.00	Yes	Y
3778	15	Cedar Elm	Remove	0.50	No	Y
3779	11.5	Cedar Elm	Remove	0.50	No	Y
3780	14.5	Live Oak	Remove	0.50	No	Y
3781	12	Cedar Elm	Remove	0.50	No	Y
3782	19.5	Cedar Elm	Remove	1.00	No	Y
3783	12.5	Post Oak	Remove	0.50	No	Y
3784	14.75	Hackberry	Remove	0.50	No	Y
3786	14.25	Post Oak	Remain	0.50	No	Y
3795	10.5	Cedar Elm	Remove	0.50	No	Y
3796	20	Live Oak	Remove	0.50	No	Y
3798	10	Post Oak	Remain	0.50	No	Y
3799	9.25	Live Oak	Remove	0.50	No	Y
3800	9.25	Live Oak	Remove	0.50	No	Y
3801	15.75	Live Oak	Remove	0.50	No	Y
3802	11.5	Live Oak	Remove	0.50	No	Y
3803	10	Live Oak	Remove	0.50	No	Y
3804	13	Live Oak	Remove	0.50	No	Y
3805	16	Live Oak	Remove	0.50	No	Y
3806	22.5	Live Oak	Remove	1.00	No	Y
3807	14.5	Live Oak	Remove	0.50	No	Y
3808	8.5	Live Oak	Remove	0.50	No	Y
3809	8	Live Oak	Remove	0.50	No	Y
3810	8.5	Live Oak	Remove	0.50	No	Y
3811	9.5	Live Oak	Remove	0.50	No	Y
3812	20	Live Oak	Remain	0.50	No	Y
3813	10.5	Live Oak	Remove	0.50	No	Y
3814	8.5	Live Oak	Remove	0.50	No	Y
3815	10.5	Live Oak	Remain	0.50	No	Y
3816	14.75	Live Oak	Remove	0.50	No	Y
3817	17	Cedar Elm	Remove	0.50	No	Y
3818	11.5	Live Oak	Remove	0.50	No	Y
3819	12.5	Cedar Elm	Remove	0.50	No	Y
3820	8.5	Live Oak	Remove	0.50	No	Y
3821	10	Cedar Elm	Remove	0.50	No	Y
3822	11.25	Cedar Elm	Remove	0.50	No	Y
3823	11.25	Live Oak	Remove	0.50	No	Y
3824	9	Live Oak	Remain	0.50	No	Y
3825	13	Live Oak	Remove	0.50	No	Y
3826	13	Live Oak	Remove	0.50	No	Y
3827	17	Live Oak	Remove	0.50	No	Y
3828	9.5	Live Oak	Remove	0.50	No	Y
3829	11.25	Live Oak	Remove	0.50	No	Y
3830	10	Live Oak	Remove	0.50	No	Y
3831	12.5	Live Oak	Remove	0.50	No	Y
3832	10.5	Live Oak	Remove	0.50	No	Y
3833	16	Post Oak	Remove	0.50	No	Y
3834	10.5	Live Oak	Remove	0.50	No	Y
3835	12	Live Oak	Remove	0.50	No	Y
3836	12	Live Oak	Remove	0.50	No	Y
3837	15.5	Live Oak	Remove	0.50	No	Y
3838	13	Live Oak	Remain	0.50	No	Y
3839	10.5	Live Oak	Remove	0.50	No	Y
3840	12	Live Oak	Remain	0.50	No	Y
3841	11	Live Oak	Remain	0.50	No	Y
3848	8.5	Live Oak	Remain	0.50	No	Y
3849	9	Live Oak	Remain	0.50	No	Y
3850	13	Live Oak	Remove	0.50	No	Y
4137	15.25	Cedar Elm	Remove	0.50	No	Y
4141	13.5	Live Oak	Remain	0.50	No	Y
4142	11.75	Live Oak	Remain	0.50	No	Y
4143	12.25	Cedar Elm	Remain	0.50	No	Y
4144	9	Cedar Elm	Remain	0.50	No	Y
4151	19	Live Oak	Remain	0.50	No	Y
4152	10.5	Live Oak	Remain	0.50	No	Y
4153	16	Live Oak	Remove	0.50	No	Y
4154	11.25	Live Oak	Remove	0.50	No	Y
4155	8.5	Live Oak	Remain	0.50	No	Y
4156	8.25	Live Oak	Remain	0.50	No	Y
4157	8.25	Cedar Elm	Remain	0.50	No	Y
4201	17.75	Cedar Elm	Remove	0.50	No	Y
4202	11	Cedar Elm	Remove	0.50	No	Y
4203	9	Live Oak	Remove	0.50	No	Y
4204	10.5	Live Oak	Remove	0.50	No	Y
4205	12	Live Oak	Remove	0.50	No	Y
4206	9.5	Live Oak	Remove	0.50	No	Y
4207	10.25	Cedar Elm	Remove	0.50	No	Y
4208	14.75	Cedar Elm	Remove	0.50	No	Y
4209	17.75	Cedar Elm	Remove	0.50	No	Y
4210	13.25	Cedar Elm	Remove	0.50	No	Y
4211	11.75	Cedar Elm	Remove	0.50	No	Y
4212	18.25	Cedar Elm	Remove	0.50	No	Y
4213	14.5	Cedar Elm	Remove	0.50	No	Y
4214	14.5	Cedar Elm	Remove	0.50	No	Y
4215	15	Cedar Elm	Remove	0.50	No	Y
4216	11	Cedar Elm	Remove	0.50	No	Y
4217	14.25	Cedar Elm	Remove	0.50	No	Y
4218	14	Live Oak	Remove	0.50	No	Y
4219	14.5	Cedar Elm	Remove	0.50	No	Y

