Gateway 29, Lots 9 & 10

WATER POLLUTION ABATEMENT PLAN
&
ORGANIZED SEWAGE COLLECTION SYSTEM PLAN

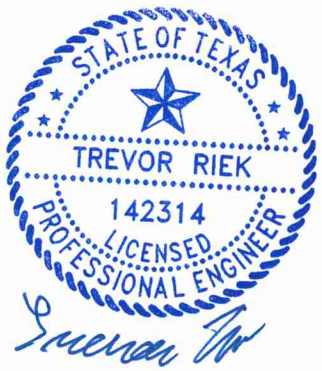
TCEQ – 0584
&
TCEQ – 0582

April 2024

Gateway 29, Lots 9 & 10

WATER POLLUTION ABATEMENT PLAN
&
ORGANIZED SEWAGE COLLECTION SYSTEM PLAN

TCEQ – 0584
&
TCEQ – 0582



4-18-24

April 2024

April 9, 2024

Mr. Robert Sadlier
Texas Commission on Environmental Quality
Region 11
12100 Park 35 Circle, Bldg. A
Austin, Texas 78753

Re: Gateway 29, Lots 9 & 10
Water Pollution Abatement Plan (WPAP) &
Organized Sewage Collection System Application (SCS)

Dear Mr. Sadlier:

Please find attached one (1) original & one (1) copy of the Gateway 29, Lots 9 & 10 Water Pollution Abatement Plan and Organized Sewage Collection System Application, one (1) original set of signed plans, one (1) half size set of plans, and a flash drive. The WPAP portion has been prepared in accordance with the Texas Administrative Code (30 TAC 213), and current policies for development over the Edwards Aquifer Recharge Zone. The SCS Application has been prepared to be consistent with the regulations of the Texas Commission on Environmental Quality (30 TAC 213 & 217) and current policies for development over the Edwards Aquifer Recharge Zone.

The WPAP application applies to an approximate 14-acre site as identified by the project limits. The SCS Application applies to an approximately 828 linear feet of sewer main proposed as part of this project. Please review the plan information for the items it is intended to address. If acceptable, please provide a written approval of the plan in order that construction may begin at the earliest opportunity.

Appropriate review fee ($7,150 Total; $6,500 WPAP; $650 SCS) and fee application are included. If you have any questions or require additional information, please do not hesitate to contact me at your earliest convenience.

Sincerely,
Pape-Dawson Engineers, Inc.
Texas Board of Professional Engineers, Firm Registration # 470

Trevor Riek, P.E.
Project Manager

Table of Contents

SECTION I: EDWARDS AQUIFER APPLICATION COVER PAGE (TCEQ-20705)

SECTION II: GENERAL INFORMATION FORM (TCEQ-0587)

Attachment A: Road Map

Attachment B: USGS Quadrangle/Edwards Recharge Zone Map

Attachment C: Project Description

SECTION III: METES AND BOUNDS

SECTION IV: GEOLOGIC ASSESSMENT FORM (TCEQ-0585)

SECTION V: WATER POLLUTION ABATEMENT APPLICATION FORM (TCEQ-0584)

Attachment A: Factors Affecting Water Quality

Attachment B: Volume and Character of Stormwater

Attachment E: Site Plan

SECTION VI: ORGANIZED SEWAGE COLLECTION SYSTEM (TCEQ-0582)

Attachment A: Engineering Design Report

Attachment E: Site Plan

Attachment F: Final Plan and Profile Sheets

SECTION VII: TEMPORARY STORMWATER SECTION (TCEQ-0602)

Attachment A: Spill Response Actions

Attachment B: Potential Sources of Contamination

Attachment C: Sequence of Major Activities

Attachment D: Temporary Best Management Practices and Measures (BMP's)

Attachment F: Structural Practices

Attachment G: Drainage Area Map(s)

Attachment I: Inspection and Maintenance for BMP's

Attachment J: Schedule of Interim and Permanent Soil Stabilization Practices

SECTION VIII: PERMANENT STORMWATER SECTION (TCEQ-0600)

Attachment B: BMP's for Upgradient Stormwater

Attachment C: BMP's for On-site Stormwater

Attachment D: BMP's for Surface Streams

Attachment F: Construction Plans

Attachment G: Inspection, Maintenance, Repair and Retrofit Plan

Attachment I: Measures for Minimizing Surface Stream Contamination

SECTION IX: AGENT AUTHORIZATION FORM (TCEQ-0599)

SECTION X: APPLICATION FEE FORM (TCEQ-0574)

SECTION XI: TCEQ CORE DATA FORM (TCEQ-10400)

SECTION I

EDWARDS AQUIFER APPLICATION COVER PAGE (TCEQ-20705)

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: Fuze Leander						**2. Regulated Entity No.:** N/A			
3. Customer Name: Zekelman Property Leander 53, LLC						**4. Customer No.:** N/A			
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):**			14.00
9. Application Fee:	$7,150		**10. Permanent BMP(s):**			Batch Detention Pond, VFS			
11. SCS (Linear Ft.):	828		**12. AST/UST (No. Tanks):**			N/A			
13. County:	Williamson		**14. Watershed:**			North 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.)	__	__	__
Region (1 req.)	__	__	__
County(ies)	__	__	__
Groundwater Conservation District(s)	__Edwards Aquifer Authority __Barton Springs/ Edwards Aquifer __Hays Trinity __Plum Creek	__Barton Springs/ Edwards Aquifer	NA - 1 ORIGINAL APPLICATION - 1 APPLICATION COPY - 1 FULL-SIZED ORIGINAL SET - 1 HALF-SIZE SET - 1 FLASH DRIVE
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 ✓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.

Trevor Riek

Print Name of Customer/Authorized Agent

09/18/2023

Signature of Customer/Authorized Agent Date

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

SECTION II

GENERAL INFORMATION FORM (TCEQ-0587)

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: Trevor Riek

Date: 09/18/2023

Signature of Customer/Agent:

Project Information

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

   [X] Recharge Zone
   [ ] Transition Zone

6. Plan Type:

   [X] WPAP
   [X] SCS
   [ ] Modification
   [ ] AST
   [ ] UST
   [ ] Exception Request

7. Customer (Applicant):

Contact Person: Angela Miu
Entity: Zekelman Property Leander 53, LLC
Mailing Address: 227 W Monroe St., Ste 2600
City, State: Chicago, IL Zip: 60606
Telephone: 312-275-1672 FAX: _____
Email Address: angela.miu@zekelman.com

8. Agent/Representative (If any):

Contact Person: Trevor Riek, P.E.
Entity: Pape-Dawson Engineers
Mailing Address: 10801 N Mopac Expy, Bldg 3, Suite 200
City, State: Austin, TX Zip: 78759
Telephone: Pape-Dawson Engineers FAX: _____
Email Address: triek@pape-dawson.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.

A LOCATION MAP HAS BEEN INCLUDED AS ATTACHMENT A

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: GEO REFERENCED PDF MAP INCLUDED IN ELECTRONIC SUBMITTAL

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.

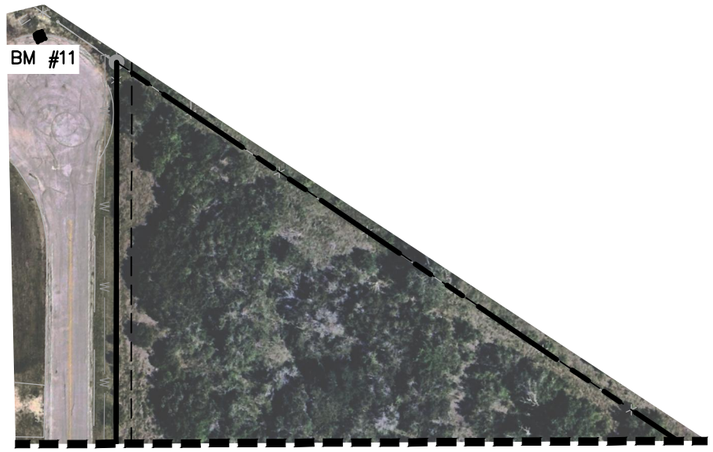
19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

- ☒ 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.

MATCHLINE THIS SHEET



MATCHLINE THIS SHEET

SCALE: 1"= 100'

100' 0' 50' 100'

LEGEND

- PROPERTY LINE
- PROPOSED EASEMENT LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED GRATE INLET
- PROPOSED JUNCTION BOX W/ MANHOLE
- PROPOSED CURB INLET

BM #10: SIX COTTON SPINDLE. +/- 65' WEST OF SOUTHWEST LOT CORNER.
DATUM: NAD83, STATE PLANE CENTRAL ZONE – COMBINED
SCALE FACTOR OF 0.999880014398272
GRID NORTHING: 10,203,075.39 GRID EASTING: 3,082,766.80
ELEVATION=1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS). +/- 55' WEST OF NORTHWEST LOT CORNER.
DATUM: NAD83, STATE PLANE CENTRAL ZONE – COMBINED
SCALE FACTOR OF 0.999880014398272
GRID NORTHING: 10,203,986.98 GRID EASTING: 3,082,429.05
ELEVATION=1035.47

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

FUZE
CITY OF LEANDER, TEXAS
STAKING MAP

JOB NO. 51283-01
DATE OCTOBER 2023
DESIGNER
CHECKED TR
DRAWN AG
SHEET 1 of 1

Date: Mar 20, 2024, 2:32pm User ID: KThomas
File: H:\Projects\512\83\01\301 Construction Documents\Exhibits\EXH51283-01_TCEQ Staking Map.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SECTION II

GENERAL INFORMATION FORM: ATTACHMENT A

Road Map

WPAP APPLICATION FORM
ATTACHMENT A: ROAD MAP

KAUFFMAN LOOP, LEANDER TX 78628

AERIAL IMAGERY PROVIDED BY GOOGLE © UNLESS OTHERWISE NOTED. Imagery ©2022, CAPCOG, Digital Globe Texas Orthoimagery Program, USDA Farm Service Agency.

Date: Sep 07, 2022 4:47:20 PM
THIS MAP WAS CREATED USING THE PAPE-DAWSON GIS WEB MAPPING SERVICES

DATE	September 2023
SHEET	1.0

PAPE-DAWSON ENGINEERS

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL

SECTION II

GENERAL INFORMATION FORM: ATTACHMENT B

USGS Quadrangle/Edwards Recharge Zone Map

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

EDWARDS AQUIFER CONTRIBUTING ZONE

EDWARDS AQUIFER RECHARGE ZONE

EDWARDS AQUIFER RECHARGE ZONE

FUZE LEANDER SITE LOCATION

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
Names.....GNIS, 1979 - 2018
Hydrography.....National Hydrography Dataset, 2002 - 2011
Contours.....National Elevation Dataset, 2002 - 2004
Boundaries.....Multiple sources; see metadata file 2016 - 2017

Wetlands.....FWS National Wetlands Inventory 1982

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
MN
GN
0°36′ 11 MILS
3°43′ 66 MILS

U.S. National Grid
100,000 - m Square ID
PV
PU
00
Grid Zone Designation 14R

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
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, 2011.
A metadata file associated with this product is draft version 0.6.18

TEXAS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

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

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

LEANDER NE, TX
2019

NSN 7643016396982
NGA REF NO. USGSX24K25239

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF TEXAS
TEXAS WATER DEVELOPMENT BOARD

LEANDER NE QUADRANGLE
TEXAS–WILLIAMSON CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

Edwards Aquifer Contributing Zone

Edwards Aquifer Recharge Zone

Edwards Aquifer Contributing Zone

Edwards Aquifer Recharge Zone

Edwards Aquifer Contributing Zone

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1962. Field checked 1962

Polyconic projection. 1927 North American Datum
10,000-foot grid based on Texas coordinate system, central zone
1000-meter Universal Transverse Mercator grid ticks, zone 14, shown in blue
The difference between 1927 North American Datum and North American Datum of 1983 (NAD 83) for 7.5 minute intersections is given in USGS Bulletin 1875. The NAD 83 is shown by dashed corner ticks

Fine red dashed lines indicate selected fence lines

UTM GRID AND 1962 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

Map photoinspected 1976
No major culture or drainage changes observed

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

3097–324

ROAD CLASSIFICATION
Heavy-duty
Medium-duty
Light-duty
Unimproved dirt
U.S. Route
State Route

LEANDER NE, TEX.
30097-F7-TF-024
1962
PHOTOINSPECTED 1976
DMA 6445 III NE–SERIES V882

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program

Regulatory Zones

30 TAC Chapter 213- Edwards Aquifer
Effective May 1985

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

SECTION II

GENERAL INFORMATION FORM: ATTACHMENT C

Project Description

NARRATIVE OF PROPOSED PROJECT

WPAP Project Description

The Gateway 29, Lots 9 & 10 Project is located on a 14.00-acre tract of land located south and west of SH 29 at the intersection of CR 267 and Kauffman Loop, within the city limits of Leander in Williamson County, Texas. Under proposed conditions approximately 6.15 acres are proposed to allow public access through parkland. The remaining acreage is proposed for a multi-family residential development with associated parking and drive access. The site is currently undeveloped and lies within the North Fork San Gabriel River watershed.

A geologic assessment was conducted, and no geologic or manmade features were identified. The project limits are located entirely within the Edwards Aquifer Recharge Zone.

Permanent Pollution Abatement Measures

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a batch detention basin and vegetative filter strips are proposed. The batch detention basin is intended to capture stormwater runoff for the multi-family residential building and associated parking and is designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005). Approximately 4.846 acres of proposed impervious cover and 0.515 acres of offsite impervious cover are flowing to the pond. The proposed batch detention basin is designed to remove 80% of the increase in Total Suspended Solids (TSS) from the site. TSS calculations have been included for their reference.

There is no existing impervious cover within the 14.00-acre development, and 5.72 acres of impervious cover is proposed. Approximately 0.46 acres of this impervious cover is the roadway section along the south side of the site. Per coordination with the adjacent property owner and developer, the entirety of this roadway and the resulting impervious cover is to be captured, analyzed and treated by the property to the east. Please see the Proposed Condition Summary Table for the breakdown of which areas are being captured and treated by the pond. The on-site and off-site areas together total 13.98 acres, and total 6.138 acres of impervious cover. As stated above, this table does not include the area of the roadway section to the south.

The required total suspended solids (TSS) treatment for the watershed area flowing to the batch detention pond is 4,980 pounds of TSS generated from the 5.36 acres of impervious cover flowing to it. The water quality and detention pond is designed to treat over 4,980 pounds of TSS. The required water quality volume per TCEQ requirements is 33,089 ft^3; The proposed pond is providing 37,499 ft^3 at an elevation of 1018.5 ft. The proposed pond will not require walls and will utilize earthen slopes. A maintenance access ramp with 4:1 slope is provided along the south of the pond.

Vegetative filter strips are proposed for the offsite flows from Kauffman Loop road to the northwest and the the dedicated parkland area that is not captured by the pond. Approximately 921 pounds of TSS is anticipated to be generated from the 0.99 acres of combined impervious cover

from the two uncaptured drainage areas. The resulting VFS TSS removal calculations for both uncaptured areas is included for reference.

SCS Project Description

The Gateway 29, Lots 9 & 10 Sewage Collection System (SCS) Application proposes the construction of approximately 828, linear feet (LF) of 8-inch (8") PVC gravity wastewater main. Approximately 60 LF of the proposed 828 LF 8" gravity wastewater mains are to be constructed of DR-18, 160 psi pressure-rated pipe, centered on water/sewer-line crossings. Regulated activities proposed include excavation, construction of sewer mains, manhole installation, backfill, and compaction. Approximately 0.99 acres may be disturbed, as identified by the limits of the fifty-foot (ft') radius SCS/GA envelope shown on the plans.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Gateway 29, Lots 9 & 10
Date Prepared: 10/24/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 28.93(A_N \times P)$

where:

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

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

County =	Williamson		
Total project area included in plan * =	14.00	acres	Total Lot Area
Predevelopment impervious area within the limits of the plan * =	0.00	acres	
Total post-development impervious area within the limits of the plan * =	5.26	acres	Total Lot IC (Excluding Road)
Total post-development impervious cover fraction * =	0.38		
P =	32	inches	
$L_{M\ TOTAL\ PROJECT}$ =	4869	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. = 1

Total drainage basin/outfall area =	8.31	acres	O2+P1
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres	
Post-development impervious area within drainage basin/outfall area =	5.36	acres	IC(O2+P1)
Post-development impervious fraction within drainage basin/outfall area =	0.65		
$L_{M\ THIS\ BASIN}$ =	4963	lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Batch Detention Pond
Removal efficiency = 91 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

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

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

where:

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

A_C =	8.31	acres
A_I =	5.36	acres
A_P =	2.95	acres
L_R =	5448	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 4963 lbs.

F = 0.91

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.80	inches
Post Development Runoff Coefficient =	0.46	
On-site Water Quality Volume =	24728	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.57	acres
Off-site Impervious cover draining to BMP =	0.52	acres
Impervious fraction of off-site area =	0.90	
Off-site Runoff Coefficient =	0.74	
Off-site Water Quality Volume =	2748	cubic feet
Storage for Sediment =	5495	
Total Capture Volume (required water quality volume(s) x 1.20) =	32971	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.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Gateway 29, Lots 9 & 10
Date Prepared: 10/24/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 28.93(A_N \times P)$

where:

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

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

County =	Williamson		
Total project area included in plan * =	14.00	acres	Total Lot Area
Predevelopment impervious area within the limits of the plan * =	0.00	acres	
Total post-development impervious area within the limits of the plan* =	5.26	acres	Total Lot IC (Excluding Road)
Total post-development impervious cover fraction * =	0.38		
P =	32	inches	
$L_{M\ TOTAL\ PROJECT}$ =	4869	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. = 1

Total drainage basin/outfall area =	5.08	acres	P2
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres	
Post-development impervious area within drainage basin/outfall area =	0.46	acres	IC(P2)
Post-development impervious fraction within drainage basin/outfall area =	0.09		
$L_{M\ THIS\ BASIN}$ =	421	lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:

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

A_C =	5.08	acres
A_I =	0.46	acres
A_P =	4.63	acres
L_R =	496	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 421 lbs.

F = 0.85

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Gateway 29, Lots 9 & 10
Date Prepared: 10/24/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 28.93(A_N \times P)$

where:

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

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

County =	Williamson		
Total project area included in plan * =	14.00	acres	Total Lot Area
Predevelopment impervious area within the limits of the plan * =	0.00	acres	
Total post-development impervious area within the limits of the plan* =	5.26	acres	Total Lot IC (Excluding Road)
Total post-development impervious cover fraction * =	0.38		
P =	32	inches	
$L_{M\ TOTAL\ PROJECT}$ =	4869	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. = 1

Total drainage basin/outfall area =	0.59	acres	O1
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres	
Post-development impervious area within drainage basin/outfall area =	0.54	acres	IC(O1)
Post-development impervious fraction within drainage basin/outfall area =	0.92		
$L_{M\ THIS\ BASIN}$ =	500	lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Vegetated Filter Strips
Removal efficiency = 85 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

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

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

where:

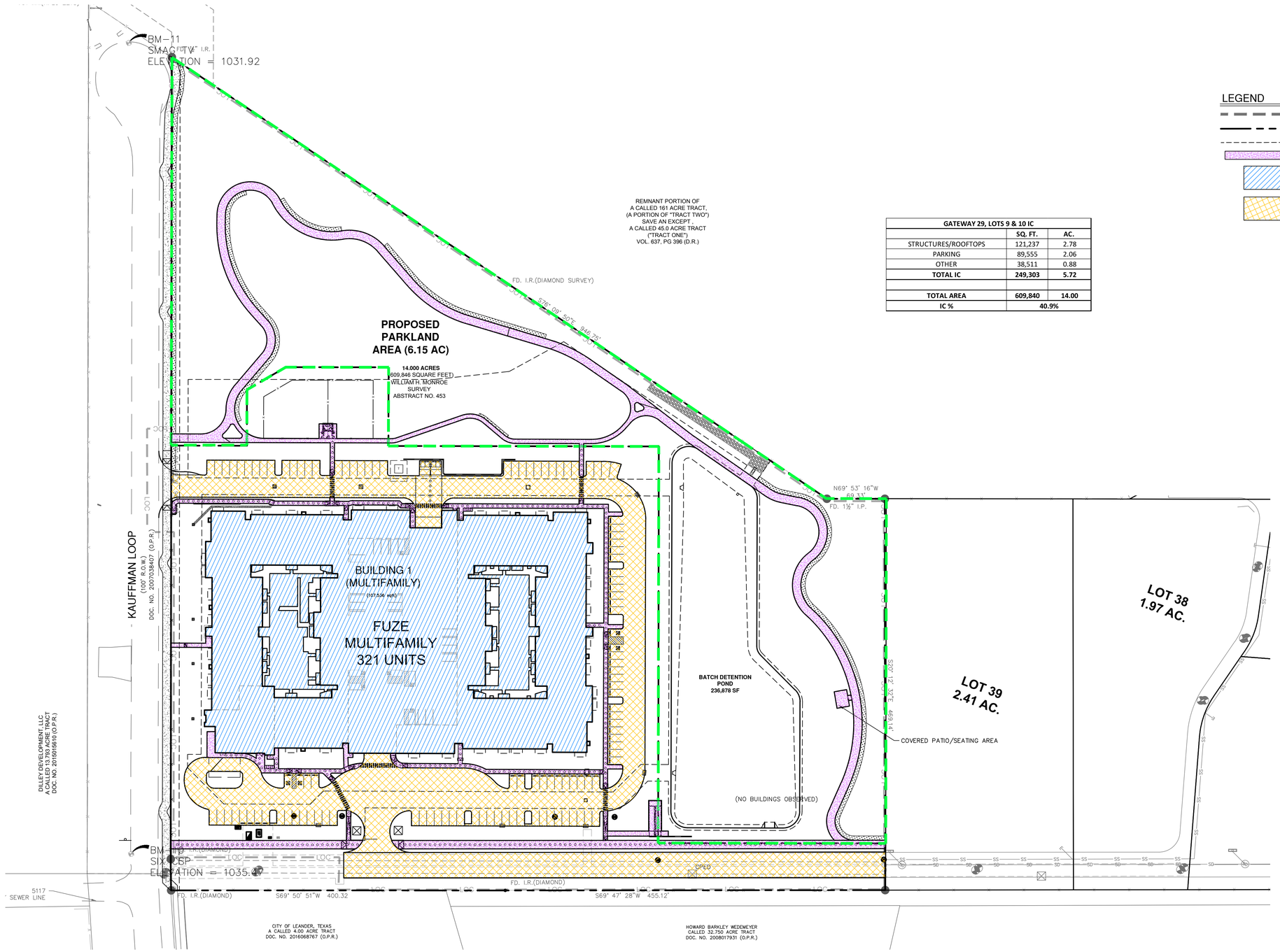
A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	0.59	acres
A_I =	0.54	acres
A_P =	0.05	acres
L_R =	509	lbs

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

Desired $L_{M\ THIS\ BASIN}$ = 500 lbs.

F = 0.98



SCALE: 1" = 60'

0' 60' 120' 180'

LEGEND

- LOC — LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED EASEMENT LINE
- PROPOSED SIDEWALK
- PROPOSED BUILDING
- PROPOSED DRIVEWAYS & PARKING

GATEWAY 29, LOTS 9 & 10 IC		
	SQ. FT.	**AC.**
STRUCTURES/ROOFTOPS	121,237	2.78
PARKING	89,555	2.06
OTHER	38,511	0.88
TOTAL IC	**249,303**	**5.72**
TOTAL AREA	**609,840**	**14.00**
IC %	**40.9%**	

NO.	REVISION	DATE

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

TCEQ WPAP IMPERVIOUS COVER EXHIBIT

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED ____ DRAWN KT
SHEET 01 of 01

Date: Apr 11, 2024, 10:38am User ID: jwolf
File: \\pape-dawson.com\pdfs-na\Projects\512\83\01\301 Construction Documents\Exhibits\EX240315 WPAP IC Exhibit.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

SECTION III

METES AND BOUNDS

FIELD NOTE DESCRIPTION

FIELD NOTE DESCRIPTION

BEING A 34.722 ACRE TRACT (1,512,487 SQUARE FEET) OF LAND, LOCATED IN THE WILLIAM H. MONROE SURVEY, ABSTRACT NO. 453 AND THE GREENLEAF FISK SURVEY, ABSTRACT NO. 5, SITUATED IN WILLIAMSON COUNTY, TEXAS, OUT OF A CALLED 14.00 ACRE TRACT OF LAND DESCRIBED IN A SPECIAL WARRANTY DEED WITH VENDOR'S LIEN TO ZEKELMAN PROPERTY LEANDER 53, LLC DESCRIBED AND RECORDED IN DOCUMENT NUMBER 2021159540 IN THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS (O.P.R.W.C.TX.), AND REMAINDER OF A CALLED 32.266 ACRE TRACT OF LAND DESCRIBED IN A SPECIAL WARRANTY DEED WITH VENDOR'S LIEN TO GATEWAY 29 REAL ESTATE, LLC RECORDED IN DOCUMENT NUMBER 2021019843 O.P.R.W.C.TX., AND A CALLED 2.457 ACRE TRACT OF LAND DESCRIBED IN DOCUMENT NUMBER 2023061605 O.P.R.W.C.TX., SAID 34.722 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A 1/2" IRON ROD FOUND FOR THE WEST CORNER OF THE HEREIN DESCRIBED TRACT, A SOUTH ANGLE POINT OF A CALLED 50.787 ACRE TRACT OF LAND (REFERRED TO AS TRACT 1) CONVEYED TO HIGHWAY 29 COMMERCIAL, LLC DESCRIBED AND RECORDED IN DOCUMENT NUMBER 2024004050 O.P.R.W.C.TX., ON THE EXISTING EAST RIGHT-OF-WAY LINE OF KAUFFMAN LOOP, A 100' WIDE RIGHT-OF-WAY, HAVING A GRID COORDINATE VALUE OF NORTHING: 10,203,988.76' AND EASTING: 3,082,483.29';

THENCE, S 76°09'50" E, ALONG THE SHARED BOUNDARY LINE OF SAID 14.00 ACRE TRACT AND THE SAID 50.787 ACRE TRACT, PASSING A 1.5" IRON PIPE FOUND AT A DISTANCE OF 455.67 FEET, PASSING A 1/2" IRON ROD FOUND AT DISTANCE OF 483.64 FEET, FOR A TOTAL A DISTANCE OF 946.75 FEET TO AN INTERIOR ANGLE CORNER OF THE HEREIN DESCRIBED TRACT, FROM WHICH A 1.5" IRON PIPE FOUND BEARS N 69°59'04" W A DISTANCE OF 1.54 FEET;

THENCE, N 69°53'16" E A DISTANCE OF 363.57 FEET ALONG THE COMMON BOUNDARY LINE OF SAID 14.00 ACRE TRACT, THE SAID 50.787 ACRE TRACT, AND THE CALLED 32.266 ACRE TRACT, TO A 1/2" IRON ROD WITH CAP STAMPED "DIAMOND SURVEYING" FOUND FOR THE SHARED EAST CORNER OF SAID 50.787 ACRE TRACT, FOR AN INTERIOR ANGLE CORNER OF THE HEREIN DESCRIBED TRACT;

THENCE, N 40°58'11" E A DISTANCE OF 29.60 FEET ALONG THE COMMON BOUNDARY LINE OF SAID 32.266 ACRE TRACT AND SAID 50.787 ACRE TRACT TO A 1/2" IRON ROD WITH CAP STAMPED "DIAMOND SURVEYING" FOUND FOR AN INTERIOR ANGLE CORNER OF THE HEREIN DESCRIBED TRACT;

THENCE, N 48°48'47" W A DISTANCE OF 495.25 FEET ALONG THE COMMON BOUNDARY LINE OF SAID SAID 32.266 ACRE TRACT AND SAID 50.787 ACRE TRACT, TO A 5/8" IRON ROD WITH CAP FOUND STAMPED "LJA SURVEYING", FOR THE SOUTHERLY CORNER OF A CALLED 2.457 ACRE TRACT CONVEYED TO GATEWAY 29 REAL ESTATE LLC, DESCRIBED AND RECORDED IN DOCUMENT NUMBER 2023061605 O.P.R.W.C.TX., FOR AN ANGLE CORNER OF THE HEREIN DESCRIBED TRACT, SAME BEING THE COMMON CORNER OF SAID 32.266 ACRE TRACT AND SAID 50.787 ACRE TRACT;

THENCE, N 75°24'03" W A DISTANCE OF 653.99 FEET ALONG THE COMMON BOUNDARY LINE OF SAID 50.787 ACRE TRACT AND SAID 2.457 ACRE TRACT, TO A 5/8" IRON ROD WITH CAP FOUND STAMPED "LJA SURVEYING", FOR A CORNER OF THE HEREIN DESCRIBED TRACT, SAME BEING THE COMMON CORNER OF SAID 50.787 ACRE TRACT AND SAID 2.457 ACRE TRACT;

