BAR W RANCH EAST MIXED USE

WATER POLLUTION ABATEMENT PLAN
&
SEWAGE COLLECTION SYSTEM APPLICATION

PREPARED FOR:

BAR W EAST COMMERCIAL, LTD.
c/o Mr. Dan Wheat
901 S. Mopac Expressway, Suite 550
Austin, Texas 78746

PREPARED BY:

CARLSON, BRIGANCE & DOERING, INC.
Patrick M. Sullivan, P.E.
5501 West William Cannon Dr.
Austin, Texas 78749
(512) 280-5160

CBD # 5375
December 2024

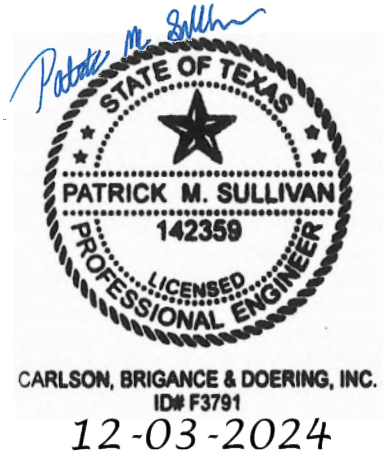


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I

EDWARDS AQUIFER APPLICATION COVER PAGE

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

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

Administrative Review

1. 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: **Bar W Ranch East Mixed Use**							**2. Regulated Entity No.:**		
3. Customer Name: **Bar W East Commercial, LTD.**							**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):**		51.474	
9. Application Fee:	$8,800		**10. Permanent BMP(s):**			Batch Detention Pond			
11. SCS (Linear Ft.):	1,600		**12. AST/UST (No. Tanks):**			N/A			
13. County:	Williamson		**14. Watershed:**			South Fork San Gabriel River			

Application Distribution

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

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

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

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	___	___	X
Region (1 req.)	___	___	X
County(ies)	___	___	X
Groundwater Conservation District(s)	___Edwards Aquifer Authority ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell X 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. Patrick M. Sullivan
Print Name of Customer/Authorized Agent
Signature of Customer/Authorized Agent Date: 12-03-2024

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):	

II

GENERAL INFORMATION FORM

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.

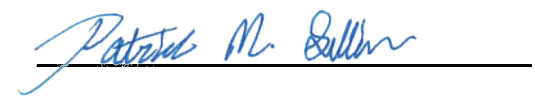
Signature

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: Patrick M. Sullivan

Date: 12/03/2024

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Bar W Ranch East Mixed Use
2. County: Williamson
3. Stream Basin: South San Gabriel River
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: Dan Wheat
   Entity: Bar W East Commercial, Ltd.
   Mailing Address: 901 S. Mopac Expressway, Suite 550
   City, State: Austin, TX Zip: 78746
   Telephone: (512) 477-1212 FAX: _____
   Email Address: dwheat@barshop-oles.com

8. Agent/Representative (If any):

   Contact Person: Patrick M. Sullivan
   Entity: Carlson, Brigance & Doering, Inc.
   Mailing Address: 5501 W. William Cannon Dr.
   City, State: Austin, TX Zip: 7879
   Telephone: (512) 280-5160 FAX: _____
   Email Address: patrick@cbdeng.com

9. Project Location:

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

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

    The project site is located on the southeast corner at the intersection of Ronald Reagan Blvd and Kauffman Loop in the city of Leander.

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: March 10, 2025

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.

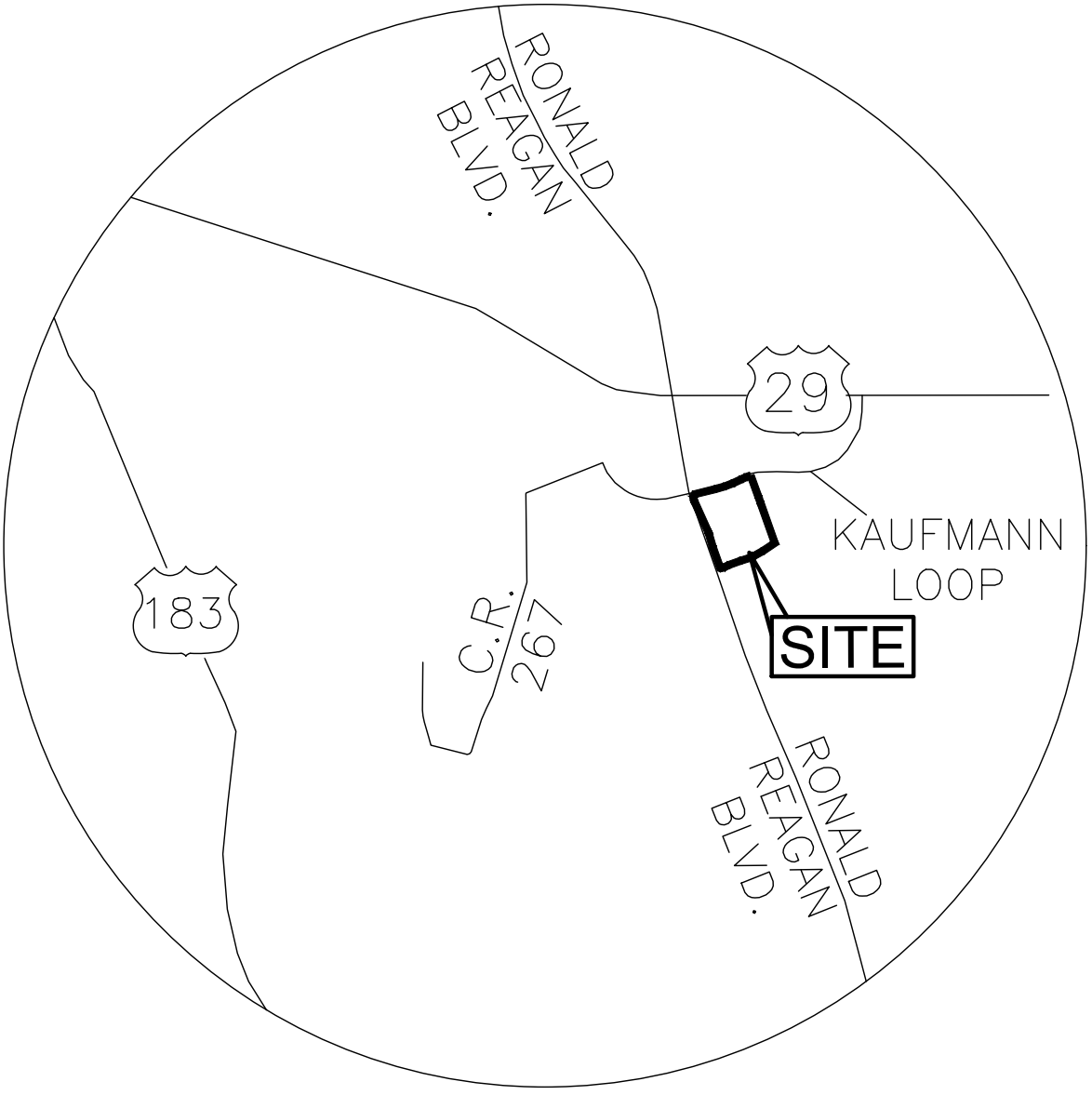
19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

☐ 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.

ATTACHMENT "A"

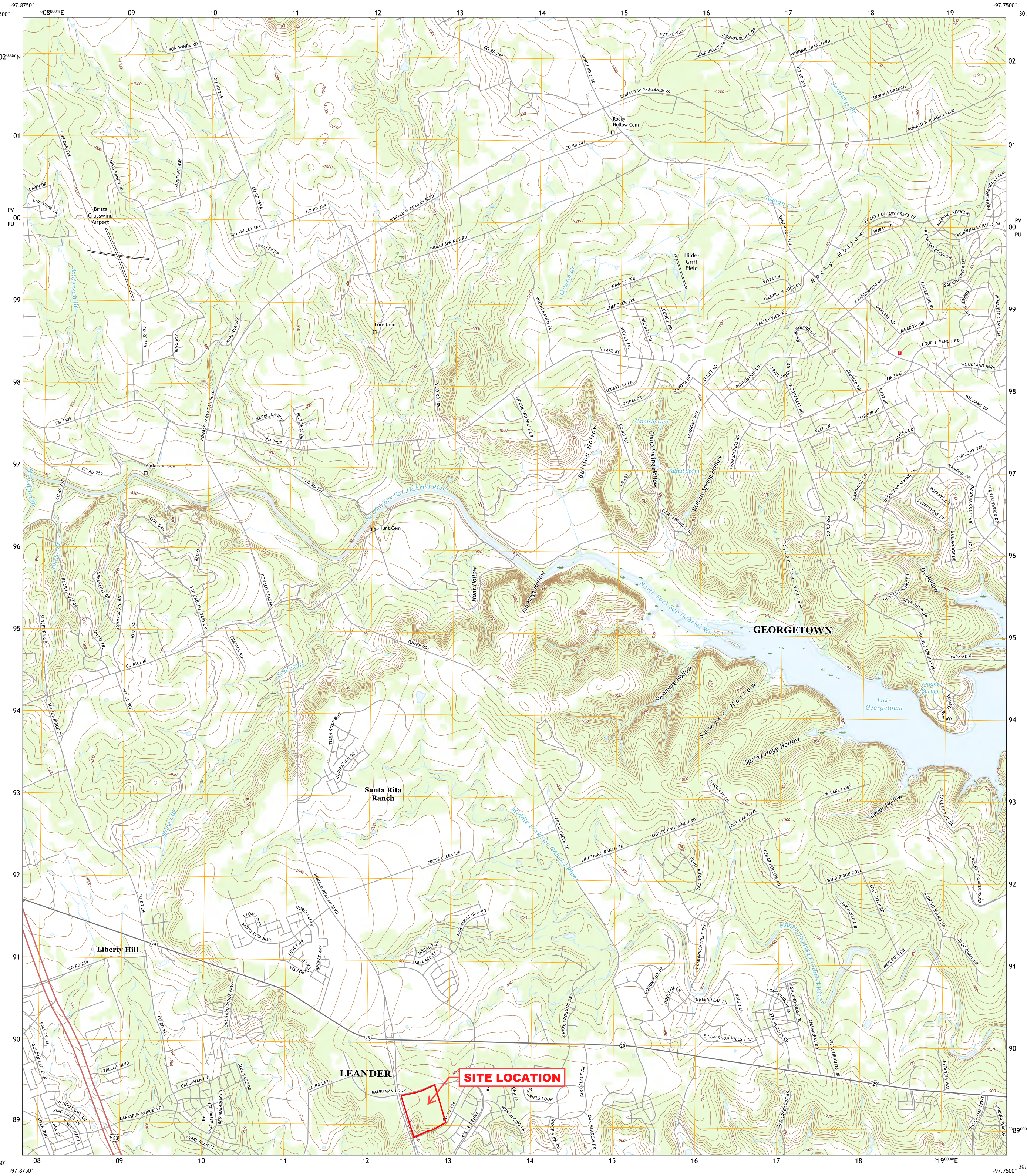


VICINITY MAP
N.T.S.

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
US Topo

LEANDER NE QUADRANGLE
TEXAS - WILLIAMSON COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery....................NAIP, August 2016 - November 2016
Roads....................U.S. Census Bureau, 2015 - 2019
Names....................GNIS, 1979 - 2021
Hydrography....................National Hydrography Dataset, 2002 - 2021
Contours....................National Elevation Dataset, 2004
Boundaries....................Multiple sources; see metadata file 2019 - 2021

Wetlands....................FWS National Wetlands Inventory Not Available

MN
GN
3°46´
67 MILS
0°36´
11 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
PV
PU
Grid Zone Designation
14R

SCALE 1:24 000
KILOMETERS
METERS
MILES
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the
National Geospatial Program US Topo Product Standard.

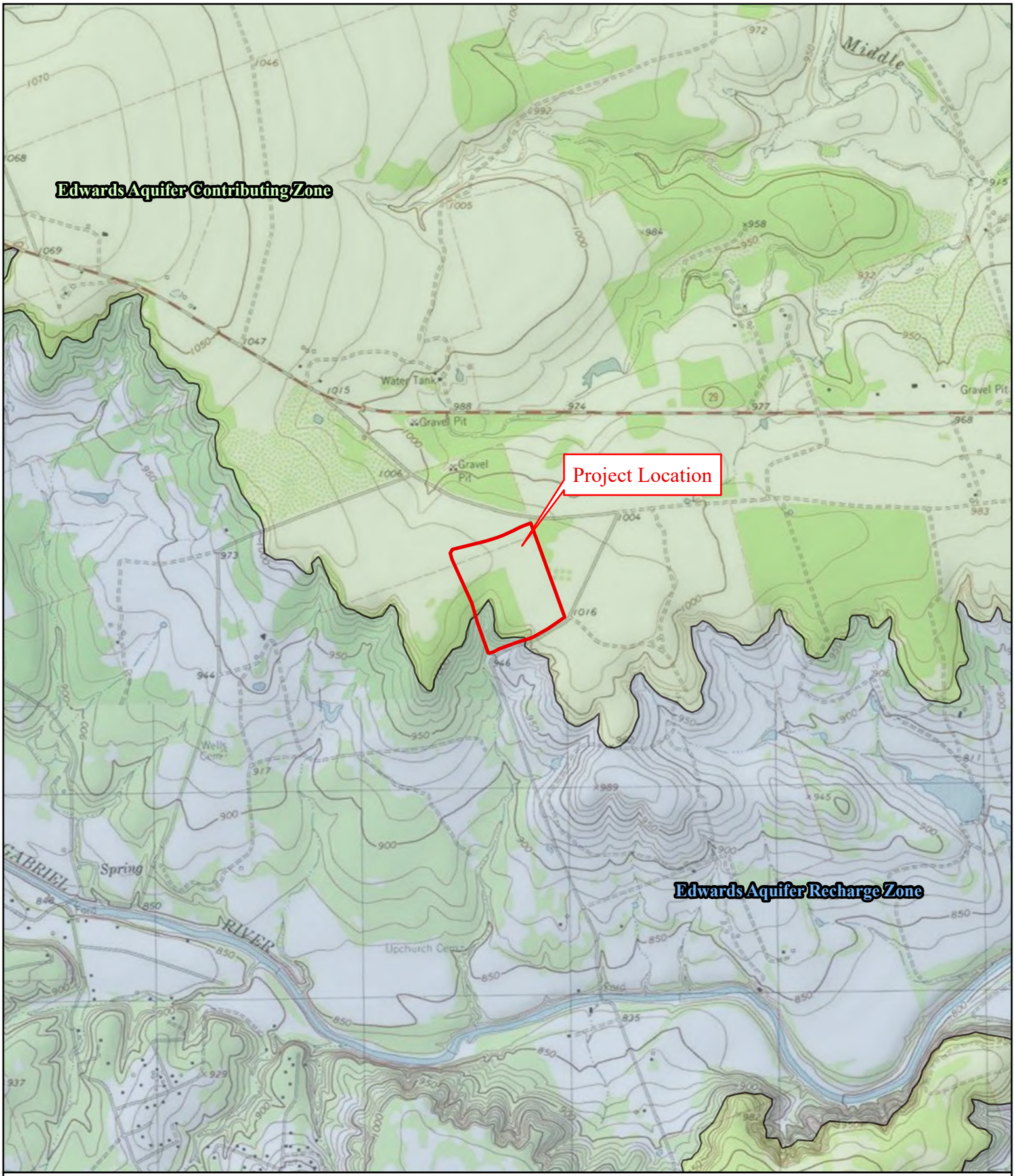
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

ADJOINING QUADRANGLES
1 Mahomet
2 Florence
3 Cobbs Cavern
4 Liberty Hill
5 Georgetown
6 Nameless
7 Leander
8 Round Rock

LEANDER NE, TX
2022

NSN. 7643016396982
NGA REF NO. USGSX24K25239



Bar W Ranch East Mixed Use

Edwards Aquifer Recharge Zone Map

USGS Quadrangle: Leander NE

Carlson, Brigance & Doering, Inc.
Civil Engineering ❖ Surveying

N W E S

0 500 1,000 2,000
Feet

E:\5375\GIS\BarWEast.aprx

Carlson, Brigance & Doering, Inc. shall not be liable for errors, omissions, or inaccuracies contained in this map.
For informational purposes only.

ATTACHMENT 'C'

PROJECT DESCRIPTION

Bar W Ranch East Mixed Use is a 51.474-acre development consisting of 6 mixed use commercial lots, 3 mixed use residential lots. The limits of construction are 53.067 acres, located in Williamson County. The site is currently undeveloped land and located within the Leander city limits. A portion of this site is located over the Edwards Aquifer Recharge Zone and the Edwards Aquifer Contributing Zone. Development of this project will be designed in accordance with the Code of Ordinances of the City of Leander and TCEQ requirements.

The anticipated impervious cover added to this development for Bar W Ranch East Mixed Use is 38.21 acres, or 74.24%.

Temporary water quality controls will be provided for this section by utilizing silt fence, inlet protection, concrete washouts, and rock berms, which will provide the necessary water quality controls to comply with TCEQ regulations.

Permanent water quality controls will be provided by the development of a partial sedimentation/filtration pond. This partial sedimentation/filtration pond will provide up to or above 80% removal of the increase in TSS load resulting from this development as required by TCEQ under TAC Chapter 213.

There is one geological feature existing within the entire 51.474-acre site. Labeled on the plans as CEF, feature F-1 is shown with it's setback on the Erosion Control sheets. This feature may have sub-surface voids. If any sub-surface voids are encountered during the proposed development, construction should be halted immediately so that a geologist may assess potential for the void(s) to provide meaningful recharge to the Edwards Aquifer. All void closure plans shall be approved by TCEQ.

III

GEOLOGIC ASSESSMENT WITH MAPS & PHOTOS

Horizon™
Environmental Services, Inc.

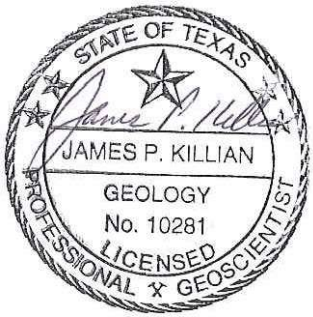
GEOLOGIC ASSESSMENT
187.3-ACRE BAR W TRACT
LEANDER, WILLIAMSON COUNTY, TEXAS
HJN 21011-001 GA

PREPARED FOR:

CARLSON, BRIGANCE & DOERING, INC.
AUSTIN, TEXAS

PREPARED BY:

HORIZON ENVIRONMENTAL SERVICES, INC.
TBPG FIRM REGISTRATION NO. 50488



FEBRUARY 2021

CORPORATE HEADQUARTERS
1507 South IH 35 ★ Austin, Texas 78741 ★ 512.328.2430 ★ Fax 512.328.1804 ★ www.horizon-esi.com
An LJA Company

Horizon
Environmental Services, Inc.

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I. GEOLOGIC ASSESSMENT FORM (TCEQ-0585)

II. ATTACHMENTS:

A GEOLOGIC ASSESSMENT TABLE
B STRATIGRAPHIC COLUMN
C DESCRIPTION OF SITE GEOLOGY
D SITE GEOLOGIC MAP
E SUPPORTING INFORMATION
F ADDITIONAL SITE MAPS
G SITE PHOTOGRAPHS

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

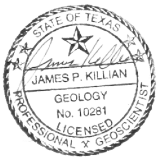
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: James Killian Telephone: 512 328-2430

Date: 5 February 2021 Fax: 512 328-1804

Representing: Horizon Environmental Services, Inc. and TBPG Firm Registration No. 50488
(Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: 187.3-acre Bar W Tract; Leander, Williamson County, Texas

Project Information

1. Date(s) Geologic Assessment was performed: 22-24, 27-29 April 2015; 1 May 2015, and 13-14 January 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)
Brackett gravelly clay loam, 3-16% slopes (BkE)	C	0 to 1
Eckrant cobbly clay, 1-8% slopes (EaD)	D	0 to 1
Fairlie clay, 1-2% slopes (FaB)	D	2 to 4
Georgetown clay loam, 0-2% slopes (GeB)	D	1 to 3
Georgetown stony clay loam, 1-3% slopes (GsB)	D	1 to 3

** Soil Group Definitions (Abbreviated)*

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

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

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

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

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

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

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

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

Site Soils Map Scale (if more than 1 soil type): 1" = 1000'

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.

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ATTACHMENT A

GEOLOGIC ASSESSMENT TABLE

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: 187.3-acre Bar W Tract, Leander, Williamson Co., Texas

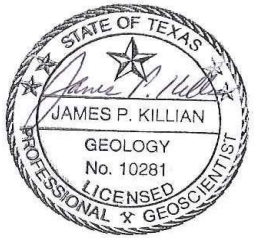
LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
F-1	30.63201	-97.82337	SH	20	Ked	25	20	2.5	--		--	--	C,F,O	45	65		X	X		Hilltop
M-1	30.63545	-97.82638	MB	30	Ked	80	60	3	--		--	--	C,F,O	5	35	X		X		Hillside

* DATUM:_____

2A TYPI	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	Man-made 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

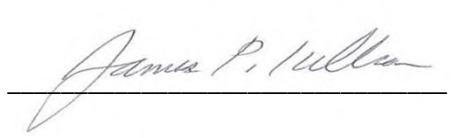
12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed



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.

Date: 5 February 2021



Sheet 1 of 1

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

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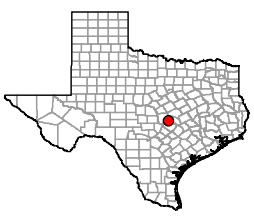
ATTACHMENT B
STRATIGRAPHIC COLUMN

150089 - Bar W\Graphics\150089A05GA_Strat.mxd | REM | 04-30-2015

Geologic Unit	Hydrologic Unit	Approx. Thickness at Project Site (ft)	Elevation (ft msl)	Depth (ft)
			1030	0
Edwards Formation (Ked)	Edwards Aquifer	60		
			970	60
Comanche Peak Formation (Kc)		50		
			920	110
Walnut Formation Keys Valley Marl Member (Kkv)	Confining Unit	50		
			870	160
Walnut Formation Cedar Park Member (Kcp)		50		
			820	210

Note: Unit elevation and thickness given with respect to a ground surface elevation of 1030 ft on the northwestern corner of the project site.

STATE OF TEXAS
JAMES P. KILLIAN
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No. 10281
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PROFESSIONAL GEOSCIENTIST



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ATTACHMENT B

STRATIGRAPHIC COLUMN
APPROXIMATELY 187.3-ACRE
BAR W TRACT
LEANDER, WILLIAMSON COUNTY, TEXAS

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ATTACHMENT C
DESCRIPTION OF SITE GEOLOGY

Geologic information for the subject site obtained via literature review is provided in Attachment E, Supporting Information.

A geologic assessment of the approximately 187.3-acre Bar W Tract was conducted pursuant to Texas rules for regulated activities in the Edwards Aquifer Recharge Zone (EARZ) (30 TAC 213). The subject site consists of undeveloped rangeland and/or woodlands currently used to raise beef cattle, located near the intersection of Ronald Reagan Boulevard and Kauffman Loop in west-central Williamson County, Texas. Assessment findings were used to develop recommendations for site construction measures intended to be protective of water resources at the subject site and adjacent areas.

The entire subject site is located within the Edwards Aquifer Recharge Zone (EARZ), as defined by the Texas Commission on Environmental Quality (TCEQ, 2005). The EARZ occurs where surface water enters the subsurface through exposed limestone bedrock containing faults, fractures, sinkholes, and caves.

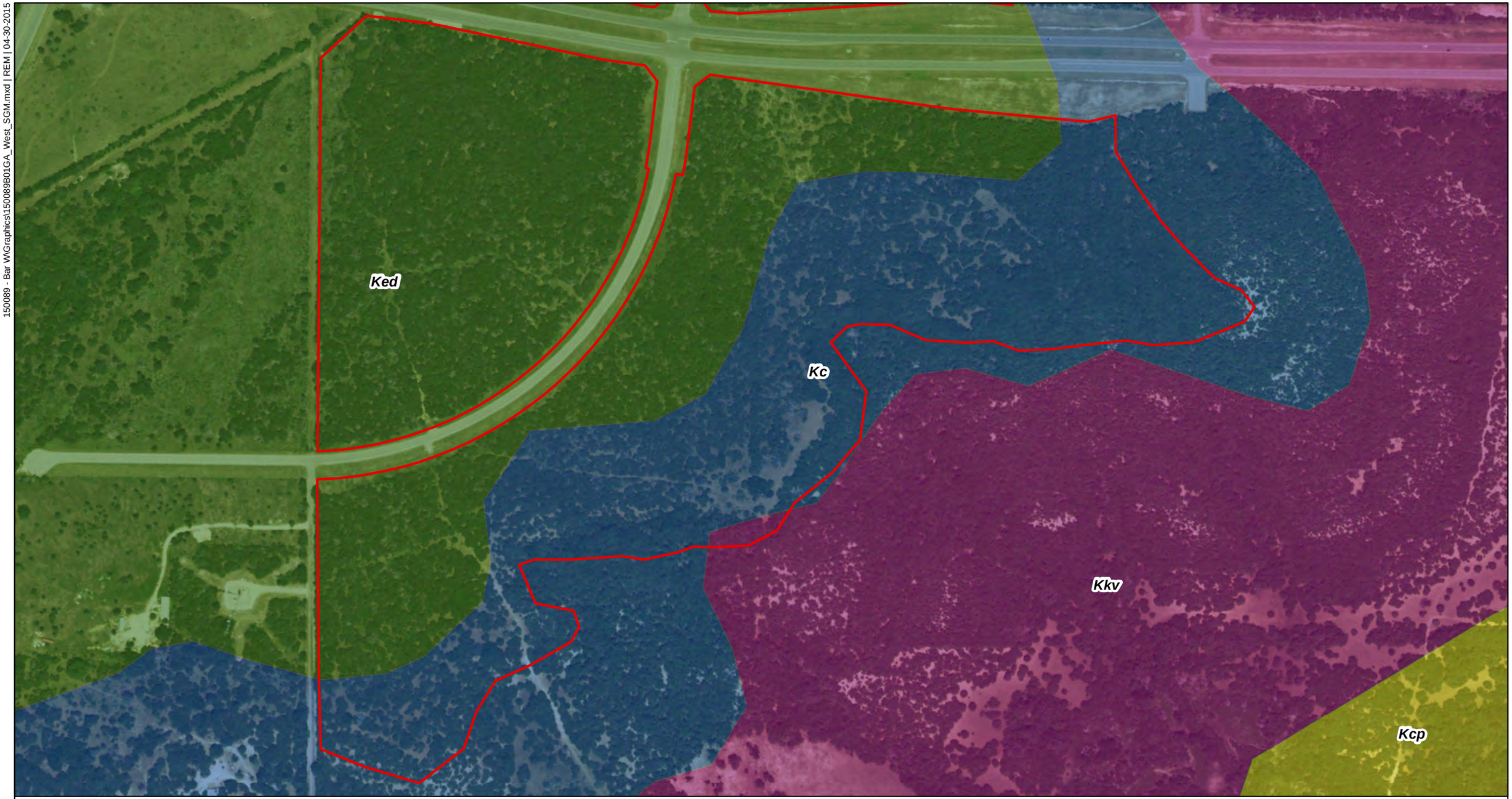
The subject site is predominantly underlain by undifferentiated Edwards Limestone Formation (Ked) (UT-BEG, 1995), which is further underlain by the Comanche Peak Formation (Kc) and the Keys Valley Marl member (Kkv) of the Walnut Formation.

One natural geologic feature (F-1) and one man-made feature (M-1) were identified at the subject site. Further information pertaining to the geologic features is presented in Attachments D, E, and F.

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ATTACHMENT D
SITE GEOLOGIC MAP

150089 - Bar W\Graphics\150089B01GA_West_SGM.mxd | REM | 04-30-2015



MAP SOURCE: UT-BEG, 1974; USDA, 2014.

Horizon Environmental Services, Inc.

STATE OF TEXAS
JAMES P. KILLIAN
GEOLOGY
No. 10281
LICENSED
PROFESSIONAL GEOSCIENTIST

0 200 400 Feet

Scale: 1" = 400'

Legend

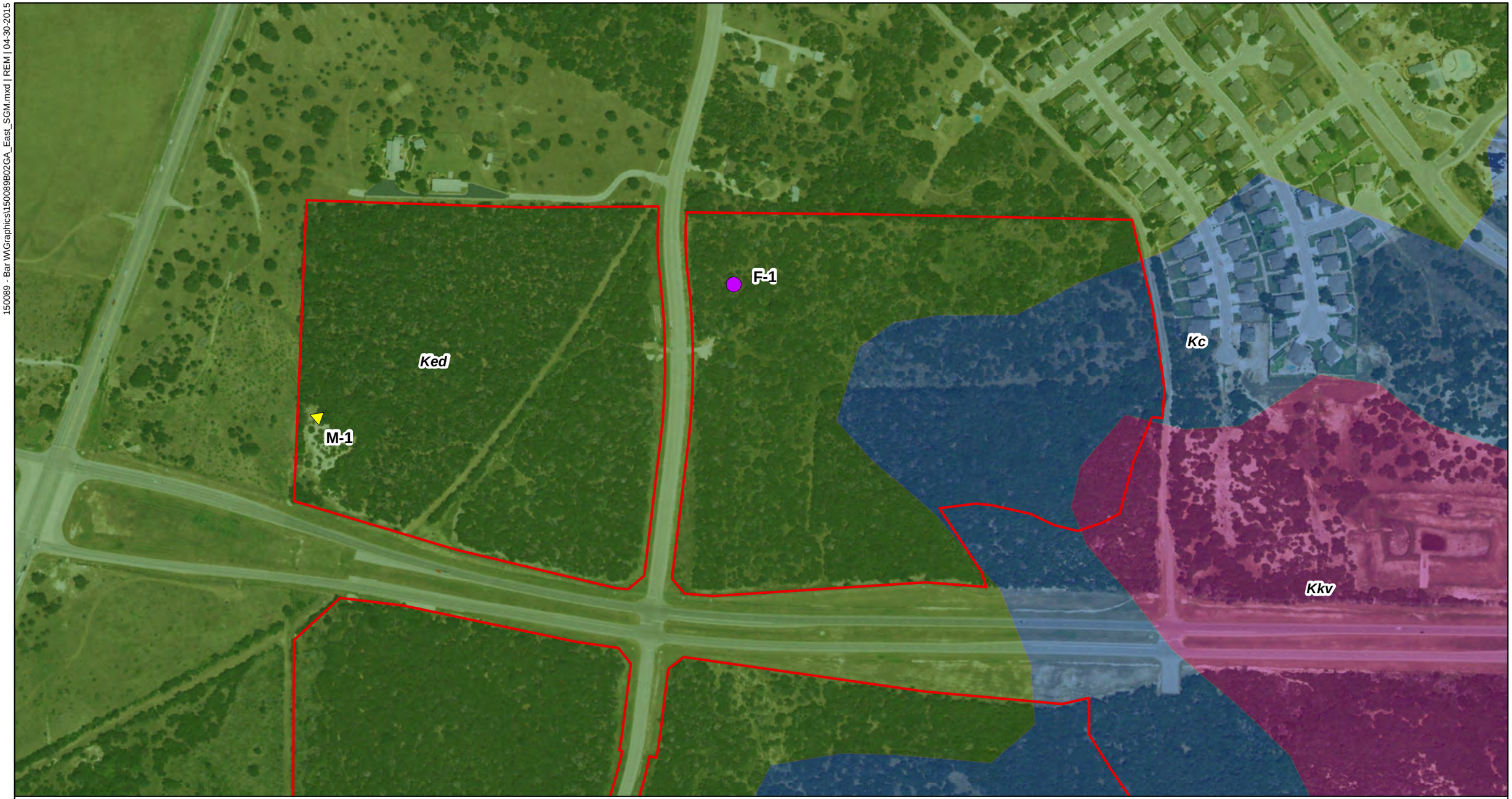
- Geologic Feature
- Man-made Feature
- Subject Site
- Edwards Formation (Ked)
- Comanche Peak Formation (Kc)
- Walnut Formation Keys Valley Marl Member (Kkv)
- Walnut Formation Cedar Park Member (Kcp)



ATTACHMENT D

SITE GEOLOGIC MAP
APPROXIMATELY 187.3-ACRE
BAR W TRACT
(WESTERN PORTION)
LEANDER, WILLIAMSON COUNTY, TEXAS

150089 - Bar W\Graphics\150089B02GA_East_SGM.mxd | REM | 04-30-2015



MAP SOURCE: UT-BEG, 1974; USDA, 2014.

Horizon Environmental Services, Inc.

STATE OF TEXAS
JAMES P. KILLIAN
GEOLOGY
No. 10281
LICENSED
PROFESSIONAL GEOSCIENTIST

0 200 400 Feet

Scale: 1" = 400'

Legend

- Geologic Feature
- Man-made Feature
- Subject Site
- Edwards Formation (Ked)
- Comanche Peak Formation (Kc)
- Walnut Formation Keys Valley Marl Member (Kkv)
- Walnut Formation Cedar Park Member (Kcp)



ATTACHMENT D

SITE GEOLOGIC MAP
APPROXIMATELY 187.3-ACRE
BAR W TRACT
(EASTERN PORTION)
LEANDER, WILLIAMSON COUNTY, TEXAS



Horizon Environmental Services, Inc.	
Date:	01/22/2021
Drawn:	KRS
HJN NO:	21011.001 KS
Source:	Nearmap, 2021

Legend

- Sensitive Geologic Feature
- Man-made Feature
- Subject Site
- TCEQ Buffer Area

Geologic Feature Buffer Map
187.3-Acre Bar W Tract
Leander, Williamson County, Texas

STATE OF TEXAS
JAMES P. KILLIAN
GEOLOGY
No. 10291
LICENSED
PROFESSIONAL GEOSCIENTIST

0 200 400
Feet
Scale: 1" = 400'

21011--Wedemeyer_Leander_Tract\Graphics\Ph II KS\21011-001KS_03A_Buffers

Horizon
Environmental Services, Inc.

ATTACHMENT E
SUPPORTING INFORMATION

1.0 INTRODUCTION AND METHODOLOGY

This report and any proposed abatement measures are intended to fulfill Texas Commission on Environmental Quality (TCEQ) reporting requirements (TCEQ, 2005). This geologic assessment includes a review of the subject site for potential aquifer recharge and documentation of general geologic characteristics for the subject site. Horizon Environmental Services, Inc. (Horizon) conducted the necessary field and literature studies according to TCEQ *Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones* (TCEQ, 2004).

Horizon walked transects spaced 50 feet apart, mapped the locations of features using a sub-foot accurate Trimble Geo HX handheld GPS, and posted processed data utilizing GPS Pathfinder Office software, topographic maps, and aerial photographs. Horizon also searched the area around any potential recharge features encountered to look for additional features. When necessary, Horizon removed loose rocks and soil (by hand) to preliminarily assess each feature's subsurface extent while walking transects. However, labor-intensive excavation was not conducted during this assessment. Features that did not meet the TCEQ definition of a potential recharge feature (per TCEQ, 2004), such as surface weathering, karren, or animal burrows, were evaluated in the field and omitted from this report.

The results of this survey do not preclude the possibility of encountering subsurface voids or abandoned test or water wells during the clearing or construction phases of the proposed project. If a subsurface void is encountered during any phase of the project, work should be halted until the TCEQ (or appropriate agency) is contacted and a geologist can investigate the feature.

2.0 ENVIRONMENTAL SETTING

2.1 LOCATION AND GENERAL DESCRIPTION

The subject site consists of approximately 187.3 acres located near the intersection of Ronald Reagan Boulevard and Kauffman Loop in west-central Williamson County, Texas (Attachment F, Figure 1).

2.2 LAND USE

The subject site is undeveloped rangeland and/or woodlands currently used to raise beef cattle, with local electrical and water utilities. Surrounding land is predominantly undeveloped rangeland and/or used for rural residences.

2.3 TOPOGRAPHY AND SURFACE WATER

The subject site is situated on gently to moderately sloping terrain within the South and Middle Forks of the San Gabriel River watershed (Attachment F, Figures 2 and 3). Surface elevations on the subject site vary from a minimum of approximately 970 feet above mean sea level (amsl) near the southeastern boundary to a maximum of approximately 1030 feet amsl near

the northwestern corner. Drainage on most of the site occurs primarily by overland sheet flow in multiple directions based on locations near several unnamed tributaries of the South and Middle Forks of the San Gabriel River.

2.4 EDWARDS AQUIFER ZONE

As shown in Attachment F, Figure 2, the entire subject site is found within the Edwards Aquifer Recharge Zone, as mapped by TCEQ Recharge Zone Boundary Maps (TCEQ, 2015).

2.5 SURFACE SOILS

Mapping by the Natural Resources Conservation Service (NRCS, 2015) shows approximately 5 soil mapping units within the subject site (Attachment F, Figure 4) associated with the soil series described below.

Brackett gravelly clay loam, 3 to 16% slopes (BkE) has a moderately alkaline, pale brown, clay loam surface layer about 5 inches thick with about 15% cover of limestone fragments that range from 4 to 12 inches in diameter. The subsoil, to 16 inches, is moderately alkaline, pale yellow clay loam with about 5% weakly cemented fine limestone fragments. The underlying layer is very pale brown, interbedded, calcareous loam and limestone. This soil is well-drained, permeability is moderately slow, and available water capacity is very low. Runoff is rapid.

Eckrant cobbly clay, 1 to 8% slopes (EaD) has a surface layer about 13 inches thick. The upper part is dark grayish-brown, cobbly clay and the lower part is dark brown, cobbly clay. The underlying material is coarsely fractured, indurated limestone. This soil is calcareous and moderately alkaline. The surface has about 50% cover of limestone fragments that are mostly 4 to 8 inches across. This soil is well-drained, permeability is moderately slow, and runoff is rapid. The available water capacity is very low.

Fairlie clay, 1 to 2% slopes (FaB) is a gently sloping soil along broad flats and on the edges of drainageways on uplands. Typically, this soil has a dark gray clay upper layer about 21 inches thick. The layer below that, to 46 inches, is clay that is gray in the upper part and dark grayish-brown in the lower part. The underlying material is weakly cemented limestone interbedded with limy material. This soil is calcareous and moderately alkaline throughout. This soil is moderately well-drained. When dry, this soil cracks extensively, and water enters it rapidly. When this soil is wet and the cracks are closed, water enters the soil very slowly. Runoff is medium. The available water capacity is high. Erosion is a slight hazard.

Georgetown clay loam, 0 to 2% slopes (GeB) is a nearly level to gently sloping soil on uplands. Most areas are irregular in shape and range from 10 to 50 acres. Typically, the surface layer is slightly acidic, brown clay loam about 7 inches thick. The subsoil extends to about 35 inches; it is neutral to slightly acidic, reddish-brown clay in the upper part and cobbly clay in the lower part. The underlying material is indurated limestone that has limy earth imbedded in the crevices. This soil is well-drained. Permeability is slow. Surface runoff is medium. The available water capacity is low.

Georgetown stony clay loam, 1 to 3% slopes (GsB) is a gently sloping soil found mostly on the higher parts of uplands. Typically, this soil has a slightly acidic, brown stony clay loam surface layer about 7 inches thick and few to common stones on or near the surface. The subsoil, which extends down to a depth of about 35 inches, is neutral, reddish-brown clay in the upper part and slightly acidic, reddish-brown cobbly clay in the lower part. The underlying material is indurated, fractured limestone that has clay loam in crevices and fractures. This soil is well-drained. Permeability is slow, and surface runoff is medium. The available water capacity is low. Reaction is neutral to slightly acidic. The erosion hazard ranges to slight.

2.6 WATER WELLS

A search was made for water wells on and within 0.5 miles of the subject site. A review of the records of the TCEQ and the Texas Water Development Board (TWDB) revealed no water wells at the subject site or within 0.5 miles from the subject site (TWDB, 2015). The results of this survey do not preclude the existence of an abandoned well. The results of this assessment do not preclude the existence of undocumented/abandoned wells on the site. If a water well or casing is encountered during construction, work should be halted near the feature until the TCEQ is contacted.

Abandoned wells must be capped or properly abandoned according to the Administrative Rules of the Texas Department of Licensing and Regulation, 16 Texas Administrative Code (TAC), Chapter 76, effective 3 January 1999. A plugging report must be submitted (by a licensed water well driller) to the Texas Department of Licensing and Regulation, Water Well Driller's Program, Austin, Texas. If a well is intended for use, it must comply with 16 TAC §76.

2.7 GEOLOGY

Literature Review

A review of existing literature shows the subject site is predominantly underlain by the undifferentiated Edwards Limestone Formation (Ked) (UT-BEG, 1995) with an estimated maximum thickness of about 60 feet at higher elevations located near the northwestern corner. Underlying the Edwards Limestone is the Comanche Peak Formation (Kc), which crops out at lower elevations located along the western, southern, and southeastern portions of the subject site, with an estimated thickness of about 50 feet. Below the Comanche Peak Formation is the Keys Valley Marl member (Kkv) of the Walnut Formation, which crops out at the lowest elevations near the western and southern portions of the subject site. In general, the rock strata beneath the site dip to the southeast at about 10 to 30 feet per mile.

The subject site is located several miles west of the Balcones Fault Zone, and available geologic reports indicate the immediate area has not been affected by geologically inactive, normal faulting. A normal fault is an inclined fault in which the hanging wall appears to have slipped downward relative to the footwall. The nearest mapped fault is located about 2 miles west of the site, and strikes N30°E (UT-BEG, 1995).

Field Assessment

Please see Attachment C for a narrative description of geology observed on the subject site. The Site Geologic Map is provided as Attachment D. Field surveys of the subject site were conducted by a licensed Horizon geologist on 22 to 24 and 27 to 29 April 2015, 1 May 2015, and 13 to 14 January 2021. Based on the results of the survey, 1 natural geologic feature (F-1) and 1 man-made feature (M-1) were observed at the subject site. Man-made feature M-1 is an abandoned gravel pit currently used as a (dry) stock pond located on the northeastern portion of the subject site that measures about 80 feet long by 60 feet wide by 2 to 4 feet deep.

Geologic Feature F-1 is an upland sinkhole measuring about 25 feet long by 20 feet wide by 2.5 feet deep with 3 open drainage portals located near its center spaced from about 3 to 6 feet apart. The largest drainage portal measures approximately 3 feet long by 2 feet wide by 18 feet deep. The smallest portal is a solution-enlarged fracture (azimuth: N26°E) measuring 3 feet long by 0.5 to 1 foot wide by 3 feet deep about 6 feet east of the larger portal. The third portal is located about 3 feet southeast of the larger portal and measures 1.5 feet in diameter by 8 feet deep. Air flow conductivity was noted at the largest and deepest drainage portal opening; however, entry was not attempted due to its extended vertical nature and lack of hand/footholds. On 13 and 14 January 2021, Horizon staff excavated the largest drainage portal within the sinkhole (to about ~8 feet long by 7 feet wide by 14 feet deep) using a backhoe with hoe ram attachment and found a narrow, fractured drainage portal within the floor of the excavation. The portal extended down another 2 feet with slight to moderate air flow conductivity; however, it became too small to continue. Due to its apparent limited horizontal extent, this feature has a final (negotiated) TCEQ setback buffer of at least 25 feet in all directions from the feature's areal extent (sinkhole perimeter), plus its watershed catchment up to 200 feet from the sinkhole perimeter of the feature. This feature has a high infiltration rate and an apparent surface runoff catchment of less than 0.3 acres.

3.0 CONCLUSIONS AND RECOMMENDATIONS

One natural geologic and 1 man-made feature were identified at the subject site. Each of the features was evaluated for its potential to be a significant pathway for fluid movement into the Edwards Aquifer. The Geologic Assessment Table (Attachment A) summarizes this evaluation and assigns each feature's sensitivity a total point value. Those with a point value of 40 or higher are deemed to be sensitive groundwater recharge features and should be protected during site development pursuant to TCEQ rules for protection of the Edwards Aquifer (30 TAC 213).

Geologic feature F-1 has been evaluated as sensitive for groundwater recharge capability and would therefore require a TCEQ protective setback buffer. This feature has a final (negotiated) TCEQ setback buffer of at least 25 feet in all directions from the feature's areal extent (sinkhole perimeter), plus its watershed catchment up to 200 feet from the sinkhole perimeter of the feature.

Man-made feature M-1 has been evaluated as non-sensitive for groundwater recharge capability and would therefore not require a TCEQ protective setback buffer. No further action is recommended for this non-sensitive man-made feature.

The site appears generally well-suited to development prospectus. It should be noted that soil and drainage erosion would increase with ground disturbance. Native grasses and the cobbly content of the soil aid to prevent erosion. Soil and sedimentation fencing should be placed in all appropriate areas prior to any site construction activities.

Because the subject site is located over the Edwards Aquifer Recharge Zone, it is possible that subsurface voids underlie the site. The nature of the subgrade is fault-influenced, which can result with variable-sized voids in materials that may otherwise not be noted as void or cave forming. If any subsurface voids are encountered during the proposed development, construction should halt immediately so that a geologist may assess potential for the void(s) to provide meaningful recharge to the Edwards Aquifer.

4.0 REFERENCES

(CAPCOG) Capital Area Council of Governments. *Data, Maps, and Reports.* Contours 10 Foot Merge. <http://www.capcog.org/data-maps-and-reports/geospatial-data/>. Accessed 1 May 2015.

(ESRI) Environmental Systems Research Institute, Inc. Street Map North America Data Layer. ESRI, Redlands, California. 2012.

(NRCS) Natural Resources Conservation Service (formerly the Soil Conservation Service) US Department of Agriculture, Engineering Division Soil Series and Hydrologic Soil Groups of Urban Hydrology for Small Watersheds, Technical Release No. 55, Engineering Division, January 1975.

_____. Web Soil Survey, <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed 30 April 2015.

(TCEQ) Texas Commission on Environmental Quality. RG-348, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices. Revised July 2005.

_____. Instructions to Geologists for completing Geologic Assessments within the Edwards Aquifer Recharge Zone. Revised October 2004.

_____. Texas Commission on Environmental Quality. Edwards Aquifer Protection Program. Edwards Aquifer Viewer, <http://gisweb.tceq.texas.gov/edwardsAquifer/>. Accessed 28 April 2015.

(TWDB) Texas Water Development Board. Water Information Integration and Dissemination System. TWDB Groundwater Database, <https://www3.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer>. Accessed 30 April 2015.

(USDA) US Department of Agriculture. National Agriculture Imagery Program, Farm Service Agency, Aerial Photography Field Office. Williamson County, Texas. 2014.

(USGS) US Geological Survey. 7.5-minute series topographic maps, Leander NE, Texas, quadrangle. 1962.

(UT-BEG) The University of Texas at Austin Bureau of Economic Geology; C.V. Proctor, Jr., T.E. Brown, J.H. McGowen, N.B. Waechter, and V.E. Barnes. *Geologic Atlas of Texas*, Austin Sheet. Francis Luther Whitney Memorial Edition. 1974; revised 1995.

(Werchan et al.) Werchan, L. E., and J. L. Coker. Soil survey of Williamson County, Texas. Soil Conservation Service, US Department of Agriculture, Washington, D.C. 1983.

ATTACHMENT F

ADDITIONAL SITE MAPS

150089 - Bar W\Graphics\150089A01GA_Vicinity.mxd | REM | 04-29-2015



MAP SOURCE: ESRI, 2012.

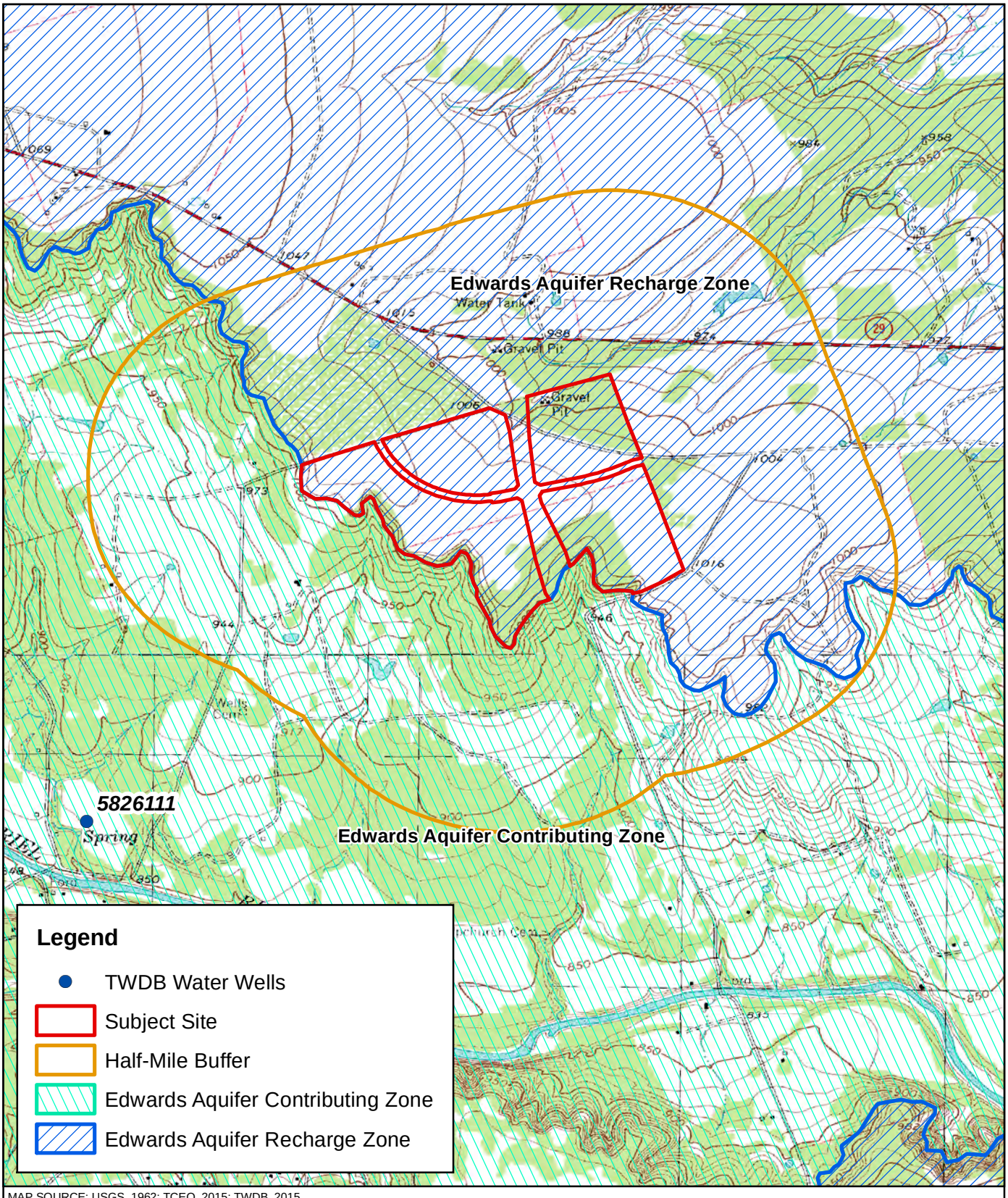
0 1 2
Miles

Horizon
Environmental Services, Inc.

ATTACHMENT F, FIGURE 1

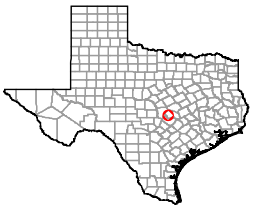
VICINITY MAP
APPROXIMATELY 187.3-ACRE
BAR W TRACT
LEANDER, WILLIAMSON COUNTY, TEXAS

150089 - Bar W\Graphics\150089A02GA_Topo_Hydro.mxd | REM | 04-29-2015



MAP SOURCE: USGS, 1962; TCEQ, 2015; TWDB, 2015.

0 1,000 2,000
Feet

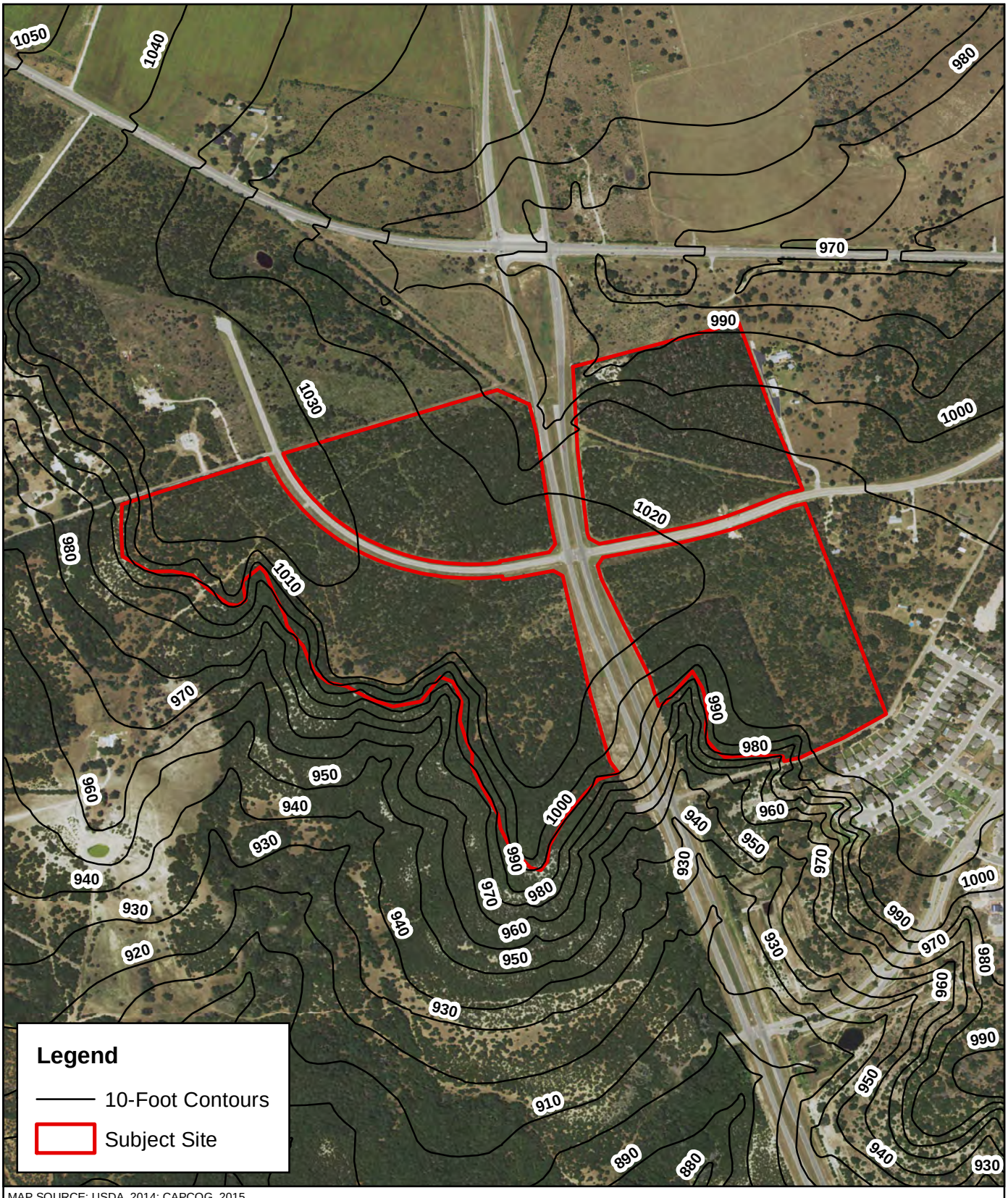


Horizon Environmental Services, Inc.

ATTACHMENT F, FIGURE 2

TOPOGRAPHY AND
HYDROGEOLOGY MAP
APPROXIMATELY 187.3-ACRE
BAR W TRACT
LEANDER, WILLIAMSON COUNTY, TEXAS

150089 - Bar W\Graphics\150089A03GA_Topo.mxd | REM | 04-29-2015



MAP SOURCE: USDA, 2014; CAPCOG, 2015.

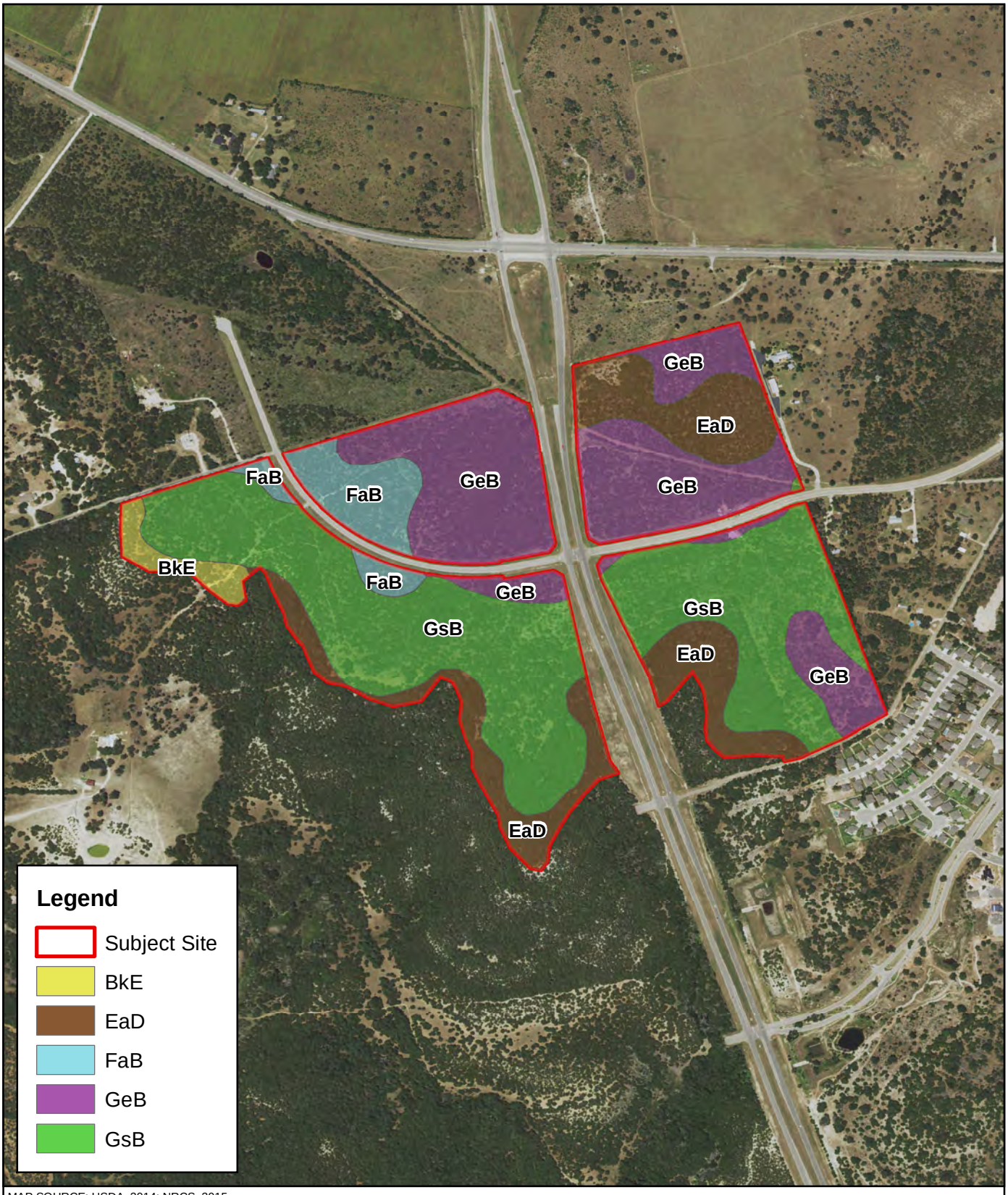
0 500 1,000
Feet

Horizon Environmental Services, Inc.

ATTACHMENT F, FIGURE 3

SITE TOPOGRAPHY MAP
APPROXIMATELY 187.3-ACRE
BAR W TRACT
LEANDER, WILLIAMSON COUNTY, TEXAS

150089 - Bar W\Graphics\150089A04GA_Soils.mxd | REM | 04-29-2015

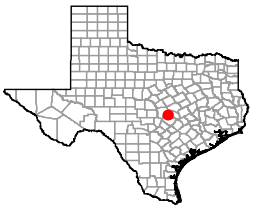


MAP SOURCE: USDA, 2014; NRCS, 2015.

STATE OF TEXAS
JAMES P. KILLIAN
GEOLOGY
No. 10261
LICENSED
PROFESSIONAL GEOSCIENTIST

Horizon
Environmental Services, Inc.

0 500 1,000
Feet



ATTACHMENT F, FIGURE 4

SURFACE SOIL MAP
APPROXIMATELY 187.3-ACRE
BAR W TRACT
LEANDER, WILLIAMSON COUNTY, TEXAS

Horizon
Environmental Services, Inc.

ATTACHMENT G

SITE PHOTOGRAPHS



PHOTO 1
View of geologic feature F-1 (sinkhole/cave), facing south



PHOTO 2
View of larger drainage portal opening at F-1, facing southeast



PHOTO 3

View of two smaller open drainage portals at F-1, facing southwest

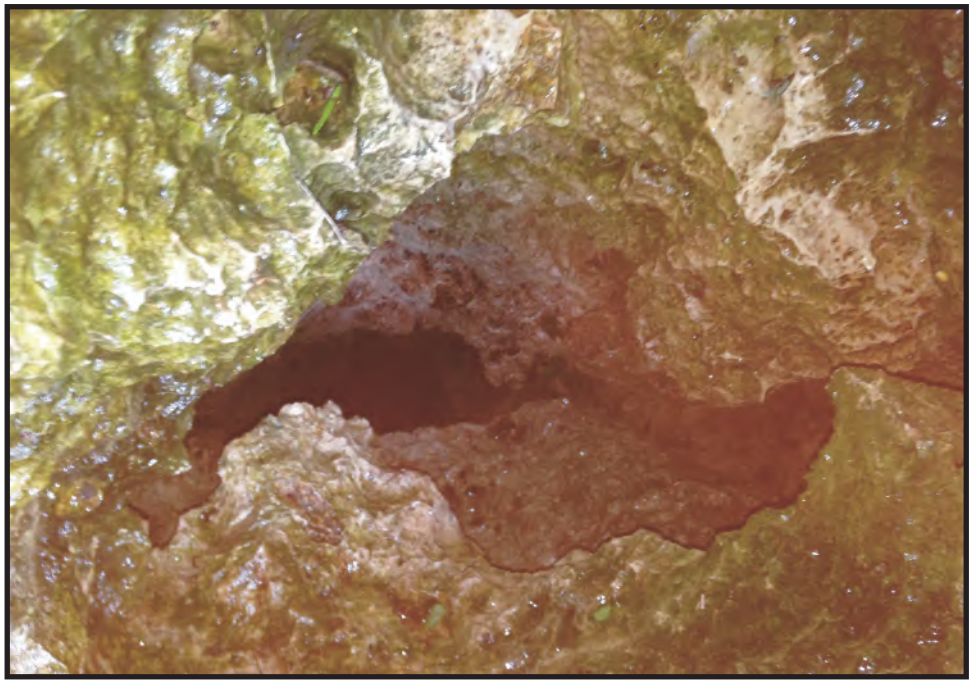


PHOTO 4

View inside drainage portal opening at F-1, facing down



PHOTO 5

View of smaller open drainage portal at F-1, facing down



PHOTO 6

View of man-made feature (dry stock pond) M-1, facing east



PHOTO 7
Geologic Feature F-1 after mechanical excavation, facing down



PHOTO 8
Interior view of small, narrow drainage portal located along excavated floor of F-1, facing down

IV

WATER POLLUTION ABATEMENT PLAN APPLICATION

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: Patrick M. Sullivan

Date: 12/03/2024

Signature of Customer/Agent:



Regulated Entity Name: Bar W Ranch East Mixed Use

Regulated Entity Information

1. The type of project is:

   ☐ Residential: Number of Lots:_____
   ☒ Residential: Number of Living Unit Equivalents:105
   ☒ Commercial
   ☐ Industrial
   ☐ Other:_____

2. Total site acreage (size of property):51.474

3. Estimated projected population:623

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		÷ 43,560 =	
Parking		÷ 43,560 =	
Other paved surfaces		÷ 43,560 =	
Total Impervious Cover	1,664,541	÷ 43,560 =	38.21

Total Impervious Cover 38.21 **÷ Total Acreage** 51.47 **X 100 =** 74.24**% 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	43,610 Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day
TOTAL gallons/day 43,610	

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 City of Liberty Hill WWTP (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

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

Site Plan Requirements

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

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

Site Plan Scale: 1" = 100'.

18. 100-year floodplain boundaries:

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

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.

WPAP APPLICATION

ATTACHMENT "A"

Factors contributing to the contamination of surface and groundwater are generated from man-made pollutants such as pesticides, fertilizers, illegal trash dumping, and automotive fluids.

WPAP APPLICATION

ATTACHMENT "B"

Volume and Character of Stormwater Runoff:

The Bar W Ranch East Mixed Use development will mitigate the 100-yr storm with the proposed sedimentation / filtration pond and natural run-off to existing drainage ditches. The runoff coefficient of the existing conditions is 0.52 and will be increased to 0.59 when the proposed development is completed. The amount of runoff leaving the site will be in compliance with the TCEQ Regulations. The pond is designed to hold the 144.7 CFS that the 100-yr storm generates and will have an 89% removal rate by TCEQ Standards. The quality of runoff leaving the site will also be in compliance with TCEQ Regulations.

V

ORGANIZED SEWAGE COLLECTION SYSTEM APPLICATION

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: Bar W Ranch East Mixed Use

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: Dan Wheat
   Entity: Bar W East Commercial, Ltd.
   Mailing Address: 901 S. Mopac Expressway, Suite 550
   City, State: Austin, TX Zip: 78746
   Telephone: (512) 477-1212 Fax: _____
   Email Address: dwheat@barshop-oles.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: Patrick M. Sullivan
   Texas Licensed Professional Engineer's Number: 142359
   Entity: Carlson, Brigance & Doering, Inc.
   Mailing Address: 5501 W. William Cannon Dr.
   City, State:Austin, TX Zip: 78749
   Telephone:(512) 280-5160 Fax:_____
   Email Address:patrick@cbdeng.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: _____
   ☒ Commercial
   ☐ Industrial
   ☐ Off-site system (not associated with any development)
   ☐ Other: _____

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

100% Domestic	204,065 gallons/day
_____% Industrial	_____ gallons/day
_____% Commingled	_____ gallons/day

   Total gallons/day: 204,065

6. Existing and anticipated infiltration/inflow is 48,422 gallons/day. This will be addressed by: The design of the wastewater system. Pipes have capacity to transport anticipated flow.

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 12/06/2024, 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)*
12	1,056	SDR 26 PVC	ASTM 3034
8	134	SDR 26 PVC	ASTM 3034
6	53	SDR 26 PVC	ASTM 3034
4	347	SDR 26 PR PVC	ASTM D2241

Total Linear Feet: 1,590

(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 City of Liberty Hill Wastewater (name) Treatment Plant. The treatment facility is:

   ☒ Existing
   ☐ Proposed

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

   ☒ The City of Leander 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?*
A	44 Of 62	1+00.00	MH
A	44 Of 62	3+25.01	MH
A	44 Of 62	4+36.77	MH
A	45 Of 62	7+89.66	MH
A	45 Of 62	9+46.44	MH
A	45 Of 62	11+56.12	MH
	Of		

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

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" = 40'.

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

20. Lateral 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
	of	to
	of	to
	of	to

23. 5-year floodplain:

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

Table 4 - 5-Year Floodplain

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

24. ☒ Legal boundaries of the site are shown.

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

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

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

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

Table 5 - Water Line Crossings

Line	*Station or Closest Point*	*Crossing or Parallel*	*Horizontal Separation Distance*	*Vertical Separation Distance*
A	6+86.45	Crossing		2.2'
A	10+10.63	Crossing		1.1'
A	11+76.12	Crossing		1.1'

27. Vented Manholes:

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

Table 6 - Vented Manholes

Line	*Manhole*	*Station*	*Sheet*

Line	*Manhole*	*Station*	*Sheet*

28. Drop manholes:

☒ There are no drop manholes associated with this project.
☐ Sewer lines which enter new or existing manholes or "manhole structures" higher than 24 inches above the manhole invert are listed in the table below and labeled on the appropriate profile sheets. These lines meet the requirements of 30 TAC §217.55(l)(2)(H).

Table 7 - Drop Manholes

Line	*Manhole*	*Station*	*Sheet*

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

☒ The placement and markings of all sewer line stub-outs are shown and labeled.
☐ No sewer line stub-outs are to be installed during the construction of this sewage collection system.

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

☒ The placement and markings of all lateral stub-outs are shown and labeled.
☐ No lateral stub-outs are to be installed during the construction of this sewage collection system.

31. Minimum flow velocity (From Appendix A)

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

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

☒ Assuming pipes are flowing full, all slopes are designed to produce maximum flows of less than or equal to 10 feet per second for this system/line.
☐ **Attachment D – Calculations for Slopes for Flows Greater Than 10.0 Feet per Second.** Assuming pipes are flowing full, some slopes produce flows which are greater than 10 feet per second. These locations are listed in the table below. Calculations are attached.

Table 8 - Flows Greater Than 10 Feet per Second

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

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

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

Administrative Information

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

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

Table 9 - Standard Details

Standard Details	*Shown on Sheet*
Lateral stub-out marking **[Required]**	44 & 45 of 62
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) **[Required]**	51 of 62
Alternate method of joining lateral to existing SCS line for potential future connections **[Required]**	of
Typical trench cross-sections **[Required]**	55 of 62
Bolted manholes **[Required]**	of
Sewer Service lateral standard details **[Required]**	51 of 62
Clean-out at end of line **[Required, if used]**	of
Baffles or concrete encasement for shock/erosion protection **[Required, if flow velocity of any section of pipe >10 fps]**	of
Detail showing Wastewater Line/Water Line Crossing **[Required, if crossings are proposed]**	44 & 45 of 62
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) **[Required, if Flexible Pipe is used]**	51 of 62

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

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

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

    ☐ Survey staking was completed on this date: _____

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

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

Signature

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

Print Name of Licensed Professional Engineer: Patrick M. Sullivan

Date: 12/03/2024

Place engineer's seal here:



Signature of Licensed Professional Engineer:

Appendix A-Flow Velocity Table

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

Table 10 - Slope Velocity

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

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

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

Figure 1 - Manning's Formula

Where:

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

ATTACHMENT 'A'

SCS Engineering Design Report

1. Wastewater Service

Bar W Ranch East Mixed Use will provide wastewater service to 6 mixed use commercial lots and 2 mixed use residential lots and takes access off a manhole constructed with Bar W Ranch West Phase One. Wastewater flows will be conveyed to the existing City of Liberty Hill Wastewater Treatment Plant. For the wastewater service calculations, the LUEs will be a conservative assumption of 178.

2. Wastewater Service Calculations

Average Dry Weather Flow (ADWF):
Assume: 70 gallons/person/day (Table B.1.-Design Organic Loadings and Flows for a New Facility)
ADWF = 70 gallons/person/day x 3.5 people/lot
ADWF = 245 gallons/day/LUE
ADWF = [245 gals/day/LUE x 178 LUEs /1,440

ADWF = **30.28 gpm**

Peak Dry Weather Flow (PDWF):
PDWF = ADWF x Pf, where Pf=Peaking Factor
Pf = [18+(0.0206 X ADWF)^0.5]/[4+(0.0206 x ADWF)^0.5]; COA UCM 2.9.4 A(4)
Pf = 18+(0.0206 x 30.28)^0.5
4+(0.0206 x 30.28)^0.5
Pf = **3.92**

PDWF = Pf x ADWF
PDWF = 3.92(30.28)

PDWF = **118.70 gpm**

Peak Wet Weather Flow (PWWF):
PWWF = PDWF + I/I
I/I = 750 gal/day/acre
Area = 53.0 Acres

I/I = (53.0 acres X 750 gal/day/acre)/1,440
I/I = **27.60 gpm**

PWWF = 118.70 + 27.60 gpm
PWWF = 146.30 **gpm**

Therefore; an 12-inch gravity wastewater line is sufficient to handle the flow for future development to this section pipe.

3. Gravity Pipe Materials

The proposed gravity pipe collection system shall be PVC SDR 26 type pipe which shall conform to ASTM 2241 or ASTM D3034 standards. All sewer pipe and fittings shall conform to these ASTM standards. This PVC gravity sewer pipe is not affected by sewer gases or acids created as products of the hydrogen sulfide cycle, nor are it affected by the attack from aggressive "hot" soil conditions. PVC pipe offers long lengths and joints which are virtually root-proof and leak proof, yet flexible enough to conform to shifts and settling caused by unstable soil or traffic conditions.

Pipe joints shall be made and joined with an integral bell, bell-and-spigot rubber gasketed joint. Each integral bell joint shall consist of a formed bell complete with a single rubber gasket. Gaskets shall conform to ASTM F 477.

4. Pipe Separation Distances

All gravity wastewater pipes are to be installed a minimum distance of nine feet from all public water supplies and manholes. All gravity wastewater pipes are to have a vertical separation of no less than 24-inches.

5. Geological Faults

No active geologic faults have been identified within the project area. See attached Geological Assessment provided by Horizon Environmental Services, Inc.

6. Structural Analysis

Structural calculations are not necessary as the line is trenched to public utility standards. The structural manholes will follow the city of Austin standard manholes as shown in the details in the plans. No curved wastewater lines are proposed.

7. Certification

I hereby certify that this report complies with the Texas Administrative Code, and the information contained hereon is true and correct to the best of my knowledge.

Patrick M. Sullivan 12-03-2024

Patrick M. Sullivan, P.E. Date



VI

LIFT STATION / FORCE MAIN SYSTEM APPLICATION

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: Bar W Ranch East Mixed Use

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: Dan Wheat
   Entity: Bar W East Commercial, Ltd.
   Mailing Address: 901 S. Mopac Expressway, Suite 550
   City, State: Austin, TX Zip: 78746
   Telephone: (512) 477-1212 Fax: _____
   Email Address: dwheat@barshop-oles.com

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

   Contact Person: Patrick M. Sullivan
   Entity: Carlson, Brigance & Doering, Inc.
   Mailing Address: 5501 W. William Cannon Dr.
   City, State: Austin, TX Zip: 78749
   Telephone: (512) 280-5160 Fax: _____
   Email Address: patrick@cbdeng.com
   Texas Licensed Professional Engineer's Serial Number: 142359

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 City of Liberty Hill Wastewater (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 Leander 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" = 40‘.

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 N/A of N/A.
   ☐ No Geologic Assessment is required for this project.

Table 1 - Geologic or Manmade Features

Line	*Station to Station*	*Type of Feature*
Feature beyond 50 feet	N/A to N/A	F-1 (Natural Sink Hole)
	to	
	to	
	to	
	to	
	to	
	to	
	to	

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

10. ☒ 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.

    ☒ 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): _____

12. 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 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.

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

14. ☒ 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. ☒ The equipment installation construction plans must have a minimum scale of 1" = 10'.

    Plan sheet scale: 1" = 40 '.

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

17. ☒ 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.

Table 3 - Air Release/Vacuum Valves

Line	*Station*	*Sheet*
N/A	N/A	N/A of N/A
		of
		of
		of
		of
		of

18. ☒ 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. ☒ **Attachment A - Engineering Design Report**. An engineering design report with the following required items is attached:

    ☒ The report is dated, signed, and sealed by a Texas Licensed Professional Engineer.
    ☒ Calculations for sizing system.
    ☒ 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.
    ☒ 100-year and 25-year flood considerations.
    ☒ Total lift station pumping capacity with the largest pump out of service.
    ☒ Type of pumps, including standby units.
    ☒ Type of pump controllers, including standby air supply for bubbler controllers, as applicable.