BF COLLABORATIVE
LANDSCAPE ARCHITECTURE
BLU FISH COLLABORATIVE, INC.
P.O. BOX 40792, Austin, TX 78704
Phone: (512)388-4115

PROFESSIONAL SEAL:

DATE SEALED: 01/06/2023

PROJECT NAME:
LAKE CREEK AT AVERY RANCH

OWNER:
LAKELINE AVERY PARTNERS, LP

PROJECT LOCATION:
9205 NORTH LAKE CREEK PARKWAY
AUSTIN, TEXAS 78729

REVISIONS:

SITE PLAN APPROVAL Sheet 57 of 59
FILE NO: SP-XXX APPLICATION DATE: XXX
APPROVED BY COMMISSION ON _____ UNDER SECTION 112 OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE
EXPIRATION DATE (25-5-81, LDC) _____ CASE MANAGER XXX
PROJECT EXPIRATION DATE (ORD. #970905-A) _____ DWPZ ____ DDZ ____
Director, Development Services Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING MF-4
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____
Final plat must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permit and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.

PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:
TREE LIST

SHEET NO.:
L111
65 OF 67

SP-XXXX

TREE NO.	TREE INCHES	TREE SPECIES	STATUS	PROPOSED MITIGATIO N	HERITAGE TREE	APPENDIX F (Y/N) OR INVASIVE (I) TREE
4220	20	Cedar Elm	Remove	1.00	No	Y
4221	13.25	Cedar Elm	Remove	0.50	No	Y
4222	8.25	Live Oak	Remove	0.50	No	Y
4223	8.25	Live Oak	Remove	0.50	No	Y
4224	16	Live Oak	Remove	0.50	No	Y
4225	20.5	Live Oak	Remove	1.00	No	Y
4226	12.75	Live Oak	Remain	0.50	No	Y
4227	11	Cedar Elm	Remove	0.50	No	Y
4228	9.5	Cedar Elm	Remove	0.50	No	Y
4229	12.5	Cedar Elm	Remove	0.50	No	Y
4230	10.25	Cedar Elm	Remove	0.50	No	Y
4231	13.5	Cedar Elm	Remove	0.50	No	Y
4232	16	Cedar Elm	Remove	0.50	No	Y
4233	14.25	Cedar Elm	Remove	0.50	No	Y
4234	10.5	Cedar Elm	Remove	0.50	No	Y
4235	11.5	Cedar Elm	Remove	0.50	No	Y
4236	15	Cedar Elm	Remove	0.50	No	Y
4237	15	Cedar Elm	Remove	0.50	No	Y
4238	8.25	Cedar Elm	Remove	0.50	No	Y
4239	16.75	Cedar Elm	Remove	0.50	No	Y
4240	10.75	Cedar Elm	Remove	0.50	No	Y
4241	14.75	Cedar Elm	Remove	0.50	No	Y
4242	9	Live Oak	Remove	0.50	No	Y
4243	10.25	Live Oak	Remove	0.50	No	Y
4244	10.75	Live Oak	Remove	0.50	No	Y
4245	11.25	Live Oak	Remove	0.50	No	Y
4397	19.75	Live Oak	Remove	1.00	No	Y
4399	12	Live Oak	Remove	0.50	No	Y
4400	9	Live Oak	Remove	0.50	No	Y
4435	13	Live Oak	Remove	0.50	No	Y
4436	21	Cedar Elm	Remain	1.00	No	Y
4437	34	Live Oak	Remain	3.00	Yes	Y
4438	13	Live Oak	Remain	0.50	No	Y
4439	10	Live Oak	Remain	0.50	No	Y
4440	16	Live Oak	Remain	0.50	No	Y
4441	10	Live Oak	Remain	0.50	No	Y
4442	9	Live Oak	Remain	0.50	No	Y
4443	16	Live Oak	Remain	0.50	No	Y
4444	31	Live Oak	Remove	3.00	Yes	Y