THENCE, N 14°35'57" E A DISTANCE OF 327.32 FEET ALONG THE COMMON BOUNDARY LINE OF SAID 50.787 ACRE TRACT AND SAID 2.457 ACRE TRACT, TO A 1/2" IRON ROD FOUND IN ASPHALT FOR THE NORTHWEST CORNER OF THE HEREIN DESCRIBED TRACT, SAME BEING THE NORTHWEST CORNER OF SAID 32.266 ACRE TRACT, AND COMMON CORNER OF SAID 50.787 ACRE TRACT AND SAID 2.457 ACRE TRACT, ON THE SOUTH RIGHT-OF-WAY LINE OF WEST STATE HIGHWAY 29, A VARIABLE WIDTH RIGHT-OF-WAY;

THENCE, WITH A CURVE TO THE LEFT HAVING A RADIUS OF 2,915.28 FEET, AN ARC LENGTH OF 99.51, A DELTA ANGLE OF 1°57'21", AND A CHORD BEARING S 68°11'25" E A DISTANCE OF 99.51 FEET, ALONG THE SHARED BOUNDARY LINE OF SAID 32.266 ACRE TRACT AND SAID WEST STATE HIGHWAY 29, VARIABLE WIDTH RIGHT-OF-WAY, TO A 1/2" IRON ROD FOUND WITH AN ILLEGIBLE CAP STAMPED FOR A POINT OF CURVATURE TO THE LEFT OF THE HEREIN DESCRIBED TRACT;

THENCE, WITH A CURVE TO THE LEFT HAVING A RADIUS OF 2,915.14 FEET, AN ARC LENGTH OF 1,053.06 A DELTA ANGLE OF 20°41'51", AND A CHORD BEARING S 79°31'45" E A DISTANCE OF 1,047.35 FEET, ALONG THE SHARED BOUNDARY LINE OF SAID 32.266 ACRE TRACT AND SAID WEST STATE HIGHWAY 29, VARIABLE WIDTH RIGHT-F-WAY, TO A 1/2" IRON ROD FOUND WITH CAP STAMPED "DIAMOND SURVEYING" FOR A POINT OF TANGENCY OF THE HEREIN DESCRIBED TRACT;

THENCE, S 89°44'36" E A DISTANCE OF 33.93 FEET, ALONG SAID SHARED BOUNDARY LINE OF SAID 32.266 ACRE TRACT AND SAID WEST STATE HIGHWAY 29, VARIABLE WIDTH RIGHT-OF-WAY, TO A 1/2" IRON ROD FOUND FOR A NORTH CORNER OF THE HEREIN DESCRIBED TRACT;

THENCE, S 51°01'22" E A DISTANCE OF 160.25 FEET, ALONG SAID SHARED BOUNDARY LINE OF SAID 32.266 ACRE TRACT AND SAID WEST STATE HIGHWAY 29, VARIABLE WIDTH RIGHT-OF-WAY, AND RONALD REAGAN BOULEVARD, A VARIABLE WIDTH RIGHT-OF-WAY, TO A 1/2" IRON ROD FOUND FOR THE NORTHEAST CORNER OF THE HEREIN DESCRIBED TRACT, SAME BEING THE NORTHEAST CORNER OF SAID 32.266 ACRE TRACT;

THENCE, S 12°01'04" E A DISTANCE OF 415.70 FEET, ALONG SAID SHARED BOUNDARY LINE OF SAID 32.266 ACRE TRACT AND SAID RONALD REAGAN BOULEVARD, VARIABLE WIDTH RIGHT-OF-WAY, TO A 1/2" IRON ROD WITH CAP STAMPED "DIAMOND SURVEYING" FOR AN ANGLE POINT OF THE HEREIN DESCRIBED TRACT;

THENCE, S 15°42'56" E A DISTANCE OF 408.00 FEET, ALONG SAID SHARED BOUNDARY LINE OF SAID 32.266 ACRE TRACT AND SAID RONALD REAGAN BOULEVARD, VARIABLE WIDTH RIGHT-OF-WAY, TO A 1/2" IRON ROD WITH CAP STAMPED "DIAMOND SURVEYING" FOR THE SOUTHEAST CORNER OF THE HEREIN DESCRIBED TRACT, SAME BEING THE SOUTHEAST CORNER OF SAID 32.266 ACRE TRACT AT A CUTBACK OF SAID RONALD REAGAN BOULEVARD, VARIABLE WIDTH RIGHT-OF-WAY;

THENCE, S 72°24'20" W A DISTANCE OF 113.01 FEET, ALONG SAID SHARED BOUNDARY LINE OF SAID 32.266 ACRE TRACT AND SAID RONALD REAGAN BOULEVARD, VARIABLE WIDTH RIGHT-OF-WAY, TO A 1/2" IRON ROD WITH CAP STAMPED "DIAMOND SURVEYING" FOR AN ANGLE POINT OF THE HEREIN DESCRIBED TRACT;

THENCE, S 57°36'45" W A DISTANCE OF 34.51 FEET, ALONG SAID SHARED BOUNDARY LINE OF SAID 32.266 ACRE TRACT AND SAID RONALD REAGAN BOULEVARD, VARIABLE WIDTH RIGHT-OF-WAY, TO A 1/2" IRON ROD WITH CAP STAMPED "DIAMOND SURVEYING" FOR AN ANGLE POINT OF THE HEREIN DESCRIBED TRACT, AN ANGLE POINT OF SAID 32.266 ACRE TRACT, AND AN ANGLE POINT OF A CALLED 0.013 ACRE TRACT OF LAND CONVEYED TO WEDEMEYER, HOWARD BARKLEY DESCRIBED AND RECORDED IN DOCUMENT NUMBER 2008071853 O.P.R.W.C.TX.;

THENCE, N 48°08'52" W A DISTANCE OF 12.51 FEET, ALONG SAID SHARED BOUNDARY LINE OF SAID 32.266 ACRE TRACT AND SAID 0.013 ACRE TRACT, TO A 1/2" IRON ROD WITH ILLEGIBLE CAP FOUND FOR AN ANGLE POINT OF THE HEREIN DESCRIBED TRACT;

THENCE, S 69°47'28" W PASSING A 1/2" IRON ROD WITH ILLEGIBLE CAP FOUND AT A DISTANCE OF 37.36 FEET, FOR A TOTAL DISTANCE OF 1,032.93 FEET, ALONG SHARED BOUNDARY LINE OF SAID 32.266 ACRE TRACT, SAID 14.00 ACRE TRACT, SAID 0.013 ACRE TRACT, A CALLED 0.436 ACRE TRACT OF LAND AND A CALLED 0.184 ACRE TRACT OF LAND CONVEYED TO WEDEMEYER, HOWARD BARKLEY DESCRIBED AND RECORDED IN DOCUMENT NUMBER 2008071853 O.P.R.W.C.TX.;

THENCE, S 69°50'51" W PASSING A 1/2" IRON ROD WITH CAP STAMPED "CBD SETSTONE" FOUND AT 73.05 FEET ON THE COMMON BOUNDARY CORNER OF SAID 0.184 ACRE TRACT AND A CALLED PORTION OF 0.624 ACRE TRACT OF LAND CONVEYED TO THE CITY OF LEANDER TEXAS, DESCRIBED AND RECORDED IN DOCUMENT NUMBER 2016068767 O.P.R.W.C.TX., ON THE COMMON SOUTH LINE OF SAID 14.00 ACRE TRACT FOR A TOTAL DISTANCE OF 400.32 FEET, TO A 1/2" IRON ROD WITH CAP STAMPED "DIAMOND SURVEYING" FOR THE SOUTH CORNER OF THE HEREIN DESCRIBED TRACT, SAME BEING THE SOUTH CORNER OF SAID 14.00 ACRE TRACT, ON THE EAST RIGHT-OF-WAY LINE OF SAID KAUFFMAN LOOP, A 100 FOOT RIGHT-OF-WAY;

THENCE, WITH A CURVE TO THE RIGHT, HAVING A RADIUS OF 1,250.15 FEET, PASSING A 1/2" IRON ROD WITH CAP STAMPED "DIAMOND SURVEYING" AT AN ARC LENGTH OF 20.08 FEET, FOR A TOTAL ARC LENGTH OF 37.50 FEET, A DELTA ANGLE OF 01°43'07", AND A CHORD BEARING N 20°56'02" W A DISTANCE OF 37.50 FEET TO A 1/2" IRON ROD FOUND WITH CAP STAMPED "DIAMOND SURVEYING" FOR A POINT OF TANGENCY OF THE HEREIN DESCRIBED TRACT, ON THE EAST RIGHT-OF-WAY OF SAID KAUFFMAN LOOP AND SAID 14.00 ACRE TRACT;

THENCE, N 20°04'59" W A DISTANCE OF 961.40 FEET, ALONG SAID SHARED BOUNDARY LINE OF SAID KAUFFMAN LOP AND SAID 14.00 ACRE TRACT TO THE POINT OF BEGINNING AND CONTAINING 34.722 ACRES (1,512,487 SQUARE FEET) OF LAND MORE OR LESS.

GATEWAY 29
FINAL PLAT

BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE (4203), NAD83, ALL DISTANCES, ACREAGE AND COORDINATES ARE SURFACE. TO ADJUST TO GRID, MULTIPLY SURFACE VALUES BY A COMBINED SCALE FACTOR OF 0.9998800144.

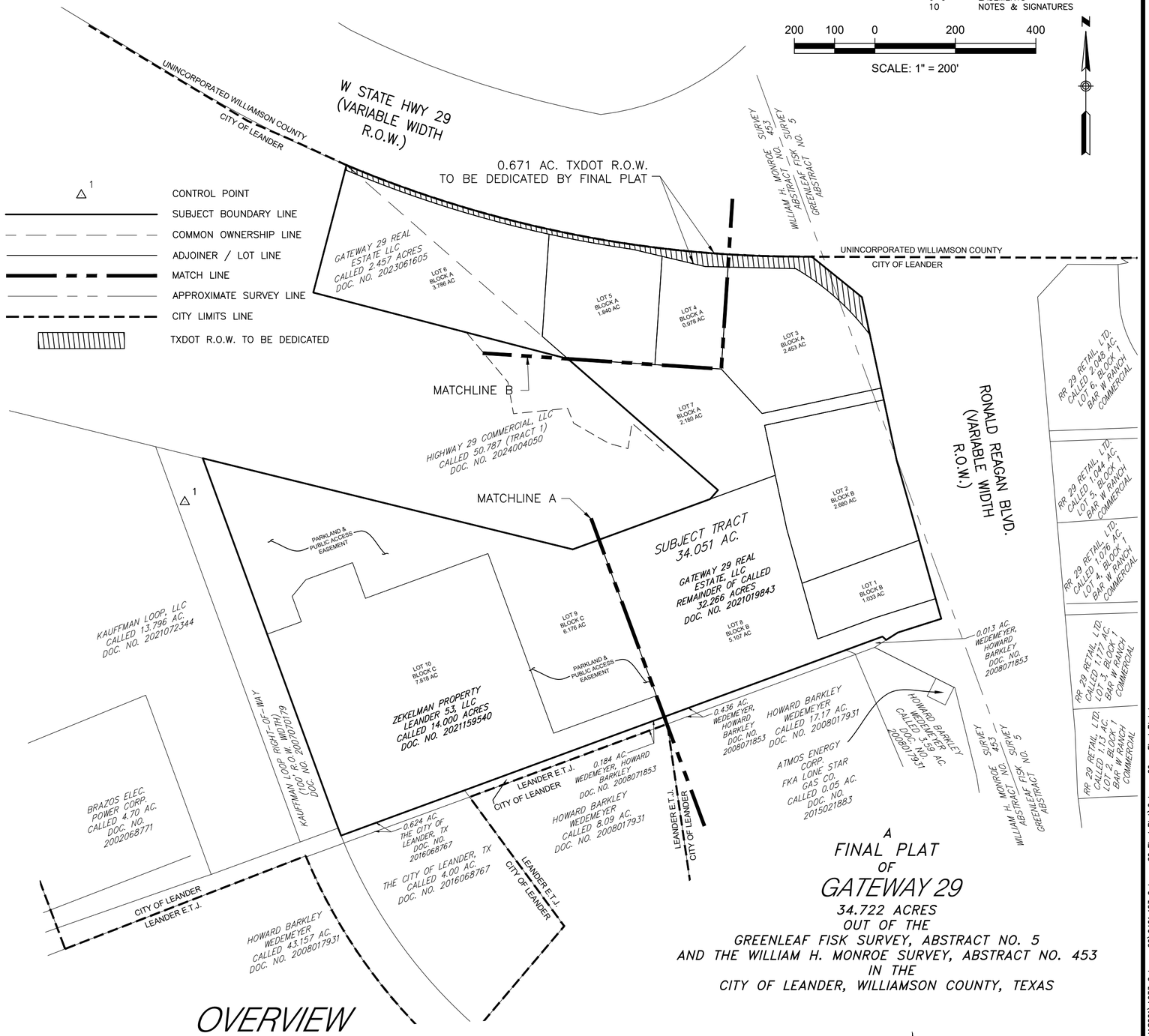
OBSERVATIONS WERE COLLECTED USING A COMBINATION OF RTK AND THE VRS NETWORK.

SUBMITTAL DATE: _____ __, 2023

PROJECT ADDRESS:
_____
LEANDER, TEXAS _____
ZONING: GC-2-A, GC-3-A, MF-2-A
SITE AREA: 34.051 ACRES

SHEET INDEX:

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	OVERVIEW
3-5	PLAT MAP
6-9	EASEMENTS
10	NOTES & SIGNATURES



OVERVIEW MAP

A
FINAL PLAT
OF
GATEWAY 29
34.722 ACRES
OUT OF THE
GREENLEAF FISK SURVEY, ABSTRACT NO. 5
AND THE WILLIAM H. MONROE SURVEY, ABSTRACT NO. 453
IN THE
CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS

LJA SURVEYING, INC.
9830 COLONNADE BLVD.
SUITE 300
SAN ANTONIO, TEXAS 78230
PHONE 210-503-2700
TBPELS FIRM NO. 10194382

CITY OF LEANDER PROJECT No. PP-22-014

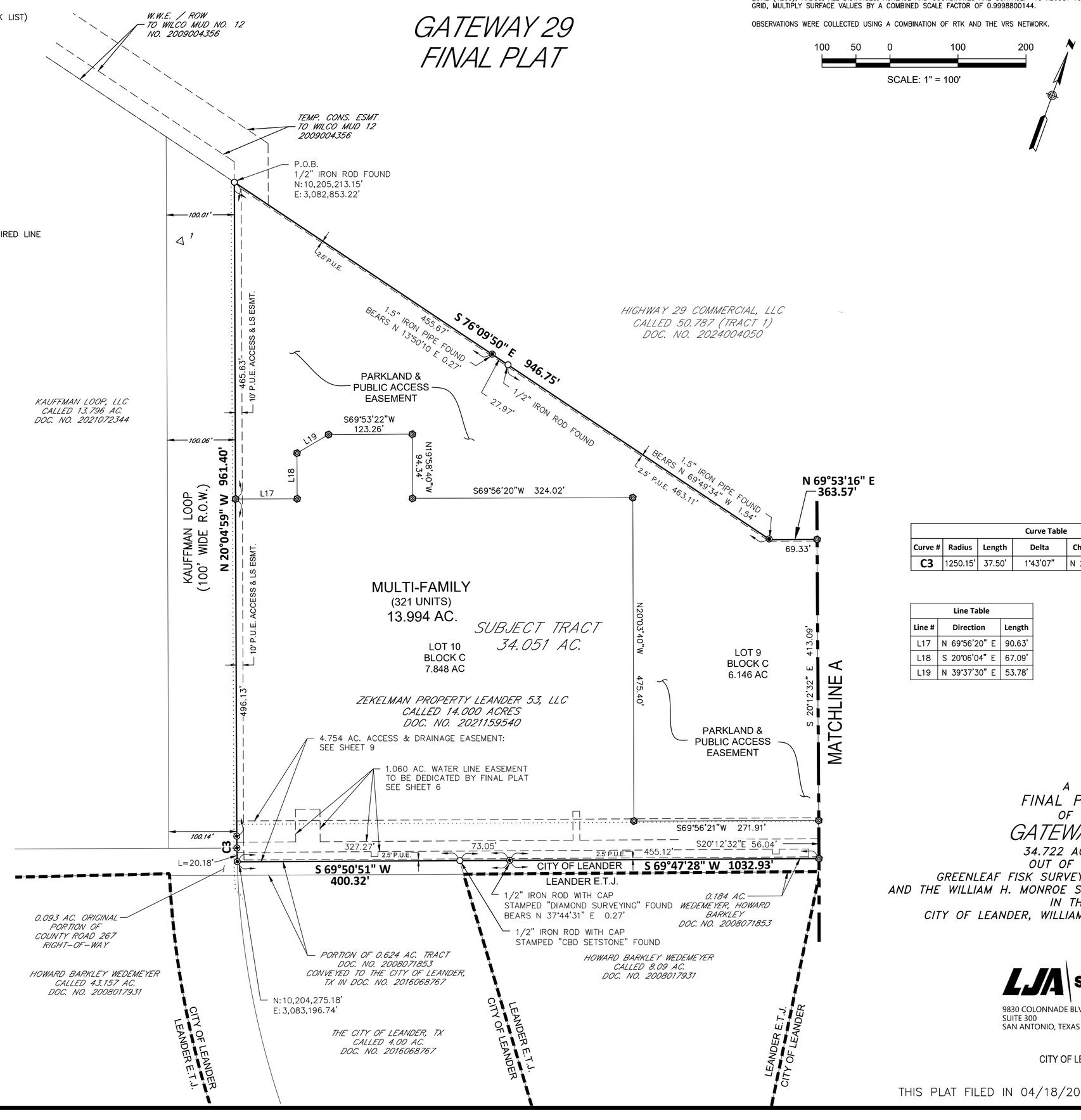
THIS PLAT FILED IN 04/18/2023

S:\Sectors\Survey\Projects\LJASOO1\A633 Gateway 29\0401.423 Gateway 29 Final Plat\Gateway 29 - Final Plat.dwg
User: bclayton Plot Date/Time: Feb. 23, 24 - 11:28:34

GATEWAY 29
FINAL PLAT

LEGEND

△ 1	CONTROL (AS NOTED IN BENCHMARK LIST)
◎	5/8" IRON ROD SET WITH CAP STAMPED "LJA SURVEY"
○	IRON ROD FOUND (AS NOTED)
◉	1/2" IRON ROD FOUND WITH CAP STAMPED "DIAMOND SURVEYING"
●	IRON PIPE FOUND (AS NOTED)
P.O.B.	POINT OF BEGINNING
P.U.E.	PUBLIC UTILITY EASEMENT
R.O.W.	RIGHT-OF-WAY
O.P.R.W.C.TX.	OFFICIAL PUBLIC RECORDS WILLIAMSON COUNTY, TEXAS
	SUBJECT BOUNDARY LINE
	EASEMENT LINE
	ADJOINER / LOT LINE
	CENTERLINE OF 10' SIDEWALK REQUIRED LINE
	MATCH LINE
	APPROXIMATE SURVEY LINE
	CITY LIMITS LINE
	TXDOT R.O.W. TO BE DEDICATED
	COMMON OWNERSHIP LINE



BEARING BASIS:
ALL BEARINGS BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, GRID NORTH, CENTRAL ZONE (4203), NAD83, ALL DISTANCES, ACREAGE AND COORDINATES ARE SURFACE. TO ADJUST TO GRID, MULTIPLY SURFACE VALUES BY A COMBINED SCALE FACTOR OF 0.9998800144.

OBSERVATIONS WERE COLLECTED USING A COMBINATION OF RTK AND THE VRS NETWORK.

100 50 0 100 200

SCALE: 1" = 100'

SUBMITTAL DATE: _____ __, 2023

PROJECT ADDRESS:
_____
LEANDER, TEXAS ____
ZONING: GC-2-A, GC-3-A, MF-2-A
SITE AREA: 34.051 ACRES

SHEET INDEX:

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	OVERVIEW
3-5	PLAT MAP
6-9	EASEMENTS
10	NOTES & SIGNATURES

BENCHMARK LIST:

1
5/8" IRON ROD WITH ALUMINUM CAP STAMPED "CP #1" SET IN CONCRETE
GRID NORTHING: 10,203,880.30
GRID EASTING: 3,082,438.58
ELEVATION: 1,031.56'

2
5/8" IRON ROD WITH RED CAP STAMPED "LJA CONTROL"
GRID NORTHING: 10,202,184.88
GRID EASTING: 3,083,846.59
ELEVATION: 1,025.62'

Curve Table					
Curve #	Radius	Length	Delta	Chord Bearing	Chord Length
C3	1250.15'	37.50'	1°43'07"	N 20°56'02" W	37.50'

Line Table		
Line #	Direction	Length
L17	N 69°56'20" E	90.63'
L18	S 20°06'04" E	67.09'
L19	N 39°37'30" E	53.78'

A
FINAL PLAT
OF
GATEWAY 29
34.722 ACRES
OUT OF THE
GREENLEAF FISK SURVEY, ABSTRACT NO. 5
AND THE WILLIAM H. MONROE SURVEY, ABSTRACT NO. 453
IN THE
CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS

LJA SURVEYING, INC.
9830 COLONNADE BLVD.
SUITE 300
SAN ANTONIO, TEXAS 78230
PHONE 210-503-2700
TBPELS FIRM NO. 10194382

CITY OF LEANDER PROJECT No. PP-22-014

THIS PLAT FILED IN 04/18/2023

S:\Sectors\Survey\Projects\LJA5001\4633 Gateway 29\0401-423 Gateway 29 Final Plat\Gateway 29 – Final Plat.dwg
User: bdoyton Plot Date/Time: Feb. 23, 24 – 11:28:36

SECTION IV

GEOLOGIC ASSESSMENT FORM (TCEQ-0585)

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: Roman C. Pineda, P.G.

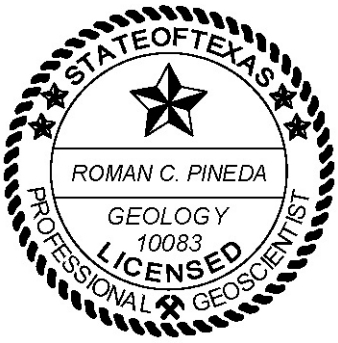
Telephone: (210) 979-8444

Fax: (210) 979-8441

Date: August 17, 2021

Representing: KFW Engineers, TBPE Firm #9513 (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: Zekelman Property Leander 14, LLC

Project Information

1. Date(s) Geologic Assessment was performed: August 12, 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)
Fairlie clay, 1 to 2 percent slopes (FaB)	D	0-4
Georgetown clay loam, 0 to 2 percent slopes (GeB)	C	0-4
Georgetown stony clay loam, 1 to 3 percent slopes (GsB)	C	0-4

Soil Name	Group*	Thickness(feet)

** 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" = 60'
   Site Geologic Map Scale: 1" = 60'
   Site Soils Map Scale (if more than 1 soil type): 1" = 300'

9. Method of collecting positional data:

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

10. ☒ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.
11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.
12. ☒ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

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

13. ☒ The Recharge Zone boundary is shown and labeled, if appropriate.
14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

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

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

Administrative Information

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

ATTACHMENT A

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Leander 14-Acre Wrap

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	
	No geologic or manmade features were identified within the project limits.																			

* DATUM: NAD 83

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

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

12 TOPOGRAPHY

Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

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

Roman C. Pineda

Date 8/17/2021

Sheet __1__ of __1__

Attachment A

STATE OF TEXAS
ROMAN C. PINEDA
GEOLOGY
10083
LICENSED
PROFESSIONAL GEOSCIENTIST

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

ATTACHMENT B

LEANDER 14-ACRE WRAP

Stratigraphic Column

System		Stratigraphic Unit	Hydrologic Unit	Approximate Maximum Thickness (ft)	Character of Rocks
Lower Cretaceous	Edwards Aquifer	Edwards Limestone (Ked)	Edwards and associated limestones	360	Massive, brittle, vulgar limestone and dolomite with nodular chert, gypsum, anhydrite, and solution-collapse features.
		Comanche Peak Limestone (Kc)		60	Fine-grained, fairly hard, nodular, fossiliferous, marly, extensively burrowed limestone.
		Walnut Formation (Kwa)		120	Hard and soft limestones, marls, clays, and shelf beds.
		Upper Member of Glen Rose Limestone (Kgru)		350	Yellowish tan, finely bedded limestone and marl

For Travis County, adjacent to county to the southwest
Modified from Brune and Duffin, 1983

ATTACHMENT C

LEANDER 14-ACRE WRAP

Narrative Description of Site Geology

The overall potential for fluid migration to the Edwards Aquifer on the site is intermediate. The dominant trend for the site is N57°E, based on an average of the trends of faults within the surrounding area and from published maps (V.E. Barnes, 1981). The site is located in the Edwards Limestone (Ked).

The Ked is characterized by massive, brittle, vugular limestone and dolomite with nodular chert. Karst development in the Ked is characterized by solution-collapse features. No caves or sinkholes were identified onsite.

No geologic or manmade features were identified within the project limits.

LEANDER 14-ACRE WRAP

References

Ashworth, J.B., Jan 1983, Ground-Water Availability of the Lower Cretaceous Formations in the Hill Country of South-Central Texas, Texas Department of Water Resources, rept., 273, 12pp.

Barnes, V.L., 1981, Geologic Atlas of Texas, Austin Sheet, Bureau of Economic Geology, The University of Texas at Austin, Texas.

Collins, E.W., Woodruff, C.M., Jr., and Tremblay, Thomas A., 2002, Geologic Framework of the Northern Edwards Aquifer, Central Texas: Bur. Econ. Geol., Abstract, Figure 1.

Collins, E.W., 1998, Geologic Map of the Leander Quadrangle, Texas: University of Texas at Austin, Bureau of Economic Geology, Open-File Map STATEMAP Study Area 5, scale 1:24,000.

Federal Emergency Management Agency (FEMA), September 25, 2008, Williamson County, Texas and Incorporated areas, Flood Insurance Rate Map (FIRM), Panel 48491C0275 E, FEMA, Washington, D.C.

Jones, Ian C., 2006, Defining Groundwater Flow Characteristics in the northern Segment of the Edwards Aquifer Based on Groundwater Chemistry: Texas Water Development Board, Technical Paper

Land, L.F. and Dorsey, M.E., 1988, Reassessment of the Georgetown Limestone as a Hydrogeologic Unit of the Edwards Aquifer, Georgetown Area, Texas: U.S. Geol. Survey, Water – Resources Investigations 88-4190, 2 pp., 3 figs.

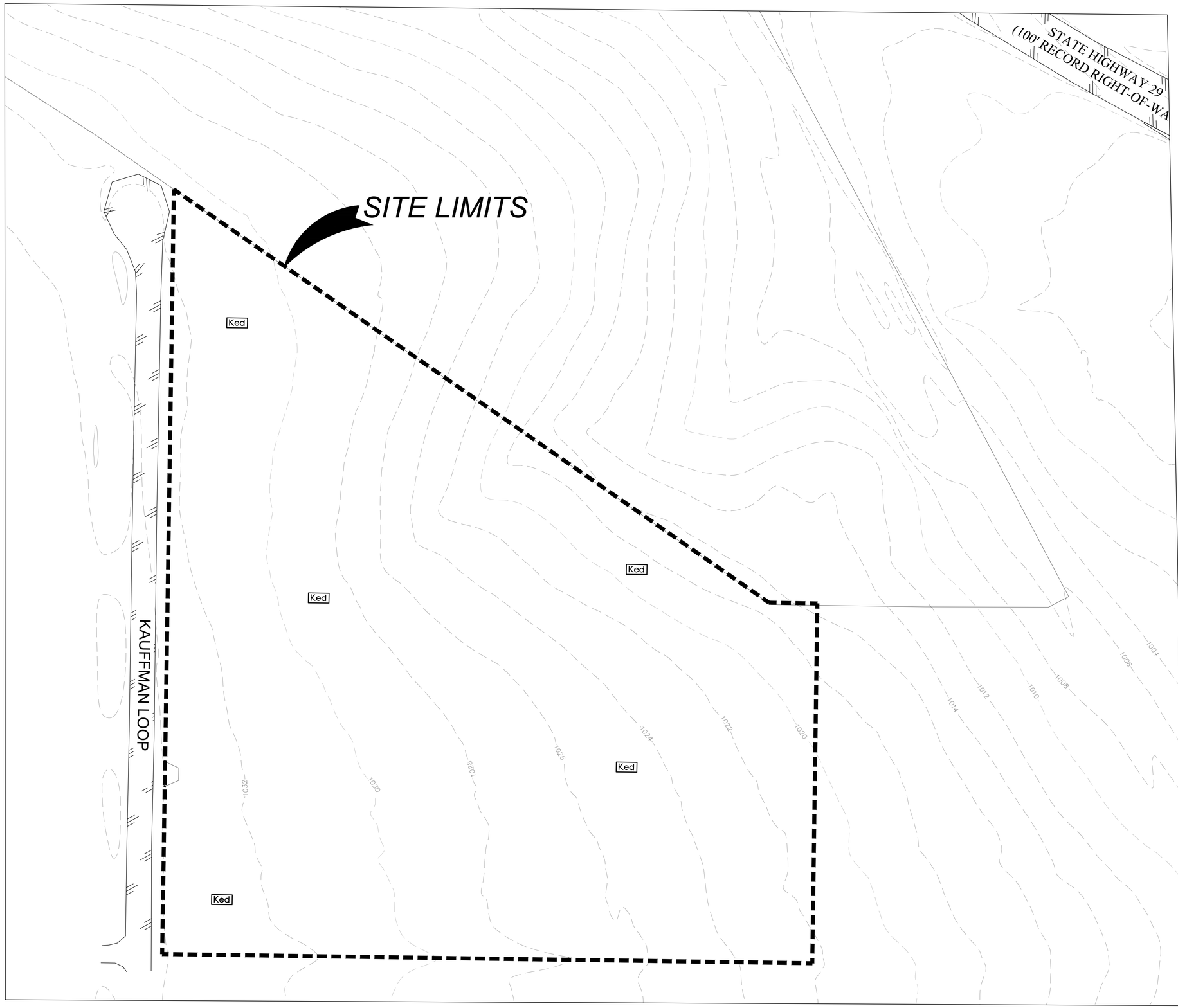
Rose, P.R., 1972, Edwards Group, Surface and Subsurface, Central Texas: Bur. Econ. Geol., Rep of Invest. 74, 198 pp..