☒ Pump cycle time.
☒ Type of wet well ventilation; include number of air changes for mechanical ventilation.
☒ Minimum and maximum flow velocities for the force main.
☒ Lift station security.
☒ 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. ☒ 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.

22. ☒ 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. ☒ 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: Patrick M. Sullivan

Place engineer's seal here:



Date: 12/03/2024

Signature of Licensed Professional Engineer:

ATTACHMENT 'A'

Lift Station/Force Main System Engineering Design Report

1. Wastewater Service

Bar W Ranch East Mixed Use will provide forcemain wastewater service to be stubbed out to Lot 7 which is will be a mixed use residential lot. Wastewater flows will be conveyed through the proposed forcemain to the proposed gravity system included in the SCS portion of this application. Ultimately, the wastewater flow is conveyed to the existing City of Liberty Hill Wastewater Treatment Plant. For the wastewater service calculations, the LUEs for Lot 7 will be a conservative assumption of 25.

2. Wastewater Service Calculations

Average Dry Weather Flow (ADWF):
Assume: 70 gallons/person/day (Table B.1.-Design Organic Loadings and Flows for a New Facility)
ADWF = 70 gallons/person/day x 3.5 people/lot
ADWF = 245 gallons/day/LUE
ADWF = [245 gals/day/LUE x 25 LUEs /1,440

ADWF = **5.0 gpm**

Peak Dry Weather Flow (PDWF):
PDWF = ADWF x Pf, where Pf=Peaking Factor
Pf = [18+(0.0206 X ADWF)^0.5]/[4+(0.0206 x ADWF)^0.5]; COA UCM 2.9.4 A(4)
Pf = 18+(0.0206 x 5.0)^0.5
4+(0.0206 x 5.0)^0.5
Pf = **4.0**

PDWF = Pf x ADWF
PDWF = 4.0 x (5.0)

PDWF = **20.0 gpm**

Peak Wet Weather Flow (PWWF):
PWWF = PDWF + I/I
I/I = 750 gal/day/acre
Area = 14.11 Acres

I/I = (14.11 acres X 750 gal/day/acre)/1,440
I/I = **8.0 gpm**

PWWF = 20.0 + 8.0 gpm
PWWF = 28.0 **gpm**

Therefore; a 4-inch forcemain wastewater line is sufficient to handle the flow for future development to this section pipe.

3. Forcemain Pipe Materials

The proposed forcemain pipe collection system shall be PVC SDR 21 type pipe which shall conform to ASTM D2241 standards. All sewer pipe and fittings shall conform to these ASTM standards. This PVC forcemain sewer pipe is not affected by sewer gases or acids created as products of the hydrogen sulfide cycle, nor are it affected by the attack from aggressive "hot" soil conditions. PVC pipe offers long lengths and joints which are virtually root-proof and leak proof, yet flexible enough to conform to shifts and settling caused by unstable soil or traffic conditions.

Pipe joints shall be made and joined with an integral bell, bell-and-spigot rubber gasketed joint. Each integral bell joint shall consist of a formed bell complete with a single rubber gasket. Gaskets shall conform to ASTM F 477.

4. Pipe Separation Distances

All forcemain wastewater pipes are to be installed a minimum distance of nine feet from all public water supplies and manholes. All forcemain wastewater pipes are to have a vertical separation of no less than 24-inches.

5. Lift Station Design

This project only provides a design for a 4 inch forcemain to stub out to Lot 7 a Mixed Use Residential Lot. A lift station design is not provided at this time. At the time of site development for Lot 7 a lift station/grinder pump design will be required and will need to tie to the existing 4 inch forcemain stub.

6. Flood Considerations

No portion of this tract is located within the 100 year or 25 year flood plain.

7. Geological Faults

No active geologic faults have been identified within the project area. See attached Geological Assessment provided by Horizon Environmental Services, Inc.

8. Structural Analysis

Structural calculations are not necessary as the line is trenched to public utility standards. The structural manholes will follow the city of Austin standard manholes as shown in the details in the plans.

9. Certification

I hereby certify that this report complies with the Texas Administrative Code, and the information contained hereon is true and correct to the best of my knowledge.

Patrick M. Sullivan, P.E. 12-03-2024 Date



CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

VII

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: Patrick M. Sullivan

Date: 12/03/2024

Signature of Customer/Agent:



Regulated Entity Name: Bar W Ranch East Mixed Use

Project Information

Potential Sources of Contamination

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

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

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

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

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

☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

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

2. ☒ **Attachment A - Spill Response Actions**. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.

3. ☒ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. ☒ **Attachment B - Potential Sources of Contamination**. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

5. ☒ **Attachment C - Sequence of Major Activities**. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.

   ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

   ☒ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: South Fork San Gabriel River

Temporary Best Management Practices (TBMPs)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☐ N/A

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

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

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

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

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

Soil Stabilization Practices

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

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

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

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

Administrative Information

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

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

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

TEMPORARY STORMWATER SECTION

ATTACHMENT "A"
Spill Response Actions

Spill response actions will be in accordance with Texas Administrative Code (TAC) 30.327. If the amount of material spilled or discharged within any 24-hour period is equal to or greater than the reportable quantities as listed within TAC 30.327.4 or as indicated in Table 1, the responsible person shall notify the SERC and TCEQ Regional Office within 24-hours. All spills coincide with the Spill Rule which requires the party responsible for causing a spill that by its nature and size presents the threat of contaminating groundwater or surface water to:

- Control and contain the spill (or see that this is done)
- Clean up the results of the spill (or see that this is done)
- Notify the appropriate authorities, which may range from the local fire department to TCEQ, depending on the threat posed by the spill
- Make follow-up reports to TCEQ about the continuing progress of completion of the cleanup

In order to report an environmental emergency, discharge, spill, or air release, contact the State of Texas Spill-Reporting Hotline and the SERC at 1-800-832-8224, available 24 hours a day. Also, contact the TCEQ Regional Office, open Monday-Friday, 8:00 a.m.-5:00 p.m.

Table 1: Reportable Quantities (RQs) According to the Spill Rule

	Site of Spill	
Type of Spill	**On Land**	**In Water**
Hazardous substance		
If CERCLA RQ = 1-100 lb	CERCLA RQ	CERCLA RQ
If CERCLA RQ > 100 lb	CERCLA RQ	100 lb
Crude oil	210 gal	Enough to form a sheen
Used oil or petroleum product		
At a PST exempt facility*	210 gal	Enough to form a sheen
All others	25 gal	Enough to form a sheen
Oil other than crude oil, used		

oil, or petroleum product	210 gal	Enough to form a sheen
Other substances	No RQ	100 lb
Industrial solid waste	No RQ	100 lb

Note: This table applies only to the reporting to spills and discharges according to the Spill Rule, 30 TAC §§327.1-327.5. To find values of CERCLA RQs for hazardous substances, please refer to 40 CFR Table 302.4.

*The term “PST exempt facility” refers to facilities that are exempt from the Aboveground Storage Tank Program. Petrochemical plants, petroleum refineries, and electricity generation, transmission, and distribution facilities are some examples of PST exempt facilities.

-CERCLA (Comprehensive Emergency Response, Compensation, and Liability Act)

TEMPORARY STORMWATER SECTION

ATTACHMENT "B"

Potential sources of contamination include the leaking of fluids from construction equipment, trash generated by workers and material, sediment transport onto public roadways from construction equipment, and the use of asphaltic products on the roadways.

TEMPORARY STORMWATER SECTION

ATTACHMENT "C"

All temporary BMP's will be in place prior to start of any construction. All work within the Limits of Construction will be encompassed with silt fence to prevent water migrating into the site and trap any sediment leaving the site.

All permanent BMP's will begin to be installed once the temporary BMP's are complete. Upon completion of the permanent BMP's and site re-vegetation restoration, all temporary BMP's will be removed.

The major activities of this project that will result in large areas of soil disturbance are:

Sequence of Construction

Grubbing and Rough Grading:	31.43 acres
Utilities (SS, W, WW):	2.75 acres
Paving	3.16 acres

TEMPORARY STORMWATER SECTION

ATTACHMENT "D"

All temporary BMP's will be installed prior to the beginning of construction and remain in place until revegetation has been completed. These temporary measures will include silt fences, rock berms, inlet dykes, concrete wash-out areas, and stabilized construction entrances. These erosion control devices will prevent the transport of sediment generated from this site. The erosion control devices proposed with this project allow for the passing of water while retaining any sediment or trash. This will allow for the flow to maintain its natural course to naturally occurring sensitive features.

All Bar W Ranch East Mixed Use natural and permanent re-vegetation will be completed prior to removal of any temporary BMP's.

TEMPORARY STORMWATER SECTION

ATTACHMENT “F”

Practices of diverting runoff around exposed soils will consist of silt fence and inlet protection, which will be utilized to catch any pollutants from leaving the site. The only runoff aimed at exposed soils will be from the site itself. Filter dykes will prevent the sediment from entering constructed inlets.

TEMPORARY STORMWATER SECTION

ATTACHMENT "H"

The partial sedimentation and filtration pond will be utilized as a temporary sediment pond during the construction phase of Bar W Ranch East Mixed Use.

Drainage to pond = 51.48 ac
Volume required = 3,600 cu. ft. per acre of drainage area
Volume required = 3,600 x 51.48 = 185,328 cu. ft.
Volume provided = 251,387 cu. ft.

Also, other temporary BMP will be used and the placement, details, and design calculations for these temporary BMPs are shown in the attached construction plans, see sheet "Erosion Control Plan". All BMPs are designed to the TCEQ standards and specifications.

TEMPORARY STORMWATER SECTION

ATTACHMENT "I"

The Temporary BMP's will be inspected on a weekly basis for their compliance with TCEQ and City of Leander criteria.

Check all concrete washout facilities daily to determine if they have been filled to 75% capacity. The facility needs to be cleaned or changed when 75% full. Inspect self-installed washouts daily to ensure that plastic linings are intact and sidewalls have not been damaged by construction activities. If contractors have washed out chutes or hoppers in other unapproved locations, you may need to provide more education, install additional signage, or place additional washouts in more convenient locations. If the washout is nearing capacity, vacuum and dispose of the waste material in an approved manner. Do not discharge liquids to waterways, storm drains or directly onto ground. Do not use sanitary sewer without local approval. Remove liquids or cover the structures before predicted storms to prevent overflows.

Inspection of silt fence will occur weekly, and after any rainfall. Sediment shall be removed from silt fence when buildup reaches 6-inches and torn fabric must be replaced or a second line of fencing parallel to the torn section shall be provided. The contractor will be responsible for maintenance of these items. If cited by TCEQ or City of Leander the contractor will have 24 hours to bring the delinquent items up to standard. The contractor will keep a record of these items on site in the construction trailer. A Storm Water Pollution Prevention Plan will be filed prior to commencement of construction.

TEMPORARY STORMWATER SECTION

ATTACHMENT "J"

The project's limits of construction are primarily confined to the existing right-of-ways, easements, and project site. The project will begin with rough grading and cutting. The utilities will be installed. The final installation of curbs and paving will be completed within 120 working days. The backfill behind the curbs and embankments will be revegetated with hydromulch mix to be determined by the City of Leander.

Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity on that portion has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14^{th} day after construction activity temporary or permanently cease is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

VIII

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: Patrick M. Sullivan

Date: 12/03/2024

Signature of Customer/Agent



Regulated Entity Name: Bar W Ranch East Mixed Use

Permanent Best Management Practices (BMPs)

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

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

   ☐ N/A

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

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

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

☐ N/A

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

   ☐ N/A

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

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

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

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

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

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

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

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

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

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

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

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

☐ N/A

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

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

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

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

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

☐ N/A

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

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

    ☐ N/A

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

    ☒ N/A

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

    ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

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

    ☐ N/A

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

    ☐ N/A

PERMANENT STORMWATER SECTION

ATTACHMENT "B"

All upgradient storm water will run overland where it will be captured by curb inlets and/or area inlets and transported via storm sewer pipe to the proposed onsite sedimentation / filtration pond. The onsite pond will capture the required water quality volume then release the remainder downstream. The proposed pond was designed using the City of Austin Environmental Criteria Manual and the TCEQ Technical Guidance Manual for BMP's.

PERMANENT STORMWATER SECTION

ATTACHMENT "C"

All onsite storm water will flow over land and/or pavement where it will be captured by curb inlets and area inlets and transported via storm sewer pipe to the proposed onsite sedimentation / filtration pond. The onsite pond will capture the required water quality volume then release the remainder downstream. The proposed pond was designed using the City of Austin Environmental Criteria Manual and the TCEQ Technical Guidance Manual for BMP's.

PERMANENT STORMWATER SECTION

ATTACHMENT "D"

This section has been designed to capture all runoff and transport via storm sewer to an on-site proposed water quality sedimentation/filtration basin. This will prevent the pollutants from entering the adjacent stream until they are reduced to an acceptable level. A concrete wash-out will be used to remove any toxic materials from entering the adjacent stream and should be maintained properly. None of the features located on site are affected by the project construction.

PERMANENT STORMWATER SECTION

ATTACHMENT "F"

(SEE ATTACHED TCEQ SPREADSHEETS)

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009



12-03-2024

CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

Additional information is provided for cells with a red triangle in the upper right corn
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will

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 resul
A_N = Net increase in impervious a
P = Average annual precipitation

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

County =	Williamson	
Total project area included in plan * =	51.47	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	38.21	acres
Total post-development impervious cover fraction * =	0.74	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	33258	lbs.

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

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. = A

Total drainage basin/outfall area =	50.00	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	38.21	acres
Post-development impervious fraction within drainage basin/outfall area =	0.76	
$L_{M\ THIS\ BASIN}$ =	33258	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 3

where:

A_C = Total On-Site drainage area
A_I = Impervious area proposed in
A_P = Pervious area remaining in tl
L_R = TSS Load removed from this

A_C =	**50.00**	acres
A_I =	**38.21**	acres
A_P =	**11.79**	acres
L_R =	**37834**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	**33258**	lbs.
F =	**0.88**	

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

Rainfall Depth =	**1.50**	inches
Post Development Runoff Coefficient =	**0.58**	
On-site Water Quality Volume =	**157118**	cubic feet

Calculations from RG-348

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 =	**31424**	
Total Capture Volume (required water quality volume(s) x 1.20) =	**188541**	cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP
The values for BMP Types not selected in cell C45 will show NA.

7. Retention/Irrigation System Designed as Required in RG

Required Water Quality Volume for retention basin =	**NA**	cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate =	**0.1**	in/hr
Irrigation area =	**NA**	square feet
	NA	acres

8. Extended Detention Basin System Designed as Required in RG

Required Water Quality Volume for extended detention basin =	**NA**	cubic feet

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

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin =	**188541**	cubic feet
Minimum filter basin area =	**8729**	square feet
Maximum sedimentation basin area =	**78559**	square feet
Minimum sedimentation basin area =	**19640**	square feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	**188541**	cubic feet
Minimum filter basin area =	**15712**	square feet
Maximum sedimentation basin area =	**62847**	square feet
Minimum sedimentation basin area =	**3928**	square feet

10. Bioretention System Designed as Required in RG

Required Water Quality Volume for Bioretention Basin =	**NA**	cubic feet

11. Wet Basins Designed as Required in RG

Required capacity of Permanent Pool =	**NA**	cubic feet
Required capacity at WQV Elevation =	**NA**	cubic feet

BAR W RANCH EAST MIXED USE

SITE DEVELOPMENT PLANS

SUBMITTED BY:

Patrick M. Sullivan — 11-26-2024

CARLSON, BRIGANCE & DOERING, INC. — DATE

APPROVED BY:

ROBIN M. GRIFFIN, AICP, EXECUTIVE DIRECTOR OF DEVELOPMENT SERVICES, CITY OF LEANDER, TEXAS — DATE

EMILY TRUMAN, P.E., CITY ENGINEER CITY OF LEANDER, TEXAS — DATE

GINA ELLISON, P.E., EXECUTIVE DIRECTOR OF PUBLIC WORKS CITY OF LEANDER, TEXAS — DATE

MARK TUMMONS, CPRP, DIRECTOR OF PARKS AND RECREATION — DATE

CHIEF JOSHUA DAVIS, FIRE MARSHALL — DATE

TEXAS ONE CALL SYSTEM — CALL BEFORE YOU DIG — 1-800-245-4545

ZONING & LAND USE SUMMARY
FUTURE LAND USE CATEGORY: ACTIVITY CENTER, MULTI-USE CORRIDOR, NEIGHBORHOOD RESIDENTIAL
PER CITY OF LEANDER ORDINANCE NUMBER 23-019-00 THE ZONING & LAND USE IS AS FOLLOWS:
LOTS 1-6 ZONING: GC-2-A GENERAL COMMERCIAL
LOTS 7-9 ZONING: SFT-2-A & MF-2-A SINGLE-FAMILY TOWNHOUSE & MULTI-FAMILY
NOTE LOTS 7 & 8 ARE TO BE DEVELOPED AT A LATER DATE YET TO BE DETERMINED.

NOTE: ALL EASEMENTS OF RECORD AS INDICATED ON THE MOST RECENT RUN DATED: XX-XX-XXXX, CONDUCTED BY XXXXXXXXX, FOR THIS PROPERTY ARE SHOWN ON THIS SITE PLAN.

THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY, REGULATORY COMPLIANCE AND ADEQUACY OF THESE PLANS AND OR SPECIFICATIONS WHETHER OR NOT THE PLANS AND OR SPECIFICATIONS WERE REVIEWED BY THE CITY ENGINEER(S).

NOTE: A CONTRIBUTING ZONE PLAN,WATER POLLUTION ABATEMENT PLAN AND AN ORGANIZED SEWAGE COLLECTION PLAN ARE REQUIRED FOR THIS PROJECT.
APPROVAL MUST BE PROVIDED TO THE CITY OF LEANDER.

OWNER/DEVELOPER:
BAR W EAST COMMERCIAL, LTD.
901 S. MOPAC EXPRESSWAY, SUITE 550
AUSTIN, TEXAS 78746
ATTENTION: C. PATRICK OLES JR.

ENGINEER AND SURVEYOR:
CARLSON, BRIGANCE & DOERING, INC.
5501 WILLIAM CANNON DRIVE
AUSTIN, TEXAS 78749
PHONE: (512) 280-5160

	REVISION DESCRIPTION	REVIEWED BY:	DATE
REVISIONS AND CORRECTIONS			

CITY OF LEANDER PROJECT NUMBER: SD-24-0243
FILLING DATE 08/20/2024



LOCATION MAP

SCALE: 1"=2000'

LEGAL DESCRIPTION: TRACT OF LAND OUT OF THE GREEENLEAF FISK SURVEY, ABSTRACT NUMBER 5, SITUATED IN WILLIAMSON COUNTY, TEXAS, BEING 51.474 ACRES OF LAND, CONVEYED TO C.PATRICK OLES JR., RECORDED IN DOCUMENT NO. 2023091208, OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS.

TOTAL ACREAGE : 51.474 ACRES
SURVEY: GREENLEAF FISK SURVEY, ABS. NO. 5

IMPERVIOUS COVER: 171,452 SF / 3.936 ACRES

RELATED PROJECTS:

BAR W RANCH EAST MIXED USE FINAL PLAT	FP-24-0168
BAR W RANCH EAST MIXED USE CONSTRUCTION PLAN	PICP-24-0149
BAR W RANCH DEVELOPMENT AGREEMENT	DOC.# 2015089728

NOTES:

1. NO PORTION OF THIS TRACT IS WITHIN THE DESIGNATED FLOOD HAZARD AREA AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP #48491C0275 E WILLIAMSON COUNTY, TEXAS DATED SEPTEMBER 26, 2008.
2. THIS TRACT IS IN THE EDWARDS AQUIFER RECHARGE & CONTRIBUTING ZONE.
3. DEVELOPMENT OF THIS TRACT IS SUBJECT TO THE AMENDED AND RESTATED AGREEMENT REGARDING CONSENT OF CREATION OF MUNICIPAL UTILITY DISTRICTS 1, 2, AND 3 AND DEVELOPMENT OF THE "WEDEMEYER RANCH" AS AMENDED (CONSENT AGREEMENT); DOC #2015089728.
4. THE CITY OF LEANDER PLAT FILE NUMBER ASSOCIATED WITH THESE PLANS IS FP-24-0168.
5. ALL DRIVES WILL BE PRIVATE AND MAINTAINED BY THE BAR W EAST DEVELOPMENT OWNER'S ASSOCIATION (BWEDOA)/PARKLAND LOTS WILL BE MAINTAINED BY THE BAR W EAST DEVELOPMENT OWNER'S ASSOCIATION (BWEDOA), INCLUDING DRAINAGE IMPROVEMENTS.

Sheet List Table

Sheet Number	Sheet Title
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3	GENERAL CONSTRUCTION NOTES (SHEET 2 OF 2)
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5	FINAL PLAT (1 OF 3)
6	FINAL PLAT (2 OF 3)
7	FINAL PLAT (3 OF 3)
8	OVERALL EROSION CONTROL PLAN
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18	PHASING PLAN
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21	PRIVATE DRIVE A (4+50 TO 9+00)
22	PRIVATE DRIVE A (9+00 TO 13+00)
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29	PRIVATE DRIVE A & PRIVATE DRIVE C ROUNDABOUT
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31	OVERALL STORM SEWER PLAN
32	STORM SEWER LINES A & E (0+00 TO END)
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40	WATER QUALITY & DETENTION POND A
41	POND CROSS-SECTIONS
42	POND A DETAILS & CALCS
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44	WASTEWATER LINE A (0+00 TO 6+00)
45	WASTEWATER LINE A (6+00 TO END)
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SD-24-0243

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: COVER SHEET
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS — PATRICK M. SULLIVAN — 142359 — LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE, & DOERING, INC. ID # F3791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET: 1 OF 62

SUB-ENGINEERING.CTB

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SUB-ENGINEERING.CTB

GENERAL NOTES FOR SUBDIVISIONS AND SITE DEVELOPMENT PLANS
REVISED JULY 22, 2024

CITY CONTACTS:

ENGINEERING MAIN LINE:	512–528–2721
PLANNING DEPARTMENT:	512–528–2750
PUBLIC WORKS MAIN LINE:	512–259–2640
STORMWATER INSPECTIONS:	512–285–0055
UTILITIES MAIN LINE:	512–259–1142
UTILITIES ON–CALL:	512–690–4760

PEC CONTACTS:

PUBLIC SAFETY LINE:	1–888–343–7702
CUSTOMER OUTAGE LINE:	1–800–396–9037

GENERAL:
1. CONTRACTORS SHALL HAVE AN APPROVED SET OF PLANS WITH APPROVED REVISIONS ON SITE AT ALL TIMES. FAILURE TO HAVE APPROVED PLANS ON SITE MAY RESULT IN ISSUANCE OF WORK STOPPAGE.
2. CONTACT 811 SYSTEM FOR EXISTING WATER AND WASTEWATER LOCATIONS 48 HOURS PRIOR TO CONSTRUCTION.
   a. **REFRESH ALL LOCATES BEFORE 14 DAYS** – LOCATE REFRESH REQUESTS MUST INCLUDE A COPY OF YOUR 811 TICKET. TEXAS PIPELINE DAMAGE PREVENTION LAWS REQUIRE THAT A LOCATE REFRESH REQUEST BE SUBMITTED BEFORE 14 DAYS, OR IF LOCATION MARKERS ARE NO LONGER VISIBLE.
   b. **REPORT PIPELINE DAMAGE IMMEDIATELY** – IF YOU WITNESS OR EXPERIENCE PIPELINE EXCAVATION DAMAGE, PLEASE CONTACT THE CITY OF LEANDER BY PHONE AT 512–259–2640.
3. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR 48 HOURS BEFORE:
   a. BEGINNING EACH PHASE OF CONSTRUCTION. CONTACT ASSIGNED CITY INSPECTOR.
   b. ANY TESTING. CONTRACTOR SHALL PROVIDE QUALITY TESTING FOR ALL INFRASTRUCTURES TO BE ACCEPTED AND MAINTAINED BY THE CITY OF LEANDER AFTER COMPLETION.
   c. PROOF ROLLING SUB–GRADE AND EVERY LIFT OF ROADWAY EMBANKMENT, IN–PLACE DENSITY TESTING OF EVERY BASE COURSE, AND ASPHALT CORES. ALL OF THIS TESTING MUST BE WITNESSED BY A CITY OF LEANDER REPRESENTATIVE.
   d. CONNECTING TO THE EXISTING WATER LINES.
   e. THE INSTALLATION OF ANY DRAINAGE FACILITY WITHIN A DRAINAGE EASEMENT OR STREET ROW. THE METHOD OF PLACEMENT AND COMPACTION OF BACKFILL IN THE CITY'S ROW MUST BE APPROVED PRIOR TO THE START OF BACKFILL OPERATIONS.
4. ALL RESPONSIBILITILY FOR THE ACCURACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY MUST RELY ON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
5. **EXCESS SOIL SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE. NOTIFY THE CITY OF LEANDER IF THE DISPOSAL SITE IS INSIDE THE CITY'S JURISDICTIONAL BOUNDARIES.**
6. BURNING IS PROHIBITED.
7. NO WORK IS TO BE PERFORMED BETWEEN THE HOURS OF 9:00 P.M. AND 7:00 A.M. OR WEEKENDS. THE CITY INSPECTOR RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO UNCOVER ALL WORK PERFORMED WITHOUT INSPECTION.
8. CONTACT THE CITY INSPECTOR 4 DAYS PRIOR TO WORK FOR APPROVAL TO SCHEDULE ANY INSPECTIONS ON WEEKENDS OR CITY HOLIDAYS.
9. NO BLASTING IS ALLOWED.
10. ANY CHANGES OR REVISIONS TO THESE PLANS MUST FIRST BE SUBMITTED TO THE CITY BY THE DESIGN ENGINEER FOR REVIEW AND WRITTEN APPROVAL PRIOR TO CONSTRUCTION OF THE REVISION. ALL CHANGES AND REVISIONS SHALL USE REVISION CLOUDS TO HIGHLIGHT ALL REVISIONS AND CHANGES WITH EACH SUBMITTAL. REVISION TRIANGLE MARKERS AND NUMBERS SHALL BE USED TO MARK REVISIONS. ALL CLOUDS AND TRIANGLE MARKERS FROM PREVIOUS REVISIONS MUST BE REMOVED. REVISION INFORMATION SHALL BE UPDATED ON COVER SHEET AND AFFECTED PLAN SHEET TITLE BLOCK.
11. THE CONTRACTOR AND ENGINEER SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCTION THAT DEVIATES FROM THE PLANS. THE ENGINEER SHALL FURNISH THE CITY OF LEANDER ACCURATE "RECORD DRAWINGS" FOLLOWING THE COMPLETION OF ALL CONSTRUCTION. THESE "RRECORD DRAWINGS" SHALL MEET THE SATISFACTION OF THE ENGINEERING DEPARTMENTS PRIOR TO FINAL ACCEPTANCE.
12. THE CONTRACTOR WILL REIMBURSE THE CITY FOR ALL REPAIR AND/OR COST INCURRED AS A RESULT OF ANY DAMAGE TO ANY PUBLIC INFRASTRUCTURE WITHIN CITY EASEMENT OR PUBLIC RIGHT–OF–WAY, REGARDLESS OF THESE PLANS.
13. WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINE HIS WORK TO WITHIN THE PERMANENT AND TEMPORARY EASEMENTS. PRIOR TO ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TRASH AND DEBRIS WITHIN THE PERMANENT EASEMENTS. CLEANUP SHALL BE TO THE SATISFACTION OF THE ENGINEER OF RECORD AND CITY.
14. CONTRACTOR TO LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, CONTROL POINTS AND PROJECT ENGINEERING REFERENCE POINTS. RE–ESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, AT NO ADDITIONAL COST TO THE PROPERTY OWNER.
15. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 1033 LA POSADA DR. SUITE 375, AUSTIN, TEXAS 78752–3832.
16. ALL MANHOLE FRAMES/COVERS AND WATER VALVE/METER BOXES MUST BE ADJUSTED TO FINISHED GRADE AT THE OWNER'S EXPENSE BY THE CONTRACTOR FOR CITY CONSTRUCTION INSPECTOR INSPECTION. ALL UTILITY ADJUSTMENTS SHALL BE COMPLETED PRIOR TO FINAL PAVING. CONTRACTOR SHALL BACKFILL AROUND MANHOLES AND VALVE BOXES WITH CLASS A CONCRETE.
17. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT WHERE NOT SPECIFICALLY COVERED IN THE PROJECT SPECIFICATIONS SHALL CONFORM TO ALL CITY OF LEANDER DETAILS AND CITY OF AUSTIN STANDARD SPECIFICATIONS.
18. PROJECT SPECIFICATIONS TAKE PRECEDENCE OVER PLANS AND SPECIAL CONDITIONS GOVERN OVER TECHNICAL SPECIFICATIONS.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
20. THE CONTRACTOR MUST OBTAIN A CONSTRUCTION WATER METER FOR ALL WATER USED DURING CONSTRUCTION. A COPY OF THIS PERMIT MUST BE CARRIED AT ALL TIMES BY ALL WHO USE WATER.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADS AND DRIVES ADJACENT TO AND NEAR THE SITE FREE FROM SOIL, SEDIMENT AND DEBRIS. CONTRACTOR WILL NOT REMOVE SOIL, SEDIMENT OR DEBRIS FROM ANY AREA OR VEHICLE BY MEANS OF WATER. ONLY SHOVELING AND SWEEPING WILL BE ALLOWED. THE CONTRACTOR WILL BE RESPONSIBLE FOR DUST CONTROL FROM THE SITE. THE CONTRACTOR SHALL KEEP THE SITE AREA CLEAN AND MAINTAINED AT ALL TIMES, TO THE SATISFACTION OF THE CITY. THE SUBDIVISION (OR SITE) WILL NOT BE ACCEPTED (OR CERTIFICATE OF OCCUPANCY ISSUED) UNTIL THE SITE HAS BEEN CLEANED TO THE SATISIFACTION OF THE CITY.
22. TREES IN EXISTING ROW SHOULD BE PROTECTED OR NOTED IN THE PLANS TO BE REMOVED.

CONSTRUCTION SEQUENCE NOTES
NOTE: BELOW IS GENERAL SEQUENCE OF CONSTRUCTION. THE ENGINEER OF RECORD SHALL UPDATE BELOW WITH NOTES SPECIFIC TO THE PROJECT.

1. REACH OUT TO THE CITY FOR PRE–CONSTRUCTION MEETING AND CONSTRUCTION PERMIT.
2. SET–UP E/S CONTROLS AND TREE PROTECTION AND REACH OUT TO CITY FOR INSPECTION.
3. SET UP TEMPORARY TRAFFIC CONTROLS.
4. CONSTRUCT THE DRAINAGE PONDS AND STORM WATER FEATURES.
5. START PRIVATE WASTEWATER UTILITY, PRIVATE ROADS, GRADING, AND ALL NECESSARY INFRASTRUCTURE CONSTRUCTION.
6. REQUEST FINAL WALK THROUGH AND CONDUCT WALK THROUGH WITH ENGINEER OF RECORD AND CITY DEPARTMENT.
7. ENGINEER OF RECORD IS RESPONSIBLE TO PREPARE AND SUBMIT CLOSEOUT DOCUMENTS FOR PROJECT CLOSEOUT.

EROSION CONTROL NOTES
1. THE CONTRACTOR IS REQUIRED TO INSPECT THE CONTROLS AND FENCES AT WEEKLY INTERVALS AND AFTER SIGNIFICANT RAINFALL EVENTS TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES AND SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES.
2. THE TEMPORARY SPOILS DISPOSAL SITE IS TO BE SHOWN IN THE EROSION CONTROL MAP.
3. ANY ON–SITE SPOILS DISPOSAL SHALL BE REMOVED PRIOR TO ACCEPTANCE UNLESS SPECIFICALLY SHOWN ON THE PLANS. THE DEPTH OF SPOIL SHALL NOT EXCEED 10 FEET IN ANY AREA.
4. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 6 INCHES OF TOPSOIL AND COMPOST BLEND. TOPSOIL ON SINGLE FAMILY LOTS MAY BE INSTALLED WITH HOME CONSTRUCTION. THE TOPSOIL AND COMPOST BLEND SHALL CONSIST OF 75% TOPSOIL AND 25% COMPOST.
5. SEEDING FOR REESTABLISHING VEGETATION SHALL COMPLY WITH THE AUSTIN GROW GREEN GUIDE OR WILLIAMSON COUNTY'S PROTOCOL FOR SUSTAINABLE ROADSIDES (SPEC 164––WC001 SEEDING FOR EROSION CONTROL). RESEEDING VARIETIES OF BERMUDA SHALL NOT BE USED.
6. STABILIZED CONSTRUCTION ENTRANCE IS REQUIRED AT ALL POINTS WHERE CONSTRUCTION TRAFFIC IS EXITING THE PROJECT ONTO EXISTING PAVEMENT. LINEAR CONSTRUCTION PROJECTS MAY REQUIRE SPECIAL CONSIDERATION. ROADWAYS SHALL REMAIN CLEAR OF SILT AND MUD.
7. TEMPORARY STOP SIGNS SHOULD BE INSTALLED AT ALL CONSTRUCTION ENTRANCES WHERE A STOP CONDITION DOES NOT ALREADY EXIST.
8. IN THE EVENT OF INCLEMENT WEATHER THAT MAY RESULT IN A FLOODING SITUATION, THE CONTRACTOR SHALL REMOVE INLET PROTECTION MEASURES UNTIL SUCH TIME AS THE WEATHER EVENT HAS PASSED.

WATER AND WASTEWATER NOTES
WATER AND WASTEWATER GENERAL NOTES
1. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 61 AND MUST BE CERTIFIED BY AND ORGANIZATION ACCREDITED BY ANSI.
2. ALL WATER SERVICE, WASTEWATER SERVICE AND VALVE LOCATIONS SHALL BE APPROPRIATELY STAMPED AS FOLLOWS:

WATER SERVICE	"W" ON TOP OF CURB
WASTEWATER SERVICE	"S" ON TOP OF CURB
VALVE	"V" ON TOP OF CURB

3. OPEN UTILITIES SHALL NOT BE PERMITTED ACROSS THE EXISTING PAVED SURFACES. WATER AND WASTEWATER LINES ACROSS THE EXISTING PAVED SURFACES SHALL BE BORED AND INSTALLED IN STEEL ENCASEMENT PIPES. BELL RESTRAINTS SHALL BE PROVIDED AT JOINTS.
4. INTERIOR SURFACES OF ALL DUCTILE IRON POTABLE OR RECLAIMED WATER PIPE SHALL BE CEMENT–MORTAR LINED AND SEAL COATED AS REQUIRED BY AWWA C104.
5. SAND, AS DESCRIBED IN AUSTIN SPECIFICATION ITEM 510 PIPE, SHALL NOT BE USED AS BEDDING FOR WATER AND WASTEWATER LINES. ACCEPTABLE BEDDING MATERIALS ARE PIPE BEDDING STONE, PEA GRAVEL AND IN LIEU OF SAND, A NATURALLY OCCURRING OR MANUFACTURED STONE MATERIAL CONFORMING TO ASTM C33 FOR STONE QUALITY AND MEETING THE FOLLOWING GRADATION SPECIFICATION:

SIEVE SIZE	PERCENT RETAINED BY WEIGHT
1/2"	0
3/8"	0–2
#4	40–85
#10	95–100

6. DENSITY TESTING FOR TRENCH BACKFILL SHALL BE DONE IN MAXIMUM 12" LIFTS.

WATER (* WATER NOTES ARE NOT APPLICABLE TO THIS PROJECT)
1. SAMPLING TAPS SHALL BE BROUGHT UP TO 3 FEET ABOVE GRADE AND SHALL BE EASILY ACCESSIBLE FOR CITY PERSONNEL. AT THE CONTRACTORS' REQUEST, AND IN HIS PRESENCE, SAMPLES FOR BACTERIOLOGICAL TESTING WILL BE COLLECTED BY THE CITY OF LEANDER NOT LESS THAN 24 HOURS AFTER THE TREATED LINE HAS BEEN FLUSHED OF THE CONCENTRATED CHLORINE SOLUTION AND CHARGED WITH WATER APPROVED BY THE CITY.
2. CITY PERSONNEL WILL OPERATE OR AUTHORIZE THE CONTRACTOR TO OPERATE ALL WATER VALVES THAT WILL PASS THROUGH THE CITY'S POTABLE WATER. THE CONTRACTOR MAY BE FINED $500 OR MORE, INCLUDING ADDITIONAL THEFT OF WATER FINES, IF A WATER VALVE IS OPERATED IN AN UNAUTHORIZED MANNER, REGARDLESS OF WHO OPERATED THE VALVE.
3. THE CONTRACTOR IS HEREBY NOTIFIED THAT CONNECTING TO, SHUTTING DOWN, OR TERMINATING EXISTING UTILITY LINES MAY HAVE TO OCCUR AT OFF–PEAK HOURS. SUCH HOURS ARE USUALLY OUTSIDE NORMAL WORKING HOURS AND POSSIBLY BETWEEN 12 AM AND 6 AM AFTER COORDINATING WITH CITY CONSTRUCTION INSPECTORS AND INFORMING AFFECTED PROPERTIES.
4. PRESSURE TAPS OR HOT TAPS SHALL BE IN ACCORDANCE WITH CITY OF LEANDER STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION AND SHALL FURNISH, INSTALL AND AIR TEST THE SLEEVE AND VALVE. A CITY OF LEANDER INSPECTOR MUST BE PRESENT WHEN THE CONTRACTOR MAKES A TAP, AND/OR ASSOCIATED TESTS. A MINIMUM OF TWO (2) WORKING DAYS NOTICE IS REQUIRED. "SIZE ON SIZE" TAPS SHALL NOT BE PERMITTED UNLESS MADE BY THE USE OF AN APPROVED FULL–CIRCLE GASKETED TAPPING SLEEVE. CONCRETE THRUST BLOCKS SHALL BE PLACED BEHIND AND UNDER ALL TAP SLEEVES A MINIMUM OF 24 HOURS PRIOR TO THE BRANCH BEING PLACED INTO SERVICE. THRUST BLOCKS SHALL BE INSPECTED PRIOR TO BACKFILL.
5. FIRE HYDRANTS ON MAINS UNDER CONSTRUCTION SHALL BE SECURELY WRAPPED WITH A BLACK POLY WRAP BAG AND TAPED INTO PLACE. THE POLY WRAP SHALL BE REMOVED WHEN THE MAINS ARE ACCEPTED AND PLACED INTO SERVICE.
6. THRUST BLOCKS OR RESTRAINTS SHALL BE IN ACCORDANCE WITH THE CITY OF LEANDER STANDARD SPECIFICATIONS AND REQUIRED AT ALL FITTINGS PER DETAIL OR MANUFACTURER'S RECOMMENDATION. ALL FITTINGS SHALL HAVE BOTH THRUST BLOCKS AND RESTRAINTS.
7. ALL DEAD END WATER MAINS SHALL HAVE "FIRE HYDRANT ASSEMBLY" OR "BLOW–OFF VALVE AND THRUST BLOCK" OR "BLOW–OFF VALVE AND THRUST RESTRAINTS". THRUST RESTRAINTS SHALL BE INSTALLED ON THE MINIMUM LAST THREE PIPE LENGTHS (STANDARD 20' LAYING LENGTH). ADDITIONALL THRUST RESTRAINTS MAY BE REQUIRED BASED UPON THE MANUFACTURERS RECOMMENDATION AND/OR ENGINEER'S DESIGN.
8. PIPE MATERIAL FOR PUBLIC WATER MAINS SHALL BE PVC (AWWA C900–DR14 MIN. 305 PSI PRESSURE RATING). WATER SERVICES (2" OR LESS) SHALL BE POLYETHYLENE TUBING (BLACK, 200PSI, AND SDR–(9)). COPPER PIPES AND FITTINGS ARE NOT ALLOWED IN THE PUBLIC RIGHT OF WAY. ALL PLASTIC PIPES FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL (NSF–PW).
9. ALL FIRE HYDRANT LEADS SHALL BE DUCTILE IRON PIPE (AWWA C115/C151 PRESSURE CLASS 350).
10. ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM 8–MIL POLYETHYLENE.
11. LINE FLUSHING OR ANY ACTIVITY USING A LARGE QUANTITY OF WATER MUST BE COORDINATED WITH THE PUBLIC WORKS DEPARTMENT.
12. ALL WATER METER BOXES SHALL BE:
    a. SINGLE, 1" METER AND BELOW — DFW37F–12–1CA, OR EQUAL
    b. DUAL, 1" METERS AND BELOW — DFW39F–12–1CA, OR EQUAL
    c. 1.5" SINGLE METER — DFW65C–14–1CA, OR EQUAL
    d. 2" SINGLE METER — DFW1730F–12–1CA, OR EQUAL
13. ALL WATER VALVE COVERS ARE TO BE PAINTED BLUE.

WASTEWATER
1. CURVILINEAR WASTEWATER DESIGN LAYOUT IS NOT PERMITTED.
2. MANDREL TESTING SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.
3. MANHOLES SHALL BE COATED PER CITY OF AUSTIN SPL WW–511 (RAVEN 405 OR SPRAYWALL). PENETRATIONS TO EXISTING WASTEWATER MANHOLES REQUIRE THE CONTRACTOR TO RECOAT THE ENTIRE MANHOLE IN ACCORDANCE WITH CITY OF AUSTIN STANDARD SPECIFICATIONS SECTION NO. 506.5.
4. RECLAIMED AND RECYCLED WATER LINE SHALL BE CONSTRUCTED OF "PURPLE PIPE." ALL RECLAIMED AND RECYCLED WATER VALVE COVERS SHALL BE SQUARE AND PAINTED PURPLE.
5. FORCE MAIN PIPES NEED TO HAVE SWEEPING WYES FOR JOINTS.

STREET AND DRAINAGE NOTES
1. THE CITY OF LEANDER HAS NOT REVIEWED THESE PLANS FOR COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA). IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE COMPLIANCE WITH ALL LEGISTATION RELATED TO ACCESSIBLITY WITHIN THE LIMITS OF CONSTRUCTION SHOWN IN THESE PLANS. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARS (TAS).
2. BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95% MAXIMUM DENSITY TO WITHIN 6" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN THE GREATEST DIMENSION. THE REMAINING 6" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND SUITABLE FOR SUSTAINING PLANT LIFE.
3. A MINIMUM OF 6" OF TOPSOIL SHALL BE PLACED BETWEEN THE CURB AND RIGHT–OF–WAY AND IN ALL DRAINAGE CHANNELS EXCEPT CHANNELS CUT IN STABLE ROCK.
4. DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT, INCLUDING GAS, ELECTRIC TELEPHONE, CABLE TV, ETC., SHALL BE A MINIMUM OF 36" BELOW SUBGRADE.
5. STREET RIGHT–OF–WAY SHALL BE GRADED AT A SLOPE OF ¼" PER FOOT TOWARD THE CURB UNLESS OTHERWISE INDICATED.
6. ALL DRAINAGE PIPE IN PUBLIC RIGHT OF WAY OR EASEMENTS SHALL BE REINFORCED CONCRETE PIPE MINIMUM CLASS III OF TONGUE AND GROOVE OR O–RING JOINT DESIGN. CORRUGATED METAL PIPE IS NOT ALLOWED IN PUBLIC RIGHT OR WAY OR EASEMENTS.
7. THE CONTRACTOR MUST PROVIDE A PNEUMATIC TRUCK PER TXDOT SPEC FOR PROOF ROLLING.
8. ALL STRIPING, WITH THE EXCEPTION OF STOP BARS, CROSS WALKS, WORDS AND ARROWS, IS TO BE TYPE II (WATER BASED). STOP BARS, CROSS WALKS, WORDS AND ARROWS REQUIRE TYPE I THERMOPLASTIC.
9. MANHOLE FRAMES, COVERS, VALVES, CLEAN–OUTS, ETC. SHALL BE RAISED TO GRADE PRIOR TO FINAL PAVEMENT CONSTRUCTION.
10. A STOP BAR SHALL BE PLACED AT ALL STOP SIGN LOCATIONS.
11. THE GEOTECHNICAL ENGINEER SHALL INSPECT THE SUBGRADE FOR COMPLIANCE WITH THE DESIGN ASSUMPTIONS MADE DURING PREPARATION OF THE SOILS REPORT. ANY ADJUSTMENTS THAT ARE REQUIRED SHALL BE MADE THROUGH REVISIONS OF THE APPROVED CONSTRUCTION PLANS.

GEOTECHNICAL INVESTIGATION INFORMATION AND PAVEMENT RECOMMENDATIONS WERE PROVIDED BY TERRACON CONSULTANTS, INC. PAVEMENT RECOMMENDATIONS ARE AS FOLLOWS:

STREET	CLASSIFICATION	HMAC	LIMESTONE BASE	LIME STABILIZATION
PRIVATE DRIVE A	LOCAL	3 INCHES	8 INCHES	8 INCHES
PRIVATE DRIVE B	LOCAL	3 INCHES	8 INCHES	8 INCHES
PRIVATE DRIVE C	LOCAL	3 INCHES	8 INCHES	8 INCHES

13. A TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CITY OF AUSTIN TRANSPORTATION CRITERIA MANUAL, CITY OF LEANDER STANDARD DETAILS AND TEXAS DEPARTMENT OF TRANSPORTATION CRITERIA, SHALL BE SUBMITTED TO THE CITY OF LEANDER FOR REVIEW AND APPROVAL PRIOR TO ANY PARTIAL OR COMPLETE ROADWAY CLOSURES. TRAFFIC CONTROL PLANS MUST BE SITE SPECIFIC AND SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
14. ALL LANE CLOSURES SHALL OCCUR ONLY BETWEEN THE HOURS OF 9 AM AND 4 PM UNLESS OTHERWISE NOTED ON THE PLANS. ANY NIGHT TIME LANE CLOSURES REQUIRE APPROVAL OF THE CITY ENGINEER AND SHALL OCCUR BETWEEN THE HOURS OF 8 PM AND 6 AM. LANE CLOSURES OBSERVED BY THE CITY DURING PEAK HOURS OF 6 AM TO 9 AM OR 4 PM TO 8 PM WILL BE SUBJECT TO A FINE AND/OR SUBSEQUENT ISSUANCE OF WORK STOPPAGE.
15. TEMPORARY ROCK CRUSHING IS NOT ALLOWED. ALL SOURCES OF FLEXIBLE BASE MATERIAL ARE REQUIRED TO BE APPROVED BY THE CITY. PRIOR TO BASE PLACEMENT ALL CURRENT TRIAXIAL TEST REPORTS FOR PROPOSED STOCK PILES ARE TO BE SUBMITTED TO THE CITY CONSTRUCTION INSPECTOR FOR REVIEW AND APPROVAL.
16. AT ROAD INTERSECTIONS THAT HAVE A VALLEY GUTTER, THE CROWN TO THE INTERSECTING ROAD WILL BE CULMINATED AT A DISTANCE OF 40 FEET FROM THE INTERSECTING CURB LINE UNLESS OTHERWISE NOTED.
17. NO PONDING OF WATER SHALL BE ALLOWED TO COLLECT ON OR NEAR THE INTERSECTION OF PRIVATE DRIVEWAYS AND PUBLIC STREETS. RECONSTRUCTION OF THE DRIVEWAY APPROACH SHALL BE AT THE CONTRACTOR 'S EXPENSE.
18. ALL DRIVEWAY APPROACHES SHALL HAVE A UNIFORM TWO PERCENT SLOPE WITHIN THE PUBLIC RIGHT OF WAY UNLESS APPROVED IN WRITING BY THE ENGINEERING DEPARTMENT.
19. IMPROVEMENTS THAT INCLUDE RECONSTRUCTION OF AN EXISTING TYPE II DRIVEWAY SHALL BE DONE IN A MANNER WHICH RETAINS OPERATIONS OF NOT LESS THAN HALF OF THE DRVIEWAY TO REMAIN OPEN AT ALL TIMES. FULL CLOSURE OF SUCH DRIVEWAY CAN BE CONSIDERED WITH WRITTEN AUTHORIZATION OBTAINED BY THE CONTRACTOR FROM ALL PROPERTY OWNERS AND ACCESS EASEMENT RIGHT HOLDERS ALLOWING THE FULL CLOSURE OF THE DRIVEWAY.
20. CONTRACTOR MUST CLEAR FIVE (5) FEET BEYOND ALL PUBLIC RIGHT OF WAY TO PREVENT FUTURE VEGETATIVE GROWTH INTO THE SIDEWALK AREAS.
21. SLOPE OF NATURAL GROUND ADJACENT TO THE PUBLIC RIGHT OF WAY SHALL NOT EXCEED 3:1 SLOPE. IF A 3:1 SLOPE IS NOT POSSIBLE, SLOPE PROTECTION OR RETAINING WALL MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE.
22. THERE SHALL BE NO WATER, WASTEWATER OR DRAINAGE APPURTENANCES, INCLUDING BUT NOT LIMITED TO VALVES, FITTINGS, METERS, CLEAN–OUTS, MANHOLES, OR VAULTS IN ANY DRIVEWAY, SIDEWALK, TRAFFIC OR PEDESTRIAN AREA.
23. PUBLIC SIDEWALKS SHALL NOT USE CURB INLETS AS PARTIAL WALKING SURFACE. SIDEWALKS SHALL NOT USE TRAFFIC CONTROL BOXES, METERS, CHECK VALVE VAULTS, COMMUNICATION VAULTS, OR OTHER BURIED OR PARTIALLY BURIED INFRASTRUCTURE AS A VEHICULAR OR PEDESTRIAN SURFACE.
24. ALL WET UTILITIES SHALL BE INSTALLED AND ALL DENSITIES MUST HAVE PASSED INSPECTION(S) PRIOR TO THE INSTALLATION OF DRY UTILITIES.
25. DRY UTILITIES SHALL BE INSTALLED AFTER SUBGRADE IS CUT AND BEFORE THE FIRST COURSE OF BASE. NO TRENCHING COMPACTED BASE. IF NECESSARY DRY UTILITIES INSTALLED AFTER FIRST COURSE BASE SHALL BE BORED ACROSS THE FULL WIDTH OF THE PUBLIC RIGHT–OF–WAY.
26. A MINIMUM OF SEVEN (7) DAYS OF CURE TIME IS REQUIRED FOR HMAC PRIOR TO THE INTRODUCTION OF VEHICULAR TRAFFIC TO ALL STREETS.

TRENCH SAFETY NOTES
1. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT ARE DESCRIBED IN ITEM 509S "TRENCH SAFETY SYSTEMS" OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS AND SHALL BE IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATION SAFETY AND HEALTH ADMINISTRATION REGULATIONS.

GRADING NOTES
1. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
2. THE CONTRACTOR SHALL CONSTRUCT EARTHEN EMBANKMENTS WITH SLOPES NO STEEPER THAN 3:1 AND COMPACT SOIL TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS.
3. AREAS OF SOIL DISTURBANCE ARE LIMITED TO GRADING AND IMPROVEMENTS SHOWN. ALL OTHER AREAS WILL NOT BE DISTURBED

DEVELOPMENT AGREEMENT NOTE
ANY NOTE WITHIN THESE PLANS, THAT IS IN CONFLICT WITH THE DEVELOPMENT AGREEMENT, THE DEVELOPMENT AGREEMENT FOR BAR W RANCH SHALL BE FOLLOWED.

WILLIAMSON COUNTY NOTE
SHEETS AND DRAINAGE NOTES WITHIN THESE PLANS THAT DO NOT CONFLICT WITH WILLIAMSON COUNTY CODES AND REGULATIONS SHALL BE APPLIED.

BENCHMARK INFORMATION:

BENCHMARK #1
COTTON SPINDLE IN 18" LIVE OAK
N: 10198298.06
E: 3080503.19
ELEV: 899.07' (NAVD '88)

BENCHMARK #2
1/2" CAPPED IRON ROD STAMPED "CONTROL"
N: 10196865.88
E: 3082496.68
ELEV: 870.74' (NAVD '88)

BASIS OF BEARINGS – TEXAS COORDINATE SYSTEM OF 1983, CENTRAL ZONE (4203)
ELEVATION DATUM – NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88) GEOID 03

SITE DEVELOPMENT NOTES:

ALL SITE UTILITIES ARE PROPOSED TO BE UNDERGROUND.

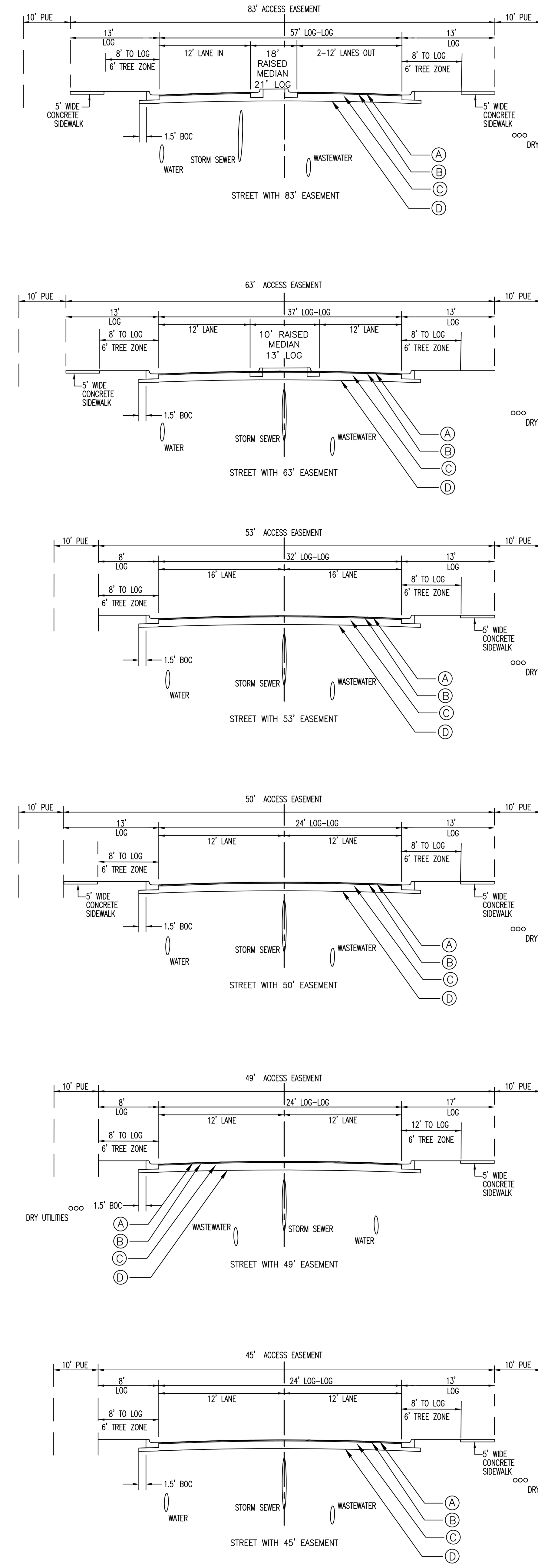
EXTERIOR LIGHTING SHALL BE SHIELDED SUCH THAT THE LIGHT SOURCE IS NOT DIRECTLY VISIBLE FROM THE PUBLIC ROW OR ADJACENT RESIDENTIAL DISTRICTS OR USES AT THE PROPERTY LINE. UNSHIELDED "WALL PACK" LIGHTING IS NOT PROPOSED.

AL CLAWSON DISPOSAL, INC. SHALL BE THE SOLE PROVIDER OF WASTE HAULING FOR THIS SITE AFTER CONSTRUCTION.

AIR CONDITIONING UNITS ARE NOT PROPOSED FORWARD THE FRONT WALL OF THE BUILDING.

GARBAGE DUMPSTERS ARE LOCATED NO CLOSER TO A ROADWAY THAN THE FRONT WALL OF THE PRINCIPLE STRUCTURE LOCATED CLOSEST TO THE ROADWAY. GARBAGE DUMPSTERS ARE SCREENED BY A WALL (COMPRISED OF MASONRY COMPATIBLE WITH THE STRUCTURE OR WOODCRETE) AT LEAST AS HIGH AS THE CONTAINER. THE OPEN SIDE TO THE DUMPSTER OR OTHER TRASH RECEPTACLE IS A GATE CONSTRUCTED OF SOLID WOOD OR METAL. THE DUMPSTER IS ORIENTED FOR PICKUP BY A FRONT LOAD GARBAGE TRUCK.

FOR 90 GALLON ROLL OUT CONTAINER STORED OUTSIDE, IT IS REQUIRED TO BE ENCLOSED BY PRIVACY FENCE.



CONSTRUCTION INDEX:

Ⓐ HOT MIX ASPHALTIC CONCRETE – 3" MINIMUM.

Ⓑ PRIME COAT.

Ⓒ FLEXIBLE BASE. 15"

Ⓓ COMPACTED SUBGRADE.

Ⓔ BASE COURSE TO EXTEND 18 INCHES MINIMUM BEHIND THE BACK OF CURB.

Ⓕ 2% TYPICAL UNLESS OTHERWISE INDICATED ON THE GRADING PLAN.

Ⓖ ALL UNPAVED AREAS WITHIN THE LIMITS OF CONSTRUCTION, SHALL BE SODDED OR SEEDED AS INDICATED.

Ⓗ FOR MINIMUM PAVEMENT SECTION, SEE GEOTECHNICAL ENGINEER'S RECOMMENDATION, THE GEOTECHNICAL ENGINEER SHALL MAKE THE FINAL PAVEMENT SECTION RECOMMENDATION BASED ON SITE CONDITION.

NOTE:

CONTRACTOR IS TO AVOID INSTALLATION OF IRRIGATION, PLANTINGS, SILT FENCE, ETC. IN THE BASE OVERBUILD.

SD–24–0243

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr., Austin, Texas 78749, Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600, Austin, Texas 78750, www.cbdeng.com

SHEET NAME: GENERAL CONSTRUCTION NOTES (SHEET 1 OF 2)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED
PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET 2 OF 62

FILE PATH:J:\AC3D\5375\dwg\CONSTRUCTION PLAN\Site Plan\5375- COVER.dwg - Nov 26, 2024 - 3:01pm

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN – GENERAL CONSTRUCTION NOTES

EDWARDS AQUIFER PROTECTION PROGRAM CONSTRUCTION NOTES –LEGAL DISCLAIMER

THE FOLLOWING/LISTED "CONSTRUCTION NOTES" ARE INTENDED TO BE ADVISORY IN NATURE ONLY AND DO NOT CONSTITUTE AN APPROVAL OR CONDITIONAL APPROVAL BY THE EXECUTIVE DIRECTOR (ED), NOR DO THEY CONSTITUTE A COMPREHENSIVE LISTING OF RULES OR CONDITIONS TO BE FOLLOWED DURING CONSTRUCTION. FURTHER ACTIONS MAY BE REQUIRED TO ACHIEVE COMPLIANCE WITH TCEQ REGULATIONS FOUND IN TITLE 30, TEXAS ADMINISTRATIVE CODE (TAC), CHAPTERS 213 AND 217, AS WELL AS LOCAL ORDINANCES AND REGULATIONS PROVIDING FOR THE PROTECTION OF WATER QUALITY. ADDITIONALLY, NOTHING CONTAINED IN THE FOLLOWING/LISTED "CONSTRUCTION NOTES" RESTRICTS THE POWERS OF THE ED, THE COMMISSION OR ANY OTHER GOVERNMENTAL ENTITY TO PREVENT, CORRECT, OR CURTAIL ACTIVITIES THAT RESULT OR MAY RESULT IN POLLUTION OF THE EDWARDS AQUIFER OR HYDROLOGICALLY CONNECTED SURFACE WATERS. THE HOLDER OF ANY EDWARDS AQUIFER PROTECTION PLAN CONTAINING "CONSTRUCTION NOTES" IS STILL RESPONSIBLE FOR COMPLIANCE WITH TITLE 30, TAC, CHAPTERS 213 OR ANY OTHER APPLICABLE TCEQ REGULATION, AS WELL AS ALL CONDITIONS OF AN EDWARDS AQUIFER PROTECTION PLAN THROUGH ALL PHASES OF PLAN IMPLEMENTATION. FAILURE TO COMPLY WITH ANY CONDITION OF THE ED'S APPROVAL, WHETHER OR NOT IN CONTRADICTION OF ANY "CONSTRUCTION NOTES," IS A VIOLATION OF TCEQ REGULATIONS AND ANY VIOLATION IS SUBJECT TO ADMINISTRATIVE RULES, ORDERS, AND PENALTIES AS PROVIDED UNDER TITLE 30, TAC § 213.10 (RELATING TO ENFORCEMENT). SUCH VIOLATIONS MAY ALSO BE SUBJECT TO CIVIL PENALTIES AND INJUNCTION. THE FOLLOWING/LISTED "CONSTRUCTION NOTES" IN NO WAY REPRESENT AN APPROVED EXCEPTION BY THE ED TO ANY PART OF TITLE 30 TAC, CHAPTERS 213 AND 217, OR ANY OTHER TCEQ APPLICABLE REGULATION.

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY GROUND DISTURBANCE OR CONSTRUCTION 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 SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ONSITE.
3. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
4. 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. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED NAPPROPRIATELY, 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.
5. 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.
6. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
8. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.
9. IF PORTIONS OF THE SITE WILL HAVE A CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
10. THE FOLLOWING RECORDS SHOULD 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.
11. THE HOLDER OF ANY APPROVED CZP 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 BEST MANAGEMENT PRACTICES (BMPS) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES;
    B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;
    C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR
    D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE PLAN.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
WATER POLLUTION ABATEMENT PLAN – GENERAL CONSTRUCTION NOTES

EDWARDS AQUIFER PROTECTION PROGRAM CONSTRUCTION NOTES –LEGAL DISCLAIMER

THE FOLLOWING/LISTED "CONSTRUCTION NOTES" ARE INTENDED TO BE ADVISORY IN NATURE ONLY AND DO NOT CONSTITUTE AN APPROVAL OR CONDITIONAL APPROVAL BY THE EXECUTIVE DIRECTOR (ED), NOR DO THEY CONSTITUTE A COMPREHENSIVE LISTING OF RULES OR CONDITIONS TO BE FOLLOWED DURING CONSTRUCTION. FURTHER ACTIONS MAY BE REQUIRED TO ACHIEVE COMPLIANCE WITH TCEQ REGULATIONS FOUND IN TITLE 30, TEXAS ADMINISTRATIVE CODE (TAC), CHAPTERS 213 AND 217, AS WELL AS LOCAL ORDINANCES AND REGULATIONS PROVIDING FOR THE PROTECTION OF WATER QUALITY. ADDITIONALLY, NOTHING CONTAINED IN THE FOLLOWING/LISTED "CONSTRUCTION NOTES" RESTRICTS THE POWERS OF THE ED, THE COMMISSION OR ANY OTHER GOVERNMENTAL ENTITY TO PREVENT, CORRECT, OR CURTAIL ACTIVITIES THAT RESULT OR MAY RESULT IN POLLUTION OF THE EDWARDS AQUIFER OR HYDROLOGICALLY CONNECTED SURFACE WATERS. THE HOLDER OF ANY EDWARDS AQUIFER PROTECTION PLAN CONTAINING "CONSTRUCTION NOTES" IS STILL RESPONSIBLE FOR COMPLIANCE WITH TITLE 30, TAC, CHAPTERS 213 OR ANY OTHER APPLICABLE TCEQ REGULATION, AS WELL AS ALL CONDITIONS OF AN EDWARDS AQUIFER PROTECTION PLAN THROUGH ALL PHASES OF PLAN IMPLEMENTATION. FAILURE TO COMPLY WITH ANY CONDITION OF THE ED'S APPROVAL, WHETHER OR NOT IN CONTRADICTION OF ANY "CONSTRUCTION NOTES," IS A VIOLATION OF TCEQ REGULATIONS AND ANY VIOLATION IS SUBJECT TO ADMINISTRATIVE RULES, ORDERS, AND PENALTIES AS PROVIDED UNDER TITLE 30, TAC § 213.10 (RELATING TO ENFORCEMENT). SUCH VIOLATIONS MAY ALSO BE SUBJECT TO CIVIL PENALTIES AND INJUNCTION. THE FOLLOWING/LISTED "CONSTRUCTION NOTES" IN NO WAY REPRESENT AN APPROVED EXCEPTION BY THE ED TO ANY PART OF TITLE 30 TAC, CHAPTERS 213 AND 217, OR ANY OTHER TCEQ APPLICABLE REGULATION.

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.
3. IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.
4. NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
WATER POLLUTION ABATEMENT PLAN – GENERAL CONSTRUCTION NOTES CONT'D

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.

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 (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 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.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ORGANIZED SEWAGE COLLECTION SYSTEM – GENERAL CONSTRUCTION NOTES CONT'D

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.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ORGANIZED SEWAGE COLLECTION SYSTEM – GENERAL CONSTRUCTION NOTES CONT'D

(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.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AUSTIN REGIONAL OFFICE	SAN ANTONIO REGIONAL OFFICE
12100 PARK 35 CIRCLE, BUILDING A	14250 JUDSON ROAD
AUSTIN, TEXAS 78753-1808	SAN ANTONIO, TEXAS 78233-4480
PHONE (512) 339-2929	PHONE (210) 490-3096
FAX (512) 339-3795	FAX (210) 545-4329

SD-24-0243

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr., Austin, Texas 78749, Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600, Austin, Texas 78750, www.cbdeng.com

SHEET NAME: GENERAL CONSTRUCTION NOTES (SHEET 2 OF 2)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS — PATRICK M. SULLIVAN — 142359 — LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC. ID # F3791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET 3 OF 62

SUB-ENGINEERING.CTB
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SUB-ENGINEERING.CTB



DESIGNED BY: CRB/PS	DRAFTED BY:
DATE	
REVISION	

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: EXISTING CONDITIONS & DEMOLITION PLAN

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791

11-26-2024

DATE: November 2024

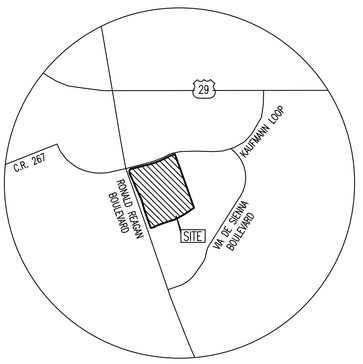
JOB NUMBER: 5375

SHEET 4 OF 62

SD-24-0243

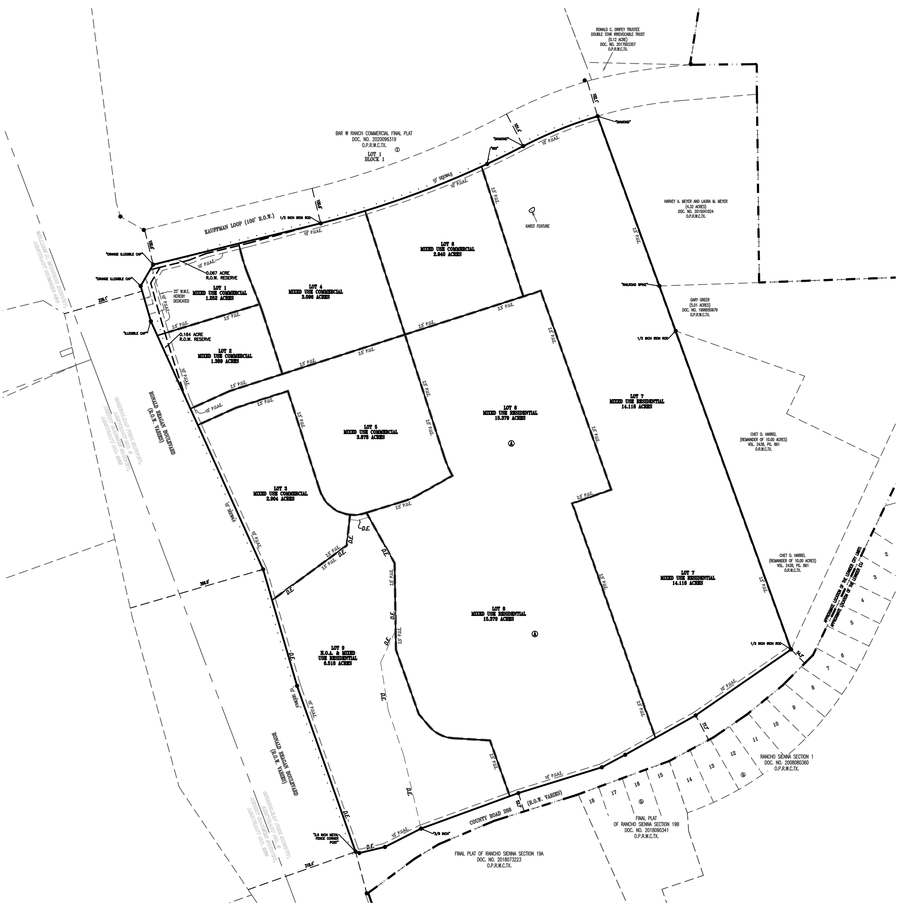
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BAR W RANCH EAST MIXED USE
FINAL PLAT



VICINITY MAP
APPROX. SCALE: 1" = 2000'

INDEX:
SHEET 1 – COVER SHEET AND PROJECT INFORMATION
SHEET 2 – NORTH PORTION OF PROJECT
SHEET 3 – SOUTH PORTION OF PROJECT
SHEET 4 – METES & BOUNDS AND PLAT NOTES
SHEET 5 – SIGNATURE BLOCKS, SURVEYOR, ENGINEER, OWNER, AND COUNTY



SCALE: 1" = 200'

LEGEND

- ● CAPPED 1/2" IRON ROD FOUND STAMPED "CBD SETSTONE" (UNLESS OTHERWISE NOTED)
- ○ CAPPED 1/2" CAPPED IRON ROD SET STAMPED "CBD SETSTONE"
- APPROXIMATE SIDEWALK LOCATION
- H.O.A. HOMEOWNER'S ASSOCIATION
- D.E. DRAINAGE EASEMENT
- P.U.E. PUBLIC UTILITY EASEMENT
- P.U.A.E. PUBLIC UTILITY, LANDSCAPE AND PEDESTRIAN ACCESS EASEMENT
- W.W.E. WASTEWATER EASEMENT
- Ⓐ BLOCK DESIGNATION
- CITY OF LEANDER CITY LIMIT LINE
- BOUNDARY LINE
- SURVEY LINE
- O.P.R.W.C.TX. OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS
- O.R.W.C.TX. OFFICIAL RECORDS, WILLIAMSON COUNTY, TEXAS

FILING DATE: 08/20/2024

OWNER/DEVELOPER:
BAR W EAST COMMERCIAL, LTD.
901 S. MOPAC EXPRESSWAY, SUITE 550
AUSTIN, TEXAS 78746
ATTENTION: C. PATRICK OLES JR.