4452	24	Live Oak	Remain	3.00	Yes	Y
4453	11.25	Live Oak	Remain	0.50	No	Y
4454	13.5	Live Oak	Remove	0.50	No	Y
4464	22.75	Cedar Elm	Remain	1.00	No	Y
4465	19	Pecan	Remain	0.50	No	Y
4466	17.25	Live Oak	Remain	0.50	No	Y
4468	21	Live Oak	Remain	0.50	No	Y
4469	19.25	Live Oak	Remain	1.00	No	Y
4470	16.5	Live Oak	Remove	0.50	No	Y
4490	37.5	Live Oak	Remain	3.00	Yes	Y
4491	22.5	Live Oak	Remain	1.00	No	Y
4492	19.25	Live Oak	Remain	1.00	No	Y
4493	12	Live Oak	Remain	0.50	No	Y
4494	8.5	Live Oak	Remain	0.50	No	Y
4495	10.25	Cedar Elm	Remove	0.50	No	Y
4511	21	Live Oak	Remain	1.00	No	Y
4513	21	Live Oak	Remove	1.00	No	Y
4514	15	Live Oak	Remove	0.50	No	Y
4515	9	Live Oak	Remove	0.50	No	Y
4516	10	Live Oak	Remove	0.50	No	Y
4517	12	Live Oak	Remove	0.50	No	Y
4518	11	Live Oak	Remove	0.50	No	Y
4519	19.5	Live Oak	Remove	1.00	No	Y
4521	22.5	Live Oak	Remain	1.00	No	Y
4522	11	Live Oak	Remove	0.50	No	Y
4605	9	Live Oak	Remove	0.50	No	Y
4606	8	Live Oak	Remove	0.50	No	Y
4607	10	Live Oak	Remove	0.50	No	Y
4608	12	Live Oak	Remain	0.50	No	Y
4609	13	Live Oak	Remain	0.50	No	Y
4610	28	Pecan	Remain	3.00	Yes	Y
4611	29	Live Oak	Remain	3.00	Yes	Y
4612	10	Live Oak	Remove	0.50	No	Y
4613	10.5	Live Oak	Remove	0.50	No	Y
4614	19.5	Live Oak	Remove	0.50	No	Y
4615	18.25	Live Oak	Remove	0.50	No	Y
4616	14.5	Live Oak	Remove	0.50	No	Y
4620	14.25	Live Oak	Remove	0.50	No	Y
4621	18	Live Oak	Remove	0.50	No	Y
4622	22	Live Oak	Remove	0.50	No	Y
4623	11.75	Live Oak	Remain	0.50	No	Y
4624	13.5	Live Oak	Remain	0.50	No	Y
4625	11.25	Live Oak	Remove	0.50	No	Y
4626	15.25	Live Oak	Remain	0.50	No	Y
4627	30.5	Live Oak	Remain	3.00	Yes	Y
4628	13	Live Oak	Remove	0.50	No	Y
4629	14.5	Cedar Elm	Remove	0.50	No	Y
4630	17.5	Live Oak	Remove	0.50	No	Y
4631	17.25	Live Oak	Remove	0.50	No	Y
4632	22.75	Live Oak	Remain	1.00	No	Y
4633	15	Live Oak	Remain	0.50	No	Y
4634	33.5	Live Oak	Remain	3.00	Yes	Y
4635	10	Live Oak	Remain	0.50	No	Y
4636	12	Live Oak	Remove	0.50	No	Y
4637	9.75	Live Oak	Remove	0.50	No	Y
4638	10.5	Live Oak	Remove	0.50	No	Y
4639	14.5	Live Oak	Remove	0.50	No	Y
4640	16.5	Live Oak	Remove	0.50	No	Y
4641	8.5	Live Oak	Remove	0.50	No	Y
4642	9.5	Cedar Elm	Remove	0.50	No	Y
4643	12.75	Live Oak	Remove	0.50	No	Y
4644	12.5	Live Oak	Remove	0.50	No	Y
4645	9.25	Live Oak	Remove	0.50	No	Y
4646	22	Live Oak	Remove	3.00	Yes	Y
4647	8.5	Live Oak	Remove	0.50	No	Y
4648	11.5	Live Oak	Remove	0.50	No	Y
4649	31	Live Oak	Remove	0.50	No	Y
4650	13	Cedar Elm	Remove	0.50	No	Y
4651	14.5	Live Oak	Remove	0.50	No	Y
4652	9.5	Cedar Elm	Remove	0.50	No	Y
4653	13.28	Cedar Elm	Remove	0.50	No	Y
4654	9.5	Live Oak	Remove	0.50	No	Y