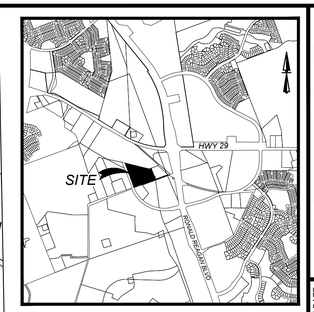
Texas Natural Resource Conservation Commission, 1999, Edwards Aquifer Recharge Zone Map, Leander Quadrangle, TNRCC, Leander, Texas.

United States Department of Agriculture, 1983, Soil Survey – Williamson County, Texas, USDA.

United States Geologic Survey, 2988, (USGS), Leander Quadrangle, USGS, Denver, Colorado.

ATTACHMENT D





LOCATION MAP
NOT TO SCALE

SCALE : 1" = 60'

0' 60' 180'

120'

LEGEND

Qal	ALLUVIUM
Kbu	BUDA LIMESTONE
Kdr	DEL RIO CLAY
Kgt	GEORGETOWN FORMATION
Ked	EDWARDS FORMATION
Kc	COMANCHE PEAK FORMATION
Kw	WALNUT FORMATION
Kgru	GLEN ROSE FORMATION (UPPER)
S-1	POTENTIAL RECHARGEFEATURE
	DRAINAGE PATHWAY
	CONTACT, LOCATED APPROXIMATELY
	FAULT, LOCATED APPROXIMATELY (D,DOWNTHROWN SIDE;U,UPTHROWN SIDE)
	FAULT EXISTANCEUNCERTAIN
	POSSIBLE FAULT (AS LOCATED BY AERIAL PHOTOGRAPHS)
	STRIKE AND DIP OF BEDDING
	STRIKE AND DIP OF JOINTS
	STRIKE OF VERTICAL JOINTS
C	CAVE
	NON-KARST CLOSED DEPRESSION
	SINKHOLE
	SOLUTION CAVITY
	OTHER NATURAL BEDROCK FEATURES: VUGGY ROCK, REEF DEPOSITS
	ZONE
MB	MAN-MADE FEATURE IN BEDROCK
W	WATER WELL
	PROPOSED SANITARY SEWER LINE
SS	EXISTING SANITARY SEWER LINE
	50' SEWER ENVELOPE
	PROPOSED MANHOLE
	EXISTING MANHOLE

NOTE: THE GEOSCIENTIST SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR PURPOSES OF GEOLOGIC INFORMATION. ALL OTHER INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SIGNED AND SEALED CIVIL ENGINEERING DRAWINGS

KFW
ENGINEERS + SURVEYING
3421 Paesanos Parkway, Suite 200 • San Antonio, Texas 78231
Phone #: (210) 979-8444 • Fax #: (210) 979-8441
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

REVISIONS ISSUE DATE

STATE OF TEXAS
ROMAN C. PINEDA
GEOLOGY
10083
LICENSED
PROFESSIONAL GEOSCIENTIST

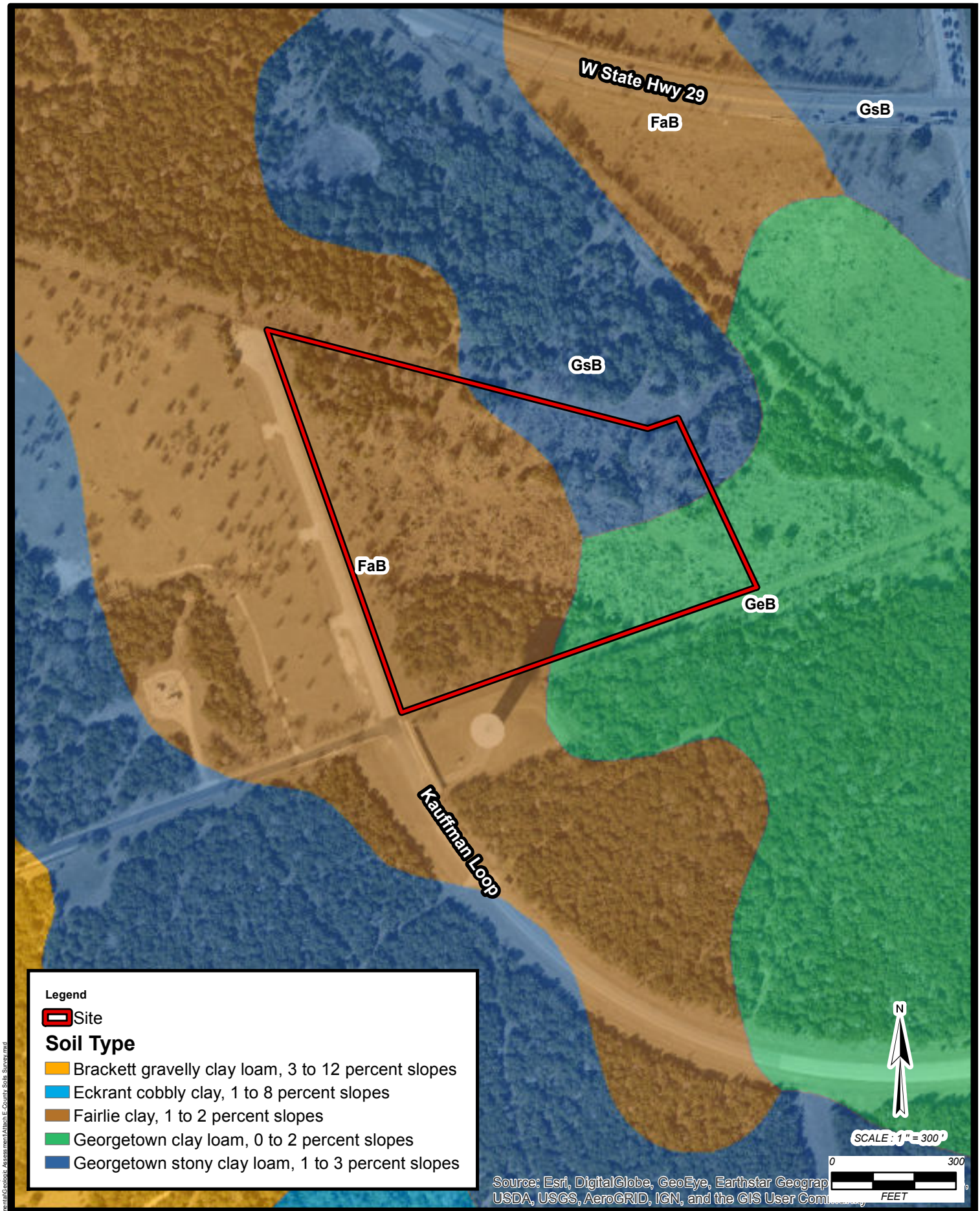
LEANDER 14-ACRE WRAP
LEANDER, TEXAS
SITE GEOLOGIC MAP

JOB NO.: 952-01-01
DATE: AUGUST 2021
DRAWN: RCP CHECKED: RCP

ATTACHMENT
D

Date: Aug 17, 2021, 11:25am User ID: rpineda
File: K:\952\01\01\Design\Environmental\Geologic Assessment\Geologic Assessment.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.



KFW
ENGINEERS + SURVEYING
FIRM# 9513 FIRM# 10122300
3421 PAESANOS PKWY STE. 200 PHONE (210) 979-8444
SAN ANTONIO, TEXAS 78231 FAX (210) 979-8441

LEANDER 14-ACRE WRAP

GEOLOGIC ASSESSMENT

WILLIAMSON COUNTY SOILS

REVISIONS: ISSUE DATE:

JOB NO. 952-01-01

DATE: August 2021 DESIGNER:

DRAWN: C.G. CHECKED: R.P.

ATTACHMENT E

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL

Date: Aug 16, 2021, 9:58:45 PM User ID: rpmeda
File: K:\952001101\Design\Environmental\Geologic Assessment\Attach E-County Soils Survey.mxd

SECTION V

WATER POLLUTION ABATEMENT APPLICATION FORM (TCEQ-0584)

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: Trevor Riek

Date: 04/11/24

Signature of Customer/Agent:

Regulated Entity Name: Gateway 29, Lots 9 & 10

Regulated Entity Information

1. The type of project is:

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

2. Total site acreage (size of property): 14.00

3. Estimated projected population: 450

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	121,237	÷ 43,560 =	2.78
Parking	89,555	÷ 43,560 =	2.06
Other paved surfaces	38,511	÷ 43,560 =	0.88
Total Impervious Cover	249,303	÷ 43,560 =	5.72

Total Impervious Cover 5.72 **÷ Total Acreage** 14.00 **X 100 =** 40.9**% 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	76,440 Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day

TOTAL gallons/day 76,440

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 Leander 2243 Wastewater (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" = 40'.

18. 100-year floodplain boundaries:

☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
☒ No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA FIRM Map Panel 48491C0275E, Dated Sept. 26, 2008

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.

A grading layout has been included as sheet 18 in the construction plans

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.

Temporary BMPs are displayed on the Erosion & Sedimentation Control plan included as sheet 09 in the construction plans

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.

SECTION V

WATER POLLUTION ABATEMENT APPLICATION: ATTACHMENT A

Factors Affecting Water Quality

FACTORS AFFECTING SURFACE WATER QUALITY

Potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the site during construction include:

- Soil erosion due to the clearing of the site;
- Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle drippings;
- Hydrocarbons from asphalt paving operations;
- Concrete truck washout;
- Potential overflow/spills from portable toilets;
- Miscellaneous trash and litter from construction workers and material wrappings.

Potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the site after development include:

- Oil, grease, fuel and hydraulic fluid contamination from vehicle drippings;
- Dirt and dust which may fall off vehicles;
- Miscellaneous trash and litter.

SECTION V

WATER POLLUTION ABATEMENT APPLICATION: ATTACHMENT B

Volume and Character of Stormwater

VOLUME AND CHARACTER OF STORMWATER

The following table summarizes the respective area, curve number, cumulative time of concentration, lag time, and 2, 10, 25, and 100-year peak discharges for **existing conditions**. The existing drainage area can be seen on the Existing Drainage Plan included with the construction plans.

Gateway 29, Lots 9 & 10 - Existing Conditions						Peak Flows			
Area #	Hydrologic Description	Drainage Area (ac)	Imp Cover (%)	Weighted CN	Lag Time (min)	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)
E1	Site Runoff - To Analysis Point 1	11.093	0.0%	80.00	8.64	27.2	52.4	69.9	99.8
E2	Site Runoff - To Analysis Point 2	2.916	0.0%	80.00	10.11	6.7	12.9	17.2	24.6
O1	Offsite Runoff - To Analysis Point 1	0.593	75.3%	93.55	3.00	3.1	4.9	6.1	8.1
O2	Offsite Runoff - To Analysis Point 1	0.569	68.3%	92.30	3.00	2.9	4.6	5.8	7.7
AP1	**ANALYSIS POINT 1**					**36.86**	**69.95**	**93.00**	**132.30**

The following table summarizes the respective area, curve number, cumulative time of concentration, lag time, and 2, 10, 25, and 100-year peak discharges for **proposed conditions**. The proposed drainage area can be seen on the Proposed Drainage Plan included with the construction plans.

Gateway 29, Lots 9 & 10 - Proposed Conditions						Peak Flows			
Area #	Hydrologic Description	Drainage Area (ac)	Imp Cover (%)	Weighted CN	Lag Time (min)	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)
P1	Site runoff to Detention pond	7.741	62.60%	91.27	3.47	37.17	59.78	75.50	102.58
P2	Onsite Runoff undetained to AP1	5.080	4.67%	80.84	6.92	14.22	26.91	35.76	50.88
O1	Offsite runoff undetained to AP1	0.593	91.07%	96.39	3.00	3.24	4.93	6.10	8.13
O2	Offsite runoff to Detention Pond	0.569	90.56%	96.30	3.00	3.09	4.71	5.83	7.77
POND	**Pond Discharge to AP1**					17.02	29.69	39.23	60.13
AP1	TOTAL RUNOFF TO ANALYSIS POINT					**32.62**	**58.75**	**77.73**	**115.36**

ANALYSIS POINT 1		
EVENT	EXISTING (CFS)	PROPOSED (CFS)
2-YR	36.86	32.62
10-YR	69.95	58.75
25-YR	93.00	77.73
100-YR	132.30	115.36

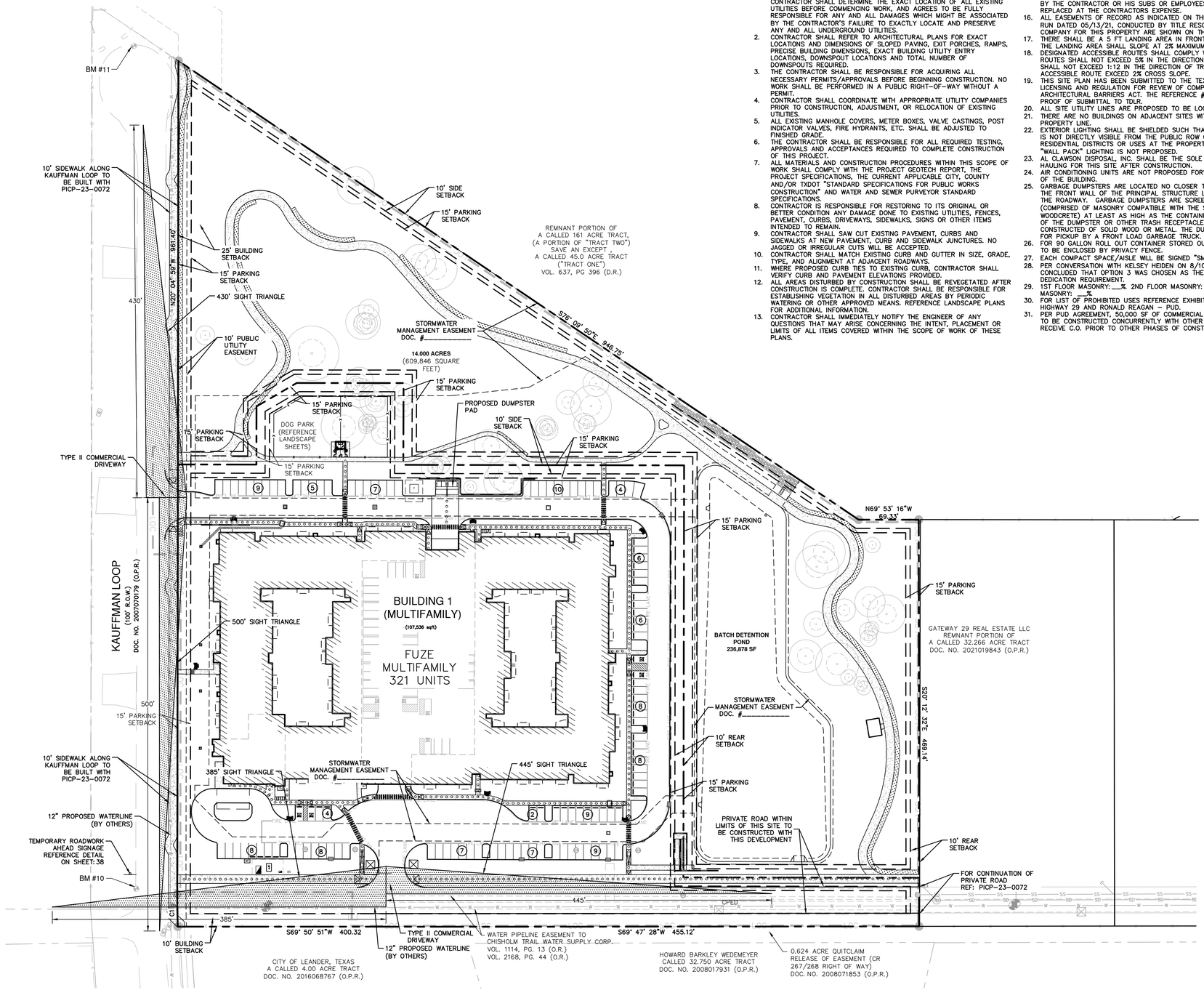
Detention Pond Routing				
Return Event	Peak In-Flow (CFS)	Peak Out-Flow (CFS)	Max Water Surface Elevation (ft)	Max Storage (Ac-ft)
2	40.26	17.02	1019.29	0.69
10	64.50	29.69	1019.59	1.00
25	81.33	39.23	1019.80	1.21
100	110.35	60.13	1020.09	1.53

SECTION V

WATER POLLUTION ABATEMENT APPLICATION: ATTACHMENT E

Site Plan

CURVE TABLE					
CURVE	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	1250.15'	1°43'07"	N20°56'02"W	37.50'	37.50'



GENERAL NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN THESE PLANS IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF SLOPED PAVING, EXIT PORCHES, RAMPS, PRECISE BUILDING DIMENSIONS, EXACT BUILDING UTILITY ENTRY LOCATIONS, DOWNSPOUT LOCATIONS AND TOTAL NUMBER OF DOWNSPOUTS REQUIRED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS/APPROVALS BEFORE BEGINNING CONSTRUCTION. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
4. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANIES PRIOR TO CONSTRUCTION, ADJUSTMENT, OR RELOCATION OF EXISTING UTILITIES.
5. ALL EXISTING MANHOLE COVERS, METER BOXES, VALVE CASTINGS, POST INDICATOR VALVES, FIRE HYDRANTS, ETC. SHALL BE ADJUSTED TO FINISHED GRADE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED TESTING, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
7. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK SHALL COMPLY WITH THE PROJECT GEOTECH REPORT, THE PROJECT SPECIFICATIONS, THE CURRENT APPLICABLE CITY, COUNTY AND/OR TXDOT "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" AND WATER AND SEWER PURVEYOR STANDARD SPECIFICATIONS.
8. CONTRACTOR IS RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION ANY DAMAGE DONE TO EXISTING UTILITIES, FENCES, PAVEMENT, CURBS, DRIVEWAYS, SIDEWALKS, SIGNS OR OTHER ITEMS INTENDED TO REMAIN.
9. CONTRACTOR SHALL SAW CUT EXISTING PAVEMENT, CURBS AND SIDEWALKS AT NEW PAVEMENT, CURB AND SIDEWALK JUNCTURES. NO JAGGED OR IRREGULAR CUTS WILL BE ACCEPTED.
10. CONTRACTOR SHALL MATCH EXISTING CURB AND GUTTER IN SIZE, GRADE, TYPE, AND ALIGNMENT AT ADJACENT ROADWAYS.
11. WHERE PROPOSED CURB TIES TO EXISTING CURB, CONTRACTOR SHALL VERIFY CURB AND PAVEMENT ELEVATIONS PROVIDED.
12. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE REVEGETATED AFTER CONSTRUCTION IS COMPLETE. CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING VEGETATION IN ALL DISTURBED AREAS BY PERIODIC WATERING OR OTHER APPROVED MEANS. REFERENCE LANDSCAPE PLANS FOR ADDITIONAL INFORMATION.
13. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT OR LIMITS OF ALL ITEMS COVERED WITHIN THE SCOPE OF WORK OF THESE PLANS.
14. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, ACCESS MUST BE PROVIDED TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
15. CONTRACTOR SHALL PRESERVE ALL PROPERTY CORNER MONUMENTATION, CONTROL POINTS & BENCHMARKS. IF ANY ARE DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS SUBS OR EMPLOYEES, THEY SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
16. ALL EASEMENTS OF RECORD AS INDICATED ON THE MOST RECENT TITLE RUN DATED 05/13/21, CONDUCTED BY TITLE RESOURCES GUARANTY COMPANY FOR THIS PROPERTY ARE SHOWN ON THIS SITE PLAN.
17. THERE SHALL BE A 5 FT LANDING AREA IN FRONT OF ALL ENTRANCES. THE LANDING AREA SHALL SLOPE AT 2% MAXIMUM.
18. DESIGNATED ACCESSIBLE ROUTES SHALL COMPLY WITH TAS. ACCESSIBLE ROUTES SHALL NOT EXCEED 5% IN THE DIRECTION OF TRAVEL; RAMPS SHALL NOT EXCEED 1:12 IN THE DIRECTION OF TRAVEL; NOR SHALL THE ACCESSIBLE ROUTE EXCEED 2% CROSS SLOPE.
19. THIS SITE PLAN HAS BEEN SUBMITTED TO THE TEXAS DEPARTMENT OF LICENSING AND REGULATION FOR REVIEW OF COMPLIANCE WITH THE ARCHITECTURAL BARRIERS ACT. THE REFERENCE #TABS2022017944 IS PROOF OF SUBMITTAL TO TDLR.
20. ALL SITE UTILITY LINES ARE PROPOSED TO BE LOCATED UNDERGROUND.
21. THERE ARE NO BUILDINGS ON ADJACENT SITES WITHIN 50' OF THE PROPERTY LINE.
22. 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.
23. AL CLAWSON DISPOSAL, INC. SHALL BE THE SOLE PROVIDER OF WASTE HAULING FOR THIS SITE AFTER CONSTRUCTION.
24. AIR CONDITIONING UNITS ARE NOT PROPOSED FORWARD THE FRONT WALL OF THE BUILDING.
25. GARBAGE DUMPSTERS ARE LOCATED NO CLOSER TO A ROADWAY THAN THE FRONT WALL OF THE PRINCIPAL 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 OF 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.
26. FOR 90 GALLON ROLL OUT CONTAINER STORED OUTSIDE, IT IS REQUIRED TO BE ENCLOSED BY PRIVACY FENCE.
27. EACH COMPACT SPACE/AISLE WILL BE SIGNED "SMALL CAR ONLY".
28. PER CONVERSATION WITH KELSEY HEIDEN ON 8/10/22 IT WAS CONCLUDED THAT OPTION 3 WAS CHOSEN AS THE PROPOSED PARKLAND DEDICATION REQUIREMENT.
29. 1ST FLOOR MASONRY: __% 2ND FLOOR MASONRY: __% 3RD FLOOR MASONRY: __%
30. FOR LIST OF PROHIBITED USES REFERENCE EXHIBIT A OF THE STATE HIGHWAY 29 AND RONALD REAGAN – PUD.
31. PER PUD AGREEMENT, 50,000 SF OF COMMERCIAL SPACE IS REQUIRED TO BE CONSTRUCTED CONCURRENTLY WITH OTHER DEVELOPMENTS AND RECEIVE C.O. PRIOR TO OTHER PHASES OF CONSTRUCTION.

SCALE: 1" = 60'

0' 60' 120' 180'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED EASEMENT LINE
- EXISTING BENCHMARK
- PROPOSED FIRE HYDRANT
- PROPOSED WASTEWATER MANHOLE
- PROPOSED GRATE INLET
- PROPOSED CURB INLET
- PROPOSED JUNCTION BOX W/ MANHOLE
- PROPOSED ELECTRIC TRANSFORMER
- (8) PARKING COUNT
- PROPOSED BUILDING
- PROPOSED CONCRETE SIDEWALK
- TREES TO BE PROTECTED

PROJECT DATA:

SITE ACREAGE:	14.000 AC.
# LIVING UNITS:	321
UNITS/ACRE	22.93

PARKING SUMMARY

ROOM TYPE	UNIT COUNT	REQUIRED SPACES
1 BED:	211	316.5
2 BED:	95	190
3 BED:	15	37.5
TOTAL:	321	544

PARKING TYPE	UNIT COUNT
STANDARD:	125
ADA:	4
COMPACT:	0
GARAGE STANDARD	406
GARAGE ADA	11
TOTAL:	546

STRIPING/SIGNAGE NOTES:

1. CURB, GUTTERS AND PAVEMENT DELINEATING THE FIRE LANE SHALL BE PAINTED RED WITH FOUR INCH (4') WHITE LETTERING STATING 'NO PARKING – FIRE LANE', 'FIRE LANE – TOW AWAY ZONE', OR SIMILAR WORDING. WORDING MAY NOT BE SPACED MORE THAN THIRTY (30') FEET APART.
2. FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE – NO PARKING" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET (25') INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.
3. ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT UNLESS NOTED OTHERWISE: WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS. REFERENCE DETAIL SHEET FOR STRIPED ISLANDS.
4. ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
5. ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION

BENCHMARKS:
BENCHMARKS ARE BASED ON NAD83
COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.99988001398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

OVERALL SITE & TRAFFIC CONTROL PLAN

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 10 of 55

Date: Mar 29, 2024, 9:38am User ID: jrobinson
File: H:\Projects\51283\01\301 Construction Documents\Civil\SP51283O1.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

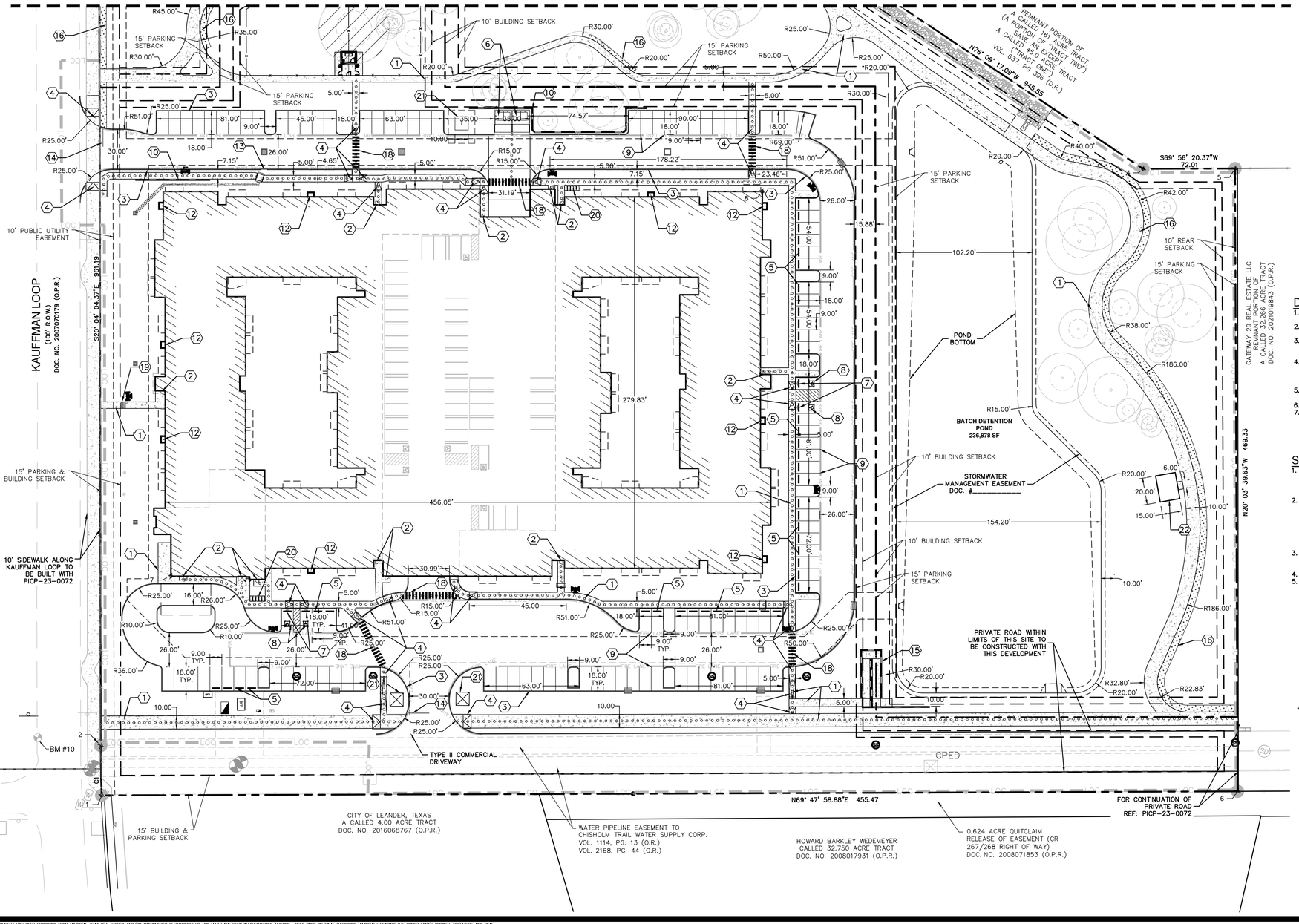
SD-23-0162

Point Table		
Point #	Northing	Easting
1	10204275.18	3083196.74
2	10204310.20	3083183.34
3	10205213.15	3082853.22
4	10204986.73	3083772.50
5	10205010.57	3083837.60
6	10204570.32	3083999.66
7	10204448.26	3083189.36
8	10204872.64	3083508.83