ENGINEER AND SURVEYOR:
CARLSON, BRIGANCE & DOERING, INC.
5501 WEST WILLIAM CANNON DRIVE
AUSTIN, TEXAS 78749
PHONE: (512) 280-5160
FAX: (512) 280-5165

BENCHMARK INFORMATION:

BENCHMARK #1
COTTON SPINDLE IN 18" LIVE OAK
N: 10198298.06
E: 3080503.19
ELEV: 899.07' (NAVD '88)

BENCHMARK #2
1/2" CAPPED IRON ROD STAMPED "CONTROL"
N: 10196865.88
E: 3082496.68
ELEV: 870.74' (NAVD '88)

BASIS OF BEARINGS – TEXAS COORDINATE SYSTEM OF 1983, CENTRAL ZONE (4203)

ELEVATION DATUM – NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88) GEOID 03

TOTAL ACREAGE: 51.474 ACRES

SURVEY: GREENLEAF FISK SURVEY, ABSTRACT NO. 5

F.E.M.A. MAP NO. 48491C0275E

WILLIAMSON COUNTY, TEXAS AND INCORPORATED AREAS. DATED: SEPTEMBER 26, 2008

TOTAL NUMBER OF LOTS:	9	
NO. OF BLOCKS:	1	
NO. OF SINGLE FAMILY LOTS:	0	
NO. OF MIXED USE COMMERCIAL LOTS:	6	15.459 ACRES
NO. OF H.O.A. & MIXED USE RESIDENTIAL LOTS:	1	6.518 ACRES
NO. OF MIXED USE RESIDENTIAL LOTS	2	29.497 ACRES
TOTAL ACREAGE:		51.474 ACRES

SHEET NO. 1 OF 5

Carlson, Brigance & Doering, Inc.
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5501 West William Cannon ◆ Austin, Texas 78749
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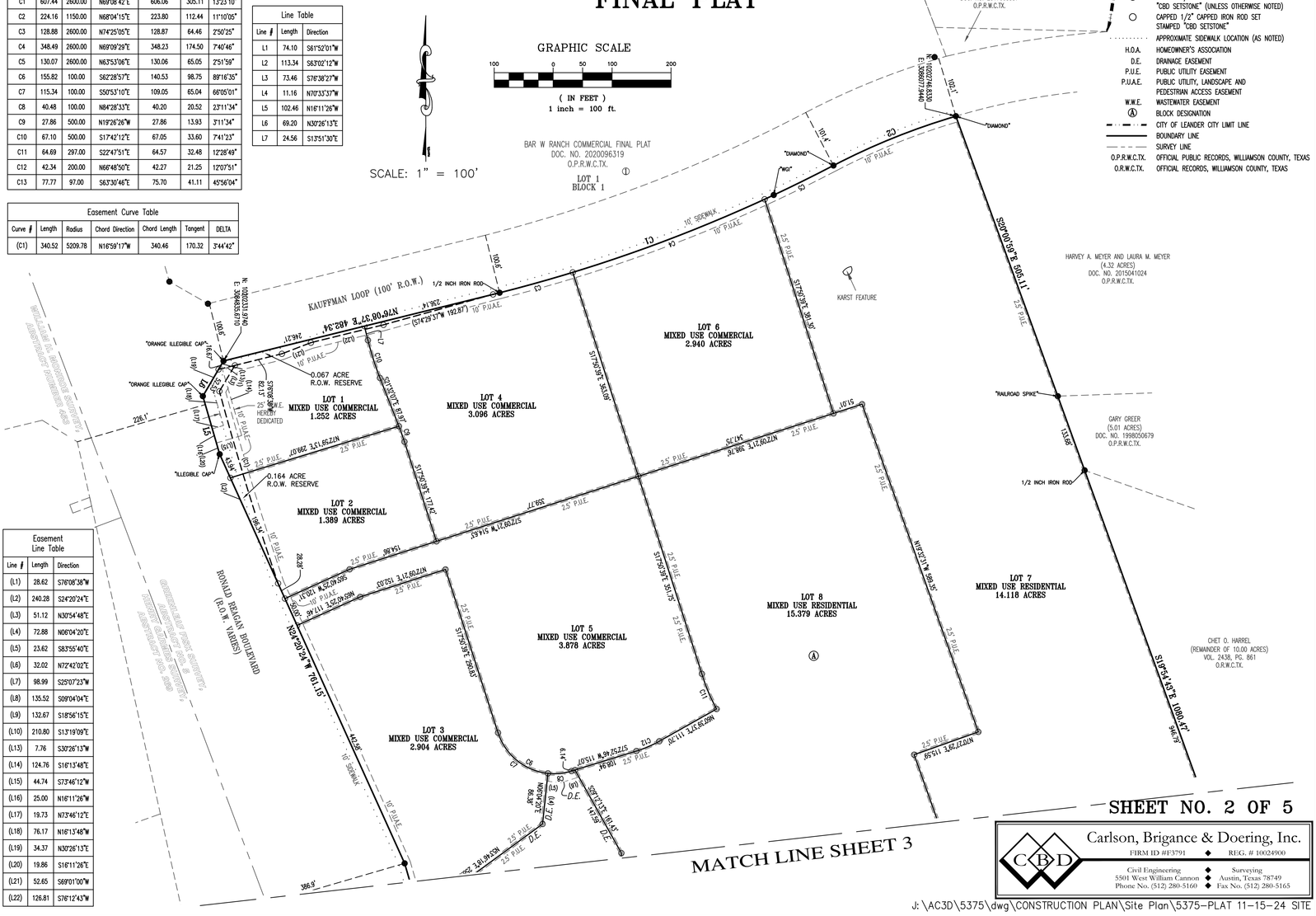
BAR W RANCH EAST MIXED USE
FINAL PLAT

Curve Table						
Curve #	Length	Radius	Chord Direction	Chord Length	Tangent	DELTA
C1	607.44	2600.00	N69°08'42"E	606.06	305.11	13°23'10"
C2	224.16	1150.00	N68°04'15"E	223.80	112.44	11°10'05"
C3	128.88	2600.00	N74°25'05"E	128.87	64.46	2°50'25"
C4	348.49	2600.00	N69°09'29"E	348.23	174.50	7°40'46"
C5	130.07	2600.00	N63°53'06"E	130.06	65.05	2°51'59"
C6	155.82	100.00	S62°28'57"E	140.53	98.75	89°16'35"
C7	115.34	100.00	S50°53'10"E	109.05	65.04	66°05'01"
C8	40.48	100.00	N84°28'33"E	40.20	20.52	23°11'34"
C9	27.86	500.00	N19°26'26"W	27.86	13.93	3°11'34"
C10	67.10	500.00	S17°42'12"E	67.05	33.60	7°41'23"
C11	64.69	297.00	S22°47'51"E	64.57	32.48	12°28'49"
C12	42.34	200.00	N66°48'50"E	42.27	21.25	12°07'51"
C13	77.77	97.00	S63°30'46"E	75.70	41.11	45°56'04"

Line Table		
Line #	Length	Direction
L1	74.10	S61°52'01"W
L2	113.34	S63°02'12"W
L3	73.46	S76°38'27"W
L4	11.16	N70°33'37"W
L5	102.46	N16°11'26"W
L6	69.20	N30°26'13"E
L7	24.56	S13°51'30"E

Easement Curve Table						
Curve #	Length	Radius	Chord Direction	Chord Length	Tangent	DELTA
(C1)	340.52	5209.78	N16°59'17"W	340.46	170.32	3°44'42"

Easement Line Table		
Line #	Length	Direction
(L1)	28.62	S78°08'38"W
(L2)	240.28	S24°20'24"E
(L3)	51.12	N33°54'48"E
(L4)	72.88	N06°04'20"E
(L5)	23.62	S83°55'40"E
(L6)	32.02	N72°42'02"E
(L7)	98.99	S25°07'23"W
(L8)	135.52	S09°04'04"E
(L9)	132.67	S18°56'15"E
(L10)	210.80	S13°19'09"E
(L13)	7.76	S30°26'13"W
(L14)	124.76	S16°13'48"E
(L15)	44.74	S73°46'12"W
(L16)	25.00	N16°11'26"W
(L17)	19.73	N73°46'12"E
(L18)	76.17	N16°13'48"W
(L19)	34.37	N30°26'13"E
(L20)	19.86	S16°11'26"E
(L21)	52.65	S69°01'00"W
(L22)	126.81	S76°12'43"W



LEGEND

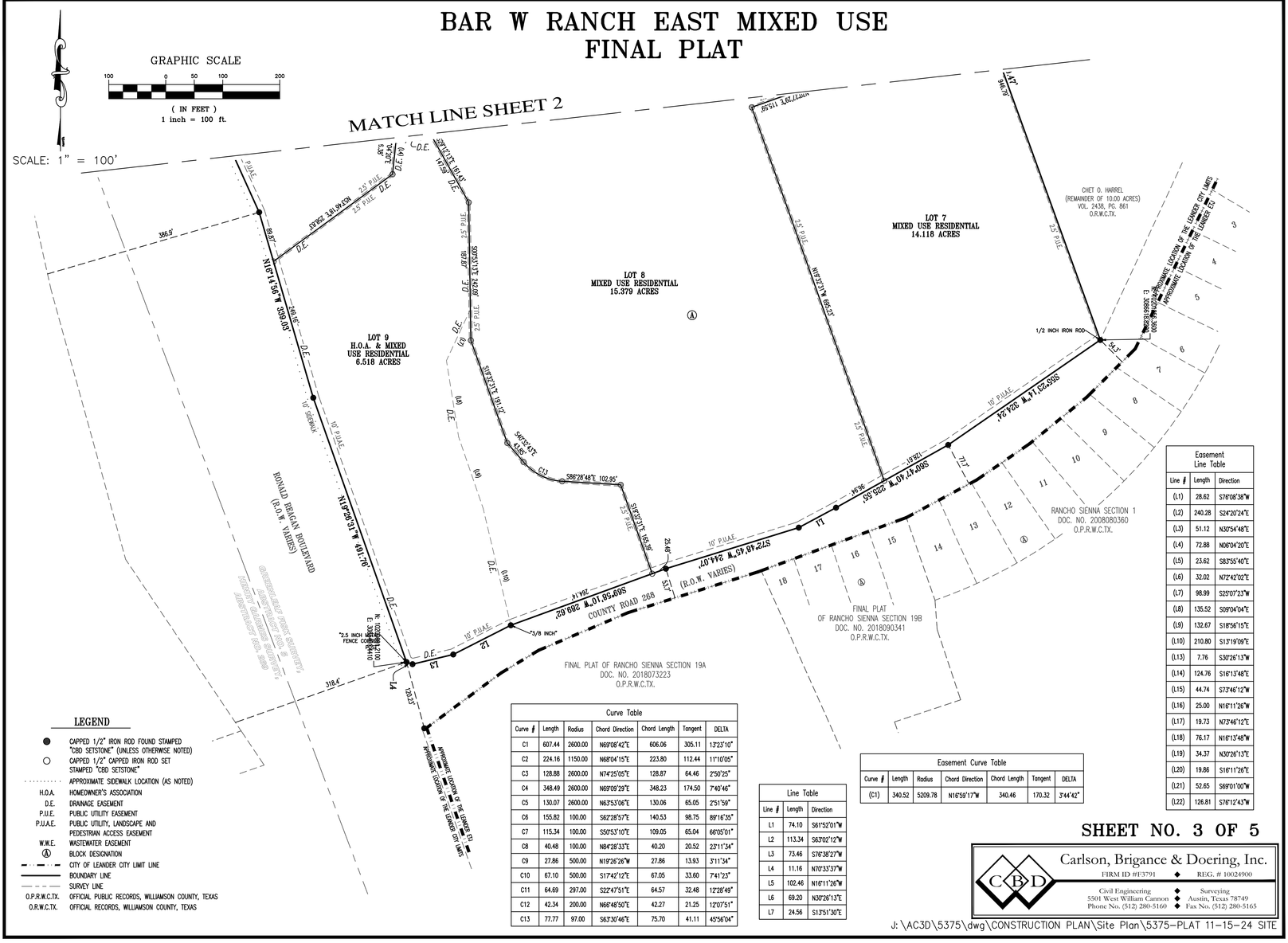
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- ○ CAPPED 1/2" CAPPED IRON ROD SET STAMPED "CBD SETSTONE"
- APPROXIMATE SIDEWALK LOCATION (AS NOTED)
- H.O.A. HOMEOWNER'S ASSOCIATION
- D.E. DRAINAGE EASEMENT
- P.U.E. PUBLIC UTILITY EASEMENT
- P.U.A.E. PUBLIC UTILITY, LANDSCAPE AND PEDESTRIAN ACCESS EASEMENT
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- O.P.R.W.C.TX. OFFICIAL PUBLIC RECORDS, WILLIAMSON COUNTY, TEXAS
- O.R.W.C.TX. OFFICIAL RECORDS, WILLIAMSON COUNTY, TEXAS

SHEET NO. 2 OF 5

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BAR W RANCH EAST MIXED USE
FINAL PLAT



LEGEND

- CAPPED 1/2" IRON ROD FOUND STAMPED "CBD SETSTONE" (UNLESS OTHERWISE NOTED)
- CAPPED 1/2" CAPPED IRON ROD SET STAMPED "CBD SETSTONE"
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(L18)	76.17	N16°13'48"W
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(L21)	52.65	S69°01'00"W
(L22)	126.81	S76°12'43"W

SHEET NO. 3 OF 5

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Civil Engineering ◆ Surveying
5501 West William Cannon ◆ Austin, Texas 78749
Phone No. (512) 280-5160 ◆ Fax No. (512) 280-5165

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BAR W RANCH EAST MIXED USE
FINAL PLAT

METES AND BOUNDS

BEING ALL OF THAT CERTAIN 51.474 ACRE TRACT OF LAND, OUT OF THE GREENLEAF FISK SURVEY, ABSTRACT NUMBER 5, SITUATED IN WILLIAMSON COUNTY, TEXAS, BEING ALL OF THAT CALLED 51.474 ACRE TRACT OF LAND DESCRIBED IN A CORRECTION SPECIAL WARRANTY DEED TO BAR W EAST COMMERCIAL, LTD. RECORDED IN DOCUMENT NUMBER 2024064999 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS (O.P.R.W.C.TX.), SAID 51.474 ACRE TRACT MORE FULLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A CAPPED 1/2 INCH IRON ROD FOUND WITH ILLEGIBLE STAMP ON THE SOUTH RIGHT-OF-WAY LINE OF KAUFFMAN LOOP (100' R.O.W.) AND THE EAST RIGHT-OF-WAY LINE OF RONALD REAGAN BOULEVARD (R.O.W. VARIES), FOR THE NORTHWEST CORNER OF SAID 51.474 ACRE TRACT OF LAND AND POINT OF BEGINNING OF THE HEREIN DESCRIBED TRACT OF LAND,

THENCE, WITH THE NORTH LINE OF SAID 51.474 ACRE TRACT OF LAND AND WITH THE SOUTH RIGHT-OF-WAY LINE OF SAID KAUFFMAN LOOP, THE FOLLOWING THREE (3) COURSES AND DISTANCES, NUMBERED 1 THROUGH 3:

1. N76°08'37"E, A DISTANCE OF 482.34 FEET TO A 1/2 INCH IRON ROD FOUND, BEING AT THE BEGINNING OF A CURVE TO THE LEFT,
2. ALONG SAID CURVE TO THE LEFT, HAVING A RADIUS OF 2,600.00 FEET, PASSING AT AN ARC LENGTH OF 494.47 FEET A CAPPED 1/2 INCH IRON ROD FOUND STAMPED 'WGI', CONTINUING FOR A TOTAL ARC LENGTH OF 607.44 FEET, AND WHOSE CHORD BEARS N69°08'42"E, A DISTANCE OF 606.06 FEET TO A CAPPED 1/2 INCH IRON ROD FOUND STAMPED 'DIAMOND', BEING AT THE BEGINNING OF A CURVE TO THE RIGHT, AND
3. ALONG SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 1,150.00 FEET, AN ARC LENGTH OF 224.16 FEET, AND WHOSE CHORD BEARS N68°04'15"E, A DISTANCE OF 223.80 FEET TO A CAPPED 1/2 INCH IRON ROD FOUND STAMPED 'DIAMOND' AT THE NORTHEAST CORNER OF SAID 51.474 ACRE TRACT OF LAND, SAME BEING THE NORTHWEST CORNER OF A CALLED 4.32 ACRE TRACT OF LAND CONVEYED TO HARVEY A. MEYER AND LAURA M. MEYER BY DEED RECORDED IN DOCUMENT NUMBER 2015041024, O.P.R.W.C.TX.,

THENCE, WITH THE EAST LINE OF SAID 51.474 ACRE TRACT OF LAND, WITH THE WEST LINE OF SAID 4.32 ACRE TRACT OF LAND, WITH THE WEST LINE OF A CALLED 5.01 ACRE TRACT OF LAND CONVEYED TO GARY GREER BY DEED RECORDED IN DOCUMENT NUMBER 1998050679, O.P.R.W.C.TX., AND WITH THE WEST LINE OF THE REMAINDER OF A CALLED 10.00 ACRE TRACT OF LAND CONVEYED TO CHET O. HARREL BY DEED RECORDED IN VOLUME 2438, PAGE 861, OFFICIAL RECORDS OF WILLIAMSON COUNTY, TEXAS (O.R.W.C.TX.), THE FOLLOWING TWO (2) COURSES AND DISTANCES, NUMBERED 1 AND 2:

1. S20°00'59"E, A DISTANCE OF 505.11 FEET TO AN IRON RAILROAD SPIKE FOUND AT A COMMON CORNER OF SAID 4.32 ACRE TRACT OF LAND AND SAID 5.01 ACRE TRACT OF LAND,
2. S19°54'43"E, PASSING AT A DISTANCE OF 133.68 FEET A 1/2 INCH IRON ROD FOUND FOR A COMMON CORNER OF SAID 5.01 ACRE TRACT OF LAND AND SAID 10.00 ACRE TRACT OF LAND, CONTINUING FOR A TOTAL DISTANCE OF 1,080.47 FEET TO A 1/2 INCH IRON ROD FOUND ON THE NORTH RIGHT-OF-WAY LINE OF COUNTY ROAD 268 (R.O.W. VARIES) FOR THE SOUTHEAST CORNER OF SAID 51.474 ACRE TRACT OF LAND, SAME BEING THE SOUTHWEST CORNER OF SAID 10.00 ACRE TRACT OF LAND,

THENCE, WITH THE SOUTH LINE OF SAID 51.474 ACRE TRACT OF LAND AND WITH THE NORTH RIGHT-OF-WAY LINE OF SAID COUNTY ROAD 268, THE FOLLOWING EIGHT (8) COURSES AND DISTANCES, NUMBERED 1 THROUGH 8:

1. S55°23'14"W, A DISTANCE OF 324.24 FEET TO A CAPPED 1/2 INCH IRON ROD FOUND STAMPED 'CBD SETSTONE',
2. S60°47'40"W, A DISTANCE OF 225.55 FEET TO A CAPPED 1/2 INCH IRON ROD FOUND STAMPED 'CBD SETSTONE',
3. S61°52'01"W, A DISTANCE OF 74.10 FEET TO A CAPPED 1/2 INCH IRON ROD FOUND STAMPED 'CBD SETSTONE',
4. S72°48'45"W, A DISTANCE OF 244.07 FEET TO A CAPPED 1/2 INCH IRON ROD FOUND STAMPED 'CBD SETSTONE',
5. S69°58'10"W, A DISTANCE OF 289.62 FEET TO A 3/8 INCH IRON ROD FOUND,
6. S63°02'12"W, A DISTANCE OF 113.34 FEET TO A CAPPED 1/2 INCH IRON ROD FOUND STAMPED 'CBD SETSTONE',
7. S76°38'27"W, A DISTANCE OF 73.46 FEET TO A CAPPED 1/2 INCH IRON ROD FOUND STAMPED 'CBD SETSTONE', AND
8. N70°33'37"W, A DISTANCE OF 11.16 FEET TO A 2-1/2 INCH METAL FENCE POST FOUND ON THE EAST RIGHT-OF-WAY LINE OF SAID RONALD REAGAN BOULEVARD FOR THE SOUTHWEST CORNER OF SAID 51.474 ACRE TRACT OF LAND,

THENCE, WITH THE WEST LINE OF SAID 51.474 ACRE TRACT OF LAND AND WITH THE EAST RIGHT-OF-WAY LINE OF SAID RONALD REAGAN BOULEVARD, THE FOLLOWING FIVE (5) COURSES AND DISTANCES, NUMBERED 1 THROUGH 5:

1. N19°26'31"W, A DISTANCE OF 491.76 FEET TO A CAPPED 1/2 INCH IRON ROD FOUND STAMPED 'CBD SETSTONE',
2. N16°14'56"W, A DISTANCE OF 339.03 FEET TO A CAPPED 1/2 INCH IRON ROD FOUND STAMPED 'CBD SETSTONE',
3. N24°20'24"W, A DISTANCE OF 761.15 FEET TO A CAPPED 1/2 INCH IRON ROD FOUND WITH ILLEGIBLE STAMP,
4. N16°11'26"W, A DISTANCE OF 102.46 FEET TO A CAPPED 1/2 INCH IRON ROD FOUND WITH ILLEGIBLE STAMP, AND
5. N30°26'13"E, A DISTANCE OF 69.20 FEET TO THE POINT OF BEGINNING AND CONTAINING 51.474 ACRES OF LAND.

THIS FLOOD STATEMENT, AS DETERMINED BY A H.U.D.-F.I.A. FLOOD INSURANCE RATE MAP, DOES NOT IMPLY THAT THE PROPERTY OR THE IMPROVEMENTS THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS, GREATER FLOODS CAN AND WILL OCCUR, AND FLOOD HEIGHTS MAY INCREASE BY MAN-MADE OR NATURAL CAUSES.

THIS STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF ENGINEER OR SURVEYOR.

FLOODPLAIN NOTE: NO PORTION OF THIS TRACT IS WITHIN A FLOOD HAZARD AREA AS SHOWN ON THE FLOOD HAZARD BOUNDARY MAP NUMBER 48491C0275E FOR WILLIAMSON COUNTY, TEXAS, DATED SEPTEMBER 26, 2008.

STATE OF TEXAS:

COUNTY OF TRAVIS:

I, LEE A. WHITED, P.E., AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS, TO PRACTICE THE PROFESSION OF ENGINEERING, AND DO HEREBY STATE THAT THIS PLAT CONFORMS WITH THE APPLICABLE ORDINANCES OF THE CITY OF LEANDER, TEXAS.

ENGINEERING BY: _____

LEE A. WHITED, P.E. NO. 102471 DATE
CARLSON, BRIGANCE & DOERING, INC.
5501 WEST WILLIAM CANNON DRIVE
AUSTIN, TEXAS 78749
lee@cbdeng.com

STATE OF TEXAS
LEE A. WHITED
102471
LICENSED
PROFESSIONAL ENGINEER

CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

STATE OF TEXAS:

COUNTY OF TRAVIS:

I, JOHN DAVID KIPP, R.P.L.S., AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF SURVEYING AND HEREBY STATE THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE ON-THE-GROUND SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION, IN ACCORDANCE WITH ALL CITY OF LEANDER ORDINANCE AND CODES, AND THAT ALL EXISTING EASEMENTS OF RECORD AS FOUND ON TITLE POLICY ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY, GF NO. 202401895, WITH AN EFFECTIVE DATE OF JULY 15, 2024, HAVE BEEN SHOWN OR NOTED HEREON.

SURVEYED BY: _____

JOHN DAVID KIPP, R.P.L.S. NO. 5844 DATE
CARLSON, BRIGANCE & DOERING, INC.
5501 WEST WILLIAM CANNON DRIVE,
AUSTIN, TEXAS 78749
jkipp@cbdeng.com

STATE OF TEXAS
JOHN DAVID KIPP
5844
REGISTERED
PROFESSIONAL
LAND SURVEYOR

SHEET NO. 4 OF 5

Carlson, Brigance & Doering, Inc.
FIRM ID #F3791 ◆ REG. # 10024900
Civil Engineering ◆ Surveying
5501 West William Cannon ◆ Austin, Texas 78749
Phone No. (512) 280-5160 ◆ Fax No. (512) 280-5165

J:\AC3D\5375\dwg\CONSTRUCTION PLAN\Site Plan\5375-PLAT 11-15-24 SITE

BAR W RANCH EAST MIXED USE
FINAL PLAT

PLAT NOTES:

1. THIS SUBDIVISION IS WHOLLY CONTAINED WITHIN THE CURRENT CORPORATE LIMITS OF THE CITY OF LEANDER, TEXAS.

2. THIS SUBDIVISION IS SUBJECT TO THE BAR W RANCH EAST PUD (23-019-00) AND THE AMENDMENT TO AGREEMENT REGARDING CONSENT TO CREATION OF MUNICIPAL UTILITY DISTRICT AND DEVELOPMENT OF THE WEDEMEYER RANCH.

3. NO LOT IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO THE CITY OF LEANDER WATER DISTRIBUTION AND WASTEWATER COLLECTION FACILITIES.

4. A BUILDING PERMIT IS REQUIRED FROM THE CITY OF LEANDER PRIOR TO CONSTRUCTION OF ANY BUILDING OR SITE IMPROVEMENTS ON ANY LOT IN THIS SUBDIVISION.

5. NO BUILDINGS, FENCES, LANDSCAPING OR OTHER STRUCTURES ARE PERMITTED WITHIN DRAINAGE EASEMENTS SHOWN EXCEPT AS APPROVED BY THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT.

6. PROPERTY OWNER SHALL PROVIDE FOR ACCESS TO DRAINAGE EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY THE CITY OF LEANDER.

7. ALL EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY OWNER OR HIS OR HER ASSIGNS.

8. IN ADDITION TO THE EASEMENT SHOWN HEREON, A TEN FOOT (10') WIDE PUBLIC UTILITY, LANDSCAPE AND PEDESTRIAN ACCESS EASEMENT IS DEDICATED AND SHOWN GRAPHICALLY ADJACENT TO ALL STREET RIGHT-OF-WAY AND A TWO AND A HALF FOOT (2.5') WIDE PUBLIC UTILITY EASEMENT IS DEDICATED ALONG ALL SIDE LOT LINES.

9. BUILDING SETBACKS NOT SHOWN HEREON SHALL COMPLY WITH THE MOST CURRENT ZONING ORDINANCE OF THE CITY OF LEANDER.

10. NO PORTION OF THIS TRACT IS WITHIN THE DESIGNATED FLOOD HAZARD AREA AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP #48491C0275E FOR WILLIAMSON COUNTY, TEXAS, EFFECTIVE DATE SEPTEMBER 26, 2008.

11. SIDEWALKS SHALL BE INSTALLED ON THE SUBDIVISION SIDE OF KAUFFMAN LOOP. SIDEWALKS ALONG RONALD REAGAN BOULEVARD SHALL BE INSTALLED OR PAYMENT OF FEE IN LIEU SHALL BE PROVIDED TO THE CITY OF LEANDER. NO SIDEWALKS ARE REQUIRED ON COUNTY ROAD 268. THOSE SIDEWALKS NOT ABUTTING A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL LOT (INCLUDING SIDEWALKS ALONG STREET FRONTAGES OF LOTS PROPOSED FOR SCHOOLS, CHURCHES, PARK LOTS, DETENTION LOTS, DRAINAGE LOTS, LANDSCAPE LOTS, OR SIMILAR LOTS), SIDEWALKS ON ARTERIAL STREETS TO WHICH ACCESS IS PROHIBITED, SIDEWALKS ON DOUBLE FRONTAGE LOTS ON THE SIDE TO WHICH ACCESS IS PROHIBITED, AND ALL SIDEWALKS ON SAFE SCHOOL ROUTES SHALL BE INSTALLED WHEN THE ADJOINING STREET IS CONSTRUCTED.

12. ALL UTILITY LINES MUST BE LOCATED UNDERGROUND.

13. NO DRIVEWAY SHALL BE CONSTRUCTED CLOSER THAN 50' OR 60% OF PARCEL FRONTAGE, WHICHEVER IS LESS, TO THE ROW OF AN INTERSECTING LOCAL OR COLLECTOR STREET OR 100' OR 60% OF PARCEL FRONTAGE, WHICHEVER IS LESS, TO THE ROW OF AN INTERSECTING ARTERIAL STREET.

14. MAINTENANCE OF THE SHARED DRAINAGE FACILITIES AND DETENTION AND WATER QUALITY AREAS LOCATED IN LOT 9, BLOCK A SHALL BE THE RESPONSIBILITY OF THE BAR W EAST DEVELOPMENT OWNERS ASSOCIATION (BWEDOA). ALL OTHER AREAS OF LOT 9, BLOCK A SHALL BE MAINTAINED BY THE OWNER OF THE LOT.

15. THE BWEDOA BYLAWS ARE RECORDED IN THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS UNDER DOCUMENT NUMBER _____.

16. THE BAR W EAST DEVELOPMENT OWNERS ASSOCIATION SHALL MOW AND MAINTAIN LANDSCAPING IN THE OPEN CHANNELS, DETENTION AND WATER QUALITY AREAS.

17. THE BWEDOA SHALL MAINTAIN DRAINAGE AND WATER QUALITY IMPROVEMENTS CONTAINED IN OPEN CHANNELS, DETENTION AND WATER QUALITY AREAS.

18. TIA NOTE: REFER TO BAR W RANCH EAST TIA (TIA-23-0005) PREPARED BY B.O.E. ATTN: BOBAK J. TEHRANY, P.E., REQUIRED MITIGATIONS AS RECOMMENDED IN THE TIA WILL BE DESIGNED AND CONSTRUCTED AT SITE DEVELOPMENT WITH THE CONSTRUCTION PLANS.

19. ALL DRIVE LANES, FIRE LANES, AND DRIVEWAYS WITHIN THIS SUBDIVISION SHALL PROVIDE FOR RECIPROCAL ACCESS FOR INGRESS AND EGRESS TO ALL OTHER LOTS WITHIN THE SUBDIVISION AS MODIFIED BY THE BAR W EAST PUD.

20. THE PROPOSED RIGHT-OF-WAY RESERVATION LINE SHOWN ALONG RONALD REAGAN BOULEVARD AND KAUFFMAN LOOP IS PRELIMINARY ONLY. THIS PROJECT IS ACTIVELY COORDINATING WITH WILLIAMSON COUNTY ON THE FINAL ALIGNMENT OF THE RIGHT-OF-WAY RESERVATION LINE. THE FINAL RIGHT-OF-WAY RESERVATION LINE ALIGNMENT ALONG RONALD REAGAN BOULEVARD SHALL BE FINALIZED PRIOR TO RELEASE OF THE FINAL PLAT.

21. THIS PLAT CONFORMS TO THE PRELIMINARY PLAT APPROVED BY THE PLANNING & ZONING COMMISSION ON 02/22/2024.

22. APPROVAL OF THIS FINAL PLAT DOES NOT CONSTITUTE THE APPROVAL OF VARIANCES OR WAIVERS TO ORDINANCE REQUIREMENTS.

23. THE BWEDOA SHALL MOW AND MAINTAIN LANDSCAPING IN THE OPEN CHANNELS, DETENTION AND WATER QUALITY AREAS.

STATE OF TEXAS: §
§ KNOW ALL MEN BY THESE PRESENTS
COUNTY OF WILLIAMSON: §

THAT BAR W EAST COMMERCIAL, LTD., A TEXAS LIMITED PARTNERSHIP, AS THE OWNER OF THAT CERTAIN 51.474 ACRE TRACT OF LAND RECORDED IN DOCUMENT NUMBER 2024064999, OF THE OFFICIAL PUBLIC RECORDS FO WILLIAMSON COUNTY, TEXAS, DOES HEREBY CERTIFY THAT THERE ARE NO LIEN HOLDERS AND DEDICATES TO THE PUBLIC FOREVER USE OF ALL ADDITIONAL ROW, STREETS, ALLEYS, EASEMENTS, PARKS, AND ALL OTHER LANDS INTENDED FOR PUBLIC DEDICATION, OR WHEN THE SUBDIVIDER HAS MADE PROVISION FOR PERPETUAL MAINTENANCE THEREOF, TO THE INHABITANTS OF THE SUBDIVISION AS SHOWN HEREON TO BE KNOWN AS:

"BAR W RANCH EAST MIXED USE FINAL PLAT"

BAR W EAST COMMERCIAL, LTD., A TEXAS LIMITED PARTNERSHIP

BY: B&O BAR W EAST GP, LLC., A TEXAS LIMITED LIABILITY COMPANY,
ITS GENERAL PARTNER

_____
C. PATRICK OLES JR.
PRESIDENT
901 S. MOPAC EXPRESSWAY, SUITE 550
AUSTIN, TEXAS 78746

STATE OF TEXAS: §

COUNTY OF WILLIAMSON: §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS THE _____ DAY OF _____, 20__, PERSONALLY APPEARED, C. PATRICK OLES JR., IN HIS CAPACITY AS PRESIDENT OF B&O BAR W EAST GP, LLC., IN ITS CAPACITY AS GENERAL PARTNER OF BAR W EAST COMMERCIAL, LTD., ON BEHALF OF SAID BAR W EAST COMMERCIAL, LTD., A DULY AUTHORIZED AGENT WITH AUTHORITY TO SIGN SAID DOCUMENT, PERSONALLY KNOWN TO ME (AND PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT (S)HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS THE _____ DAY OF _____, 20____, A.D.

_____
NOTARY PUBLIC – STATE OF TEXAS

PRINTED NAME: _____

MY COMMISSION EXPIRES: _____

APPROVED THIS THE _____ DAY OF _____, 20_____, A.D., AND AUTHORIZED TO BE FILED FOR RECORD BY THE COUNTY CLERK OF _____ COUNTY, TEXAS.

_____ ATTEST: _____
ROBIN M. GRIFFIN, AICP — DARA CRABTREE
EXECUTIVE DIRECTOR OF DEVELOPMENT SERVICES — CITY SECRETARY
CITY OF LEANDER, TEXAS — CITY OF LEANDER, TEXAS

STATE OF TEXAS: §
§ KNOW ALL MEN BY THESE PRESENTS
COUNTY OF WILLIAMSON: §

I, NANCY E. RISTER, CLERK OF THE COUNTY COURT OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT IN WRITING, WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE ON THE _____ DAY OF _____, 20_____, A.D., AT _____ O'CLOCK __ M., AND DULY RECORDED THIS THE _____ DAY OF _____, 20_____, A.D., AT _____ O'CLOCK __ M., IN THE PLAT RECORDS OF SAID COURT IN INSTRUMENT NO. _____.

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL OF THE COUNTY COURT OF SAID COUNTY, AT MY OFFICE IN GEORGETOWN, TEXAS, THE LAST DATE SHOWN ABOVE WRITTEN.

_____
BY DEPUTY
NANCY E. RISTER, CLERK
COUNTY COURT, WILLIAMSON COUNTY, TEXAS

SHEET NO. 5 OF 5

Carlson, Brigance & Doering, Inc.
FIRM ID #F3791 ◆ REG. # 10024900
Civil Engineering ◆ Surveying
5501 West William Cannon ◆ Austin, Texas 78749
Phone No. (512) 280-5160 ◆ Fax No. (512) 280-5165

J:\AC3D\5375\dwg\CONSTRUCTION PLAN\Site Plan\5375-PLAT 11-15-24 SITE

BAR W RANCH EAST MIXED USE
FINAL PLAT

STATE OF TEXAS: §
§ {KNOW ALL MEN BY THESE PRESENTS}
COUNTY OF WILLIAMSON: §

THAT HOWARD BARKLEY WEDEMEYER ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF TEXAS, HAVING IT'S HOME OFFICE IN AUSTIN, TEXAS, ACTING HEREIN BY AND THROUGH _____, ASSISTANT SECRETARY, BEING OWNERS OF THAT CERTAIN 51.474 ACRE TRACT OR PARCEL OF LAND, OUT OF AND A PART OF THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, SITUATED IN WILLIAMSON COUNTY, TEXAS, SAID TRACT OF LAND BEING MORE PARTICULARLY DESCRIBED AS BEING CALLED 972.33 ACRE TRACT OD LAND CONVEYED TO HOWARD BARKLEY WEDEMEYER IN VOLUME 343, PAGE 553, OF THE DEED RECORDS OF WILLIAMSON COUNTY, TEXAS, DOES HEREBY CERTIFY THAT THERE ARE NO LIEN HOLDERS AND DEDICATES TO THE PUBLIC FOREVER USE OF ALL ADDITIONAL ROW, STREETS, ALLEYS, EASEMENTS, PARKS, AND ALL OTHER LANDS INTENDED FOR PUBLIC DEDICATION, OR WHEN THE SUBDIVIDER HAS MADE PROVISION FOR PERPETUAL MAINTENANCE THEREOF, TO THE INHABITANTS OF THE SUBDIVISION AS SHOWN HEREON TO BE KNOWN AS:

"BAR W RANCH EAST MIXED USE FINAL PLAT"

_____, ASSISTANT SECRETARY
CONTINENTAL HOMES OF TEXAS, L.P.
A TEXAS LIMITED PARTNERSHIP
BY: CHTEX OF TEXAS, INC.
10700 PECAN PARK BOULEVARD, SUITE 400
AUSTIN, TX, 78750

STATE OF TEXAS: §
§ {KNOW ALL MEN BY THESE PRESENTS}
COUNTY OF WILLIAMSON: §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS THE _____DAY OF _____, 20_____, PERSONALLY APPEARED, JOHN SPARROW, AS ASSISTANT SECRETARY, ON BEHALF OF SAID CONTINENTAL HOMES OF TEXAS L.P., A DULY AUTHORIZED AGENT WITH AUTHORITY TO SIGN SAID DOCUMENT, PERSONALLY KNOWN TO ME (AND PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT (S)HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS THE _____ DAY OF _____, 20___, A.D.

_____
NOTARY PUBLIC IN AND FOR TRAVIS COUNTY, TEXAS

_____
HOWARD BARKLEY WEDEMEYER

STATE OF TEXAS: §
§ {KNOW ALL MEN BY THESE PRESENTS}
COUNTY OF WILLIAMSON: §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS THE _____DAY OF _____, 20_____, PERSONALLY APPEARED HOWARD BARKLEY WEDEMEYER, OWNER, A DULY AUTHORIZED AGENT WITH AUTHORITY TO SIGN SAID DOCUMENT, PERSONALLY KNOWN TO ME (AND PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT (S)HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS THE _____ DAY OF _____, 20___, A.D.

_____
NOTARY PUBLIC IN AND FOR TRAVIS COUNTY, TEXAS

THIS FLOOD STATEMENT, AS DETERMINED BY A H.U.D.-F.I.A. FLOOD INSURANCE RATE MAP, DOES NOT IMPLY THAT THE PROPERTY OR THE IMPROVEMENTS THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS, GREATER FLOODS CAN AND WILL OCCUR, AND FLOOD HEIGHTS MAY INCREASE BY MAN-MADE OR NATURAL CAUSES.

THIS STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF ENGINEER OR SURVEYOR.

FLOOD PLAIN NOTE: A PORTION OF THIS TRACT IS WITHIN A FLOOD HAZARD AREA AS SHOWN ON THE FEDERAL FLOOD INSURANCE ADMINISTRATION RATE MAP NO. 48491C0445F FOR WILLIAMSON COUNTY, TEXAS, DATED DECEMBER 20, 2019 AND FLOOD HAZARD BOUNDARY MAP NUMBER 48491C0275E FOR WILLIAMSON COUNTY, TEXAS, DATED SEPTEMBER 26, 2008.

STATE OF TEXAS:

COUNTY OF TRAVIS:

I, LEE A. WHITED, P.E., AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS, TO PRACTICE THE PROFESSION OF ENGINEERING, AND DO HEREBY STATE THAT THIS PLAT CONFORMS WITH THE APPLICABLE ORDINANCES OF THE CITY OF LEANDER, TEXAS.

ENGINEERING BY: _____
LEE A. WHITED, P.E. NO. 102471 DATE
CARLSON, BRIGANCE & DOERING, INC.
5501 WEST WILLIAM CANNON DRIVE
AUSTIN, TEXAS 78749
lee@cbdeng.com

STATE OF TEXAS OF TEXAS — LEE A. WHITED — 102471 — LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE & DOERING, INC.
ID# F3791

STATE OF TEXAS:

COUNTY OF TRAVIS:

I, JOHN DAVID KIPP, R.P.L.S., AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF SURVEYING AND HEREBY STATE THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE ON-THE-GROUND SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION, IN ACCORDANCE WITH ALL CITY OF LEANDER ORDINANCE AND CODES, AND THAT ALL EXISTING EASEMENTS OF RECORD AS FOUND ON TITLE POLICY ISSUED BY STEWART TITLE COMPANY, FILE NO. 1247017, WITH AN EFFECTIVE DATE OF APRIL 30, 2021, HAVE BEEN SHOWN OR NOTED HEREON.

SURVEYED BY: _____
JOHN DAVID KIPP, R.P.L.S. NO. 5844 DATE
CARLSON, BRIGANCE & DOERING, INC.
5501 WEST WILLIAM CANNON DRIVE,
AUSTIN, TEXAS 78749
JKIPP@cbdeng.com

STATE OF TEXAS — REGISTERED — JOHN DAVID KIPP — 5844 — PROFESSIONAL LAND SURVEYOR

APPROVED THIS THE ___ DAY OF _____, 20__, A.D., AT A PUBLIC MEETING OF THE PLANNING AND ZONING COMMISSION OF THE CITY OF LEANDER, TEXAS AND AUTHORIZED TO BE FILED FOR RECORD BY THE COUNTY CLERK OF WILLIAMSON COUNTY, TEXAS.

_____ _____
JOHN COSGROVE, CHAIR — ELLEN COUFAL, SECRETARY
PLANNING AND ZONING COMMISSION — PLANNING AND ZONING COMMISSION
CITY OF LEANDER, TEXAS — CITY OF LEANDER, TEXAS

STATE OF TEXAS:

COUNTY OF WILLIAMSON:

KNOW ALL MEN BY THESE PRESENTS: I, NANCY E. RISTER, CLERK OF THE COUNTY COURT OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT IN WRITING, WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE,

ON THIS THE _____ DAY OF _____, 20__, A.D., AT _____ O'CLOCK __ M., AND DULY RECORDED THIS THE _____ DAY OF _____, 20___, A.D., AT _____ O'CLOCK __ M., IN THE PLAT RECORDS, OF SAID COURT IN DOCUMENT NO. _____ .

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL OF THE COUNTY COURT OF SAID COUNTY, AT MY OFFICE IN GEORGETOWN, TEXAS, THE LAST DATE SHOWN ABOVE WRITTEN.

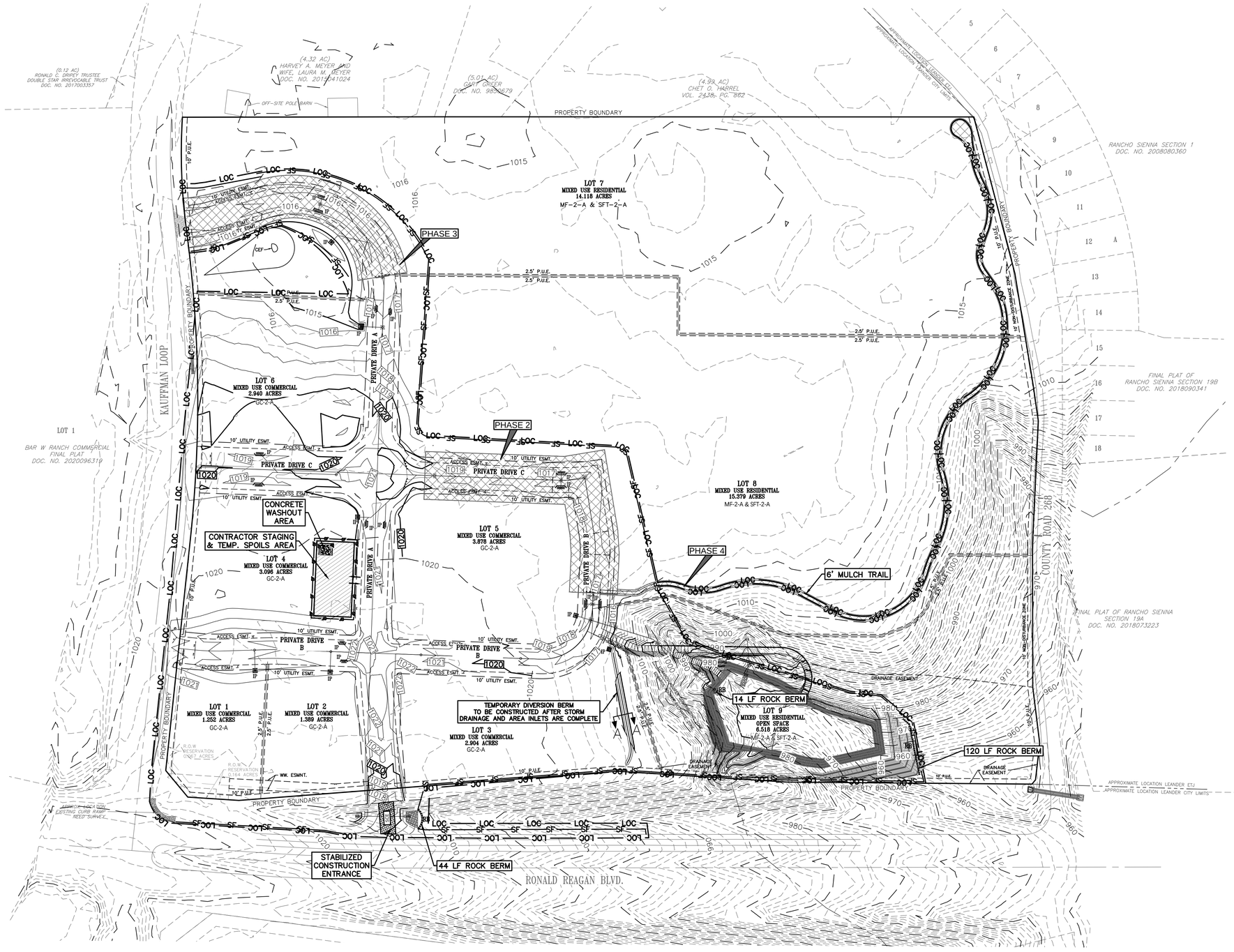
_____
BY DEPUTY
NANCY E. RISTER, CLERK
COUNTY COURT, WILLIAMSON COUNTY, TEXAS

SHEET NO. 6 OF 6

Carlson, Brigance & Doering, Inc.
FIRM ID #F3791 ◆ REG. # 10024900
Civil Engineering ◆ Surveying
5501 West William Cannon ◆ Austin, Texas 78749
Phone No. (512) 280-5160 ◆ Fax No. (512) 280-5165

J:\AC3D\5375\dwg\CONSTRUCTION PLAN\Site Plan\5375-PLAT 11-15-24 SITE

SUB-ENGINEERING.CTB



LEGEND

- SF — SILT FENCE
- LOC — LIMITS OF CONSTRUCTION
- JH — J HOOK
- IP — INLET PROTECTION
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- STAGING AND SPOILS AREA
- CONCRETE WASH AREA
- EXIST. MINOR CONTOUR
- 570 — EXIST. MAJOR CONTOUR
- 570 — PROPOSED MINOR CONTOUR
- 570 — PROPOSED MAJOR CONTOUR
- RB — ROCK BERM
- BERM
- PROJECT PHASE AREA

0 100' 200'

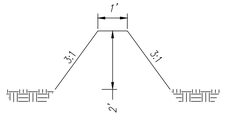
SCALE: 1" = 100'

CONTRACTOR EROSION CONTROL NOTE: EROSION CONTROL INSTALLATION, MAINTENANCE, AND REMOVAL ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MUST REMOVE ALL EROSION CONTROL, ONCE VEGETATION IS ESTABLISHED. IF EROSION CONTROL RESPONSIBILITY IS TURNED OVER TO ANOTHER PARTY, CONTRACTOR MUST PROVIDE AN EMAIL NOTIFICATION TO THE ENGINEER OF RECORD.

NOTES:

1. INLET PROTECTION TO BE PROVIDED FOR ALL STORM SEWER INLETS.
2. EROSION CONTROL MATTING IS REQUIRED FOR ALL FINISHED SLOPES 6(H):1(V) OR STEEPER
3. ALL ROCK BERMS SHALL BE REMOVED BY THE CONTRACTOR.
4. THE CITY OF LEANDER INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY THE EROSION CONTROLS THROUGHOUT THE DURATION OF THE PROJECT.
5. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS THAN DISTURBED AREA NEEDS TO BE STABILIZED BY VEGETATION, MULCH, TARP OR REVEGETATION MATTING.

LIMITS OF CONSTRUCTION =31.43 AC
STABILIZED CONSTRUCTION ENTRANCE = 1
TOTAL SILT FENCE = 5813 LF
INLET PROTECTION = 21
ROCK BERMS = 177 L.F.



PERMENANT DIVERSION BERM DETAIL
CROSS SECTION A-A
N.T.S.

DESIGNED BY: CRB/PS	DRAFTED BY:

DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office
5501 West William Cannon Dr.
Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

SHEET NAME: OVERALL EROSION CONTROL PLAN

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024

JOB NUMBER: 5375

SHEET: 8 OF 62

SD-24-0243

FILE PATH: I:\ACDS\5375\dwg\CONSTRUCTION PLANS\Site Plan\5375-EROSION CONTROL PLAN.dwg - Nov 26, 2024 - 3:02pm

NOTES:

1. INLET PROTECTION TO BE PROVIDED FOR ALL STORM SEWER INLETS.
2. EROSION CONTROL MATTING IS REQUIRED FOR ALL FINISHED SLOPES 6(H):1(V) OR STEEPER
3. ALL ROCK BERMS SHALL BE REMOVED BY THE CONTRACTOR.
4. THE CITY OF LEANDER INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY THE EROSION CONTROLS THROUGHOUT THE DURATION OF THE PROJECT.
5. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS THAN DISTURBED AREA NEEDS TO BE STABILIZED BY VEGETATION, MULCH, TARP OR REVEGETATION MATTING.

LIMITS OF CONSTRUCTION =22.09 AC
STABILIZED CONSTRUCTION ENTRANCE = 1
TOTAL SILT FENCE = 4452 LF
INLET PROTECTION = 21
ROCK BERMS = 177 L.F.

MATCH LINE SEE THIS SHEET

LOT 6
MIXED USE COMMERCIAL
2.940 ACRES
GC-2-A

LOT 1
BAR W RANCH COMMERCIAL
FINAL PLAT
DOC. NO. 202009631 9

LOT 4
MIXED USE COMMERCIAL
3.096 ACRES
GC-2-A

LOT 5
MIXED USE COMMERCIAL
3.878 ACRES
GC-2-A

LOT 8
MIXED USE RESIDENTIAL
15.379 ACRES
MF-2-A & SFT-2-A

LOT 9
MIXED USE RESIDENTIAL
OPEN SPACE
6.518 ACRES
MF-2-A & SFT-2-A

LOT 1
MIXED USE COMMERCIAL
1.252 ACRES
GC-2-A

LOT 2
MIXED USE COMMERCIAL
1.389 ACRES
GC-2-A

LOT 3
MIXED USE COMMERCIAL
2.904 ACRES
GC-2-A

PHASE 2
PHASE 3
PHASE 4

PRIVATE DRIVE A
PRIVATE DRIVE B
PRIVATE DRIVE C

CONCRETE WASHOUT AREA
CONTRACTOR STAGING & TEMP. SPOILS AREA
STABILIZED CONSTRUCTION ENTRANCE
TEMPORARY DIVERSION BERM TO BE CONSTRUCTED AFTER STORM DRAINAGE AND AREA INLETS ARE COMPLETE.
14 LF ROCK BERM
44 LF ROCK BERM
120 LF ROCK BERM
FUTURE 6' TRAIL
DRAINAGE EASEMENT
SEWER VALVE
WATER TANK (TO BE REMOVED)
EDWARDS AQUIFER RECHARGE ZONE
EDWARDS AQUIFER CONTRIBUTING ZONE
KAUFFMAN LOOP
RONALD REAGAN BLVD.
PROPERTY BOUNDARY
R.O.W. RESERVATION 0.067 ACRES 25' W.W.E. HEREBY DEDICATED
R.O.W. RESERVATION 0.164 ACRES
WW. ESMNT.
10' UTILITY ESMT.
ACCESS ESMT.
10' P.U.E.
2.5' P.U.E.

LEGEND

SF	SILT FENCE
LOC	LIMITS OF CONSTRUCTION
JH	J HOOK
IP	INLET PROTECTION
SCE	STABILIZED CONSTRUCTION ENTRANCE
	STAGING AND SPOILS AREA
	CONCRETE WASH AREA
	EXIST. MINOR CONTOUR
570	EXIST. MAJOR CONTOUR
570	PROPOSED MINOR CONTOUR
570	PROPOSED MAJOR CONTOUR
RB	ROCK BERM
	BERM
	PROJECT PHASE AREA

0 60' 120'
SCALE: 1" = 60'

CONTRACTOR EROSION CONTROL NOTE: EROSION CONTROL INSTALLATION, MAINTENANCE, AND REMOVAL ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MUST REMOVE ALL EROSION CONTROL, ONCE VEGETATION IS ESTABLISHED. IF EROSION CONTROL RESPONSIBILITY IS TURNED OVER TO ANOTHER PARTY, CONTRACTOR MUST PROVIDE AN EMAIL NOTIFICATION TO THE ENGINEER OF RECORD.

SD-24-0243

DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR (620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

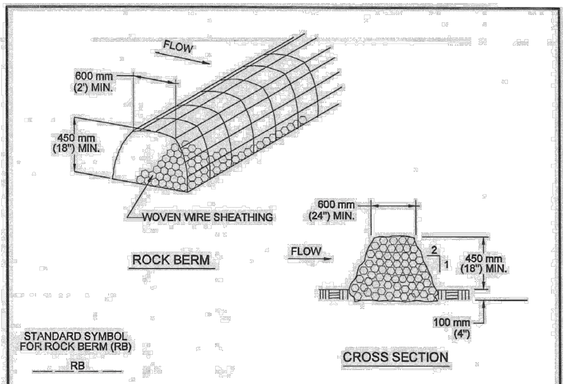
SHEET NAME: EROSION CONTROL PLAN (60 SCALE)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET: 9 OF 62

SUB-ENGINEERING.CTB

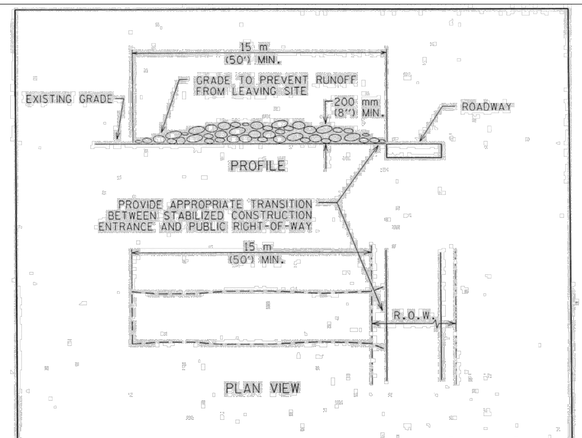
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NOTES:

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.

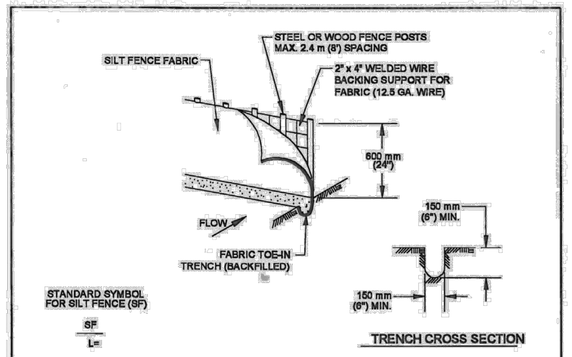
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	ROCK BERM	
Wayne S. Watts P.E. 8/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S-1



NOTES:

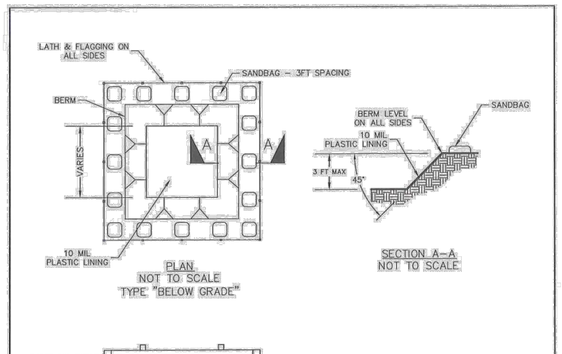
1. STONE SIZE: 75-125 mm (3-5") OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8").
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO 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	
5/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-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.

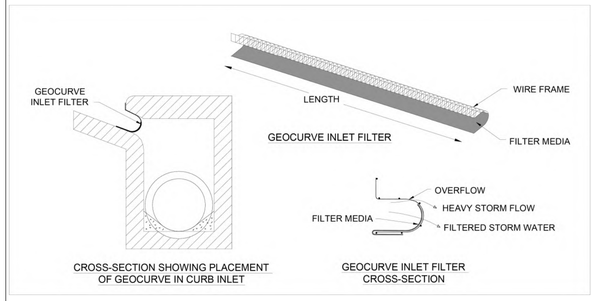
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	SILT FENCE	
9/1/2011 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1



STATE OF TEXAS WAYNE S. WATTS 88134 LICENSED PROFESSIONAL ENGINEER	Wayne S. Watts 01/30/15	City Of Leander, Texas 303-1 CONCRETE WASHOUT

GeoSolutions, Inc. Product Data Sheet
GeoCurve Inlet Filter

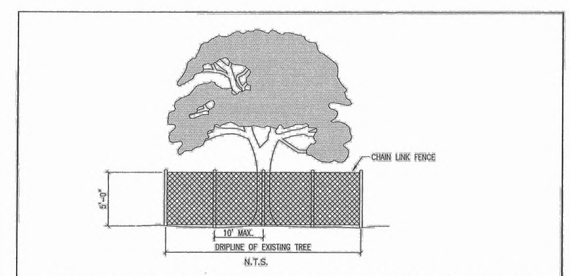
The GeoCurve Inlet Filter is a stormwater filter for placement into a stormwater curb inlet for the purpose of capturing debris and sediment that is transported by stormwater runoff. The device is comprised of a filter media (woven monofilament filter fabric) affixed to the lower portion of a "C" shaped 12 gauge welded wire frame (2" x 4" openings) with an upper retention flange. The device effectively filters stormwater, can easily be removed for maintenance and cleaning and incorporates an overflow window for heavy storm events.



FILTER MEDIA PROPERTIES: Mono-filament Woven Filter Fabric

PROPERTY	ASTM TEST METHOD	VALUE	C.O.A. REQ'T
Fabric Weight	D 3776	4.5 oz/sy	3 oz/sy
Grab Tensile Strength	D 4632	170 lbs	----
Mullen Burst Strength	D 3786	410 lbs/sq in	120 lbs/sq in
UV Stability	D 4355	80 %	70 %
Water Flow Rate	D 4491	325 gal/min/sf	275 gal/min/sf

GeoSolutions, Inc. 4417 Burleson Road Austin, Texas 78744 512-330-0796



1. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING).
2. FENCES SHALL COMPLETELY SURROUND THE TREE, OR CLUSTERS OF TREES; SHALL BE LOCATED AT THE OUTERMOST LIMIT OF THE TREE BRANCHES (DRIPLINE), AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
   A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MATERIALS.
   B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN SIX INCHES (6")) CUT OR FILL, OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY.
   C. WOUNDS TO EXPOSED ROOTS, TRUNKS OR LIMBS BY MECHANICAL EQUIPMENT.
   D. OTHER ACTIVITIES DETRIMENTAL TO TREES, SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING AND FIRE.
3. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIPLINES MAY BE PERMITTED IN THE FOLLOWING CASES:
   A. WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.
   B. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN SIX FEET (6'-0") TO BUILDING.
4. CRITICAL ROOT ZONE REQUIREMENTS
   A. NO CONSTRUCTION OR DISTURBANCE SHALL OCCUR WITHIN AN AREA THAT CONSTITUTES MORE THAN FIFTY (50%) OF THE TOTAL CRITICAL ROOT ZONE AND ONE HALF THE RADIAL DISTANCE OF THE CRITICAL ROOT ZONE FOR EACH TREE BEING PRESERVED INCLUDING SIGNIFICANT TREES, HERITAGE TREES, AND ANY OTHER TREES FOR WHICH PRESERVATION IS TO BE CREDITED. THE REMAINING CRITICAL ROOT ZONE SHALL CONSIST OF AT LEAST ONE HUNDRED (100) SQUARE FEET.
   B. THIS DEFINED AREA SHALL BE FLAGGED AND ENCIRCLED WITH PROTECTIVE FENCING DURING CONSTRUCTION. THE PLANNING DIRECTOR MAY APPROVE CONSTRUCTION CLOSER TO THE TRUNK THAN ONE HALF (½) THE RADIAL DISTANCE, DEPENDING ON THE SIZE, SPACING, OR SPECIES OF THE TREE, THE TYPE OF DISTURBANCE PROPOSED, AND UNIQUENESS OF THE SITUATION.
   C. CUT OR FILL THAT IS GREATER THAN FOUR (4) INCHES IN DEPTH AND THE SEVERING OF MAJOR ROOTS SHALL BE CONSIDERED DISTURBANCE FOR THE PURPOSES OF THIS ORDINANCE.
   D. WITHIN THE PROTECTED CRITICAL ROOT ZONE, ONLY FLATWORK, DECKING, OR SIMILAR CONSTRUCTION, MAY BE APPROVED AND SHALL NOT AFFECT THE BRANCHING OF THE TREE.
   E. IF PROPOSED OR ACTUAL PROTECTION OF THE CRITICAL ROOT ZONE OF A TREE DOES NOT MEET THE REQUIREMENTS OF THIS SECTION, THEN THE TREE SHALL BE CONSIDERED REMOVED AND SHALL REQUIRE MITIGATION IN ACCORDANCE WITH THIS ORDINANCE.

STATE OF TEXAS WAYNE S. WATTS 88134 LICENSED PROFESSIONAL ENGINEER	Wayne S. Watts 08/21/15	City Of Leander, Texas 303-2 TREE PROTECTION

DESIGNED BY: CRB/PS | DRAFTED BY:

REVISION | DATE

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: EROSION CONTROL NOTES AND DETAILS
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET: 10 OF 62

SD-24-0243

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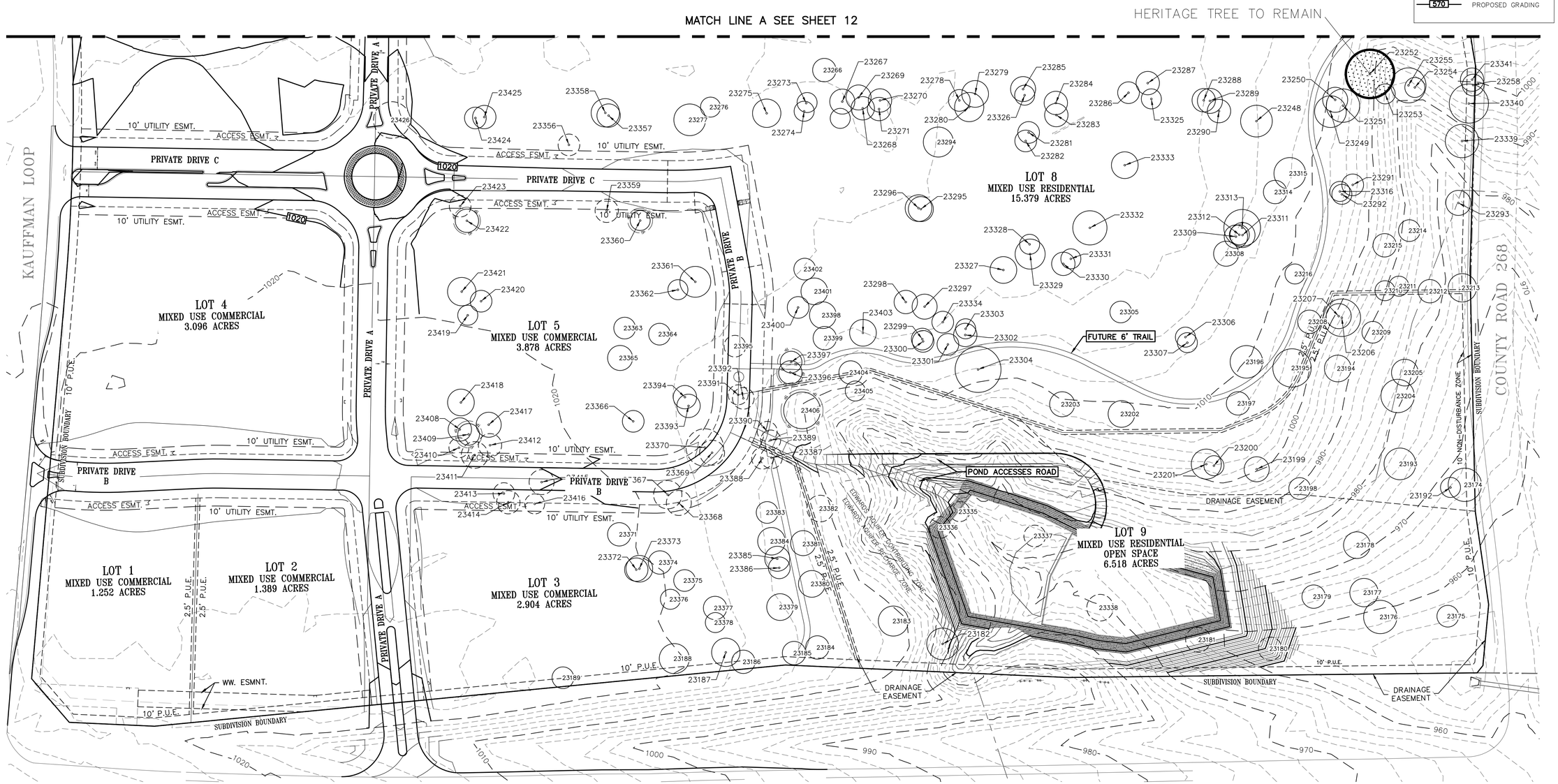
IN THE EVENT OF A CONFLICT WITH TREE REMOVAL/PRESERVATION CALL OUTS ON PLAN SHEET(S) VERSUS TREE REMOVAL/PRESERVATION MATRIX, THE TREE REMOVAL/PRESERVATION MATRIX SHALL APPLY. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY WITH CITY STAFF SHOULD ANY INCONSISTENCY EXIST WITHIN AN APPROVED PLAN SET. NO IN-FIELD CHANGES ARE MADE TO APPROVED PLANS, NO EXCEPTIONS.

LEGEND

- TREE WELL
- 1000 * TREE TO BE REMOVED
- 1000 TREE TO BE SAVED
- 1000 HERITAGE TREE
- 1000 * HERITAGE TREE TO BE REMOVED
- 1000 TREE PROTECTION
- 570 PROPOSED GRADING

0 60' 120'

SCALE: 1" = 60'



TREE SURVEY DATE:
5-7-2021

NOTE:

1. MITIGATION FOR SIGNIFICANT TREES IS NOT REQUIRED BECAUSE OVER 40% ARE BEING RETAINED (86.6%)
2. TREES TO BE REMOVED ARE ONLY FROM INFRASTRUCTURE EASEMENTS. TREE REMOVAL FOR SITE DEVELOPMENT WILL BE ADDRESSED WITH THE SITE DEVELOPMENT PLANS FOR EACH SITE.
3. NO HERITAGE TREES ARE TO BE REMOVED, SO THERE WILL BE NO HERITAGE TREE MITIGATION REQUIRED.

SD-24-0243

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

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Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: TREE SURVEY & PROTECTION PLAN (1 OF 2)

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024

JOB NUMBER: 5375

SHEET: 11 OF 62

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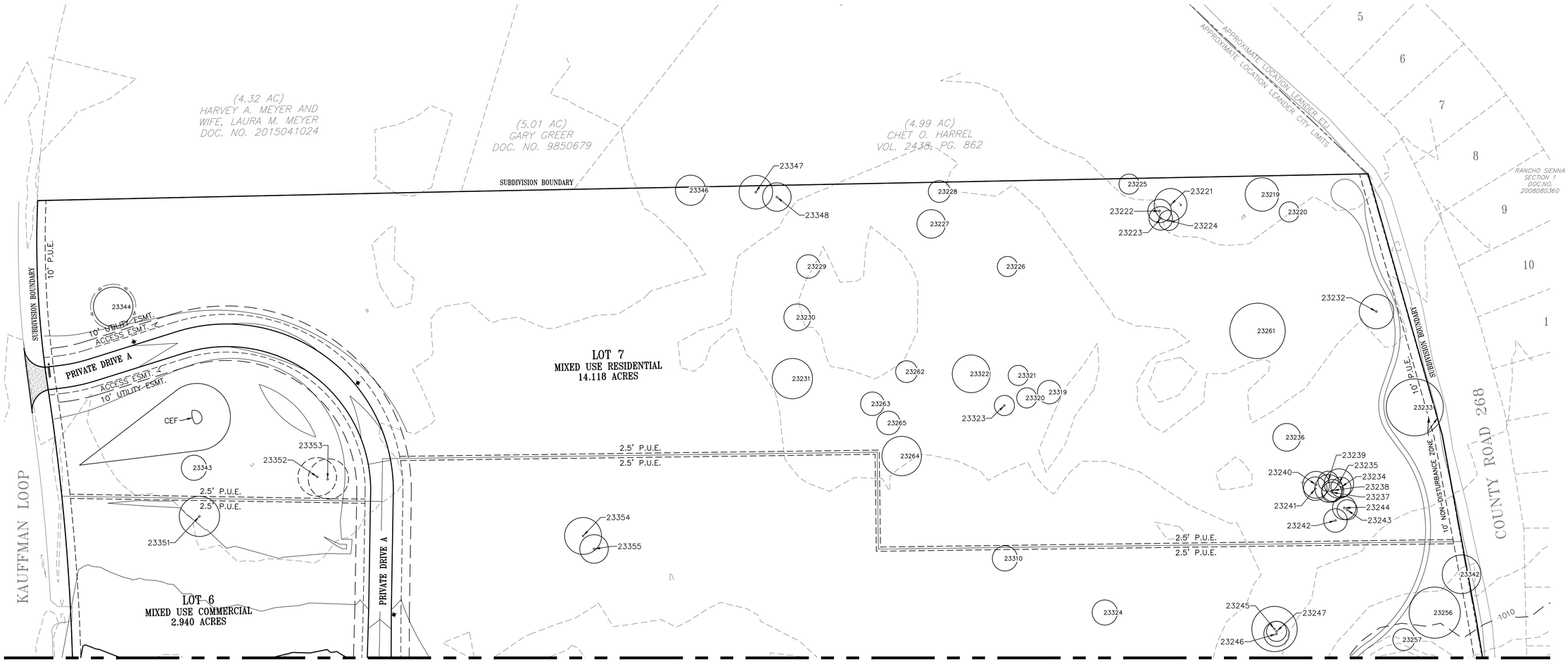
IN THE EVENT OF A CONFLICT WITH TREE REMOVAL/PRESERVATION CALL OUTS ON PLAN SHEET(S) VERSUS TREE REMOVAL/PRESERVATION MATRIX, THE TREE REMOVAL/PRESERVATION MATRIX SHALL APPLY. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY WITH CITY STAFF SHOULD ANY INCONSISTENCY EXIST WITHIN AN APPROVED PLAN SET. NO IN-FIELD CHANGES ARE MADE TO APPROVED PLANS, NO EXCEPTIONS.

LEGEND

- TREE WELL
- 1000 * TREE TO BE REMOVED
- 1000 TREE TO BE SAVED
- 1000 HERITAGE TREE
- 1000 * HERITAGE TREE TO BE REMOVED
- 1000 TREE PROTECTION
- 570 PROPOSED GRADING

0 60' 120'

SCALE: 1" = 60'



MATCH LINE A SEE SHEET 11

TREE SURVEY DATE:
5-7-2021

NOTE:

1. MITIGATION FOR SIGNIFICANT TREES IS NOT REQUIRED BECAUSE OVER 40% ARE BEING RETAINED (86.6%)
2. TREES TO BE REMOVED ARE ONLY FROM INFRASTRUCTURE EASEMENTS. TREE REMOVAL FOR SITE DEVELOPMENT WILL BE ADDRESSED WITH THE SITE DEVELOPMENT PLANS FOR EACH SITE.
3. NO HERITAGE TREES ARE TO BE REMOVED, SO THERE WILL BE NO HERITAGE TREE MITIGATION REQUIRED.

SD-24-0243

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

Carlson, Brigance & Doering, Inc.
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Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: TREE SURVEY & PROTECTION PLAN (2 OF 2)

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024

JOB NUMBER: 5375

SHEET: 12 OF 62

SUB-ENGINEERING.CTB

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SUB-ENGINEERING.CTB

LOT 3 TREES

LOT 3 TREES						
POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
23184	TREE OAK 14IN	14		14		
23185	TREE OAK 14IN	14		14		
23186	TREE OAK 14IN	14		14		
23187	TREE OAK 17IN	17		17		
23188	TREE OAK 18IN	18		18		
23189	TREE OAK 13IN	13		13		
✳ 23367	TREE OAK 17IN	17	17			EASEMENT
✳ 23368	TREE OAK 15IN	15	15			EASEMENT
23371	TREE OAK 14IN	14		14		
23372	TREE OAK 14IN	14		14		
23373	TREE OAK 16IN	16		16		
23374	TREE OAK 14IN	14		14		
23375	TREE OAK 13IN	13		13		
23376	TREE OAK 12IN	12		12		
23377	TREE OAK 14IN	14		14		
23378	TREE OAK 12IN	12		12		
23379	TREE OAK 16IN	16		16		
23380	TREE OAK 16IN	16		16		
23381	TREE OAK 15IN	15		15		
23383	TREE OAK 13IN	13		13		
23384	TREE MULTI OAK 13IN	13		13		
23385	TREE OAK 15IN	15		15		
23386	TREE OAK 13IN	13		13		
✳ 23387	TREE OAK 13IN	13	13			GRADING
✳ 23388	TREE OAK 13IN	13	13			GRADING
✳ 23413	TREE OAK 13IN	13	13			EASEMENT
✳ 23414	TREE OAK 14IN	14	14			EASEMENT
✳ 23415	TREE OAK 15IN	15	15			EASEMENT
✳ 23416	TREE OAK 12IN	12	12			EASEMENT

LOT 3 TREE MITIGATION REQUIREMENT

TREE MITIGATION REQUIREMENT LOT 3:	TOTAL INCHES	INCHES REMOVED	MITIGATION	INCHES RETAINED
SIGNIFICANT TREES 8"–18" SUBDIVISION	29 TREES: 412	8 TREES: 112	0	300
SIGNIFICANT TREES 18"–26" SUBDIVISION	0 TREES: 0	0	0	0
HERITAGE TREES (2:1 REQUIRED) SUBDIVISION	0 TREE: 0	0	0	0
TOTAL INCHES OF TREES	29 TREES: 412	112	0	300

LOT 5 TREES

LOT 5 TREES						
POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
✳ 23359	TREE OAK 14IN	14	14			GRADING
23360	TREE OAK 12IN	12		12		
23361	TREE MULTI OAK 13N 11IN	19		19		
23362	TREE OAK 12IN	12		12		
23363	TREE OAK 13IN	13		13		
23364	TREE OAK 13IN	13		13		
23365	TREE OAK 15IN	15		15		
23366	TREE OAK 13IN	13		13		
✳ 23369	TREE OAK 15IN	15	15			EASEMENT
✳ 23370	TREE MULTI OAK 15IN 10IN	20	20			EASEMENT
✳ 23391	TREE OAK 12IN	12	12			EASEMENT
23393	TREE OAK 14IN	14		14		
23394	TREE OAK 14IN	14		14		
✳ 23395	TREE OAK 13IN	13	13			EASEMENT
23408	TREE OAK 14IN	14		14		
23409	TREE OAK 13IN	13		13		
✳ 23410	TREE OAK 12IN	12	12			GRADING
✳ 23411	TREE OAK 16IN	16	16			GRADING
✳ 23412	TREE OAK 14IN	14	14			GRADING
23417	TREE OAK 15IN	15		15		
23418	TREE OAK 16IN	16		16		
23419	TREE OAK 12IN	12		12		
23420	TREE OAK 13IN	13		13		
23421	TREE OAK 17IN	17		17		
23422	TREE OAK 14IN	14		14		
✳ 23423	TREE OAK 13IN	13	13			GRADING

LOT 5 TREE MITIGATION REQUIREMENT

TREE MITIGATION REQUIREMENT LOT 5:	TOTAL INCHES	INCHES REMOVED	MITIGATION	INCHES RETAINED
SIGNIFICANT TREES 8"–18" SUBDIVISION	26 TREES: 368	9 TREES: 129	0	239
SIGNIFICANT TREES 18"–26" SUBDIVISION	0 TREE: 0	0	0	0
HERITAGE TREES (2:1 REQUIRED) SUBDIVISION	0 TREE: 0	0	0	0
TOTAL INCHES OF TREES	26 TREES: 368	9 TREES: 129	0	239

NOTES:

1. MITIGATION FOR SIGNIFICANT TREES IS NOT REQUIRED BECAUSE OVER 40% ARE BEING RETAINED (85.7%)
2. TREES TO BE REMOVED ARE ONLY FROM INFRASTRUCTURE EASEMENTS. TREE REMOVAL FOR SITE DEVELOPMENT WILL BE ADDRESSED WITH THE SITE DEVELOPMENT PLANS FOR EACH SITE.
3. NO HERITAGE TREES ARE TO BE REMOVED, SO THERE WILL BE NO HERITAGE TREE MITIGATION REQUIRED.
4. IN THE EVENT OF A CONFLICT WITH TREE REMOVAL/PRESERVATION CALL OUTS ON PLAN SHEET(S) VERSUS TREE REMOVAL/PRESERVATION MATRIX, THE TREE REMOVAL/PRESERVATION MATRIX SHALL APPLY. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY WITH CITY STAFF SHOULD ANY INCONSISTENCY EXIST WITHIN AN APPROVED PLAN SET. NO IN-FIELD CHANGES ARE MADE TO APPROVED PLANS, NO EXCEPTIONS.
5. THERE ARE NO EXISTING TREES ON LOTS 1, 2, AND 4.