TREE NO.	TREE INCHES	TREE SPECIES	STATUS	PROPOSED MITIGATIO N	HERITAGE TREE	APPENDIX F (Y/N) OR INVASIVE (I) TREE
4655	11.5	Live Oak	Remain	0.50	No	Y
4656	14	Live Oak	Remain	0.50	No	Y
4657	20.5	Live Oak	Remove	1.00	No	Y
4658	8.25	Cedar Elm	Remove	0.50	No	Y
4659	9.25	Cedar Elm	Remove	0.50	No	Y
4660	28.25	Live Oak	Remain	3.00	Yes	Y
4661	13	Live Oak	Remove	0.50	No	Y
4662	20.75	Live Oak	Remove	1.00	No	Y
4663	10	Live Oak	Remove	0.50	No	Y
4801	15.5	Live Oak	Remove	0.50	No	Y
4802	20	Live Oak	Remove	1.00	No	Y
4803	16.25	Live Oak	Remove	0.50	No	Y
4804	12.5	Live Oak	Remove	0.50	No	Y
4805	12	Live Oak	Remove	0.50	No	Y
4806	19.5	Live Oak	Remove	1.00	No	Y
4807	13.2	Cedar Elm	Remove	0.50	No	Y
4808	16	Cedar Elm	Remove	0.50	No	Y
4948	9	Juniper	Remain	0.50	No	Y
4950	9	Juniper	Remove	0.50	No	Y
4951	11	Juniper	Remove	0.50	No	Y
4952	10	Juniper	Remove	0.50	No	Y
4953	12.5	Juniper	Remove	0.50	No	Y
4954	8.25	Juniper	Remove	0.50	No	Y
4955	9.25	Juniper	Remove	0.50	No	Y
4956	9	Juniper	Remove	0.50	No	Y
4957	12	Juniper	Remove	0.50	No	Y
4958	8.5	Juniper	Remove	0.50	No	Y
4959	10.25	Juniper	Remove	0.50	No	Y
4960	10	Juniper	Remove	0.50	No	Y
4961	11	Juniper	Remain	0.50	No	Y
4962	18	Juniper	Remove	0.50	No	Y
4963	14	Juniper	Remove	0.50	No	Y
4969	11.75	Juniper	Remove	0.50	No	Y
4970	10	Juniper	Remove	0.50	No	Y
4971	13	Juniper	Remove	0.50	No	Y
4972	9.75	Juniper	Remove	0.50	No	Y
4974	10.5	Juniper	Remove	0.50	No	Y
4990	15	Juniper	Remove	0.50	No	Y
4991	10	Juniper	Remove	0.50	No	Y
4995	13	Juniper	Remove	0.50	No	Y
4996	9	Juniper	Remove	0.50	No	Y
4997	9	Juniper	Remove	0.50	No	Y
4998	9	Juniper	Remove	0.50	No	Y
4999	13	Juniper	Remove	0.50	No	Y
5000	10	Juniper	Remove	0.50	No	Y
6001	29	Live Oak	Remain	3.00	Yes	Y
6002	9.5	Live Oak	Remain	0.50	No	Y
6003	32	Live Oak	Remain	3.00	Yes	Y
6004	17.5	Live Oak	Remain	0.50	No	Y
6005	32	Live Oak	Remain	3.00	Yes	Y
6006	8	Live Oak	Remain	0.50	No	Y
6007	36.5	Live Oak	Remain	3.00	Yes	Y
6008	14.5	Cedar	Remain	0.50	No	Y