KEYED NOTES

1. CONCRETE SIDEWALK, RE: SHEET 36
2. BUILDING ENTRANCE
3. 6" CONCRETE CURB, RE: SHEET 37
4. PROPOSED ADA RAMP, RE: SHEET 36
5. WHEEL STOP
6. TRASH DUMPSTER/COMPACTOR
7. ACCESSIBLE PARKING SIGN & BUMPER CURB, RE: DETAILS, SHEET 37
8. ACCESSIBLE PARKING SPACE WITH ACCESS AISLE, TO SLOPE 2% MAX IN ALL DIRECTIONS. RE: DETAIL, SHEET 37
9. 4" WIDE PAVEMENT STRIPING
10. WALL WITH RAILING
11. WALL WITH FENCING; RE: LANDSCAPE PLANS
12. VENT – SEE ARCHITECTURAL PLANS
13. CURB CUT
14. 24" WHITE STOP BAR
15. RAMP WITH HANDRAIL (8.33% MAX) (REFERENCE ARCH)
16. VEGETATIVE FILTER STRIP
18. ACCESSIBLE CROSSWALK
19. SIDEWALK STEPS
20. BICYCLE PARKING
21. ELECTRIC TRANSFORMER
22. COVERED PATIO/SEATING AREA

MATCHLINE SEE SHEET 12



SCALE: 1" = 40'

0' 40' 80' 120'

LEGEND

- LOC — LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED EASEMENT LINE
- PROPOSED RETAINING WALL
- PROPOSED SIDEWALK
- EXISTING BENCHMARK
- PROPOSED WASTEWATER MANHOLE
- PROPOSED GRATE INLET
- PROPOSED CURB INLET
- PROPOSED JUNCTION BOX
- PROPOSED HEADWALL
- PROPOSED BUILDING

DIMENSIONAL CONTROL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL HORIZONTAL AND VERTICAL CONTROL PER THE CONSTRUCTION DRAWINGS.
3. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL USE THE PROPERTY PINS FOR HORIZONTAL CONTROL POINTS. BENCHMARKS ARE NOT TO BE USED FOR HORIZONTAL CONTROL.
4. DIMENSIONAL CONTROL POINTS ARE TO BACK OF CURB. DIMENSIONS ARE TO THE FACE OF CURB, FACE OF RETAINING WALL, AND CENTER OF PAINT STRIPING. ALL DIMENSIONS ARE PERPENDICULAR TO THE POINT OF REFERENCE.
5. REFER TO THE ARCHITECTURAL AND STRUCTURAL PLANS FOR ADDITIONAL DIMENSION CONTROL INFORMATION.
6. ALL CONCRETE CURB RADII ARE 3' UNLESS OTHERWISE NOTED.
7. COORDINATES FOR HORIZONTAL CONTROL POINTS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NAD NAVD88 DISPLAYED IN SURFACE VALUES USING A SURFACE ADJUSTMENT FACTOR FOR EACH COUNTY.
   (THE SURFACE ADJUSTMENT FACTOR FOR THIS SITE IS 0.99988)

STRIPING/SIGNAGE NOTES:

1. CURB, GUTTERS AND PAVEMENT DELINEATING THE FIRE LANE SHALL BE PAINTED RED WITH FOUR INCH (4') WHITE LETTERING STATING NO PARKING – FIRE LANE', FIRE LANE – TOW AWAY ZONE', OR SIMILAR WORDING. WORDING MAY NOT BE SPACED MORE THAN THIRTY (30') FEET APART.
2. FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE – NO PARKING" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET (25') INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.
3. ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT UNLESS NOTED OTHERWISE: WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS. REFERENCE DETAIL SHEET FOR STRIPED ISLANDS.
4. ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
5. ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	1250.15'	001°43'07"	S20°56'02"E	37.50'	37.50'

BENCHMARKS:

BENCHMARKS ARE BASED ON NAD83
COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.99988001438272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

SITE & DIMENSIONAL CONTROL PLAN (1 OF 2)

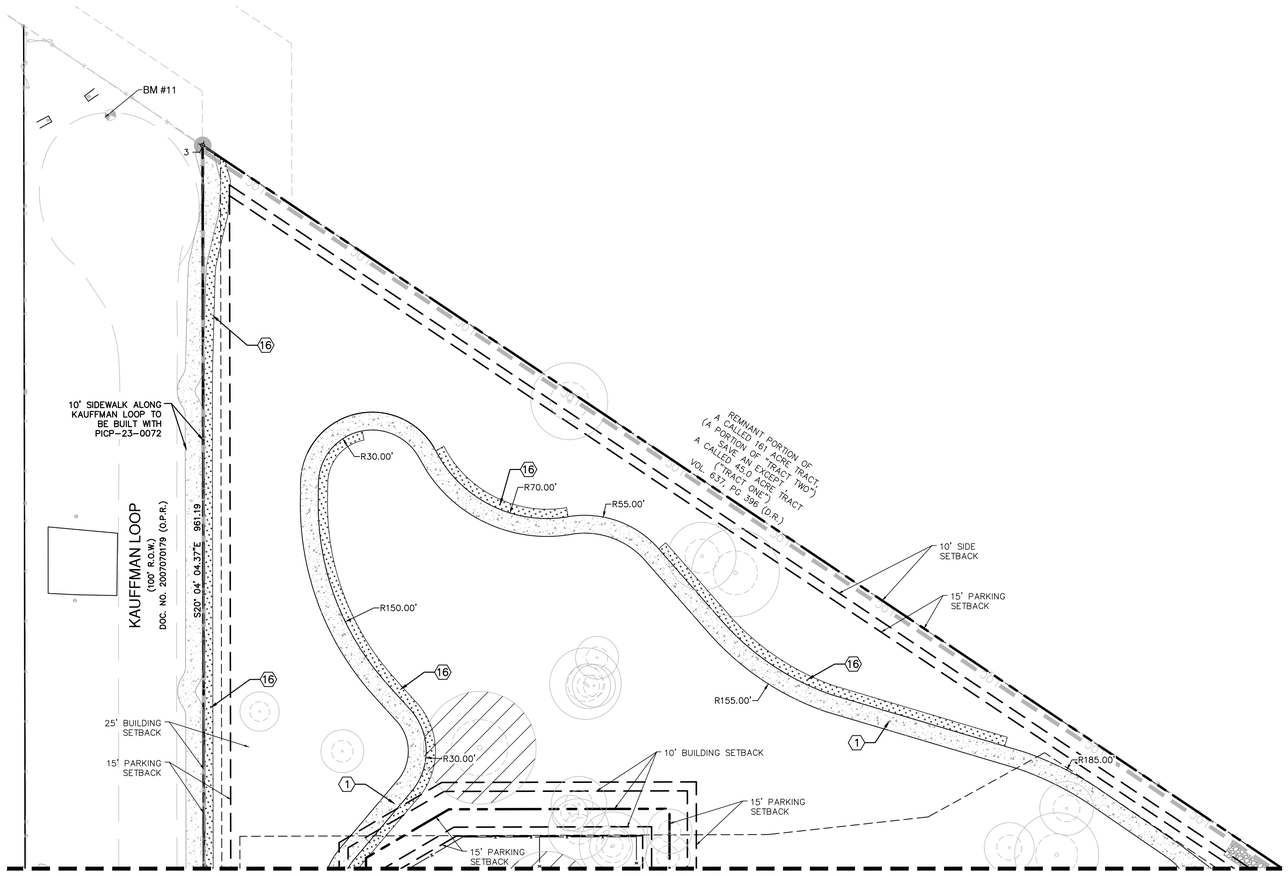
JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 11 of 55

Date: Mar 29, 2024, 9:38am User ID: jrobinson
File: H:\Projects\51283\01\301 Construction Documents\Civil\DC51283-01.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

KEYED NOTES

1. CONCRETE SIDEWALK, RE: SHEET 36
2. BUILDING ENTRANCE
3. 6" CONCRETE CURB, RE: SHEET 37
4. PROPOSED ADA RAMP, RE: SHEET 36
5. WHEEL STOP
6. TRASH DUMPSTER/COMPACTOR
7. ACCESSIBLE PARKING SIGN & BUMPER CURB, RE: DETAILS, SHEET 37
8. ACCESSIBLE PARKING SPACE WITH ACCESS AISLE, TO SLOPE 2% MAX IN ALL DIRECTIONS. RE: DETAIL, SHEET 37
9. 4" WIDE PAVEMENT STRIPING
10. WALL WITH RAILING
11. WALL WITH FENCING; RE: LANDSCAPE PLANS
12. VENT – SEE ARCHITECTURAL PLANS
13. CURB CUT
14. 24" WHITE STOP BAR
15. RAMP WITH HANDRAIL (8.33% MAX) (REFERENCE ARCH)
16. VEGETATIVE FILTER STRIP
18. ACCESSIBLE CROSSWALK
19. SIDEWALK STEPS
20. BICYCLE PARKING



MATCHLINE SEE SHEET 11

SCALE: 1"= 40'

0' 40' 80' 120'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED EASEMENT LINE
- PROPOSED RETAINING WALL
- PROPOSED SIDEWALK
- EXISTING BENCHMARK
- PROPOSED WASTEWATER MANHOLE
- PROPOSED GRATE INLET
- PROPOSED CURB INLET
- PROPOSED JUNCTION BOX
- PROPOSED HEADWALL
- PROPOSED BUILDING

DIMENSIONAL CONTROL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL HORIZONTAL AND VERTICAL CONTROL PER THE CONSTRUCTION DRAWINGS.
3. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL USE THE PROPERTY PINS FOR HORIZONTAL CONTROL POINTS. BENCHMARKS ARE NOT TO BE USED FOR HORIZONTAL CONTROL.
4. DIMENSIONAL CONTROL POINTS ARE TO BACK OF CURB. DIMENSIONS ARE TO THE FACE OF CURB, FACE OF RETAINING WALL, AND CENTER OF PAINT STRIPING. ALL DIMENSIONS ARE PERPENDICULAR TO THE POINT OF REFERENCE.
5. REFER TO THE ARCHITECTURAL AND STRUCTURAL PLANS FOR ADDITIONAL DIMENSION CONTROL INFORMATION.
6. ALL CONCRETE CURB RADII ARE 3' UNLESS OTHERWISE NOTED.
7. COORDINATES FOR HORIZONTAL CONTROL POINTS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NAD NAVD88 DISPLAYED IN SURFACE VALUES USING A SURFACE ADJUSTMENT FACTOR FOR EACH COUNTY. (THE SURFACE ADJUSTMENT FACTOR FOR THIS SITE IS 0.99988)

STRIPING/SIGNAGE NOTES:

1. CURB, GUTTERS AND PAVEMENT DELINEATING THE FIRE LANE SHALL BE PAINTED RED WITH FOUR INCH (4') WHITE LETTERING STATING 'NO PARKING – FIRE LANE', 'FIRE LANE – TOW AWAY ZONE', OR SIMILAR WORDING. WORDING MAY NOT BE SPACED MORE THAN THIRTY (30') FEET APART.
2. FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE – NO PARKING" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET (25') INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.
3. ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT UNLESS NOTED OTHERWISE: WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS. REFERENCE DETAIL SHEET FOR STRIPED ISLANDS.
4. ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
5. ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION

BENCHMARKS:

BENCHMARKS ARE BASED ON NAD83
COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.999880014398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

SITE & DIMENSIONAL CONTROL PLAN (2 OF 2)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 12 of 55

SD-23-0162

Date: Mar 29, 2024, 9:38am User ID: jrobinson
File: I:\Projects\5128,83\01\301 Construction Documents\Civil\0c51283-01.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SECTION VI

ORGANIZED SEWAGE COLLECTION SYSTEM (TCEQ-0582)

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: Gateway 29, Lots 9 & 10

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: Angela Miu
   Entity: Zekelman Property Leander 53, LLC
   Mailing Address: 227 W Monroe St., Ste 2600
   City, State: Chicago, IL Zip: 60606
   Telephone: (312) 275-1672 Fax: _____
   Email Address: angela.miu@zekelman.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: Trevor Riek
   Texas Licensed Professional Engineer's Number: 142314
   Entity: Pape-Dawson Engineers
   Mailing Address: 10801 N. Mopac Expressway, Building 3 Suite 200
   City, State:Austin, Texas Zip: 78759
   Telephone:(512) 454-8711 Fax:_____
   Email Address:triek@pape-dawson.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	76,440 gallons/day
_____% Industrial	_____ gallons/day
_____% Commingled	_____ gallons/day

   Total gallons/day: 76,440

6. Existing and anticipated infiltration/inflow is 10,498 gallons/day. This will be addressed by: ADEQUATE SIZING OF PROPOSED SEWER LINES.

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~~ with this application, but has not been approved.
   ☐ A WPAP application is required for an associated project, but it has not been submitted.
   ☐ There is no associated project requiring a WPAP application.

8. Pipe description:

Table 1 - Pipe Description

Pipe Diameter(Inches)	*Linear Feet (1)*	*Pipe Material (2)*	*Specifications (3)*
8" [Gravity]	768	PVC SDR 26	ASTM D3034 & 3212
8" [Pressure Rated (160 psi)]	60	PVC SDR 26	ASTM D2241 CLASS 160, ASTM D3139

Total Linear Feet: 828

(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 Leander 2243 Wastewater Treatment Plant (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?*
WW-1	13 Of 45	1+02	MH
WW-1	13 Of 45	3+73	MH
WW-1	13 Of 45	4+46	MH
WW-1	13 Of 45	5+18	MH
WW-1	13 Of 45	7+73	MH
WW-1	13 Of 45	8+30	MH

Line	*Shown on Sheet*	*Station*	*Manhole or Clean-out?*
WW-1	13 Of 45	9+25	CO
	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*
WW-1	4+81	Crossing		3.6 ft
WW-1	5+81	Crossing		3.2 ft
WW-1	8+01	Crossing		2.1 ft
WW-1	8+70	Crossing		2.3 ft
WW-1	8+83	Crossing		2.5 ft
WW-1	8+98	Crossing		2.9 ft

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]**	40 of 55
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) **[Required]**	39 of 55
Alternate method of joining lateral to existing SCS line for potential future connections **[Required]**	40 of 55
Typical trench cross-sections **[Required]**	39 of 55
Bolted manholes **[Required]**	39 of 55
Sewer Service lateral standard details **[Required]**	40 of 55
Clean-out at end of line **[Required, if used]**	40 of 55
Baffles or concrete encasement for shock/erosion protection **[Required, if flow velocity of any section of pipe >10 fps]**	NA of NA
Detail showing Wastewater Line/Water Line Crossing **[Required, if crossings are proposed]**	40 of 55
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) **[Required, if Flexible Pipe is used]**	NA of NA

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

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

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

    ☐ Survey staking was completed on this date: _____

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

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

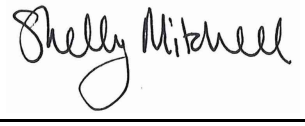
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Organized Sewage Collection System Application** is hereby submitted for TCEQ review and executive director 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: Shelly Mitchell

Date: 04/16/2024

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.*

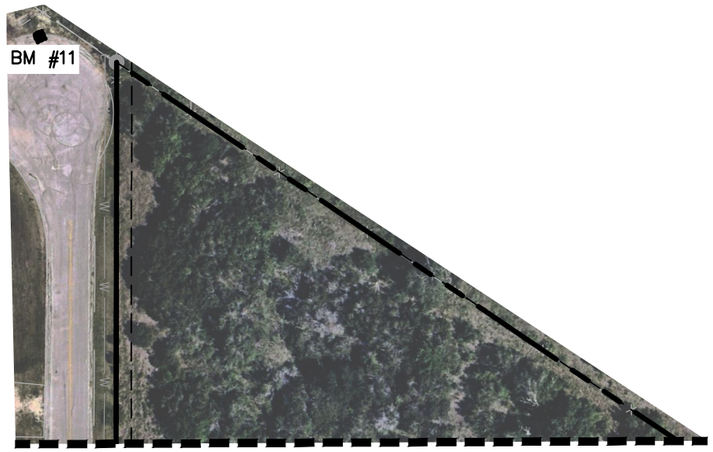
$$v = \frac{1.49}{n} \times R_h^{0.67} \times \sqrt{S}$$

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)

MATCHLINE THIS SHEET



MATCHLINE THIS SHEET

SCALE: 1"= 100'

100' 0' 50' 100'

LEGEND

- PROPERTY LINE
- PROPOSED EASEMENT LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED GRATE INLET
- PROPOSED JUNCTION BOX W/ MANHOLE
- PROPOSED CURB INLET

BM #10: SIX COTTON SPINDLE. +/- 65' WEST OF SOUTHWEST LOT CORNER.
DATUM: NAD83, STATE PLANE CENTRAL ZONE – COMBINED
SCALE FACTOR OF 0.999880014398272
GRID NORTHING: 10,203,075.39 GRID EASTING: 3,082,766.80
ELEVATION=1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS). +/- 55' WEST OF NORTHWEST LOT CORNER.
DATUM: NAD83, STATE PLANE CENTRAL ZONE – COMBINED
SCALE FACTOR OF 0.999880014398272
GRID NORTHING: 10,203,986.98 GRID EASTING: 3,082,429.05
ELEVATION=1035.47

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

FUZE
CITY OF LEANDER, TEXAS
STAKING MAP

JOB NO. 51283-01
DATE OCTOBER 2023
DESIGNER
CHECKED TR
DRAWN AG
SHEET 1 of 1

Date: Mar 20, 2024, 2:32pm User ID: KThomas
File: H:\Projects\512\83\01\301 Construction Documents\Exhibits\EXH51283-01_TCEQ Staking Map.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SECTION VI

ORGANIZED SEWAGE COLLECTION SYSTEM : ATTACHMENT A

Engineering Design Report

GATEWAY 29, LOTS 9 & 10

Engineering Design Report

Prepared in Accordance with the
City of Austin Wastewater Design Criteria

March 2024

PAPE-DAWSON ENGINEERS

PROJECT INFORMATION 2
GRAVITY SANITARY SEWER PIPING: FLOW & CAPACITY ANALYSIS 3
Odor Control 3
Flow Calculation 3
Capacity Calculation 5
Conclusion 7
GENERAL STRUCTURAL COMPONENTS 7
Project Materials (Pipe and Joints): 7
Project Materials (Bedding): 8
Project Materials (Manholes): 8
Project Materials (Manhole Covers): 9
Minimum and Maximum Slopes 9
Backfill 9
Trenching 10
Minimum and Maximum Trench Width 10
Corrosion Prevention 10
Manholes (General) 10
Manholes (Inverts) 11
Manholes (Ventilation) 11
Reduction of Inflow 12
FLEXIBLE PIPE COMPUTATIONS 11
Live Load Calculations 12
Buckling Pressure Calculations 12
Allowable Buckling Pressure: 13
Pressure Under Installed Conditions 14
Installation Temperature Effects 15
Wall Crushing 15

Tensile Strength **16**
Strain **16**
Modulus of Soil Reaction **16**
Zeta Calculation **17**
Pipe Stiffness **18**
Deflection **18**

This Engineering Design Report has been prepared to comply with the Texas Commission on Environmental Quality's Design Criteria for Domestic Wastewater Systems (30 TAC 217), and regulations over the Edwards Aquifer Recharge Zone (30 TAC 213). Please note that throughout this application, in the case of multiple regulations, the more stringent shall apply.

PROJECT INFORMATION

The Gateway 29 project is located on approximately 14.00 acres located south and west of SH 29 at the intersection of CR 267 and Kauffman Loop, within the city limits of Leander in Williamson County, Texas. No geological or manmade features were identified during a geological assessment of the site. The project limits are located over the Edwards Aquifer Recharge Zone. The property will consist of a multifamily apartment complex. A combined Water Pollution Abatement Plan (WPAP) Application and Sewage Collection System (SCS) Plan Application for this development is being submitted to Texas Commission on Environmental Quality (TCEQ).

The Gateway 29 Sewage Collection System (SCS) Application proposes the construction of an approximately 828 LF of 8-inch (8") PVC, SDR 26 gravity wastewater main. Approximately 60 LF of 8-inch PVC is 160 psi pressure-rated pipe to be centered on water/wastewater line crossings. Regulated activities proposed include excavation, construction of sewer mains, manhole installation, backfill, and compaction.

Approximately 76,440 gallons per day (average flow) of domestic wastewater will flow through the SCS. Sewage flow will be disposed of by conveyance to active Lift Station 25. Potable water will be provided by the City of Leander.

Safety considerations are the responsibility of the contractor. Safety protection shall be accomplished in accordance with the most recent requirements of the Occupational Safety and Health Administration (OSHA) Standards and Interpretations.

GRAVITY SANITARY SEWER PIPING: FLOW & CAPACITY ANALYSIS

Basis for average flow used for design of collection system (**check one or more**):

Per Capita Contributions:	_____
Service Connections:	✓
Land Area and Use:	✓
Fixture Analysis:	_____

Odor Control

Odor Control is not necessary on this project as it is a gravity line and there will be no conditions where sewage is standing and will become septic.

Flow Calculation

Peaking Factor used for design: ***([18+(0.0206 x F)$^{0.5}$]/(4+(0.0206 x F)$^{0.5}$)***

F= 42.19 GPM approx. factor of 3.84

Peaking Factor is based on: **Design Requirements for peak flow (from City of Austin, Drainage Criteria Manual)**

Gateway 29, Lots 9 & 10:

Total Area = 14.00 acres

LUEs (units) = 321 units x 0.7 LUEs = ***225 LUEs***

Average Dry Weather Flowrate (gpm)

$$Q_{avg} = \frac{225\ LUE\ \times \frac{270\ gal/day}{LUE}}{1440\ min/day} = 42.19\ gpm$$

Peak Dry Weather Flowrate (PDWF) (gpm)

In order to determine peak flows for the drainage basin, the formula for peak dry weather flow (PDWF) is applied:

$$Peak\ Factor = \frac{18 + \left[0.0206 \times Q_{avg}\right]^{0.5}}{4 + \left[0.0206 \times Q_{avg}\right]^{0.5}} = 3.84$$

$$PDWF = PF\ \times\ Q_{avg} = 161.9\ gpm$$

Using the above equation and an average daily flow of 42.19 gpm gives a peak factor of 3.84 which results in a peak dry weather flow of 161.9 gpm.

Inflow & Infiltration (gpm)

In order to determine the peak wet weather flow (PWWF), a component must be added to the peak dry weather flow to account for inflow and infiltration to the collection system. This inflow and infiltration is computed based on the value of 750 gallons per day per acre of land in the service area.

$$Q_{I\&I} = \frac{\frac{750 gal}{\frac{acre}{day}} \times 14.00\ acre}{1440\ min/day} = 7.29\ gpm$$

Peak Wet Weather Flowrate (gpm)

In adding the inflow and infiltration value to the peak dry weather flow, a peak wet weather flow value is achieved.

$$PWWF = PWDF + Q_{I\&I} = 169.23\ gpm$$

Please note that capacities are determined using Manning's equation for pipes flowing full with an "n" value of 0.013. A reference for Manning’s Equation can be found in “The Uni-Bell Handbook of PVC Pipe: Design and Construction”.

Capacity Calculation

Characteristics of 8" ASTM D3034, SDR 26, PVC Sewer Pipe:

Nominal Size = 8"

Outer Diameter (D_o) = 8.40"

Minimum Wall Thickness (t) = 0.323"

Inner Diameter (D_i) = 7.75"

Characteristics of 8" ASTM 2241, Class 160, SDR 26, PVC Sewer Pipe:

Nominal Size = 8"

Outer Diameter (D_o) = 8.625"

Minimum Wall Thickness (t) = 0.332"

Inner Diameter (D_i) = 7.961"

Manning’s Equation:

$$Q_{full} = \frac{1.49}{n} \times A \times R^{\frac{2}{3}} \times \sqrt{S} \times 448.83 \frac{gpm}{cfs}$$

v = Q/A

Where:

Q = Discharge (cfs)

k = Constant [(1.49 $ft^{1/3}$)/sec.]

n = Manning’s roughness coefficient (unitless)

= 0.013 [as required by 30 TAC 213.53 A(i)]

A = Flow area (ft^2)

R = Hydraulic Radius (ft) = A/P = Cross sectional area of flow (ft^2)/Wetted perimeter (ft.)

S = Slope (ft/ft)

v = Velocity of flow (ft/s)

Calculations for 8" ASTM D3034, SDR 26, PVC Sewer Pipe:

$$Q_{full} = \frac{1.49}{0.013} \times 0.33 \times 0.16^{\frac{2}{3}} \times \sqrt{0.0075} \times \frac{448.83 gpm}{cfs} = 433.29\ gpm$$

$A = \pi(D_i^2)/4 = \pi(7.75\ in)^2/4 = 47.17\ in^2 = 0.33\ ft^2$

$P = \pi(D_i) = \pi(7.75\ in) = 24.35\ in = 2.03\ ft$

$R = A/P = 0.33\ ft^2/2.03\ ft. = 0.16\ ft$

$S = 0.0075$

$Q = 0.965\ cfs = 433.3\ gpm = Q_{full}$

$v = 0.965\ cfs/0.33\ ft^2 =$ ***2.93 ft/s***

Qmax =0.965 cfs (0.80)(7.48 gallons/1 cf)(60 sec/1 min.)= ***346.47 gpm***

Calculations for 8" ASTM 2241, Class 160, SDR 26, PVC Sewer Pipe:

$$Q_{full} = \frac{1.49}{0.013} \times 0.35 \times 0.17^{\frac{2}{3}} \times \sqrt{0.0075} \times \frac{448.83 gpm}{cfs} = 478.5\ gpm$$

$A = \pi(D_i^2)/4 = \pi(7.96\ in)^2/4 = 49.77\ in^2 = 0.35\ ft^2$

$P = \pi(D_i) = \pi(7.96\ in) = 25.01\ in = 2.08\ ft$

$R = A/P = 0.35\ ft^2/2.08\ ft. = 0.17\ ft$

$S = 0.0075$

$Q = 1.066\ cfs = 478.5\ gpm = Q_{full}$

$v = 1.066\ cfs/0.35\ ft^2 =$ ***3.05 ft/s***

Qmax =1.066 cfs (0.80)(7.48 gallons/1 cf)(60 sec/1 min.)= ***382.78 gpm***

Nominal Main Size (in)	Outer Diameter (in)	Minimum Slope	Area (ft^2)	Hydraulic Radius (A/P)	$R^{2/3}$	$S^{1/2}$	Q-Full (cfs)	Max Pipe (%)	Velocity (ft/s)	Q-Max (gpm)
8	*8.400*	*0.0075*	*0.33*	*0.16*	*0.29*	*0.087*	*0.965*	*80*	*2.93*	*346*
8	*8.625*	*0.0075*	*0.35*	*0.17*	*0.31*	*0.063*	*1.066*	*80*	*3.05*	*382.78*

Conclusion
The proposed PVC SDR 26 8" pipes with a minimum slope of 0.75% have sufficient capacity to convey the projected average and peak flows.

GENERAL STRUCTURAL COMPONENTS

Project Materials (Pipe and Joints):

Nominal Pipe Diameter (in)	Linear Feet	Pipe Material	National Standard Specification for Pipe Material	National Standard for Pipe Joints
8	*768*	*PVC SDR 26*	*ASTM D3034*	*ASTM D3212*
8 (pressure)	*60*	*PVC SDR 26*	*ASTM 2241, Class 160*	*ASTM D3139*

Note: Section 217.53 (j)(4) requires a minimum pipe diameter of 6 inches for all gravity sanitary sewer collection system piping.

Watertight, size on size resilient connectors conforming to ASTM C-923 have been specified for connecting pipe to manholes.

Where a collection system parallels a water supply pipe and a nine-foot separation distance cannot be achieved, Section 217.53 (d)(3)(A)(i) requires a collection system pipe be constructed of cast

iron, ductile iron, or PVC meeting ASTM specifications with at least 150 pounds per square inch (psi) rating for both the pipe and joints. The proposed project will comply with these requirements.

Where a collection system pipe crosses a water supply line and a nine-foot separation distance cannot be achieved, Section 217.53(d)(3)(B)(i) requires the collection system pipe be constructed of cast iron, ductile iron, or PVC with a minimum pressure rating of 150 psi. The proposed project will comply with this requirement and that of 30 TAC 217.53(d)(3)(B)(iii).

Project Materials (Bedding):

The specified bedding will comply with ASTM D2321-11 Class I, II or III for materials and densification. A minimum of 6 inches of bedding is required for all pipe.

Pipe Diameter (in)	Pipe Material	Bedding Class
8	***PVC***	***Class I & Class III***

Initial backfill for the pipe sizes shown above will be Class I. Secondary backfill will be Class III. See Table 2 of ASTM D2321-11 "Soil Classes" in Appendix 1 of this subsection.

Project Materials (Manholes):

Section 217.55 (f) prohibits the use of bricks to adjust a manhole cover to grade or construct a manhole. The proposed project will comply with this requirement.