LOT 6 TREES

LOT 6 TREES						
POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
23351	TREE OAK 24IN	24		24		

LOT 6 TREE MITIGATION REQUIREMENT

TREE MITIGATION REQUIREMENT LOT 6:	TOTAL INCHES	INCHES REMOVED	MITIGATION	INCHES RETAINED
SIGNIFICANT TREES 8"–18" SUBDIVISION	0 TREES: 0	0	0	0
SIGNIFICANT TREES 18"–26" SUBDIVISION	1 TREES: 24	0	0	24
HERITAGE TREES (2:1 REQUIRED) SUBDIVISION	0 TREE: 0	0	0	0
TOTAL INCHES OF TREES	1 TREES: 24	0	0	24

LOT 7 TREES

LOT 7 TREES						
POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
23219	TREE MULTI OAK 15IN 10IN	20		20		
23220	TREE OAK 12IN	12		12		
23221	TREE MULTI OAK 14IN 11IN	20		20		
23222	TREE OAK 14IN	14		14		
23223	TREE OAK 14IN	14		14		
23224	TREE OAK 12IN	12		12		
23225	TREE OAK 12IN	12		12		
23226	TREE ELM 12IN	12		12		
23227	TREE ELM 17IN	17		17		
23228	TREE OAK 13IN	13		13		
23229	TREE ELM 14IN	14		14		
23230	TREE OAK 16IN	16		16		
23231	TREE OAK 24IN	24		24		
23232	TREE MULTI OAK 16IN 9IN	21		21		
23233	TREE MULTI OAK 20IN 16IN 12IN	34		34		
23234	TREE OAK 12IN	12		12		
23235	TREE MULTI OAK 12IN 11IN	18		18		
23236	TREE MULTI OAK 12IN 9IN	17		17		
23237	TREE OAK 12IN	12		12		
23238	TREE OAK 13IN	13		13		
23239	TREE OAK 12IN	12		12		
23240	TREE OAK 16IN	16		16		
23241	TREE OAK 14IN	14		14		
23242	TREE OAK 14IN	14		14		
23243	TREE OAK 12IN	12		12		
23244	TREE OAK 14IN	14		14		
23261	TREE MULIT OAK 15IN 14IN 13IN 9IN	33		33		
23262	TREE ELM 13IN	13		13		
23263	TREE ELM 14IN	14		14		
23264	TREE MULTI ELM 18IN 11IN	24		24		
23265	TREE ELM 14IN	14		14		
23319	TREE ELM 14IN	14		14		
23320	TREE ELM 12IN	12		12		
23321	TREE ELM 12IN	12		12		
23322	TREE MULTI ELM 12IN 11IN 10IN	23		23		
23323	TREE ELM 12IN	12		12		
23343	TREE ELM 15IN	15		15		
23344	TREE MULTI OAK 14IN 11IN 8IN	24		24		
23346	TREE OAK 18IN	18		18		
23347	TREE OAK 20IN	20		20		
23348	TREE OAK 17IN	17		17		
✳ 23352	TREE OAK 23IN	23	23			GRADING
✳ 23353	TREE OAK 24IN	24	24			GRADING

LOT 7 TREE MITIGATION REQUIREMENT

TREE MITIGATION REQUIREMENT LOT 7:	TOTAL INCHES	INCHES REMOVED	MITIGATION	INCHES RETAINED
SIGNIFICANT TREES 8"–18" SUBDIVISION	38 TREES: 596	0	0	596
SIGNIFICANT TREES 18"–26" SUBDIVISION	5 TREES: 125	2 TREES: 47	0	78
HERITAGE TREES (2:1 REQUIRED) SUBDIVISION	0 TREE: 0	0	0	0
TOTAL INCHES OF TREES	43 TREES: 721	2 TREES: 47	0	674

OVERALL MITIGATION FEE CALCULATION

SIGNIFICANT TREES 8" – 18": 444" REMOVED; MITIGATION NOT REQUIRED FOR 50% OF SIGNIFICANT TREES: 3262 x 0.5 = 1818;
MITIGATION 1:1 = 0"; 25% CREDIT FOR REMOVAL OF INVASIVE SPECIES: 0 x 0.75 = 0";
MITIGATION FEE $150 PER CI: 0 x 150 = ($0.00 NO MITIGATION FEE)

SIGNIFICANT TREES 18" – 26": 88" REMOVED; MITIGATION NOT REQUIRED FOR 50% OF SIGNIFICANT TREES: 426 x 0.5 = 213;
MITIGATION 2:1: 0" x 2 = 0"; 25% CREDIT FOR REMOVAL OF INVASIVE SPECIES: 0 x 0.75 = 0";
MITIGATION FEE $150 PER CI: 0 x 150 = ($0.00 NO MITIGATION FEE)

SIGNIFICANT TREES 8" – 18" CREDIT: 0"
SIGNIFICANT TREES 18.1" – 25.99" CREDIT: 0"

HERITAGE TREES >26": 0" REMOVED; HERITAGE TREE REMOVAL FEE: 0 x $300 = $0.00;
MITIGATION 3:1: 0" x 3 = 0"; 25% CREDIT FOR REMOVAL OF INVASIVE SPECIES: 0 x 0.75 = 0;
MITIGATION FEE $150 PER CI: 0 x 150 = ($0.00 NO MITIGATION FEE)
(NO HERITAGE MITIGATION FEE)

SIGNIFICANT TREES OVERALL CREDIT: 0"

*NO MITIGATION FEE FOR THIS PROJECT

LOT 8 TREES

LOT 8 TREES						
POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
23195	TREE MULTI OAK 18IN 10IN	23		23		
23196	TREE MULTI OAK 13N 13N	20		20		
23197	TREE OAK 14IN	14		14		
23202	TREE OAK 16IN	16		16		
23203	TREE OAK 15IN	15		15		
23208	TREE OAK 14IN	14		14		
23210	TREE OAK 12IN	12		12		
23211	TREE OAK 12IN	12		12		
23212	TREE OAK 14IN	14		14		
23213	TREE MULTI OAK 13N 8IN	17		17		
23214	TREE OAK 13IN	13		13		
23215	TREE OAK 14IN	14		14		
23216	TREE OAK 12IN	12		12		
23245	TREE MULTI OAK 19IN 16IN	27		27		
23246	TREE OAK 15IN	15		15		
23247	TREE OAK 12IN	12		12		
23248	TREE MULTI ELM 14IN 10IN	19		19		
23249	TREE OAK 19IN	19		19		
23250	TREE OAK 15IN	15		15		
23251	TREE OAK 20IN	20		20		
H 23252	TREE OAK 29IN	29		29	Y	
23253	TREE ELM 12IN	12		12		
23254	TREE ELM 12IN	12		12		
23255	TREE MULTI OAK 14IN 14IN	21		21		
23256	TREE MULTI OAK 16IN 15IN 14IN	31		31		
23257	TREE OAK 13IN	13		13		
23258	TREE OAK 13IN	13		13		
23266	TREE ELM 14IN	14		14		
23267	TREE OAK 15IN	15		15		
23268	TREE OAK 14IN	14		14		
✳ 23269	TREE OAK 15IN	15	15			EASEMENT
✳ 23270	TREE OAK 14IN	14	14			EASEMENT
23271	TREE OAK 14IN	14		14		
23272	TREE OAK 12IN	12		12		
23273	TREE OAK 12IN	12		12		
23274	TREE OAK 12IN	12		12		
23275	TREE OAK 17IN	17		17		
23276	TREE OAK 12IN	12		12		
23277	TREE OAK 19IN	19		19		
23278	TREE OAK 13IN	13		13		
23279	TREE ELM 16IN	16		16		
23280	TREE MULTI OAK 12IN 11IN	18		18		
23281	TREE OAK 13IN	13		13		
23282	TREE OAK 13IN	13		13		
23283	TREE OAK 14IN	14		14		
23284	TREE OAK 14IN	14		14		
23285	TREE OAK 15IN	15		15		
23286	TREE OAK 13IN	13		13		
23287	TREE OAK 14IN	14		14		
23288	TREE OAK 14IN	14		14		
23289	TREE OAK 15IN	15		15		
23290	TREE OAK 14IN	14		14		
✳ 23291	TREE OAK 13IN	13	13			EASEMENT
✳ 23292	TREE OAK 12IN	12	12			EASEMENT
23293	TREE ELM 15IN	15		15		
23294	TREE OAK 18IN	18		18		
23295	TREE OAK 15IN	15		15		
23296	TREE OAK 16IN	16		16		
23297	TREE OAK 15IN	15		15		
23298	TREE OAK 14IN	14		14		
23299	TREE OAK 13IN	13		13		
23300	TREE OAK 13IN	13		13		
23301	TREE OAK 13IN	13		13		
23302	TREE OAK 14IN	14		14		
23303	TREE OAK 12IN	12		12		
23304	TREE CLUSTER OAK 19IN 17IN	28		28		
23305	TREE OAK 13IN	13		13		
23306	TREE OAK 12IN	12		12		
23307	TREE OAK 12IN	12		12		
23308	TREE OAK 15IN	15		15		
23309	TREE OAK 14IN	14		14		
23310	TREE OAK 15IN	15		15		
23311	TREE OAK 15IN	15		15		
23312	TREE OAK 12IN	12		12		
23313	TREE CLUSTER OAK 16IN 12IN	22		22		
23314	TREE OAK 14IN	14		14		
23315	TREE OAK 19IN	19		19		
23316	TREE OAK 12IN	12		12		
23324	TREE OAK 15IN	15		15		
23325	TREE OAK 12IN	12		12		
23326	TREE OAK 12IN	12		12		
23327	TREE OAK 16IN	16		16		
23328	TREE OAK 12IN	12		12		
23329	TREE CLUSTER OAK 12IN 12IN	18		18		
23330	TREE OAK 14IN	14		14		
23331	TREE OAK 12IN	12		12		
23332	TREE CLUSTER OAK 14IN 13IN	21		21		

LOT 8 TREES CONT'D

LOT 8 TREES						
POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
23333	TREE OAK 16IN	16		16		
23334	TREE OAK 13IN	13		13		
23339	TREE OAK 20IN	20		20		
23340	TREE MULTI OAK 13N 12IN 9IN	24		24		
23341	TREE OAK 14IN	14		14		
23342	TREE MULTI ELM 16IN 14IN	23		23		
23354	TREE OAK 22IN	22		22		
23355	TREE OAK 17IN	17		17		
✳ 23356	TREE ELM 13IN	13	13			GRADING
23357	TREE OAK 14IN	14		14		
23358	TREE OAK 17IN	17		17		
23396	TREE OAK 14IN	14		14		
23397	TREE OAK 13IN	13		13		
23398	TREE OAK 16IN	16		16		
23399	TREE OAK 14IN	14		14		
23400	TREE OAK 13IN	13		13		
23401	TREE OAK 16IN	16		16		
23402	TREE OAK 13IN	13		13		
23403	TREE OAK 16IN	16		16		
23404	TREE OAK 14IN	14		14		
23424	TREE OAK 13IN	13		13		
23425	TREE OAK 14IN	14		14		
✳ 23426	TREE OAK 22IN	22	22			EASEMENT

LOT 8 TREE MITIGATION REQUIREMENT

TREE MITIGATION REQUIREMENT LOT 8:	TOTAL INCHES	INCHES REMOVED	MITIGATION	INCHES RETAINED
SIGNIFICANT TREES 8"–18" SUBDIVISION	100 TREES:1474	5 TREES: 67	0	1407
SIGNIFICANT TREES 18"–26" SUBDIVISION	9 TREES: 196	1 TREE: 22	0	174
HERITAGE TREES (2:1 REQUIRED) SUBDIVISION	1 TREE: 29	0	0	29
TOTAL INCHES OF TREES	110 TREES: 1699	6 TREES: 89	0	1610

LOT 9 TREES

LOT 9 TREES						
POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
23174	TREE OAK 20IN	20		20		
23175	TREE OAK 13IN	13		13		
23176	TREE CLUSTER OAK 14IN 12IN	20		20		
23177	TREE OAK 17IN	17		17		
23178	TREE MULTI OAK 12IN 8IN	16		16		
23179	TREE OAK 14IN	14		14		
✳ 23180	TREE OAK 14IN	14	14			GRADING
✳ 23181	TREE OAK 15IN	15	15			GRADING
✳ 23182	TREE OAK 19IN	19	19			GRADING
23183	TREE CLUSTER OAK 12IN	12		12		
23192	TREE OAK 12IN	12		12		
23193	TREE MULTI OAK 15IN 8IN	19		19		
23194	TREE OAK 16IN	16		16		
23198	TREE OAK 13IN	13		13		
23199	TREE OAK 15IN	15		15		
23200	TREE OAK 12IN	12		12		
23201	TREE OAK 18IN	18		18		
23204	TREE OAK 20IN	20		20		
23205	TREE OAK 16IN	16		16		
23206	TREE MULTI OAK 16IN 13IN	23		23		
23207	TREE OAK 15IN	15		15		
23209	TREE OAK 13IN	13		13		
✳ 23335	TREE OAK 12IN	12	12			GRADING
✳ 23336	TREE OAK 13IN	13	13			GRADING
✳ 23337	TREE OAK 13IN	13	13			GRADING
✳ 23338	TREE OAK 16IN	16	16			GRADING
✳ 23382	TREE OAK 16IN	16	16			GRADING
✳ 23389	TREE OAK 12IN	12	12			GRADING
✳ 23390	TREE OAK 12IN	12	12			GRADING
✳ 23392	TREE OAK 13IN	13	13			EASEMENT
23405	TREE OAK 12IN	12		12		
23406	TREE OAK 22IN	22		22		

LOT 9 TREE MITIGATION REQUIREMENT

TREE MITIGATION REQUIREMENT LOT 9:	TOTAL INCHES	INCHES REMOVED	MITIGATION	INCHES RETAINED
SIGNIFICANT TREES 8"–18" SUBDIVISION	28 TREES: 412	10 TREES:136	0	276
SIGNIFICANT TREES 18"–26" SUBDIVISION	4 TREES: 81	1 TREES:19	0	62
HERITAGE TREES (2:1 REQUIRED) SUBDIVISION	0 TREE: 0	0	0	0
TOTAL INCHES OF TREES	32 TREES: 493	11 TREES:155	0	338

TREE SURVEY DATE: 5-7-2021
H – DESIGNATES HERITAGE TREE
HR – DESIGNATES HERITAGE TREE TO BE REMOVED (NONE).
✳ – DESIGNATES SIGNIFICANT TREE TO BE REMOVED

SD-24-0243

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

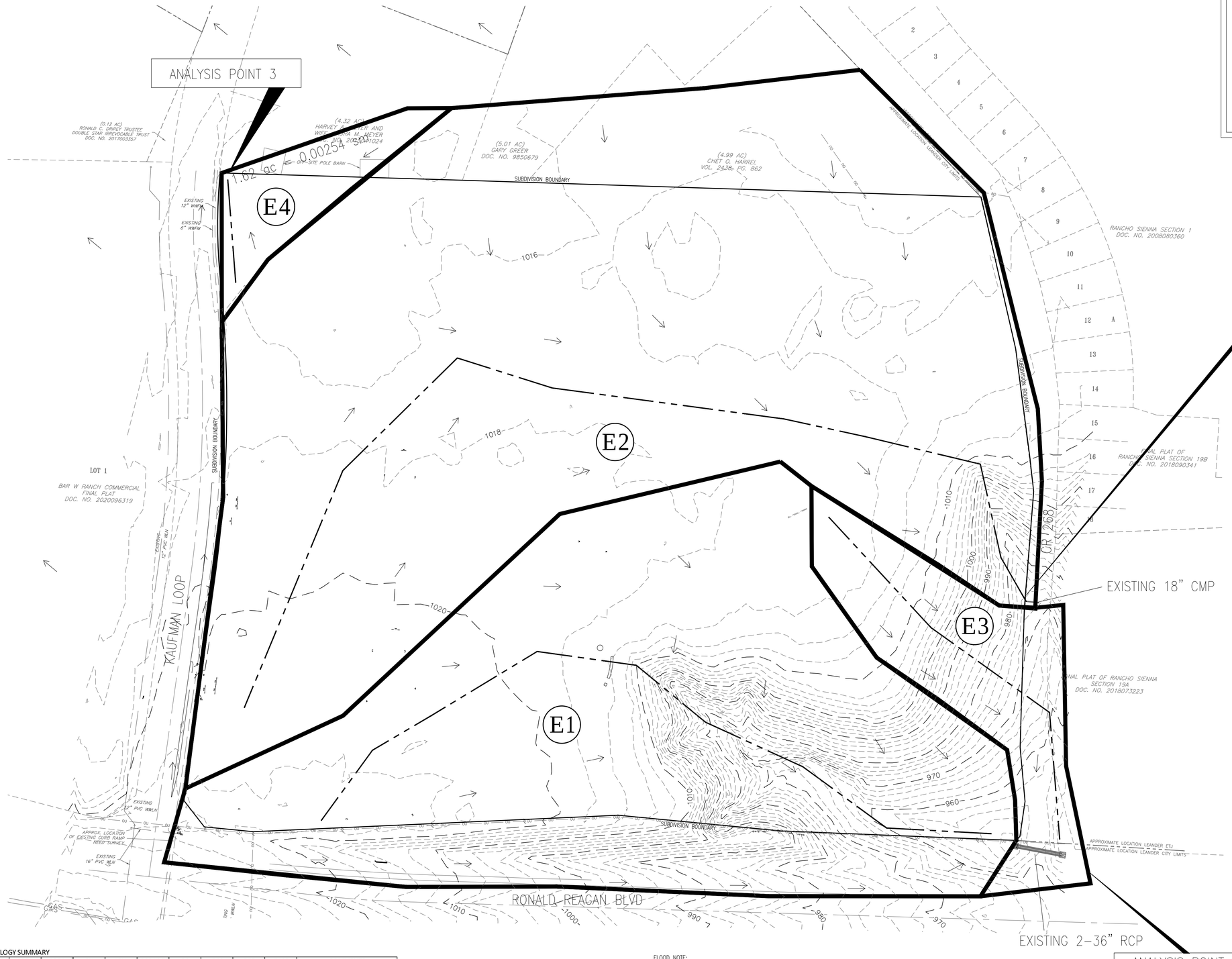
Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdengr.com

SHEET NAME: TREE LIST & MITIGATION
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET: 13 OF 62

FILE PATH: J:\ACDS\5375\dwg\CONSTRUCTION PLANS\Site Plan\5375-TREE PLAN.dwg - Nov 26, 2024 - 3:04pm



LEGEND

- EXISTING MINOR CONTOURS
- 1020 EXISTING MAJOR CONTOURS
- PROPOSED MINOR CONTOURS
- 1020 PROPOSED MAJOR CONTOURS
- PROPOSED DRAINAGE AREA BNDY
- EXISTING DRAINAGE AREA BNDY
- TIME OF CONCENTRATION PATH
- A1 DRAINAGE AREA NUMBER
- FLOW ARROW

HYDROLOGY SUMMARY

SUB AREA	AREA	AREA	CN	IC%	SCS LAG	Q2	Q10	Q25	Q100	COMMENTS
	AC	SM			MIN	CFS	CFS	CFS	CFS	
E1	22.41	0.0350	77	0	16.73	34.9	71.0	96.8	141.7	
E2	37.07	0.0579	77	0	16.14	58.7	119.6	163.3	238.9	ANALYSIS PT 1
E3	4.21	0.0066	77	0	17.51	6.4	13.1	17.8	26.1	
J-E						99.9	203.2	277.7	406.4	ANALYSIS PT 2 (E1+E2+E3)
E4	1.62	0.0025	77	0	12.45	2.9	5.9	8.1	11.8	ANALYSIS PT 3

FLOOD NOTE:

THE LEGALLY DESCRIBED PROPERTY FALLS WITHIN ZONE X (AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DESIGNATED BY THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT FEDERAL INSURANCE ADMINISTRATION FLOOD HAZARD BOUNDARY MAP NUMBER 48491C0275E FOR WILLIAMSON COUNTY, TEXAS, DATED SEPTEMBER 26, 2008.

SD-24-0243

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR (620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: EXISTING HYDROLOGY MAP

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024

JOB NUMBER: 5375

SHEET: 14 OF 62

FILE PATH: J:\ACAD\5375\dwg\CONSTRUCTION PLANS\Set Plan\5375-HYDROLOGY.dwg - Nov 26, 2024 - 3:04pm

SUB-ENGINEERING.CTB

HYDROLOGY SUMMARY

SUB AREA	AREA	AREA	CN	IC%	SCS LAG	Q2	Q10	Q25	Q100	COMMENTS
	AC	SM			MIN	CFS	CFS	CFS	CFS	
E1	22.41	0.0350	77	0	16.73	34.9	71.0	96.8	141.7	
E2	37.07	0.0579	77	0	16.14	58.7	119.6	163.3	238.9	ANALYSIS PT 1
E3	4.21	0.0066	77	0	17.51	6.4	13.1	17.8	26.1	
J-E						99.9	203.2	277.7	406.4	ANALYSIS PT 2 (E1+E2+E3)
E4	1.62	0.0025	77	0	12.45	2.9	5.9	8.1	11.8	ANALYSIS PT 3
D1A	51.48	0.0804	77	65	9.05	169.3	274.0	347.1	472.8	
POND A						21.6	91.6	150.5	244.7	
WSE						969.6	972.6	974.4	976.9	
D1B	6.81	0.0106	77	35	7.33	15.2	26.7	34.9	49.0	
J1						23.4	99.4	163.5	266.5	
D2	1.52	0.0024	77	5	3.00	1.9	3.7	5.1	7.3	ANALYSIS PT 1
D3	3.40	0.0053	77	5	4.35	9.3	18.5	24.9	36.1	
J AP 2						27.2	104.1	171.3	280	NALYSIS PT 2 (POND + DIB+D2+D3
D4	0.12	0.0002	77	0	7.74	0.3	0.5	0.7	1.1	ANALYSIS PT 3

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE

REVISION

LEGEND

- EXISTING MINOR CONTOURS
- 1020 EXISTING MAJOR CONTOURS
- PROPOSED MINOR CONTOURS
- 1020 PROPOSED MAJOR CONTOURS
- PROPOSED DRAINAGE AREA BNDY
- EXISTING DRAINAGE AREA BNDY
- TIME OF CONCENTRATION PATH
- A1 DRAINAGE AREA NUMBER
- FLOW ARROW

0 100' 200'

SCALE: 1" = 100'

ANALYSIS POINT 3

ANALYSIS POINT 1 AT EXIST CULVERT

ANALYSIS POINT 2 POND+D1B+D2+D3

WQ/DETENTION POND

EXISTING 18" CMP

EXISTING 2-36" RCP

D4 D1A D2 D3 D1B

LOT 1 MIXED USE COMMERCIAL 1.252 ACRES GC-2-A

LOT 2 MIXED USE COMMERCIAL 1.389 ACRES GC-2-A

LOT 3 MIXED USE COMMERCIAL 2.904 ACRES GC-2-A

LOT 4 MIXED USE COMMERCIAL 3.096 ACRES GC-2-A

LOT 5 MIXED USE COMMERCIAL 3.878 ACRES GC-2-A

LOT 6 MIXED USE COMMERCIAL 2.940 ACRES GC-2-A

LOT 7 MIXED USE RESIDENTIAL 14.118 ACRES MF-2-A & SFT-2-A

LOT 8 MIXED USE RESIDENTIAL 15.379 ACRES MF-2-A & SFT-2-A

LOT 9 MIXED USE RESIDENTIAL OPEN SPACE 6.518 ACRES MF-2-A & SFT-2-A

51.474 ACRES HOWARD BARKLEY WEDEMEYER (972.33 AC.) VOL. 343, PG. 553

(6.12 AC) RONALD C. DRINKY TRUSTEE DOUBLE STAR IRREVOCABLE TRUST DOC. NO. 2017003357

(4.32 AC) HARVEY A. MEYER AND WIFE, LAURA M. MEYER DOC. NO. 2015041024

(5.01 AC) GARY GREER DOC. NO. 9850679

(4.99 AC) CHET O. HARREL VOL. 2438, PG. 862

LOT 1 BAR W RANCH COMMERCIAL FINAL PLAT DOC. NO. 2020096319

RANCHO SIENNA SECTION 1 DOC. NO. 2008080360

FINAL PLAT OF RANCHO SIENNA SECTION 19B DOC. NO. 2018090341

FINAL PLAT OF RANCHO SIENNA SECTION 19A DOC. NO. 2018073223

SUBDIVISION BOUNDARY

PRIVATE DRIVE A

PRIVATE DRIVE B

PRIVATE DRIVE C

RONALD REAGAN BLVD

KATELYN RANCH LOOP

APPROXIMATE LOCATION LEANDER ETJ

APPROXIMATE LOCATION LEANDER CITY LIMITS

DRAINAGE EASEMENT

OFF-SITE POLE BARN

SEWER VALVE

WATER TANK (TO BE REMOVED)

EXISTING 12" WWFM

EXISTING 6" WWFM

EXISTING 12" PVC WWLN

EXISTING 16" PVC WEN

EXISTING 12" PVC MW

APPROX. LOCATION OF EXISTING CURB RAMP NEED SURVEY

FLOOD NOTE:

THE LEGALLY DESCRIBED PROPERTY FALLS WITHIN ZONE X (AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DESIGNATED BY THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT FEDERAL INSURANCE ADMINISTRATION FLOOD HAZARD BOUNDARY MAP NUMBER 48491C0275E FOR WILLIAMSON COUNTY, TEXAS, DATED SEPTEMBER 26, 2008.

SD-24-0243

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791

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Phone No. (512) 280-5160

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12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

SHEET NAME: PROPOSED HYDROLOGY MAP

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

PATRICK M. SULLIVAN 142359 LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS

CARLSON, BRIGANCE, & DOERING, INC. ID # F3791

11-26-2024

DATE: November 2024

JOB NUMBER: 5375

SHEET: 15 OF 62

FILE PATH:J:\ACAD\5375\dwg\CONSTRUCTION PLANS\bar plan\5375-HYDROLOGY.dwg - Nov 26, 2024 - 3:04pm

SUB-ENGINEERING.CTB



LEGEND

- EXISTING MINOR CONTOURS
- 305 EXISTING MAJOR CONTOURS
- PROPOSED MINOR CONTOURS
- 305 PROPOSED MAJOR CONTOURS
- DRAINAGE AREA BOUNDARY
- TC TIME OF CONCENTRATION PATH
- A1 DRAINAGE AREA NUMBER
- LP / HP HIGH POINT / LOW POINT
- FLOW ARROW

0 100' 200'

SCALE: 1" = 100'

NOTE:
FOR DRAINAGE CALCULATIONS SEE SHEET 17.

DESIGNED BY: CRB/PS	DRAFTED BY:

DATE

REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
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SHEET NAME: INTERNAL DRAINAGE PLAN

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE
November 2024

JOB NUMBER
5375

SHEET
16 OF 62

SD-24-0243

FILE PATH: J:\ACD\5375\dwg\CONSTRUCTION PLANS\Sht Plan\5375-DRAINAGE PLAN.dwg - Nov 26, 2024 - 3:28pm

SUB-ENGINEERING.CTB

DRAINAGE AREA CALCULATIONS

No.	Area (Acre)	T_C (Min.)	Perv. (%)	Imperv. (%)	C 25	C 100	I_{25} In/Hr	I_{100} In/Hr	Q_{25} CFS	Q_{100} CFS	C25*A	C100*A
A1	1.13	5.73	15	85	0.77	0.86	10.91	14.47	9.5	14.1	0.88	0.97
A2	1.19	5.64	15	85	0.77	0.86	10.95	14.53	10.1	14.9	0.92	1.03
A3	0.16	5.00	27	73	0.71	0.79	11.30	15.00	1.3	1.9	0.11	0.12
A4	0.19	5.00	22	78	0.73	0.82	11.30	15.00	1.6	2.3	0.14	0.16
A5	2.75	7.02	15	85	0.77	0.86	10.28	13.63	21.9	32.3	2.13	2.37
B1	0.24	5.00	35	65	0.66	0.74	11.30	15.00	1.7	2.6	0.15	0.17
B2	3.39	20.72	22	78	0.73	0.82	6.59	8.75	16.4	24.3	2.49	2.78
B3	1.24	21.63	20	80	0.75	0.83	6.44	8.57	5.9	8.8	0.92	1.03
B4	0.12	5.00	33	67	0.67	0.75	11.30	15.00	0.9	1.4	0.08	0.09
B5	0.15	5.00	26	74	0.71	0.80	11.30	15.00	1.2	1.8	0.11	0.12
B6	2.44	7.42	15	85	0.77	0.86	10.10	13.39	19.1	28.2	1.89	2.10
B7	0.35	5.00	20	80	0.75	0.83	11.30	15.00	3.0	4.4	0.26	0.29
B8	0.39	5.19	23	77	0.73	0.81	11.20	14.86	3.2	4.7	0.28	0.31
B9	0.29	5.87	37	63	0.65	0.73	10.83	14.37	2.0	3.0	0.19	0.21
B10	0.49	6.20	34	66	0.67	0.75	10.67	14.15	3.5	5.2	0.32	0.36
C1	0.40	5.00	15	85	0.78	0.86	11.30	15.00	3.5	5.1	0.31	0.34
C2	0.38	5.00	14	86	0.78	0.87	11.30	15.00	3.4	5.0	0.30	0.33
D1	2.36	7.26	15	85	0.77	0.86	10.17	13.49	18.6	27.4	1.83	2.03
D2	0.24	5.43	21	79	0.74	0.83	11.07	14.68	2.0	2.9	0.18	0.20
D3	0.17	5.00	27	73	0.71	0.79	11.30	15.00	1.4	2.1	0.12	0.14
E1	2.61	7.45	15	85	0.77	0.86	10.09	13.37	20.4	30.0	2.02	2.25
F1	1.28	13.35	45	55	0.65	0.73	8.10	10.74	6.7	10.0	0.83	0.93
G1	11.38	7.32	15	85	0.77	0.86	10.14	13.45	89.4	131.9	8.81	9.80
G2	15.38	9.13	15	85	0.77	0.86	9.42	12.48	112.2	165.4	11.91	13.25

DRAINAGE AREA COMBINED CALCULATIONS

AREAS COMBINED	T_C (Min.)	C_{25}*A	C_{100}*A	I_{25} In/Hr	I_{100} In/Hr	Q_{25} CFS	Q_{100} CFS
A1-A2	6	1.80	2.00	10.91	14.47	19.6	29.0
A1-A3	6	1.91	2.13	10.91	14.47	20.8	30.8
A1-A4	6	2.05	2.28	10.91	14.47	22.4	33.0
A1-A5	7	4.18	4.65	10.28	13.63	43.0	63.4
B1-B2	21	2.64	2.95	6.54	8.69	17.3	25.6
B1-B3	22	3.56	3.98	6.39	8.49	22.8	33.8
B1-B4	22	3.65	4.07	6.39	8.49	23.3	34.6
B1-B5	22	3.75	4.19	6.39	8.49	24.0	35.6
B1-B6	22	5.64	6.29	6.39	8.49	36.0	53.4
C1-C2	5	0.60	0.67	11.30	15.00	6.8	10.1
B1-B6, C1-C2	22	6.25	6.97	6.39	8.49	39.9	59.1
D1-D2	7	2.00	2.23	10.17	13.49	20.4	30.1
D1-D3	7	2.13	2.37	10.17	13.49	21.6	31.9
B1-B6, C1-C2, D1-D3	22	8.37	9.33	6.39	8.49	53.5	79.2
B1-B8, C1-C2, D1-D3	22	8.92	9.94	6.39	8.49	57.0	84.4
B1-B10, C1-C2, D1-D3	22	9.43	10.51	6.39	8.49	60.2	89.3
A1-A5, B1-B10, C1-C2, D1-D3	22	13.61	15.16	6.39	8.49	86.9	128.8
A1-A5, B1-B10, C1-C2, D1-D3, E1	22	15.63	17.41	6.39	8.49	99.8	147.8
G1-G2	9	20.73	23.05	9.46	12.54	196.1	289.2

RUNOFF & TC CALCULATIONS

AREA #	PERV. (%)	IMPERV. (%)	CONDITION	ESTIMATED SLOPE s (ft/ft)	SLOPE CONDITION Table(2-1)	C_{25DEV}	C_{100DEV}	A*C_{25DEV}	A*C_{100DEV}	Sheet flow s (ft/ft)	Sheet flow T_C (min)	Shallow flow s (ft/ft)	Shallow flow T_C (min)	Channel flow V (ft/s)	Channel flow T_C (min)	$T_{c\ total}$ (min)	I_{25} (In/Hr)	I_{100} (In/Hr)	Q_{25} (ft^3/s)	Q_{100} (ft^3/s)	P_2 (In/24hr)	Sheet Flow (L)	Sheet Mannings (n)	Shallow Flow (L)	Shallow Mannings (n)	Channel Flow (L)
A1	15%	85%	GOOD	1.0%	FLAT	0.775	0.862	0.88	0.97	0.010	3.2	0.010	2.5	0.0	0.0	6	10.91	14.47	9.5	14.1	3.92	15	0.2	306	0.016	0
A2	15%	85%	GOOD	1.0%	FLAT	0.775	0.862	0.92	1.03	0.010	3.2	0.010	2.4	0.0	0.0	6	10.95	14.53	10.1	14.9	3.92	15	0.2	295	0.016	0
A3	27%	73%	GOOD	2.0%	FLAT	0.706	0.790	0.11	0.12	0.020	1.8	0.000	0.0	1.7	2.5	5	11.30	15.00	1.3	1.9	3.92	10	0.2	0		262
A4	22%	78%	GOOD	2.0%	FLAT	0.732	0.818	0.14	0.16	0.020	2.2	0.000	0.0	1.7	2.5	5	11.30	15.00	1.6	2.3	3.92	13	0.2	0		263
A5	15%	85%	GOOD	1.0%	FLAT	0.775	0.862	2.13	2.37	0.010	3.2	0.010	3.8	0.0	0.0	7	10.28	13.63	21.9	32.3	3.92	15	0.2	471	0.016	0
B1	35%	65%	GOOD	2.0%	FLAT	0.658	0.741	0.15	0.17	0.020	1.5	0.000	0.0	1.7	2.5	5	11.30	15.00	1.7	2.6	3.92	8	0.2	0		260
B2	22%	78%	GOOD	0.7%	FLAT	0.733	0.819	2.49	2.78	0.010	14.7	0.007	4.6	1.7	1.4	21	6.59	8.75	16.4	24.3	3.92	100	0.2	461	0.016	147
B3	20%	80%	GOOD	0.7%	FLAT	0.746	0.832	0.92	1.03	0.005	19.4	0.008	2.2	0.0	0.0	22	6.44	8.57	5.9	8.8	3.92	100	0.2	195	0.2	0
B4	33%	67%	GOOD	2.0%	FLAT	0.671	0.754	0.08	0.09	0.020	2.0	0.000	0.0	3.0	1.3	5	11.30	15.00	0.9	1.4	3.92	12	0.2	0		241
B5	26%	74%	GOOD	2.0%	FLAT	0.711	0.796	0.11	0.12	0.020	2.0	0.000	0.0	3.0	1.3	5	11.30	15.00	1.2	1.8	3.92	12	0.2	0		236
B6	15%	85%	GOOD	1.0%	FLAT	0.775	0.862	1.89	2.10	0.010	3.2	0.010	4.2	0.0	0.0	7	10.10	13.39	19.1	28.2	3.92	15	0.2	512	0.016	0
B7	20%	80%	GOOD	2.0%	FLAT	0.746	0.832	0.26	0.29	0.020	2.0	0.000	0.0	2.2	2.9	5	11.30	15.00	3.0	4.4	3.92	12	0.2	0		381
B8	23%	77%	GOOD	2.0%	FLAT	0.728	0.813	0.28	0.31	0.020	2.0	0.000	0.0	2.2	3.1	5	11.20	14.86	3.2	4.7	3.92	12	0.2	0		416
B9	37%	63%	GOOD	2.0%	FLAT	0.649	0.732	0.19	0.21	0.020	2.4	0.000	0.0	2.2	3.4	6	10.83	14.37	2.0	3.0	3.92	15	0.2	0		454
B10	34%	66%	GOOD	2.0%	FLAT	0.669	0.752	0.32	0.36	0.020	2.0	0.000	0.0	2.2	4.2	6	10.67	14.15	3.5	5.2	3.92	12	0.2	0		550
C1	15%	85%	GOOD	2.0%	FLAT	0.775	0.862	0.31	0.34	0.020	2.0	0.000	0.0	2.5	1.6	5	11.30	15.00	3.5	5.1	3.92	12	0.2	0		241
C2	14%	86%	GOOD	2.0%	FLAT	0.781	0.869	0.30	0.33	0.020	1.9	0.000	0.0	2.5	1.6	5	11.30	15.00	3.4	5.0	3.92	11	0.2	0		236
D1	15%	85%	GOOD	1.0%	FLAT	0.775	0.862	1.83	2.03	0.010	3.2	0.010	4.0	0.0	0.0	7	10.17	13.49	18.6	27.4	3.92	15	0.2	492		0
D2	21%	79%	GOOD	2.0%	FLAT	0.740	0.826	0.18	0.20	0.020	2.2	0.000	0.0	1.7	3.2	5	11.07	14.68	2.0	2.9	3.92	13	0.2	0	0.016	340
D3	27%	73%	GOOD	2.0%	FLAT	0.708	0.793	0.12	0.14	0.020	2.4	0.000	0.0	1.7	2.2	5	11.30	15.00	1.4	2.1	3.92	15	0.2	0		230
E1	15%	85%	GOOD	1.0%	FLAT	0.775	0.862	2.02	2.25	0.010	3.2	0.010	4.2	0.0	0.0	7	10.09	13.37	20.4	30.0	3.92	15	0.2	516	0.016	0
F1	45%	55%	GOOD	2.8%	AVERAGE	0.646	0.727	0.83	0.93	0.018	11.6	0.031	1.7	0.0	0.0	13	8.10	10.74	6.7	10.0	3.92	100	0.2	295	0.2	0
G1	15%	85%	GOOD	1.0%	FLAT	0.775	0.862	8.81	9.80	0.010	3.2	0.010	4.1	0.0	0.0	7	10.14	13.45	89.4	131.9	3.92	15	0.2	500		0
G2	15%	85%	GOOD	1.0%	FLAT	0.775	0.862	11.91	13.25	0.010	3.2	0.010	5.9	0.0	0.0	9	9.42	12.48	112.2	165.4	3.92	15	0.2	720		0

25 YEAR INLET CALCULATIONS

INLET NUMBER	DRAINAGE AREA	Q (CFS)	Q SPILL (CFS)	Q PASS (CFS)	Q ADD (CFS)	Q TOTAL ADDED TO INLET (CFS)	Q AFTER PASS & SPILL REQUIRED (CFS)	CURB INLET TYPE	S_L FT/FT	PAVEMENT WIDTH (ft)	PAVEMENT PONDED WIDTH (FT)	D DEPTH AT CURB (ft)	L INLET LENGTH (FT)	Qs PVMT (cfs)	Qw GUTTER (cfs)	E0 Q_o/Q_{total}	Se EQUV. SLOPE (ft/ft)	Lt 100% INTERCEPT LENGTH	E INLET EFFICIENCY	Qi INLET CAPACITY (cfs)	COMMENTS
A-3	A3	1.30	0.00	0.00	0.00	1.30	1.30	10' INLET	0.005	35	5.53	N/A	10	0.47	0.83	0.64	0.104	6.35	1.00	1.30	
A-2	A4	1.60	0.00	0.00	0.00	1.60	1.60	10' INLET	0.005	35	6.03	N/A	10	0.66	0.94	0.59	0.097	7.23	1.00	1.60	
B-10	B1	1.70	0.00	0.00	0.00	1.70	1.70	L.P. INLET	N/A	27	N/A	0.113	15	N/A	N/A	N/A	N/A	N/A	N/A	1.70	
B-9	B2	16.40	0.00	0.00	0.00	16.40	16.40	L.P. INLET	N/A	27	N/A	0.510	15	N/A	N/A	N/A	N/A	N/A	N/A	16.40	
B-7	B4	0.90	0.00	0.00	0.00	0.90	0.90	10' INLET	0.015	27	3.70	N/A	10	0.10	0.80	0.89	0.137	6.41	1.00	0.90	
B-6	B5	1.20	0.00	0.00	0.00	1.20	1.20	10' INLET	0.015	27	4.14	N/A	10	0.22	0.98	0.82	0.127	7.57	1.00	1.20	
B-4	B7	3.00	0.00	0.00	0.00	3.00	3.00	L.P. INLET	N/A	27	N/A	0.164	15	N/A	N/A	N/A	N/A	N/A	N/A	3.00	
B-3	B8	3.20	0.00	0.00	0.00	3.20	3.20	L.P. INLET	N/A	27	N/A	0.172	15	N/A	N/A	N/A	N/A	N/A	N/A	3.20	
B-2	B9	2.00	0.00	0.00	0.00	2.00	2.00	L.P. INLET	N/A	27	N/A	0.125	15	N/A	N/A	N/A	N/A	N/A	N/A	2.00	
B-1	B10	3.50	0.00	0.00	0.00	3.50	3.50	L.P. INLET	N/A	27	N/A	0.182	15	N/A	N/A	N/A	N/A	N/A	N/A	3.50	
C-2	C1	3.50	0.00	0.00	0.00	3.50	3.50	L.P. INLET	N/A	60	N/A	0.182	15	N/A	N/A	N/A	N/A	N/A	N/A	3.50	
C-1	C2	3.40	0.00	0.00	0.00	3.40	3.40	L.P. INLET	N/A	54	N/A	0.179	15	N/A	N/A	N/A	N/A	N/A	N/A	3.40	
D-2	D2	2.00	0.00	0.00	0.00	2.00	2.00	10' INLET	0.005	35	6.63	N/A	10	0.94	1.06	0.53	0.090	8.31	1.00	2.00	
D-1	D3	1.40	0.00	0.00	0.00	1.40	1.40	10' INLET	0.005	35	5.70	N/A	10	0.53	0.87	0.62	0.101	6.65	1.00	1.40	

100 YEAR INLET CALCULATIONS

INLET NUMBER	DRAINAGE AREA NUMBER	Q (CFS)	Q SPILL (CFS)	Q PASS (CFS)	Q ADD (CFS)	Q TOTAL ADDED TO INLET (CFS)	Q AFTER PASS & SPILL REQUIRED (CFS)	CURB INLET TYPE	S_L FT/FT	PAVEMENT WIDTH (ft)	PAVEMENT PONDED WIDTH (FT)	D DEPTH AT CURB (ft)	L INLET LENGTH (FT)	Qs PVMT (cfs)	Qw GUTTER (cfs)	E0 Q_o/Q_{total}	Se EQUV. SLOPE (ft/ft)	Lt 100% INTERCEPT LENGTH	E INLET EFFICIENCY	Qi INLET CAPACITY (cfs)	COMMENTS
A-3	A3	1.9	0.00	0.00	0.00	1.90	1.90	10' INLET	0.005	35	6.49	N/A	10	0.87	1.03	0.54	0.091	8.05	1.00	1.90	
A-2	A4	2.3	0.00	0.00	0.00	2.30	2.30	10' INLET	0.005	35	7.06	N/A	10	1.15	1.15	0.50	0.086	9.07	1.00	2.30	
B-10	B1	2.6	0.00	0.00	0.10	2.70	2.70	L.P. INLET	N/A	27	N/A	0.153	15	N/A	N/A	N/A	N/A	N/A	N/A	2.70	
B-9	B2	23.7	0.10	0.00	0.00	23.70	23.60	L.P. INLET	N/A	27	N/A	0.699	15	N/A	N/A	N/A	N/A	N/A	N/A	23.60	SPILL TO INLET B-10
B-7	B4	1.4	0.00	0.00	0.00	1.40	1.40	10' INLET	0.015	27	4.41	N/A	10	0.32	1.08	0.77	0.121	8.30	1.00	1.40	
B-6	B5	1.8	0.00	0.00	0.00	1.80	1.80	10' INLET	0.015	27	4.89	N/A	10	0.54	1.26	0.70	0.112	9.68	1.00	1.80	
B-4	B7	4.4	0.00	0.00	0.00	4.40	4.40	L.P. INLET	N/A	27	N/A	0.212	15	N/A	N/A	N/A	N/A	N/A	N/A	4.40	
B-3	B8	4.7	0.00	0.00	0.00	4.70	4.70	L.P. INLET	N/A	27	N/A	0.222	15	N/A	N/A	N/A	N/A	N/A	N/A	4.70	
B-2	B9	3.0	0.00	0.00	0.00	3.00	3.00	L.P. INLET	N/A	27	N/A	0.164	15	N/A	N/A	N/A	N/A	N/A	N/A	3.00	
B-1	B10	5.2	0.00	0.00	0.00	5.20	5.20	L.P. INLET	N/A	27	N/A	0.237	15	N/A	N/A	N/A	N/A	N/A	N/A	5.20	
C-2	C1	5.1	0.00	0.00	0.10	5.20	5.20	L.P. INLET	N/A	60	N/A	0.237	15	N/A	N/A	N/A	N/A	N/A	N/A	5.20	
C-1	C2	5.0	0.00	0.00	0.00	5.00	5.00	L.P. INLET	N/A	54	N/A	0.231	15	N/A	N/A	N/A	N/A	N/A	N/A	5.00	
D-2	D2	2.9	0.00	0.10	0.00	2.90	2.80	10' INLET	0.005	35	7.72	N/A	10	1.59	1.31	0.45	0.079	10.48	1.00	2.89	PASS TO INLET C-2
D-1	D3	2.1	0.00	0.00	0.00	2.10	2.10	10' INLET	0.005	35	6.78	N/A	10	1.01	1.09	0.52	0.088	8.57	1.00	2.10	

DESIGNED BY: CRB/PS

DRAFTED BY:

DATE

REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
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SHEET NAME: INTERNAL DRAINAGE CALCULATIONS

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

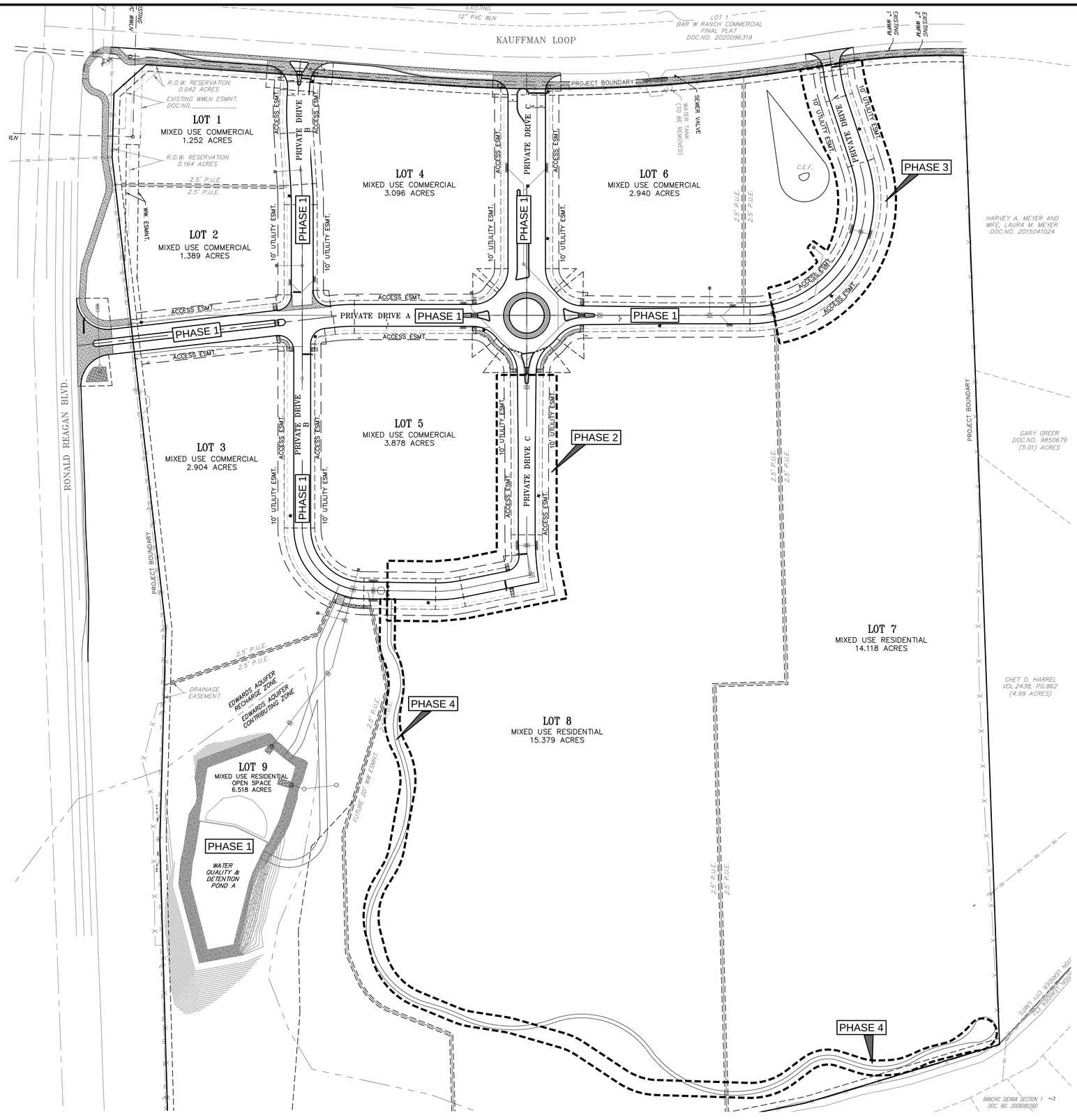
DATE: November 2024

JOB NUMBER: 5375

SHEET: 17 OF 62

SD-24-0243

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LEGEND

- DASHED SIDEWALK = TO BE BUILT BY LOT DEVELOPER
- SOLID SIDEWALK = TO BE BUILT WITH THIS CONTRACT
- STREET LIGHT LOCATION
- STORM SEWER LINE
- PHASE BOUNDARY

0 80' 160'

SCALE: 1" = 80'

PHASING PLAN

THIS PROJECT IS TO BE BUILT IN THREE PHASES:

PHASE 1 – IS THE PRIVATE DRIVES WITHIN THE LIMITS OF PHASE 1, THE UTILITIES WITHIN THE LIMITS OF PHASE 1 (STORM SEWER, GAS AND ELECTRIC), AND THE DETENTION WATER QUALITY POND.

PHASE 2 – IS THE PRIVATE DRIVES WITHIN THE LIMITS OF PHASE 2 AND THE STORM SEWER CURB INLETS WITHIN THE LIMITS OF PHASE 2.

PHASE 3 – IS THE PRIVATE DRIVES WITHIN THE LIMITS OF PHASE 3, THE STORM SEWER CURB INLETS WITHIN THE LIMITS OF PHASE 3, THE UTILITIES (STORM SEWER, GAS AND ELECTRIC), AND THE TRAIL.

PHASE 4 – IS THE MULCH TRAIL. (TO BE CONSTRUCTED AT THE TIME OF THE LOT 7 OR LOT 8 DEVELOPMENT PLAN, WITH THE COMMENCEMENT OF CONSTRUCTION TO COINCIDE WITH THE EARLIER OF THE TWO DEVELOPMENT PROJECTS.

SD-24-0243

DESIGNED BY: CRB/PS	DRAFTED BY:

DATE

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Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: PHASING PLAN

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791

11-26-2024

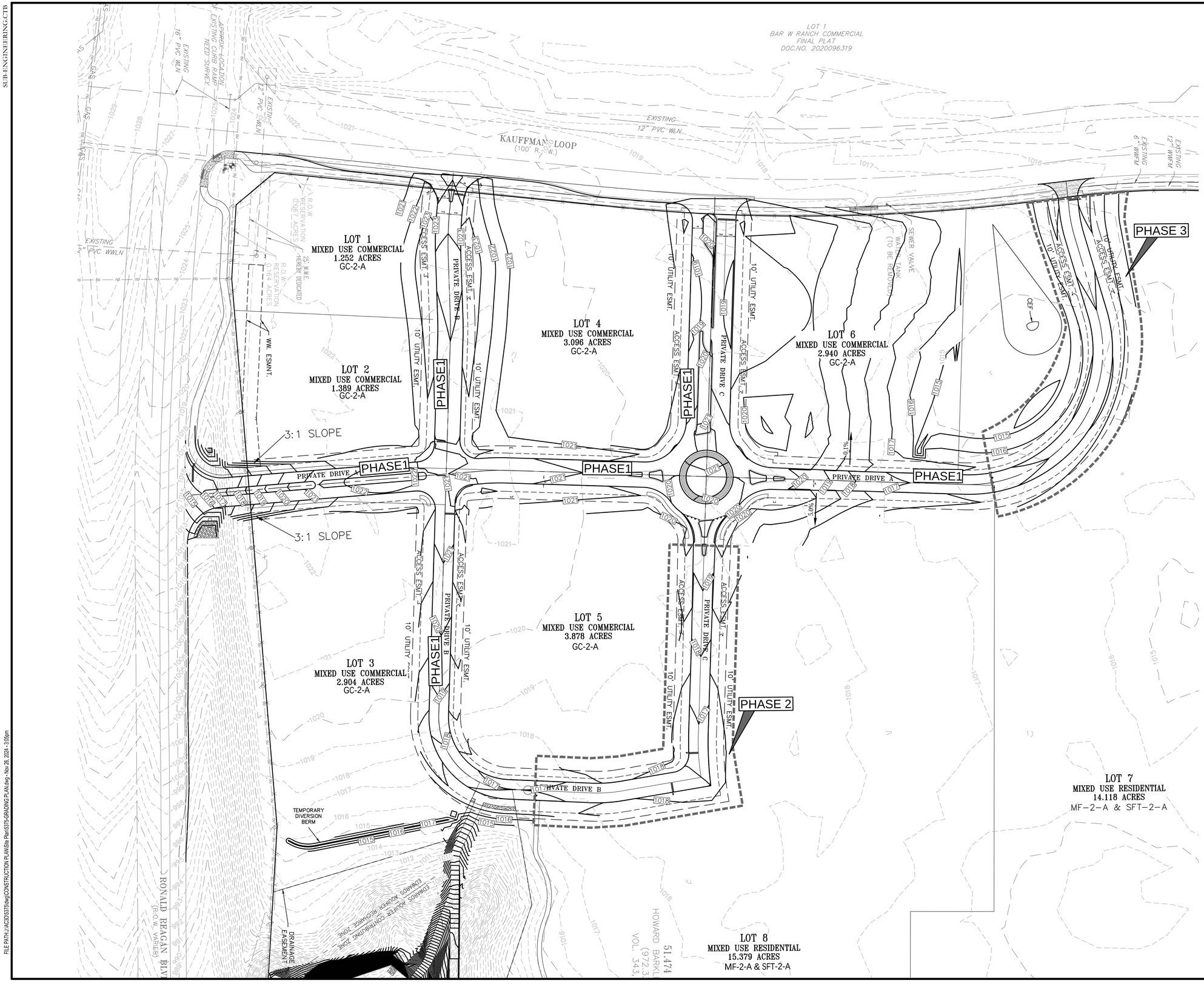
DATE November 2024

JOB NUMBER 5375

SHEET 18 OF 62

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SUB-ENGINEERING.CTB



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DATE	
REVISION	

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: GRADING PLAN

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791

11-26-2024

DATE: November 2024

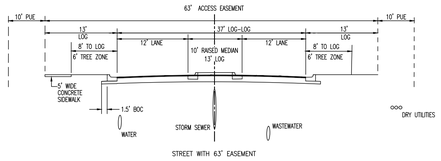
JOB NUMBER: 5375

SHEET: 19 OF 62

SD-24-0243

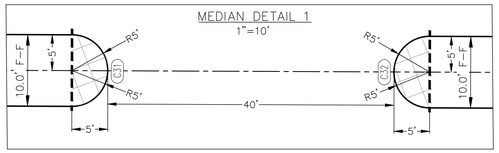
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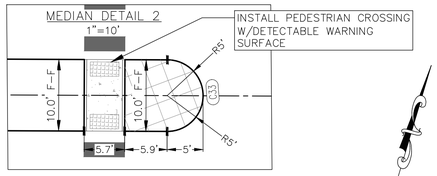
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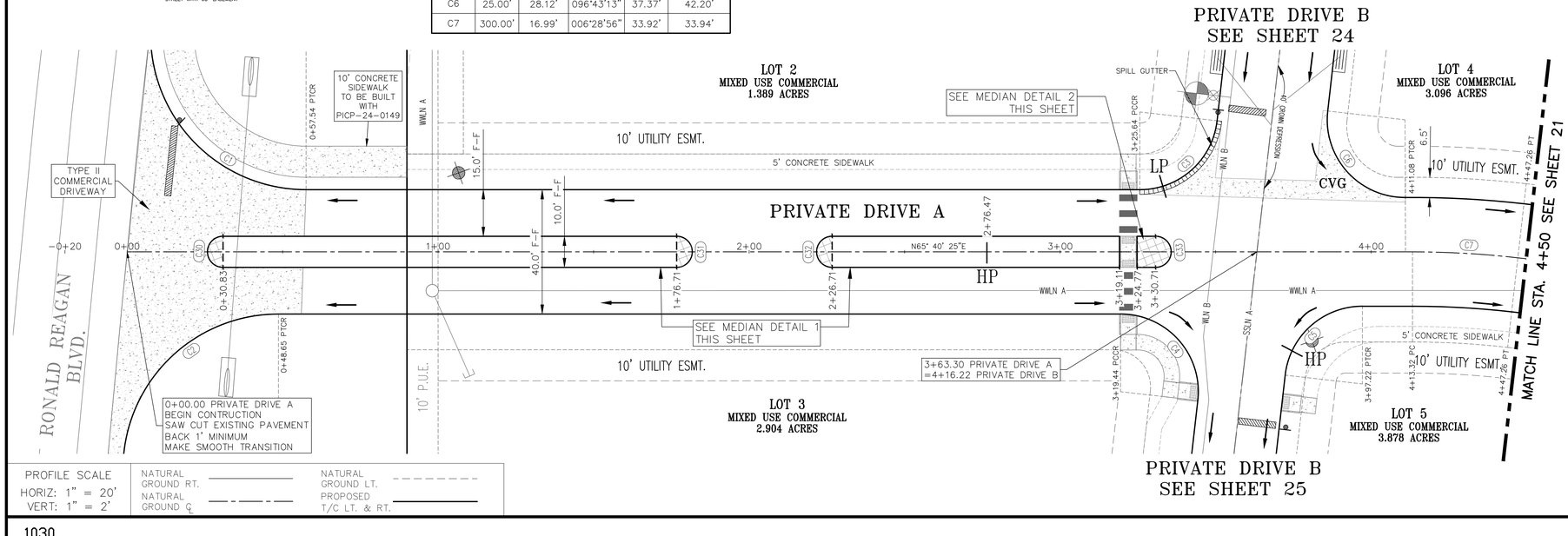


Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C1	50.00'	55.96'	096°26'07"	74.57'	84.16'
C2	50.00'	45.55'	084°39'56"	67.34'	73.88'
C3	25.00'	22.32'	083°31'04"	33.30'	36.44'
C4	25.00'	28.00'	096°28'56"	37.30'	42.10'
C5	25.00'	22.32'	083°31'04"	33.30'	36.44'
C6	25.00'	28.12'	096°43'13"	37.37'	42.20'
C7	300.00'	16.99'	006°28'56"	33.92'	33.94'

Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C30	5.00'	INFINITY'	180°00'00"	10.00'	15.71'
C31	5.00'	INFINITY'	180°00'00"	10.00'	15.71'
C32	5.00'	INFINITY'	180°00'00"	10.00'	15.71'
C33	5.00'	INFINITY'	180°00'00"	10.00'	15.71'

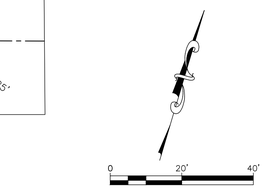






PROFILE SCALE
HORIZ: 1" = 20'
VERT: 1" = 2'

NATURAL GROUND RT. ——— NATURAL GROUND LT. - - - - -
NATURAL GROUND ℄ —·—·— PROPOSED T/C LT. & RT. ———

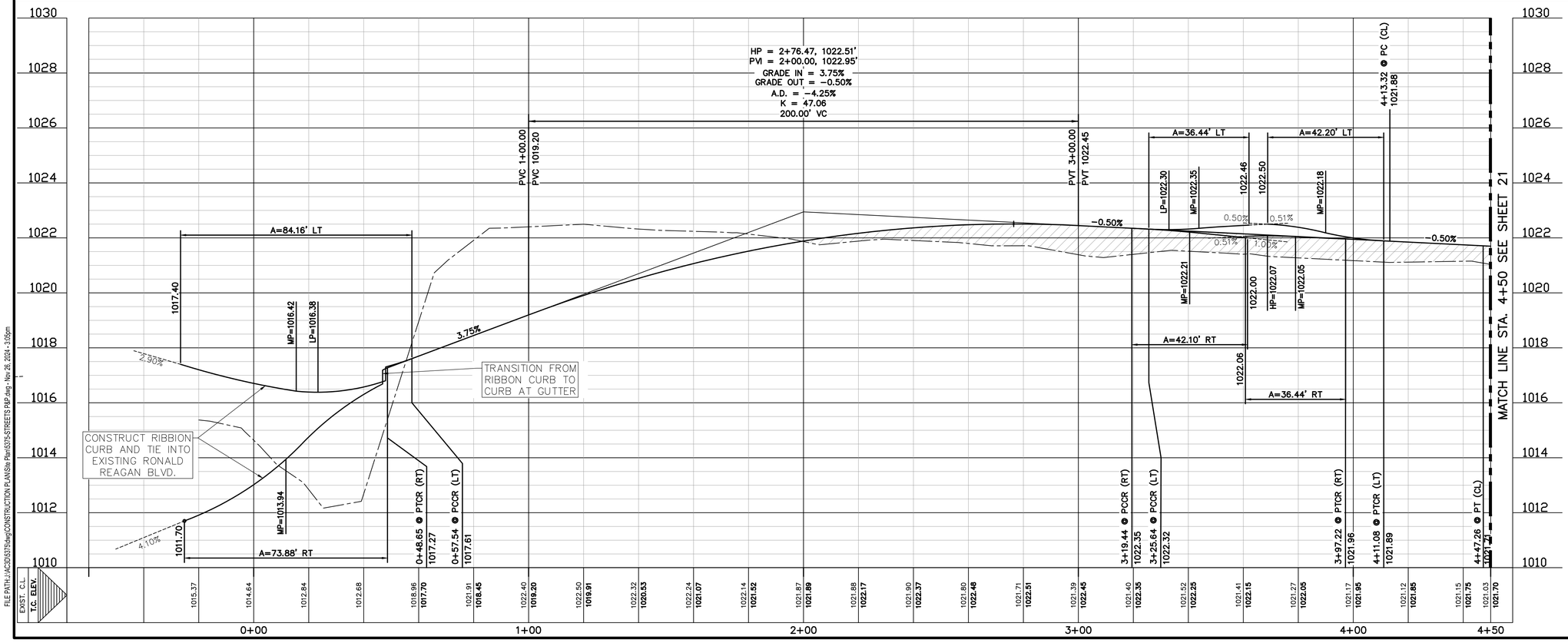


SCALE: 1" = 20'

PHASE 1

LEGEND

- DASHED SIDEWALK = TO BE BUILT BY LOT DEVELOPER
- SOLID SIDEWALK = TO BE BUILT WITH THIS CONTRACT
- 6" REINFORCED CONCRETE
- STREET LIGHT LOCATION
- STOP SIGN
- STOP BAR
- AVG — ASPHALT VALLEY GUTTER
- CVG — CONCRETE VALLEY GUTTER
- LP / HP — LOWPOINT/HIGHPOINT
- FLOW ARROW
- C1 / C1 — CURVE NUMBER



FILL AREAS

SD-24-0243

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office
5501 West William Cannon Dr.
Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
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www.cbdeng.com

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REVISION

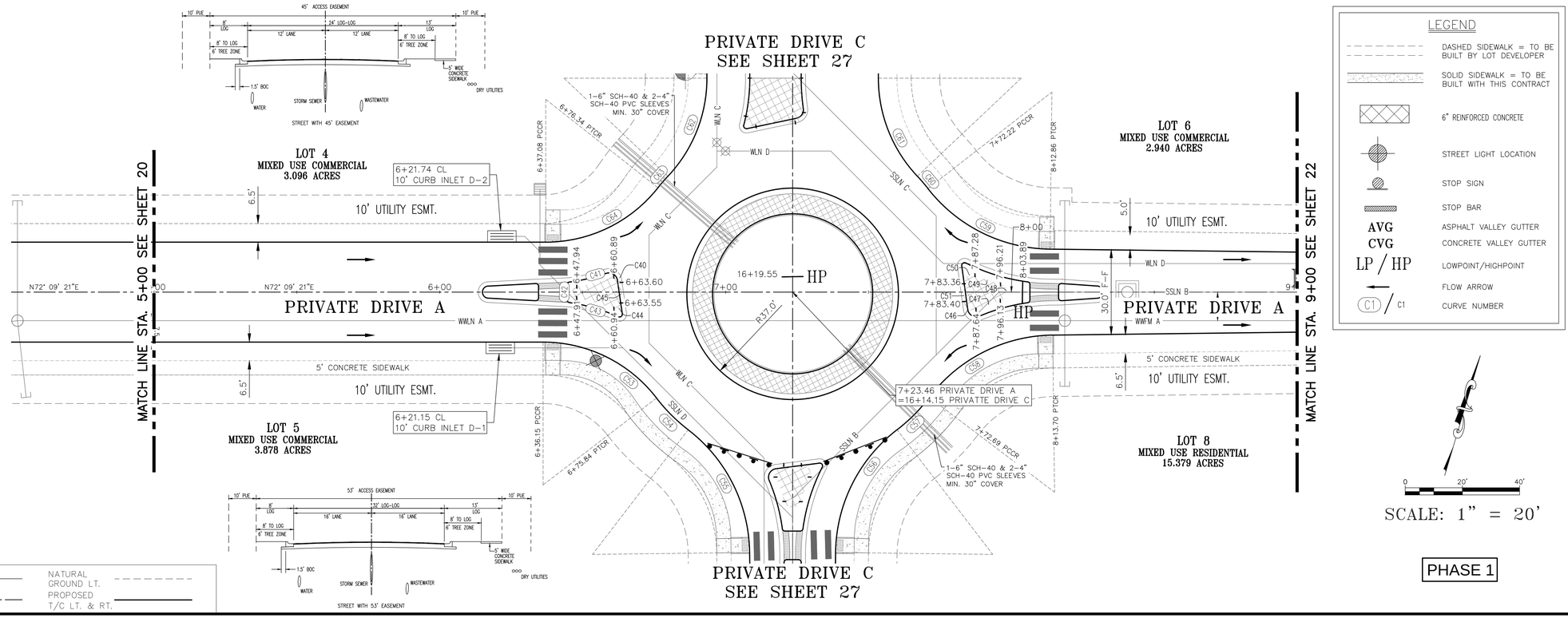
SHEET NAME: PRIVATE DRIVE A (0+00 TO 4+50)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET: 20 OF 62

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SUB-STREET.CTB



LEGEND

- DASHED SIDEWALK = TO BE BUILT BY LOT DEVELOPER
- SOLID SIDEWALK = TO BE BUILT WITH THIS CONTRACT
- 6" REINFORCED CONCRETE
- STREET LIGHT LOCATION
- STOP SIGN
- STOP BAR
- AVG / CVG — ASPHALT VALLEY GUTTER / CONCRETE VALLEY GUTTER
- LP / HP — LOWPOINT/HIGHPOINT
- FLOW ARROW
- C1 / C1 — CURVE NUMBER

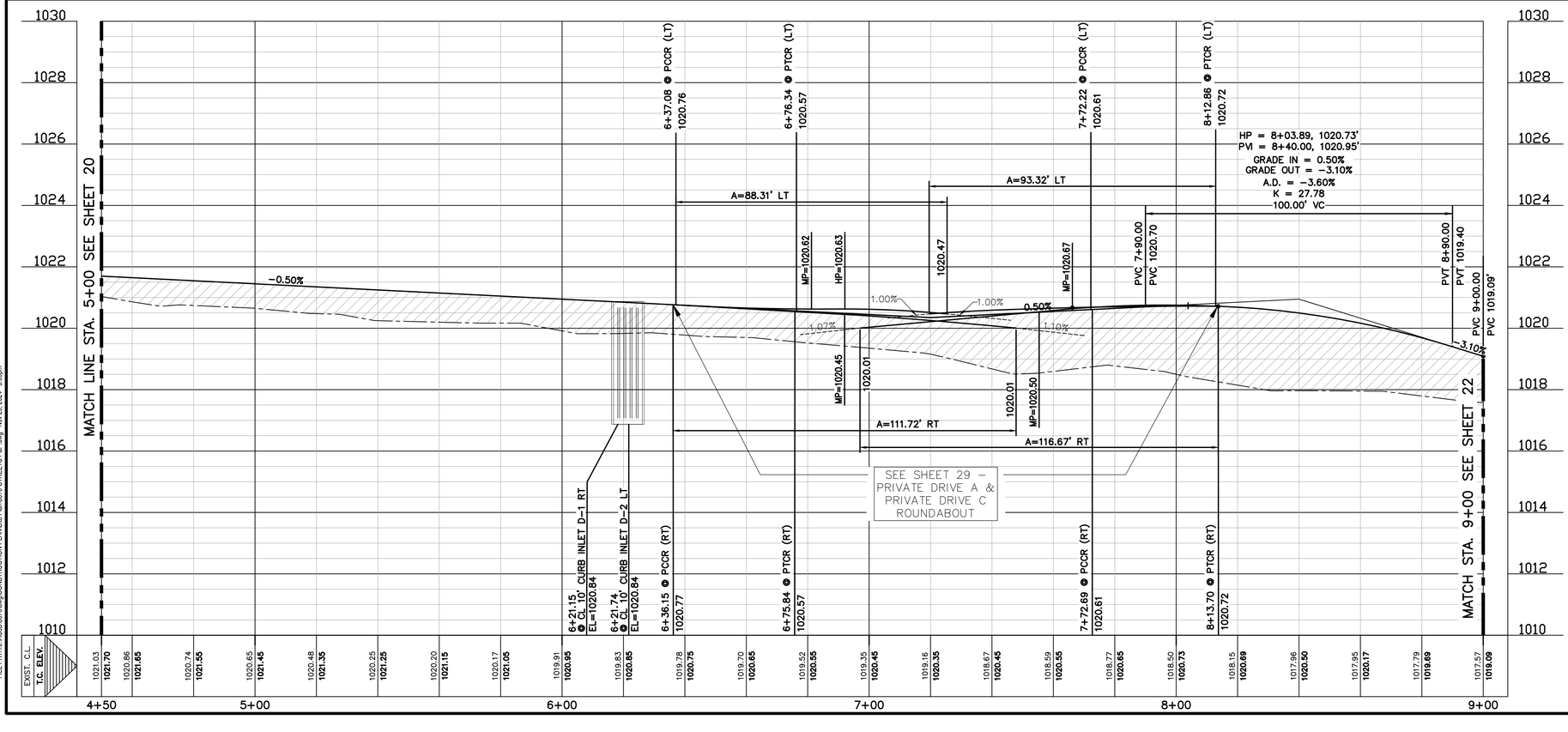
0 20' 40'

SCALE: 1" = 20'

PHASE 1

PROFILE SCALE
HORIZ: 1" = 20'
VERT: 1" = 2'

NATURAL GROUND RT. ——— NATURAL GROUND LT. - - - - -
NATURAL GROUND ℄ —·—·— PROPOSED T/C LT. & RT. ———



FILL AREAS

Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C40	2.00'	3.13'	114°48'25"	3.37'	4.01'
C41	66.50'	6.74'	011°34'46"	13.42'	13.44'
C42	2.00'	11.59'	160°24'41"	3.94'	5.60'
C43	66.50'	6.74'	011°34'46"	13.42'	13.44'
C44	2.00'	3.13'	114°48'25"	3.37'	4.01'
C45	60.00'	3.60'	006°51'59"	7.19'	7.19'
C46	3.00'	4.90'	116°59'49"	5.12'	6.13'
C47	63.00'	4.54'	008°14'22"	9.05'	9.06'
C48	3.00'	10.59'	148°22'06"	5.77'	7.77'
C49	63.00'	4.54'	008°14'22"	9.05'	9.06'
C50	3.00'	4.90'	116°59'49"	5.12'	6.13'
C51	60.00'	3.08'	005°53'01"	6.16'	6.16'
C53	50.00'	24.68'	052°32'29"	44.26'	45.85'
C54	60.00'	7.91'	015°01'18"	15.69'	15.73'
C55	55.00'	26.70'	051°47'34"	48.04'	49.72'
C56	55.00'	26.70'	051°47'34"	48.04'	49.72'
C57	60.00'	8.08'	015°20'04"	16.01'	16.06'
C58	55.00'	26.92'	052°09'46"	48.36'	50.07'
C59	55.00'	26.47'	051°24'10"	47.71'	49.34'
C60	60.22'	2.85'	005°24'57"	5.69'	5.69'
C61	50.00'	19.87'	043°20'30"	36.93'	37.82'
C62	50.00'	19.87'	043°20'30"	36.93'	37.82'
C63	60.00'	2.67'	005°05'33"	5.33'	5.33'
C64	50.00'	24.25'	051°45'03"	43.64'	45.16'

DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR (620 N.; Ste. 600 Austin, Texas 78750 www.cbdengr.com

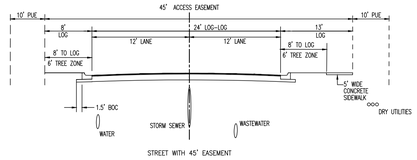
SHEET NAME: PRIVATE DRIVE A (4+50 TO 9+00)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC. ID # F3791
11-26-2024

DATE November 2024
JOB NUMBER 5375
SHEET 21 OF 62

SD-24-0243

FILE PATH: J:\AC2025\5375\dwg\CONSTRUCTION PLANS\Ind Plan\5375-STREETS P&P.dwg - Nov 26, 2024 - 3:56pm



STREET WITH 45' EASEMENT

Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C8	185.00'	256.45'	108°23'13"	300.07'	349.97'

LEGEND

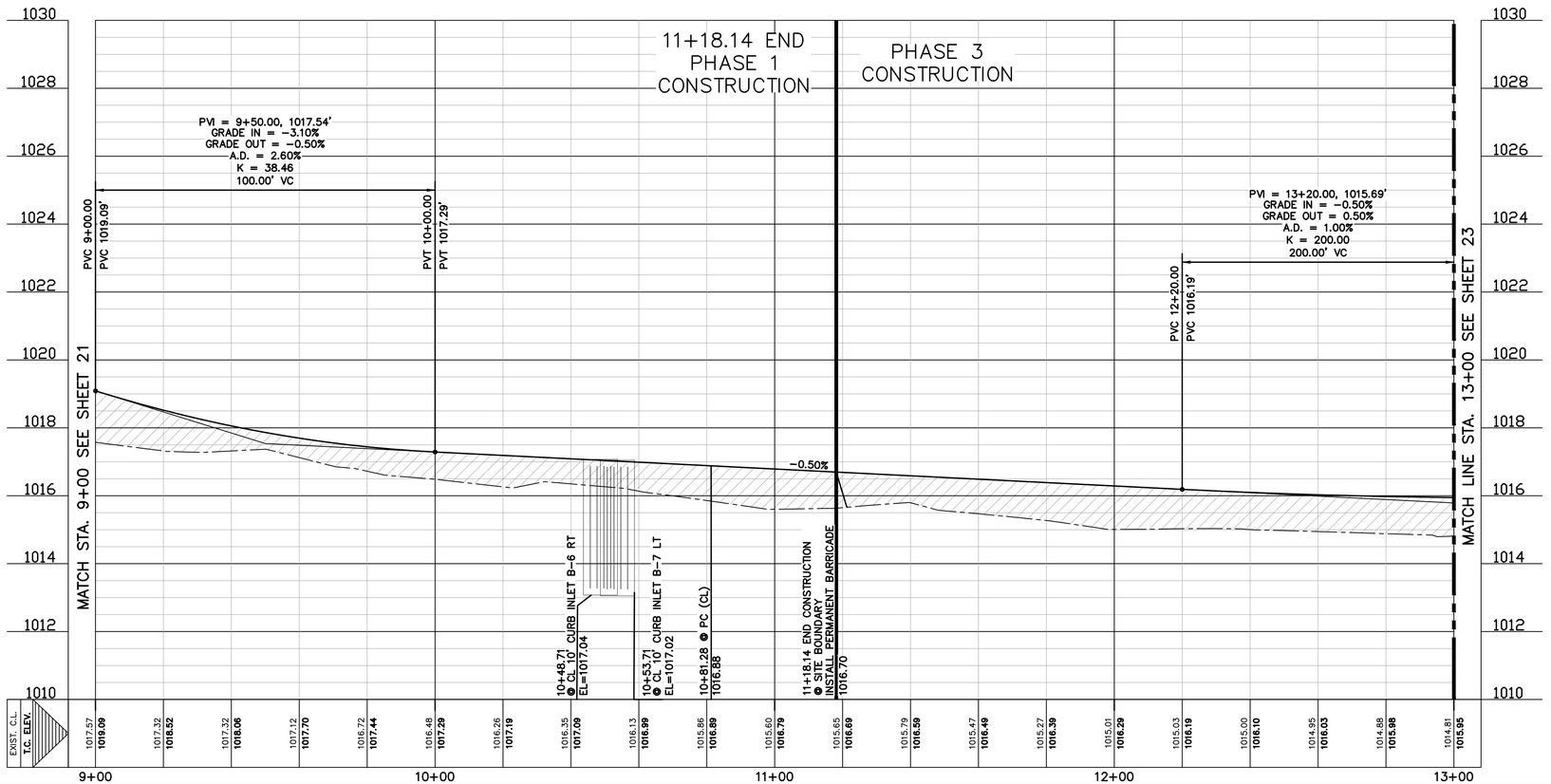
- DASHED SIDEWALK = TO BE BUILT BY LOT DEVELOPER
- SOLID SIDEWALK = TO BE BUILT WITH THIS CONTRACT
- 6" REINFORCED CONCRETE
- STREET LIGHT LOCATION
- STOP SIGN
- STOP BAR
- AVG — ASPHALT VALLEY GUTTER
- CVG — CONCRETE VALLEY GUTTER
- LP / HP — LOWPOINT/HIGHPOINT
- FLOW ARROW
- C1 / C1 — CURVE NUMBER

0 20' 40'

SCALE: 1" = 20'

PROFILE SCALE
HORIZ: 1" = 20'
VERT: 1" = 2'

NATURAL GROUND RT. ——— NATURAL GROUND LT. - - - - -
NATURAL GROUND ℄ —·—·— PROPOSED T/C LT. & RT. ———



FILL AREAS

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F5799
Main Office:
5501 West William Cannon Dr.
Austin, Texas 78749
Phone No. (512) 280-5160
North Office:
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

SHEET NAME: PRIVATE DRIVE A (9+00 TO 13+00)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F5799
11-26-2024

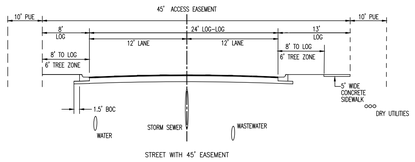
DATE: November 2024
JOB NUMBER: 5375
SHEET: 22 OF 62

SD-24-0243

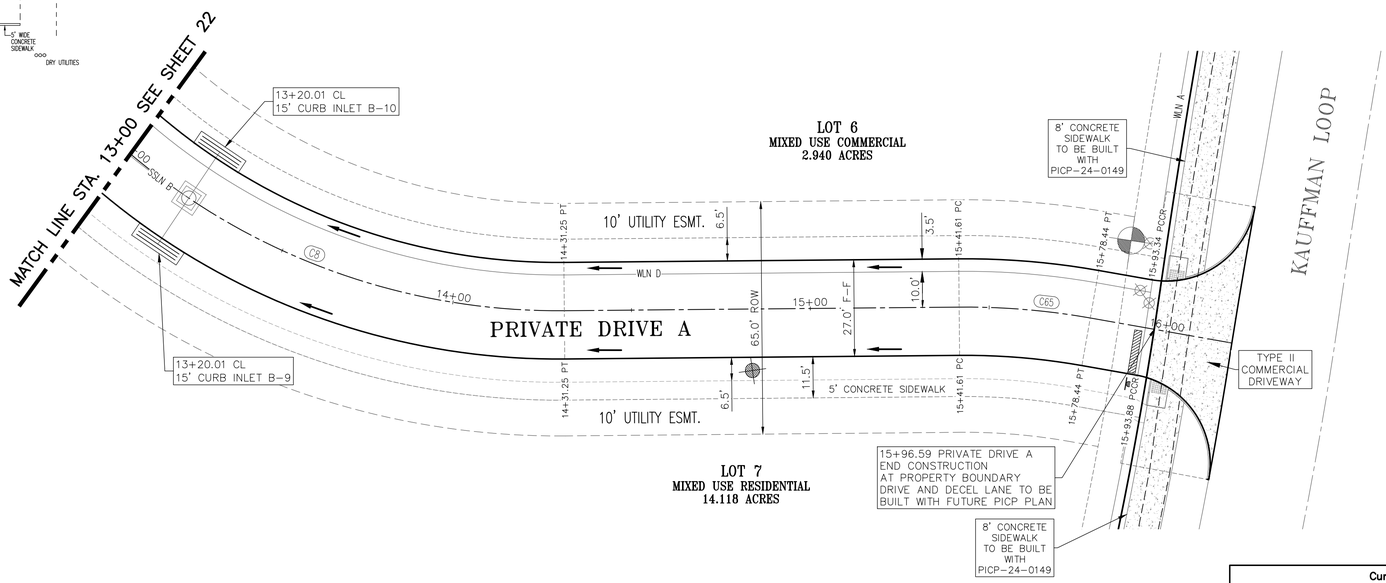
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SUB-STREET.CTB



STREET WITH 45' EASEMENT



Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C8	185.00'	256.45'	108°23'13"	300.07'	349.97'
C65	200.00'	18.30'	010°27'12"	36.44'	36.49'

LEGEND

- DASHED SIDEWALK = TO BE BUILT BY LOT DEVELOPER
- SOLID SIDEWALK = TO BE BUILT WITH THIS CONTRACT
- 6" REINFORCED CONCRETE
- STREET LIGHT LOCATION
- STOP SIGN
- STOP BAR
- AVG — ASPHALT VALLEY GUTTER
- CVG — CONCRETE VALLEY GUTTER
- LP / HP — LOWPOINT/HIGHPOINT
- FLOW ARROW
- C1 / C1 — CURVE NUMBER

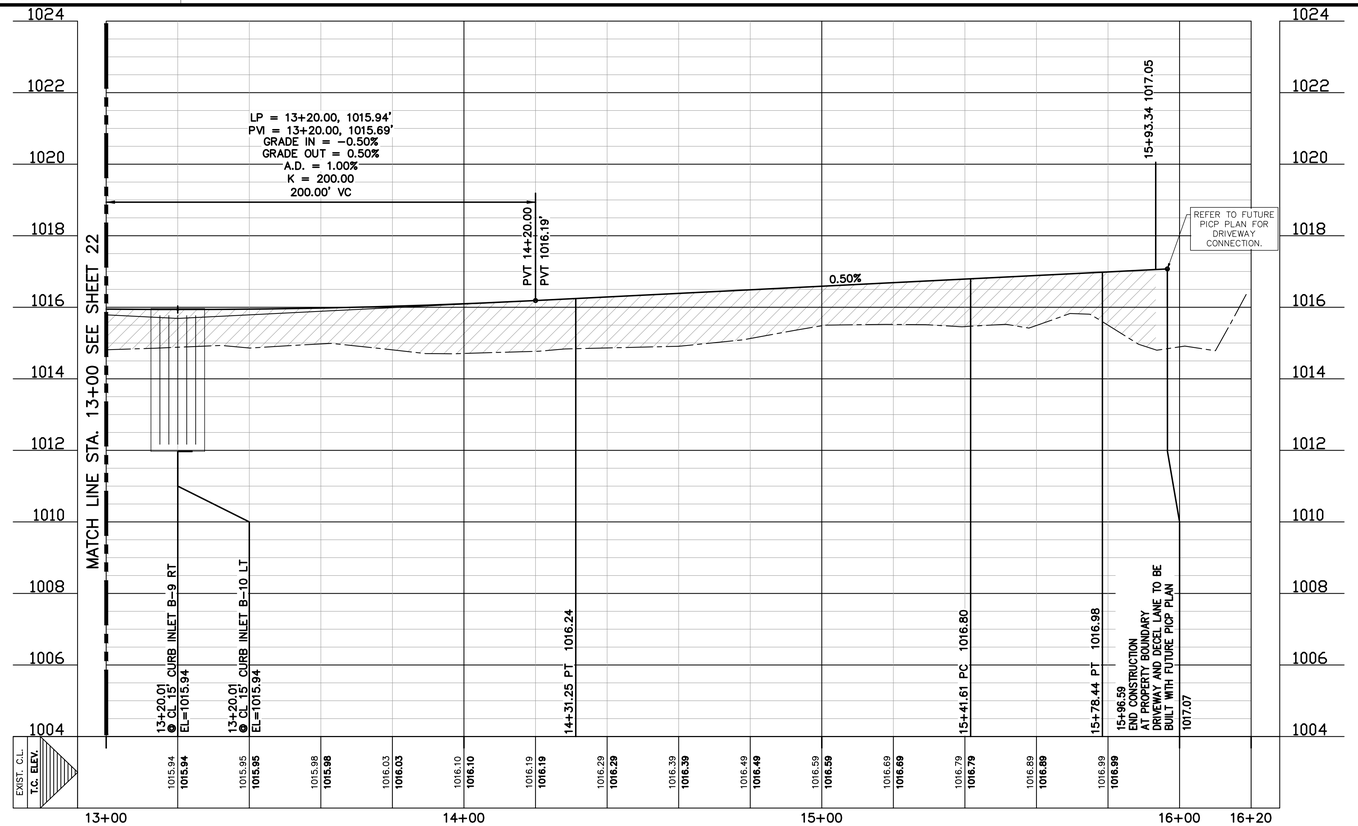
0 20' 40'

SCALE: 1" = 20'

PHASE 3

PROFILE SCALE
HORIZ: 1" = 20'
VERT: 1" = 2'

NATURAL GROUND RT.
NATURAL GROUND ℄
NATURAL GROUND LT.
PROPOSED T/C LT. & RT.