6009	18.5	Cedar	Remain	0.50	No	Y
6010	8	Cedar	Remain	0.50	No	Y
6011	18	Pecan	Remain	0.50	No	Y
6012	21.5	Cedar	Remain	1.00	No	Y
6013	22	Live Oak	Remain	1.00	No	Y
6014	27	Pecan	Remain	3.00	Yes	Y
6015	17.5	Pecan	Remain	0.50	No	Y
6016	14	Live Oak	Remain	0.50	No	Y
6017	11	Live Oak	Remain	0.50	No	Y
6018	17.5	Live Oak	Remain	0.50	No	Y
6019	8.5	Cedar	Remain	0.50	No	Y
6020	16	Cedar Elm	Remain	0.50	No	Y
6021	13	Cedar Elm	Remain	0.50	No	Y
6022	9.5	Cedar Elm	Remain	0.50	No	Y
6023	12.5	Cedar Elm	Remain	0.50	No	Y
6024	14.5	Live Oak	Remain	0.50	No	Y
6025	15.5	Live Oak	Remain	0.50	No	Y
6026	28	Live Oak	Remain	3.00	Yes	Y
6027	16.5	Live Oak	Remain	0.50	No	Y
6028	11.5	Live Oak	Remain	0.50	No	Y
6029	9	Live Oak	Remain	0.50	No	Y
6030	21	Live Oak	Remain	0.50	No	Y
6031	9.5	Live Oak	Remain	0.50	No	Y
6032	16	Live Oak	Remain	0.50	No	Y
6033	9	Live Oak	Remain	0.50	No	Y
6034	16.5	Cedar	Remain	0.50	No	Y
6035	17	Dead	DDI	0.50	No	Y
6036	29	Cedar	Remain	3.00	Yes	Y
6037	20	Live Oak	Remain	1.00	No	Y
6038	10	Live Oak	Remain	0.50	No	Y
6039	21.5	Live Oak	Remain	1.00	No	Y
6040	18	Live Oak	Remain	0.50	No	Y
6041	13	Live Oak	Remain	0.50	No	Y
6042	30	Live Oak	Remain	3.00	Yes	Y
6043	10	Cedar	Remain	0.50	No	Y
6044	15	Live Oak	Remain	0.50	No	Y
6045	10	Live Oak	Remain	0.50	No	Y
6046	26.5	Live Oak	Remain	3.00	Yes	Y
6047	19	Cedar Elm	Remain	1.00	No	Y
6048	22	Live Oak	Remain	1.00	No	Y
6049	12.5	Live Oak	Remain	0.50	No	Y
6050	12	Dead	DDI	0.50	No	Y
6051	10.5	Live Oak	Remain	0.50	No	Y
6052	17	Cedar	Remain	0.50	No	Y
6053	25	Cedar	Remain	3.00	Yes	Y
6054	22	Cedar	Remain	1.00	No	Y
6055	14	Cedar Elm	Remain	0.50	No	Y
6056	12.5	Cedar Elm	Remain	0.50	No	Y
6057	26	Cedar	Remain	3.00	Yes	Y
6058	15.5	Dead	DDI	0.50	No	Y
6059	18	Dead	DDI	0.50	No	Y
6060	22	Cedar Elm	Remain	1.00	No	Y
6061	14.5	Cedar	Remain	0.50	No	Y
6062	15.5	Cedar Elm	Remain	0.50	No	Y
6063	18.5	Live Oak	Remain	0.50	No	Y
6064	18	Live Oak	Remain	0.50	No	Y
6065	19	Live Oak	Remain	1.00	No	Y
6066	12	cedar	Remain	0.50	No	Y