The inside diameter of a manhole must be no less than 48 inches. Section 217.55 (n) requires watertight, size-on-size resilient connectors that allow for differential settlement and must conform to American Society for Testing and Materials C-923. The proposed project complies with this requirement.

Under 30 TAC 213.5(C)(3)(A), all manholes over the Recharge Zone must be watertight, with watertight rings and covers. The proposed project complies with this requirement.

Project Materials (Manhole Covers):

Manhole covers must be constructed of impervious materials. If personnel entry is required, a minimum 30-inch diameter clear opening must be provided. Inclusion of steps in a manhole is prohibited. If a manhole must be located within a 100-year floodplain then a means of preventing inflow is required. A manhole cover that is located in a roadway must meet or exceed the American Association of State Highways and Transportation Officials Standard M-306 for load bearing.

Under 30 TAC 213.5 (c)(3)(A), all manholes over the Edwards Aquifer Recharge Zone must be watertight, with watertight rings and covers. This proposed project complies with this requirement.

Minimum and Maximum Slopes

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

The following are the minimum and maximum slopes for each pipe diameter:

Pipe Diameter: ***8"(SDR-26 Gravity & 160 psi)*** Min. Slope: ***0.75%*** Max. Slope: ***3.15%***

Backfill

Note: The backfill will be free of stones greater than 6 inches in diameter and free of organic or any other unstable material.

Trenching

Note: The trench width will be minimized while still allowing adequate width for proper compaction of backfill, and while still ensuring that at least 6 inches of backfill exists below and on each side of the pipe. The trench walls will be vertical to at least one foot above the pipe.

Trenching will occur over the Recharge Zone and will comply with 30 TAC 213.5.

Minimum and Maximum Trench Width

Based on 30 TAC 217.54:

Pipe Diameter: ***8"*** Min. Trench Width: ***23***" Max. Trench Width: ***35"***

Pipe Diameter: ***8" (160 psi)*** Min. Trench Width: ***23***" Max. Trench Width: ***35"***

These trench widths account for the bell diameter.

Corrosion Prevention

Proposed collection system components (pipes, manholes, etc.) will not be susceptible to deterioration through the corrosive effects of an anaerobic sewage environment. Manholes shall be constructed of or lined with a corrosion resistant material. Where new construction ties into an existing manhole, the existing manholes must be lined, coated, or replaced with a corrosion resistant material.

Manholes (General)

Note: Manholes are provided at all changes in size, grade or alignment of pipe, at the intersection of all pipes and at the end of all lines that may be extended at a future date. A clean-out with watertight plugs may be installed instead of a manhole if no extensions are anticipated. Clean outs must pass all testing requirements outlined for gravity collection pipes.

The project complies with the maximum manhole spacing allowed by the TCEQ:

Pipe Diameter (in)	Max. Manhole Spacing (ft)
6 - 15	500
18 - 30	800
36 - 48	1000
54 or larger	2000

Manhole Spacing:

Pipe Diameter: ***8”*** Max. Spacing: ***500 LF***

Manholes (Inverts)

The bottom of a manhole must contain a U-shaped channel which is a smooth continuation of the inlet and outlet pipes. The bench above the channel must be sloped per spec 506.4 and SPL WW-146. See the City of Austin Detail 506S-10 which complies with these requirements. Note, a manhole connected to a pipe less than 15 inches in diameter must have a channel depth equal to at least half the largest pipe’s diameter.

Manholes (Ventilation)

Manholes within the 100-year floodplain are watertight. There is already an existing vented manhole that the wastewater main will be connecting to.

Reduction of Inflow

Connection of storm water or roof drains to the sewage collection system is prohibited in accordance with 30 TAC 217.55(j)(6).

FLEXIBLE PIPE COMPUTATIONS

Please note, all flexible pipe computations are based on engineering principles and practices for the design of buried PVC pipe systems. Equations used can be found in “The Uni-Bell PVC Pipe

Association Handbook of PVC Pipe: Design and Construction" and Buried Pipe Design, 3rd Edition by Moser and Folkman. Please note, the equations used may be in a different format than shown in the Uni-Bell Handbook or Buried Pipe Design, 3rd Edition. Throughout this application "160 psi" pipe refers to the pressure rating of the ASTM 2241, Class 160, SDR 26 pipe used at water/sewer crossings.

Live Load Calculations

No influence of live loads on the performance of the SCS is anticipated. The average burial depth for this line is such that the influence of live loads is negligible.

Buckling Pressure Calculations

This area of the Edwards Aquifer is unsaturated; consequently, there are no anticipated areas where sewer pipe will be placed below the water table. The value of $h_w = 0$ as there will be no height or time period of perched water or groundwater above the pipe crowns of the proposed sewer line. No geotechnical borings were done for this line.

The value of H for use in these calculations is twenty-one (21') as it exceeds the maximum burial depth for this line. The value of γ_s equals 143 pcf is a conservative value based on a dry unit weight of 135 pcf and a moisture content of 6%. This value is conservative as it corresponds to saturated unit weights of commonly used backfill materials.

Allowable Buckling Pressure:

$$q_a = 0.4 * \sqrt[2]{32 * Rw * B' * Eb * \left(E * \frac{I}{D^3}\right)}$$ *Equation 1*

$$q_a = 0.4 * \sqrt{32 * 1 * 0.50 * 400\left(400{,}000 * \frac{0.003}{8.08^3}\right)} = 48.26psi \text{ (8" } PVC\ SDR26)$$

$$q_a = 0.4 * \sqrt{32 * 1 * 0.50 * 400\left(400{,}000 * \frac{0.003}{8.29^3}\right)} = 46.44psi \text{ (8" } PVC\ SDR26\ 160psi)$$

$R_w = 1 - 0.33 * (h_w/h)$ *Equation 2*

$$R_W = 1 - 0.33 * \left(\frac{0}{360}\right) = 1$$

$$B' = \frac{1}{1 + 4 * e^{-0.065}}$$ *Equation 3*

$$B' = \frac{1}{1 + 4 * e^{-0.065(21)}} = 0.50$$

$I = (t^3/12) * (inches^4/linear\ \ inch)$ *Equation 4*

$$I = \left(\frac{.323^3}{12}\right) = 0.003in^3 \text{ (8” } PVC\ SDR26)$$

$$I = \left(\frac{.332^3}{12}\right) = 0.003in^3 \text{ (8” } PVC\ SDR26, 160psi)$$

$D = D_o - t$ *Equation 5*

$D = 8.40\text{in} - 0.323\text{in} = 8.08\text{" (8” PVC SDR26)}$

$D = 8.625\text{in} - 0.332\text{in} = 8.29"$ (8” PVC SDR26, 160psi)

Where:

- q_a = Allowable buckling pressure, pounds per square inch (psi)
- h = Height of soil surface above top of pipe in inches (in)
- h_w = Height of water surface above top of pipe in inches (in) (groundwater elevation)
- R_w = Water buoyancy factor. If hw = 0, Rw = 1. If 0 ≤ hw ≤ h (groundwater elevation is between the top of the pipe and the ground surface), calculate Rw with Equation 2
- H = Depth of burial in feet (ft) from ground surface to crown of pipe.
- B' = Empirical coefficient of elastic support
- E_b = Modulus of soil reaction for the bedding material (psi)
- E = Modulus of elasticity of the pipe material (psi)
- I = Moment of inertia of the pipe wall cross section per linear inch of pipe, $inch^4$/lineal inch = $inch^3$. For solid wall pipe, “I” can be calculated with Equation 4
- t = Pipe structural wall thickness (in)
- D = Mean pipe diameter (in)
- D_o = Pipe outer diameter (in)

Pressure Under Installed Conditions

$$q_p = \gamma_w * h_w + R_w * (W_c / D) + L_l$$ *Equation 6*

$$q_p = 0.0361 * 0 + 1 * \left(\frac{175.24}{8.08}\right) + 0 = 21.69psi \ (8"PVC\ SDR\ 26)$$

$$q_p = 0.0361 * 0 + 1 * \left(\frac{179.80}{8.29}\right) + 0 = 21.69psi \ (8"PVC\ SDR\ 26, 160\ psi)$$

Where:

- q_p = Pressure applied to pipe under installed conditions (psi)

γ_w = 0.0361 pounds per cubic inch (pci), specific weight of water

W_c = Vertical soil load on the pipe per unit length in pounds per linear inch (lb/in)

L_l = Live load (lbs)

$$W_c = \gamma_s * H * (D + t) / 144$$ *Equation 7*

$$W_c = 143 * 21 * \frac{8.08 + 0.323}{144} = 175.24 \frac{lb}{in} \text{ (8” PVC, SDR 26)}$$

$$W_c = 143 * 21 * \frac{8.29 + 0.332}{144} = 179.80 \frac{lb}{in} \text{ (8” PVC, SDR 26, psi 160)}$$

Where:

γ_s = Specific weight of soil in pounds per cubic foot (pcf)

D = Mean pipe diameter (in)

Pipe Diameter: ***8”***	Pipe Material: ***PVC, SDR 26***	q_a: ***48.26***	q_p: ***21.69***
Pipe Diameter: ***8” (160 psi)***	Pipe Material: ***PVC, SDR 26***	q_a: ***46.44***	q_p: ***21.69***

Since $q_a \geq q_p$, the specified pipe is acceptable for the proposed installation.

Installation Temperature Effects

Flexible pipe will be installed under favorable ambient conditions, per pipe manufacturer’s specifications.

Wall Crushing

No portion of the proposed sewer line is located within the 5-year floodplain.

Tensile Strength

The information below is from "The Uni-Bell Handbook of PVC Pipe: Design and Construction" Table 2.1 pages 14-15. This applies to all PVC SDR-26 pipe.

Pipe Material: ***PVC SDR 26*** Tensile Strength: ***7,000*** Cell Class (PVC only) ***12454***

Strain

The conditions of this installation are such that strain-related failure will not be a problem. Strain is generally not a performance-limiting factor for buried PVC pipe or a design-limiting criterion for PVC pipes according to the Uni-Bell Handbook of PVC Pipe (Chapter VII, Pages 255 and 257). As pipe deflection will be below 5%, strain-related failure is not anticipated.

Modulus of Soil Reaction

The modulus of soil reaction for the bedding material, $E_{b,}$ is **400 psi**.

This value was determined using the "Table 1: Soil Classification Chart" and "Table 2: Soil Classes" from ASTM D2321-11 and Table 7.3 "Average Values of Modulus of Soil Reaction, E" from "The Uni-Bell Handbook of PVC Pipe: Design and Construction" attached in Appendix 1 of this subsection. Class III material was chosen. As the secondary backfill (Class III) has a lower Modulus of Soil Reaction than initial backfill (Class I), its value was used in the calculations that follow. Class III on Table 2 corresponds to coarse-grained soils with fines (GM, GC, SM or SC) and sandy or gravelly fine-grained soils (CL or ML). On Table 7.3, coarse-grained soils with fines at a slight compaction have an E' equal to 400 psi.

The modulus of soil reaction for the in-situ soil, $E'_{n,}$ is **3,000 psi**

This value was determined using the "Table 1: Soil Classification Chart" and "Table 2: Soil Classes" from ASTM D 2321-11 and Table 7.3 "Average Values of Modulus of Soil Reaction, E"

from "The Uni-Bell Handbook of PVC Pipe: Design and Construction" attached in Appendix 1 of this subsection. Class I material was chosen, which includes crushed rock as shown on Table 2. Compacted crushed rock on Table 7.3 has an E' equal to 3,000 psi. Values in Table 7.3 are based on empirical data and derived from laboratory and field tests for buried pipe.

Bedding to in-situ soil modulus of soil reaction ratio = E_b/E'_n = **400 psi/3,000 psi = 0.13**

Zeta Calculation

Where native soil is significantly weaker than bedding material, or where predicted deflection approaches 5%, the effect of native soil must be quantified using Leonhardt's Zeta factor. If the ration of bedding modulus to soil modulus is not equal to 1.0, a zeta factor must be calculated by using the equations below, where zeta is a factor, which corrects for the effect of in-situ soil on pipe stability (Uni-Bell Handbook of Pipe, page 267). To calculate zeta, directly use the formulas below. The calculations that are done to determine the zeta factors for the different pipe diameters must be included with this submittal.

$$zeta = \frac{1.44}{f + (1.44 - f) * (E_b / E_{n'})}$$ *Equation 9*

$$zeta = \frac{1.44}{1.24 + (1.44 - 1.24) * 0.13} = 1.14 \text{ (8" } PVC\ SDR\ 26)$$

$$zeta = \frac{1.44}{1.22 + (1.44 - 1.22) * 0.13} = 1.15 \text{ (8" } PVC\ SDR\ 26, 160\ psi)$$

$$f = \frac{b/d_a - 1}{1.154 + 0.444 * (b/d_a - 1)}$$ *Equation 10*

$$f = \frac{\frac{35}{8.40} - 1}{1.154 + 0.444^{*}\left(\frac{35}{8.40} - 1\right)} = 1.24 \ (8" \ PVC \ SDR \ 26)$$

$$f = \frac{\frac{35}{8.625} - 1}{1.154 + 0.444^{*}\left(\frac{35}{8.625} - 1\right)} = 1.22 \ (8" \ PVC \ SDR \ 26, 160 \ psi)$$

Where:

f = Pipe/trench width coefficient

b = Trench width (in)

d_a = Pipe diameter (in)

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

E'_n = Modulus of soil reaction for the in-situ soil (psi)

Pipe Diameter: ***8" (SDR 26)*** Trench Width: ***35"*** Zeta: ***1.14***

Pipe Diameter: ***8" (SDR 26, 160 psi)*** Trench Width: ***35"*** Zeta: ***1.15***

Pipe Stiffness

Pipe stiffness is based on National Reference Standards and manufacturer’s data. Please see Table 7.1 of the “The Uni-Bell Handbook of PVC Pipe: Design and Construction” listing the pipe stiffness of 8” PVC SDR 26 and 10" PVC SDR 26 as 115 psi for E = 400,000 psi.

Pipe Diameter: ***8"*** Pipe Material: ***PVC SDR 26*** Ps: ***115 psi***

Deflection

Maximum allowable deflection in installed lines is 5% (per 30 TAC 217), as determined by the deflection analysis and verified by a mandrel test. It is recommended that the percent of vertical deflection is below this range; however, a 7.5% deflection limit (recommended by ASTM D3034)

provides a conservative factor of safety against structural failure (Handbook of PVC Pipe, page 249).

Note: Per Table 7.2 attached in Appendix 1 of the SCS Application, K = 0.096 when the bedding angle is 90 degrees.

$$\Delta Y / D(\%) = \frac{K*(L_p + L_1)*100}{(0.149*P_s)+(0.061*zeta*E_b)}$$ *Equation 11*

$$\frac{\Delta Y}{D(\%)} = \frac{(0.096)(20.9)*100}{(0.149*115)+(0.061*1.14*400)} = 4.46\%\ for\ 8"\ pipe$$

$$\frac{\Delta Y}{D(\%)} = \frac{(0.096)(20.9)*100}{(0.149*115)+(0.061*1.15*400)} = 4.44\%\ for\ 8"\ pipe, 160\ psi$$

$$L_p = \frac{\gamma_s * H}{144}$$ *Equation 12*

$$L_p = \frac{143*21.0}{144} = 20.9 psi$$

ΔY/D (%) = Predicted % vertical deflection under load

ΔY = Change in vertical pipe diameter under load

D = Undeflected mean pipe diameter (in)

K = Bedding angle constant

γ_s = Unit weight of soil (pcf)

H = Depth of burial (ft) from ground surface to crown of pipe

L_p = Prism load (psi)

Type of Pipe Material	P_s (psi)	Zeta Factor Assumed or Calculated	E_b (psi)	% Deflection
8" PVC SDR 26	*115*	*1.14*	*400*	*4.46*
8" PVC SDR 26 (160 psi)	*115*	*1.15*	*400*	*4.44*

Per ASTM D3034, 7.5% deflection is permitted.

Signature, Seal and Date of the Texas Professional Engineer Below:

04/16/2024

TABLE 6.6
LIVE LOADS ON PVC PIPE
From Uni-Bell Handbook of PVC Pipe: Design and Construction, Fourth Edition (2001)

Height of Cover (ft)	Live Load Transferred to Pipe, lb/in^2			Height of Cover (ft)	Live Load Transferred to Pipe, lb/in^2		
	Highway H20[1]	Railway E80[2]	Airport [3]		Highway H20[1]	Railway E80[2]	Airport [3]
1	12.50			14	*	4.17	3.06
2	5.56	26.39	13.14	16	*	3.47	2.29
3	4.17	23.61	12.28	18	*	2.78	1.91
4	2.78	18.40	11.27	20	*	2.08	1.53
5	1.74	16.67	10.09	22	*	1.91	1.14
6	1.39	15.63	8.79	24	*	1.74	1.05
7	1.22	12.15	7.85	26	*	1.39	*
8	0.69	11.11	6.93	28	*	1.04	*
10	*	7.64	6.09	30	*	0.69	*
12	*	5.56	4.76	35	*	*	*
				40	*	*	*

[1] *Simulates 20 ton truck traffic + impact (Source: ASTM A 796)*
[2] *Simulates 80,000 lb/ft railway load + impact (Source: ASTM A 796)*
[3] *180,000 lbs. dual tandem gear assembly. 26 inch spacing between tires and 66 inch center-to-center spacing between fore and aft tires under a rigid pavement 12 inches thick + impact.*
** Negligible live load influence.*

FIGURE 7.4
BEDDING ANGLE
From Uni-Bell Handbook of PVC Pipe: Design and Construction, Fourth Edition (2001)

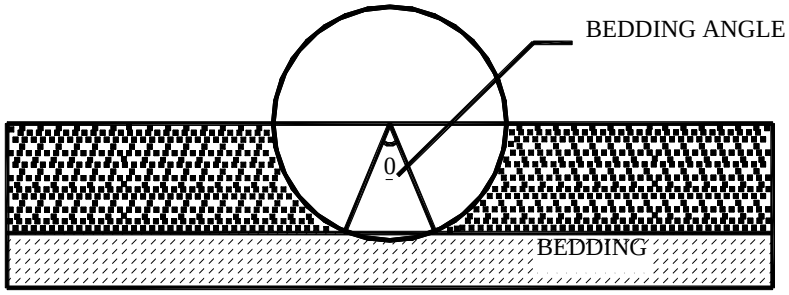


TABLE 7.2
VALUES OF BEDDING CONSTANT, K

BEDDING ANGLE (DEGREES)	K
0	0.110
30	0.108
45	0.105
60	0.102
90	0.096
120	0.090
180	0.083

TABLE 7.3
AVERAGE VALUES OF MODULUS OF SOIL REACTION, E'
(For Initial Flexible Pipe Deflection)
From Uni-Bell Handbook of PVC Pipe: Design and Construction, Fourth Edition (2001)

Soil type-pipe bedding material (Unified Classification System[a]) (1)	E' for Degree of Compaction of Bedding, in pounds per square inch			
	Dumped (2)	Slight, < 85% Proctor, <40% relative density (3)	Moderate, 85%-95% Proctor, 40%-70% relative density (4)	High, >95% Proctor, >70% relative density (5)
Fine-grained Soils (LL>50)[b] Soils with medium to high plasticity, CH, MH, CH-MH	No data available; consult a competent soils engineer; Otherwise use E' = 0			
Fine-grained Soils (LL<50) Soils with medium to no plasticity, CL, ML, ML-CL, with less than 25% coarse-grained particles	50	200	400	1,000
Fine-grained Soils (LL<50) Soils with medium to no plasticity, CL, ML, ML-CL, with more than 25% coarse-grained particles	100	400	1,000	2,000
Coarse-grained Soils with Fines GM, GC, SM, SC[c] contains more than 12% fines				
Coarse-grained Soils with Little or no Fines GW, GP, SW, SP[c] contains less than 12% fines	200	1,000	2,000	3,000
Crushed Rock	1,000	3,000	3,000	3,000
Accuracy in Terms of Percentage Deflection[d]	± 2	± 2	± 1	± 0.5

[a]ASTM Designation D 2487, USBR Designation E-3.
[b]LL = Liquid limit.
[c]Or any borderline soil beginning with one of these symbols (i.e. GM-GC, GC-SC).
[d]For ± 1% accuracy and predicted deflection of 3%, actual deflection would be between 2% and 4%
Note: Values applicable only for fills less than 50 ft (15 m). Table does not include any safety factor. For use in predicting initial deflections only, appropriate Deflection Lag Factor must be applied for long-term deflections. If bedding falls on the borderline between two compaction categories, select lower E' value or average the two values. Percentage Proctor based on laboratory maximum dry density from test standards using about 12,500 ft-lb/cu ft (598,000 J/m^3) (ASTM D 698, AASHTO T-99, USBR Designation E-11). 1 psi = 6.9 kPa.

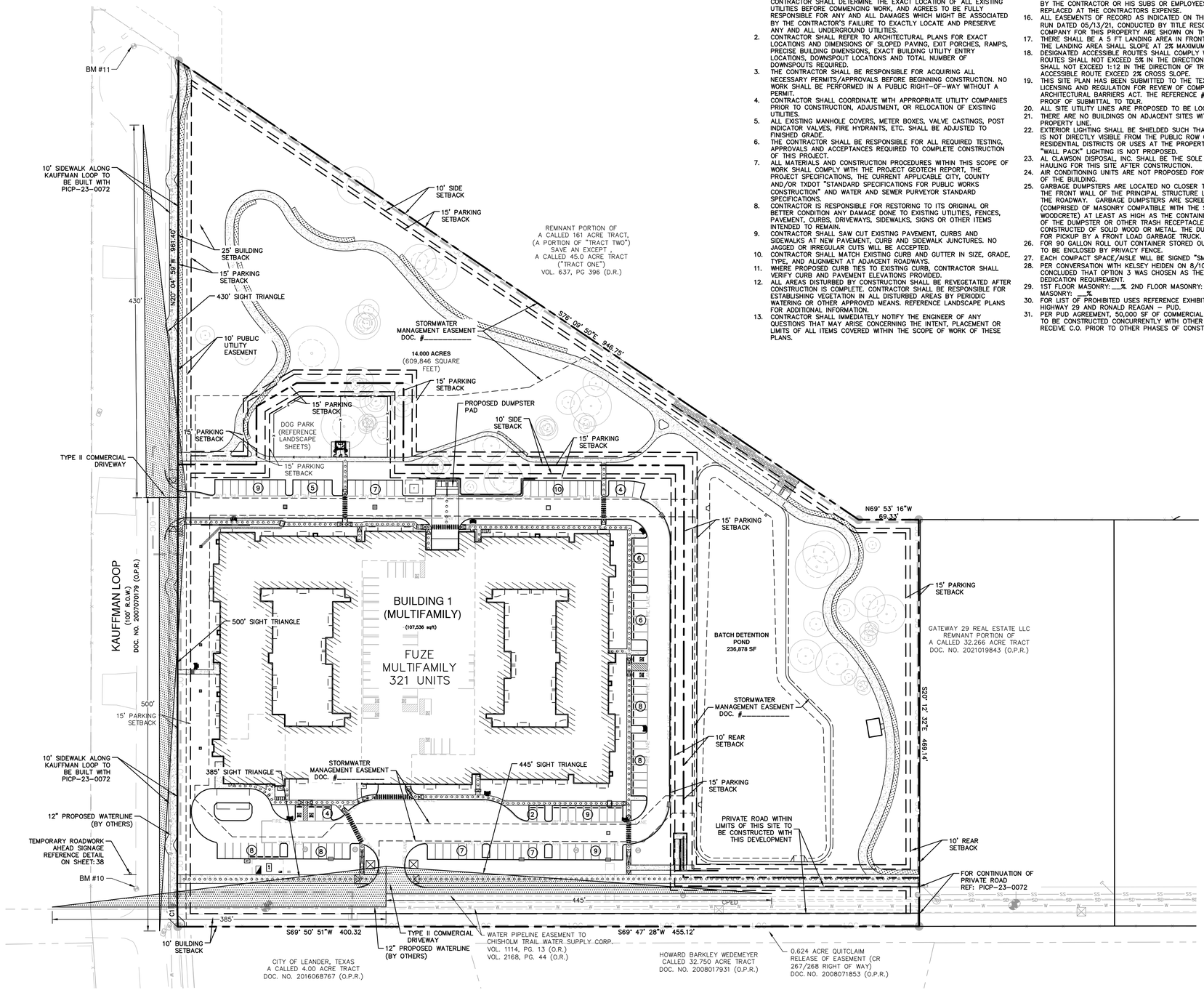
SOURCE: "Soil Reaction for Buried Flexible Pipe" by Amster K. Howard, U.S. Bureau of Reclamation, Denver, Colorado. Reprinted with permission from American Society of Civil Engineers.

SECTION VI

ORGANIZED SEWAGE COLLECTION SYSTEM : ATTACHMENT E

Site Plan

CURVE TABLE					
CURVE	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	1250.15'	1°43'07"	N20°56'02"W	37.50'	37.50'



GENERAL NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN THESE PLANS IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF SLOPED PAVING, EXIT PORCHES, RAMPS, PRECISE BUILDING DIMENSIONS, EXACT BUILDING UTILITY ENTRY LOCATIONS, DOWNSPOUT LOCATIONS AND TOTAL NUMBER OF DOWNSPOUTS REQUIRED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS/APPROVALS BEFORE BEGINNING CONSTRUCTION. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
4. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANIES PRIOR TO CONSTRUCTION, ADJUSTMENT, OR RELOCATION OF EXISTING UTILITIES.
5. ALL EXISTING MANHOLE COVERS, METER BOXES, VALVE CASTINGS, POST INDICATOR VALVES, FIRE HYDRANTS, ETC. SHALL BE ADJUSTED TO FINISHED GRADE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED TESTING, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
7. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK SHALL COMPLY WITH THE PROJECT GEOTECH REPORT, THE PROJECT SPECIFICATIONS, THE CURRENT APPLICABLE CITY, COUNTY AND/OR TXDOT "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" AND WATER AND SEWER PURVEYOR STANDARD SPECIFICATIONS.
8. CONTRACTOR IS RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION ANY DAMAGE DONE TO EXISTING UTILITIES, FENCES, PAVEMENT, CURBS, DRIVEWAYS, SIDEWALKS, SIGNS OR OTHER ITEMS INTENDED TO REMAIN.
9. CONTRACTOR SHALL SAW CUT EXISTING PAVEMENT, CURBS AND SIDEWALKS AT NEW PAVEMENT, CURB AND SIDEWALK JUNCTURES. NO JAGGED OR IRREGULAR CUTS WILL BE ACCEPTED.
10. CONTRACTOR SHALL MATCH EXISTING CURB AND GUTTER IN SIZE, GRADE, TYPE, AND ALIGNMENT AT ADJACENT ROADWAYS.
11. WHERE PROPOSED CURB TIES TO EXISTING CURB, CONTRACTOR SHALL VERIFY CURB AND PAVEMENT ELEVATIONS PROVIDED.
12. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE REVEGETATED AFTER CONSTRUCTION IS COMPLETE. CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING VEGETATION IN ALL DISTURBED AREAS BY PERIODIC WATERING OR OTHER APPROVED MEANS. REFERENCE LANDSCAPE PLANS FOR ADDITIONAL INFORMATION.
13. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT OR LIMITS OF ALL ITEMS COVERED WITHIN THE SCOPE OF WORK OF THESE PLANS.
14. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, ACCESS MUST BE PROVIDED TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
15. CONTRACTOR SHALL PRESERVE ALL PROPERTY CORNER MONUMENTATION, CONTROL POINTS & BENCHMARKS. IF ANY ARE DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS SUBS OR EMPLOYEES, THEY SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
16. ALL EASEMENTS OF RECORD AS INDICATED ON THE MOST RECENT TITLE RUN DATED 05/13/21, CONDUCTED BY TITLE RESOURCES GUARANTY COMPANY FOR THIS PROPERTY ARE SHOWN ON THIS SITE PLAN.
17. THERE SHALL BE A 5 FT LANDING AREA IN FRONT OF ALL ENTRANCES. THE LANDING AREA SHALL SLOPE AT 2% MAXIMUM.
18. DESIGNATED ACCESSIBLE ROUTES SHALL COMPLY WITH TAS. ACCESSIBLE ROUTES SHALL NOT EXCEED 5% IN THE DIRECTION OF TRAVEL; RAMPS SHALL NOT EXCEED 1:12 IN THE DIRECTION OF TRAVEL; NOR SHALL THE ACCESSIBLE ROUTE EXCEED 2% CROSS SLOPE.
19. THIS SITE PLAN HAS BEEN SUBMITTED TO THE TEXAS DEPARTMENT OF LICENSING AND REGULATION FOR REVIEW OF COMPLIANCE WITH THE ARCHITECTURAL BARRIERS ACT. THE REFERENCE #TABS2022017944 IS PROOF OF SUBMITTAL TO TDLR.
20. ALL SITE UTILITY LINES ARE PROPOSED TO BE LOCATED UNDERGROUND.
21. THERE ARE NO BUILDINGS ON ADJACENT SITES WITHIN 50' OF THE PROPERTY LINE.
22. 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.
23. AL CLAWSON DISPOSAL, INC. SHALL BE THE SOLE PROVIDER OF WASTE HAULING FOR THIS SITE AFTER CONSTRUCTION.
24. AIR CONDITIONING UNITS ARE NOT PROPOSED FORWARD THE FRONT WALL OF THE BUILDING.
25. GARBAGE DUMPSTERS ARE LOCATED NO CLOSER TO A ROADWAY THAN THE FRONT WALL OF THE PRINCIPAL 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 OF 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.
26. FOR 90 GALLON ROLL OUT CONTAINER STORED OUTSIDE, IT IS REQUIRED TO BE ENCLOSED BY PRIVACY FENCE.
27. EACH COMPACT SPACE/AISLE WILL BE SIGNED "SMALL CAR ONLY".
28. PER CONVERSATION WITH KELSEY HEIDEN ON 8/10/22 IT WAS CONCLUDED THAT OPTION 3 WAS CHOSEN AS THE PROPOSED PARKLAND DEDICATION REQUIREMENT.
29. 1ST FLOOR MASONRY: __% 2ND FLOOR MASONRY: __% 3RD FLOOR MASONRY: __%
30. FOR LIST OF PROHIBITED USES REFERENCE EXHIBIT A OF THE STATE HIGHWAY 29 AND RONALD REAGAN – PUD.
31. PER PUD AGREEMENT, 50,000 SF OF COMMERCIAL SPACE IS REQUIRED TO BE CONSTRUCTED CONCURRENTLY WITH OTHER DEVELOPMENTS AND RECEIVE C.O. PRIOR TO OTHER PHASES OF CONSTRUCTION.