FILL AREAS

SD-24-0243

DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office
5501 West William Cannon Dr.
Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

SHEET NAME: PRIVATE DRIVE A (13+00 TO END)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

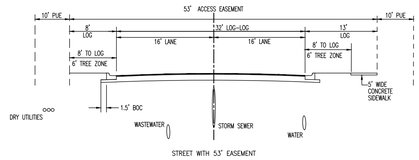
STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

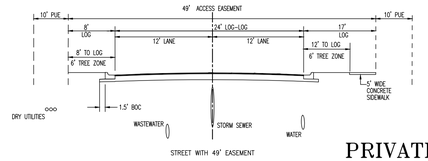
DATE: November 2024
JOB NUMBER: 5375
SHEET: 23 OF 62

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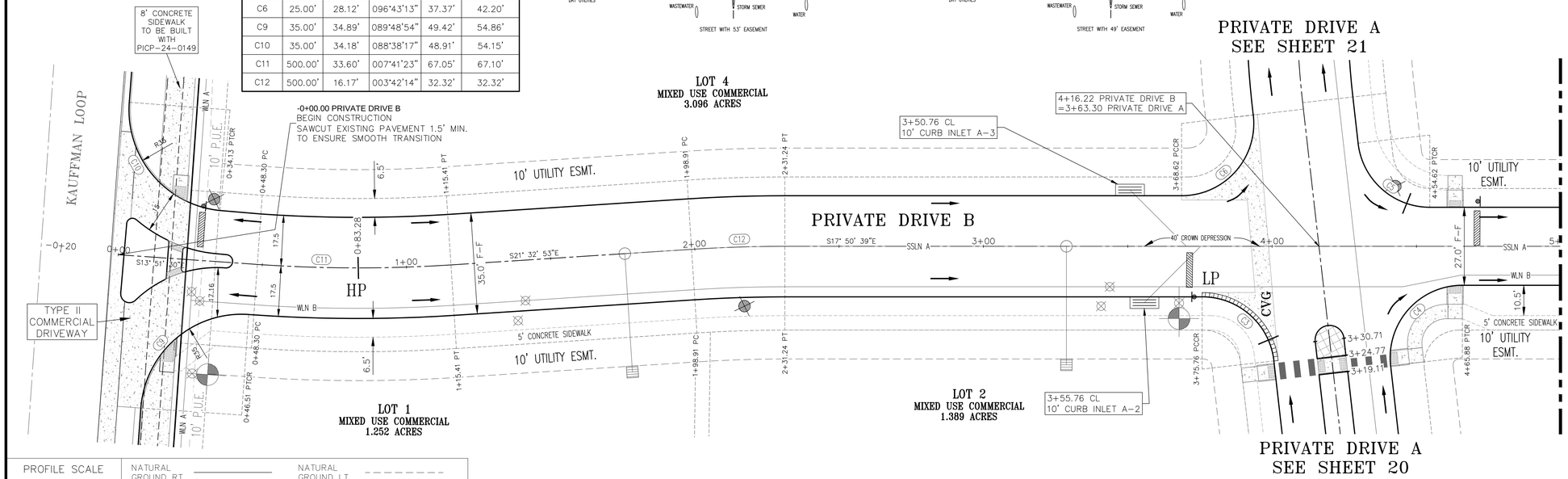
Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C3	25.00'	22.32'	083°31'04"	33.30'	36.44'
C4	25.00'	28.00'	096°28'56"	37.30'	42.10'
C5	25.00'	22.32'	083°31'04"	33.30'	36.44'
C6	25.00'	28.12'	096°43'13"	37.37'	42.20'
C9	35.00'	34.89'	089°48'54"	49.42'	54.86'
C10	35.00'	34.18'	088°38'17"	48.91'	54.15'
C11	500.00'	33.60'	007°41'23"	67.05'	67.10'
C12	500.00'	16.17'	003°42'14"	32.32'	32.32'





LEGEND

- DASHED SIDEWALK = TO BE BUILT BY LOT DEVELOPER
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- 6" REINFORCED CONCRETE
- STREET LIGHT LOCATION
- STOP SIGN
- STOP BAR
- AVG — ASPHALT VALLEY GUTTER
- CVG — CONCRETE VALLEY GUTTER
- LP / HP — LOWPOINT/HIGHPOINT
- FLOW ARROW
- C1 / C1 — CURVE NUMBER

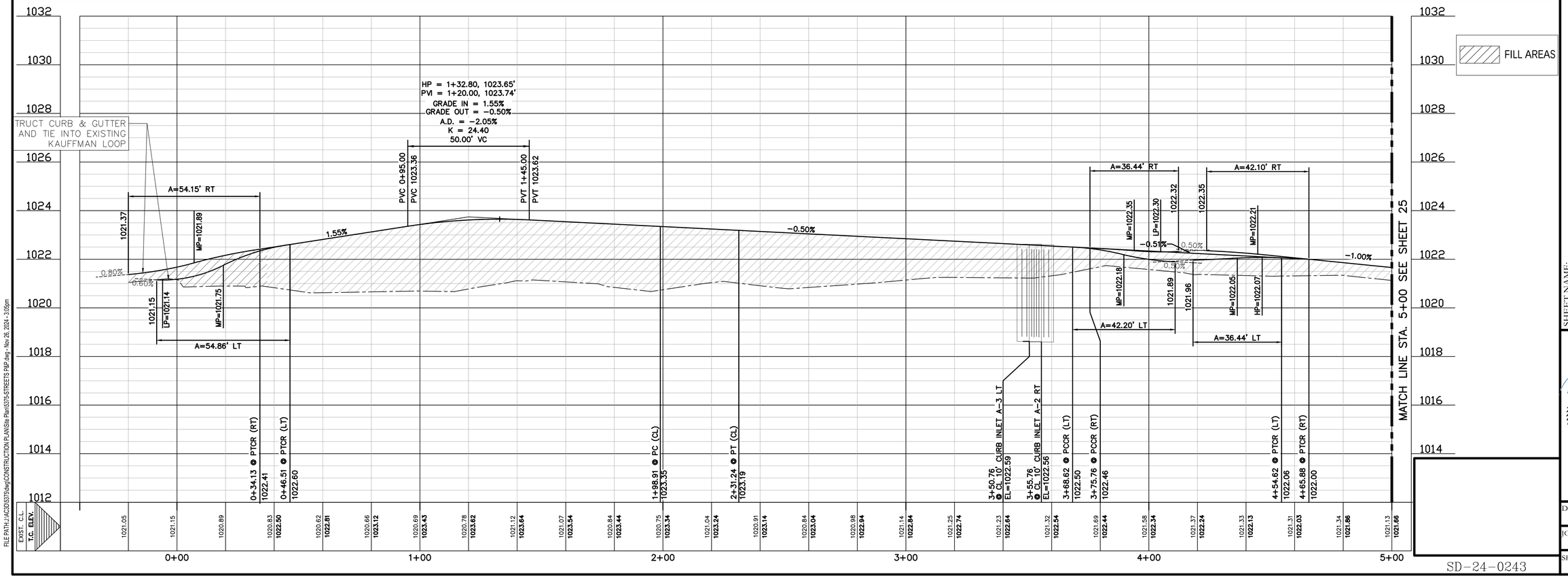


PHASE 1

SCALE: 1" = 20'

PROFILE SCALE
HORIZ: 1" = 20'
VERT: 1" = 2'

NATURAL GROUND RT. ——— NATURAL GROUND LT. - - - - - -
NATURAL GROUND ℄ —·—·— PROPOSED T/C LT. & RT. ———



Carlson, Brigance & Doering, Inc.
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DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

SHEET NAME: PRIVATE DRIVE B (0+00 TO 5+00)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

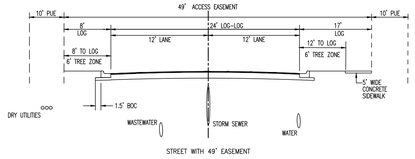
PATRICK M. SULLIVAN 142359 LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
CARLSON, BRIGANCE, & DOERING, INC. ID # F5799
11-26-2024

DATE November 2024
JOB NUMBER 5375
SHEET 24 OF 62

SD-24-0243

FILE PATH: J:\AC3D\5375\dwg\CONSTRUCTION PLANS\Sht Plan\5375-STREETS P&P.dwg - Nov 26, 2024 - 3:05pm

SUB-STREET.CTB



STREET WITH 49' EASEMENT

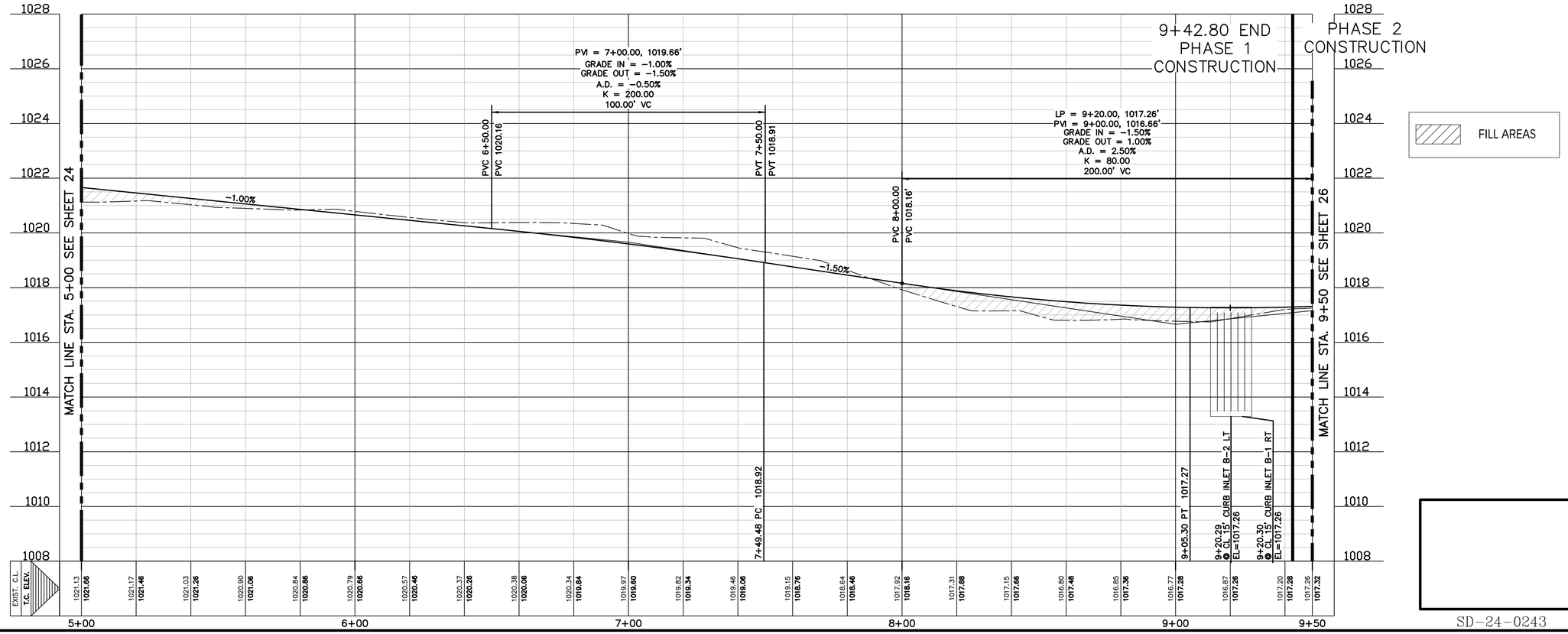
Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C13	100.00'	98.75'	089°16'35"	140.53'	155.82'

LEGEND

- DASHED SIDEWALK = TO BE BUILT BY LOT DEVELOPER
- SOLID SIDEWALK = TO BE BUILT WITH THIS CONTRACT
- 6" REINFORCED CONCRETE
- STREET LIGHT LOCATION
- STOP SIGN
- STOP BAR
- AVG — ASPHALT VALLEY GUTTER
- CVG — CONCRETE VALLEY GUTTER
- LP / HP — LOWPOINT/HIGHPOINT
- FLOW ARROW
- C1 / C1 — CURVE NUMBER

PROFILE SCALE
HORIZ: 1" = 20'
VERT: 1" = 2'

NATURAL GROUND RT.
NATURAL GROUND ℄
NATURAL GROUND LT.
PROPOSED T/C-LT. & RT.



SD-24-0243

DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

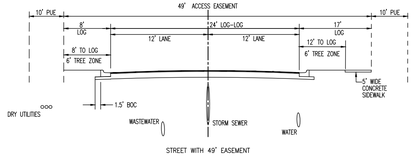
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SHEET NAME: PRIVATE DRIVE B (5+00 TO 9+50)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

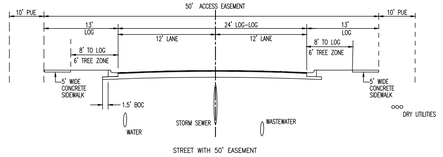
STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F5791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET: 25 OF 62

FILE PATH: J:\ACAD\5375\dwg\CONSTRUCTION PLANS\Site Plan\5375-STREETS P&P.dwg - Nov 26, 2024 - 3:05pm



STREET WITH 49' EASEMENT



STREET WITH 50' EASEMENT

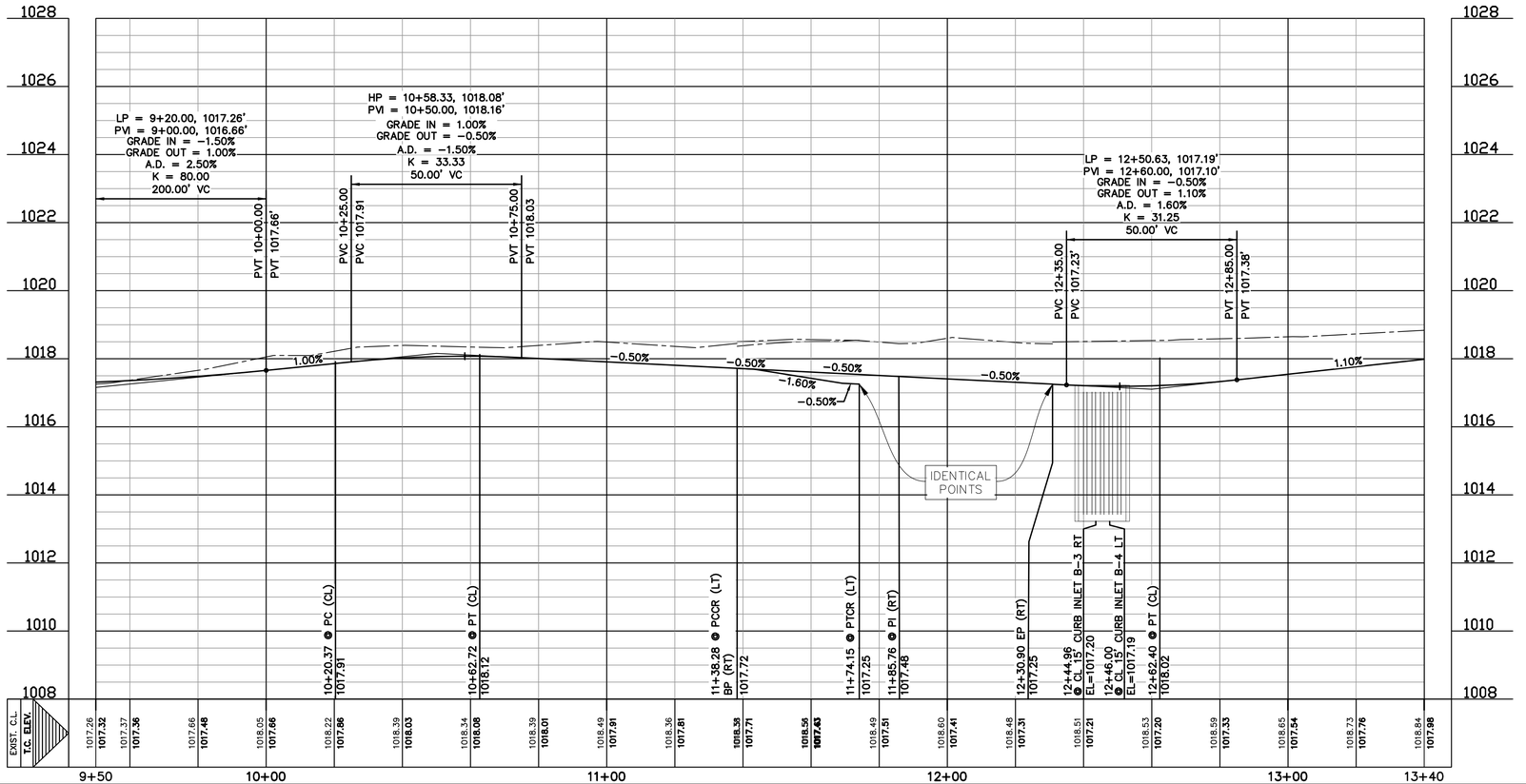
Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C14	200.00'	21.25'	012°07'51"	42.27'	42.34'
C15	25.00'	21.81'	082°11'27"	32.87'	35.87'
C16	500.00'	15.75'	003°36'34"	31.49'	31.50'

SCALE: 1" = 20'

PHASE 2

PROFILE SCALE
HORIZ: 1" = 20'
VERT: 1" = 2'

NATURAL GROUND RT.
NATURAL GROUND ℄
NATURAL GROUND LT.
PROPOSED T/C LT. & RT.



FILL AREAS

SD-24-0243

LEGEND

- DASHED SIDEWALK = TO BE BUILT BY LOT DEVELOPER
- SOLID SIDEWALK = TO BE BUILT WITH THIS CONTRACT
- 6" REINFORCED CONCRETE
- STREET LIGHT LOCATION
- STOP SIGN
- STOP BAR
- AVG — ASPHALT VALLEY GUTTER
- CVG — CONCRETE VALLEY GUTTER
- LP / HP — LOWPOINT/HIGHPOINT
- FLOW ARROW
- C1 / C1 — CURVE NUMBER

DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: PRIVATE DRIVE B (9+50 TO 13+40)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

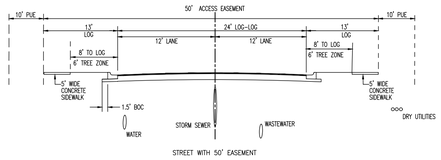
DATE: November 2024
JOB NUMBER: 5375
SHEET: 26 OF 62

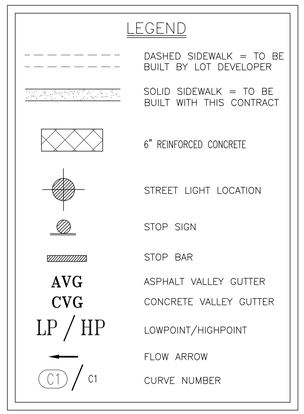
SUB-STREET.CTB

FILE PATH: J:\ACAD\5375\dwg\CONSTRUCTION PLANS\Bar Plan\5375-STREETS PNP.dwg - Nov 26, 2024 - 3:06pm

SUB-STREET.CTB

Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C19	65.00'	6.74'	011°50'17"	13.41'	13.43'
C20	3.00'	4.63'	114°09'42"	5.04'	5.98'
C21	60.00'	6.95'	013°13'05"	13.81'	13.84'
C22	3.00'	3.57'	099°53'18"	4.59'	5.23'
C23	77.00'	6.06'	008°59'37"	12.07'	12.09'
C34	3.00'	4.90'	116°59'49"	5.12'	6.13'
C35	60.00'	3.08'	005°52'55"	6.16'	6.16'
C36	3.00'	4.90'	116°59'49"	5.12'	6.13'
C37	63.00'	4.54'	008°14'09"	9.05'	9.06'
C38	3.00'	10.59'	148°21'33"	5.77'	7.77'
C39	63.00'	4.54'	008°14'09"	9.05'	9.06'
C53	50.00'	24.68'	052°32'29"	44.26'	45.85'
C54	60.00'	7.91'	015°01'18"	15.69'	15.73'
C55	55.00'	26.70'	051°47'34"	48.04'	49.72'
C56	55.00'	26.70'	051°47'34"	48.04'	49.72'
C57	60.00'	8.08'	015°20'04"	16.01'	16.06'
C58	55.00'	26.92'	052°09'46"	48.36'	50.07'
C59	55.00'	26.47'	051°24'10"	47.71'	49.34'
C60	60.22'	2.85'	005°24'57"	5.69'	5.69'
C61	50.00'	19.87'	043°20'30"	36.93'	37.82'
C62	50.00'	19.87'	043°20'30"	36.93'	37.82'
C63	60.00'	2.67'	005°05'33"	5.33'	5.33'
C64	50.00'	24.25'	051°45'03"	43.64'	45.16'



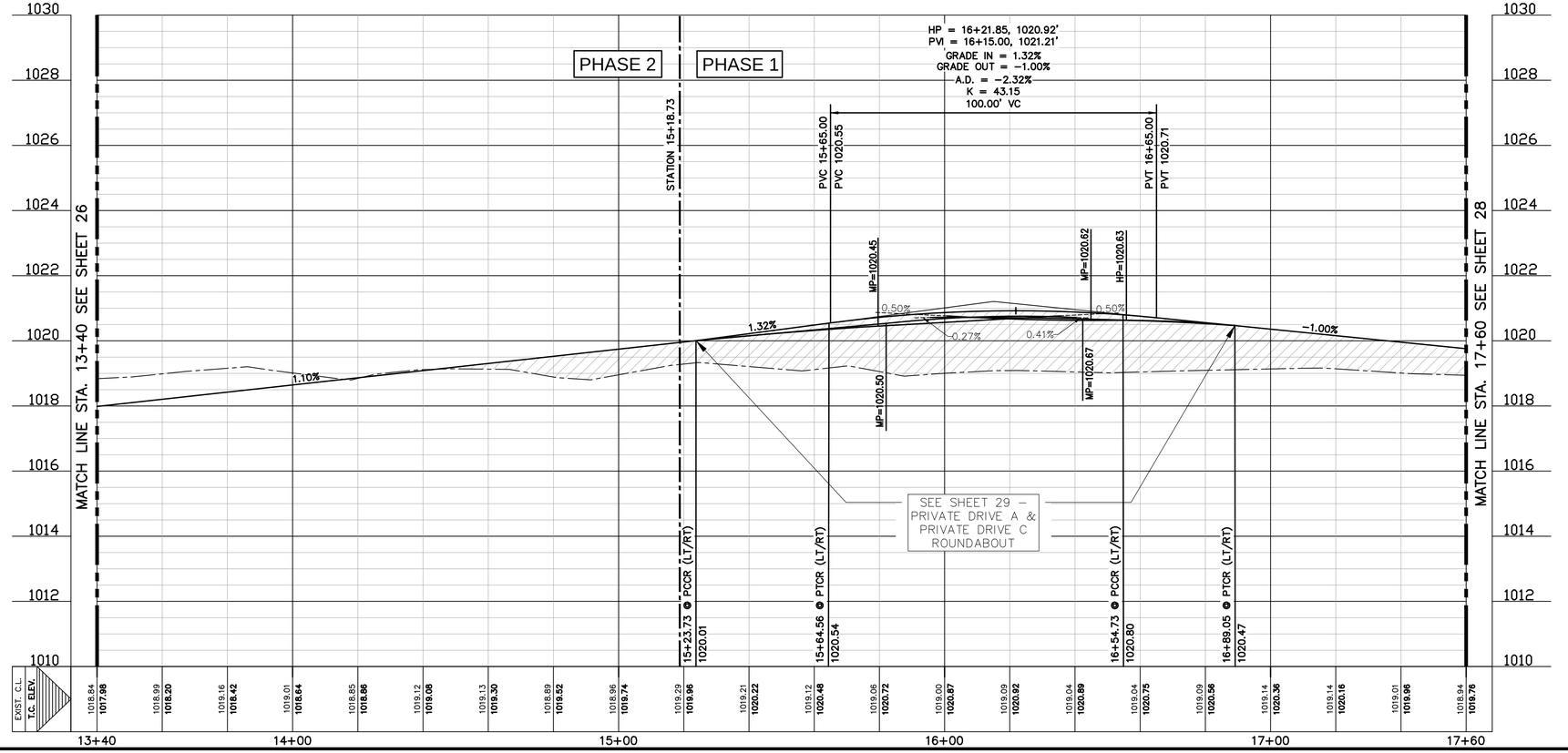




SCALE: 1" = 20'

PROFILE SCALE
HORIZ: 1" = 20'
VERT: 1" = 2'

NATURAL GROUND RT. ———
NATURAL GROUND ℄ — — — —
NATURAL GROUND LT. - - - - -
PROPOSED T/C LT. & RT. ———





SD-24-0243

DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

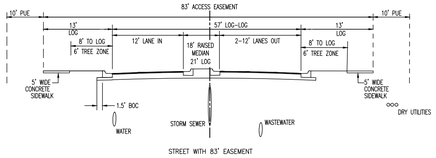
Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR (620 N.), Ste. 600 Austin, Texas 78750 www.cbdengr.com

SHEET NAME: PRIVATE DRIVE C (13+40 TO 17+60)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

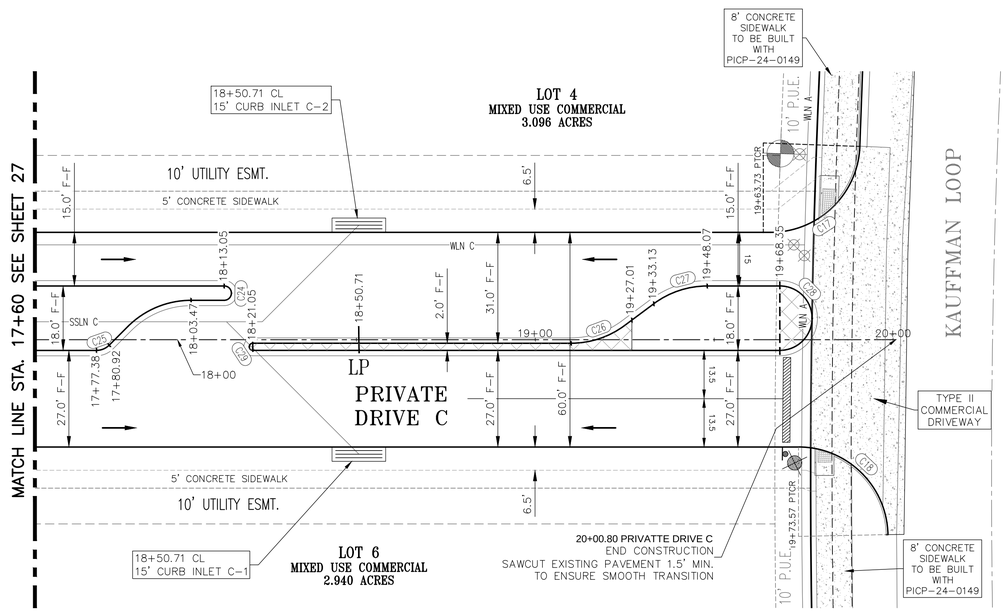
DATE: November 2024
JOB NUMBER: 5375
SHEET: 27 OF 62

FILE PATH: J:\ACCDOCS\TS\dwg\CONSTRUCTION PLANS\Bar Plan\SITE-STREETS PAP.dwg - Nov 26, 2024 - 3:06pm



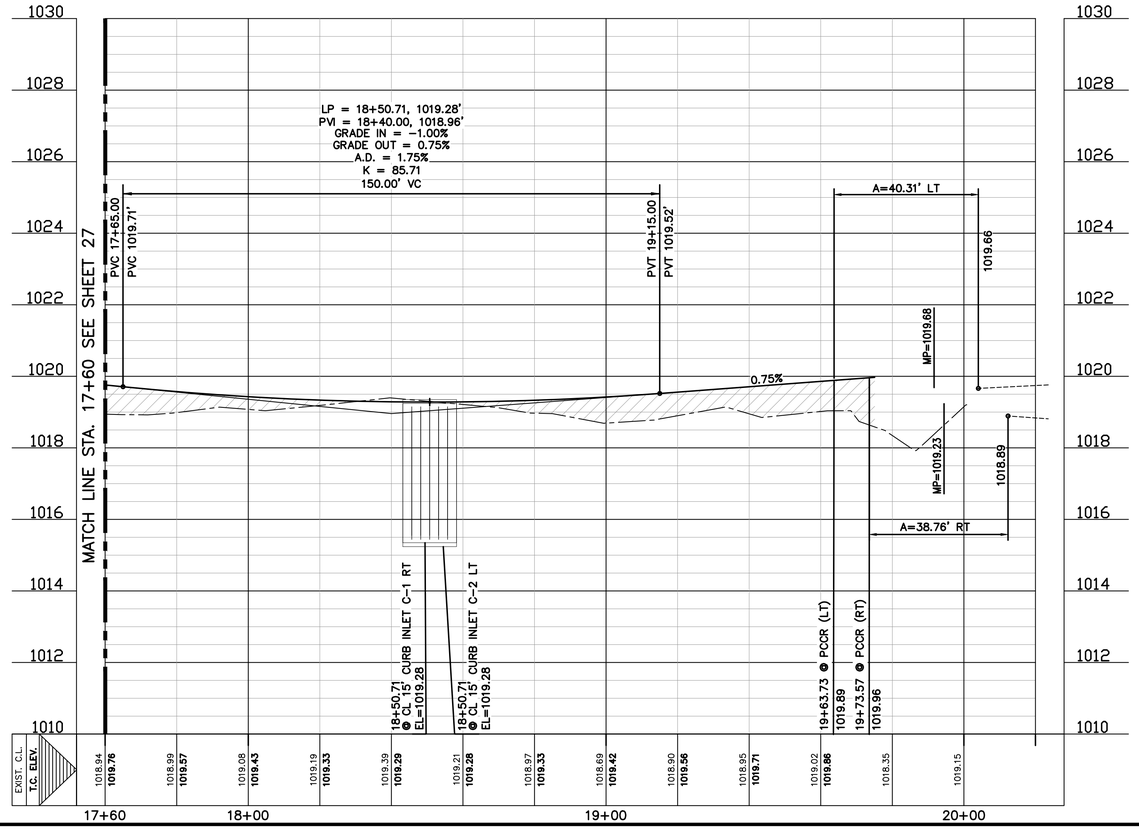
STREET WITH 83' EASEMENT

Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C17	25.13'	25.98'	091°53'36"	36.12'	40.31'
C18	25.00'	24.49'	088°49'15"	34.99'	38.76'
C24	2.00'	INFINITY'	180°00'00"	4.00'	6.28'
C25	5.00'	2.07'	045°00'00"	3.83'	3.93'
C26	25.00'	8.29'	036°42'00"	15.74'	16.01'
C27	25.00'	8.29'	036°42'00"	15.74'	16.01'
C28	9.00'	INFINITY'	180°00'00"	18.00'	28.27'
C29	1.00'	INFINITY'	180°00'00"	2.00'	3.14'

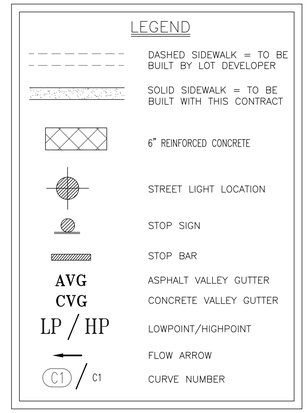


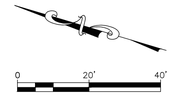
PROFILE SCALE
HORIZ: 1" = 20'
VERT: 1" = 2'

NATURAL GROUND RT.
NATURAL GROUND ℄
NATURAL GROUND LT.
PROPOSED T/C LT. & RT.



FILL AREAS





SCALE: 1" = 20'

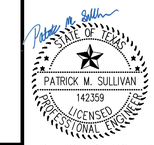
PHASE 1

SD-24-0243

DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F5791
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5501 West William Cannon Dr.
Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

SHEET NAME: PRIVATE DRIVE C (17+60 TO END)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

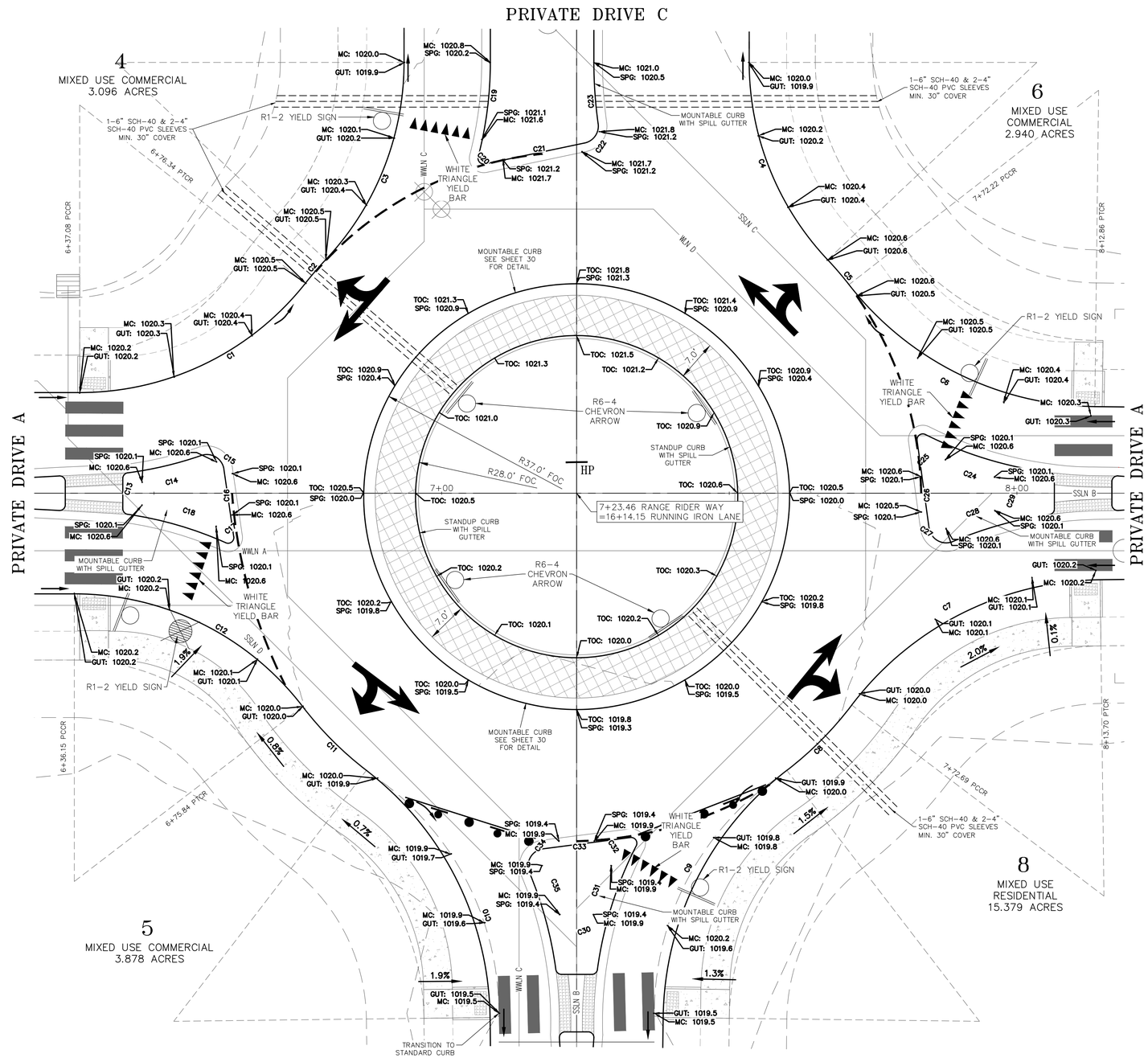


CARLSON, BRIGANCE, & DOERING, INC.
ID # F5791
11-26-2024

DATE November 2024
JOB NUMBER 5375
SHEET 28 OF 62

SUB-STREET.CTB

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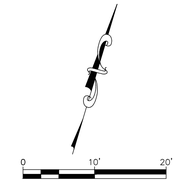
R1-2



R6-4

LEGEND

- DASHED SIDEWALK = TO BE BUILT BY HOME BUILDER
- SOLID SIDEWALK = TO BE BUILT WITH THIS CONTRACT
- 6" REINFORCED CONCRETE
- STREET LIGHT LOCATION
- STOP SIGN
- SIGN
- STOP BAR
- LP / HP — LOWPOINT/HIGHPOINT
- FLOW ARROW
- C1/L1 — CURVE/LINE NUMBER
- MC — MOUNTABLE CURB
- GUT — GUTTER
- SPG — SPILL GUTTER
- TOC — TOP OF CURB



SCALE: 1" = 10'

PHASE 1

Curve Table

Curve #	Radius	Tangent	Delta	Chord	Arc Length
C1	50.00'	24.25'	051°45'03"	43.64'	45.16'
C2	60.00'	2.67'	005°05'33"	5.33'	5.33'
C3	50.00'	19.87'	043°20'30"	36.93'	37.82'
C4	50.00'	19.87'	043°20'30"	36.93'	37.82'
C5	60.09'	4.04'	007°41'18"	8.06'	8.06'
C6	50.00'	25.67'	054°21'28"	45.68'	47.44'
C7	50.00'	26.10'	055°07'21"	46.27'	48.10'
C8	60.00'	10.51'	019°51'48"	20.70'	20.80'
C9	50.00'	25.88'	054°44'28"	45.97'	47.77'
C10	50.00'	25.88'	054°44'28"	45.97'	47.77'
C11	60.00'	9.12'	017°16'57"	18.03'	18.10'
C12	50.00'	24.68'	052°32'29"	44.26'	45.85'
C13	2.00'	11.59'	160°24'41"	3.94'	5.60'
C14	66.50'	6.74'	011°34'46"	13.42'	13.44'
C15	2.00'	3.13'	114°48'25"	3.37'	4.01'
C16	60.00'	3.60'	006°51'59"	7.19'	7.19'
C17	2.00'	3.13'	114°48'25"	3.37'	4.01'
C18	66.50'	6.74'	011°34'46"	13.42'	13.44'
C19	65.00'	6.74'	011°50'17"	13.41'	13.43'
C20	3.00'	4.63'	114°09'42"	5.04'	5.98'
C21	60.00'	6.95'	013°13'05"	13.81'	13.84'
C22	3.00'	3.57'	099°53'18"	4.59'	5.23'
C23	77.00'	6.06'	008°59'37"	12.07'	12.09'
C24	63.00'	4.54'	008°14'22"	9.05'	9.06'
C25	3.00'	4.90'	116°59'49"	5.12'	6.13'
C26	60.00'	3.08'	005°53'01"	6.16'	6.16'
C27	3.00'	4.90'	116°59'49"	5.12'	6.13'
C28	63.00'	4.54'	008°14'22"	9.05'	9.06'
C29	3.00'	10.59'	148°22'06"	5.77'	7.77'
C30	3.00'	10.59'	148°21'33"	5.77'	7.77'
C31	63.00'	4.54'	008°14'09"	9.05'	9.06'
C32	3.00'	4.90'	116°59'49"	5.12'	6.13'
C33	60.00'	3.08'	005°52'55"	6.16'	6.16'
C34	3.00'	4.90'	116°59'49"	5.12'	6.13'
C35	63.00'	4.54'	008°14'09"	9.05'	9.06'

SD-24-0243

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: PRIVATE DRIVE A & PRIVATE DRIVE C ROUNDABOUT

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS



CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

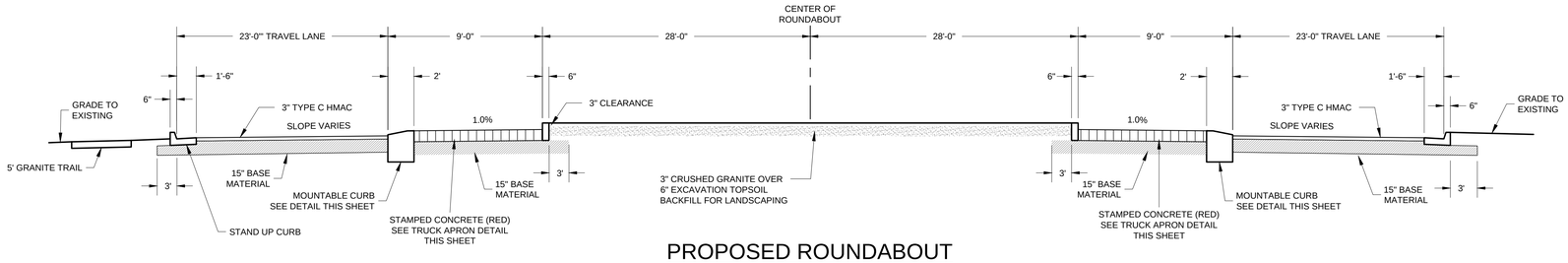
DATE: November 2024

JOB NUMBER: 5375

SHEET: 29 OF 62

SUB-STREET.CTB

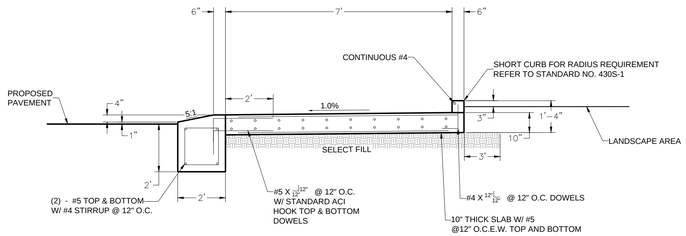
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PROPOSED ROUNDABOUT

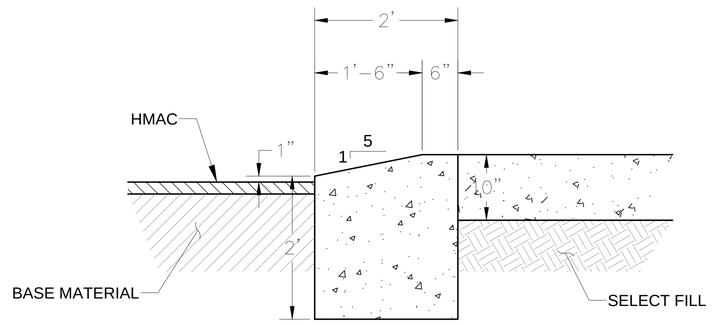
CROSS-SECTION A-A

SCALE: N.T.S



TRUCK APRON DETAIL

N.T.S.



MOUNTABLE CURB DETAIL

N.T.S.

DESIGNED BY: CRB/PS

DRAFTED BY:

DATE

REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office
5501 West William Cannon Dr.
Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

SHEET NAME: ROUNDABOUT DETAILS

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791

11-26-2024

DATE
November 2024

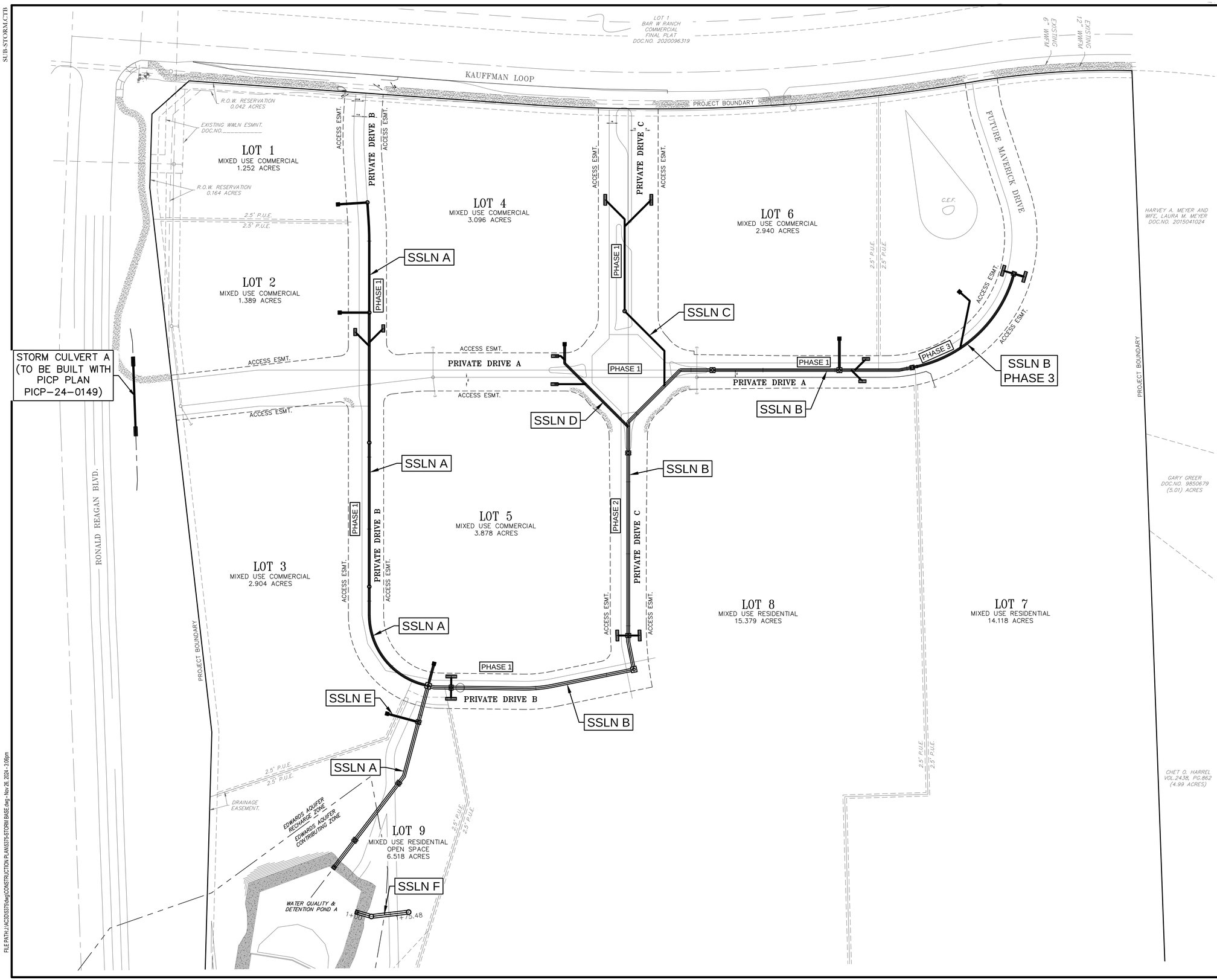
JOB NUMBER
5375

SHEET
30 OF 62

SD-24-0243

FILE PATH: J:\ACD\5375\Dwg\CONSTRUCTION PLANS\Sht Plan\5375-STREET ROUNDABOUT.dwg - Nov 26, 2024 - 3:06pm

SUB-STREET.CTB



LEGEND

- STORM SEWER PIPE
- WATER LINE
- WASTEWATER LINE
- P.U.E. / EASEMENTS

0 60' 120'

SCALE: 1" = 60'

CALL BEFORE YOU DIG
1-800-245-4545
TEXAS ONE CALL SYSTEM

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24 HOURS PRIOR TO COMMENCING CONSTRUCTION.

NOTES: (THESE NOTES APPLY TO THE ENTIRE DRAINAGE SYSTEM)

1. THE DESIGN INTENT OF THESE PLANS IS FOR ALL BENDS, LATERAL CONNECTIONS, REDUCTIONS, AND FITTINGS TO BE MADE WITH PRE-FABRICATED FITTINGS MANUFACTURED IN ACCORDANCE WITH ASTM C-76, CLASS 3 REQUIREMENTS, ALL DEFLECTIONS SHALL BE A MAXIMUM OF 5 DEGREES. IF THE CONTRACTOR ELECTS TO USE ALTERNATE CONNECTION METHODS THEN A SUBMITTAL SHALL BE APPROVED BY THE ENGINEER AND THE CITY OF LEANDER PRIOR TO COMMENCING PIPE LAYING OPERATIONS.
2. WHERE STORM DRAINAGE IS SHOWN TO BE INSTALLED ON A CURVE THE CONTRACTOR SHALL SUBMIT A LAYING SCHEDULE DEMONSTRATING ANTICIPATED JOINT SEPARATIONS USING 8' JOINTS, A COMBINATION OF 8' AND 4' JOINTS, OR LONG RADIUS PIPE TO ACHIEVE THE NECESSARY RADIUS WITHOUT EXCESSIVE JOINT SEPARATION. PROPOSED INSTALLATION METHOD SHALL BE APPROVED BY THE ENGINEER AND THE CITY OF LEANDER PRIOR TO COMMENCING PIPE LAYING OPERATIONS.
3. STORM SEWER MAY BE HDPE OR CLIII RCP.

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR (620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: OVERALL STORM SEWER PLAN

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024

JOB NUMBER: 5375

SHEET: 31 OF 62

SD-24-0243

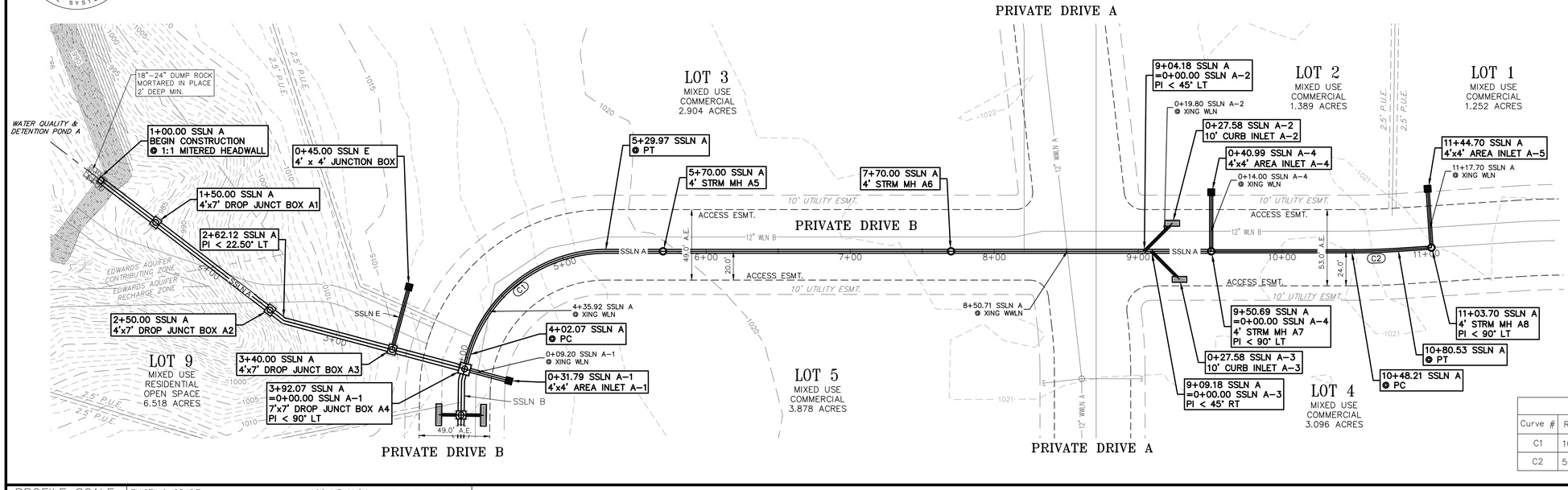
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FILE PATH: J:\ACSD\5375\dwg\CONSTRUCTION PLANS\375-STORM BASE.dwg - Nov 26, 2024 - 3:06pm

SUB-STORM.CTB

CALL BEFORE YOU DIG — TEXAS ONE CALL SYSTEM — 1-800-245-4545

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24 HOURS PRIOR TO COMMENCING CONSTRUCTION.



SCALE: 1" = 40'

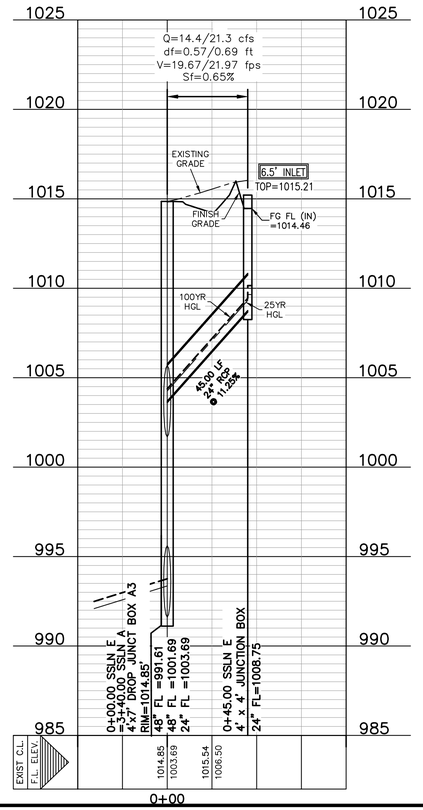
PHASE 1

CURVE TABLE					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C1	100.00'	74.37'	073°16'44"	119.36'	127.90'
C2	500.00'	16.17'	003°42'14"	32.32'	32.32'

PROFILE SCALE			
HORIZ. 1" = 40'	EXISTING GRADE	100 YR H.G.L.	
VERT. 1" = 4'	FINISHED GRADE	25 YR H.G.L.	
	SUB-GRADE		

FOR STORM SEWER LINE A PROFILE
SEE SHEET 33

STORM SEWER LINE E
STA: 0+00 TO END



NOTES: (THESE NOTES APPLY TO THE ENTIRE DRAINAGE SYSTEM)

1. THE DESIGN INTENT OF THESE PLANS IS FOR ALL BENDS, LATERAL CONNECTIONS, REDUCTIONS, AND FITTINGS TO BE MADE WITH PRE-FABRICATED FITTINGS MANUFACTURED IN ACCORDANCE WITH ASTM C-76, CLASS 3 REQUIREMENTS, ALL DEFLECTIONS SHALL BE A MAXIMUM OF 5 DEGREES. IF THE CONTRACTOR ELECTS TO USE ALTERNATE CONNECTION METHODS THEN A SUBMITTAL SHALL BE APPROVED BY THE ENGINEER AND THE CITY OF LEANDER PRIOR TO COMMENCING PIPE LAYING OPERATIONS.
2. WHERE STORM DRAINAGE IS SHOWN TO BE INSTALLED ON A CURVE THE CONTRACTOR SHALL SUBMIT A LAYING SCHEDULE DEMONSTRATING ANTICIPATED JOINT SEPARATIONS USING 8' JOINTS, A COMBINATION OF 8' AND 4' JOINTS, OR LONG RADIUS PIPE TO ACHIEVE THE NECESSARY RADIUS WITHOUT EXCESSIVE JOINT SEPARATION. PROPOSED INSTALLATION METHOD SHALL BE APPROVED BY THE ENGINEER AND THE CITY OF LEANDER PRIOR TO COMMENCING PIPE LAYING OPERATIONS.
3. STORM SEWER MAY BE HDPE OR CL III RCP.

NOTES:
STORM SEWER LINE "A" FROM STATION 1+00.00 TO STATION 3+92.07 AND STORM SEWER LINE "E" FROM STATION 0+00.00 TO END TO BE RCP ONLY.

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR (620 N.), Ste. 600 Austin, Texas 78750 www.cbdengr.com

SHEET NAME: STORM SEWER LINES A & E (0+00 TO END)

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024

JOB NUMBER: 5375

SHEET: 32 OF 62

SD-24-0243

FILE PATH=J:\ACDS\5375\dwg\CONSTRUCTION PLANS\375-STORM BASE.dwg - Nov 26, 2024 - 4:11pm

SUB-STORM.CTB

CALL BEFORE YOU DIG 1-800-245-4545 TEXAS ONE CALL SYSTEM

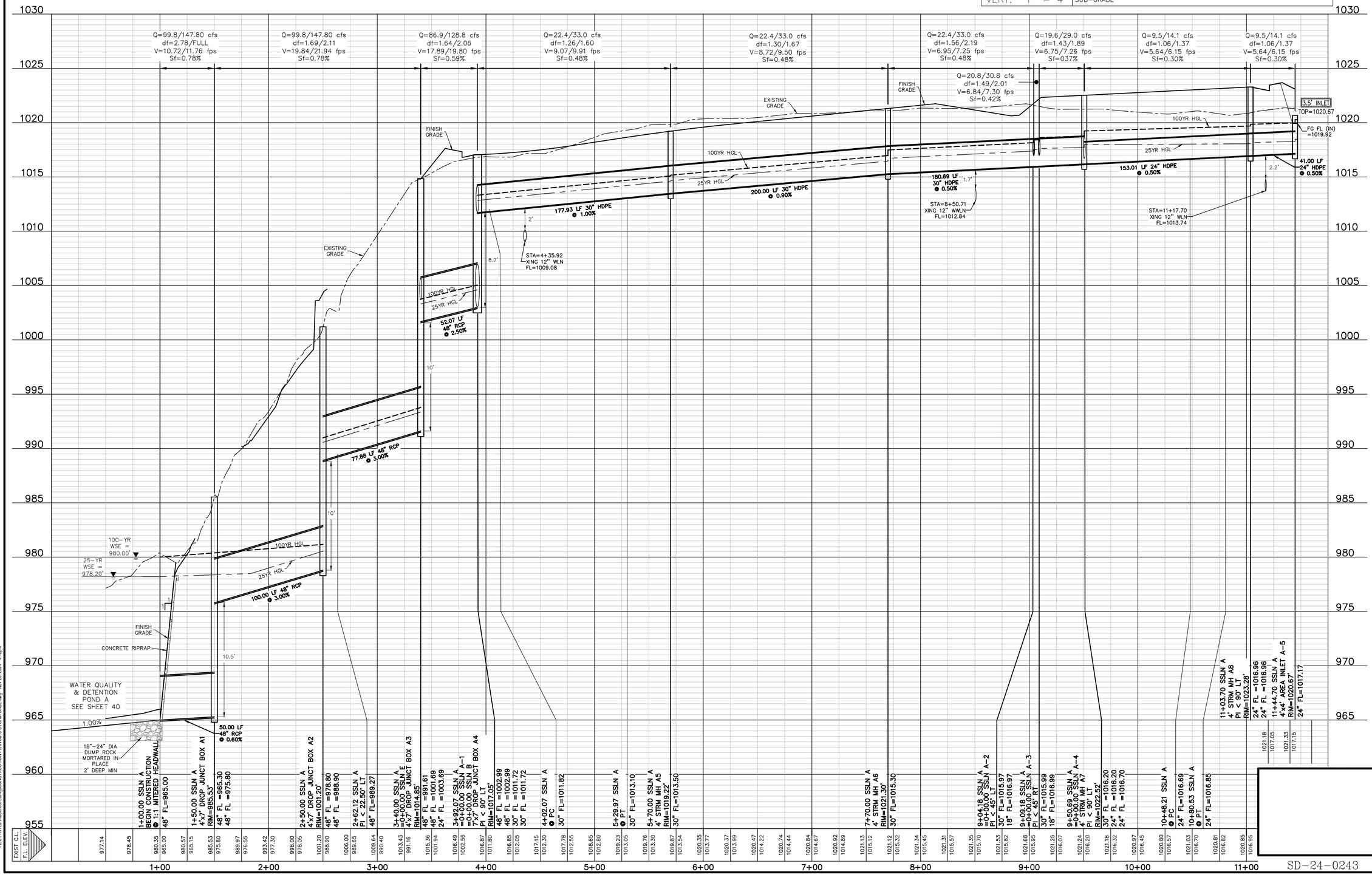
THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24 HOURS PRIOR TO COMMENCING CONSTRUCTION.

PHASE 1

NOTE:
STORM SEWER LINE "A" STATION 1+00.00 TO STATION 3+92.07 TO BE RCP ONLY. REMAINDER OF STORM SEWER LINE "A" MAY BE HDPE OR CL III RCP.

PROFILE SCALE		
HORIZ. 1" = 40'	EXISTING GRADE	100 YR H.G.L.
VERT. 1" = 4'	FINISHED GRADE	25 YR H.G.L.
	SUB-GRADE	

STORM SEWER LINE A PROFILE STA: 0+00 TO END



SD-24-0243

FILE PATH: J:\ACD\5375\dwg\CONSTRUCTION PLANS\375-STORM BASE.dwg, Nov 26, 2024 - 4:12pm

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Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: STORM SEWER LINE A PROFILE (0+00 TO END)

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024

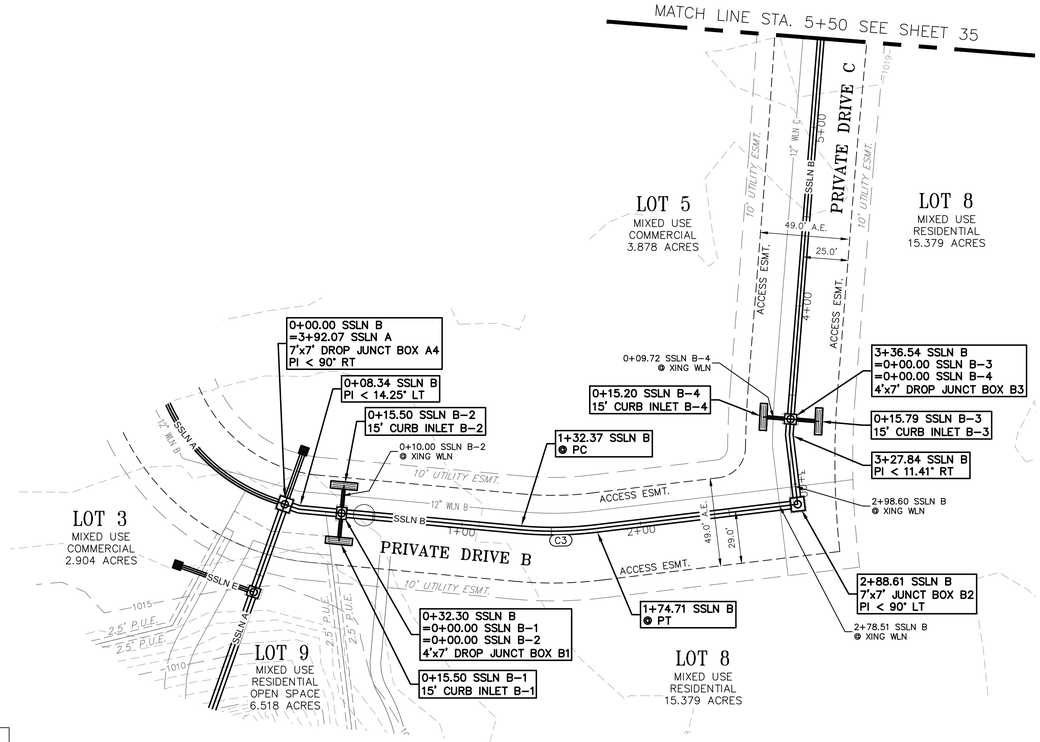
JOB NUMBER: 5375

SHEET: 33 OF 62

SUB-STORM.CTB

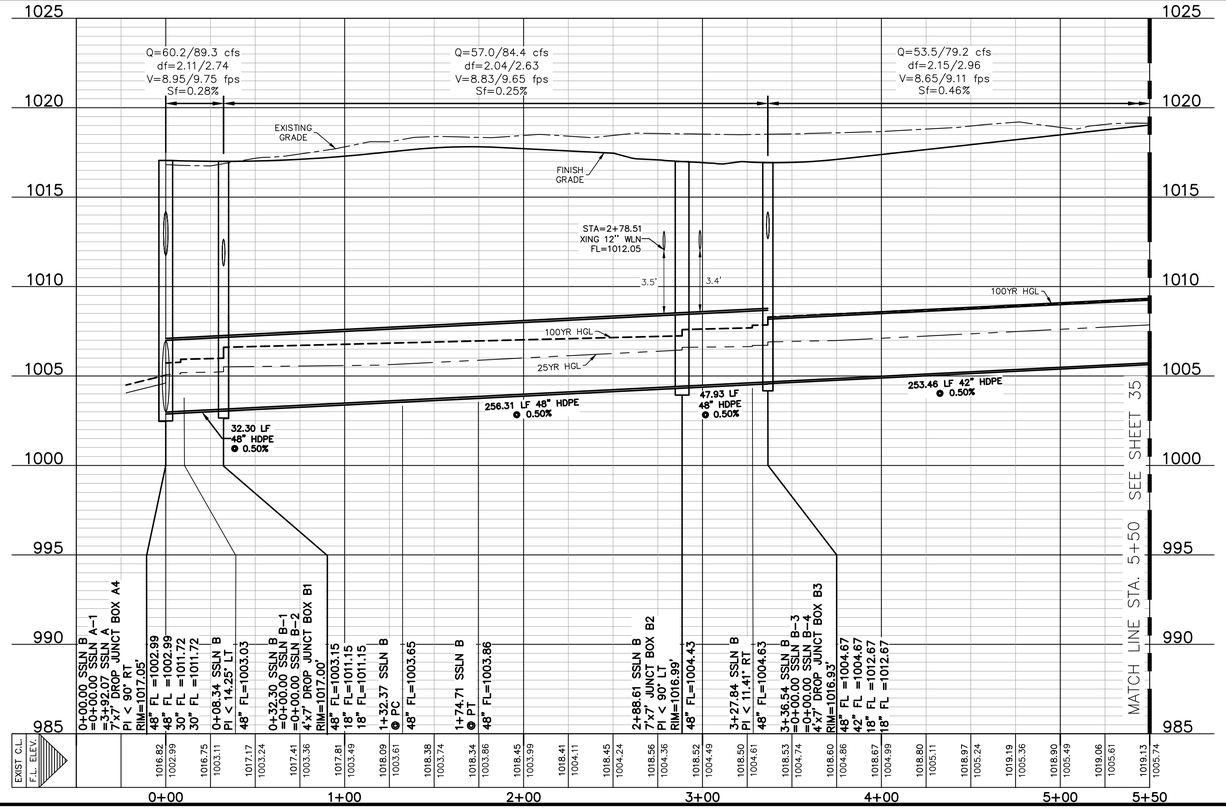
CALL BEFORE YOU DIG — TEXAS ONE CALL SYSTEM — 1-800-245-4545

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24 HOURS PRIOR TO COMMENCING CONSTRUCTION.



STORM SEWER LINE B STA: 0+00 TO 5+50

PROFILE SCALE			
HORIZ. 1" = 40'	EXISTING GRADE	100 YR H.G.L.	
VERT. 1" = 4'	FINISHED GRADE	25 YR H.G.L.	
	SUB-GRADE		



DESIGNED BY: CRB/PS	DRAFTED BY:
DATE	
REVISION	

LEGEND

- STORM SEWER PIPE
- WATER LINE
- WASTEWATER LINE
- P.U.E. / EASEMENTS
- (C1) CURVE LABEL

0 40' 80'

SCALE: 1" = 40'

PHASE 1

CURVE TABLE					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C3	200.00'	21.25'	012°07'51"	42.27'	42.34'

NOTES: (THESE NOTES APPLY TO THE ENTIRE DRAINAGE SYSTEM)

1. THE DESIGN INTENT OF THESE PLANS IS FOR ALL BENDS, LATERAL CONNECTIONS, REDUCTIONS, AND FITTINGS TO BE MADE WITH PRE-FABRICATED FITTINGS MANUFACTURED IN ACCORDANCE WITH ASTM C-76, CLASS 3 REQUIREMENTS, ALL DEFLECTIONS SHALL BE A MAXIMUM OF 5 DEGREES. IF THE CONTRACTOR ELECTS TO USE ALTERNATE CONNECTION METHODS THEN A SUBMITTAL SHALL BE APPROVED BY THE ENGINEER AND THE CITY OF LEANDER PRIOR TO COMMENCING PIPE LAYING OPERATIONS.
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3. STORM SEWER MAY BE HDPE OR CL III RCP.