TREE NO.	TREE INCHES	TREE SPECIES	STATUS	PROPOSED MITIGATIO N	HERITAGE TREE	APPENDIX F (Y/N) OR INVASIVE (I) TREE
6067	21	Live Oak	Remain	1.00	No	Y
6068	22	Live Oak	Remain	1.00	No	Y
6069	27	cedar	Remain	3.00	Yes	Y
6070	17.5	Live Oak	Remove	0.50	No	Y
6071	17	cedar	Remove	0.50	No	Y
6072	17	cedar	Remove	0.50	No	Y
6073	12.5	cedar	Remove	0.50	No	Y
6074	16	Live Oak	Remove	0.50	No	Y
6075	16	cedar	Remove	0.50	No	Y
6076	19	Live Oak	Remain	1.00	No	Y
6077	30.5	cedar	Remove	3.00	Yes	Y
6078	14	cedar	Remove	0.50	No	Y
6079	18	cedar	Remove	0.50	No	Y
6080	20	Live Oak	Remove	1.00	No	Y
6081	15	cedar	Remove	0.50	No	Y
6082	9.5	Live Oak	Remove	0.50	No	Y
6083	12.5	Live Oak	Remove	0.50	No	Y
6084	15	cedar	Remove	0.50	No	Y
6085	10	cedar	Remain	0.50	No	Y
6086	10	cedar	Remain	0.50	No	Y
6087	19	cedar	Remain	0.50	No	Y
6088	12	cedar	Remain	0.50	No	Y
6089	10	cedar	Remove	0.50	No	Y
6090	9.5	cedar	Remove	0.50	No	Y
6091	12	cedar	Remove	0.50	No	Y
6092	8	Live Oak	Remove	0.50	No	Y
6093	18.5	cedar	Remove	0.50	No	Y
6094	17.5	cedar	Remove	0.50	No	Y
6095	23	Live Oak	Remove	1.00	No	Y
6096	18	Live Oak	Remove	0.50	No	Y
6097	17	Live Oak	Remove	0.50	No	Y
6098	29	pecan	Remove	3.00	Yes	Y
6099	9	Cedar Elm	Remove	0.50	No	Y
6100	23.5	cedar	Remove	1.00	No	Y
6101	11	Cedar Elm	Remain	0.50	No	Y
6102	12.5	Live Oak	Remain	0.50	No	Y
6103	19.5	cedar	Remain	1.00	No	Y
6104	11.5	Live Oak	Remain	0.50	No	Y
6105	14	Live Oak	Remain	0.50	No	Y
6106	15.5	Live Oak	Remove	0.50	No	Y
6107	22	Live Oak	Remove	1.00	No	Y
6108	18.5	cedar	Remove	0.50	No	Y
6109	18.5	cedar	Remove	0.50	No	Y
6110	19	Live Oak	Remain	1.00	No	Y
6111	11	cedar	Remain	0.50	No	Y
6112	12	cedar	Remain	0.50	No	Y
6113	8	cedar	Remain	0.50	No	Y
6114	11	cedar	Remain	0.50	No	Y
6115	9	cedar	Remain	0.50	No	Y
6116	12	cedar	Remain	0.50	No	Y
6117	10	cedar	Remain	0.50	No	Y
6118	19.5	cedar	Remain	1.00	No	Y
6119	13	cedar	Remain	0.50	No	Y
6120	21.5	Live Oak	Remain	1.00	No	Y
6121	23	Live Oak	Remain	1.00	No	Y
6122	29.5	Live Oak	Remain	3.00	Yes	Y
6123	22	cedar	Remain	1.00	No	Y
6124	24	cedar	Remain	3.00	Yes	Y
6125	24.5	cedar	Remain	3.00	Yes	Y
6126	12.5	cedar	Remain	0.50	No	Y
6127	17.5	cedar	Remain	0.50	No	Y
6128	11.5	cedar	Remain	0.50	No	Y
6129	24	pecan	Remain	3.00	Yes	Y
6130	8	cedar	Remain	0.50	No	Y
6131	8	cedar	Remain	0.50	No	Y
6132	24.5	cedar	Remain	3.00	Yes	Y
6133	26	cedar	Remain	3.00	Yes	Y
6134	11.5	cedar	Remain	0.50	No	Y
6135	11.5	Cedar Elm	Remain	0.50	No	Y
6136	13.5	cedar	Remain	0.50	No	Y
6137	14.5	cedar	Remain	0.50	No	Y
6138	21	cedar	Remain	1.00	No	Y
6139	18	cedar	Remain	0.50	No	Y
6140	14	cedar	Remain	0.50	No	Y
6141	13	cedar	Remain	0.50	No	Y
6142	15.5	cedar	Remain	0.50	No	Y
6143	20.5	cedar	Remain	1.00	No	Y
6144	26	cedar	Remain	3.00	Yes	Y
6145	16	Live Oak	Remain	0.50	No	Y
6146	14	Live Oak	Remain	0.50	No	Y
6147	15	cedar	Remain	0.50	No	Y
6148	10	Cedar Elm	Remain	0.50	No	Y
6149	10.5	cedar	Remain	0.50	No	Y
6150	35.5	cedar	Remain	0.50	No	Y
6151	16.5	Live Oak	Remain	0.50	No	Y
6152	12	Live Oak	Remain	0.50	No	Y
6153	10	Live Oak	Remain	0.50	No	Y
6154	9.5	Live Oak	Remain	0.50	No	Y
6155	14	Live Oak	Remain	0.50	No	Y
6156	12.5	cear	Remain	0.50	No	Y
6157	24	Live Oak	Remain	3.00	Yes	Y
6158	16	Live Oak	Remain	0.50	No	Y
6159	16	cedar	Remain	0.50	No	Y
6160	12	cedar	Remain	0.50	No	Y
6161	13.5	cedar	Remain	0.50	No	Y
6162	10	cedar	Remain	0.50	No	Y
6163	8	cedar	Remain	0.50	No	Y
6164	12	Live Oak	Remain	0.50	No	Y
6165	15.5	Cedar Elm	Remain	0.50	No	Y
6166	9	Cedar Elm	Remain	0.50	No	Y
6167	14.5	Cedar Elm	Remain	0.50	No	Y
6168	11	Cedar Elm	Remain	0.50	No	Y
6169	21	cedar	Remain	1.00	No	Y
6170	11	cedar	Remain	0.50	No	Y
6171	17	cedar	Remain	0.50	No	Y
6172	19.5	cedar	Remove	1.00	No	Y
6173	12.5	cedar	Remove	0.50	No	Y
6174	14	cedar	Remove	0.50	No	Y
6175	25	cedar	Remove	3.00	Yes	Y
6176	9	Hackberry	Remain	0.50	No	Y
6177	8	Live Oak	Remain	0.50	No	Y
6178	10.5	Live Oak	Remain	0.50	No	Y