SCALE: 1" = 60'

0' 60' 120' 180'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED EASEMENT LINE
- EXISTING BENCHMARK
- PROPOSED FIRE HYDRANT
- PROPOSED WASTEWATER MANHOLE
- PROPOSED GRATE INLET
- PROPOSED CURB INLET
- PROPOSED JUNCTION BOX W/ MANHOLE
- PROPOSED ELECTRIC TRANSFORMER
- (8) PARKING COUNT
- PROPOSED BUILDING
- PROPOSED CONCRETE SIDEWALK
- TREES TO BE PROTECTED

PROJECT DATA:

SITE ACREAGE:	14.000 AC.
# LIVING UNITS:	321
UNITS/ACRE	22.93

PARKING SUMMARY

ROOM TYPE	UNIT COUNT	REQUIRED SPACES
1 BED:	211	316.5
2 BED:	95	190
3 BED:	15	37.5
TOTAL:	321	544

PARKING TYPE	UNIT COUNT
STANDARD:	125
ADA:	4
COMPACT:	0
GARAGE STANDARD	406
GARAGE ADA	11
TOTAL:	546

STRIPING/SIGNAGE NOTES:

1. CURB, GUTTERS AND PAVEMENT DELINEATING THE FIRE LANE SHALL BE PAINTED RED WITH FOUR INCH (4') WHITE LETTERING STATING 'NO PARKING – FIRE LANE', 'FIRE LANE – TOW AWAY ZONE', OR SIMILAR WORDING. WORDING MAY NOT BE SPACED MORE THAN THIRTY (30') FEET APART.
2. FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE – NO PARKING" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET (25') INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.
3. ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT UNLESS NOTED OTHERWISE: WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS. REFERENCE DETAIL SHEET FOR STRIPED ISLANDS.
4. ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
5. ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION

BENCHMARKS:
BENCHMARKS ARE BASED ON NAD83
COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.99988001398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

OVERALL SITE & TRAFFIC CONTROL PLAN

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 10 of 55

Date: Mar 29, 2024, 9:38am User ID: jrobinson
File: H:\Projects\51283\01\301 Construction Documents\Civil\SP51283O1.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

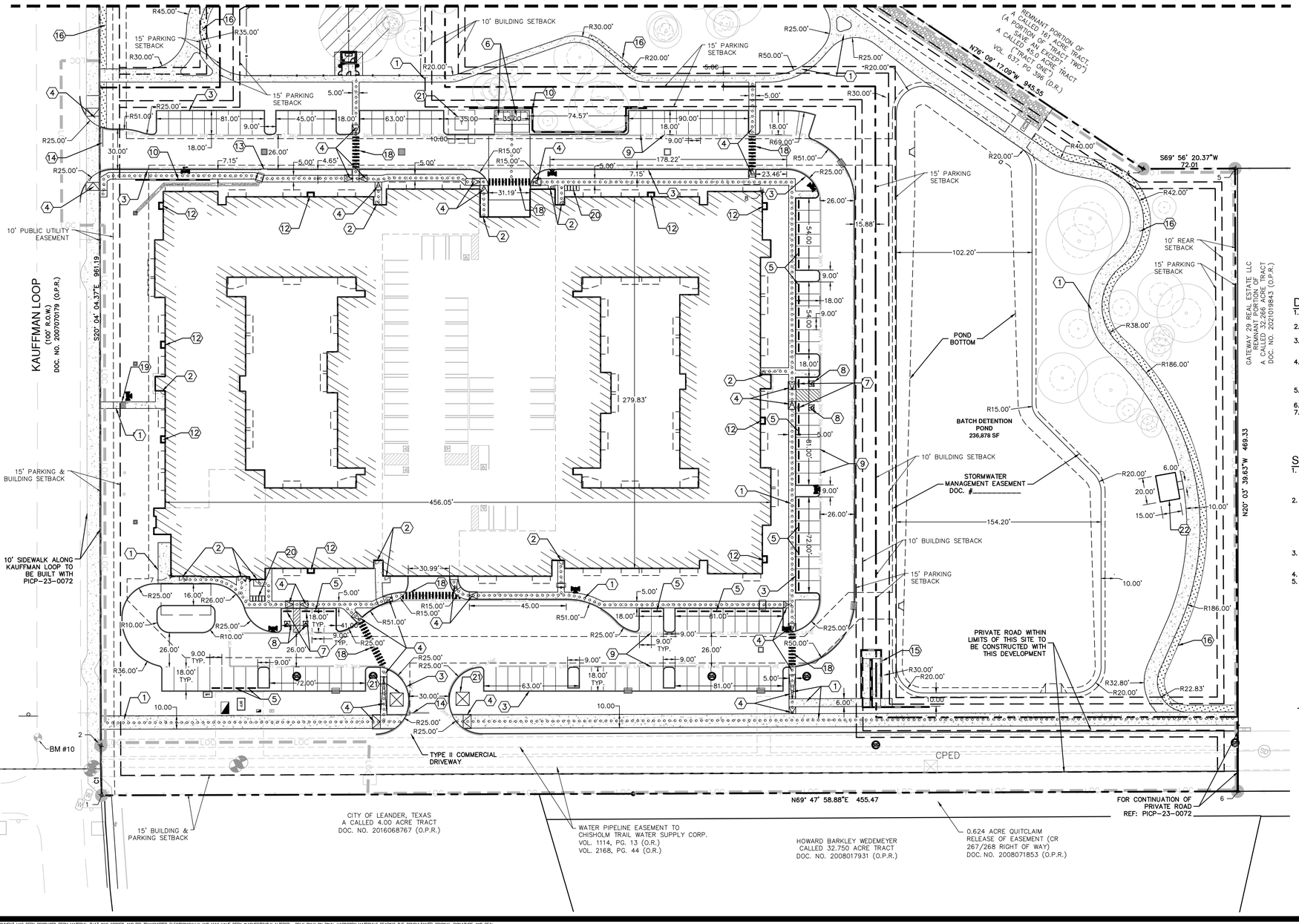
SD-23-0162

Point Table		
Point #	Northing	Easting
1	10204275.18	3083196.74
2	10204310.20	3083183.34
3	10205213.15	3082853.22
4	10204986.73	3083772.50
5	10205010.57	3083837.60
6	10204570.32	3083999.66
7	10204448.26	3083189.36
8	10204872.64	3083508.83

KEYED NOTES

1. CONCRETE SIDEWALK, RE: SHEET 36
2. BUILDING ENTRANCE
3. 6" CONCRETE CURB, RE: SHEET 37
4. PROPOSED ADA RAMP, RE: SHEET 36
5. WHEEL STOP
6. TRASH DUMPSTER/COMPACTOR
7. ACCESSIBLE PARKING SIGN & BUMPER CURB, RE: DETAILS, SHEET 37
8. ACCESSIBLE PARKING SPACE WITH ACCESS AISLE, TO SLOPE 2% MAX IN ALL DIRECTIONS. RE: DETAIL, SHEET 37
9. 4" WIDE PAVEMENT STRIPING
10. WALL WITH RAILING
11. WALL WITH FENCING; RE: LANDSCAPE PLANS
12. VENT – SEE ARCHITECTURAL PLANS
13. CURB CUT
14. 24" WHITE STOP BAR
15. RAMP WITH HANDRAIL (8.33% MAX) (REFERENCE ARCH)
16. VEGETATIVE FILTER STRIP
18. ACCESSIBLE CROSSWALK
19. SIDEWALK STEPS
20. BICYCLE PARKING
21. ELECTRIC TRANSFORMER
22. COVERED PATIO/SEATING AREA

MATCHLINE SEE SHEET 12



SCALE: 1" = 40'

0' 40' 80' 120'

LEGEND

- LOC — LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED EASEMENT LINE
- PROPOSED RETAINING WALL
- PROPOSED SIDEWALK
- EXISTING BENCHMARK
- PROPOSED WASTEWATER MANHOLE
- PROPOSED GRATE INLET
- PROPOSED CURB INLET
- PROPOSED JUNCTION BOX
- PROPOSED HEADWALL
- PROPOSED BUILDING

DIMENSIONAL CONTROL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL HORIZONTAL AND VERTICAL CONTROL PER THE CONSTRUCTION DRAWINGS.
3. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL USE THE PROPERTY PINS FOR HORIZONTAL CONTROL POINTS. BENCHMARKS ARE NOT TO BE USED FOR HORIZONTAL CONTROL.
4. DIMENSIONAL CONTROL POINTS ARE TO BACK OF CURB. DIMENSIONS ARE TO THE FACE OF CURB, FACE OF RETAINING WALL, AND CENTER OF PAINT STRIPING. ALL DIMENSIONS ARE PERPENDICULAR TO THE POINT OF REFERENCE.
5. REFER TO THE ARCHITECTURAL AND STRUCTURAL PLANS FOR ADDITIONAL DIMENSION CONTROL INFORMATION.
6. ALL CONCRETE CURB RADII ARE 3' UNLESS OTHERWISE NOTED.
7. COORDINATES FOR HORIZONTAL CONTROL POINTS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NAD NAVD88 DISPLAYED IN SURFACE VALUES USING A SURFACE ADJUSTMENT FACTOR FOR EACH COUNTY.
   (THE SURFACE ADJUSTMENT FACTOR FOR THIS SITE IS 0.99988)

STRIPING/SIGNAGE NOTES:

1. CURB, GUTTERS AND PAVEMENT DELINEATING THE FIRE LANE SHALL BE PAINTED RED WITH FOUR INCH (4') WHITE LETTERING STATING NO PARKING – FIRE LANE', FIRE LANE – TOW AWAY ZONE', OR SIMILAR WORDING. WORDING MAY NOT BE SPACED MORE THAN THIRTY (30') FEET APART.
2. FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE – NO PARKING" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET (25') INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.
3. ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT UNLESS NOTED OTHERWISE: WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS. REFERENCE DETAIL SHEET FOR STRIPED ISLANDS.
4. ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
5. ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	1250.15'	001°43'07"	S20°56'02"E	37.50'	37.50'

BENCHMARKS:

BENCHMARKS ARE BASED ON NAD83
COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.99988001438272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

SITE & DIMENSIONAL CONTROL PLAN (1 OF 2)

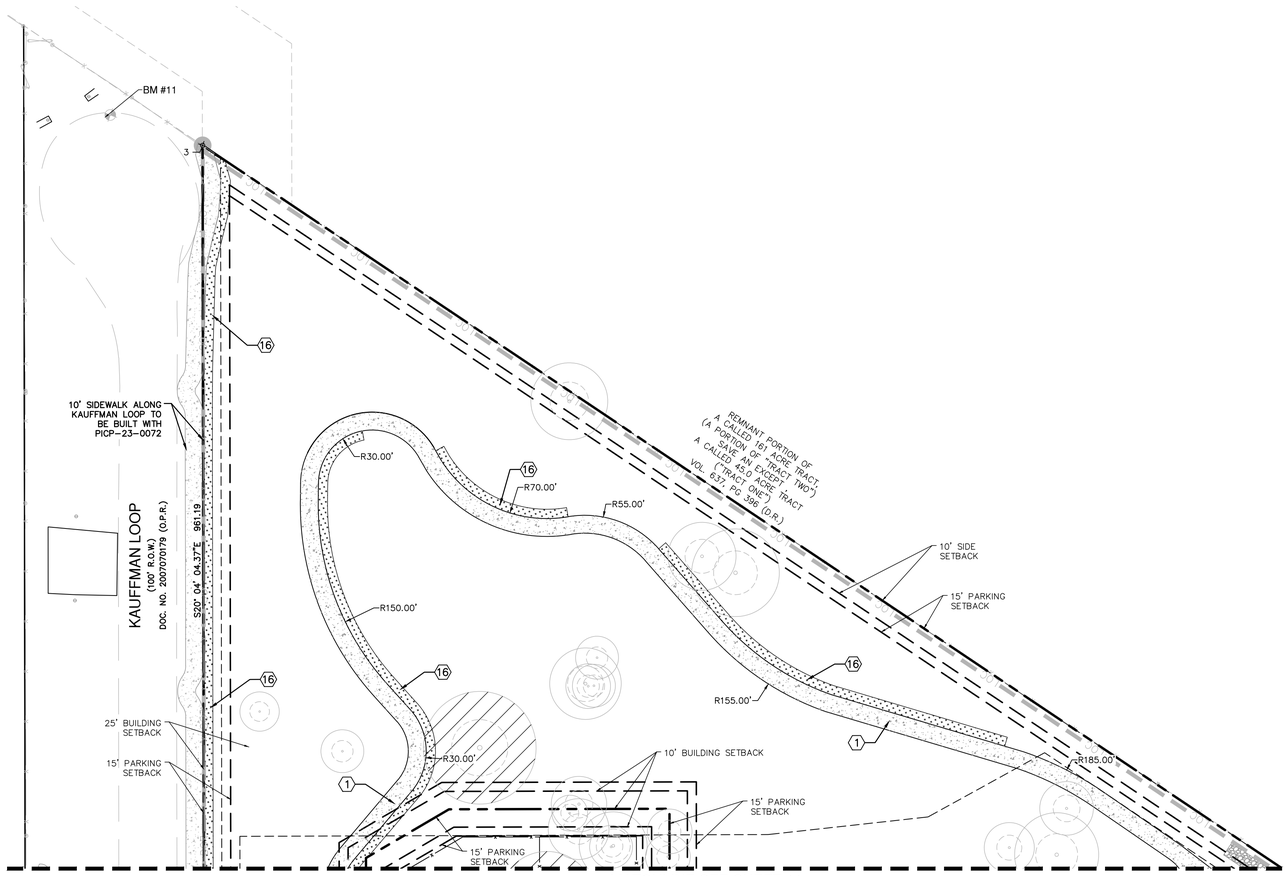
JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 11 of 55

Date: Mar 29, 2024, 9:38am User ID: jrobinson
File: H:\Projects\51283\01\301 Construction Documents\Civil\DC51283-01.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

KEYED NOTES

1. CONCRETE SIDEWALK, RE: SHEET 36
2. BUILDING ENTRANCE
3. 6" CONCRETE CURB, RE: SHEET 37
4. PROPOSED ADA RAMP, RE: SHEET 36
5. WHEEL STOP
6. TRASH DUMPSTER/COMPACTOR
7. ACCESSIBLE PARKING SIGN & BUMPER CURB, RE: DETAILS, SHEET 37
8. ACCESSIBLE PARKING SPACE WITH ACCESS AISLE, TO SLOPE 2% MAX IN ALL DIRECTIONS. RE: DETAIL, SHEET 37
9. 4" WIDE PAVEMENT STRIPING
10. WALL WITH RAILING
11. WALL WITH FENCING; RE: LANDSCAPE PLANS
12. VENT – SEE ARCHITECTURAL PLANS
13. CURB CUT
14. 24" WHITE STOP BAR
15. RAMP WITH HANDRAIL (8.33% MAX) (REFERENCE ARCH)
16. VEGETATIVE FILTER STRIP
18. ACCESSIBLE CROSSWALK
19. SIDEWALK STEPS
20. BICYCLE PARKING



MATCHLINE SEE SHEET 11

SCALE: 1"= 40'

0' 40' 80' 120'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED EASEMENT LINE
- PROPOSED RETAINING WALL
- PROPOSED SIDEWALK
- EXISTING BENCHMARK
- PROPOSED WASTEWATER MANHOLE
- PROPOSED GRATE INLET
- PROPOSED CURB INLET
- PROPOSED JUNCTION BOX
- PROPOSED HEADWALL
- PROPOSED BUILDING

DIMENSIONAL CONTROL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL HORIZONTAL AND VERTICAL CONTROL PER THE CONSTRUCTION DRAWINGS.
3. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL USE THE PROPERTY PINS FOR HORIZONTAL CONTROL POINTS. BENCHMARKS ARE NOT TO BE USED FOR HORIZONTAL CONTROL.
4. DIMENSIONAL CONTROL POINTS ARE TO BACK OF CURB. DIMENSIONS ARE TO THE FACE OF CURB, FACE OF RETAINING WALL, AND CENTER OF PAINT STRIPING. ALL DIMENSIONS ARE PERPENDICULAR TO THE POINT OF REFERENCE.
5. REFER TO THE ARCHITECTURAL AND STRUCTURAL PLANS FOR ADDITIONAL DIMENSION CONTROL INFORMATION.
6. ALL CONCRETE CURB RADII ARE 3' UNLESS OTHERWISE NOTED.
7. COORDINATES FOR HORIZONTAL CONTROL POINTS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NAD NAVD88 DISPLAYED IN SURFACE VALUES USING A SURFACE ADJUSTMENT FACTOR FOR EACH COUNTY. (THE SURFACE ADJUSTMENT FACTOR FOR THIS SITE IS 0.99988)

STRIPING/SIGNAGE NOTES:

1. CURB, GUTTERS AND PAVEMENT DELINEATING THE FIRE LANE SHALL BE PAINTED RED WITH FOUR INCH (4') WHITE LETTERING STATING 'NO PARKING – FIRE LANE', 'FIRE LANE – TOW AWAY ZONE', OR SIMILAR WORDING. WORDING MAY NOT BE SPACED MORE THAN THIRTY (30') FEET APART.
2. FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE – NO PARKING" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET (25') INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.
3. ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT UNLESS NOTED OTHERWISE: WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS. REFERENCE DETAIL SHEET FOR STRIPED ISLANDS.
4. ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
5. ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION

BENCHMARKS:

BENCHMARKS ARE BASED ON NAD83
COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.999880014398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

SITE & DIMENSIONAL CONTROL PLAN (2 OF 2)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 12 of 55

SD-23-0162

Date: Mar 29, 2024, 9:38am User ID: jrobinson
File: I:\Projects\5128,83\01\301 Construction Documents\Civil\0c51283-01.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SECTION VI

ORGANIZED SEWAGE COLLECTION SYSTEM : ATTACHMENT F

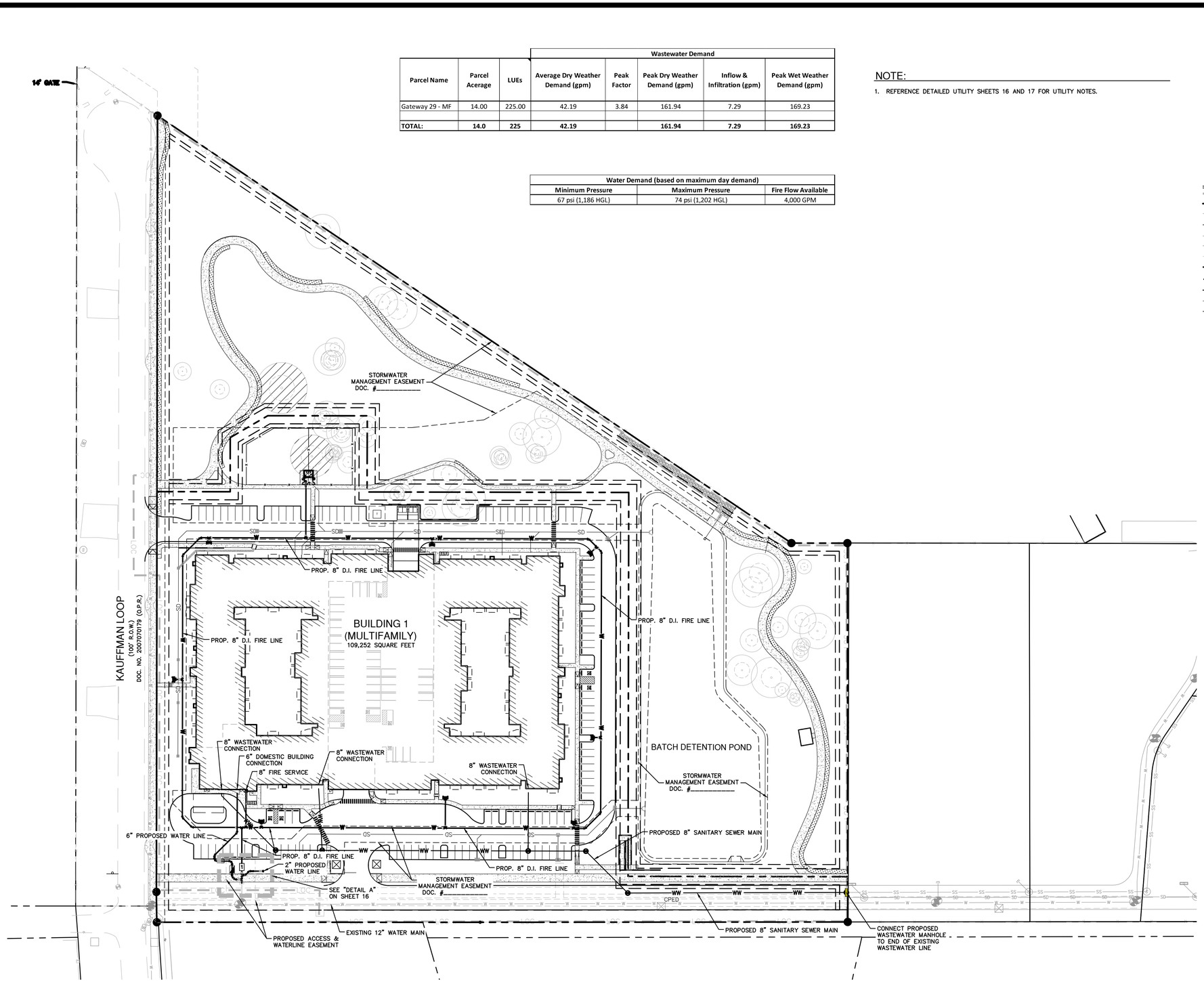
Final Plan and Profile Sheets

	Wastewater Demand						
Parcel Name	Parcel Acerage	LUEs	Average Dry Weather Demand (gpm)	Peak Factor	Peak Dry Weather Demand (gpm)	Inflow & Infiltration (gpm)	Peak Wet Weather Demand (gpm)
Gateway 29 - MF	14.00	225.00	42.19	3.84	161.94	7.29	169.23
TOTAL:	**14.0**	**225**	**42.19**		**161.94**	**7.29**	**169.23**

Water Demand (based on maximum day demand)		
Minimum Pressure	Maximum Pressure	Fire Flow Available
67 psi (1,186 HGL)	74 psi (1,202 HGL)	4,000 GPM

NOTE:

1. REFERENCE DETAILED UTILITY SHEETS 16 AND 17 FOR UTILITY NOTES.



SCALE: 1"= 60'

0' 60' 120' 180'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- EXISTING WASTEWATER LINE W/ MANHOLE
- PROPOSED EASEMENT LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- PROPOSED RETAINING WALL
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE W/ MANHOLE
- PROPOSED STORM DRAIN LINE
- PROPOSED FENCE
- PROPOSED FIRE HYDRANT W/ VALVE
- PROPOSED WATER METER
- PROPOSED JUNCTION BOX
- PROPOSED CURB INLET
- PROPOSED GRATE INLET
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE
- EXISTING UTILITY POLE
- BENCHMARK
- EXISTING WASTEWATER MANHOLE
- PROPOSED BUILDING

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

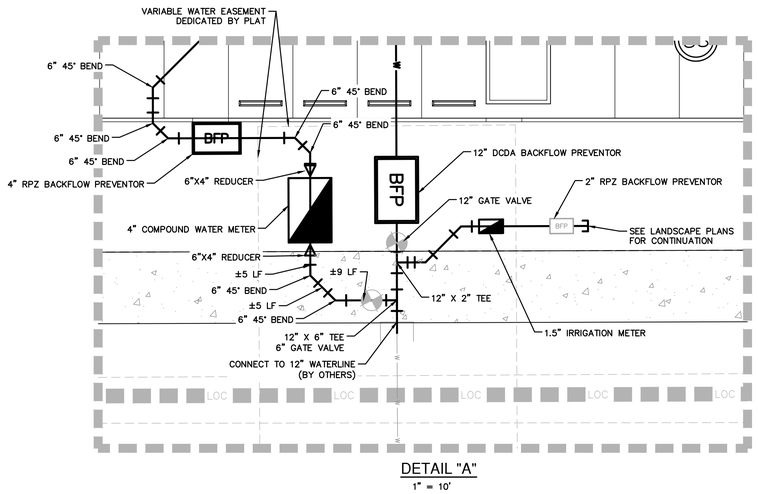
OVERALL UTILITY PLAN

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 15 of 55

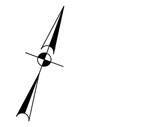
Date: Mar 29, 2024, 9:39am User ID: hbihnson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\UT 51283301.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162



DETAIL "A"
1" = 10'



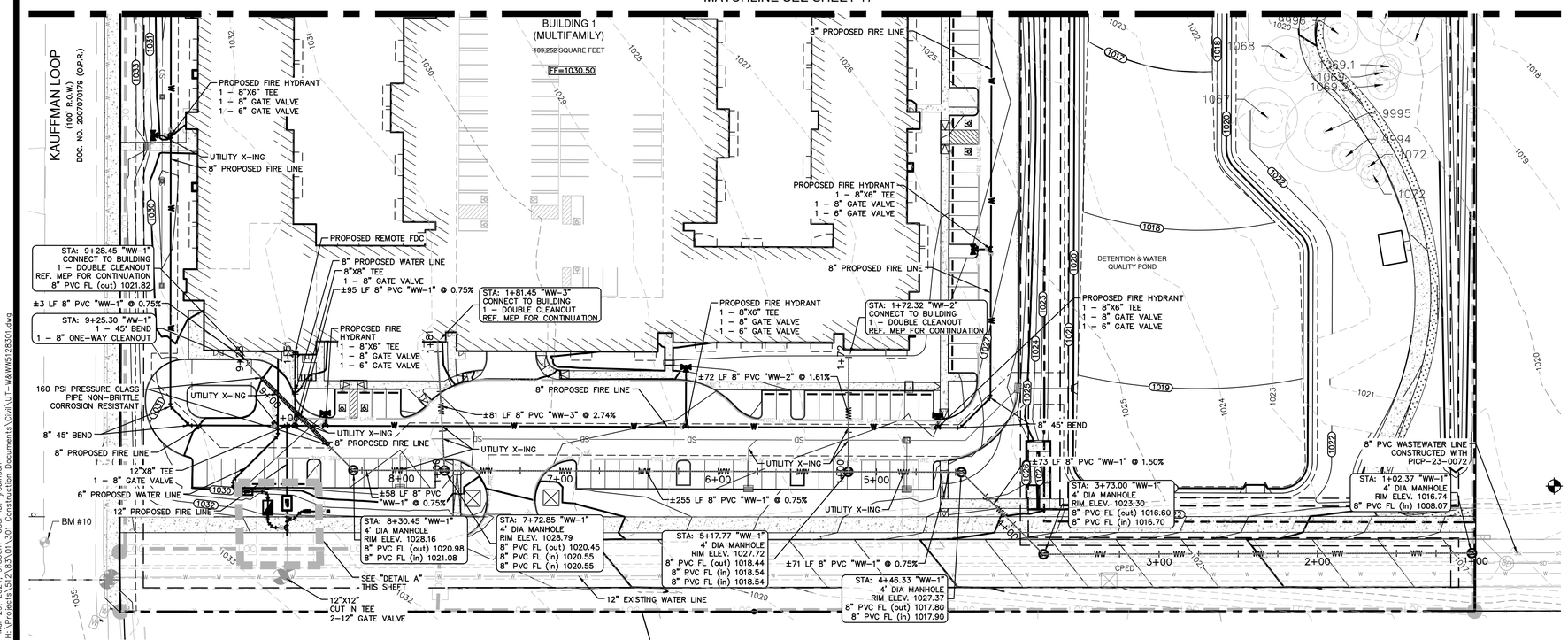
LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- EXISTING WASTEWATER LINE W/ MANHOLE
- PROPOSED EASEMENT LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- PROPOSED RETAINING WALL
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE W/ MANHOLE
- PROPOSED STORM DRAIN LINE
- PROPOSED FENCE
- PROPOSED FIRE HYDRANT W/ VALVE
- PROPOSED WATER METER
- PROPOSED JUNCTION BOX
- PROPOSED CURB INLET
- PROPOSED GRATE INLET
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE
- EXISTING UTILITY POLE
- BENCHMARK
- PROPOSED ELECTRIC TRANSFORMER
- PROPOSED BUILDING

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL 12" AND 8" WATER LINES ARE AWWA C900 DR 14, CLASS 305 PVC PIPE UNLESS OTHERWISE NOTED.
3. ALL WATER LINES AND SERVICE LINES WILL BE INSTALLED WITH TRACER TAPE.
4. NO WATER METERS LOCATED IN SIDEWALK OR DRIVEWAY AREAS.
5. FIRE HYDRANTS ARE SHOWN FOR SCHEMATIC PURPOSES ONLY. SEE DETAIL SHEET FOR PLACEMENT OF APPURTENANCES. FIRE HYDRANTS ASSEMBLY CONSISTS OF, BUT NOT LIMITED TO, 5¼" FIRE HYDRANT, 6" GATE VALVE, 6" D.I. FIRE LEAD.
6. ALL HORIZONTAL AND VERTICAL WATER LINE BENDS, TEE'S AND DEADEND'S SHALL BE RESTRAINED TO THE WATER MAIN USING MECHANICAL JOINT RESTRAINT DEVICES AS APPROVED IN SPL WW-27-A. THE CALCULATED RESTRAINT LENGTH(S) SHALL BE INCLUDED AS CALL OUT NOTES IN THE PLAN VIEW AND/OR PROFILE, CALLED OUT FROM BEGINNING STATION TO END STATION PER UCM SECTION 2.9.2.B.9.
7. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.
8. UNDERWATER MAINS SUPPLYING NFPA 13 SPRINKLER SYSTEMS MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 13 AND THE FIRE CODE, BY A LICENSED SPRINKLER CONTRACTOR WITH A PLUMBING PERMIT. THE ENTIRE MAIN MUST BE HYDROSTATICALLY TESTED AT ONE TIME, UNLESS ISOLATION VALVES ARE PROVIDED BETWEEN TEST SECTIONS
9. UNDERGROUND MAINS SUPPLYING PRIVATE HYDRANTS MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 24, AND THE FIRE CODE, BY A LICENSED CONTRACTOR WITH A PLUMBING PERMIT. THE ENTIRE MAIN MUST BE HYDROSTATICALLY TESTED AT ONE TIME, UNLESS ISOLATION VALVES ARE PROVIDED BETWEEN TESTED SECTIONS.