Carlson, Brigance & Doering, Inc.
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Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: STORM SEWER LINE B (0+00 TO 5+50)

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS — PATRICK M. SULLIVAN — 142359 — LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE, & DOERING, INC. ID # F3791

11-26-2024

DATE: November 2024

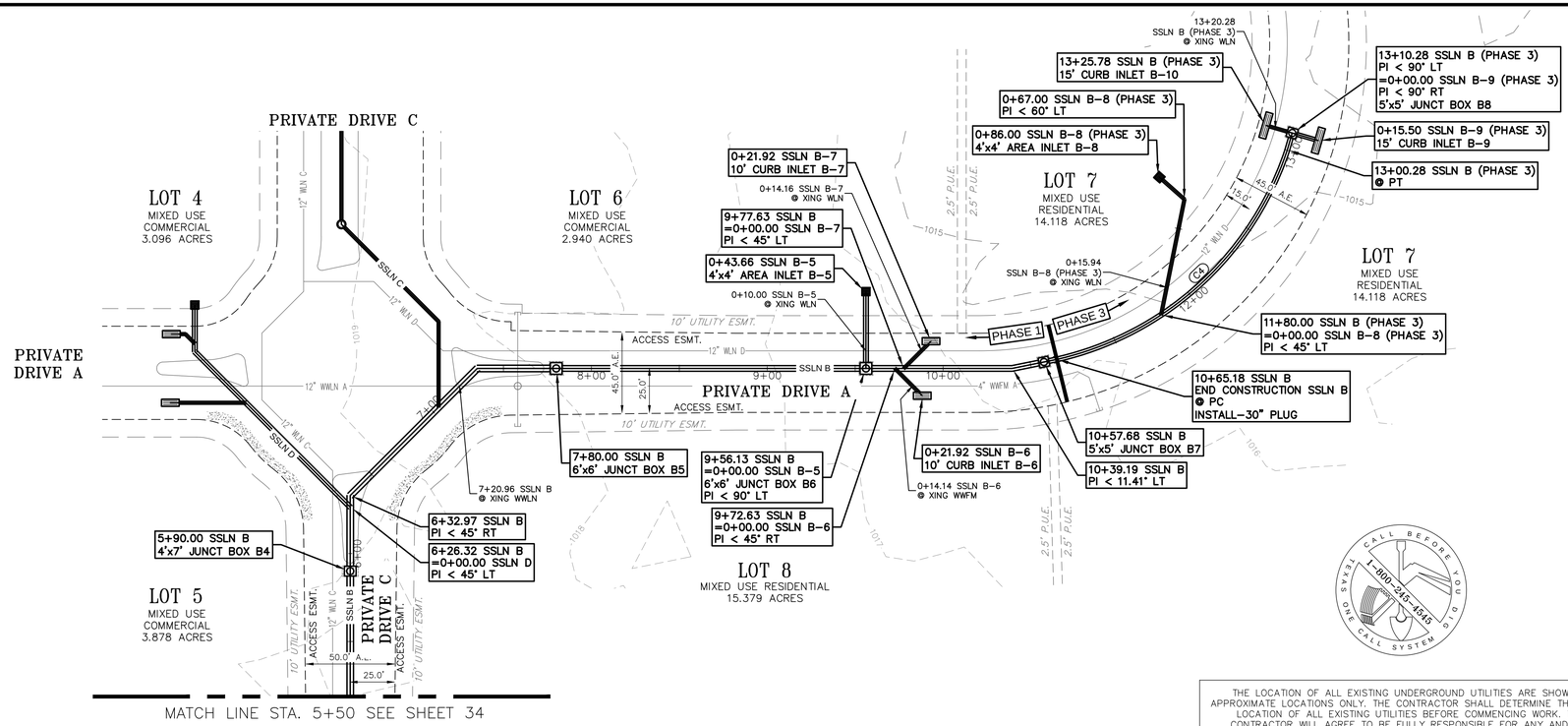
JOB NUMBER: 5375

SHEET: 34 OF 62

SD-24-0243

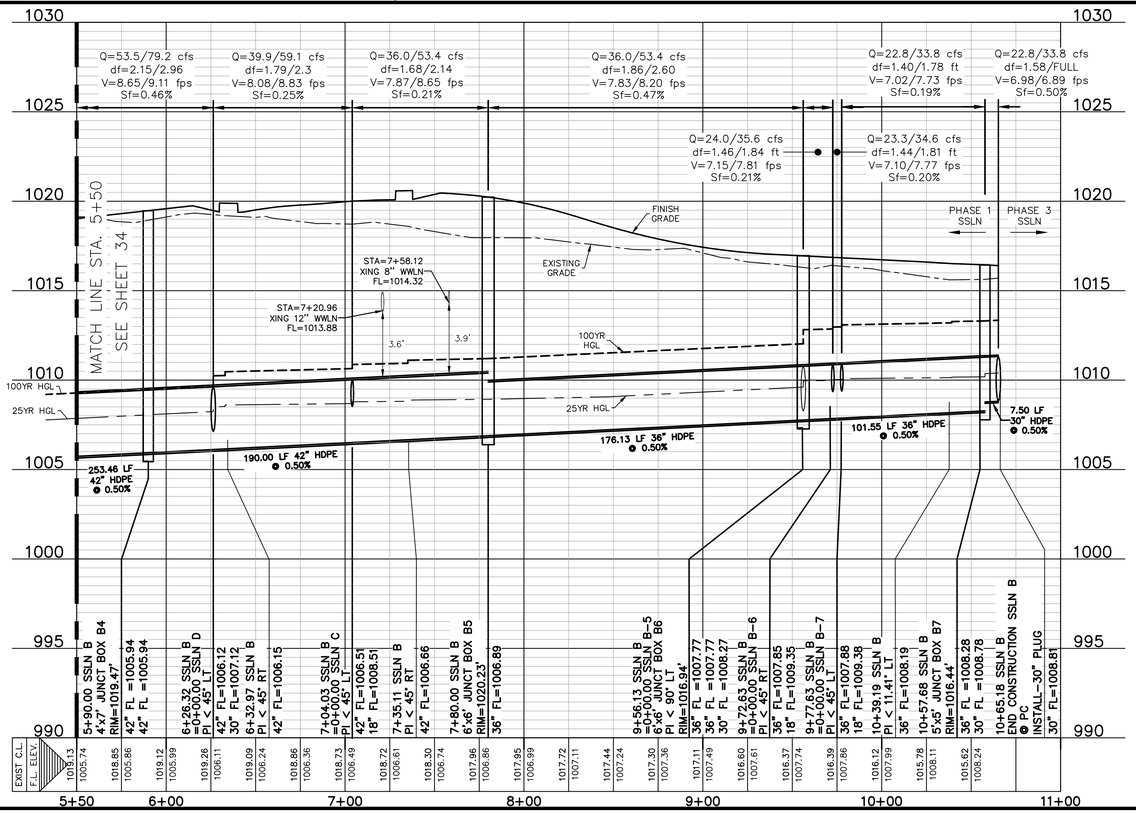
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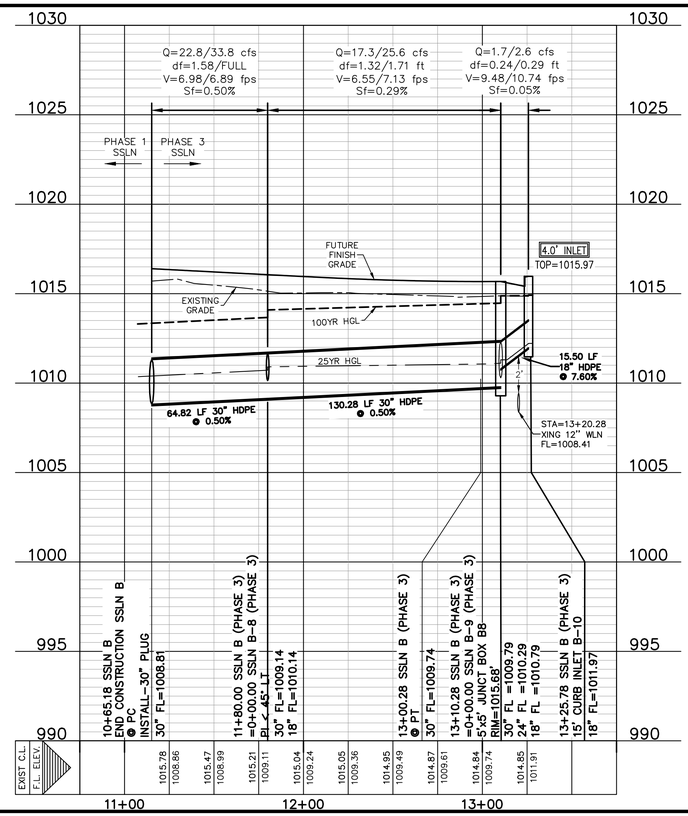
SUB-STORM.CTB

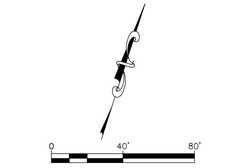


PROFILE SCALE			
HORIZ. 1" = 40'	EXISTING GRADE	100 YR H.G.L.	
VERT. 1" = 4'	FINISHED GRADE	25 YR H.G.L.	
	SUB-GRADE		

STORM SEWER LINE B STA: 5+50 TO END







SCALE: 1" = 40'

LEGEND	
	STORM SEWER PIPE
	WATER LINE
	WASTEWATER LINE
	P.U.E. / EASEMENTS
(C1)	CURVE LABEL

CURVE TABLE					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C4	180.00'	101.67'	058°55'09"	177.05'	185.10'

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24 HOURS PRIOR TO COMMENCING CONSTRUCTION.

CALL BEFORE YOU DIG
TEXAS ONE CALL SYSTEM
1-800-245-4545

NOTES: (THESE NOTES APPLY TO THE ENTIRE DRAINAGE SYSTEM)

1. THE DESIGN INTENT OF THESE PLANS IS FOR ALL BENDS, LATERAL CONNECTIONS, REDUCTIONS, AND FITTINGS TO BE MADE WITH PRE-FABRICATED FITTINGS MANUFACTURED IN ACCORDANCE WITH ASTM C-76, CLASS 3 REQUIREMENTS, ALL DEFLECTIONS SHALL BE A MAXIMUM OF 5 DEGREES. IF THE CONTRACTOR ELECTS TO USE ALTERNATE CONNECTION METHODS THEN A SUBMITTAL SHALL BE APPROVED BY THE ENGINEER AND THE CITY OF LEANDER PRIOR TO COMMENCING PIPE LAYING OPERATIONS.
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3. STORM SEWER MAY BE HDPE OR CL III RCP.

DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: STORM SEWER LINE B (5+50 TO END)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

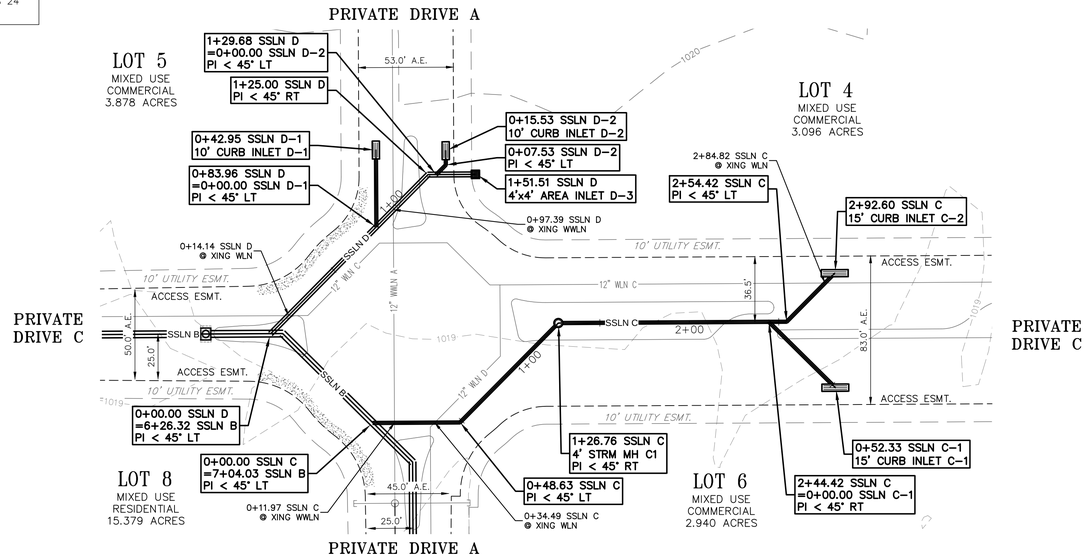
DATE: November 2024
JOB NUMBER: 5375
SHEET: 35 OF 62

SD-24-0243

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SUB-STORM.CTB

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24 HOURS PRIOR TO COMMENCING CONSTRUCTION.



LEGEND

- STORM SEWER PIPE
- WATER LINE
- WASTEWATER LINE
- P.U.E. / EASEMENTS
- (C1) CURVE LABEL

0 40' 80'

SCALE: 1" = 40'

PHASE 1

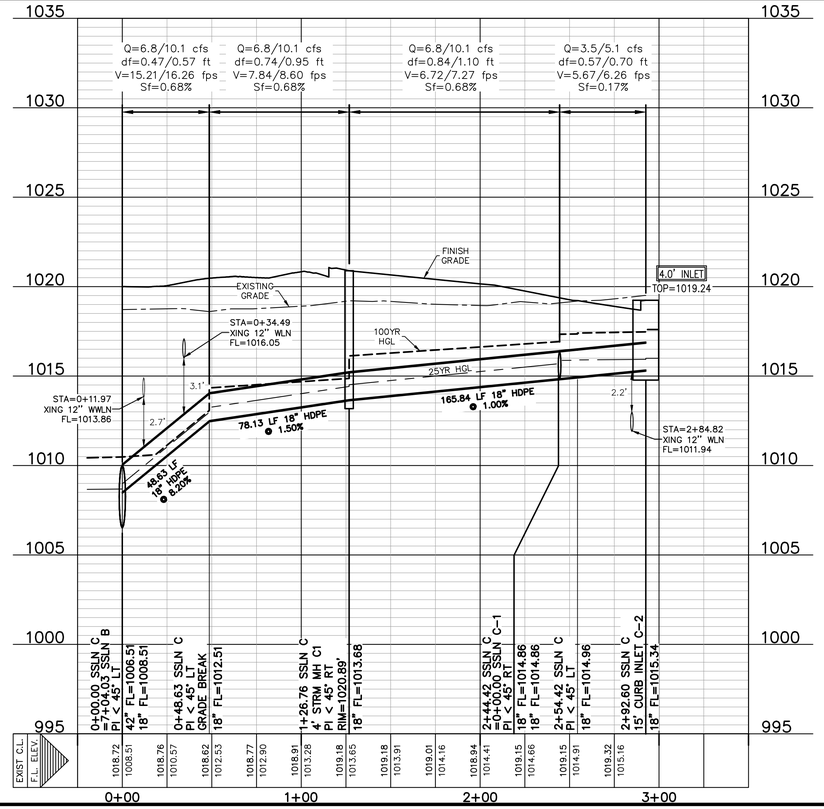
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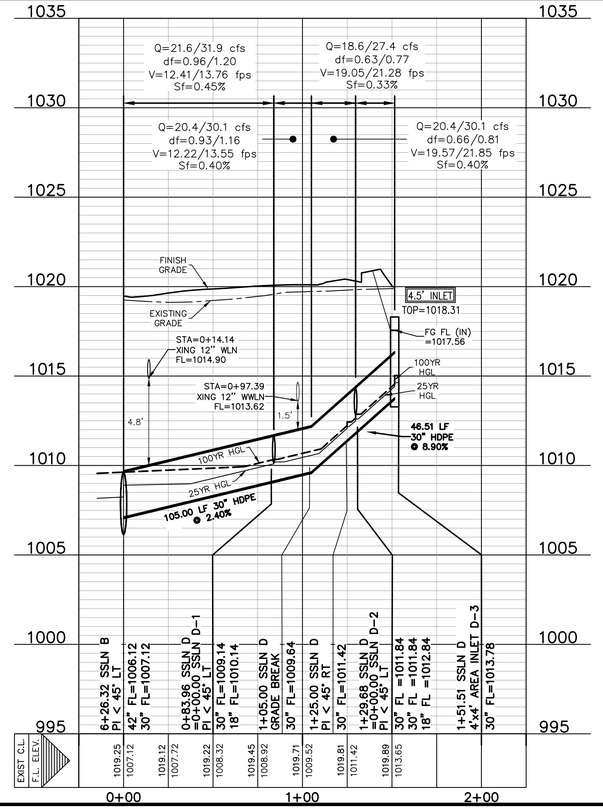
STORM SEWER LINE C
STA: 0+00 TO END

PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

EXISTING GRADE
FINISHED GRADE
SUB-GRADE
100 YR H.G.L.
25 YR H.G.L.



STORM SEWER LINE D
STA: 0+00 TO END



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Carlson, Brigance & Doering, Inc.
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FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: STORM SEWER LINES C & D (0+00 TO END)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET: 36 OF 62

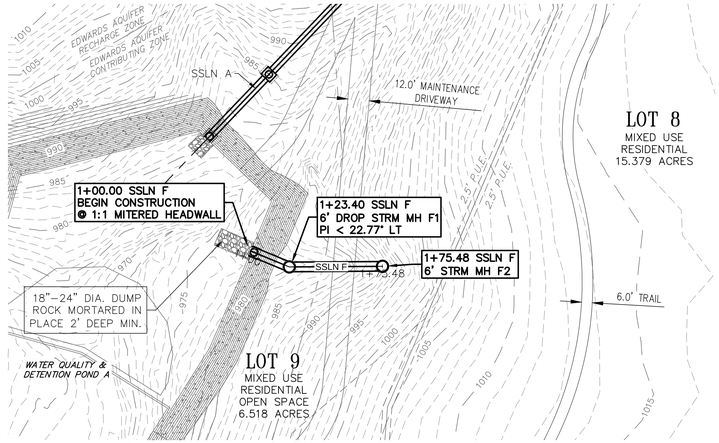
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SUB-STORM.CTB

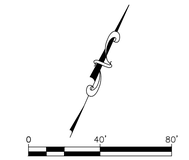
CALL BEFORE YOU DIG 1-800-245-4545 TEXAS ONE CALL SYSTEM

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LEGEND

- STORM SEWER PIPE
- WATER LINE
- WASTEWATER LINE
- P.U.E. / EASEMENTS
- (C1) CURVE LABEL



SCALE: 1" = 40'

PHASE 1

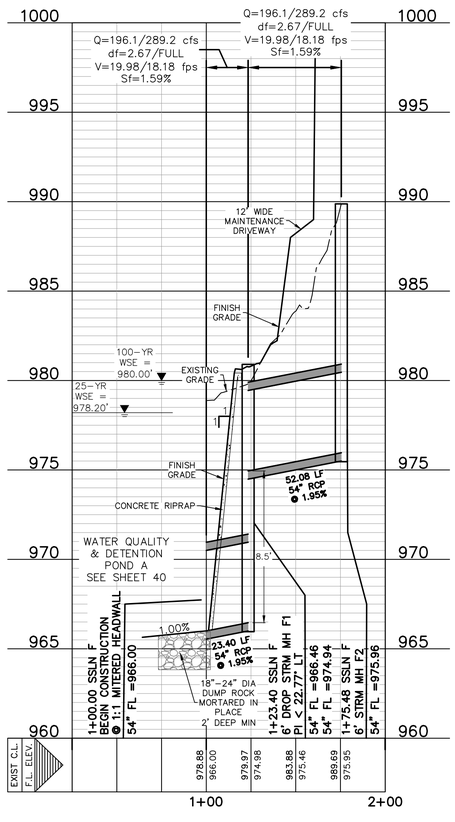
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3. STORM SEWER MAY BE HDPE OR CL III RCP.

STORM SEWER LINE F
FSTA: 0+00 TO END

PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

EXISTING GRADE
FINISHED GRADE
SUB–GRADE
100 YR H.G.L.
25 YR H.G.L.



FILE PATH: J:\ACAD\SD375\dwg\CONSTRUCTION PLANS\SD-STORM BASE.dwg - Nov 26, 2024 - 3:07pm

DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F5791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: STORM SEWER LINE F (0+00-END)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

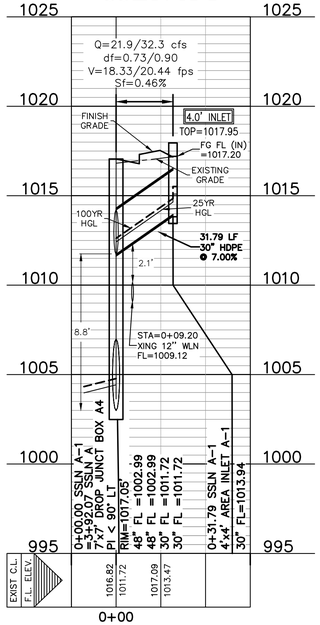
STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F5791
11-26-2024

DATE November 2024
JOB NUMBER 5375
SHEET 37 OF 62

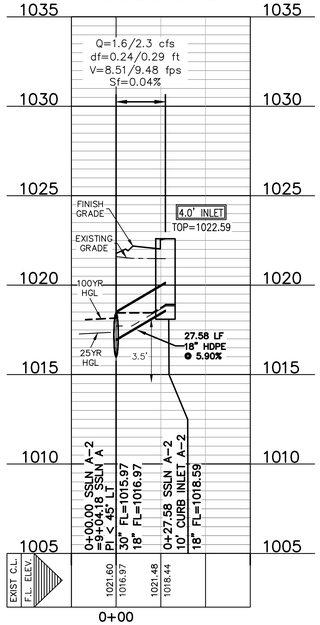
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SUB-STORM.CTB

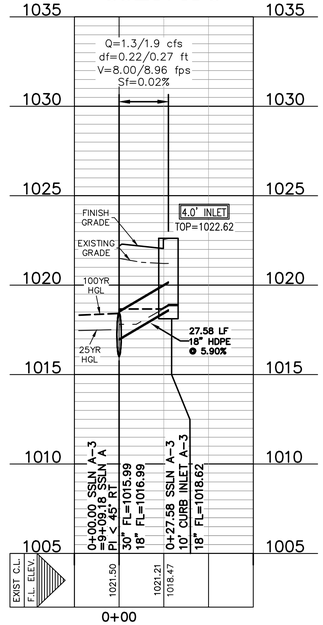
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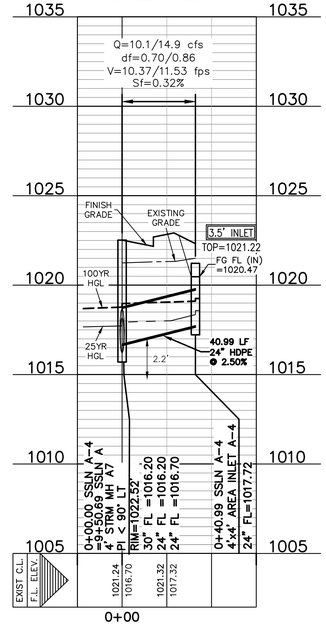
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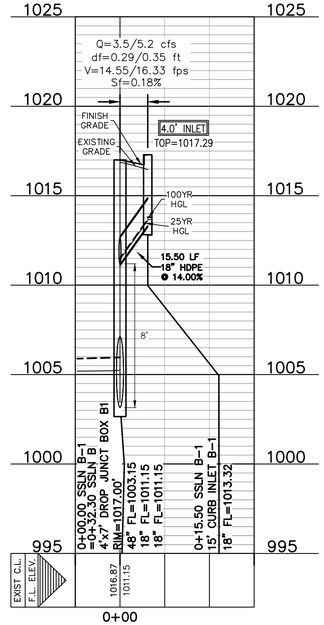
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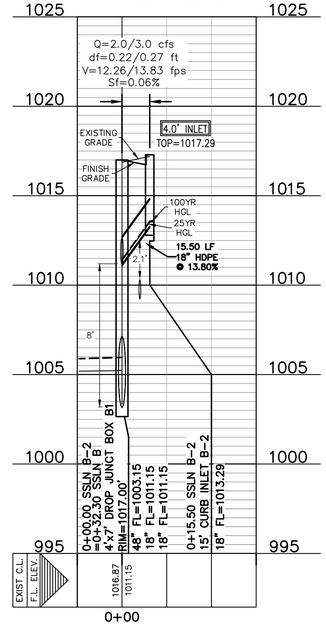
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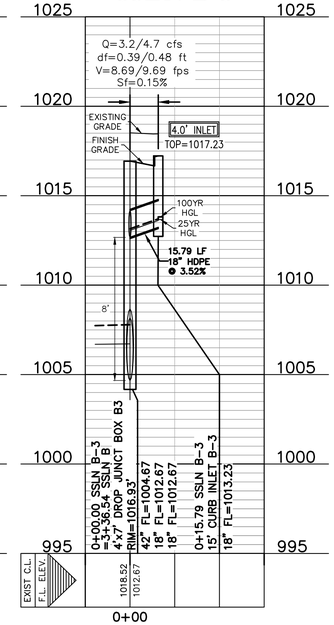
SSLN B-1



SSLN B-2



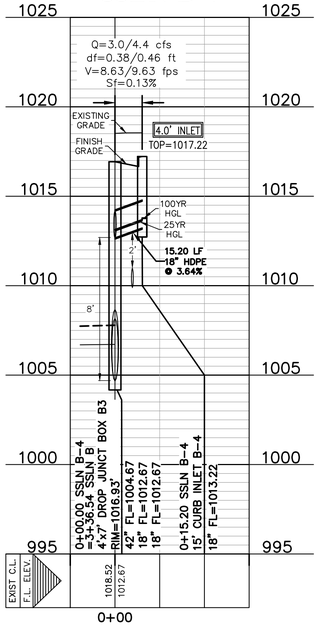
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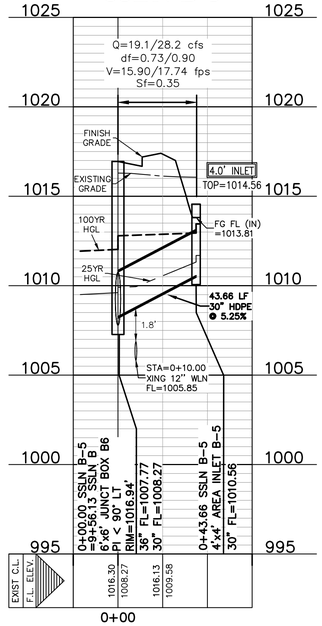
PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

NOTE:
STORM SEWER MAY BE HDPE OR CL III RCP.

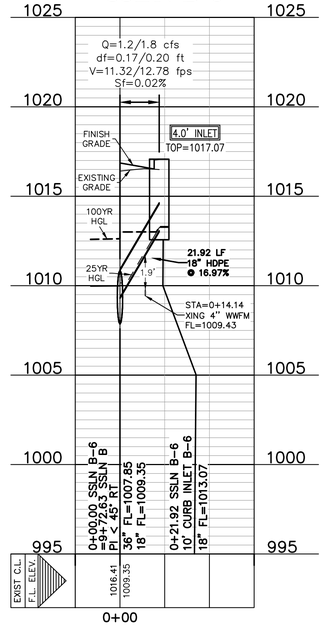
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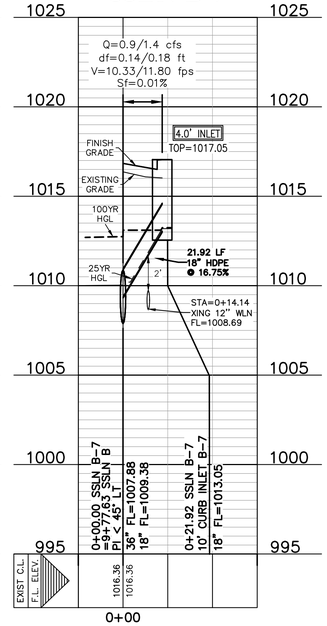
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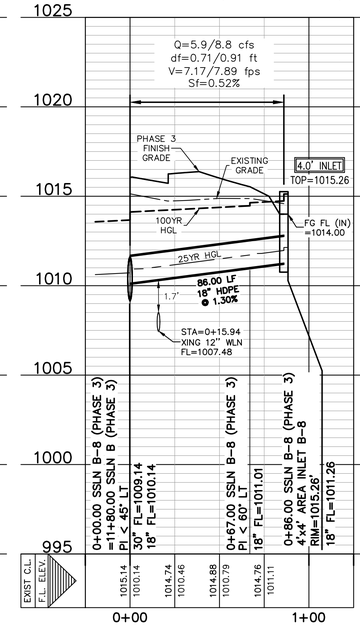
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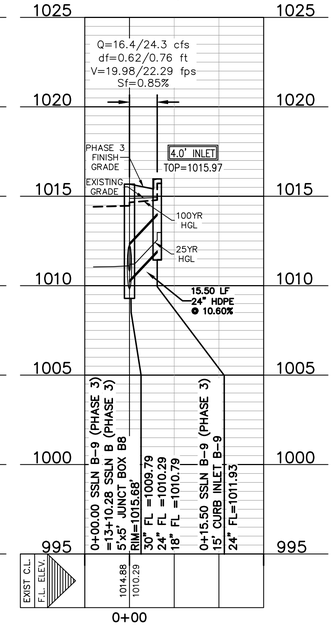
SSLN B-7



SSLN B-8 (PHASE 3)



SSLN B-9 (PHASE 3)



SD-24-0243

DESIGNED BY: CRB/PS
DRAFTED BY:

DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdengr.com

SHEET NAME: STORM SEWER LATERALS (1 OF 2)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

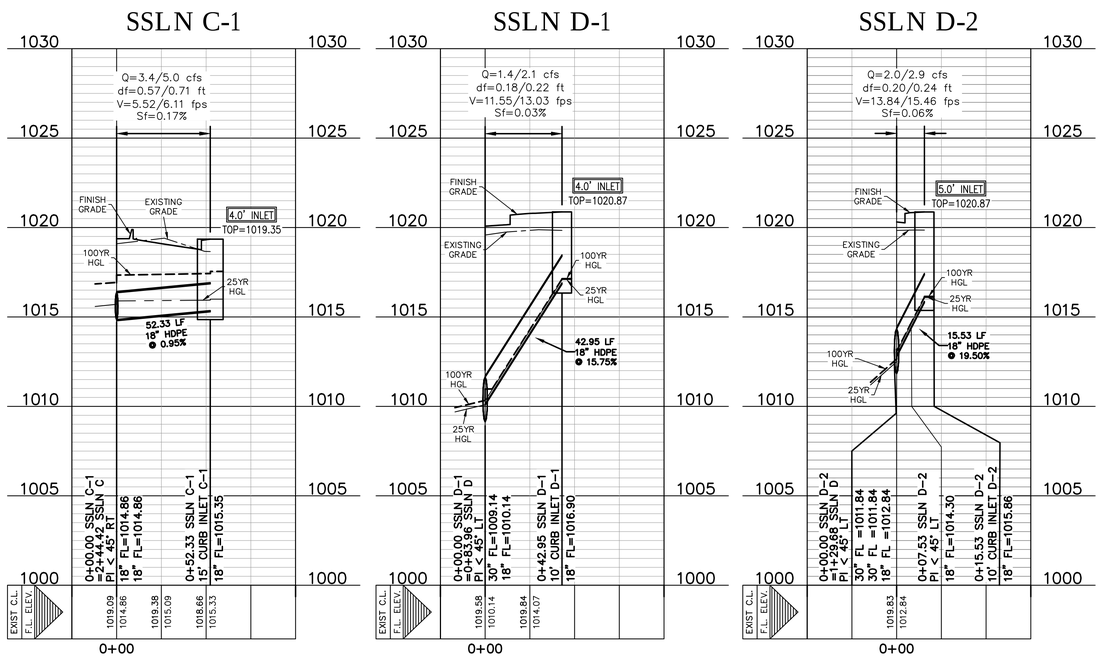
STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET: 38 OF 62

FILE PATH: J:\ACAD\5375\dwg\CONSTRUCTION PLANS\375-STORM BASE.dwg - Nov 26, 2024 - 3:07pm

SUB-STORM.CTB

PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'



PHASE 1

NOTE:
STORM SEWER MAY BE HDPE OR CL III RCP.

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DATE | REVISION

Carlson, Brigance & Doering, Inc.
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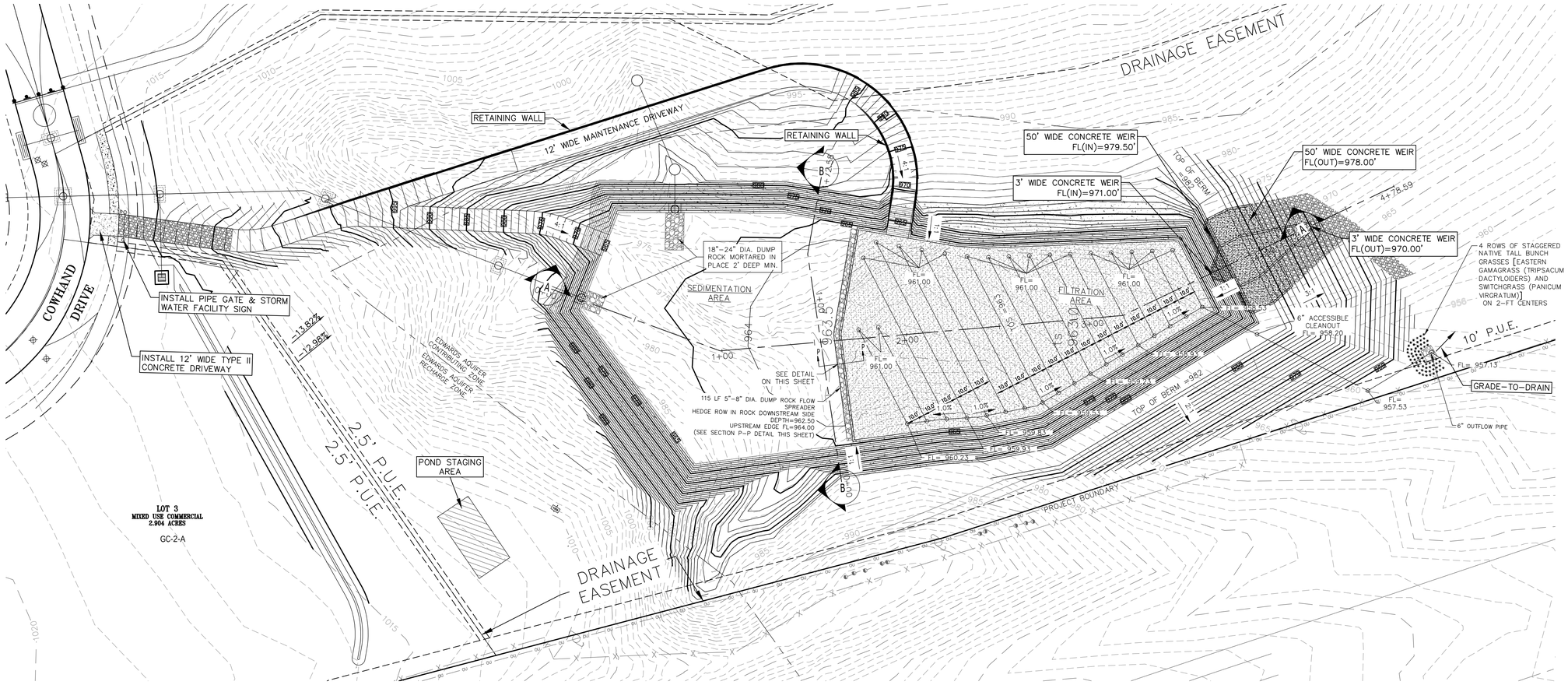
SHEET NAME: STORM SEWER LATERALS (2 OF 2)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

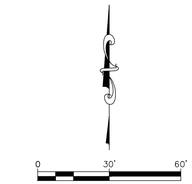
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
CARLSON, BRIGANCE, & DOERING, INC.
ID # F5791
11-26-2024

DATE November 2024
JOB NUMBER 5375
SHEET 39 OF 62

SD-24-0243

SUB-ENGINEERING.CTB





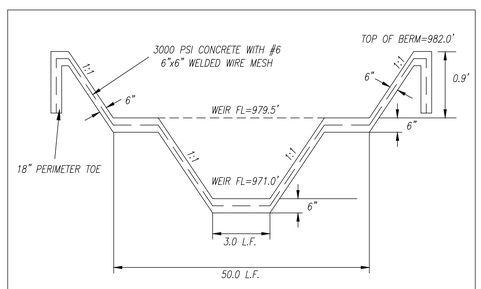
SCALE: 1" = 30'

LEGEND

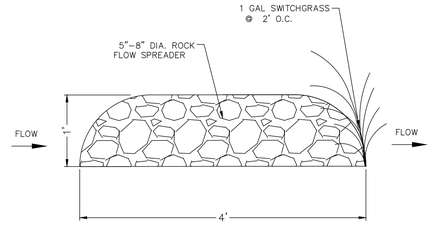
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW

PHASE 1

NOTE:
1. ALL EXPOSED CONCRETE THAT IS VISIBLE IS REQUIRED TO BE MADE OF STONE OR CLAD IN STONE INCLUDING BUT NOT LIMITED TO LEDGESTONE, FIELDSTONE, CAST STONE, OR OTHER DECORATIVE MATERIALS SUCH AS STAMPED AND TINTED CONCRETE THAT RESEMBLES STONE OR BRICK AS APPROVED BY THE DIRECTOR OF PLANNING. ALL OTHER EXPOSED CONCRETE IS REQUIRED TO BE MADE OF STONE CLAD IN STONE AS LISTED ABOVE OR TEXTURED AND TINTED IN EARTHEN COLORS. (CZO ART VI, SEC 7)
2. FOLLOWING COMPLETION OF THE ROUGH GRADING OF THE WATER QUALITY/DETENTION POND THE CONTRACTOR SHALL NOTIFY THE OWNER, ENGINEER OF RECORD, AND GEOTECHNICAL ENGINEER TO EVALUATE THE EXPOSED SOIL CONDITIONS BEFORE PROCEEDING WITH FINAL GRADING AND SOIL STABILIZATION TREATMENTS.
3. FENCING FOR FALL PROTECTION TO BE PROVIDED FOR ALL INTERIOR SLOPES STEEPER THAN 3:1.



50 & 3 L.F. WEIR DETAIL
N.T.S.



ROCK FLOW SPREADER
SECTION P-P DETAIL
1"=1'

SD-24-0243

DESIGNED BY: CRB/PS
DRAFTED BY:

DATE
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SHEET NAME: WATER QUALITY & DETENTION POND A

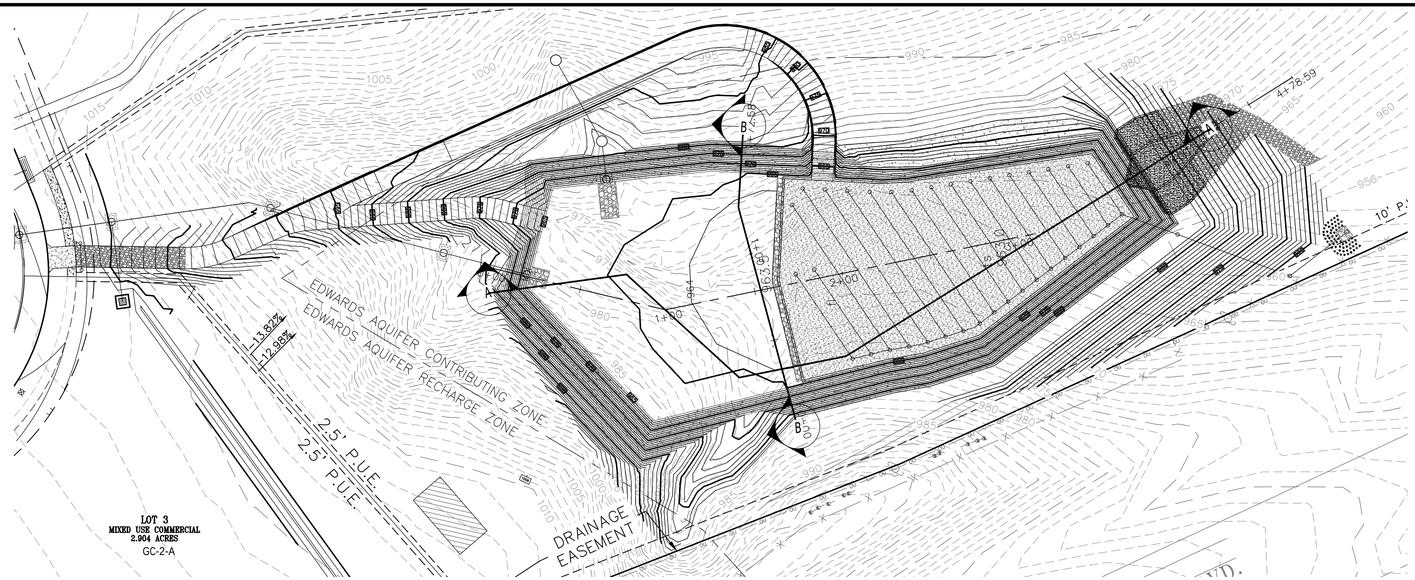
JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET: 40 OF 62

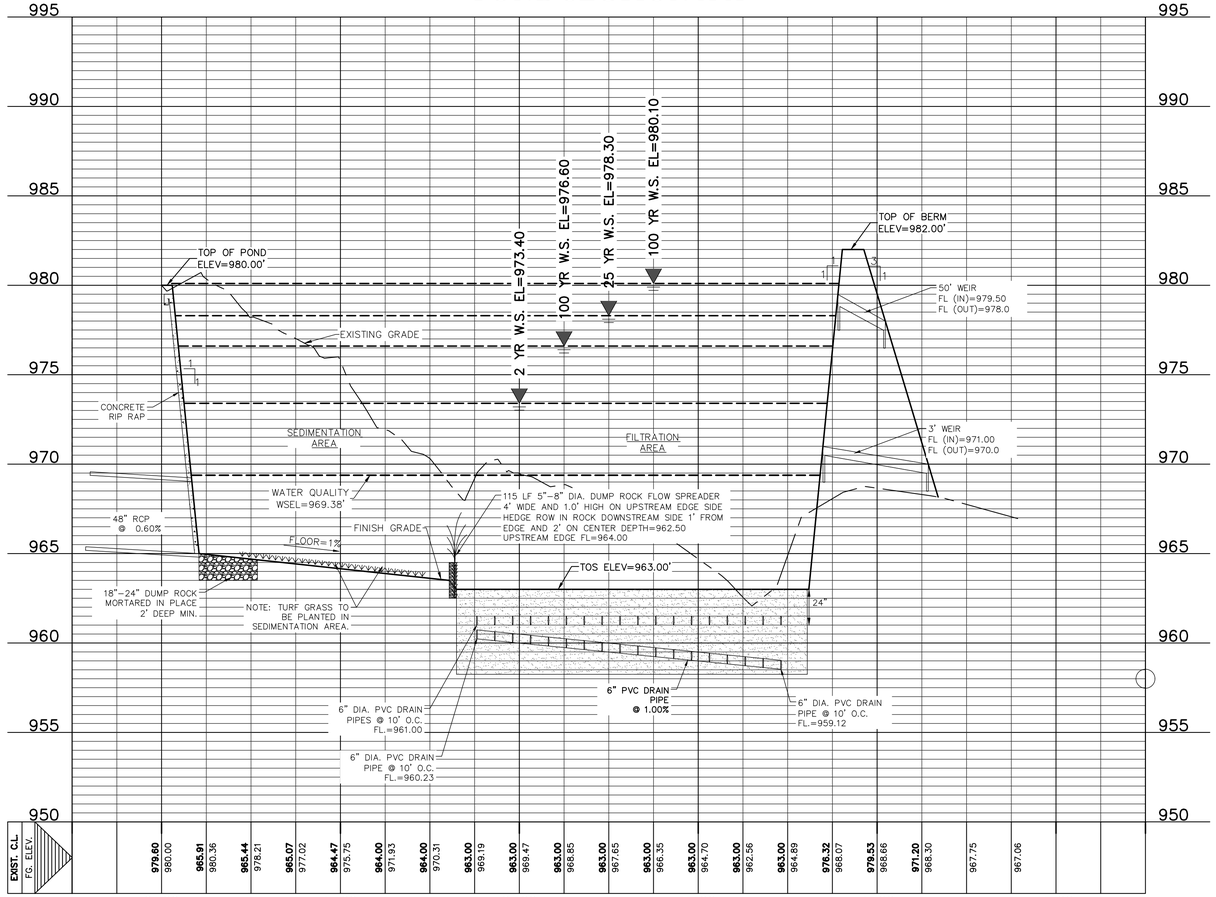
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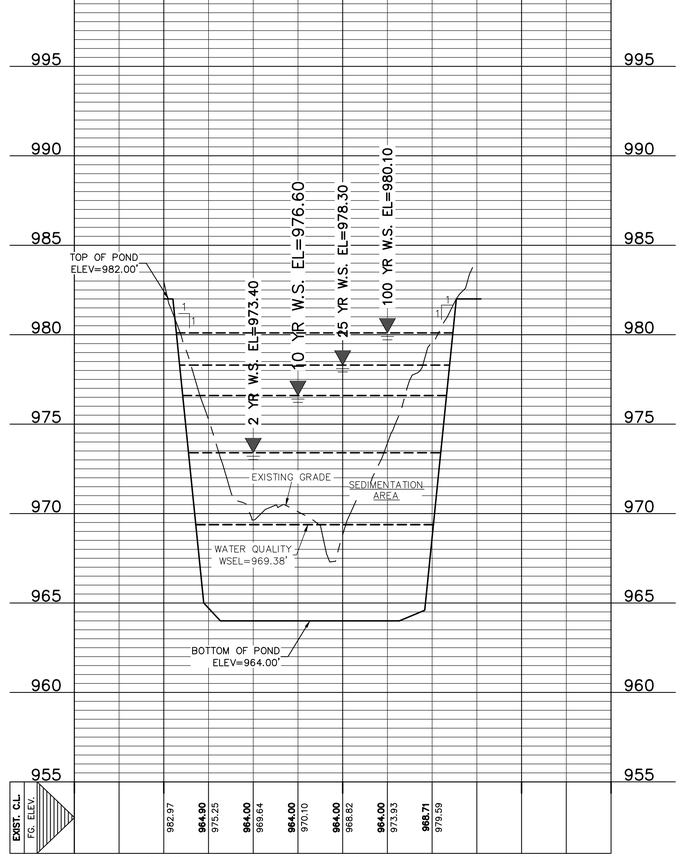
POND A

SCALE 1" = 40'

POND SECTION A-A



POND SECTION B-B



LEGEND

- 936 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 930 — PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW

0 40' 80'

SCALE: 1" = 40'

PHASE 1

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE

REVISION

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Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

SHEET NAME: POND A CROSS-SECTIONS

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE November 2024

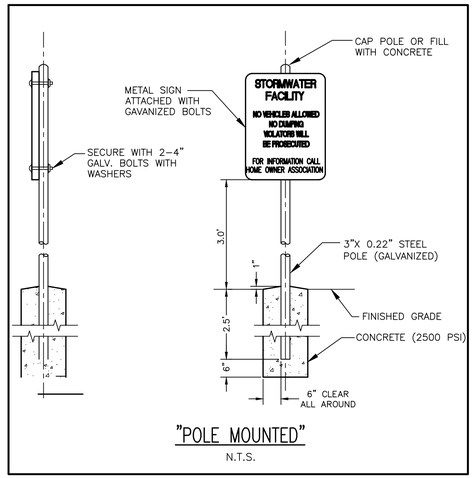
JOB NUMBER 5375

SHEET 41 OF 62

SD-24-0243

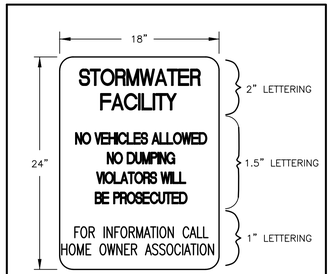
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SUB-ENGINEERING.CTB



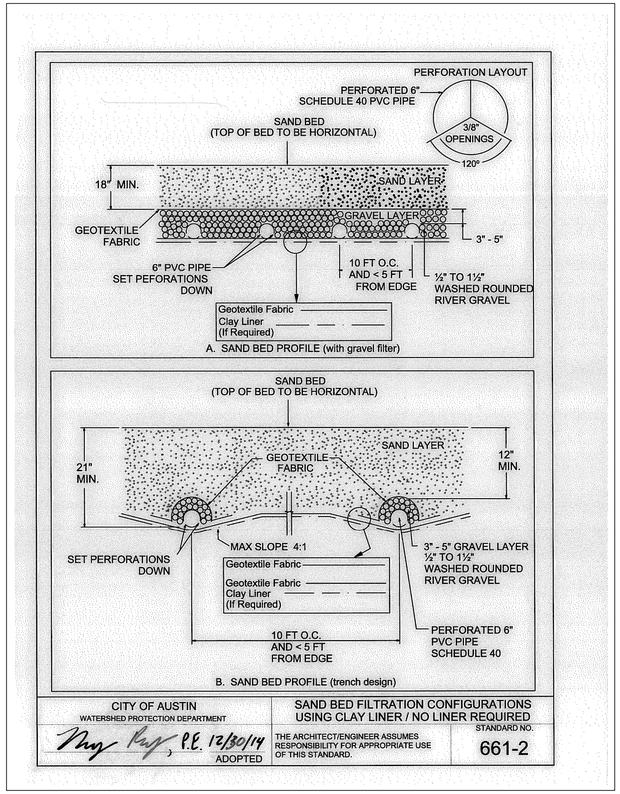
"POLE MOUNTED"

N.T.S.



STORMWATER SIGN DETAIL

N.T.S.



FILTRATION

Elevation	Area SF	Average Area SF	Average Vol cu/ft	Cumulative Vol cu/ft
963	16088.64			0.00
		16360.34	16360.34	
964	16632.05			16360.34
		8316.02	8316.02	
965				24676.37
		0.00	0.00	
966				24676.37
		0.00	0.00	
967				24676.37
		0.00	0.00	
968				24676.37
		0.00	0.00	
969				24676.37
		0.00	0.00	
970				24676.37

SEDIMENTATION

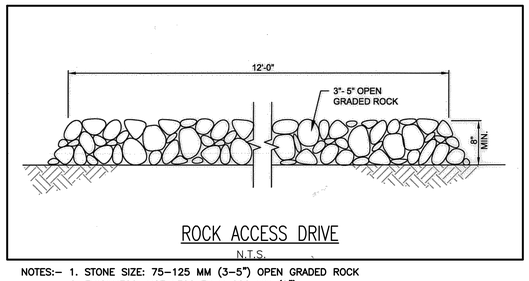
Elevation	Area SF	Average Area SF	Average Vol cu/ft	Cumulative Vol cu/ft
963.5	0.00			0.00
		1906.85	953.43	
964	3813.70			953.43
		16067.64	16067.64	
965	28321.58			17021.07
		31001.72	31001.72	
966	33681.86			48022.79
		34091.60	34091.60	
967	34501.33			82114.39
		34914.86	34914.86	
968	35328.38			117029.24
		35742.75	35742.75	
969	36157.13			152772.00
		36583.37	36583.37	
970	37009.60			189355.37

TOTAL POND

Elevation	Area SF	Average Area SF	Average Vol cu/ft	Cumulative Vol cu/ft	Cumulative Vol ac/ft
963	16088.64			0.00	0.00
		18267.19	18267.19		
964	20445.75			18267.19	0.42
		24383.67	24383.67		
965	28321.58			42650.86	0.98
		31001.72	31001.72		
966	33681.86			73652.58	1.69
		34091.60	34091.60		
967	34501.33			107744.18	2.47
		34914.86	34914.86		
968	35328.38			142659.04	3.28
		35742.75	35742.75		
969	36157.13			178401.79	4.10
		35957.06	35957.06		
970	35757.00			214358.86	4.92
		37028.50	37028.50		
971	38300.00			251387.36	5.77
		38907.50	38907.50		
972	39515.00			290294.86	6.66
		40035.00	40035.00		
973	40555.00			330329.86	7.58
		41116.50	41116.50		
974	41678.00			371446.36	8.53
		42302.50	42302.50		
975	42927.00			413748.86	9.50
		43592.50	43592.50		
976	44258.00			457341.36	10.50
		44965.50	44965.50		
977	45673.00			502306.86	11.53
		46440.00	46440.00		
978	47207.00			548746.86	12.60
		48128.50	48128.50		
979	49050.00			596875.36	13.70
		50129.00	50129.00		
980	51208.00			647004.36	14.85
		52333.00	52333.00		
981	53458.00			699337.36	16.05
		54811.00	54811.00		
982	56164.00			754148.36	17.31

HYDROLOGY SUMMARY

SUB AREA	AREA	AREA	CN	IC%	SCS LAG	Q2	Q10	Q25	Q100	COMMENTS
	AC	SM			MIN	CFS	CFS	CFS	CFS	
E1	22.41	0.0350	77	0	16.73	34.9	71.0	96.8	141.7	
E2	37.07	0.0579	77	0	16.14	58.7	119.6	163.3	238.9	ANALYSIS PT 1
E3	4.21	0.0066	77	0	17.51	6.4	13.1	17.8	26.1	
J-E						99.9	203.2	277.7	406.4	ANALYSIS PT 2 (E1+E2+E3)
E4	1.62	0.0025	77	0	12.45	2.9	5.9	8.1	11.8	ANALYSIS PT 3
D1A	51.48	0.0804	77	65	9.05	174.3	278.6	351.3	476.4	
POND A						37.5	123.8	184.1	332.0	
WSE						973.4	976.6	978.3	980.1	
D1B	6.81	0.0106	77	35	7.33	15.2	26.7	34.9	49.0	
J1						40.5	134.1	199.9	361.1	
D2	1.52	0.0024	77	5	3.00	1.9	3.7	5.1	7.3	ANALYSIS PT 1
D3	3.40	0.0053	77	5	4.35	9.3	18.5	24.9	36.1	
J AP 2						42.3	139.9	209.4	376.9	NALYSIS PT 2 (POND + DIB+D2+D3
D4	0.12	0.0002	77	0	7.74	0.3	0.5	0.7	1.1	ANALYSIS PT 3

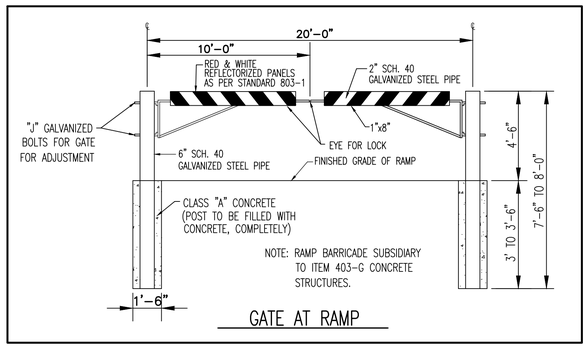


ROCK ACCESS DRIVE

N.T.S.

NOTES:– 1. STONE SIZE: 75–125 MM (3–5") OPEN GRADED ROCK
2. THICKNESS: NOT LESS THAN 200 MM (8")
3. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS?EGRESS

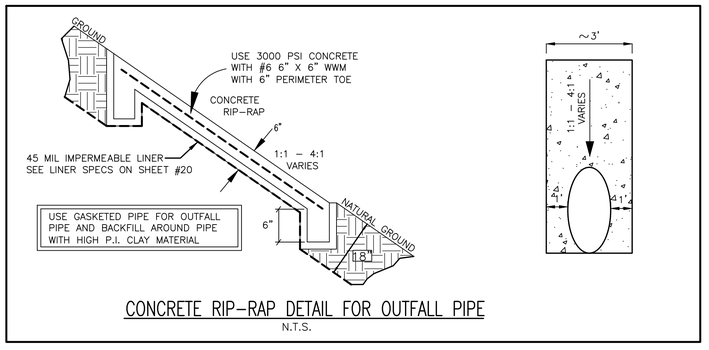
CITY OF AUSTIN, POND MAINTENANCE ROAD CROSS SECTION, STANDARD NO 662S–2



GATE AT RAMP

NOTES:– RAMP BARRICADE SUBSIDIARY TO ITEM 403–G CONCRETE STRUCTURES

CITY OF AUSTIN POND, PIPE GATE AT RAMP DETAILS, STANDARD NO:662S–1



CONCRETE RIP–RAP DETAIL FOR OUTFALL PIPE

N.T.S.

DESIGNED BY: CRB/PS

DRAFTED BY:

DATE

REVISION

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Civil Engineering ◆ Surveying
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Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: POND DETAILS

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F5791
11-26-2024

DATE November 2024

JOB NUMBER 5375

SHEET 42 OF 62

SD–24–0243

SITE-ENGINEERING.CTB

FILE PATH:J:\ACAD\5375\dwg\CONSTRUCTION PLANS\Site Plan\5375-POND.dwg - Nov 26, 2024 - 3:07pm

NOTES:

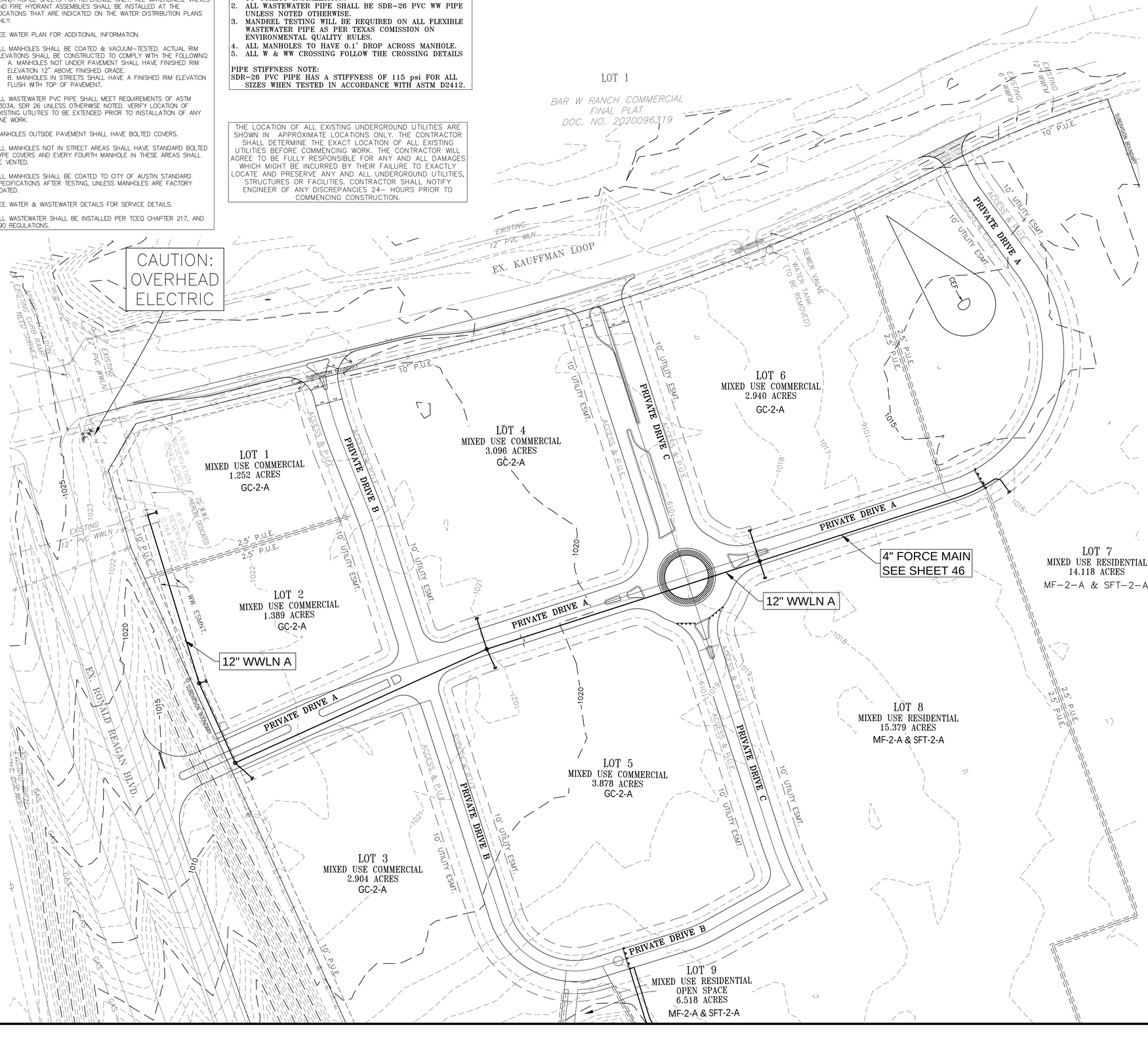
1. WATERLINES ARE SHOWN ON THE WASTEWATER PLAN AND PLAN/PROFILE SHEETS FOR REFERENCE ONLY. ALL WATERLINES, VALVES AND FIRE HYDRANT ASSEMBLIES SHALL BE INSTALLED AT THE LOCATIONS THAT ARE INDICATED ON THE WATER DISTRIBUTION PLANS ONLY.
2. SEE WATER PLAN FOR ADDITIONAL INFORMATION.
3. ALL MANHOLES SHALL BE COATED & VACUUM-TESTED. ACTUAL RIM ELEVATIONS SHALL BE CONSTRUCTED TO COMPLY WITH THE FOLLOWING:
   A. MANHOLES NOT UNDER PAVEMENT SHALL HAVE FINISHED RIM ELEVATION 12" ABOVE FINISHED GRADE.
   B. MANHOLES IN STREETS SHALL HAVE A FINISHED RIM ELEVATION FLUSH WITH TOP OF PAVEMENT.
4. ALL WASTEWATER PVC PIPE SHALL MEET REQUIREMENTS OF ASTM D3034, SDR 26 UNLESS OTHERWISE NOTED. VERIFY LOCATION OF EXISTING UTILITIES TO BE EXTENDED PRIOR TO INSTALLATION OF ANY LINE WORK.
5. MANHOLES OUTSIDE PAVEMENT SHALL HAVE BOLTED COVERS.
6. ALL MANHOLES NOT IN STREET AREAS SHALL HAVE STANDARD BOLTED TYPE COVERS AND EVERY FOURTH MANHOLE IN THESE AREAS SHALL BE VENTED.
7. ALL MANHOLES SHALL BE COATED TO CITY OF AUSTIN STANDARD SPECIFICATIONS AFTER TESTING, UNLESS MANHOLES ARE FACTORY COATED.
8. SEE WATER & WASTEWATER DETAILS FOR SERVICE DETAILS.
9. ALL WASTEWATER SHALL BE INSTALLED PER TCEQ CHAPTER 217, AND 290 REGULATIONS.

NOTES:

1. **ALL PRIVATE DRIVES ARE TO BUILT TO SUBGRADE PRIOR TO UTILITY INSTALLATION.**
2. **ALL WASTEWATER PIPE SHALL BE SDR-26 PVC WW PIPE UNLESS NOTED OTHERWISE.**
3. **MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE WASTEWATER PIPE AS PER TEXAS COMISSION ON ENVIRONMENTAL QUALITY RULES.**
4. **ALL MANHOLES TO HAVE 0.1' DROP ACROSS MANHOLE.**
5. **ALL W & WW CROSSING FOLLOW THE CROSSING DETAILS**

PIPE STIFFNESS NOTE:
SDR-26 PVC PIPE HAS A STIFFNESS OF 115 psi FOR ALL SIZES WHEN TESTED IN ACCORDANCE WITH ASTM D2412.

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24- HOURS PRIOR TO COMMENCING CONSTRUCTION.



SCALE: 1" = 50'

DESIGNED BY: CRB/PS	DRAFTED BY:
DATE	
REVISION	

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
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SHEET NAME: OVERALL WASTEWATER COLLECTION PLAN

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

CALL BEFORE YOU DIG 1-800-245-4545 TEXAS ONE CALL SYSTEM

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC. ID # F5791
11-26-2024

DATE: November 2024

JOB NUMBER: 5375

SHEET: 43 OF 62

SD-24-0243

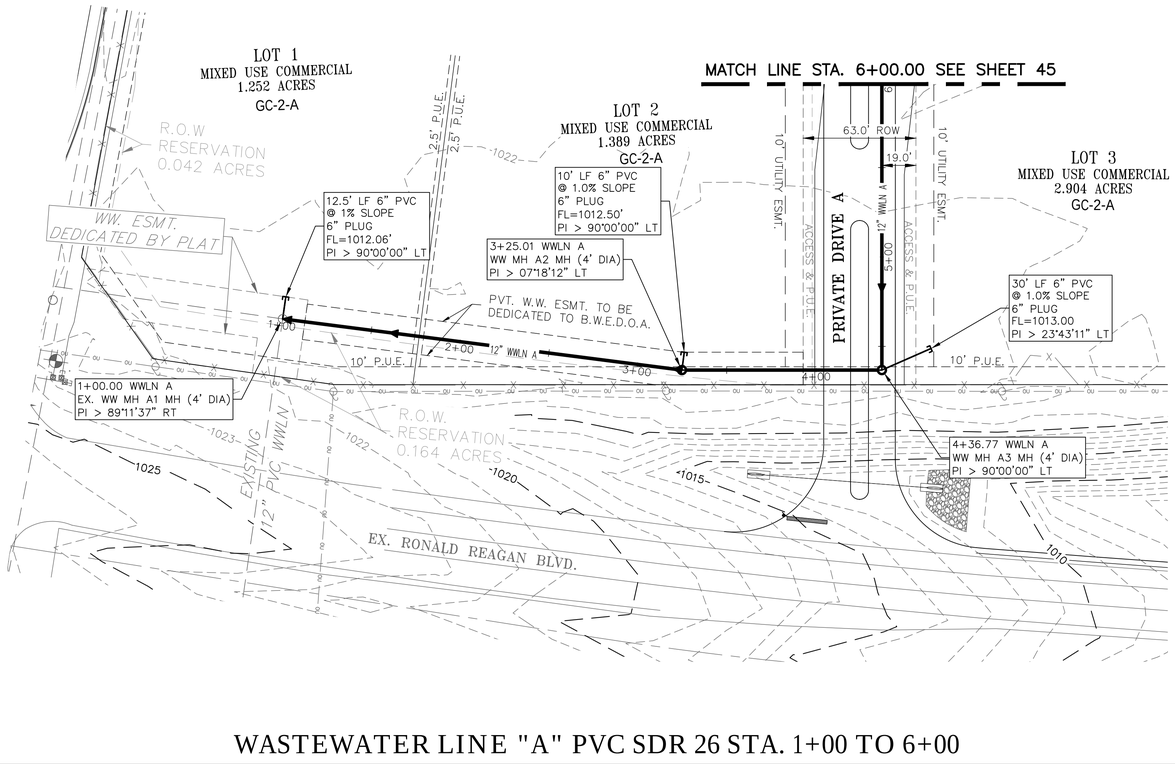
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SUB-WASTE.CTB

NOTES:
1. ALL PRIVATE DRIVES ARE TO BUILT TO SUBGRADE PRIOR TO UTILITY INSTALLATION.
2. ALL WASTEWATER PIPE SHALL BE SDR-26 PVC WW PIPE UNLESS NOTED OTHERWISE.
3. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE WASTEWATER PIPE AS PER TEXAS COMISSION ON ENVIRONMENTAL QUALITY RULES.
4. ALL MANHOLES TO HAVE 0.1' DROP ACROSS MANHOLE.
5. ALL W & WW CROSSING FOLLOW THE CROSSING DETAILS

PIPE STIFFNESS NOTE:
SDR-26 PVC PIPE HAS A STIFFNESS OF 115 psi FOR ALL SIZES WHEN TESTED IN ACCORDANCE WITH ASTM D2412.

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.

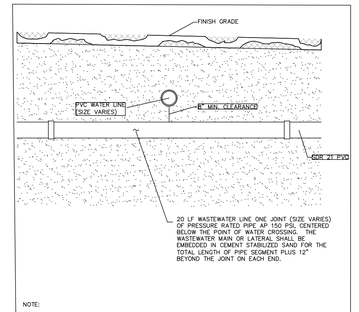


LEGEND

S	PROPOSED SINGLE SERVICE
	PROPOSED PLUG AND CAP
	PROPOSED MANHOLE
	EXISTING MANHOLE
	FLOW DIRECTION ARROW
940	EXISTING MAJOR CONTOUR
	EXISTING MMINOR CONTOUR

0 40' 80'

SCALE: 1" = 40'



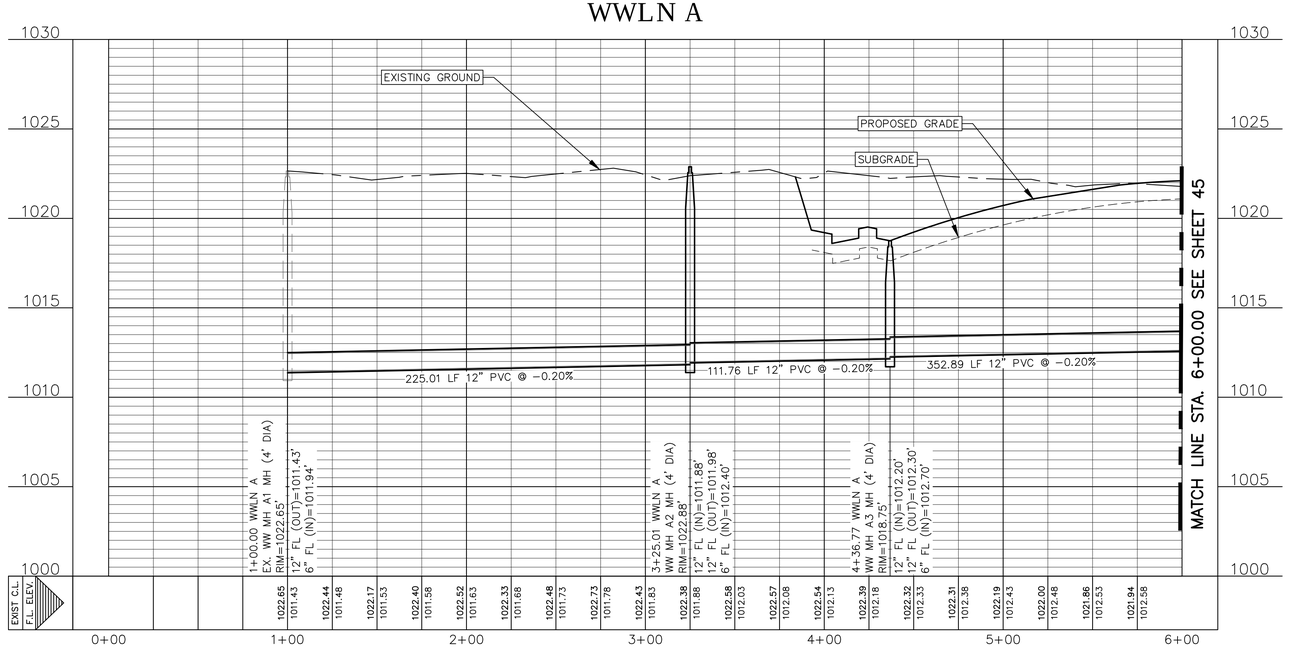
NOTE:
THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF 6" ABOVE AND 4" BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN THE CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATE WASTEWATER MAINS DURING FUTURE CONSTRUCTION.

TCEQ NEW WATER/WASTEWATER CROSSING DETAIL
N.T.S.

PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

WASTEWATER LINE "A" PVC SDR 26 STA. 1+00 TO 6+00

WWLN A



SD-24-0243

DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office
5501 West William Cannon Dr. 12129 RR (620 N., Ste. 600)
Austin, Texas 78749 Austin, Texas 78750
Phone No. (512) 280-5160 www.cbdeng.com

SHEET NAME: WASTEWATER LINE A (1+00.00 TO 6+00.00)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

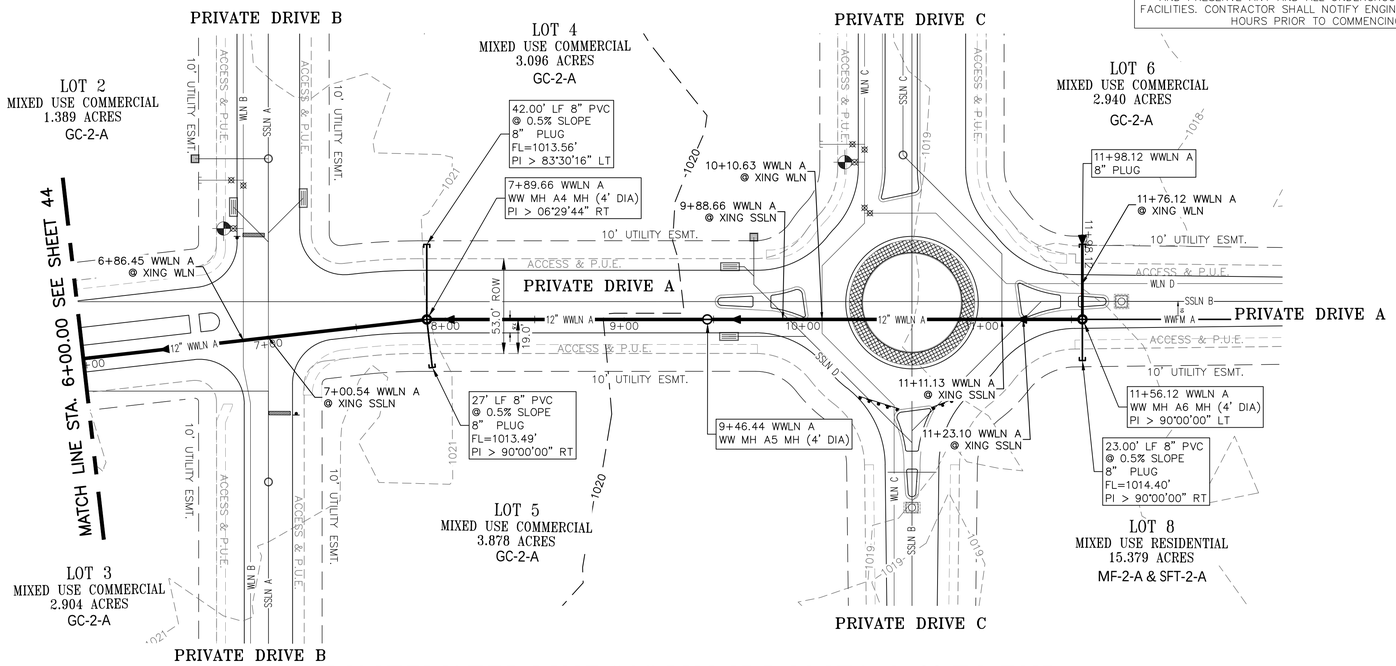
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET: 44 OF 62

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SUB-WASTE.CTB

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.



PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

WASTEWATER LINE "A" PVC SDR 26 STA. 6+00 TO END

LEGEND

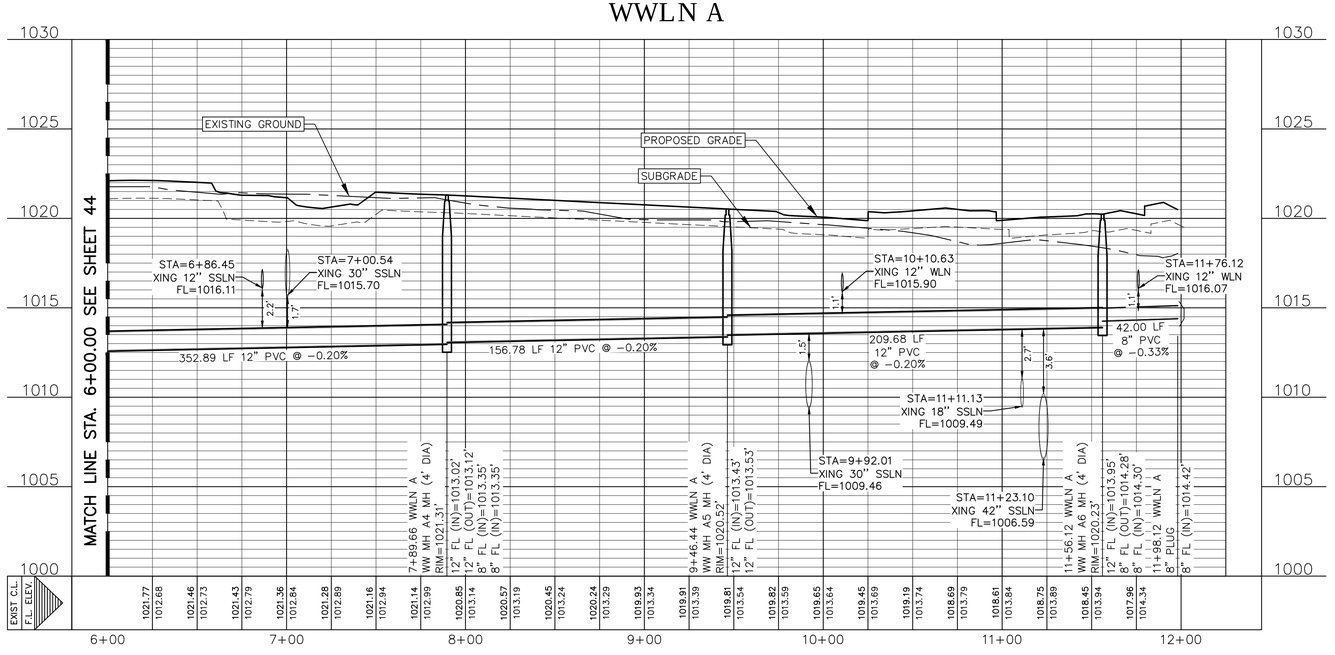
- S — PROPOSED SINGLE SERVICE
- PROPOSED PLUG AND CAP
- PROPOSED MANHOLE
- EXISTING MANHOLE
- FLOW DIRECTION ARROW
- 940 — EXISTING MAJOR CONTOUR
- EXISTING MMINOR CONTOUR

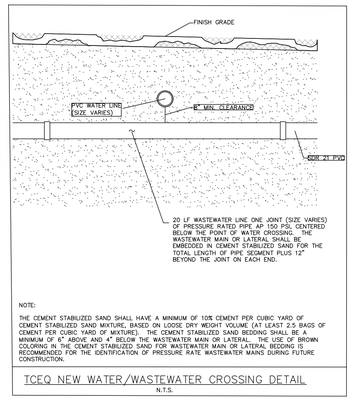


SCALE: 1" = 40'

NOTES:
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TCEQ NEW WATER/WASTEWATER CROSSING DETAIL
N.T.S.

SD-24-0243

DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750
Phone No. (512) 280-5160
www.cbdeng.com

SHEET NAME: WASTEWATER LINE A (6+00.00 TO END)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

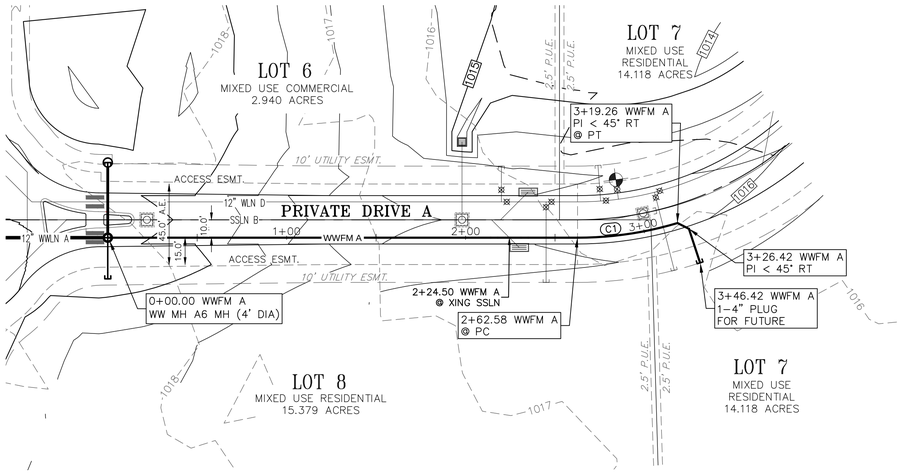
DATE: November 2024
JOB NUMBER: 5375
SHEET: 45 OF 62

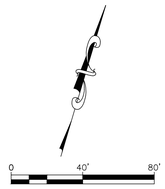
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SUB-WASTE.CTB



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SCALE: 1" = 40'

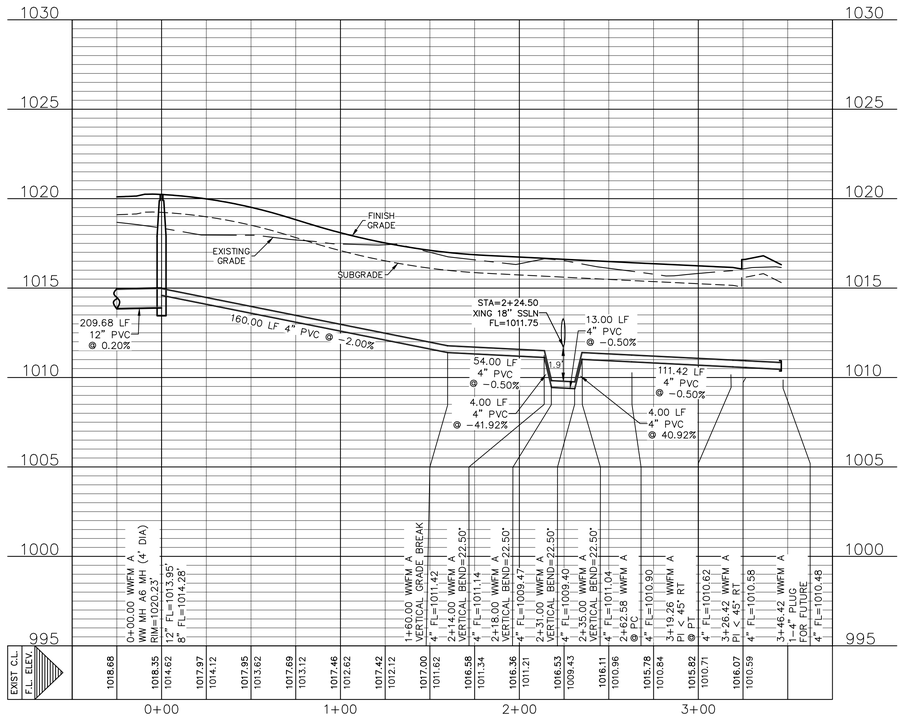
LEGEND

- PROPOSED MANHOLE
- EXISTING MANHOLE
- FLOW DIRECTION ARROW
- 940 EXISTING MAJOR CONTOUR
- EXISTING MMINOR CONTOUR

Curve Table					
Curve #	Radius	Tangent	Delta	Chord	Arc Length
C1	195.00'	28.54'	016°39'14"	56.48'	56.68'

PROFILE SCALE
HORIZ. 1" = 40'
VERT. 1" = 4'

4" WASTEWATER FORCE MAIN A PVC SDR 26 STA. 0+00 TO END



DESIGNED BY: CRB/PS
DRAFTED BY:

DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F5791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: WASTEWATER FORCE MAIN A (0+00 TO END)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F5791
11-26-2024

DATE November 2024
JOB NUMBER 5375
SHEET 46 OF 62

SD-24-0243

FILE PATH: J:\ACAD\SD375\dwg\CONSTRUCTION PLANS\Site Plan\SD75-WASTEWATER P1.dwg - Nov 26, 2024 - 3:08pm

SUB-ENGINEERING.CTB

LOT 1

BAR W RANCH COMMERCIAL FINAL PLAT DOC. NO. 2020096319

HARVEY A. MEYER AND WIFE, LAURA M. MEYER DOC.NO. 2015041024

STREET LIGHTING ILLUMINATION = 150' RADIUS (TYP.)

EX. KAUFFMAN LOOP

APPROX. LOCATION OF EXISTING CURB RAMP NEED SURVEY

SUBDIVISION BOUNDARY

10' P.U.E.

PRIVATE DRIVE B

PRIVATE DRIVE C

PRIVATE DRIVE A

PHASE 1

PHASE 2

PHASE 3

ACCESS ESMT.

10' UTILITY ESMT.

2.5' P.U.E.

R150.0' TYP.

OFF-SITE POLE BARN

CEF

LOT 1
MIXED USE COMMERCIAL
1.252 ACRES
GC-2-A

LOT 2
MIXED USE COMMERCIAL
1.389 ACRES
GC-2-A

LOT 3
MIXED USE COMMERCIAL
2.904 ACRES
GC-2-A

LOT 4
MIXED USE COMMERCIAL
3.096 ACRES
GC-2-A

LOT 5
MIXED USE COMMERCIAL
3.878 ACRES
GC-2-A

LOT 6
MIXED USE COMMERCIAL
2.940 ACRES
GC-2-A

LOT 7
MIXED USE RESIDENTIAL
14.118 ACRES
MF-2-A & SFT-2-A

LOT 8
MIXED USE RESIDENTIAL
15.379 ACRES
MF-2-A & SFT-2-A

LOT 9
MIXED USE RESIDENTIAL
OPEN SPACE
6.518 ACRES
MF-2-A & SFT-2-A

EX. RONALD REAGAN BLVD.

GAS

STREET LIGHTING ILLUMINATION = 150' RADIUS (TYP.)

LEGEND

- STREET LIGHT–EXISTING
- STREET LIGHT–PROPOSED
- STANDARD STREET BARRICADE

0 60' 120'

SCALE: 1" = 60'

DESIGNED BY: CRB/PS	DRAFTED BY:

DATE

REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying

Main Office:
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Austin, Texas 78749
Phone No. (512) 280-5160

North Office:
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

FIRM ID #F3791

SHEET NAME: LIGHTING PLAN

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791

11-26-2024

DATE: November 2024

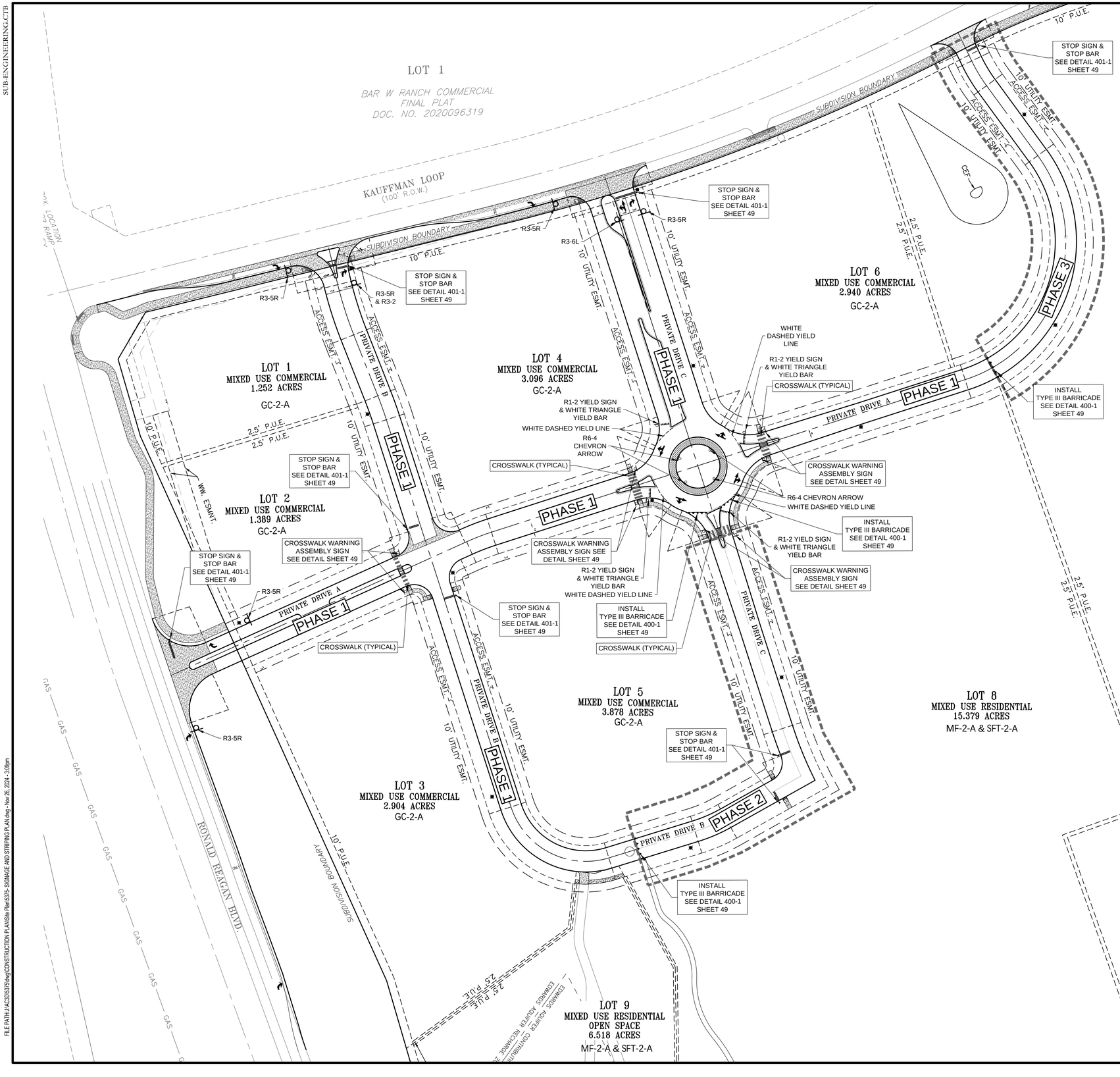
JOB NUMBER: 5375

SHEET: 47 OF 62

SD-24-0243

FILE PATH: J:\AC3D\5375\dwg\CONSTRUCTION PLANS\Site Plan\5375-LIGHTING PLAN.dwg - Nov 26, 2024 - 3:06pm

SUB-ENGINEERING.CTB



LEGEND

- STREET LIGHT-PROPOSED
- STOP SIGN / STREET NAME SIGN
- STOP BAR
- BARRICADE
- CROSSWALK
- ADA RAMP

SYMBOLS MAY BE EXAGERATED FOR CLARITY

0 60' 120'

SCALE: 1" = 60'

DESIGNED BY: CRB/PS	DRAFTED BY:
DATE	
REVISION	

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749 Phone No. (512) 280-5160
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: SIGNAGE & STRIPING PLAN

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791

11-26-2024

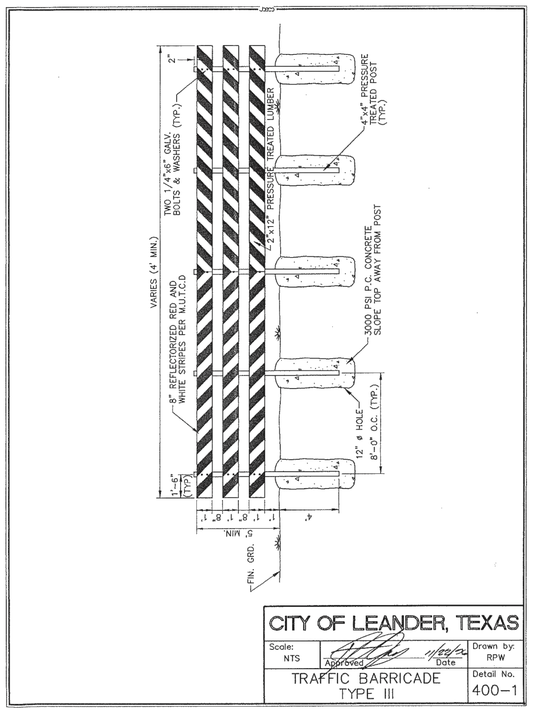
DATE: November 2024

JOB NUMBER: 5375

SHEET: 48 OF 62

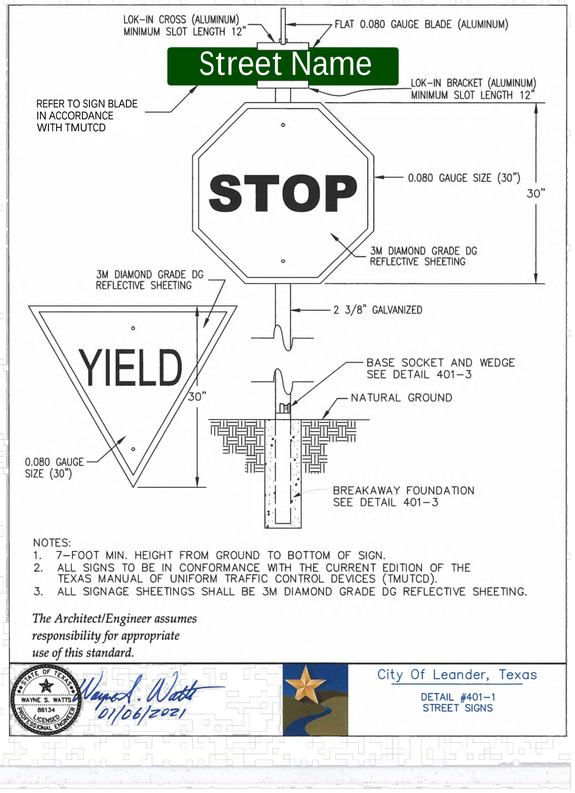
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CITY OF LEANDER, TEXAS

Scale: NTS	Approved	Date	Drawn by: RPW
TRAFFIC BARRICADE TYPE III			Detail No. 400-1



NOTES:
1. 7-FOOT MIN. HEIGHT FROM GROUND TO BOTTOM OF SIGN.
2. ALL SIGNS TO BE IN CONFORMANCE WITH THE CURRENT EDITION OF THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
3. ALL SIGNAGE SHEETINGS SHALL BE 3M DIAMOND GRADE DG REFLECTIVE SHEETING.

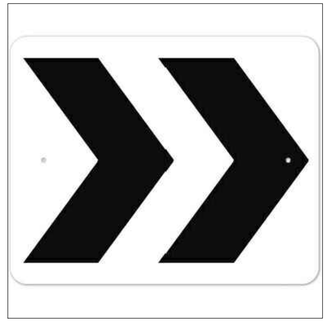
The Architect/Engineer assumes responsibility for appropriate use of this standard.

STATE OF TEXAS WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER

Wayne S. Watts 01/06/2021

City Of Leander, Texas

DETAIL #401-1
STREET SIGNS



R6-4
CHEVRON ARROWS



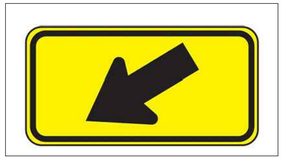
R3-6L



R3-5R



W11-2



W16-7P

CROSSWALK WARNING ASSEMBLY SIGN



WHITE DASHED YIELD LINE

SCALE: N.T.S.



ROAD SPEED LIMIT	A	B	C
FOR POSTED SPEED EQUAL TO OR GREATER THAN 45 MPH	36"	3" TO 12"	24"
FOR POSTED SPEED EQUAL TO OR LESS THAN 40 MPH	18"	3" TO 12"	12"

WHITE TRIANGLE YIELD BAR

SCALE: N.T.S.



R3-2

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
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North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: SIGNAGE & STRIPING PLAN DETAILS

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS PATRICK M. SULLIVAN 142359 LICENSED PROFESSIONAL ENGINEER

CARLSON, BRIGANCE, & DOERING, INC. ID # F3791

11-26-2024

DATE November 2024

JOB NUMBER 5375

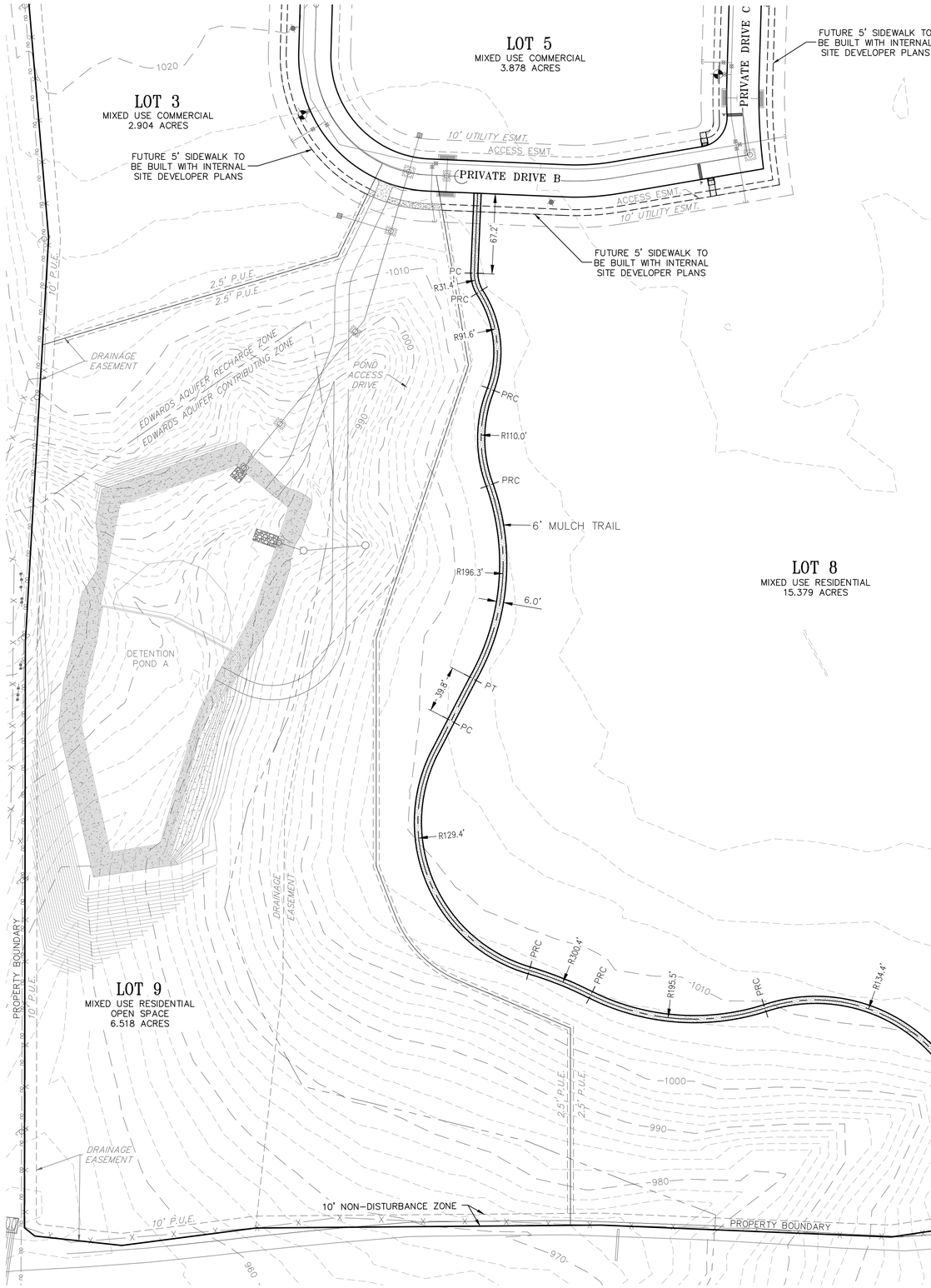
SHEET 49 OF 62

SD-24-0243

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SUB-STREET.CTB



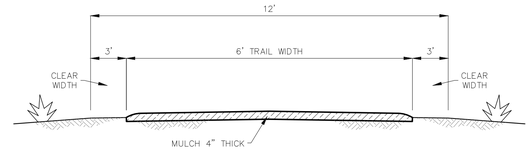
0 50' 100'

SCALE: 1" = 50'

LEGEND

- 936 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- TRAIL
- FUTURE SIDEWALK
- X — EXISTING WIRE FENCE

PHASE 4



TRAIL DETAIL
N.T.S.

NOTE:
THE CONSTRUCTION OF THE TRAIL SHALL BE BUILT CONCURRENTLY WITH THE DEVELOPMENT OF EITHER LOT 7 OR LOT 8, WITH THE COMMENCEMENT OF CONSTRUCTION TO COINCIDE WITH THE EARLIER OF THE TWO DEVELOPMENT PROJECTS.

SD-24-0243

DESIGNED BY: CRB/PS	DRAFTED BY:
DATE	
REVISION	

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
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Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
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SHEET NAME: TRAIL PLAN

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

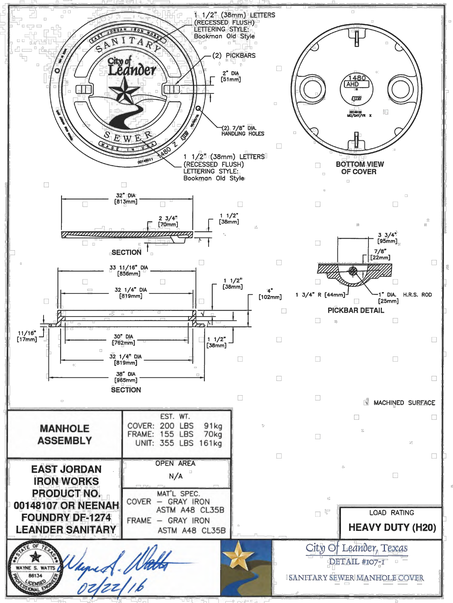
STATE OF TEXAS
PATRICK M. SULLIVAN
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LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
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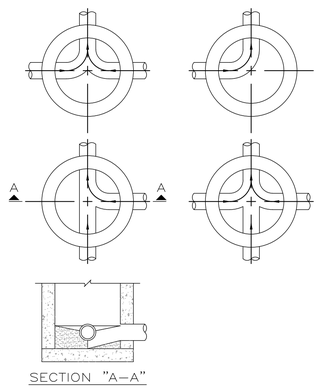
JOB NUMBER: 5375

SHEET: 50 OF 62

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FLOW PATTERNS FOR INVERT CHANNELS



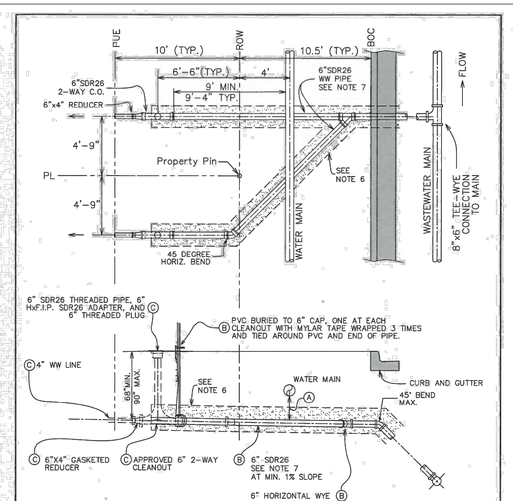
SECTION "A–A"

NOTES:

1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
2. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOW.
3. CHANNELS FOR FUTURE CONSTRUCTIONS (STUBS) SHALL BE CONSTRUCTED, FILLED WITH SAND, AND COVERED WITH 1" OF MORTAR.
4. SLOPE MANHOLE ITSELF WITH A 1:2 SLOPE FROM MANHOLE WALL TO CHANNEL.
5. INVERT SHALL BE A MINIMUM OF 1/2 THE DIAMETER OF THE LARGEST PIPE OR 4" DEEP.

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

WASTEWATER MANHOLE INVERT DETAIL



NOTES:

Ⓐ WATER MAIN SHALL CROSS ABOVE 6" WASTEWATER SERVICE, TWO–FOOT (2') MINIMUM VERTICAL SEPARATION.

Ⓑ TO BE INSTALLED AND INSPECTED DURING SUBDIVISION CONSTRUCTION. UTILITY CONTRACTOR INSTALLS SERVICE STUB WITH PLUG OR CAP.

Ⓒ 2–WAY CLEANOUTS, 6" MxF.I.P. ADAPTER, REDUCER, AND 4" SERVICE LINE INSTALLED BY BLDG. PLUMBER. PERMITS DEPARTMENT SHALL INSPECT CUSTOMER'S WASTEWATER LINE AND ALL APPURTENANCES INSTALLED BY BUILDING PLUMBER.

WAYNE S. WATTS 98134 LICENSED PROFESSIONAL ENGINEER
09/26/18
City Of Leander, Texas
DETAIL #101–2
1 OF 2
WASTEWATER SERVICE CONNECTIONS

NOTES

1. DURING SUBDIVISION CONSTRUCTION, UTILITY CONTRACTOR INSTALLS WASTEWATER CONNECTION TO MAIN, 6" HORIZONTAL WYE FOR DOUBLE SERVICES, 6" SERVICE BRANCH, AND PLUG(S) FOR 6" SERVICE BRANCH STUB. CONTRACTOR TIES MYLAR TAPE TO END OF 6" STUB, WRAPS 3 TIMES AROUND LENGTH OF PVC BURIED TO THE DEPTH OF THE 6" STUB AND TIES TO TOP OF PVC EXTENDING A MINIMUM OF 2 FEET ABOVE GROUND.

   ALL WASTEWATER PIPING SHALL HAVE ELASTOMERIC GASKET TYPE JOINTS AND SHALL SLOPE DOWNWARD TO MAIN 1% (1/8" PER FOOT) MINIMUM TO 45° MAXIMUM. DEPTH OF SERVICE STUB AT PROPERTY LINE WILL BE SHOWN ON PLANS BY ENGINEER. IF GREATER THAN 8', OTHERWISE THE INSTALLED DEPTH WILL TYPICALLY BE 6' TO 8'. IF WASTEWATER SERVICE LINE TO MAIN REQUIRES DEFLECTION EXCEEDING 45°, REFER TO DETAIL 520–6. ALL INSTALLATIONS SHALL BE MADE IN ACCORDANCE WITH INFORMATION SHOWN ON APPLICABLE STANDARD DRAWINGS AND WILL BE INSPECTED BY CITY OF LEANDER CONSTRUCTION INSPECTION PERSONNEL.

2. CUSTOMER REMOVES PLUG FROM 6" SERVICE LINE STUB, INSTALLS 6" 2–WAY CLEANOUT, 6" BY 4" REDUCER, RISER FOR CLEANOUT, 6" HxF.I.P. ADAPTER, 6" THREADED PLUG, AND 4" SERVICE LINE TO STRUCTURE. IF WASTEWATER WILL NOT SATISFACTORILY FLOW BY GRAVITY FROM STRUCTURE TO SEWER SERVICE STUB & WASTEWATER MAIN, PUMP EQUIPMENT MUST BE PROVIDED BY THE CUSTOMER AS PART OF CUSTOMER'S WASTEWATER SYSTEM.

3. CUSTOMER IS RESPONSIBLE FOR PUBLIC PIPING SYSTEM UNTIL WASTEWATER IS CONNECTED. ANY MISSING OR DAMAGED PARTS SHALL BE REINSTALLED BY CUSTOMER WHO SHALL GUARANTEE, FOR A PERIOD OF TWO (2) YEARS FROM DATE OF ACCEPTANCE, THAT CONNECTIONS TO CITY SYSTEMS ARE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIAL. CUSTOMER ALSO HAS THE RESPONSIBILITY TO ASSURE THAT ALL 2–WAY–CLEANOUTS REMAIN CLEAR OF SIDEWALKS AND OTHER OBSTRUCTIONS.

4. CITY OF LEANDER ACTIVITY IS LIMITED TO INSPECTION OF CONNECTIONS TO THE CITY'S WASTEWATER SYSTEM. FOR MAINTENANCE PURPOSES, THE CITY'S RESPONSIBILITY ENDS AT THE CUSTOMER'S WASTEWATER CONNECTION TO THE 2–WAY–CLEANOUT.

5. PIPING AND TUBING IN STREET RIGHT–OF–WAY AND IN EASEMENT AREA SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY CITY OF AUSTIN STANDARD SPECIFICATION SECTION 510.3 (14) UNLESS OTHERWISE NOTED ON THIS DETAIL. 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 MINIMUM COVER BELOW FINAL STREET GRADE OF 42". ANY EXCEPTION MUST BE SPECIFICALLY APPROVED BY THE ENGINEER.

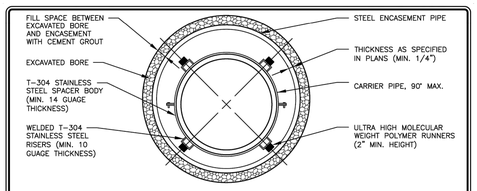
6. ALL SANITARY SEWER PIPE WITHIN 9' OF WATER MAINS SHALL BE BEDDED IN CEMENT STABILIZED SAND PER TCEQ CHAPTER 217 & 290 REQUIREMENTS. BEDDING SHALL EXTEND A MINIMUM OF 12" ABOVE PIPE, 4" BELOW PIPE, AND 12" BEYOND JOINTS AT EACH END.

7. PIPE MATERIAL FOR WASTEWATER SERVICES SHALL BE 6" SDR–26 PVC D2241 160 PSI RATED.

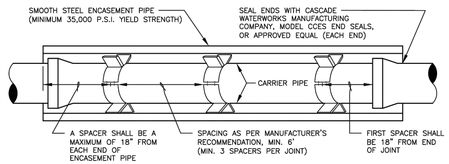
8. NO METER BOX OR CLEAN OUT SHALL BE SET IN SIDEWALK OR DRIVEWAY AREA WITHOUT WRITTEN APPROVAL FROM THE CITY ENGINEERING DEPT.

9. NO JOINTS SHALL BE PERMITTED BETWEEN THE 6"x6" HORIZONTAL WYE AND THE 6" 2–WAY CLEANOUT EXCEPT FOR THE 6" 45–DEGREE BEND REQUIRED FOR DOUBLE SERVICES.

WAYNE S. WATTS 98134 LICENSED PROFESSIONAL ENGINEER
09/26/18
City Of Leander, Texas
DETAIL #101–2
2 OF 2
WASTEWATER SERVICE CONNECTIONS



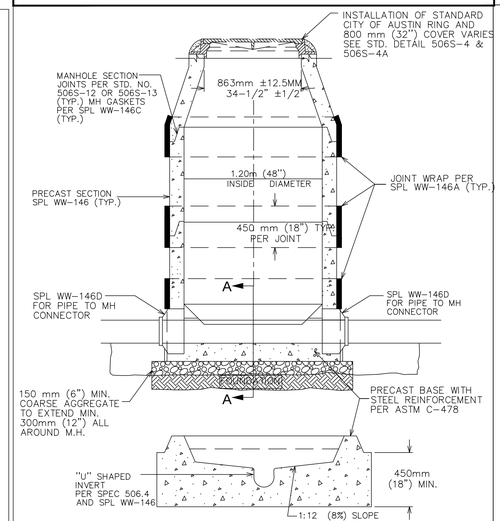
PIPE SIZE–CARRIER (DIAMETER)	PIPE SIZE–CASING (DIAMETER) (MIN.)	MINIMUM PIPE THICKNESS (INCHES)	
6"	16"	1/4	0.2500
8"	18"	1/4	0.2500
10"	20"	5/16	0.3125
12" ~ 14"	24"	3/8	0.3750
16" ~ 18"	30"	7/16	0.4375
20"	36"	1/2	0.5000
24"	42"	1/2	0.5000
30"	48"	1/2	0.5000



NOTES:

1. CASING SPACER CONFIGURATION AND SPACING SHALL BE AS SHOWN ON MANUFACTURER'S DRAWINGS FOR SPECIFIC WORK; THESE MUST BE ACCEPTABLE TO THE CITY OF ROUND ROCK.
2. CASING SPACER SHALL BE AS MANUFACTURED BY CASCADE WATERWORKS MANUFACTURING COMPANY, MODEL CCS, OR APPROVED EQUAL.

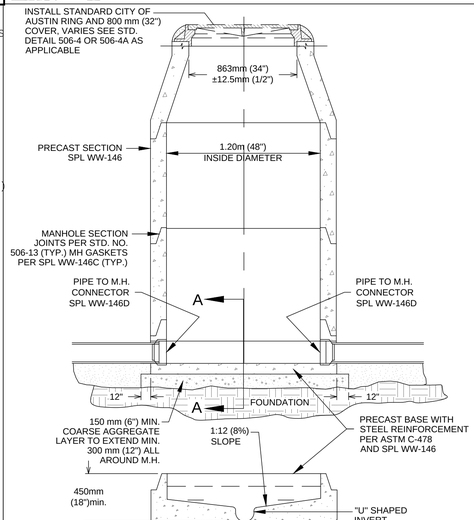
RECORD SIGNED COPY ON FILE AT UARS DEPARTMENT	CITY OF ROUND ROCK	DRAWING NO: WT–16
APPROVED 03–01–18 DATE	PIPE ENCASEMENT DETAIL	ROUND ROCK TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		



TYPICAL PRECAST BASE

NOTE:
1. THE MANHOLE BASE SHALL BE BEDDED ON 150 mm (6") COARSE AGGREGATE. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE.
2. MANHOLE FOUNDATION SHALL MEET OR EXCEED SPEC. 506.5B.

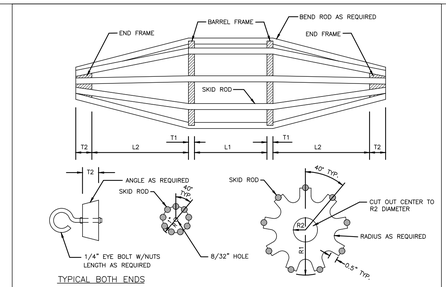
CITY OF AUSTIN AUSTIN WATER UTILITY	WATER TIGHT WASTEWATER MANHOLE ON PRECAST BASE	
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/20	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S–6



TYPICAL PRECAST BASE

NOTE:
1. THE MANHOLE BASE SHALL BE BEDDED ON 150 mm (6") COARSE AGGREGATE. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE.
2. MH FOUNDATION SHALL MEET OR EXCEED STD. SPEC. 506.5B.

CITY OF AUSTIN AUSTIN WATER UTILITY	WASTEWATER MANHOLE ON PRECAST BASE	
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	STANDARD NO. 506S-10



TYPICAL BOTH ENDS

END FRAME

BARREL FRAME

NOTE: WELD ALL RODS TO FRAME.

MANDREL SHALL BE CONSTRUCTED FROM METAL OR RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200 PSI WITHOUT BEING DEFORMED.

MANDREL DIMENSIONS
5% DEFLECTION
FOR O. D. CONTROLLED PVC PIPE
(ALL DIMENSIONS IN INCHES)

SIZE	TYPE	O.D. AVERAGE	MIN. WALL THICKNESS	L1	L2	R1	R2	T1	T2	ROD DIAMETER
6"	D3034 SDR35	6.275	0.180	4.50	6	2.81	0.75	0.375	1.0	0.375
8"	D3034 SDR35	8.400	0.240	6.00	6	3.76	1.25	0.375	1.0	0.375
10"	D3034 SDR35	10.500	0.300	7.50	6	4.70	1.50	0.375	1.0	0.375
12"	D3034 SDR35	12.500	0.360	9.00	6	5.60	1.75	0.375	1.0	0.375
15"	D3034 SDR35	15.300	0.437	11.25	6	6.85	2.00	0.375	1.0	0.375
18"	F679 T–1	18.701	0.536	13.50	9	8.37	2.50	0.50	1.5	0.50
21"	F679 T–1	22.047	0.632	15.75	9	9.87	3.00	0.50	1.5	0.50
24"	F679 T–1	24.803	0.711	18.00	9	11.11	3.50	0.50	1.5	0.50
27"	F679 T–1	27.953	0.801	20.25	9	12.52	4.00	0.50	1.5	0.50
* 6"	SDR26	6.275	0.241			2.89		MANDREL: 5.50 IN. DIA.		
* 8"	SDR26	8.400	0.323			3.88		MANDREL: 7.36 IN. DIA.		
* 12"	SDR26	12.500	0.481			5.48		MANDREL: 10.96 IN. DIA.		

TYPICAL MANDREL DETAIL

NOT TO SCALE

SEE SHEET NO. 2 FOR MANDREL NOTES.

ADDITIONAL WATER & WASTEWATER SERVICE NOTES:

1. WASTEWATER SERVICE LINES SHALL BE SDR26 PVC PRESSURE RATED PIPE (160 PSI).
2. THE WATER SERVICE LINES SHALL CROSS ABOVE WASTEWATER SERVICE LINES WITH A MINIMUM OF 2 FEET OF SEPARATION. THE WASTEWATER SERVICE SHALL BE 11.5' IN LENGTH AT THE WATER CROSSING AND CENTERED UNDER THE WATER SERVICE.
3. A HORIZONTAL SEPARATION OF 4 FEET IS REQUIRED BETWEEN THE METER SERVICE AND THE WASTEWATER SERVICE LINE.

DESIGNED BY: CRB/PS | DRAFTED BY:

REVISION | DATE

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F5791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749
North Office: 12129 RR (620 N.), Ste. 600 Austin, Texas 78750
Phone No.: (512) 280-5160
www.cbdeng.com

SHEET NAME: WASTEWATER DETAILS

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

PATRICK M. SULLIVAN 142359 LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC. ID # F5791
11-26-2024

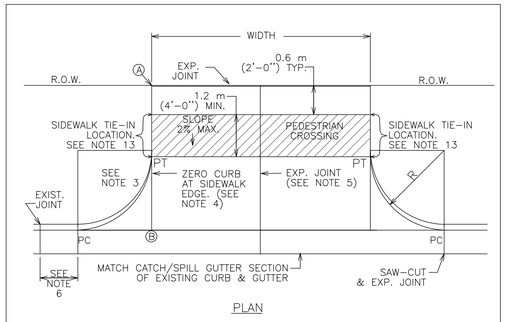
DATE November 2024

JOB NUMBER 5375

SHEET 51 OF 62

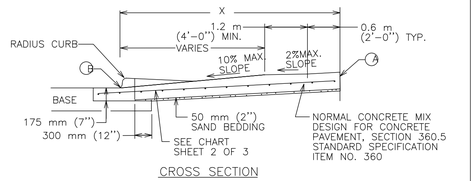
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SUB-ENGINEERING.CTB
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PLAN

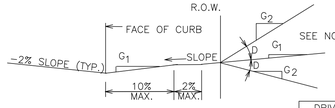
NOTE: ALL DRIVEWAYS SHALL BE SLOPED TOWARDS THE STREET FROM THE R.O.W. LINE. ELEVATION OF Ⓑ POINT, A ABOVE Ⓒ POINT B IS, TYPICALLY A MINIMUM OF 150 mm (6") PLUS 20 mm/m (¼" RISE/FOOT) OVER DISTANCE "X" IN METERS (FEET).



CROSS SECTION

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN	02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 1 OF 2

USE	THICKNESS	REINFORCEMENT
DRIVEWAYS FOR PASSENGER VEHICLE PARKING LOTS	150 mm (6") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF 13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS
ALL OTHERS	175 mm (7") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF 13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS



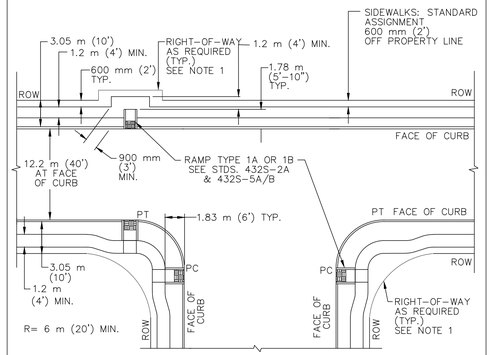
ALLOWABLE GRADES

DRIVEWAY VOLUME (ADT)	D=GRADE CHANGE STD.	MAX.
>1500	0%	3%
500-1500	3%	6%
< 500	6%	15%

NOTES:

1. ALL TYPE II DRIVEWAYS SHALL HAVE RADIUS ENDS.
2. DRIVEWAY WIDTHS AND RADII DIMENSIONS, ONE/TWO WAY TRAVEL REQUIREMENTS, AND GEOMETRIC LAY-OUT ARE HIGHLY VARIABLE. SUBJECT TO SITE SPECIFIC CONDITIONS AND REQUIREMENTS. SEE TRANSPORTATION CRITERIA MANUAL. SECTION 5 "DRIVEWAYS".
3. THE DRIVEWAY EDGE SHALL BE SMOOTHLY TRANSITITIONED INTO THE SIDEWALK TIE-IN LOCATION BEGINNING AT THE RADIUS PC LINE.
4. "ZERO" CURB AT PT OR SIDEWALK EDGE, WHICHEVER IS ENCOUNTERED FIRST.
5. PLACE AN EXPANSION JOINT DOWN THE CENTER OF DRIVEWAY ALL DRIVEWAYS.
6. IF DIMENSION IS LESS THAN 1.5 METERS (5 FEET), REMOVE CURB AND GUTTER TO EXISTING JOINT AND POUR MONOLITHICALLY WITH DRIVEWAY.
7. IF THE BASE IS OVER-EXCAVATED WHERE THE CURB AND GUTTER WERE REMOVED, BACKFILL WITH CONCRETE MONOLITHICALLY WITH THE DRIVEWAY.
8. TYPE II DRIVEWAYS ARE TO BE LOCATED NO CLOSER TO THE CORNER OF INTERSECTING RIGHT OF WAY THAN 60% OF PARCEL FRONTAGE AT 30 METERS (100 FEET): WHICHEVER IS LESS.
9. DRIVEWAY SHALL NOT BE CONSTRUCTED WITHIN THE CURB RETURN OF A STREET INTERSECTION.
10. WHILE THE PROPERTY OWNER REMAINS RESPONSIBLE FOR GRADE BREAKS WITHIN PRIVATE PROPERTY, THE FIRE DEPARTMENT SHALL BE CONSULTED WHERE THE DRIVEWAY IS ESSENTIAL TO EMERGENCY VEHICLE ACCESS AND "G2 IS GREATER THAN 15%.
11. USE 12 MM (1/2") ASPHALT BOARD OR OTHER APPROVED MATERIAL FOR CURB AND GUTTER EXPANSION JOINTS. SIDEWALK, AT THE R.O.W. LINE AND AT MIDWIDTH, SEE NOTE 5.
12. SEE TRANSPORTATION CRITERIA MANUAL, SECTION 5 FOR OTHER DRIVEWAY REQUIREMENTS.
13. THE SIDEWALK, REGARDLESS OF ITS LOCATION WITH RESPECT TO THE CURB OR PROPERTY LINE, SHALL BE CONNECTED TO THE DRIVEWAY AT THESE LOCATIONS.
14. WATER METER BOXES AND WASTEWATER CLEAN OUTS ARE PROHIBITED FROM BEING LOCATED IN DRIVEWAY AREAS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN	02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 2 OF 2



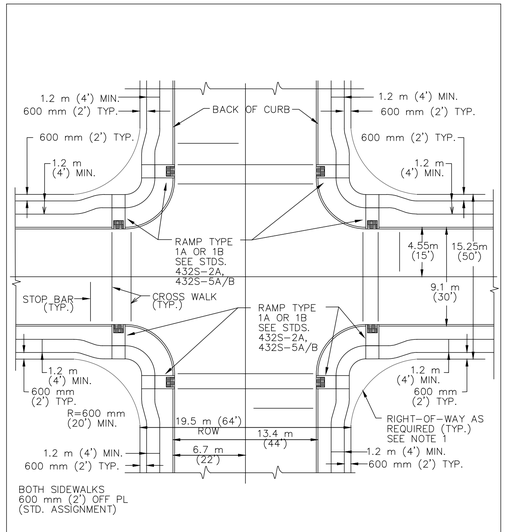
TYPICAL PLAN

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE 1A/1B CURB RAMPS- "T" INTERSECTION	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-3C 1 OF 2

GENERAL NOTES:

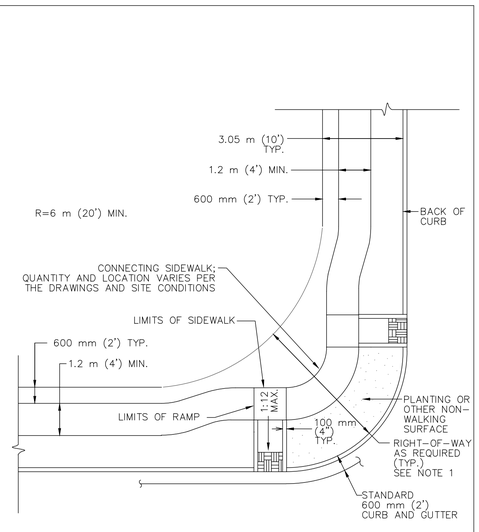
1. THIS STANDARD IS APPLICABLE FOR RAMP CONSTRUCTION WITHIN RIGHT-OF-WAY OR EASEMENT ONLY.
2. THIS STANDARD REPRESENTS A TYPICAL CURB RAMP DESIGN FOR A NEWLY CONSTRUCTED INTERSECTION WITH A 6 m (20') RADIUS. LARGER RADII, STREET GRADES, LIMITED SIGHT DISTANCES, STREET CLASSIFICATION, SIGNALIZATION AND OTHER FACTORS MAY REQUIRE THE ENGINEER OR DESIGNATED REPRESENTATIVE TO MODIFY THIS STANDARD. SUFFICIENT RIGHT-OF-WAY SHALL BE DEDICATED SUCH THAT THE ENTIRE CURB RAMP, INCLUDING LANDING, AND THE INTER-CONNECTING SIDEWALK ARE CONTAINED WITHIN THE RIGHT-OF-WAY.
3. THE CURB, GUTTER AND RAMP SYSTEM SHALL BE CONFIGURED TO MAINTAIN ALL RUNOFF FROM A 25 YEAR FREQUENCY STORM WITHIN THE RIGHT-OF-WAY (DRAINAGE CRITERIA MANUAL SECTION 1.2.2.B). WHEN THERE IS AN ELEVATION DIFFERENCE BETWEEN THE BOTTOM OF RAMPS (IE. ELEVATION AT THE GUTTER) WITHIN A QUADRANT OF AN INTERSECTION, THE LOWER ELEVATION RAMP SHALL BE CONSTRUCTED WITH A POSITIVE RAMP SLOPE OF 1:12 IN ACCORDANCE WITH STANDARDS 432S-5, 432S-5A AND 432S-5B.
4. STANDARD ASSIGNMENT OF SIDEWALKS IS 600 mm (2') OFF PROPERTY LINE, EXCEPT AS INDICATED ON THE DRAWINGS.
5. ALTHOUGH CURB RAMPS MAY BE PLACED WITHIN THE RADIUS, PLACING THE RAMP OUTSIDE OF THE RADIUS WILL ALLOW FOR THE GREATEST DIFFERENCE IN ELEVATION BETWEEN THE RAMPS.
6. WINGS ARE REQUIRED ONLY IF PEDESTRIANS WOULD NORMALLY CROSS THE RAMP.
7. LANDINGS SHALL BE FLAT AND MATCH PT, PC OR TOP OF CURB ELEVATION.
8. CURB RAMPS WILL BE PERPENDICULAR TO ROADWAY CENTERLINES AND SHALL ALIGN WITH EACH OTHER.
9. GRADES ON SIDEWALKS LEADING TO OR FROM THE RAMPS SHALL FOLLOW CURB GRADES.
10. THE SLOPE OF THE SIDEWALK WHICH IS LOCATED WITHIN THE RADIUS AND CONNECTS TWO CURB RAMPS SHALL NOT EXCEED 1:20. THE DEVELOPER, AS PART OF THE CURB RAMP INSTALLATION, SHALL CONSTRUCT THIS CONNECTING SIDEWALK.
11. STRIPING AND SIGNAGE NOT REQUIRED IN ALL INSTANCES. STOP BARS, IF REQUIRED, SHALL BE LOCATED 1.2 m (4') FROM CROSSWALK.
12. IF A MEDIAN EXTENDS INTO THE CROSSWALK AREA, AN OPENING SHALL BE PROVIDED IN THE MEDIAN THE SAME WIDTH AS THE CURB RAMP.
13. CURB INLETS SHALL NOT BE LOCATED WITHIN 3.0 m (10') OF A CURB RAMP.
14. GUTTER SHALL PROVIDE SMOOTH TRANSITION TO RAMPS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE 1A/1B CURB RAMPS- "T" INTERSECTION	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-3C 2 OF 2



TYPICAL PLAN

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE 1A/1B CURB RAMPS- FULL INTERSECTION	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-3B 1 OF 3



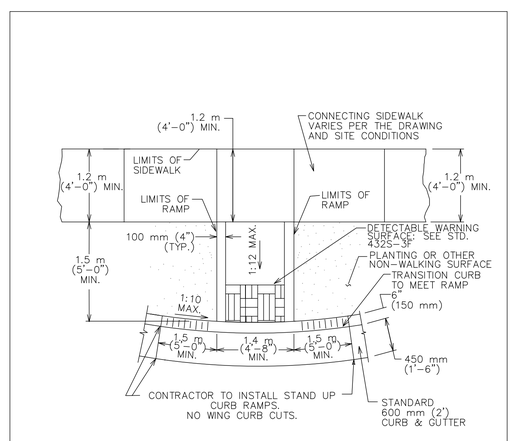
TYPICAL PLAN

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE 1A/1B CURB RAMPS- FULL INTERSECTION	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-3B 2 OF 3

GENERAL NOTES:

1. THIS STANDARD IS APPLICABLE FOR RAMP CONSTRUCTION WITHIN RIGHT-OF-WAY OR EASEMENT ONLY.
2. THIS STANDARD REPRESENTS A TYPICAL CURB RAMP DESIGN FOR A NEWLY CONSTRUCTED INTERSECTION WITH A 6 m (20') RADIUS. LARGER RADII, STREET GRADES, LIMITED SIGHT DISTANCES, STREET CLASSIFICATION, SIGNALIZATION AND OTHER FACTORS MAY REQUIRE THE ENGINEER OR DESIGNATED REPRESENTATIVE TO MODIFY THIS STANDARD. SUFFICIENT RIGHT-OF-WAY SHALL BE DEDICATED SUCH THAT THE ENTIRE CURB RAMP, INCLUDING LANDING, AND THE INTER-CONNECTING SIDEWALK ARE CONTAINED WITHIN THE RIGHT-OF-WAY.
3. THE CURB, GUTTER AND RAMP SYSTEM SHALL BE CONFIGURED TO MAINTAIN ALL RUNOFF FROM A 25 YEAR FREQUENCY STORM WITHIN THE RIGHT-OF-WAY (DRAINAGE CRITERIA MANUAL SECTION 1.2.2.B). WHEN THERE IS AN ELEVATION DIFFERENCE BETWEEN THE BOTTOM OF RAMPS (IE. ELEVATION AT THE GUTTER) WITHIN A QUADRANT OF AN INTERSECTION, THE LOWER ELEVATION RAMP SHALL BE CONSTRUCTED WITH A POSITIVE RAMP SLOPE OF 1:12 IN ACCORDANCE WITH STANDARDS 432S-5, 432S-5A AND 432S-5B.
4. STANDARD ASSIGNMENT OF SIDEWALKS IS 600 mm (2') OFF PROPERTY LINE, EXCEPT AS INDICATED ON THE DRAWINGS.
5. ALTHOUGH CURB RAMPS MAY BE PLACED WITHIN THE RADIUS, PLACING THE RAMP OUTSIDE OF THE RADIUS WILL ALLOW FOR THE GREATEST DIFFERENCE IN ELEVATION BETWEEN THE RAMPS.
6. WINGS ARE REQUIRED ONLY IF PEDESTRIANS WOULD NORMALLY CROSS THE RAMP.
7. LANDINGS SHALL BE FLAT AND MATCH PT, PC OR TOP OF CURB ELEVATION.
8. CURB RAMPS WILL BE PERPENDICULAR TO ROADWAY CENTERLINES AND SHALL ALIGN WITH EACH OTHER.
9. GRADES ON SIDEWALKS LEADING TO OR FROM THE RAMPS SHALL FOLLOW CURB GRADES.
10. THE SLOPE OF THE SIDEWALK WHICH IS LOCATED WITHIN THE RADIUS AND CONNECTS TWO CURB RAMPS SHALL NOT EXCEED 1:20. THE DEVELOPER, AS PART OF THE CURB RAMP INSTALLATION, SHALL CONSTRUCT THIS CONNECTING SIDEWALK.
11. STRIPING AND SIGNAGE NOT REQUIRED IN ALL INSTANCES. STOP BARS, IF REQUIRED, SHALL BE LOCATED 1.2 m (4') FROM CROSSWALK.
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13. CURB INLETS SHALL NOT BE LOCATED WITHIN 3.0 m (10') OF A CURB RAMP.
14. GUTTER SHALL PROVIDE SMOOTH TRANSITION TO RAMPS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE 1A/1B CURB RAMPS- FULL INTERSECTION	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-3B 3 OF 3



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE 1B SIDEWALK CURB RAMP	
RECORD COPY SIGNED BY BILL GARDNER	9/14/05 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-5B

GENERAL NOTES:

1. THIS STANDARD IS APPLICABLE FOR RAMP CONSTRUCTION WITHIN RIGHT-OF-WAY OR EASEMENT ONLY.
2. THIS STANDARD REPRESENTS A TYPICAL CURB RAMP DESIGN FOR A NEWLY CONSTRUCTED INTERSECTION WITH A 6 m (20') RADIUS. LARGER RADII, STREET GRADES, LIMITED SIGHT DISTANCES, STREET CLASSIFICATION, SIGNALIZATION AND OTHER FACTORS MAY REQUIRE THE ENGINEER OR DESIGNATED REPRESENTATIVE TO MODIFY THIS STANDARD. SUFFICIENT RIGHT-OF-WAY SHALL BE DEDICATED SUCH THAT THE ENTIRE CURB RAMP, INCLUDING LANDING, AND THE INTER-CONNECTING SIDEWALK ARE CONTAINED WITHIN THE RIGHT-OF-WAY.
3. THE CURB, GUTTER AND RAMP SYSTEM SHALL BE CONFIGURED TO MAINTAIN ALL RUNOFF FROM A 25 YEAR FREQUENCY STORM WITHIN THE RIGHT-OF-WAY (DRAINAGE CRITERIA MANUAL SECTION 1.2.2.B). WHEN THERE IS AN ELEVATION DIFFERENCE BETWEEN THE BOTTOM OF RAMPS (IE. ELEVATION AT THE GUTTER) WITHIN A QUADRANT OF AN INTERSECTION, THE LOWER ELEVATION RAMP SHALL BE CONSTRUCTED WITH A POSITIVE RAMP SLOPE OF 1:12 IN ACCORDANCE WITH STANDARDS 432S-5, 432S-5A AND 432S-5B.
4. STANDARD ASSIGNMENT OF SIDEWALKS IS 600 mm (2') OFF PROPERTY LINE, EXCEPT AS INDICATED ON THE DRAWINGS.
5. ALTHOUGH CURB RAMPS MAY BE PLACED WITHIN THE RADIUS, PLACING THE RAMP OUTSIDE OF THE RADIUS WILL ALLOW FOR THE GREATEST DIFFERENCE IN ELEVATION BETWEEN THE RAMPS.
6. WINGS ARE REQUIRED ONLY IF PEDESTRIANS WOULD NORMALLY CROSS THE RAMP.
7. LANDINGS SHALL BE FLAT AND MATCH PT, PC OR TOP OF CURB ELEVATION.
8. CURB RAMPS WILL BE PERPENDICULAR TO ROADWAY CENTERLINES AND SHALL ALIGN WITH EACH OTHER.
9. GRADES ON SIDEWALKS LEADING TO OR FROM THE RAMPS SHALL FOLLOW CURB GRADES.
10. THE SLOPE OF THE SIDEWALK WHICH IS LOCATED WITHIN THE RADIUS AND CONNECTS TWO CURB RAMPS SHALL NOT EXCEED 1:20. THE DEVELOPER, AS PART OF THE CURB RAMP INSTALLATION, SHALL CONSTRUCT THIS CONNECTING SIDEWALK.
11. STRIPING AND SIGNAGE NOT REQUIRED IN ALL INSTANCES. STOP BARS, IF REQUIRED, SHALL BE LOCATED 1.2 m (4') FROM CROSSWALK.
12. IF A MEDIAN EXTENDS INTO THE CROSSWALK AREA, AN OPENING SHALL BE PROVIDED IN THE MEDIAN THE SAME WIDTH AS THE CURB RAMP.
13. CURB INLETS SHALL NOT BE LOCATED WITHIN 3.0 m (10') OF A CURB RAMP.
14. GUTTER SHALL PROVIDE SMOOTH TRANSITION TO RAMPS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPE 1A/1B CURB RAMPS- "T" INTERSECTION	
RECORD COPY SIGNED BY BILL GARDNER	03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-3C 2 OF 2

DESIGNED BY: CRB/PS

DRAFTED BY:

REVISION	DATE

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750
Phone No. (512) 280-5160
www.cbdeng.com

SHEET NAME: STANDARD CONSTRUCTION DETAILS (1 OF 4)

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

PATRICK M. SULLIVAN 142359 LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
CARLSON, BRIGANCE, & DOERING, INC. ID # F3791
11-26-2024

DATE November 2024

JOB NUMBER 5375

SHEET 52 OF 62

SD-24-0243

FILE PATH: J:\ACD\5375\dwg\CONSTRUCTION PLANS\for Plot\5375-STANDARD CONSTRUCTION DETAILS.dwg - Nov 26, 2024 - 3:10pm

SUB-ENGINEERING.CTB

SUB-ENGINEERING.CTB

Appendix H – Curb Details

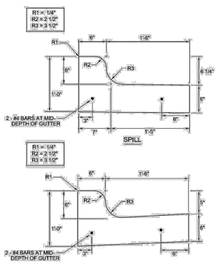


Figure H-1: 24-inch Curb & Gutter Detail

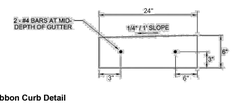
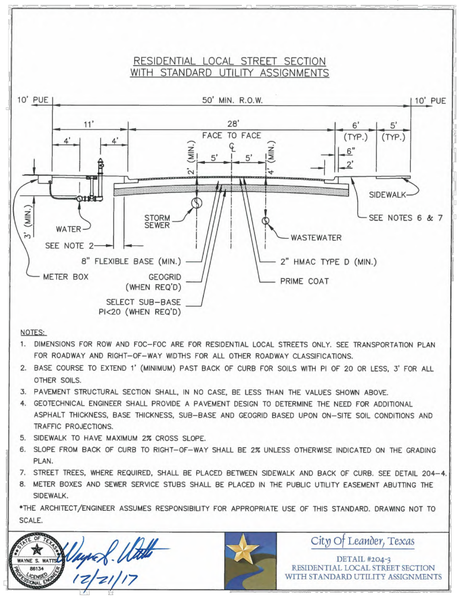


Figure H-2: 24" Ribbon Curb Detail



NOTES:

1. DIMENSIONS FOR ROW AND FOC-FOC ARE FOR RESIDENTIAL LOCAL STREETS ONLY. SEE TRANSPORTATION PLAN FOR ROADWAY AND RIGHT-OF-WAY WIDTHS FOR ALL OTHER ROADWAY CLASSIFICATIONS.
2. BASE COURSE TO EXTEND 1' (MINIMUM) PAST BACK OF CURB FOR SOILS WITH PI OF 20 OR LESS, 3' FOR ALL OTHER SOILS.
3. PAVEMENT STRUCTURAL SECTION SHALL, IN NO CASE, BE LESS THAN THE VALUES SHOWN ABOVE.
4. GEOTECHNICAL ENGINEER SHALL PROVIDE A PAVEMENT DESIGN TO DETERMINE THE NEED FOR ADDITIONAL ASPHALT THICKNESS, BASE THICKNESS, SUB-BASE AND GEOGRID BASED UPON ON-SITE SOIL CONDITIONS AND TRAFFIC PROJECTIONS.
5. SIDEWALK TO HAVE MAXIMUM 2% CROSS SLOPE.
6. SLOPE FROM BACK OF CURB TO RIGHT-OF-WAY SHALL BE 2% UNLESS OTHERWISE INDICATED ON THE GRADING PLAN.
7. STREET TREES, WHERE REQUIRED, SHALL BE PLACED BETWEEN SIDEWALK AND BACK OF CURB. SEE DETAIL 204-4.
8. METER BOXES AND SEWER SERVICE STUBS SHALL BE PLACED IN THE PUBLIC UTILITY EASEMENT ABUTTING THE SIDEWALK.

*THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. DRAWING NOT TO SCALE.

WAYNE S. WATTS 86124 REGISTERED PROFESSIONAL ENGINEER 12/21/17

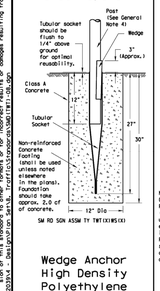
City Of Leander, Texas

DETAIL #204-3
RESIDENTIAL LOCAL STREET SECTION
WITH STANDARD UTILITY ASSIGNMENTS

DISCLAIMER: The use of this standard is governed by the "Terms & Conditions" agreement in effect between the City of Leander and the user. Unauthorized use of this standard is prohibited and the City of Leander accepts no liability for its use or misuse. Users are responsible for determining the applicability of this standard to their project.

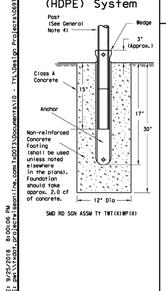
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Wedge Anchor Steel System



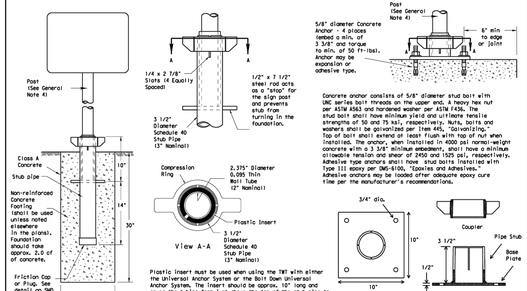
SM RD SGN ASSM TY TWT(1)WS(1)

Wedge Anchor High Density Polyethylene (HDPE) System



SMD RD SGN ASSM TY TWT(1)HP(1)

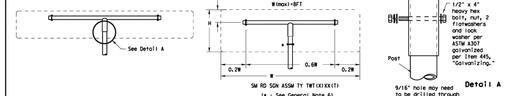
Universal Anchor System with Thin-Walled Tubing Post



Concrete anchor consists of 5/8" diameter stud bolt with LNC series bolt threads on the upper end, a heavy hex nut per ASTM A563 and hardened washer per ASTM F436. the stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per ASTM A153 or B695. Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/4" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 psi, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.

Plastic insert must be used when using the TBT with either the Universal Anchor System or the Bolt Down Universal Anchor System. The insert should be approx. 10" long and cover the tubing from just above the top of the stub pipe to the bottom of the sign post when using the Universal Anchor System. The insert should be cut to approx. 4 1/2" when used with the Bolt Down Universal Anchor System.

Sign Installation Using a Prefabricated T-Bracket for Thin-Wall Tubing Post



NOTE
The devices shall be installed per manufacturer's recommendations.
Installation procedures shall be provided to the Engineer by Contractor.

T-Bracket
1/2" x 4" heavy hex bolt, nut, 2 flatwashers and lock washer per ASTM A307 galvanized per item 445, "Galvanizing."
Post
9/16" hole may need to be drilled through post to accommodate bolt.
Detail A

GENERAL NOTES:

1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer, lot/mold, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Anchor bolts, nuts, washers, wedges, and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: http://www.txdot.gov/business/producer_list.htm
4. Material used as post with this system shall conform to the following specifications: 13 BWG Tubing (0.375" Outside diameter) (TBT)
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   Steel shall be HSLAS GF 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of .083" to .099"
   Outside diameter (uncoated) shall be within the range of 2.369" to 2.381"
   Galvanization per ASTM 123 or ASTM A653 G210. For precoated steel: tubing (ASTM A653), (except tube outside diameter weld seam by metallizing with zinc wire per ASTM A780).
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamps required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be splices.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be free from the bottom and the clearance requirements given on SMD(SGN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Place concrete into hole until it is approximately flush with the ground. Concrete shall be Class A.
3. Insert tubular socket into concrete until top of socket is approximately 1/4 " above the concrete footing.
4. Plumb the socket. Allow a minimum 4 days for concrete to set, unless otherwise directed by Engineer..
5. Attach the sign to the sign post.
6. Insert the sign post into socket and align sign face with roadway.
7. Drive the wedge into the socket to secure post. This will leave approximately 1/4" of the socket above the concrete.

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be free from the bottom and the clearance requirements given on SMD(SGN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. Insert base post in hole to depths shown and backfill hole with concrete.
3. Level and plumb the base post using a torpedo level and allow concrete adequate time to set. The bottom of the slots provided in the stub pipe shall remain above the top of the concrete foundation.
4. Attach the sign to the sign post.
5. Install plastic insert around bottom of post.
6. Insert align post into base post. Lower until the post comes to rest on steel rod. Tighten the locking screw. Typically, the top of compression ring will be approximately level with top of stub post when optimally installed.
7. Check sign post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

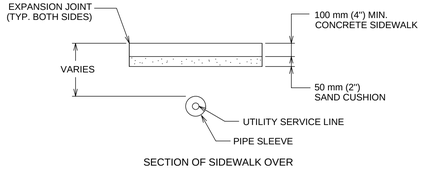
Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST SMD(TWT)-08

©TxDOT July 2002 REVISIONS	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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	0697-02	039		SH 334
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	TYL	HENDERSON		289

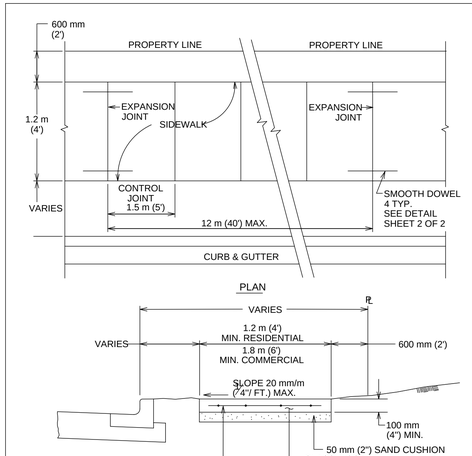
246

SIDEWALK OVER UTILITY SERVICE LINE PLAN



SECTION OF SIDEWALK OVER UTILITY SERVICE LINES

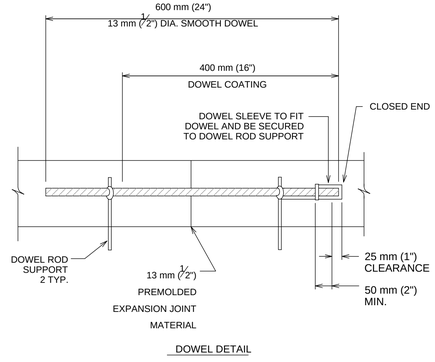
NOTES:
1. THIS STANDARD APPLIES TO THE INSTALLATION OF NEW UTILITIES OR UTILITIES BEING REPLACED BY A NEW LINE.
2. NO JOINTS IN UTILITY SERVICE PIPE TO BE LOCATED INSIDE PVC PIPE SLEEVE.



PLAN

SECTION

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 1 OF 3



DOWEL DETAIL

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 2 OF 3

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		SIDEWALK	
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1 3 OF 3

DESIGNED BY: CRB/PS
DRAFTED BY:

DATE	REVISION

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North Office: 12129 RR (620 N.), Ste. 600 Austin, Texas 78750
Phone No. (512) 280-5160
www.cbdeng.com
FIRM ID #1759

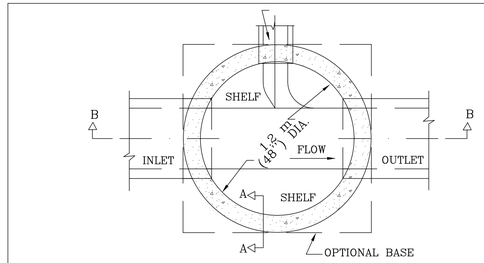
SHEET NAME: STANDARD CONSTRUCTION DETAILS (2 OF 4)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

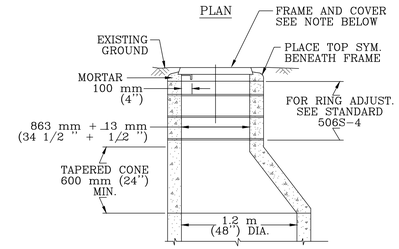
PATRICK M. SULLIVAN 142359 LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
CARLSON, BRIGANCE, & DOERING, INC. ID # 1759
11-26-2024

DATE November 2024
JOB NUMBER 5375
SHEET 53 OF 62

SD-24-0243

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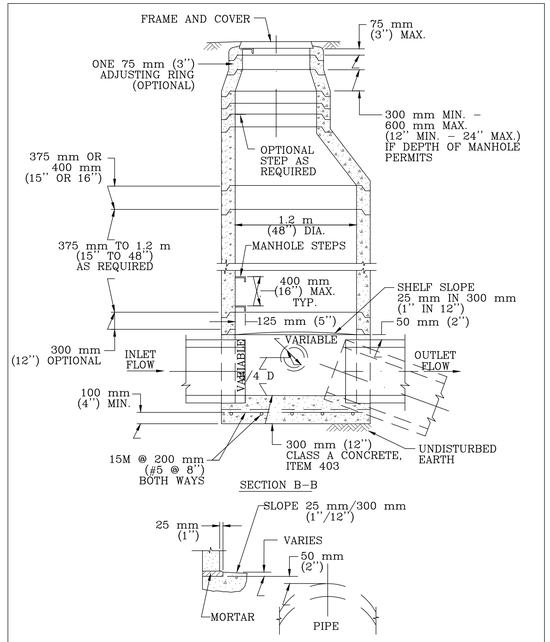


NOTE:
USE 800 mm (32") FRAME AND COVER.

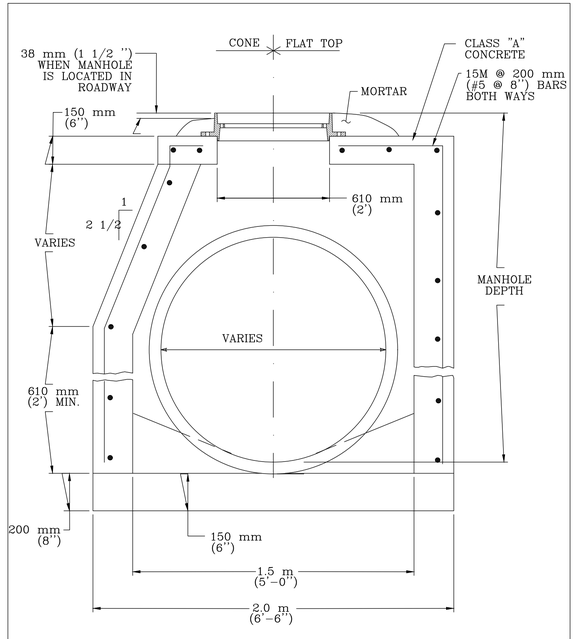
MINIMUM MANHOLE DIA.	MINIMUM PIPE SIZE
1.2 m (4')	450 TO 600 mm (18 TO 24")
1.5 m (5')	750 mm TO 1.1 m (30 TO 42")
1.8 m (6')	1.2 TO 1.4 m (48 TO 54")
2.1 m (7')	1.5 TO 1.7 m (60 TO 66")

SIZE TO BE USED IS DEPENDENT ON DRAIN ANGLES.