BF COLLABORATIVE
LANDSCAPE ARCHITECTURE
BLU FISH COLLABORATIVE, INC.
P.O. BOX 40792, Austin, TX 78704
Phone: (512)388-4115

PROFESSIONAL SEAL:

DATE SEALED: 01/06/2023

PROJECT NAME:
LAKE CREEK AT AVERY RANCH

OWNER:
LAKELINE AVERY PARTNERS, LP

PROJECT LOCATION:
9205 NORTH LAKE CREEK PARKWAY AUSTIN, TEXAS 78729

REVISIONS:

SITE PLAN APPROVAL Sheet 58 of 59
FILE NO: SP-XXX APPLICATION DATE: XXX
APPROVED BY COMMISSION ON _____ UNDER SECTION 112 OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE
EXPIRATION DATE (25-5-81, LDC) _____ CASE MANAGER XXX
PROJECT EXPIRATION DATE (ORD. #970905-A) _____ DWPZ _____ DDZ _____
Director, Development Services Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING MF-4
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____
Final plat must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permit and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.

PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:
TREE LIST

SHEET NO.:
L112
66 OF 67

SP-XXXX

TREE NO.	TREE INCHES	TREE SPECIES	STATUS	PROPOSED MITIGATION	HERITAGE TREE	APPENDIX F (Y/N) OR INVASIVE (I) TREE
6179	9	Live Oak	Remain	0.50	No	Y
6180	9	Live Oak	Remain	0.50	No	Y
6181	10	Live Oak	Remain	0.50	No	Y
6182	24	Live Oak	Remain	3.00	Yes	Y
6183	13.5	cedar	Remain	0.50	No	Y
6184	8.5	Live Oak	Remain	0.50	No	Y
6185	26	Live Oak	Remain	3.00	Yes	Y
6186	14.5	cedar	Remain	0.50	No	Y
6187	35.5	Live Oak	Remain	3.00	Yes	Y
6188	18	cedar	Remain	0.50	No	Y
6189	11.5	cedar	Remain	0.50	No	Y
6190	31.5	Live Oak	Remain	3.00	Yes	Y
6191	11	Cedar Elm	Remain	0.50	No	Y
6192	36	Live Oak	Remain	3.00	Yes	Y
6193	8.5	cedar	Remain	0.50	No	Y
6194	9	Cedar Elm	Remain	0.50	No	Y
6195	13	Live Oak	Remain	0.50	No	Y
6196	13.5	Cedar Elm	Remain	0.50	No	Y
6197	13.5	Live Oak	Remain	0.50	No	Y
6198	11	Live Oak	Remain	0.50	No	Y
6199	15.5	Live Oak	Remain	0.50	No	Y
6200	24.5	Live Oak	Remain	3.00	Yes	Y
6201	9	Live Oak	Remain	0.50	No	Y
6202	21.5	Live Oak	Remove	1.00	No	Y
17108	10.5	Juniper	Remain	0.50	No	Y
17129	8	Juniper	Remove	0.50	No	Y
17130	20	Juniper	Remove	0.50	No	Y
17131	9.5	Juniper	Remain	0.50	No	Y
17198	9	Juniper	Remain	0.50	No	Y
17227	13.5	Juniper	Remove	0.50	No	Y
17228	14.5	Juniper	Remove	0.50	No	Y
17229	17.5	Juniper	Remove	0.50	No	Y
17230	25	Juniper	Remove	0.50	No	Y
17231	12	Juniper	Remove	0.50	No	Y
17232	13	Juniper	Remove	0.50	No	Y
17233	16.5	Juniper	Remove	0.50	No	Y
17234	16.5	Juniper	Remove	0.50	No	Y
17238	23	Juniper	Remove	1.00	No	Y
17239	11	Juniper	Remove	0.50	No	Y
17240	32	Juniper	Remove	1.00	No	Y
17241	16	Juniper	Remove	0.50	No	Y
17242	17	Juniper	Remove	0.50	No	Y