MATCHLINE SEE SHEET 17



BENCHMARKS:
BENCHMARKS ARE BASED ON NAD83 COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.99988014398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

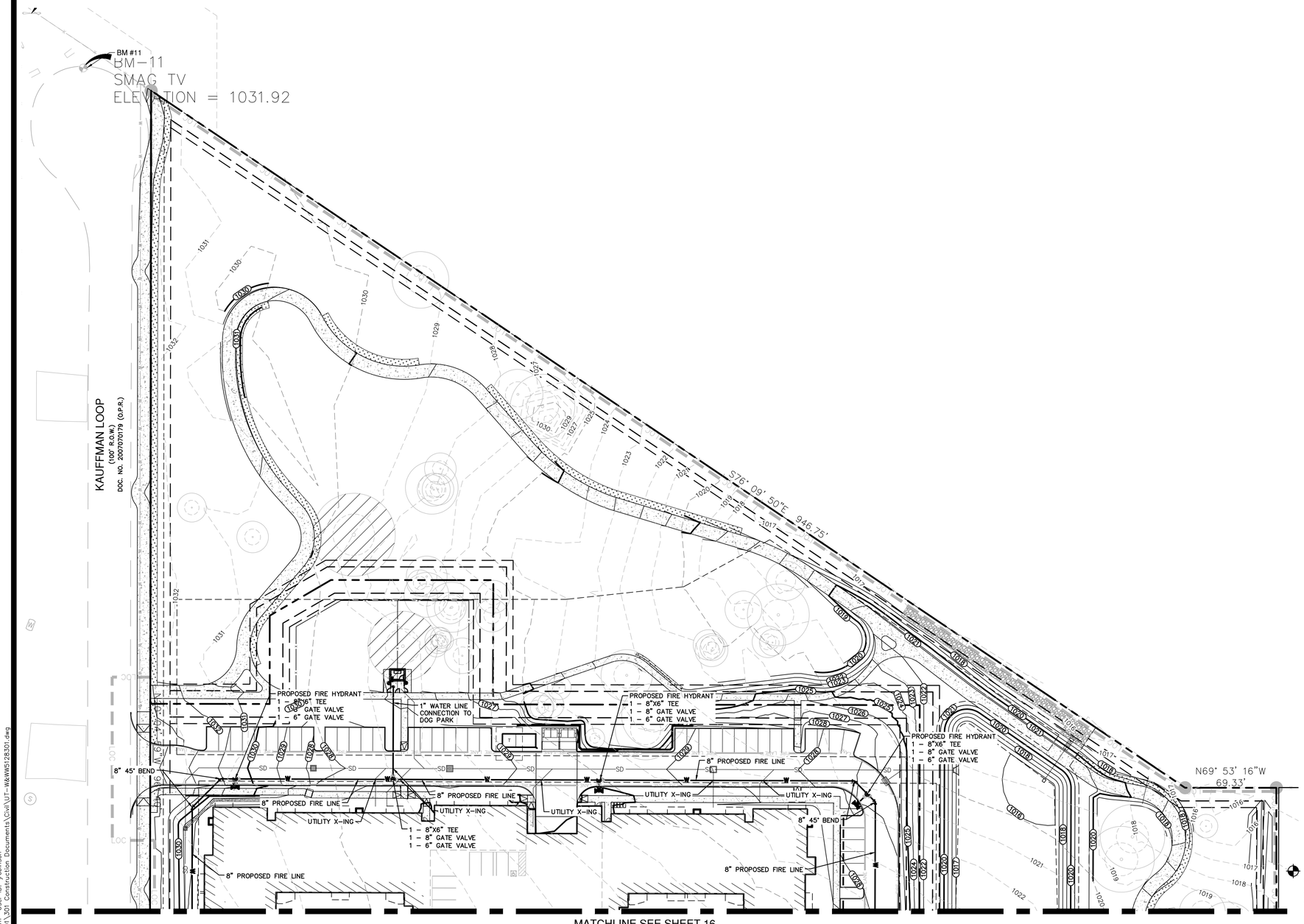
GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

DETAILED UTILITY PLAN (1 OF 2)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 16 of 55

Date: Mar 29, 2024, 9:39am User ID: jrobinson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\UT-WW\W51283301.dwg
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162



MATCHLINE SEE SHEET 16

SCALE: 1"= 40'

0' 40' 80' 120'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- EXISTING WASTEWATER LINE W/ MANHOLE
- PROPOSED EASEMENT LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- PROPOSED RETAINING WALL
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE W/ MANHOLE
- PROPOSED STORM DRAIN LINE
- PROPOSED FENCE
- PROPOSED FIRE HYDRANT W/ VALVE
- PROPOSED WATER METER
- PROPOSED JUNCTION BOX
- PROPOSED CURB INLET
- PROPOSED GRATE INLET
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE
- EXISTING UTILITY POLE
- BENCHMARK
- PROPOSED BUILDING

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL 12" AND 8" WATER LINES ARE AWWA C900 DR 14, CLASS 305 PVC PIPE UNLESS OTHERWISE NOTED.
3. ALL WATER LINES AND SERVICE LINES WILL BE INSTALLED WITH TRACER TAPE.
4. NO WATER METERS LOCATED IN SIDEWALK OR DRIVEWAY AREAS.
5. FIRE HYDRANTS ARE SHOWN FOR SCHEMATIC PURPOSES ONLY. SEE DETAIL SHEET FOR PLACEMENT OF APPURTENANCES. FIRE HYDRANTS ASSEMBLY CONSISTS OF, BUT NOT LIMITED TO, 5¼" FIRE HYDRANT, 6" GATE VALVE, 6" D.I. FIRE LEAD.
6. ALL HORIZONTAL AND VERTICAL WATER LINE BENDS, TEE'S AND DEADEND'S SHALL BE RESTRAINED TO THE WATER MAIN USING MECHANICAL JOINT RESTRAINT DEVICES AS APPROVED IN SPL WW-27-A. THE CALCULATED RESTRAINT LENGTH(S) SHALL BE INCLUDED AS CALL OUT NOTES IN THE PLAN VIEW AND/OR PROFILE, CALLED OUT FROM BEGINNING STATION TO END STATION PER UCM SECTION 2.9.2.B.9.
7. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.
8. UNDERWATER MAINS SUPPLYING NFPA 13 SPRINKLER SYSTEMS MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 13 AND THE FIRE CODE, BY A LICENSED SPRINKLER CONTRACTOR WITH A PLUMBING PERMIT. THE ENTIRE MAIN MUST BE HYDROSTATICALLY TESTED AT ONE TIME, UNLESS ISOLATION VALVES ARE PROVIDED BETWEEN TEST SECTIONS
9. UNDERGROUND MAINS SUPPLYING PRIVATE HYDRANTS MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 24, AND THE FIRE CODE, BY A LICENSED CONTRACTOR WITH A PLUMBING PERMIT. THE ENTIRE MAIN MUST BE HYDROSTATICALLY TESTED AT ONE TIME, UNLESS ISOLATION VALVES ARE PROVIDED BETWEEN TESTED SECTIONS.

BENCHMARKS:

BENCHMARKS ARE BASED ON NAD83 COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.999880014398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

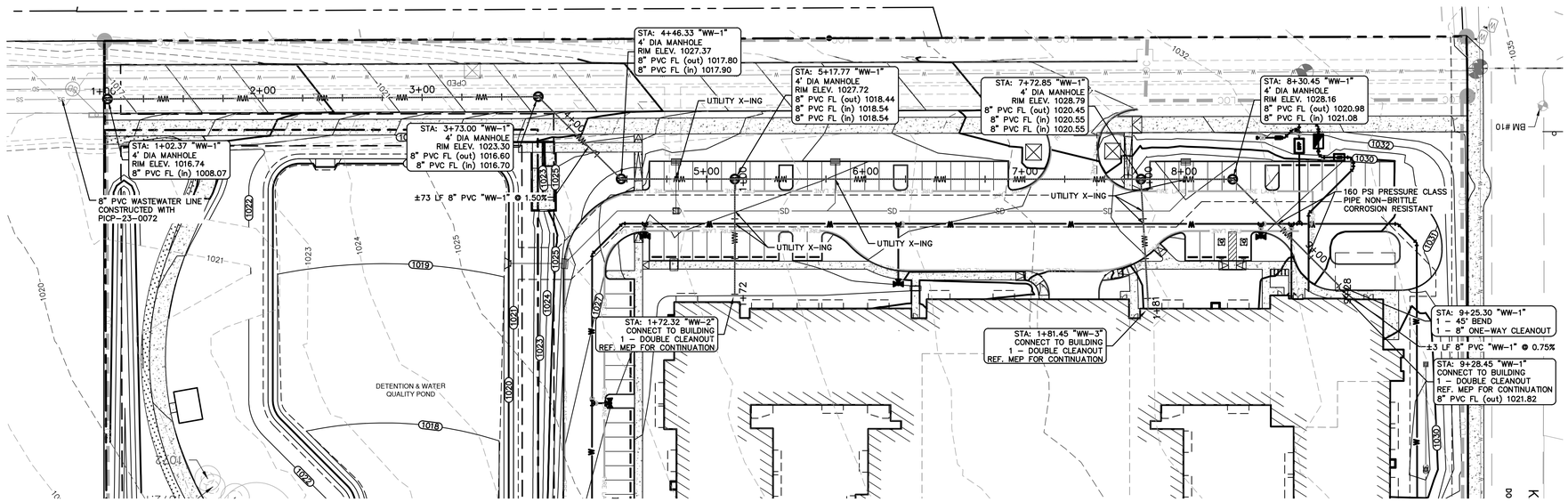
DETAILED UTILITY PLAN (2 OF 2)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 17 of 55

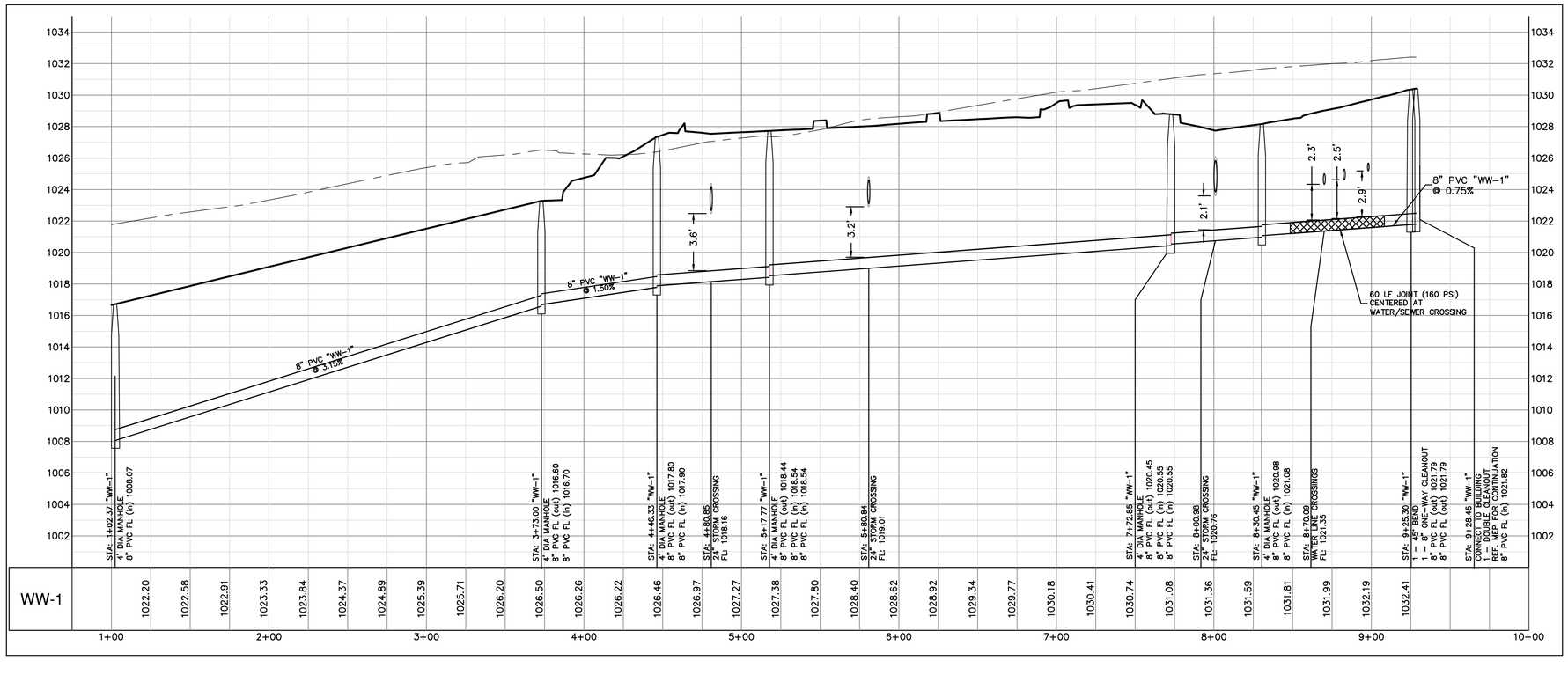
Date: Mar 29, 2024, 9:39am User ID: jhobson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\UT-W&WW\512830 1.dwg

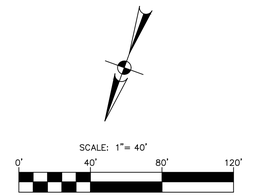
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162



SEWER LINE WW-1
(STA. 1+00.00 TO END)





LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- EXISTING WASTEWATER LINE W/ MANHOLE
- PROPOSED EASEMENT LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- PROPOSED RETAINING WALL
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE W/ MANHOLE
- PROPOSED STORM DRAIN LINE
- PROPOSED FENCE
- PROPOSED FIRE HYDRANT W/ VALVE
- PROPOSED WATER METER
- PROPOSED JUNCTION BOX
- PROPOSED CURB INLET
- PROPOSED GRATE INLET
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE
- EXISTING UTILITY POLE
- BENCHMARK
- PROPOSED ELECTRIC TRANSFORMER
- PROPOSED BUILDING

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.

PROFILE SCALES:

1" = 40' HORIZONTAL
1" = 4' VERTICAL

PROFILE LEGEND:

NATURAL GROUND

FINISHED GRADE

BENCHMARKS:

BENCHMARKS ARE BASED ON NAD83 COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.999880014398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS
WASTEWATER LINE PLAN & PROFILE

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED DRAWN KT
SHEET EXH

Date: Mar 29, 2024, 9:47am User ID: jwolf
File: \\pape-dawson.com\pde-ps\Projects\S121\83\01\301 Construction Documents\Civil\WW51283201.dwg
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SECTION VII

TEMPORARY STORMWATER SECTION (TCEQ-0602)

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: Trevor Riek

Date: 04/11/24

Signature of Customer/Agent:

Regulated Entity Name: Gateway 29, Lots 9 & 10

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: Contruction Staging Area

   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: North Fork San Gabriel River Watershed

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.

SECTION VII

TEMPORARY STORMWATER SECTION : ATTACHMENT A

Spill Response Actions

SPILL RESPONSE ACTIONS

In the event of an accidental leak or spill:

- The spill must be contained and cleaned up immediately.
- Spills will not be merely buried or washed with water.
- Contractor shall take action to contain spill. Contractor may use sand or other absorbent material stockpiled on site to absorb spill. Absorbent material should be spread over the spill area to absorb the spilled product.
- In the event of an uncontained discharge the contractor shall utilize onsite equipment to construct berms downgradient of the spill with sand or other absorbent material to contain and absorb the spilled product.
- Spill containment/absorbent materials along with impacted media must be collected and stored in such a way so as not to continue to affect additional media (soil/water). Once the spill has been contained, collected material should be placed on poly or plastic sheeting until removed from the site. The impacted media and cleanup materials should be covered with plastic sheeting and the edges weighed down with paving bricks or other similarly dense objects as the material is being accumulated. This will prevent the impacted media and cleanup materials from becoming airborne in windy conditions or impacting runoff during a rain event. The stockpiled materials should not be located within an area of concentrated runoff such as along a curb line or within a swale.
- Contaminated soils and cleanup materials will be sampled for waste characterization. When the analysis results are known the contaminated soils and cleanup materials will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.
- The contractor will be required to notify the owner, who will in turn contact TCEQ to notify them in the event of a significant hazardous/reportable quantity spill. Additional notifications as required by the type and amount of spill will be conducted by owner or owner's representative.

In the event of an accidental significant or hazardous spill:

The contractor will be required to report significant or hazardous spills in reportable quantities to:

- Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact

the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.

- For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.

- Notification should first be made by telephone and followed up with a written report.

- The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.

- Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

- Contaminated soils will be sampled for waste characterization. When the analysis results are known the contaminated soils will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.

Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 1.4.16. Contractor shall review this section.

SECTION VII

TEMPORARY STORMWATER SECTION : ATTACHMENT B

Potential Sources of Contamination

POTENTIAL SOURCES OF CONTAMINATION

Other potential sources of contamination during construction include:

Potential Source ● Asphalt products used on this project.

Preventative Measure
- After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.

Potential Source ● Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.

Preventative Measure
- Vehicle maintenance when possible will be performed within the construction staging area.
- Construction vehicles and equipment shall be checked regularly for leaks and repaired immediately.

Potential Source ● Accidental leaks or spills of oil, petroleum products and substances listed under 40 CFR parts 110, 117, and 302 used or stored temporarily on site.

Preventative Measure
- Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures.
- Contractor's superintendent or representative overseer shall enforce proper spill prevention and control measures.
- Hazardous materials and wastes shall be stored in covered containers and protected from vandalism.
- A stockpile of spill cleanup materials shall be stored on site where it will be readily accessible.

Potential Source ● Miscellaneous trash and litter from construction workers and material wrappings.

Preventive Measure
- Trash containers will be placed throughout the site to encourage proper trash disposal.

Potential Source ● Construction debris.

Preventive Measure
- Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.

Potential Source ● Spills/Overflow of waste from portable toilets

Preventative Measure
- Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets.
- Portable toilets will be placed on a level ground surface.
- Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.

Other potential sources of contamination during construction include:

Potential Source ● Asphalt products used on this project.

Preventative Measure
- After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.

Potential Source ● Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.

Preventative Measure
- Vehicle maintenance when possible will be performed within the construction staging area.
- Construction vehicles and equipment shall be checked regularly for leaks and repaired immediately.

Potential Source ● Accidental leaks or spills of oil, petroleum products and substances listed under 40 CFR parts 110, 117, and 302 used or stored temporarily on site.

Preventative Measure
- Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures.
- Contractor's superintendent or representative overseer shall enforce proper spill prevention and control measures.
- Hazardous materials and wastes shall be stored in covered containers and protected from vandalism.
- A stockpile of spill cleanup materials shall be stored on site where it will be readily accessible.

Potential Source ● Miscellaneous trash and litter from construction workers and material wrappings.

Preventive Measure
- Trash containers will be placed throughout the site to encourage proper trash disposal.

Potential Source ● Construction debris.

Preventive Measure
- Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.

Potential Source ● Spills/Overflow of waste from portable toilets

Preventative Measure
- Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets.
- Portable toilets will be placed on a level ground surface.
- Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.

SECTION VII

TEMPORARY STORMWATER SECTION : ATTACHMENT C

Sequence of Major Activities

SEQUENCE OF MAJOR ACTIVITIES

1. Hold pre-construction meeting (NA)
2. Install erosion controls per construction plans (±1,534 LF Silt Fence; 12 sediment trap protection)
3. Install sediment basin & batch pond (104,092 CF)
4. Begin mass grading of areas within limits of construction (13.77 ac)
5. Install utilities (828 LF Wastewater [60 LF 160 psi pressure rated pipe]; 2,788 LF Water; 2,166 LF Storm)
6. Construct pavement (2.98 ac)
7. Construct buildings (2.78 ac)
8. Complete final grading and revegetate disturbed areas (13.77 ac)
9. Obtain Engineer's concurrence letter (NA)
10. Remove erosion controls (±1,534 LF Silt Fence; 12 sediment trap protection)

SECTION VII

TEMPORARY STORMWATER SECTION : ATTACHMENT D

Temporary Best Management Practices and Measures (BMP's)

TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

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.

Upgradient stormwater will cross the site from a portion of the upstream residential development and adjacent roadway improvements. Both areas will be routed through the project site for treatment. All TBMPs are adequate for the drainage areas they serve.

B. 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.

Site preparation, which is the initiation of all activity on the project, will disturb the largest amount of soil. Therefore, before any of this work can begin, the clearing and grading contractor will be responsible for the installation of all on-site control measures. The methodology for pollution prevention of on-site stormwater will include: (1) erection of silt fences along the downgradient boundary of construction activities for temporary erosion and sedimentation controls, (2) installation of rock berms with silt fencing downgradient from areas of concentrated stormwater flow for temporary erosion control, (3) Installation of gravel bags and drain inlet protection at inlets and downgradient areas of construction activities for sediment control (4) installation of stabilized construction entrance/exit(s) to reduce the dispersion of sediment from the site, and (5) installation of construction staging area(s).

Prior to the initiation of construction, all previously installed control measures will be repaired or reestablished for their designed or intended purpose. This work, which is the remainder of all activity on the project, may also disturb additional soil. The construction contractor will be responsible for the installation of all remaining on-site control measures that includes installation of the concrete truck washout pit(s), as construction phasing warrants.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.

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

As this site is entirely over the Edwards Aquifer Contributing Zone, a Geologic Assessment was not conducted and is not required; therefore, no sensitive features were identified. There are no surface streams on or immediately adjacent to the site.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.

D. 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.

Since the project is located entirely over the Edwards Contributing Zone, a Geologic Assessment was not conducted and is not required by 30 TAC 213 regulations. Therefore, no naturally-occurring sensitive features are known to exist on the site. 30 TAC 213(f)(2) only applies to projects over the Edwards Recharge Zone.

SECTION VII

TEMPORARY STORMWATER SECTION : ATTACHMENT F

Structural Practices

STRUCTURAL PRACTICES

The following structural measures will be installed prior to the initiation of site preparation activities:

- Erection of silt fences along the downgradient boundary of construction activities and rock berms with silt fence for secondary protection, as located on the Erosion and Sedimentation Control Plan and illustrated on the Erosion and Sedimentation Control Details Plan.
- Installation of gravel bags and drain inlet protection at inlets and downgradient areas of construction activities, as located on the Erosion and Sedimentation Control Plan and illustrated on the Erosion and Sedimentation Control Details Plan.
- Installation of stabilized construction entrance/exit(s) and construction staging area(s), as located on the Erosion and Sedimentation Control Plan, and illustrated on the Erosion and Sedimentation Control Details Plan.

The following structural measures will be installed at the initiation of construction activities or as appropriate based on the construction sequencing:

- Installation of concrete truck washout pit(s), as required and located on the Erosion and Sedimentation Control Plan and illustrated on the Erosion and Sedimentation Control Details Plan.

SECTION VII

TEMPORARY STORMWATER SECTION : ATTACHMENT G

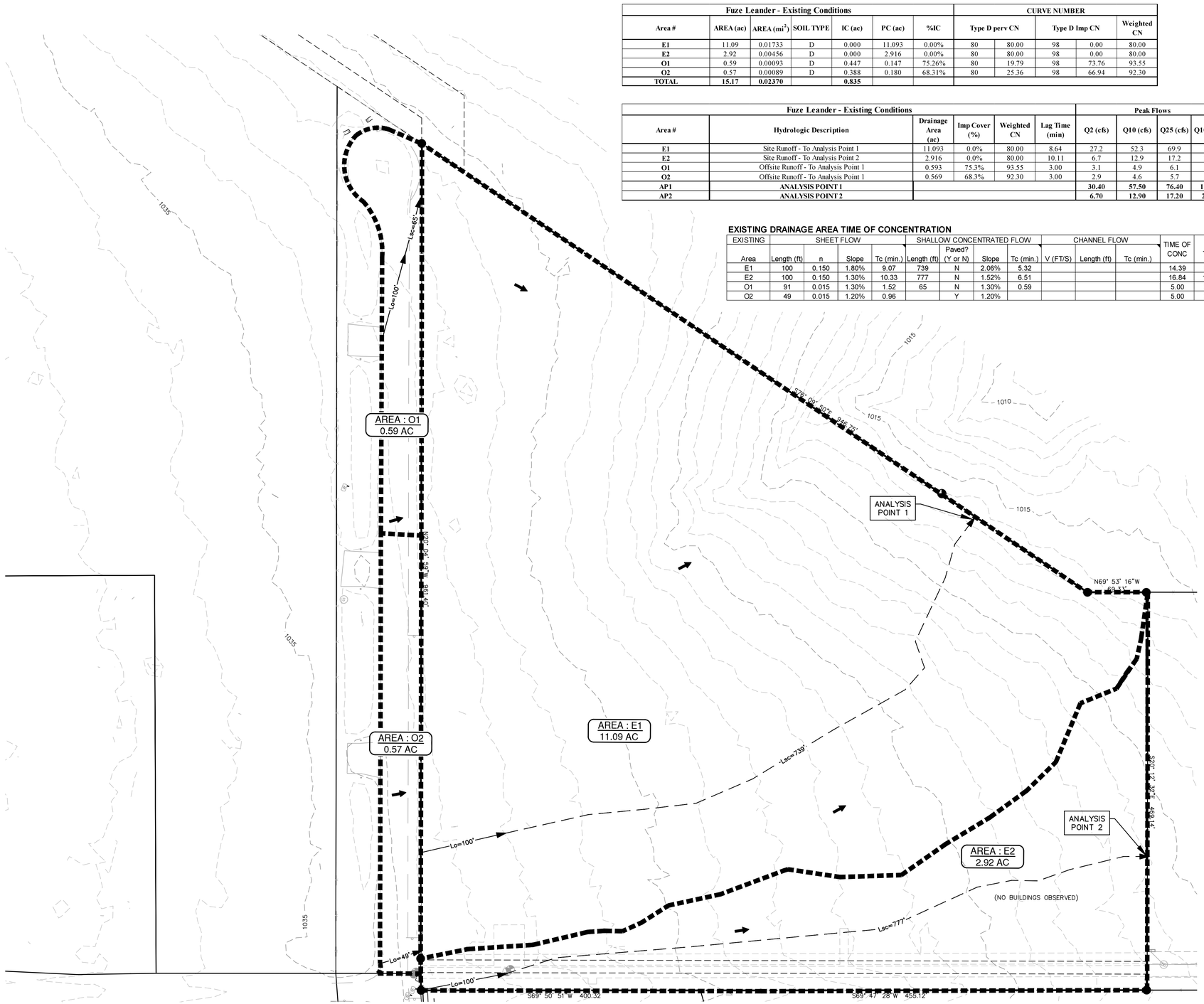
Drainage Area Map(s)

Fuze Leander - Existing Conditions							CURVE NUMBER				
Area #	AREA (ac)	AREA (mi^2)	SOIL TYPE	IC (ac)	PC (ac)	%IC	Type D perv CN		Type D Imp CN		Weighted CN
E1	11.09	0.01733	D	0.000	11.093	0.00%	80	80.00	98	0.00	80.00
E2	2.92	0.00456	D	0.000	2.916	0.00%	80	80.00	98	0.00	80.00
O1	0.59	0.00093	D	0.447	0.147	75.26%	80	19.79	98	73.76	93.55
O2	0.57	0.00089	D	0.388	0.180	68.31%	80	25.36	98	66.94	92.30
TOTAL	15.17	0.02370		0.835							

Fuze Leander - Existing Conditions						Peak Flows			
Area #	Hydrologic Description	Drainage Area (ac)	Imp Cover (%)	Weighted CN	Lag Time (min)	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)
E1	Site Runoff - To Analysis Point 1	11.093	0.0%	80.00	8.64	27.2	52.3	69.9	99.8
E2	Site Runoff - To Analysis Point 2	2.916	0.0%	80.00	10.11	6.7	12.9	17.2	24.6
O1	Offsite Runoff - To Analysis Point 1	0.593	75.3%	93.55	3.00	3.1	4.9	6.1	8.1
O2	Offsite Runoff - To Analysis Point 1	0.569	68.3%	92.30	3.00	2.9	4.6	5.7	7.7
AP1	ANALYSIS POINT 1					30.40	57.50	76.40	108.60
AP2	ANALYSIS POINT 2					6.70	12.90	17.20	24.60

EXISTING DRAINAGE AREA TIME OF CONCENTRATION

EXISTING	SHEET FLOW				SHALLOW CONCENTRATED FLOW				CHANNEL FLOW			TIME OF CONC	LAG TIME
Area	Length (ft)	n	Slope	Tc (min.)	Length (ft)	Paved? (Y or N)	Slope	Tc (min.)	V (FT/S)	Length (ft)	Tc (min.)		
E1	100	0.150	1.80%	9.07	739	N	2.06%	5.32				14.39	8.64
E2	100	0.150	1.30%	10.33	777	N	1.52%	6.51				16.84	10.11
O1	91	0.015	1.30%	1.52	65	N	1.30%	0.59				5.00	3.00
O2	49	0.015	1.20%	0.96		Y	1.20%					5.00	3.00



SCALE: 1"= 60'

0' 60' 120' 180'

LEGEND

- DRAINAGE BOUNDARY
- PROPERTY BOUNDARY
- EASEMENT LINE
- 760 EXISTING CONTOUR LINE
- 760 PROPOSED CONTOUR LINE
- Lo=100' OVERLAND FLOW
- Lsc=100' SHALLOW CONCENTRATED FLOW
- DIRECTION OF FLOW

GENERAL NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT ONE (1) FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING FIELD DATA COLLECTED ON OR ABOUT JULY 2021.