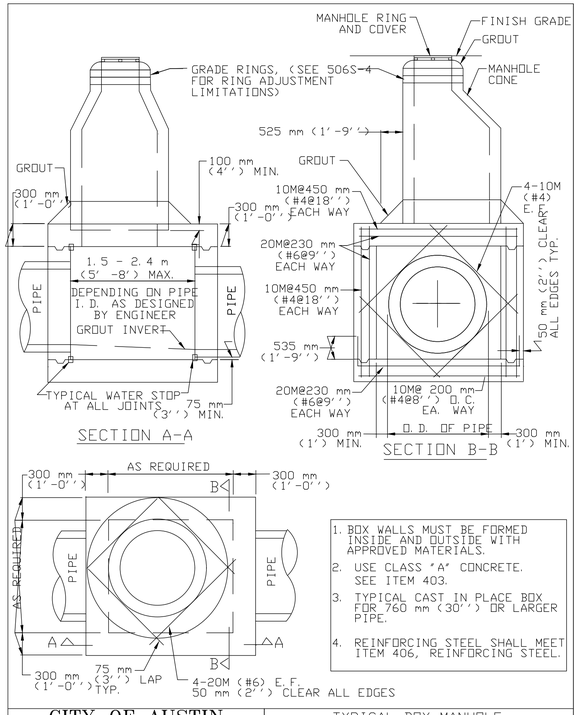
CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		PRE-CAST CONCRETE STORM DRAIN MANHOLE	
RECORD COPY SIGNED BY GEORGE E. OSWALD	*2/14/02* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-3 1 OF 2



CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		PRE-CAST CONCRETE STORM DRAIN MANHOLE	
RECORD COPY SIGNED BY GEORGE E. OSWALD	*2/14/02* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-3 2 OF 2



CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW		STORM DRAIN MANHOLE DETAIL	
RECORD COPY SIGNED BY GEORGE E. OSWALD	*2/14/02* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-11



1. BOX WALLS MUST BE FORMED INSIDE AND OUTSIDE WITH APPROVED MATERIALS.
2. USE CLASS "A" CONCRETE. SEE ITEM 403.
3. TYPICAL CAST IN PLACE BOX FOR 760 mm (30") OR LARGER PIPE.
4. REINFORCING STEEL SHALL MEET ITEM 406, REINFORCING STEEL.

CITY OF AUSTIN WATER AND WASTEWATER UTILITY		TYPICAL BOX MANHOLE 760 mm (30") & LARGER PIPE	
RECORD COPY SIGNED BY KATHI L. FLOWERS	*2/17/00* ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-5

DESIGNED BY: CRB/PS | DRAFTED BY:

DATE | REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
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North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750 www.cbdeng.com

SHEET NAME: STANDARD CONSTRUCTION DETAILS (3 OF 4)

JOB NAME: BAR W RANCH EAST MIXED USE

PROJECT: SITE DEVELOPMENT PLANS

STATE OF TEXAS
PATRICK M. SULLIVAN
142359
LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC.
ID # F3791
11-26-2024

DATE: November 2024

JOB NUMBER: 5375

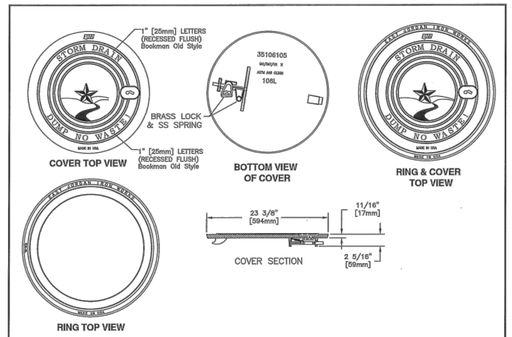
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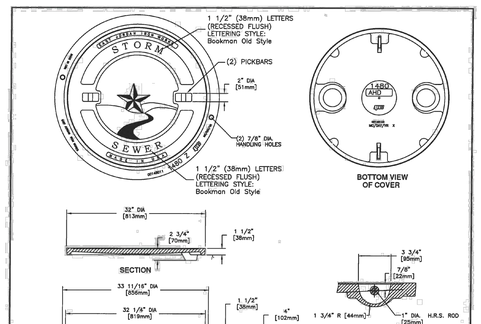


MANHOLE ASSEMBLY WITH LOCK	EST. WT. COVER: 86 LBS 39kg RING: 95 LBS 43kg TOTAL: 181 LBS 82kg
EAST JORDAN IRON WORKS PRODUCT NO. 35505205 OR APPROVED EQUAL	OPEN AREA N/A
	MAT'L SPEC. COVER – GRAY IRON ASTM A48 CL35B FRAME – GRAY IRON ASTM A48 CL35B

LOAD RATING: NON-TRAFFIC

STATE OF TEXAS WAYNE S. WATTS 88134 LICENSED PROFESSIONAL ENGINEER 02/04/14

City Of Leander, Texas
DETAIL #107-2
STORM SEWER INLET COVER (LOCKING)

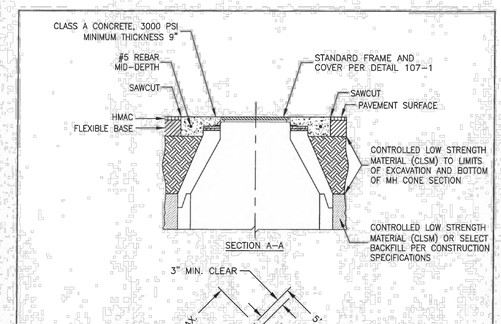


MANHOLE ASSEMBLY	EST. WT. COVER: 200 LBS 91kg FRAME: 155 LBS 70kg UNIT: 355 LBS 161kg
EAST JORDAN IRON WORKS PRODUCT NO. 00148105 OR NEENAH FOUNDRY DF-1274 LEANDER STORM	OPEN AREA N/A
	MAT'L SPEC. COVER – GRAY IRON ASTM A48 CL35B FRAME – GRAY IRON ASTM A48 CL35B

LOAD RATING: HEAVY DUTY (H20)

STATE OF TEXAS WAYNE S. WATTS 88134 LICENSED PROFESSIONAL ENGINEER 02/22/16

City Of Leander, Texas
DETAIL #107-3
STORM SEWER MANHOLE COVER (HEAVY DUTY)



NOTES:
1. CONCRETE SHALL BE CLASS A, 3000 PSI MINIMUM AND SHALL BE REINFORCED WITH #5 BARS AS SHOWN. THE CONCRETE SHALL EXTEND TO SAW CUT PAVEMENT EDGE.
2. PLACEMENT OF CLSM SHALL BE BELOW FLEXIBLE BASE LAYER TO LIMITS OF EXCAVATION.
3. INSTALLATION OF HMAC OVER CONCRETE ADJUSTMENT SHALL NOT BE ALLOWED.
4. INSTALLATION OF CONCRETE CASTING ADJUSTMENT IS REQUIRED FOR ALL TYPES OF MANHOLES TO BE LOCATED IN THE ROADWAY.

STATE OF TEXAS WAYNE S. WATTS 88134 LICENSED PROFESSIONAL ENGINEER 02/22/17

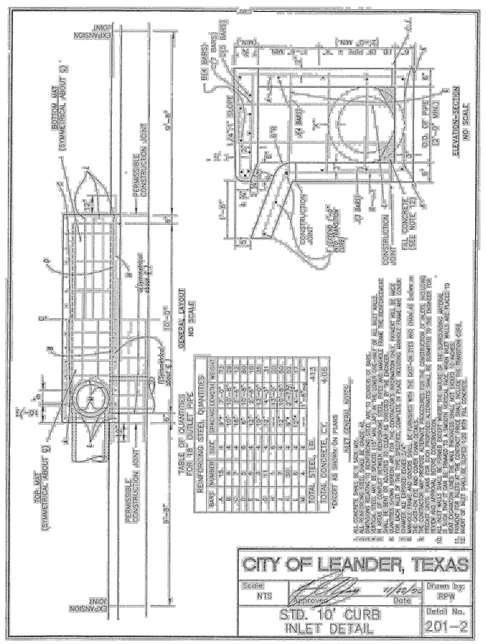
City Of Leander, Texas
DETAIL #107-4
MANHOLE CASTING ADJUSTMENT

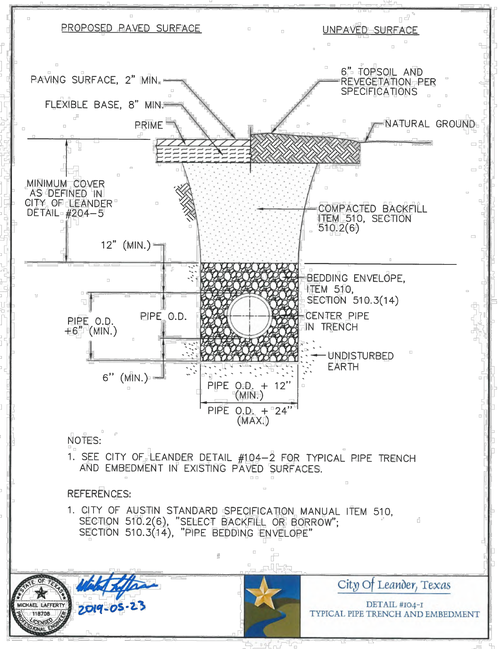


NOTES:
1. INSTALL 4" DIAMETER STAINLESS STEEL "NO DUMPING – DRAINS TO CREEK" MARKER, FACTORY PAINTED BLUE AS SHOWN, 2" ABOVE VERTICAL FACE OF INLET AT MIDPOINT OF ALL INLETS.
2. MARKER SHALL BE AFFIXED TO SURFACE WITH ADHESIVE PER MANUFACTURER'S RECOMMENDATIONS.
3. MARKER SHALL BE MANUFACTURED BY ALMATEK INDUSTRIES OR APPROVED EQUAL:
   ALMATEK INDUSTRIES, INC.
   2 JOY DRIVE
   HACKETTSTOWN, NJ 07840
   (800) 248–2080
   WWW.ALMATEK.COM

STATE OF TEXAS WAYNE S. WATTS 88134 LICENSED PROFESSIONAL ENGINEER 06/20/18

City Of Leander, Texas
DETAIL #303-3
STORM DRAIN MARKERS



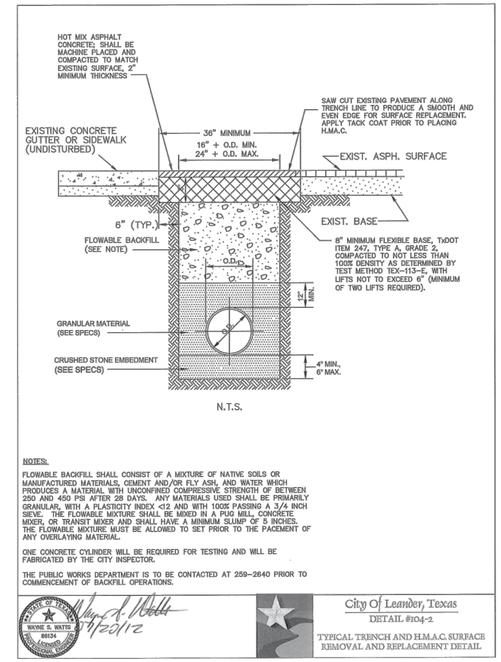


NOTES:
1. SEE CITY OF LEANDER DETAIL #104–2 FOR TYPICAL PIPE TRENCH AND EMBEDMENT IN EXISTING PAVED SURFACES.

REFERENCES:
1. CITY OF AUSTIN STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

STATE OF TEXAS MICHAEL LAFFERTY 118708 LICENSED PROFESSIONAL ENGINEER 2019-05-23

City Of Leander, Texas
DETAIL #104-1
TYPICAL PIPE TRENCH AND EMBEDMENT



NOTES:
FLOWABLE BACKFILL SHALL CONSIST OF A MIXTURE OF NATIVE SOILS OR MANUFACTURED MATERIALS, CEMENT AND/OR FLY ASH, AND WATER WHICH PRODUCES A MATERIAL WITH UNCONFINED COMPRESSIVE STRENGTH OF BETWEEN 250 AND 450 PSI AFTER 28 DAYS. ANY MATERIALS USED SHALL BE PRIMARILY GRANULAR, WITH A PLASTICITY INDEX <12 AND WITH 100% PASSING A 3/4 INCH SIEVE. THE FLOWABLE MIXTURE SHALL BE MIXED IN A PUG MILL CONCRETE MIXER, OR TRANSIT MIXER AND SHALL HAVE A MINIMUM SLUMP OF 5 INCHES. THE FLOWABLE MIXTURE MUST BE ALLOWED TO SET PRIOR TO THE PLACEMENT OF ANY OVERLAYING MATERIAL.

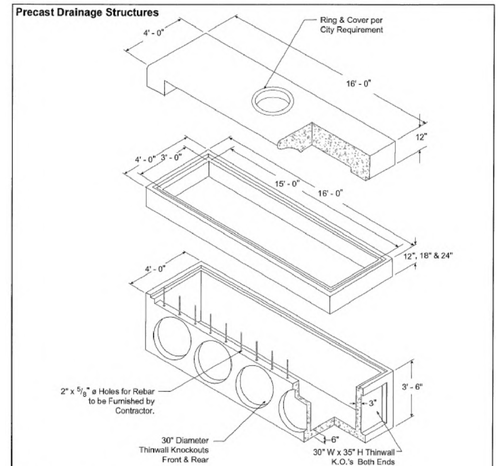
ONE CONCRETE CYLINDER WILL BE REQUIRED FOR TESTING AND WILL BE FABRICATED BY THE CITY INSPECTOR.

THE PUBLIC WORKS DEPARTMENT IS TO BE CONTACTED AT 259–2640 PRIOR TO COMMENCEMENT OF BACKFILL OPERATIONS.

STATE OF TEXAS WAYNE S. WATTS 88134 LICENSED PROFESSIONAL ENGINEER 11/22/12

City Of Leander, Texas
DETAIL #104-2
TYPICAL TRENCH AND H.M.A.C. SURFACE REMOVAL AND REPLACEMENT DETAIL

Precast Drainage Structures



Materials & Features

CONCRETE: 5,000 PSI - 28 day strength
REINFORCING: (All reinforcing steel shall be grade 60.)
CAST IRON RING & COVER shall be in accordance with City of Austin Standard No. 503-1 & 503-2.
MASTIC SEALANT USED AS PRECAST. Construction joints shall meet the requirements of City of Austin Standards specification item No. 510.2(C)4 joint material.
Rebar for connection to paving shall be provided & installed by the contractor.
5/8" holes 2" deep will be provided by manufacturer.
The inlet as designed exceed the requirements of ASTM C478
RISERS AVAILABLE: 12", 18" & 24".

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

TITLE	PLANT	STATE	SECTION/PAGE	DATE
15' Curb Inlet w/ 4' - 0" Invert City of Austin	Waco	TX	10.b.3	08-15-06

Hanson

SD–24–0243

DESIGNED BY: CRB/PS
DRAFTED BY:
DATE
REVISION

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office: 5501 West William Cannon Dr. Austin, Texas 78749
North Office: 12129 RR 620 N., Ste. 600 Austin, Texas 78750
Phone No.: (512) 280-5160
www.cbdengr.com

SHEET NAME: STANDARD CONSTRUCTION DETAILS (4 OF 4)
JOB NAME: BAR W RANCH EAST MIXED USE
PROJECT: SITE DEVELOPMENT PLANS

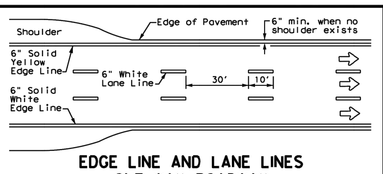
STATE OF TEXAS PATRICK M. SULLIVAN 142359 LICENSED PROFESSIONAL ENGINEER
CARLSON, BRIGANCE, & DOERING, INC. ID # F3791
11-26-2024

DATE: November 2024
JOB NUMBER: 5375
SHEET: 55 OF 62

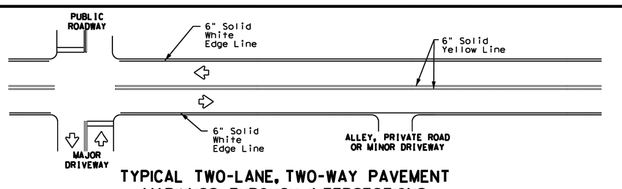
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DATE:
FILE:



EDGE LINE AND LANE LINES
ONE-WAY ROADWAY
WITH OR WITHOUT SHOULDERS



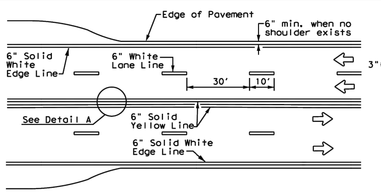
TYPICAL TWO-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS

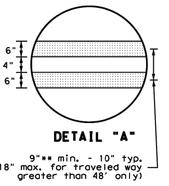
GENERAL NOTES

1. Edge line striping shall be as shown in the plans or as directed by the Engineer. The edge line should not be placed less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edge lines are not required in curb and gutter sections of roadways.
2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the center of edge line to the center of edge line of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

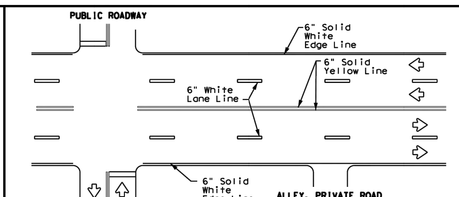
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



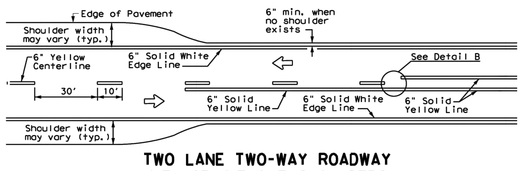


CENTERLINE AND LANE LINES
FOUR LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS

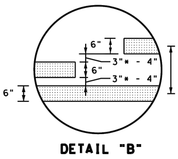
* 2" minimum for restripe projects when approved by the Engineer.
** 8" minimum for restripe projects when approved by the Engineer.



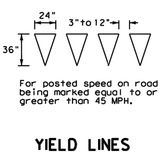
TYPICAL MULTI-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS



TWO LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS

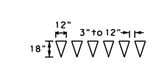


* 2" minimum for restripe projects when approved by the Engineer.

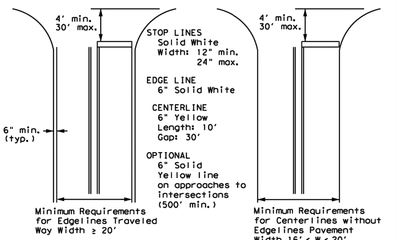


For posted speed on road being marked equal to or greater than 45 MPH.

YIELD LINES



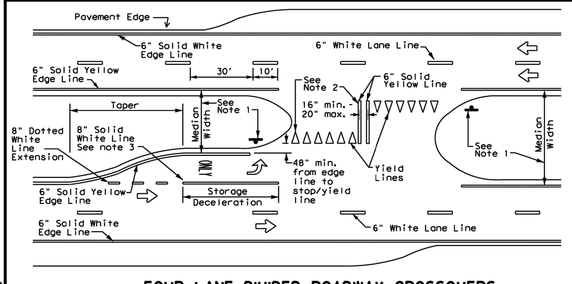
For posted speed on road being marked equal to or less than 40 MPH.



NOTE: Traveled way is exclusive of shoulder widths. Refer to General Note 2 for additional details.

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Roadways



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs and stop bars are optional as determined by the Engineer.
2. Install median striping (double yellow centerlines and stop lines/yield lines) when a 50' or greater median centerline can be placed. Stop lines shall only be used with stop signs. Yield lines shall only be used with yield signs.
3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

Texas Department of Transportation — Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-22

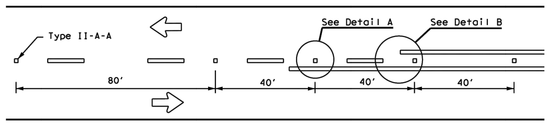
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©TxDOT	December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS		DIST	COUNTY		SHEET NO.
11-78 8-00 6-20					
8-95 3-03 12-22					
5-00 2-12					

228

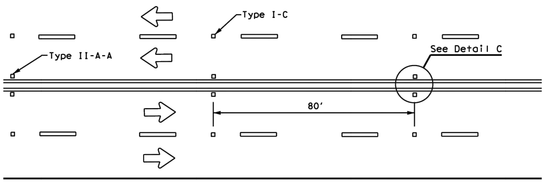
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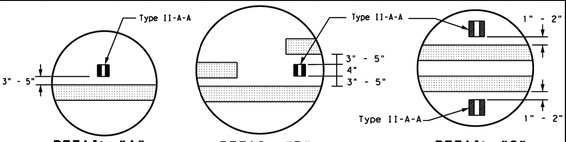
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

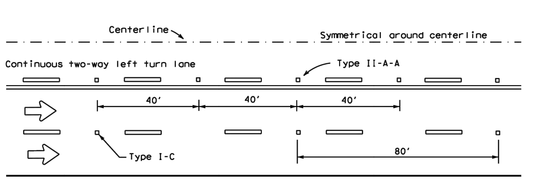


CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS

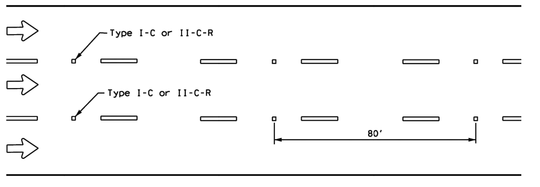


CENTERLINE & LANE LINES
FOR FOUR LANE TWO-WAY ROADWAYS





CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



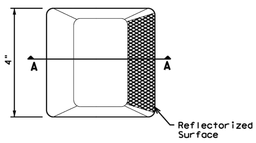
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.

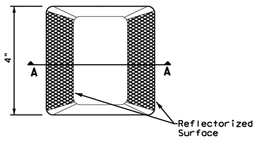
See Note 3.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

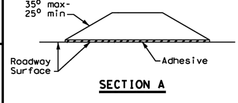
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)

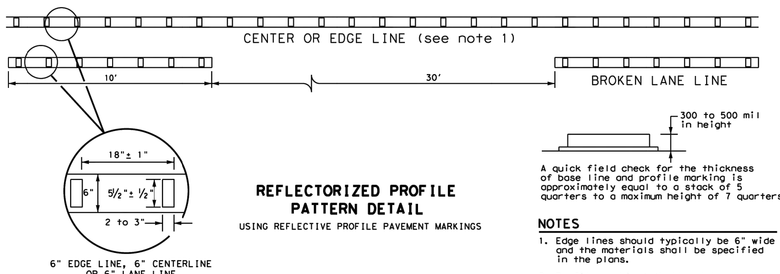


Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS



REFLECTORIZED PROFILE
PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS

A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

NOTES

1. Edge lines should typically be 6" wide and the materials shall be specified in the plans.
2. Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

1. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements, the raised pavement markers should be placed to one side of the longitudinal joints.
3. Use raised pavement marker Type I-C with undivided roadways, flush medians, and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.

Texas Department of Transportation — Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS

PM(2)-22

FILE:	pm2-22.dgn	DN:	CK:	DW:	CK:
©TxDOT	December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS		DIST	COUNTY		SHEET NO.
4-77 8-00 6-20					
4-92 2-10 12-22					
5-00 2-12					

228

SD-24-0243

SHEET NO. 56 OF 62

JOB NUMBER 5375

DATE: November 2024

PATRICK M. SULLIVAN 142359 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
CARLSON, BRIGANCE & DOERING, INC.
F-3791
11-26-2024

SHEET NAME:
PAVEMENT MARKING DETAILS (1 OF 2)

JOB NAME:
BAR W RANCH EAST MIXED USE

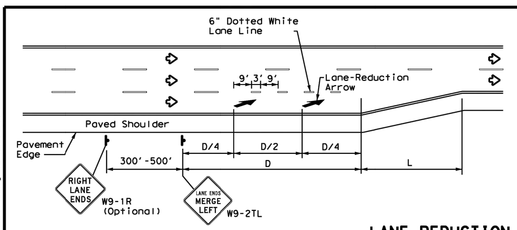
PROJECT:
SITE DEVELOPMENT PLANS

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office
5501 West William Cannon Dr.
Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

REVISION	DATE

DESIGNED
DRAWN
CHECKED

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LANE REDUCTION

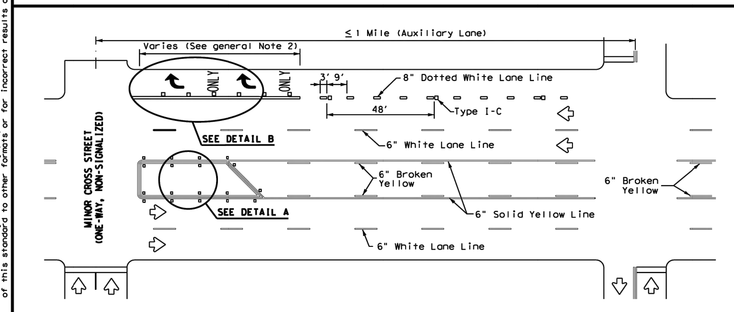
NOTES

1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
2. On divided highways, an additional RIGHT LANE ENDS (W9-1R) sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
4. For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

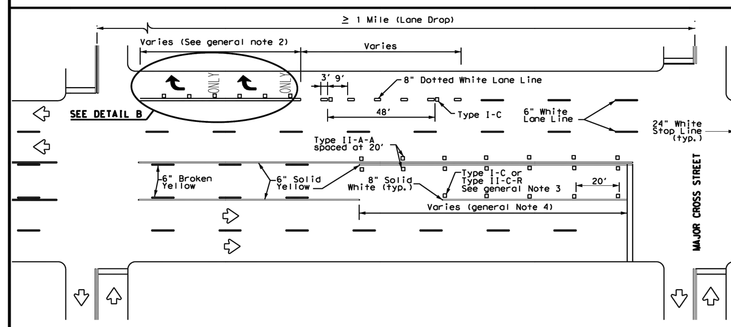
ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L=\frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

GENERAL NOTES

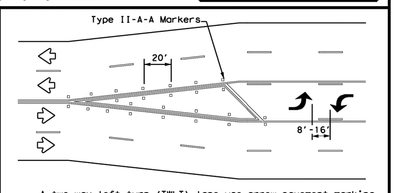
1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
2. When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
3. Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
4. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer. See Chapter 3 of the Roadway Design Manual for additional information on turning lanes or storage lengths.



TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP

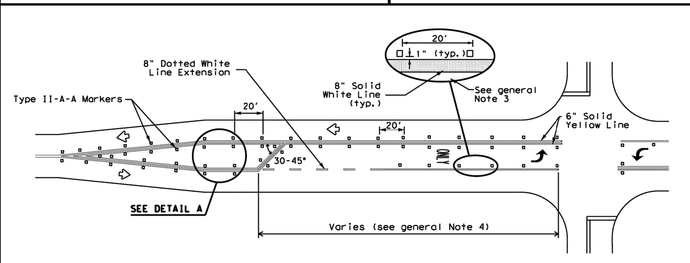


A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

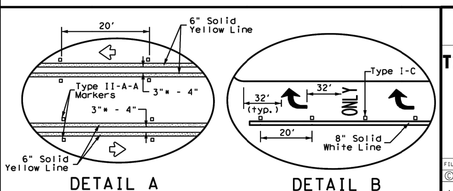
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



* 2" minimum allowed for restripe projects when approved by the Engineer.

Texas Department of Transportation — Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS

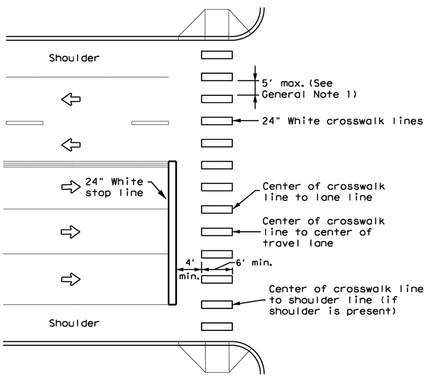
PM(3)-22

FILE: pm3-22.dgn	DN:	CK:	DW:	CK:
©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-98 3-03 6-20 5-00 2-10 12-22 8-00 2-12	DIST	COUNTY		SHEET NO.

225

DATE:
FILE:

DISCLAIMER:
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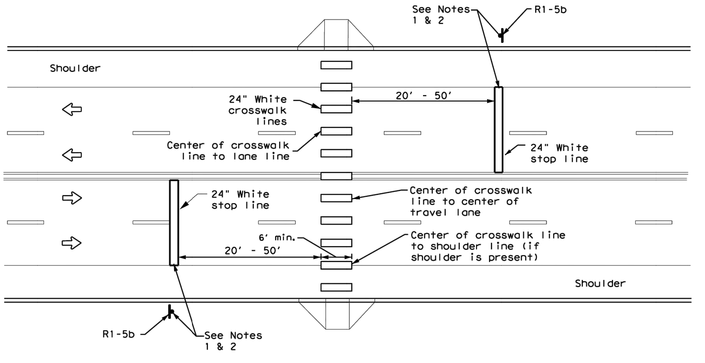
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).
2. A minimum 6' clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.
3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.
4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.
5. Each crosswalk shall be a minimum of 6' wide.
6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."
7. Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



UNSIGNALIZED MIDBLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES:

1. Use stop bars with Stop Here For Pedestrians (R1-5b) signs at unsignalized midblock cross walks.
2. Use stop bars with STOP HERE ON RED (R10-6 or R10-6a) signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

Texas Department of Transportation — Traffic Safety Division Standard

CROSSWALK PAVEMENT MARKINGS

PM(4)-22A

FILE: pm4-22a.dgn	DN:	CK:	DW:	CK:
©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 6-20 6-22 12-22	DIST	COUNTY		SHEET NO.

260

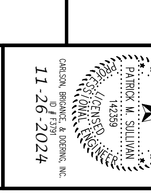
DATE:
FILE:

SD-24-0243

SHEET NO. 56 OF 62

JOB NUMBER 5375

DATE: November 2024



SHEET NAME:
PAVEMENT MARKING DETAILS (2 OF 2)

JOB NAME:
BAR W RANCH EAST MIXED USE

PROJECT:
SITE DEVELOPMENT PLANS

Carlson, Brigance & Doering, Inc.
Civil Engineering ◆ Surveying
FIRM ID #F3791
Main Office
5501 West William Cannon Dr.
Austin, Texas 78749
Phone No. (512) 280-5160
North Office
12129 RR 620 N., Ste. 600
Austin, Texas 78750
www.cbdeng.com

REVISION	DATE

DESIGNED
DRAWN
CHECKED
DATE PLOTTED

SUB-STRHET.CTB

AN IRRIGATION SYSTEM IS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH THE STATE LAW, TITLE 2 TEXAS WATER CODE, CHAPTER 34 AND TITLE 30 TEXAS ADMINISTRATIVE CODE, CHAPTER 344, AS AMENDED, AS REGULATED AND ENFORCED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY. THE IRRIGATION SYSTEM WILL BE REVIEWED UNDER A SEPARATE APPLICATION. NO IRRIGATION SYSTEM SHALL BE INSTALLED WITHIN THE RIGHT-OF-WAY WITHOUT A LICENSE AGREEMENT

KAUFFMAN LOOP
(100' R.O.W.)

EXISTING 12" PVC W.M.

EXISTING 16" PVC W.M.

EXISTING 12" PVC W.M.

EXISTING 6" WWFM

EXISTING 12" WWFM

APPROX. LOCATION EXISTING CURB RAMP NEED SURVEY

R.O.W. RESERVATION 0.067 ACRES

25' W.W.E. HEREBY DEDICATED

R.O.W. RESERVATION 0.164 ACRES

WW. ESMNT.

10' P.U.E.

2.5' P.U.E.

LOT 1
MIXED USE COMMERCIAL
1.252 ACRES
GC-2-A

LOT 2
MIXED USE COMMERCIAL
1.389 ACRES
GC-2-A

LOT 4
MIXED USE COMMERCIAL
3.096 ACRES
GC-2-A

LOT 5
MIXED USE COMMERCIAL
3.878 ACRES
GC-2-A

LOT 6
MIXED USE COMMERCIAL
2.940 ACRES
GC-2-A

LOT 7
MIXED USE RESIDENTIAL
14.118 ACRES
ME-2-A & SFT-2-A

LOT 3
MIXED USE COMMERCIAL
2.904 ACRES
GC-2-A

PRIVATE DRIVE A

PRIVATE DRIVE B

PRIVATE DRIVE C

ACCESS ESMT. 1

ACCESS ESMT. 2

10' UTILITY ESMT.

SEWER VALVE

WATER TANK
(TO BE REMOVED)

OFF-SITE POLE BARN

CCF

MATCHLINE SEE SHEET L0.02

BENKENDORFER+ASSOCIATES
LANDSCAPE ARCHITECTURE/SITE PLANNING
2901 Bee Cave Rd. Suite P
Austin, TX 78746
P 512 366 5209

ISSUED SETS
CC : 07/02/24
CS : 10/08/24
CS : 11/26/24

REVISIONS

BAR W EAST MIXED USE

LEANDER, TEXAS
CITY SUBMITTAL LANDSCAPE PLAN

REGISTERED LANDSCAPE ARCHITECT
BRIAN E. BENKENDORFER
1378
STATE OF TEXAS
11/26/24

NORTH

SCALE:
0 25 50 100

PROJECT # 240-01

SHEET #
L0.01

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SUB-STREET.CTB

AN IRRIGATION SYSTEM IS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH THE STATE LAW, TITLE 2 TEXAS WATER CODE, CHAPTER 34 AND TITLE 30 TEXAS ADMINISTRATIVE CODE, CHAPTER 344, AS AMENDED, AS REGULATED AND ENFORCED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY. THE IRRIGATION SYSTEM WILL BE REVIEWED UNDER A SEPARATE APPLICATION. NO IRRIGATION SYSTEM SHALL BE INSTALLED WITHIN THE RIGHT-OF-WAY WITHOUT A LICENSE AGREEMENT

MATCHLINE SEE SHEET L0.01

RONALD REAGAN BLVD
(R.O.W. VARIES)

COUNTY ROAD 268
(R.O.W. VARIES)

PRIVATE DRIVE B

MIXED USE RESIDENTIAL LOT 8 15.530 ACRES MIXED USE RESIDENTIAL LOT 7 14.18 ACRES & SFT-2-A

MIXED USE RESIDENTIAL LOT 9 GREEN SPACE 2.68 ACRES MIXED USE RESIDENTIAL LOT 10 SFT-2-A

EDWARDS AQUIFER RECHARGE ZONE
EDWARDS AQUIFER CONTRIBUTING ZONE

DRAINAGE EASEMENT

10' P.U.E.

2.5' P.U.E.

10' NON-DISTURBANCE ZONE

BENKENDORFER+ASSOCIATES
LANDSCAPE ARCHITECTURE/SITE PLANNING
2901 Bee Cave Rd. Suite P
Austin, TX 78746
P 512 366 3259

ISSUED SETS
CC : 07/02/24
CS : 10/08/24
CS : 11/26/24

REVISIONS

BAR W EAST MIXED USE

LEANDER, TEXAS
CITY SUBMITTAL LANDSCAPE PLAN

REGISTERED LANDSCAPE ARCHITECT
CHRISTOPHER S. BENKENDORFER
7370
STATE OF TEXAS
11/26/24

NORTH

SCALE:
0 25 50 100

PROJECT # 240-01
SHEET # L0.02

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SUB-STREET.CTB

LANDSCAPE WORKSHEET: LOT 1

Overall Required Landscape Area	%		SQFT		Total
Multi-Family	20%	X		=	0
Office/Professional	15%	X		=	0
Commercial	15%	X	54515.15	=	8177.3
Industrial/Manufacturing	10%	X		=	0
School/Church/Community	15%	X		=	0
Park	15%	X		=	0

Provided Landscape Area	SQFT	%
Total Area	54515.2	
Total Provided	50450.7	92.54

*The minimum percentage of landscape area may include setback areas. However, the setback areas are required to be landscaped even if they exceed the above percentage.

Setback Areas

	SQFT					Units	REQUIRED Trees	REQUIRED Inches	REQUIRED Shrubs	PROVIDED Trees	PROVIDED Inches	PROVIDED Shrubs	DIFFERENCE Inches	DIFFERENCE Shrubs
Front	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 1	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 2	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 3	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 4	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 5	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Rear	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0

LANDSCAPE WORKSHEET: LOT 2

Overall Required Landscape Area	%		SQFT		Total
Multi-Family	20%	X		=	0
Office/Professional	15%	X		=	0
Commercial	15%	X	60504	=	9075.6
Industrial/Manufacturing	10%	X		=	0
School/Church/Community	15%	X		=	0
Park	15%	X		=	0

Provided Landscape Area	SQFT	%
Total Area	60503.9	
Total Provided	54090.5	89.4

*The minimum percentage of landscape area may include setback areas. However, the setback areas are required to be landscaped even if they exceed the above percentage.

Setback Areas

	SQFT					Units	REQUIRED Trees	REQUIRED Inches	REQUIRED Shrubs	PROVIDED Trees	PROVIDED Inches	PROVIDED Shrubs	DIFFERENCE Inches	DIFFERENCE Shrubs
Front	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 1	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 2	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 3	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 4	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 5	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Rear	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0

LANDSCAPE WORKSHEET: LOT 3

Overall Required Landscape Area	%		SQFT		Total
Multi-Family	20%	X		=	0
Office/Professional	15%	X		=	0
Commercial	15%	X	126521.1	=	18978
Industrial/Manufacturing	10%	X		=	0
School/Church/Community	15%	X		=	0
Park	15%	X		=	0

Provided Landscape Area	SQFT	%
Total Area	126521	
Total Provided	118713	93.83

*The minimum percentage of landscape area may include setback areas. However, the setback areas are required to be landscaped even if they exceed the above percentage.

Setback Areas

	SQFT					Units	REQUIRED Trees	REQUIRED Inches	REQUIRED Shrubs	PROVIDED Trees	PROVIDED Inches	PROVIDED Shrubs	DIFFERENCE Inches	DIFFERENCE Shrubs
Front	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 1	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 2	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 3	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 4	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 5	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Rear	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0

LANDSCAPE WORKSHEET: LOT 4

Overall Required Landscape Area	%		SQFT		Total
Multi-Family	20%	X		=	0
Office/Professional	15%	X		=	0
Commercial	15%	X	134856.1	=	20228
Industrial/Manufacturing	10%	X		=	0
School/Church/Community	15%	X		=	0
Park	15%	X		=	0

Provided Landscape Area	SQFT	%
Total Area	134856	
Total Provided	112194	83.2

*The minimum percentage of landscape area may include setback areas. However, the setback areas are required to be landscaped even if they exceed the above percentage.

Setback Areas

	SQFT					Units	REQUIRED Trees	REQUIRED Inches	REQUIRED Shrubs	PROVIDED Trees	PROVIDED Inches	PROVIDED Shrubs	DIFFERENCE Inches	DIFFERENCE Shrubs
Front	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 1	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 2	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 3	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 4	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 5	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Rear	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0

LANDSCAPE WORKSHEET: LOT 5

Overall Required Landscape Area	%		SQFT		Total
Multi-Family	20%	X		=	0
Office/Professional	15%	X		=	0
Commercial	15%	X	132996.7	=	19950
Industrial/Manufacturing	10%	X		=	0
School/Church/Community	15%	X		=	0
Park	15%	X		=	0

Provided Landscape Area	SQFT	%
Total Area	168910	
Total Provided	132998	78.74

*The minimum percentage of landscape area may include setback areas. However, the setback areas are required to be landscaped even if they exceed the above percentage.

Setback Areas

	SQFT					Units	REQUIRED Trees	REQUIRED Inches	REQUIRED Shrubs	PROVIDED Trees	PROVIDED Inches	PROVIDED Shrubs	DIFFERENCE Inches	DIFFERENCE Shrubs
Front	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 1	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 2	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 3	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 4	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 5	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Rear	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0

LANDSCAPE WORKSHEET: LOT 6

Overall Required Landscape Area	%		SQFT		Total
Multi-Family	20%	X		=	0
Office/Professional	15%	X		=	0
Commercial	15%	X	128075.9	=	19211
Industrial/Manufacturing	10%	X		=	0
School/Church/Community	15%	X		=	0
Park	15%	X		=	0

Provided Landscape Area	SQFT	%
Total Area	128076	
Total Provided	111476	87.04

*The minimum percentage of landscape area may include setback areas. However, the setback areas are required to be landscaped even if they exceed the above percentage.

Setback Areas

	SQFT					Units	REQUIRED Trees	REQUIRED Inches	REQUIRED Shrubs	PROVIDED Trees	PROVIDED Inches	PROVIDED Shrubs	DIFFERENCE Inches	DIFFERENCE Shrubs
Front	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 1	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 2	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 3	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 4	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 5	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Rear	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0

LANDSCAPE WORKSHEET: LOT 7

Overall Required Landscape Area	%		SQFT		Total
Multi-Family	20%	X	615003	=	123000.6
Office/Professional	15%	X		=	0
Commercial	15%	X		=	0
Industrial/Manufacturing	10%	X		=	0
School/Church/Community	15%	X		=	0
Park	15%	X		=	0

Provided Landscape Area	SQFT	%
Total Area	615003	
Total Provided	614342	99.89

*The minimum percentage of landscape area may include setback areas. However, the setback areas are required to be landscaped even if they exceed the above percentage.

Setback Areas

	SQFT					Units	REQUIRED Trees	REQUIRED Inches	REQUIRED Shrubs	PROVIDED Trees	PROVIDED Inches	PROVIDED Shrubs	DIFFERENCE Inches	DIFFERENCE Shrubs
Front	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 1	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 2	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 3	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 4	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 5	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Rear	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0

LANDSCAPE WORKSHEET: LOT 8

Overall Required Landscape Area	%		SQFT		Total
Multi-Family	20%	X	676051	=	135210.2
Office/Professional	15%	X		=	0
Commercial	15%	X		=	0
Industrial/Manufacturing	10%	X		=	0
School/Church/Community	15%	X		=	0
Park	15%	X		=	0

Provided Landscape Area	SQFT	%
Total Area	669909	
Total Provided	648898	96.86

*The minimum percentage of landscape area may include setback areas. However, the setback areas are required to be landscaped even if they exceed the above percentage.

Setback Areas

	SQFT					Units	REQUIRED Trees	REQUIRED Inches	REQUIRED Shrubs	PROVIDED Trees	PROVIDED Inches	PROVIDED Shrubs	DIFFERENCE Inches	DIFFERENCE Shrubs
Front	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 1	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 2	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 3	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 4	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 5	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Rear	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0

LANDSCAPE WORKSHEET: LOT 9

Overall Required Landscape Area	%		SQFT		Total
Multi-Family	20%	X	283944.9	=	56789
Office/Professional	15%	X		=	0
Commercial	15%	X		=	0
Industrial/Manufacturing	10%	X		=	0
School/Church/Community	15%	X		=	0
Park	15%	X		=	0

Provided Landscape Area	SQFT	%
Total Area	283945	
Total Provided	226342	79.71

*The minimum percentage of landscape area may include setback areas. However, the setback areas are required to be landscaped even if they exceed the above percentage.

Setback Areas

	SQFT					Units	REQUIRED Trees	REQUIRED Inches	REQUIRED Shrubs	PROVIDED Trees	PROVIDED Inches	PROVIDED Shrubs	DIFFERENCE Inches	DIFFERENCE Shrubs
Front	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 1	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 2	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 3	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 4	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Side 5	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0
Rear	0	÷	600	=	0	Units	0	0	0	0	0	0	0	0

ARTICLE VI - SITE STANDARDS
SECTION 1: LANDSCAPING, TREE PRESERVATION AND PROTECTION AND SCREENING REQUIREMENTS.

LANDSCAPE REQUIREMENTS:

1. All the landscape materials shall be installed and maintained according to generally accepted landscape practices for the region.
2. The owner of the property shall be responsible for the maintenance of all landscape areas. Maintenance shall include the removal of dead plant material and its replacement if that material was used to meet the requirements of this section.
3. Shrubs, vines and groundcover planted pursuant to this section shall be healthy nursery stock.
4. All turfgrass installed shall have summer dormancy capabilities and shall be one of the varieties set forth in the preferred plant list maintained by the Planning Department or the *Grow Green Guide*.
5. Turfgrass shall be limited to two thirds (⅔) of the lot after subtracting the impervious cover for single-family and two-family lots.
6. No more than fifty (50%) percent of the lot may consist of non plant material.
7. A minimal percentage of the total lot area of property on which development occurs shall be devoted to landscape development in accordance with the following schedule. Such percentages may include setback areas. However, all non-single-family and non-two-family setback areas are required to be landscaped in accordance with Article VI, Section 1 (b)(11) even if they exceed the following percentages:
   (i) Multifamily Dwellings = 20%
   (ii) Office and Professional Use = 15%
   (iii) Commercial use = 15%
   (iv) Industrial or Manufacturing = 10%
   (v) Single-family-Dwellings, Two-Family dwellings, Tiny House, Neighborhood Residential, or Cottage Housing (Ref. Landscape requirements for residential districts).
8. No landscaping over three feet in height shall be planted within forty (40) feet of the intersection of any street pavement.
9. All new landscapes (non-residential and residential) are required to have a minimum of six inches (6") of soil depth in areas planted with turfgrass. This minimum soil depth will consist of 75 percent soil blended with 25 percent compost. This does not apply to the area between the drip line and trunk of existing trees, shrub beds or wildscape areas.
10. Mulch (all non-residential properties). All exposed soil surfaces of non-turf areas within the developed landscape area must be mulched with a minimum two-inch layer of organic material.
11. Tree caliper is the trunk diameter of a tree at four (4'0 feet above natural grade per the Composite Zoning Ordinance.

IRRIGATION REQUIREMENTS (New residential and non-residential installations):

1. All irrigation systems, both residential and non-residential, shall be installed in accordance with state law, Title 2 Texas Water Code, Chapter 34 and Title 30 Texas Administrative Code, Chapter 344, as amended, as regulated and enforced by the Texas Commission on Environmental Quality (TCEQ)

SCREENING REQUIREMENTS:

In addition to the landscape requirements of this section, all development shall comply with the following screening requirements:
1. the following shall be screened from the view of at least sixty percent (60%) of adjacent single-family or two-family residences and any street or public right of way: off-street parking areas, loading spaces and docks, trash and storage containers, outside storage areas, satellite dishes, antennas, mechanical equipment and metal siding.
2. Detention facilities including detention ponds and/or water quality ponds shall be screened from view.

NOTE: ALL LANDSCAPE AND SCREENING REQUIREMENTS WILL BE ADDRESSED AT THE TIME OF SITE DEVELOPMENT PERMIT FOR EACH LOT.

B+A
BENKENDORFER+ASSOCIATES
LANDSCAPE ARCHITECTURE/SITE PLANNING
2901 Bee Cave Rd. Suite P
Austin, TX 78746
P 512 366 3299

ISSUED SETS
CC : 07/02/24
CS : 10/08/24
CS : 11/26/24

REVISIONS

BAR W EAST MIXED USE

LEANDER, TEXAS
CITY SUBMITTAL LANDSCAPE NOTES AND SPECIFICATIONS

REGISTERED LANDSCAPE ARCHITECT
BENKENDORFER
7370
STATE OF TEXAS
11/26/24

NORTH

SCALE:
NONE

PROJECT # 240-01
SHEET #
L0.03

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NOTE: THERE ARE NO EXISTING TREES ON LOTS 1, 2, AND 4.

LOT 3 TREES

LOT 3 TREES

	POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
	23184	TREE OAK 14IN	14		14		
	23185	TREE OAK 14IN	14		14		
	23186	TREE OAK 14IN	14		14		
	23187	TREE OAK 17IN	17		17		
	23188	TREE OAK 18IN	18		18		
	23189	TREE OAK 13IN	13		13		
✳	23367	TREE OAK 17IN	17	17			EASEMENT
✳	23368	TREE OAK 15IN	15	15			EASEMENT
	23371	TREE OAK 14IN	14		14		
	23372	TREE OAK 14IN	14		14		
	23373	TREE OAK 16IN	16		16		
	23374	TREE OAK 14IN	14		14		
	23375	TREE OAK 13IN	13		13		
	23376	TREE OAK 12IN	12		12		
	23377	TREE OAK 14IN	14		14		
	23378	TREE OAK 12IN	12		12		
	23379	TREE OAK 16IN	16		16		
	23380	TREE OAK 16IN	16		16		
	23381	TREE OAK 15IN	15		15		
	23383	TREE OAK 13IN	13		13		
	23384	TREE MULTI OAK 13IN	13		13		
	23385	TREE OAK 15IN	15		15		
	23386	TREE OAK 13IN	13		13		
✳	23387	TREE OAK 13IN	13	13			GRADING
✳	23388	TREE OAK 13IN	13	13			GRADING
✳	23413	TREE OAK 13IN	13	13			EASEMENT
✳	23414	TREE OAK 14IN	14	14			EASEMENT
✳	23415	TREE OAK 15IN	15	15			EASEMENT
✳	23416	TREE OAK 12IN	12	12			EASEMENT

LOT 3 TREE MITIGATION REQUIREMENT

TREE MITIGATION REQUIREMENT LOT 3:	TOTAL INCHES	INCHES REMOVED	MITIGATION	INCHES RETAINED
SIGNIFICANT TREES 8"–18" SUBDIVISION	29 TREES: 412	8 TREES: 112	0	300
SIGNIFICANT TREES 18"–26" SUBDIVISION	0 TREES: 0	0	0	0
HERITAGE TREES (2:1 REQUIRED) SUBDIVISION	0 TREE: 0	0	0	0
TOTAL INCHES OF TREES	29 TREES: 412	112	0	300

LOT 5 TREES

LOT 5 TREES

	POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
✳	23359	TREE OAK 14IN	14	14			GRADING
	23360	TREE OAK 12IN	12		12		
	23361	TREE MULTI OAK 13IN 11IN	19		19		
	23362	TREE OAK 12IN	12		12		
	23363	TREE OAK 13IN	13		13		
	23364	TREE OAK 13IN	13		13		
	23365	TREE OAK 15IN	15		15		
	23366	TREE OAK 13IN	13		13		
✳	23369	TREE OAK 15IN	15	15			EASEMENT
✳	23370	TREE MULTI OAK 15IN 10IN	20	20			EASEMENT
✳	23391	TREE OAK 12IN	12	12			EASEMENT
	23393	TREE OAK 14IN	14		14		
	23394	TREE OAK 14IN	14		14		
✳	23395	TREE OAK 13IN	13	13			EASEMENT
	23408	TREE OAK 14IN	14		14		
	23409	TREE OAK 13IN	13		13		
✳	23410	TREE OAK 12IN	12	12			GRADING
✳	23411	TREE OAK 16IN	16	16			GRADING
✳	23412	TREE OAK 14IN	14	14			GRADING
	23417	TREE OAK 15IN	15		15		
	23418	TREE OAK 16IN	16		16		
	23419	TREE OAK 12IN	12		12		
	23420	TREE OAK 13IN	13		13		
	23421	TREE OAK 17IN	17		17		
	23422	TREE OAK 14IN	14		14		
✳	23423	TREE OAK 13IN	13	13			GRADING

LOT 5 TREE MITIGATION REQUIREMENT

TREE MITIGATION REQUIREMENT LOT 5:	TOTAL INCHES	INCHES REMOVED	MITIGATION	INCHES RETAINED
SIGNIFICANT TREES 8"–18" SUBDIVISION	26 TREES: 368	9 TREES: 129	0	239
SIGNIFICANT TREES 18"–26" SUBDIVISION	0 TREE: 0	0	0	0
HERITAGE TREES (2:1 REQUIRED) SUBDIVISION	0 TREE: 0	0	0	0
TOTAL INCHES OF TREES	26 TREES: 368	9 TREES: 129	0	239

NOTES:

1. MITIGATION FOR SIGNIFICANT TREES IS NOT REQUIRED BECAUSE OVER 40% ARE BEING RETAINED (85.7%)
2. TREES TO BE REMOVED ARE ONLY FROM INFRASTRUCTURE EASEMENTS. TREE REMOVAL FOR SITE DEVELOPMENT WILL BE ADDRESSED WITH THE SITE DEVELOPMENT PLANS FOR EACH SITE.
3. NO HERITAGE TREES ARE TO BE REMOVED, SO THERE WILL BE NO HERITAGE TREE MITIGATION REQUIRED.
4. IN THE EVENT OF A CONFLICT WITH TREE REMOVAL/PRESERVATION CALL OUTS ON PLAN SHEET(S) VERSUS TREE REMOVAL/PRESERVATION MATRIX, THE TREE REMOVAL/PRESERVATION MATRIX SHALL APPLY. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY WITH CITY STAFF SHOULD ANY INCONSISTENCY EXIST WITHIN AN APPROVED PLAN SET. NO IN-FIELD CHANGES ARE MADE TO APPROVED PLANS, NO EXCEPTIONS.
5. THERE ARE NO EXISTING TREES ON LOTS 1, 2, AND 4.

LOT 6 TREES

LOT 6 TREES

POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
23351	TREE OAK 24IN	24		24		

LOT 6 TREE MITIGATION REQUIREMENT

TREE MITIGATION REQUIREMENT LOT 6:	TOTAL INCHES	INCHES REMOVED	MITIGATION	INCHES RETAINED
SIGNIFICANT TREES 8"–18" SUBDIVISION	0 TREES: 0	0	0	0
SIGNIFICANT TREES 18"–26" SUBDIVISION	1 TREES: 24	0	0	24
HERITAGE TREES (2:1 REQUIRED) SUBDIVISION	0 TREE: 0	0	0	0
TOTAL INCHES OF TREES	1 TREES: 24	0	0	24

LOT 7 TREES

LOT 7 TREES

	POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
	23219	TREE MULTI OAK 15IN 10IN	20		20		
	23220	TREE OAK 12IN	12		12		
	23221	TREE MULTI OAK 14IN 11IN	20		20		
	23222	TREE OAK 14IN	14		14		
	23223	TREE OAK 14IN	14		14		
	23224	TREE OAK 12IN	12		12		
	23225	TREE OAK 12IN	12		12		
	23226	TREE ELM 12IN	12		12		
	23227	TREE ELM 17IN	17		17		
	23228	TREE OAK 13IN	13		13		
	23229	TREE ELM 14IN	14		14		
	23230	TREE OAK 16IN	16		16		
	23231	TREE OAK 24IN	24		24		
	23232	TREE MULTI OAK 16IN 9IN	21		21		
	23233	TREE MULTI OAK 20IN 16IN 12IN	34		34		
	23234	TREE OAK 12IN	12		12		
	23235	TREE MULTI OAK 12IN 11IN	18		18		
	23236	TREE MULTI OAK 12IN 9IN	17		17		
	23237	TREE OAK 12IN	12		12		
	23238	TREE OAK 13IN	13		13		
	23239	TREE OAK 12IN	12		12		
	23240	TREE OAK 16IN	16		16		
	23241	TREE OAK 14IN	14		14		
	23242	TREE OAK 14IN	14		14		
	23243	TREE OAK 12IN	12		12		
	23244	TREE OAK 14IN	14		14		
	23261	TREE MULTI OAK 15IN 14IN 13IN 9IN	33		33		
	23262	TREE ELM 13IN	13		13		
	23263	TREE ELM 14IN	14		14		
	23264	TREE MULTI ELM 18IN 11IN	24		24		
	23265	TREE ELM 14IN	14		14		
	23319	TREE ELM 14IN	14		14		
	23320	TREE ELM 12IN	12		12		
	23321	TREE ELM 12IN	12		12		
	23322	TREE MULTI ELM 12IN 11IN 10IN	23		23		
	23323	TREE ELM 12IN	12		12		
	23343	TREE ELM 15IN	15		15		
	23344	TREE MULTI OAK 14IN 11IN 8IN	24		24		
	23346	TREE OAK 18IN	18		18		
	23347	TREE OAK 20IN	20		20		
	23348	TREE OAK 17IN	17		17		
✳	23352	TREE OAK 23IN	23	23			GRADING
✳	23353	TREE OAK 24IN	24	24			GRADING

LOT 7 TREE MITIGATION REQUIREMENT

TREE MITIGATION REQUIREMENT LOT 7:	TOTAL INCHES	INCHES REMOVED	MITIGATION	INCHES RETAINED
SIGNIFICANT TREES 8"–18" SUBDIVISION	38 TREES: 596	0	0	596
SIGNIFICANT TREES 18"–26" SUBDIVISION	5 TREES: 125	2 TREES: 47	0	78
HERITAGE TREES (2:1 REQUIRED) SUBDIVISION	0 TREE: 0	0	0	0
TOTAL INCHES OF TREES	43 TREES: 721	2 TREES: 47	0	674

OVERALL MITIGATION FEE CALCULATION

SIGNIFICANT TREES 8" – 18": 444" REMOVED; MITIGATION NOT REQUIRED FOR 50% OF SIGNIFICANT TREES: 3262 x 0.5 = 1818;
MITIGATION 1:1 = 0"; 25% CREDIT FOR REMOVAL OF INVASIVE SPECIES: 0 x 0.75 = 0";
MITIGATION FEE $150 PER CI: 0 x 150 = ($0.00 NO MITIGATION FEE)

SIGNIFICANT TREES 18" – 26": 88" REMOVED; MITIGATION NOT REQUIRED FOR 50% OF SIGNIFICANT TREES: 426 x 0.5 = 213;
MITIGATION 2:1: 0" x 2 = 0"; 25% CREDIT FOR REMOVAL OF INVASIVE SPECIES: 0 x 0.75 = 0";
MITIGATION FEE $150 PER CI: 0 x 150 = ($0.00 NO MITIGATION FEE)

SIGNIFICANT TREES 8" – 18" CREDIT: 0"
SIGNIFICANT TREES 18.1" – 25.99" CREDIT: 0"

HERITAGE TREES >26": 0" REMOVED; HERITAGE TREE REMOVAL FEE: 0 x $300 = $0.00;
MITIGATION 3:1: 0" x 3 = 0"; 25% CREDIT FOR REMOVAL OF INVASIVE SPECIES: 0 x 0.75 = 0;
MITIGATION FEE $150 PER CI: 0 x 150 = ($0.00 NO MITIGATION FEE)
(NO HERITAGE MITIGATION FEE)

SIGNIFICANT TREES OVERALL CREDIT: 0"

*NO MITIGATION FEE FOR THIS PROJECT

LOT 8 TREES

LOT 8 TREES

	POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
	23195	TREE MULTI OAK 18IN 10IN	23		23		
	23196	TREE MULTI OAK 13IN 13IN	20		20		
	23197	TREE OAK 14IN	14		14		
	23202	TREE OAK 16IN	16		16		
	23203	TREE OAK 15IN	15		15		
	23208	TREE OAK 14IN	14		14		
	23210	TREE OAK 12IN	12		12		
	23211	TREE OAK 12IN	12		12		
	23212	TREE OAK 14IN	14		14		
	23213	TREE MULTI OAK 13IN 8IN	17		17		
	23214	TREE OAK 13IN	13		13		
	23215	TREE OAK 14IN	14		14		
	23216	TREE OAK 12IN	12		12		
	23245	TREE MULTI OAK 19IN 16IN	27		27		
	23246	TREE OAK 15IN	15		15		
	23247	TREE OAK 12IN	12		12		
	23248	TREE MULTI ELM 14IN 10IN	19		19		
	23249	TREE OAK 19IN	19		19		
	23250	TREE OAK 15IN	15		15		
	23251	TREE OAK 20IN	20		20		
H	23252	TREE OAK 29IN	29		29	Y	
	23253	TREE ELM 12IN	12		12		
	23254	TREE ELM 12IN	12		12		
	23255	TREE MULTI OAK 14IN 14IN	21		21		
	23256	TREE MULTI OAK 16IN 15IN 14IN	31		31		
	23257	TREE OAK 13IN	13		13		
	23258	TREE OAK 13IN	13		13		
	23266	TREE ELM 14IN	14		14		
	23267	TREE OAK 15IN	15		15		
	23268	TREE OAK 14IN	14		14		
✳	23269	TREE OAK 15IN	15	15			EASEMENT
✳	23270	TREE OAK 14IN	14	14			EASEMENT
	23271	TREE OAK 14IN	14		14		
	23272	TREE OAK 12IN	12		12		
	23273	TREE OAK 12IN	12		12		
	23274	TREE OAK 12IN	12		12		
	23275	TREE OAK 17IN	17		17		
	23276	TREE OAK 12IN	12		12		
	23277	TREE OAK 19IN	19		19		
	23278	TREE OAK 13IN	13		13		
	23279	TREE ELM 16IN	16		16		
	23280	TREE MULTI OAK 12IN 11IN	18		18		
	23281	TREE OAK 13IN	13		13		
	23282	TREE OAK 13IN	13		13		
	23283	TREE OAK 14IN	14		14		
	23284	TREE OAK 14IN	14		14		
	23285	TREE OAK 15IN	15		15		
	23286	TREE OAK 13IN	13		13		
	23287	TREE OAK 14IN	14		14		
	23288	TREE OAK 14IN	14		14		
	23289	TREE OAK 15IN	15		15		
	23290	TREE OAK 14IN	14		14		
✳	23291	TREE OAK 13IN	13	13			EASEMENT
✳	23292	TREE OAK 12IN	12	12			EASEMENT
	23293	TREE ELM 15IN	15		15		
	23294	TREE OAK 18IN	18		18		
	23295	TREE OAK 15IN	15		15		
	23296	TREE OAK 16IN	16		16		
	23297	TREE OAK 15IN	15		15		
	23298	TREE OAK 14IN	14		14		
	23299	TREE OAK 13IN	13		13		
	23300	TREE OAK 13IN	13		13		
	23301	TREE OAK 13IN	13		13		
	23302	TREE OAK 14IN	14		14		
	23303	TREE OAK 12IN	12		12		
	23304	TREE CLUSTER OAK 19IN 17IN	28		28		
	23305	TREE OAK 13IN	13		13		
	23306	TREE OAK 12IN	12		12		
	23307	TREE OAK 12IN	12		12		
	23308	TREE OAK 15IN	15		15		
	23309	TREE OAK 14IN	14		14		
	23310	TREE OAK 15IN	15		15		
	23311	TREE OAK 15IN	15		15		
	23312	TREE OAK 12IN	12		12		
	23313	TREE CLUSTER OAK 16IN 12IN	22		22		
	23314	TREE OAK 14IN	14		14		
	23315	TREE OAK 19IN	19		19		
	23316	TREE OAK 12IN	12		12		
	23324	TREE OAK 15IN	15		15		
	23325	TREE OAK 12IN	12		12		
	23326	TREE OAK 12IN	12		12		
	23327	TREE OAK 16IN	16		16		
	23328	TREE OAK 12IN	12		12		
	23329	TREE CLUSTER OAK 12IN 12IN	18		18		
	23330	TREE OAK 14IN	14		14		
	23331	TREE OAK 12IN	12		12		
	23332	TREE CLUSTER OAK 14IN 13IN	21		21		

LOT 8 TREES CONT'D

LOT 8 TREES

	POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
	23333	TREE OAK 16IN	16		16		
	23334	TREE OAK 13IN	13		13		
	23339	TREE OAK 20IN	20		20		
	23340	TREE MULTI OAK 13IN 12IN 9IN	24		24		
	23341	TREE OAK 14IN	14		14		
	23342	TREE MULTI ELM 16IN 14IN	23		23		
	23354	TREE OAK 22IN	22		22		
	23355	TREE OAK 17IN	17		17		
✳	23356	TREE ELM 13IN	13	13			GRADING
	23357	TREE OAK 14IN	14		14		
	23358	TREE OAK 17IN	17		17		
	23396	TREE OAK 14IN	14		14		
	23397	TREE OAK 13IN	13		13		
	23398	TREE OAK 16IN	16		16		
	23399	TREE OAK 14IN	14		14		
	23400	TREE OAK 13IN	13		13		
	23401	TREE OAK 16IN	16		16		
	23402	TREE OAK 13IN	13		13		
	23403	TREE OAK 16IN	16		16		
	23404	TREE OAK 14IN	14		14		
	23424	TREE OAK 13IN	13		13		
	23425	TREE OAK 14IN	14		14		
✳	23426	TREE OAK 22IN	22	22			EASEMENT

LOT 8 TREE MITIGATION REQUIREMENT

TREE MITIGATION REQUIREMENT LOT 8:	TOTAL INCHES	INCHES REMOVED	MITIGATION	INCHES RETAINED
SIGNIFICANT TREES 8"–18" SUBDIVISION	100 TREES:1474	5 TREES: 67	0	1407
SIGNIFICANT TREES 18"–26" SUBDIVISION	9 TREES: 196	1 TREE: 22	0	174
HERITAGE TREES (2:1 REQUIRED) SUBDIVISION	1 TREE: 29	0	0	29
TOTAL INCHES OF TREES	110 TREES: 1699	6 TREES: 89	0	1610

LOT 9 TREES

LOT 9 TREES

POINT	DESCRIPTION	CALIPER INCH	REMOVED	PROTECTED	HERITAGE	REMOVAL REASON
23174	TREE OAK 20IN	20		20		
23175	TREE OAK 13IN	13		13		
23176	TREE CLUSTER OAK 14IN 12IN	20		20		
23177	TREE OAK 17IN	17		17		
23178	TREE MULTI OAK 12IN 8IN	16		16		
23179	TREE OAK 14IN	14		14		
✳ 23180	TREE OAK 14IN	14	14			GRADING
✳ 23181	TREE OAK 15IN	15	15			GRADING
✳ 23182	TREE OAK 19IN	19	19			GRADING
23183	TREE CLUSTER OAK 12IN	12		12		
23192	TREE OAK 12IN	12		12		
23193	TREE MULTI OAK 15IN 8IN	19		19		
23194	TREE OAK 16IN	16		16		
23198	TREE OAK 13IN	13		13		
23199	TREE OAK 15IN	15		15		
23200	TREE OAK 12IN	12		12		
23201	TREE OAK 18IN	18		18		
23204	TREE OAK 20IN	20		20		
23205	TREE OAK 16IN	16		16		
23206	TREE MULTI OAK 16IN 13IN	23		23		
23207	TREE OAK 15IN	15		15		
23209	TREE OAK 13IN	13		13		
✳ 23335	TREE OAK 12IN	12	12			GRADING
✳ 23336	TREE OAK 13IN	13	13			GRADING
✳ 23337	TREE OAK 13IN	13	13			GRADING
✳ 23338	TREE OAK 16IN	16	16			GRADING
✳ 23382	TREE OAK 16IN	16	16			GRADING
✳ 23389	TREE OAK 12IN	12	12			GRADING
✳ 23390	TREE OAK 12IN	12	12			GRADING
✳ 23392	TREE OAK 13IN	13	13			EASEMENT
23405	TREE OAK 12IN	12		12		
23406	TREE OAK 22IN	22		22		

LOT 9 TREE MITIGATION REQUIREMENT

TREE MITIGATION REQUIREMENT LOT 9:	TOTAL INCHES	INCHES REMOVED	MITIGATION	INCHES RETAINED
SIGNIFICANT TREES 8"–18" SUBDIVISION	28 TREES: 412	10 TREES:136	0	276
SIGNIFICANT TREES 18"–26" SUBDIVISION	4 TREES: 81	1 TREES:19	0	62
HERITAGE TREES (2:1 REQUIRED) SUBDIVISION	0 TREE: 0	0	0	0
TOTAL INCHES OF TREES	32 TREES: 493	11 TREES:155	0	338

TREE SURVEY DATE: 5-7-2021

H – DESIGNATES HERITAGE TREE
HR – DESIGNATES HERITAGE TREE TO BE REMOVED (NONE).
✳ – DESIGNATES SIGNIFICANT TREE TO BE REMOVED

BENKENDORFER+ASSOCIATES
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P 512 366 5259

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CITY SUBMITTAL LANDSCAPE NOTES AND SPECIFICATIONS

REGISTERED LANDSCAPE ARCHITECT
BRIAN K. BENKENDORFER
1370
STATE OF TEXAS
11/26/24

NORTH

SCALE:
NONE

PROJECT # 240-01
SHEET # L0.04

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SUB-STREET.CTB

TREE MITIGATION SUMMARY	SURVEY INCHES	REMOVED INCHES	# OF SURVEYED TREES	# OF TREES REMOVED	PERCENTAGE OF # OF TREES RETAINED
TOTAL SIGNIFICAN INCHES (8" - 18") =	3636.00	395	266	28	89%
TOTAL SIGNIFICAN INCHES (18" - 25.99") =	798.5	91.5	38	4	89%
TOTAL HERITAGE INCHES ≥26" =	181	0	6	0	100%

SIGNIFICANT TREE PRESERVATION REQUIRMENTS	# OF TREES	% OF INCHES
UP TO 50% OF SIGNIFICANT TREES/INCHES (8"-18") MAY BE REMOVED WITHOUT MITIGATION	**133**	**1818**
EXISTING TREE CREDITS FOR LANDSCAPE REQUIREMENTS	**CREDIT INCHES AVAILABLE**	
SIGNIFICANT TREE ≤ 18" (1:1)	3241.00	
SINIFICAT TREES > 18" (2:1)	1959.00	
MITIGATION REQUIRMENTS	**# OF INCHES**	
TOTAL INCHES REMOVED AT 1:1 =	**395**	
TOTAL INCHES REMOVED AT 2:1 =	**183**	
TOTAL INCHES REMOVED AT 3:1 =	**0**	
EXISTING TREE CREDIT INCHES=	**3241.00**	
TOTAL MITIGATION INCHES REQUIRE TO BE PLANTED=	**0**	

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CITY SUBMITTAL LANDSCAPE NOTES AND SPECIFICATIONS

REGISTERED LANDSCAPE ARCHITECT
BENJAMIN A. DORFER
1378
STATE OF TEXAS
11/26/24

NORTH

SCALE:
NONE

PROJECT # 240-01
SHEET # L0.05

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ATTACHMENT "G"
OPERATION AND MAINTENANCE PLAN
BAR W RANCH EAST MIXED USE

PROJECT DESCRIPTION

Bar W Ranch East Mixed Use is a 51.474-acre tract of land located in the city limits of Leaner and Williamson County. It is a development of six commercial lots, two mixed use residential lots and one open space lot. This project will utilize one partial sedimentation-filtration pond for the entire site. The property is in the South Fork San Gabriel Watershed and is in a portion the Edward's Aquifer Recharge Zone and Contributing Zone.

PEST MANAGEMENT

The following Integrated Pest Management plan for Bar W Ranch East Mixed Use will assume that primary pests of concern will be Aphids, Beetles, Beneficial Insects, Caterpillars, Fertilizing Recommendations, Fire Ants, Fleas, Galls, Hiring a Landscaping Professional, Landscaping, Lawn Care, Lawn Problems, Mosquitos, Poison Ivy, Pruning, Spider Mites, Product Ratings, Scale, Snails, Stink Bugs, and Weeks. The anticipated pest problems have been derived from the type of pests that typically inhabit subdivisions and developments within local proximity to the project.

Non-toxic and less persistent control products should be employed in controlling pests before more persistent products are considered. More persistent control products should only be used after all other tactics have been employed. It is advisable to utilize a pest control professional, familiar with the IPM approaches, before resorting to highly toxic and persistent chemicals. Regularly scheduled pesticide applications are not considered to be part of the Integrated Pest management.

Sand Filter System

Regular, routine maintenance is essential to effective, long-lasting performance of sand filters. Neglect or failure to service the filters on a regular basis will lead to poor performance and eventual costly repairs. It is recommended that sand filter BMPs be inspected on a quarterly basis and after large storms for the first year of operation. This intensive monitoring is intended to ensure proper operation and provide maintenance personnel with a feel for the operational characteristics of the filter. Subsequent inspections can be limited to semi-annually or more often if deemed necessary (Young et al., 1996).

Certain construction and maintenance practices are essential to efficient operation of the filter. The biggest threat to any filtering system is exposure to heavy sediment loads that clog the filter media. Construction within the watershed should be complete prior to minimize sediment loads. Runoff from any unstabilized construction areas should be treated via a separate sediment system that bypasses the filter media.

Another important consideration in constructing the filter bed is to ensure that the top of the media is completely level. The filter design is based on the use of the entire filter media surface area; a sloped filter surface would result in disproportionate use of the filter media.

Other recommended maintenance guidelines include:

· ***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-down time 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.

· ***Debris and Litter Removal.*** Debris and liter 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.

ATTACHMENT "G" (cont.)
OPERATION AND MAINTENANCE PLAN
BAR W RANCH EAST MIXED USE

DEVELOPER CONTACT INFORMATION

Bar W East Commercial, LTD.
901 S. Mopac Expressway, Suite 550
Austin, TX 78746

Dan Wheat
Developer / Owner Signature

10/21/24
Date

Vice President, B&O Bar W East G.P. LLC., General Partner of Bar W East Commercial, LTD.

PERMANENT STORMWATER SECTION

ATTACHMENT "I"

This project is served by a water quality sedimentation/filtration basin located downstream of the site. The proposed facilities controlling the resulting run-off have been designed with measures to minimize stream bank erosion at the point of discharge to the adjacent stream. The outfall from the water quality facility is equipped with large dump rock which will slow down the stormwater discharge velocities, thus stopping the undermining of soil and sediment transport in the stream.

IX

AGENT AUTHORIZATION FORM

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

I Dan Wheat,
Print Name

Vice President, B&O Bar W East G.P., LLC., General Partner of Bar W East Commercial, LTD.
Title - Owner/President/Other

of Bar W East Commercial, LTD.,
Corporation/Partnership/Entity Name

have authorized Patrick M. Sullivan
Print Name of Agent/Engineer

of Carlson, Brigance & Doering, Inc.
Print Name of Firm

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

I also understand that:

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

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Dan Wheat
Applicant's Signature

10/21/2024
Date

THE STATE OF Texas §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Dan Wheat 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 21 day of October, 2024.

Delaney Ryann Williams
NOTARY PUBLIC

Delaney Ryann Williams
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 07-14-2027

X

APPLICATION FEE FORM

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Bar W Ranch East Mixed Use
Regulated Entity Location: SE corner of Ronald Reagan Blvd. & Kauffman Loop
Name of Customer: Bar W East Commercial, LTD.
Contact Person: Dan Wheat Phone: (512) 477-1212
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	51.474 Acres	$ 8,000
Sewage Collection System	1,600 L.F.	$ 800
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: Dan Wheat Date: 10/21/2024
Vice President, B&O Bar W East, G.P., LLC,
General Partner of Bar W East Commercial, Ltd.

TCEQ-0574 (Rev. 02-24-15)

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

XI

CORE DATA FORM

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN		**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:*

Bar W East Commercial, Ltd.

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
0804580343	32084729691		

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

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

13. Independently Owned and Operated?
☐ **Yes** ☐ **No**

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

☐ Owner ☒ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:	901 S. Mopac Expressway, Suite 550						
	City	Austin	**State**	TX	**ZIP**	78746	**ZIP + 4**

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*
	pato@barshop-oles.com

18. Telephone Number	**19. Extension or Code**	**20. Fax Number** *(if applicable)*

(512) 477-1212		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

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

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

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

Bar W Ranch East Mixed Use

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	901 S							
	City		**State**		**ZIP**		**ZIP + 4**	
24. County								

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:					
26. Nearest City			**State**		**Nearest ZIP Code**

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:			**28. Longitude (W) In Decimal:**		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
1521		236115	236116

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

Land development.

34. Mailing Address:	**901 S. Mopac Expressway, Suite 550**							
	City	**Austin**	**State**	**TX**	**ZIP**	**78746**	**ZIP + 4**	
35. E-Mail Address:	**pato@barshop-oles.com**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 477-1212		( ) -

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

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

SECTION IV: Preparer Information

40. Name:	Patrick M. Sullivan	**41. Title:**	P.E.

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512 **)** 280-5160		**( ) -**	

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:	Carlson, Brigance & Doering, Inc.	**Job Title:**	P.E.
Name *(In Print):*	Patrick M. Sullivan	**Phone:**	**(** 512 **)** 280- **5160**
Signature:	Patrick M. Sullivan	**Date:**	12-03-2024