17243	14	Juniper	Remove	0.50	No	Y
17244	19	Juniper	Remove	1.00	No	Y
17245	18	Juniper	Remove	0.50	No	Y
17246	21	Juniper	Remove	1.00	No	Y
17247	20	Juniper	Remove	1.00	No	Y
17248	14	Juniper	Remove	0.50	No	Y
17265	15	Juniper	Remove	0.50	No	Y
17308	12	Juniper	Remain	0.50	No	Y
17413	8	Juniper	Remove	0.50	No	Y
17414	11.25	Juniper	Remove	0.50	No	Y
17415	11	Juniper	Remove	0.50	No	Y
17416	20	Juniper	Remove	1.00	No	Y
17417	19.5	Juniper	Remove	1.00	No	Y
17418	16.5	Juniper	Remove	0.50	No	Y
17419	12	Juniper	Remove	0.50	No	Y
17420	20.5	Juniper	Remove	1.00	No	Y
17421	23	Juniper	Remove	1.00	No	Y
17422	12	Juniper	Remove	0.50	No	Y
17426	16	Juniper	Remove	0.50	No	Y
17427	18.5	Juniper	Remove	0.50	No	Y
17428	21.5	Juniper	Remove	1.00	No	Y
17429	13	Juniper	Remove	0.50	No	Y
17430	11	Juniper	Remove	0.50	No	Y
17431	15	Juniper	Remove	0.50	No	Y
17432	9	Juniper	Remove	0.50	No	Y
17433	8	Juniper	Remove	0.50	No	Y
17436	9	Juniper	Remove	0.50	No	Y
17437	24.5	Juniper	Remain	1.00	No	Y
17438	12	Juniper	Remove	0.50	No	Y
17439	11	Juniper	Remove	0.50	No	Y
17440	9	Juniper	Remove	0.50	No	Y
17441	15.25	Juniper	Remove	0.50	No	Y
17442	16	Juniper	Remove	0.50	No	Y
17443	12.75	Juniper	Remove	0.50	No	Y
17444	9	Juniper	Remove	0.50	No	Y
17445	8.75	Juniper	Remain	0.50	No	Y
17446	11	Juniper	Remove	0.50	No	Y
17447	10.55	Juniper	Remove	0.50	No	Y
17448	23	Juniper	Remain	1.00	No	Y
17449	9	Juniper	Remove	0.50	No	Y
17450	9	Juniper	Remove	0.50	No	Y
17451	9	Juniper	Remove	0.50	No	Y
17452	9	Juniper	Remain	0.50	No	Y
17453	8.5	Juniper	Remove	0.50	No	Y

BF COLLABORATIVE
LANDSCAPE ARCHITECTURE
BLU FISH COLLABORATIVE, INC.
P.O. BOX 40792, Austin, TX 78704
Phone: (512)388-4115

PROFESSIONAL SEAL:

DATE SEALED: 01/06/2023

PROJECT NAME:
LAKE CREEK AT AVERY RANCH

OWNER:
LAKELINE AVERY PARTNERS, LP

PROJECT LOCATION:
9205 NORTH LAKE CREEK PARKWAY
AUSTIN, TEXAS 78729

REVISIONS:

SITE PLAN APPROVAL Sheet 59 of 59
FILE NO: SP-XXX APPLICATION DATE: XXX
APPROVED BY COMMISSION ON _____ UNDER SECTION 112 OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE
EXPIRATION DATE (25-5-81, LDC) _____ CASE MANAGER XXX
PROJECT EXPIRATION DATE (ORD. #970905-A) _____ DWPZ _____ DDZ _____
Director, Development Services Department
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING MF-4
Rev. 1 _____ Correction 1 _____
Rev. 2 _____ Correction 2 _____
Rev. 3 _____ Correction 3 _____
Final plat must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permit and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.

PROJECT #: 046-22-07
DATE PRINTED: 01/06/2023
DRAWING TITLE:
TREE LIST

SHEET NO.:
L113
67 OF 67

SP-XXXX