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

EXISTING OVERALL DRAINAGE AREA MAP

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 24 of 55

Date: Mar 29, 2024, 9:41am User ID: jrobinson
File: H:\Projects\51283\83\01\301 Construction Documents\Civil\EX0R51283-01.dwg
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

Fuze Leander - Proposed Conditions							CURVE NUMBER				
Area #	AREA (ac)	AREA (mi^2)	SOIL TYPE	IC (ac)	PC (ac)	%IC	Type D perv CN		Type D Imp CN		Weighted CN
P1	7.74	0.01210	D	4.846	2.895	62.60%	80	29.92	98	61.35	91.27
P2	5.08	0.00794	D	0.237	4.843	4.67%	80	76.27	98	4.57	80.84
O1	0.59	0.00093	D	0.540	0.053	91.07%	80	7.14	98	89.25	96.39
O2	0.57	0.00089	D	0.515	0.054	90.56%	80	7.55	98	88.75	96.30
TOTAL	13.98	0.02096		6.138							

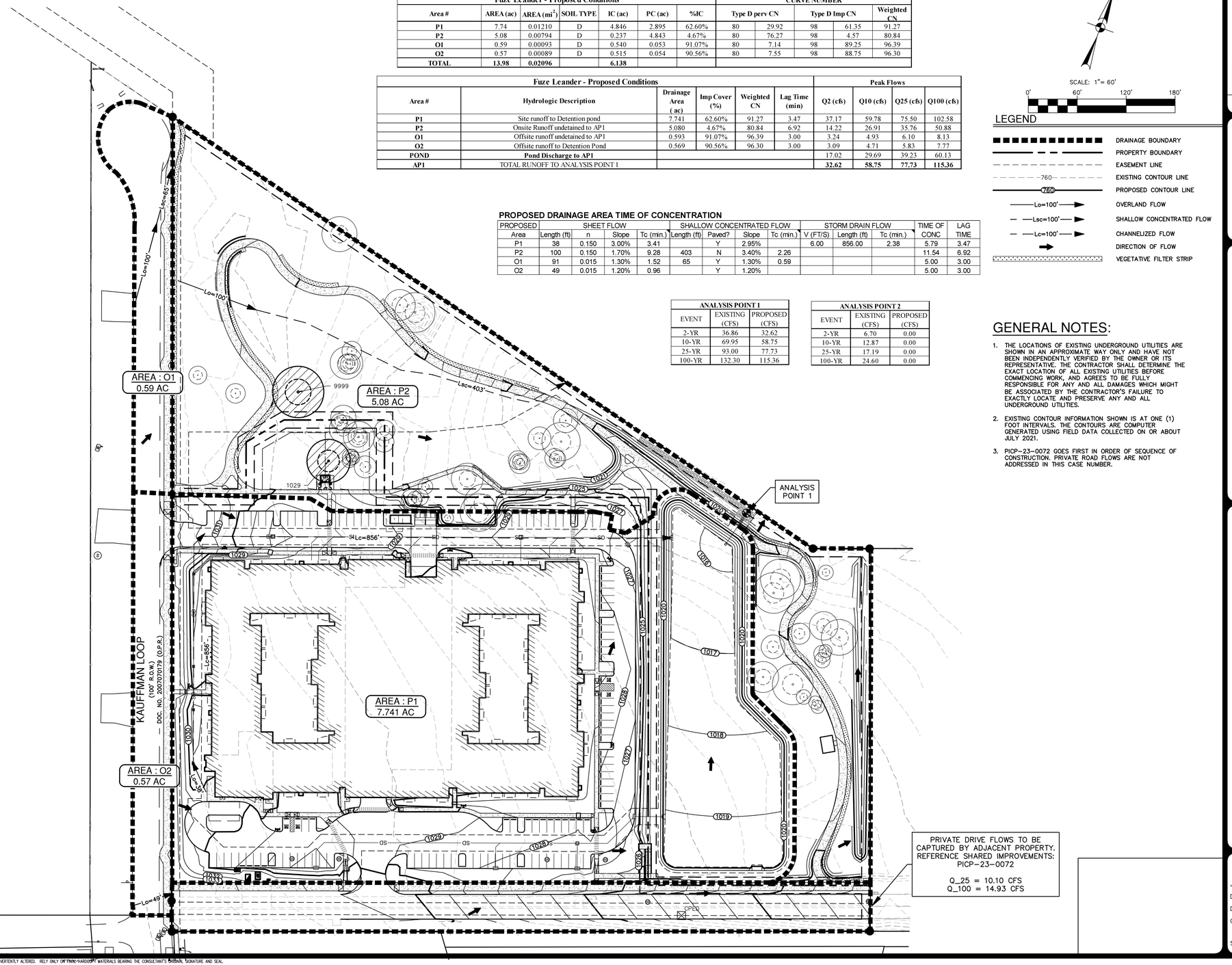
Fuze Leander - Proposed Conditions						Peak Flows			
Area #	Hydrologic Description	Drainage Area (ac)	Imp Cover (%)	Weighted CN	Lag Time (min)	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)
P1	Site runoff to Detention pond	7.741	62.60%	91.27	3.47	37.17	59.78	75.50	102.58
P2	Onsite Runoff undetained to AP1	5.080	4.67%	80.84	6.92	14.22	26.91	35.76	50.88
O1	Offsite runoff undetained to AP1	0.593	91.07%	96.39	3.00	3.24	4.93	6.10	8.13
O2	Offsite runoff to Detention Pond	0.569	90.56%	96.30	3.00	3.09	4.71	5.83	7.77
POND	Pond Discharge to AP1					17.02	29.69	39.23	60.13
AP1	TOTAL RUNOFF TO ANALYSIS POINT 1					32.62	58.75	77.73	115.36

PROPOSED DRAINAGE AREA TIME OF CONCENTRATION

PROPOSED	SHEET FLOW				SHALLOW CONCENTRATED FLOW				STORM DRAIN FLOW			TIME OF	LAG
Area	Length (ft)	n	Slope	Tc (min.)	Length (ft)	Paved?	Slope	Tc (min.)	V (FT/S)	Length (ft)	Tc (min.)	CONC	TIME
P1	38	0.150	3.00%	3.41		Y	2.95%		6.00	856.00	2.38	5.79	3.47
P2	100	0.150	1.70%	9.28	403	N	3.40%	2.26				11.54	6.92
O1	91	0.015	1.30%	1.52	65	Y	1.30%	0.59				5.00	3.00
O2	49	0.015	1.20%	0.96		Y	1.20%					5.00	3.00

ANALYSIS POINT 1		
EVENT	EXISTING (CFS)	PROPOSED (CFS)
2-YR	36.86	32.62
10-YR	69.95	58.75
25-YR	93.00	77.73
100-YR	132.30	115.36

ANALYSIS POINT 2		
EVENT	EXISTING (CFS)	PROPOSED (CFS)
2-YR	6.70	0.00
10-YR	12.87	0.00
25-YR	17.19	0.00
100-YR	24.60	0.00



SCALE: 1"= 60'

0' 60' 120' 180'

LEGEND

- DRAINAGE BOUNDARY
- PROPERTY BOUNDARY
- EASEMENT LINE
- 760 EXISTING CONTOUR LINE
- 760 PROPOSED CONTOUR LINE
- Lo=100' OVERLAND FLOW
- Lsc=100' SHALLOW CONCENTRATED FLOW
- Lc=100' CHANNELIZED FLOW
- DIRECTION OF FLOW
- VEGETATIVE FILTER STRIP

GENERAL NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT ONE (1) FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING FIELD DATA COLLECTED ON OR ABOUT JULY 2021.
3. PICP-23-0072 GOES FIRST IN ORDER OF SEQUENCE OF CONSTRUCTION. PRIVATE ROAD FLOWS ARE NOT ADDRESSED IN THIS CASE NUMBER.

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS

AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

PROPOSED OVERALL DRAINAGE AREA MAP

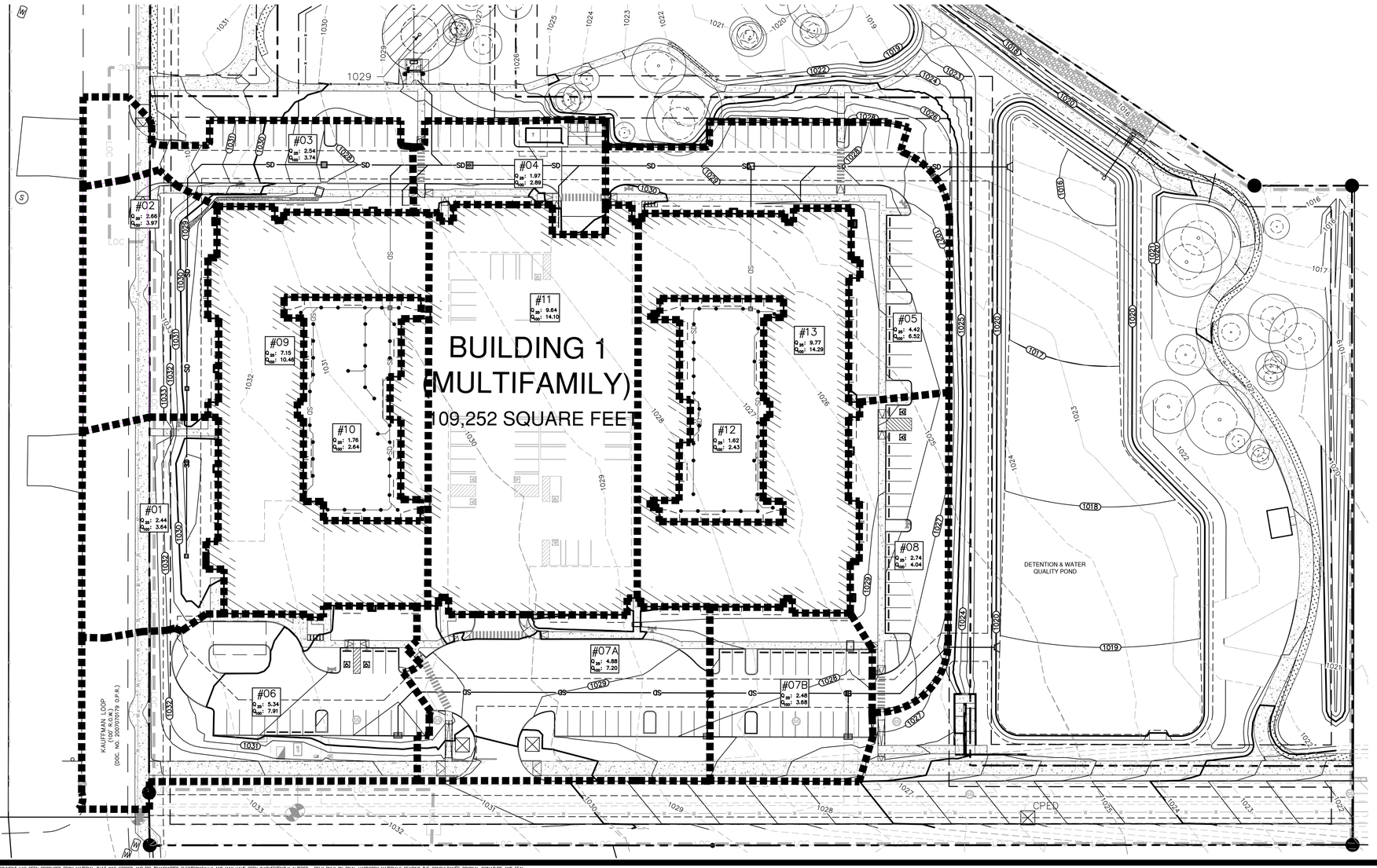
JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 25 of 55

Date: Mar 29, 2024, 9:41am User ID: jrobinson
File: H:\Projects\5120\83\01\301 Construction Documents\Civil\0851283-01.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S SEAL, SIGNATURE AND SEAL.

SD-23-0162

Drainage Area	Area (ac)	Percent Imp. Cover	Time of Concentration (min)	I (2-yr)	I (10-yr)	I (25-yr)	I (100-yr)	c (2-yr)	c (10-yr)	c (25-yr)	c (100-yr)	Q (2-yr)	Q (10-yr)	Q (25-yr)	Q (100-yr)
				inches per hour								cubic feet per second			
1	0.33	53.94%	5.00	6.14	9.19	11.30	15.00	0.54	0.61	0.65	0.74	1.09	1.85	2.44	3.64
2	0.36	52.67%	5.00	6.14	9.19	11.30	15.00	0.53	0.60	0.65	0.73	1.19	2.01	2.66	3.97
3	0.29	81.07%	5.00	6.14	9.19	11.30	15.00	0.66	0.74	0.79	0.87	1.16	1.94	2.54	3.74
4	0.21	91.35%	5.00	6.14	9.19	11.30	15.00	0.71	0.79	0.84	0.93	0.91	1.51	1.97	2.89
5	0.52	74.70%	5.00	6.14	9.19	11.30	15.00	0.63	0.71	0.76	0.84	2.01	3.36	4.42	6.52
6	0.66	66.77%	5.00	6.14	9.19	11.30	15.00	0.60	0.67	0.72	0.80	2.42	4.06	5.34	7.91
7A	0.58	73.32%	5.00	6.14	9.19	11.30	15.00	0.63	0.70	0.75	0.83	2.22	3.71	4.88	7.20
7B	0.32	62.08%	5.00	6.14	9.19	11.30	15.00	0.58	0.65	0.69	0.78	1.12	1.88	2.48	3.68
8	0.32	74.88%	5.00	6.14	9.19	11.30	15.00	0.63	0.71	0.76	0.84	1.25	2.09	2.74	4.04
9	0.72	100.00%	5.00	6.14	9.19	11.30	15.00	0.75	0.83	0.88	0.97	3.31	5.48	7.15	10.46
10	0.26	43.15%	5.00	6.14	9.19	11.30	15.00	0.49	0.56	0.60	0.68	0.78	1.33	1.76	2.64
11	0.97	100.00%	5.00	6.14	9.19	11.30	15.00	0.75	0.83	0.88	0.97	4.46	7.39	9.64	14.10
12	0.23	45.42%	5.00	6.14	9.19	11.30	15.00	0.50	0.57	0.61	0.69	0.72	1.22	1.62	2.43
13	0.98	100.00%	5.00	6.14	9.19	11.30	15.00	0.75	0.83	0.88	0.97	4.52	7.49	9.77	14.29



SCALE: 1"= 40'

0' 40' 80' 120'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- EXISTING WASTEWATER LINE
- PROPOSED EASEMENT LINE
- EXISTING WATER LINE
- EXISTING CONTOUR
- PROPOSED CONTOURS
- PROPOSED STORM DRAIN LINE
- PROPOSED FENCE
- PROPOSED GRATE INLET
- PROPOSED JUNCTION BOX
- PROPOSED CURB INLET–GRATE
- DRAINAGE AREA BOUNDARY

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT ONE (1) FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING FIELD SURVEY DATA FROM JULY 2021.
3. ROOF DOWNSPOUTS TO OUTFALL VIA SPLASH BLOCK ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED.
4. ALL PUBLIC STORM SEWER TO BE CLASS 5 CONCRETE. PRIVATE STORM SEWER WITH MORE THAN OR EQUAL TO 2 FEET OF SEPARATION FROM TOP OF PIPE TO SUBGRADE CAN BE HDPE PIPE OR EQUIVALENT. PRIVATE STORM SEWER PIPE WITH LESS THAN 2 FEET FROM TOP OF PIPE TO SUBGRADE, OR EQUAL TO OR GREATER THAN 48" PIPE, SHALL BE HP DUAL WALL OR CLASS 5 CONCRETE PIPE.

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS

AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

OVERALL STORM DRAIN PLAN

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 26 of 55

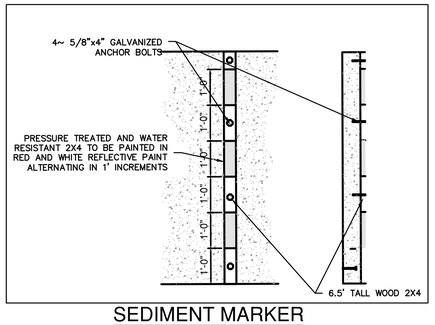
Date: Mar 29, 2024, 9:42am User ID: jrobinson
File: H:\Projects\512\283\01\301 Construction Documents\Civil\SD0A51283301.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

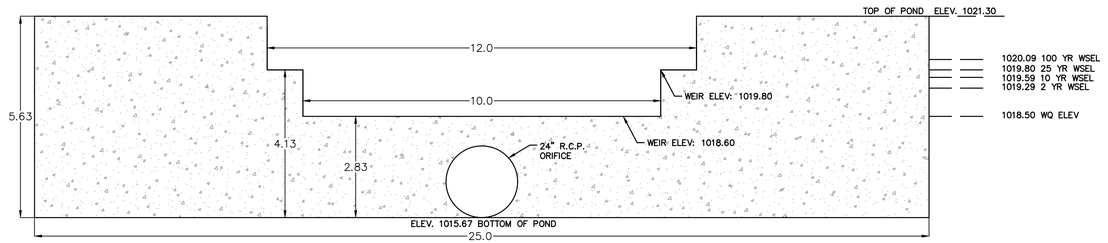
Table 3-6 Clay Liner Specifications (COA, 2004)

Property	Test Method	Unit	Specification
Permeability	ASTM D-2434	cm/sec	1×10^{-6}
Plasticity Index of Clay	ASTM D-423 & D-424	%	Not less than 15
Liquid Limit of Clay	ASTM D-2216	%	Not less than 30
Clay Particles Passing	ASTM D-422	%	Not less than 30
Clay Compaction	ASTM D-2216	%	95% of Standard Proctor Density



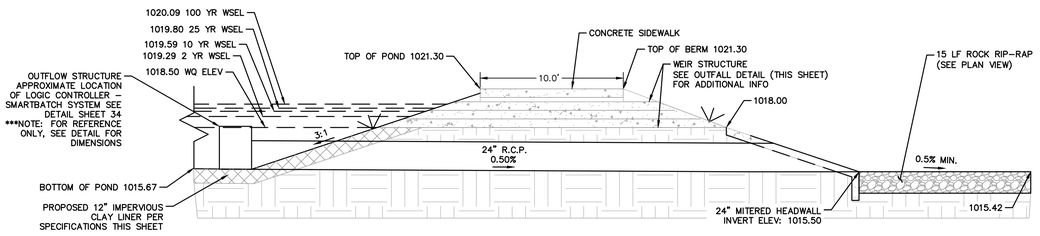
SEDIMENT MARKER

NOT TO SCALE



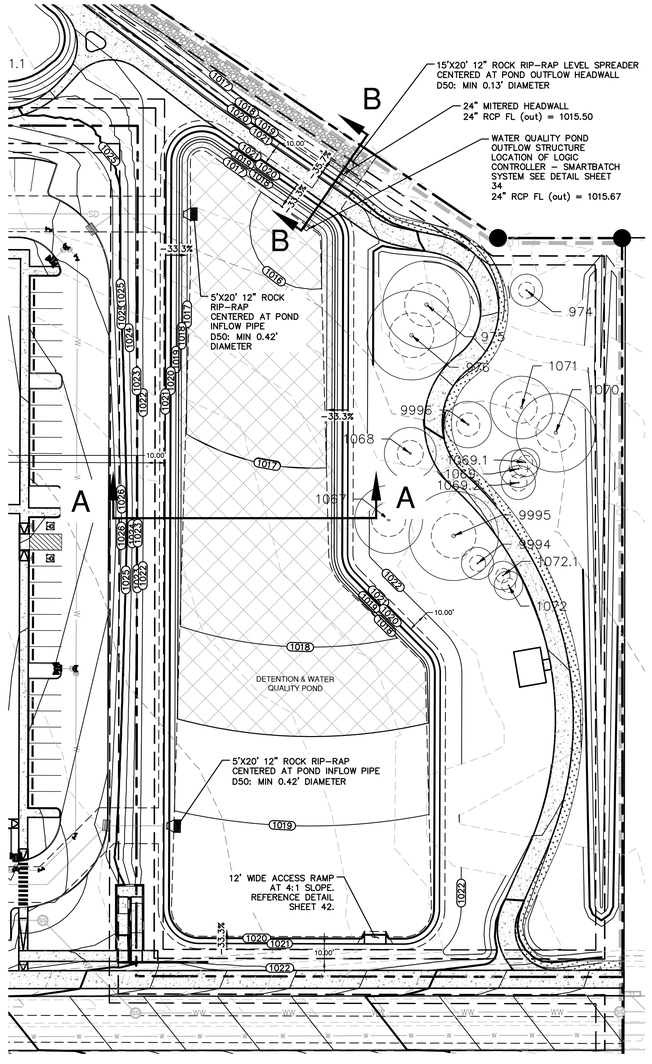
DETENTION POND WEIR

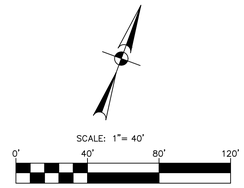
1" = 2'



DETENTION POND OUTFALL SECTION B-B

1" = 5'





LEGEND

- PROPERTY LINE
- SD — PROPOSED STORM DRAIN LINE
- 790 — PROPOSED CONTOUR LINE
- 790 — EXISTING CONTOUR LINE
- LIMITS OF CLAY LINER RE: CLAY LINER SPEC. THIS SHEET

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT ONE (1) FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING FIELD DATA COLLECTED ON OR ABOUT JULY 2021.
3. WATERSTOPS SHALL BE PROVIDED DURING CONSTRUCTION OF EXPANSION JOINTS IN RETAINING WALLS PER STANDARD SPECIFICATION 414S, CONCRETE RETAINING WALLS.
4. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.
5. WEIR COEFFICIENT WAS ASSUMED TO BE 3.0 FOR THE PURPOSES OF HEC-HMS MODELING.
6. 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 OR CLAD IN STONE AS LISTED ABOVE OR TEXTURED AND TINTED IN EARTHERN COLORS. IN THE EVENT THAT THE DRAINAGE FACILITY IS BELOW GRADE, STRUCTURAL STABILIZATION IS PERMITTED FOR THE FULL PERIMETER AND SCREENING REQUIREMENTS LISTED IN ARTICLE VI, SECTION 1 (D) OF THE CITY OF LEANDER CODE OF ORDINANCES SHALL APPLY.

POND RIP-RAP:

D50 CALCULATION:
V = 8.74 FPS

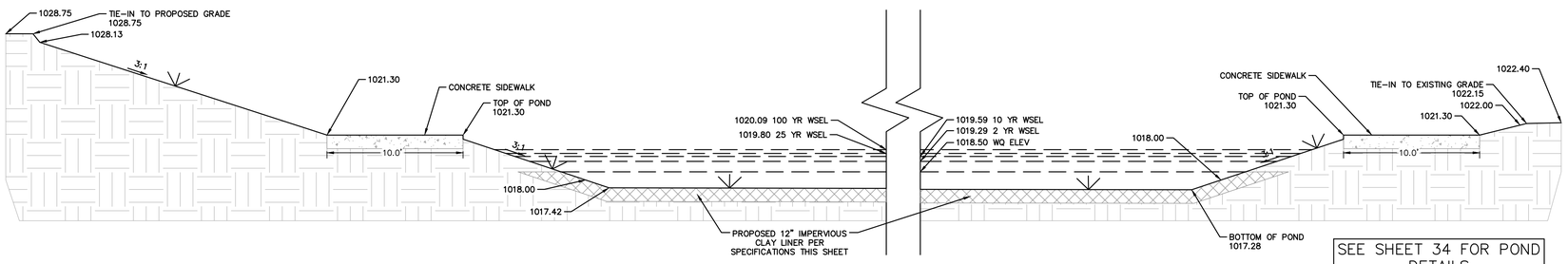
D50 = 0.0105 * (V)^2.06
D50 = 0.0105 * (8.74)^2.06
D50 = 0.91 FT

D50 CALCULATION:
V = 3.43 FPS

D50 = 0.0105 * (V)^2.06
D50 = 0.0105 * (3.43)^2.06
D50 = 0.13 FT

V = 5.97 FPS

D50 = 0.0105 * (V)^2.06
D50 = 0.0105 * (5.97)^2.06
D50 = 0.42 FT



SECTION A-A

1" = 5'

SEE SHEET 34 FOR POND DETAILS

NO. REVISION | DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

POND PLAN

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 33 of 55

Date: Mar 29, 2024, 9:43am User ID: jrobison
Files: H:\Projects\51283.01\301 Construction Documents\Civil\PD51283301.dwg
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

DETENTION POND						
Elev. (ft)	Depth (ft)	Pr. Area (ft²)	Area (ac)	Incremental Volume (ft³)	Cumulative Volume (ft³)	Notes
1015.67	0	0	0.00000	0	0	
1016.00	0.33	1,481	0.03400	244	244	
1017.00	1.00	11,979	0.27500	6730	6974	
1018.00	1.00	22,564	0.51800	17272	24246	
1018.50	0.50	30,448	0.69899	13253	37499	WQ Volume
1019.00	0.40	38,681	0.88799	17282	54781	
1020.00	1.00	50,747	1.16499	44714	99495	
1020.23	0.23	51,412	1.18026	10216	109711	100-YR WSEL
1021.00	0.77	54,099	1.24194	42204	151915	Top of Pond

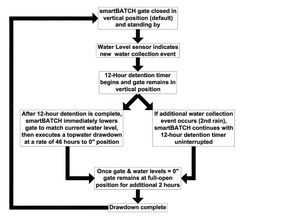
DETENTION POND WSEL	
2 YEAR	1019.29
10 YEAR	1019.59
25 YEAR	1019.80
100 YEAR	1020.09

Detention Pond Routing				
Return Event	Peak In-Flow (CFS)	Peak Out-Flow (CFS)	Max Water Surface Elevation (ft)	Max Storage (Ac-ft)
2	40.26	17.02	1019.29	0.69
10	64.50	29.69	1019.59	1.00
25	81.33	39.23	1019.80	1.21
100	110.35	60.13	1020.09	1.53

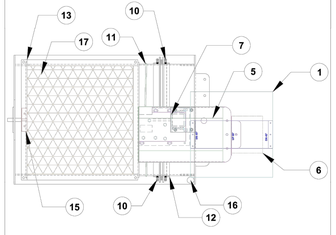
WQ POND						
BATCH DETENTION POND						
Elev. (ft)	Depth (ft)	Pr. Area (ft²)	Area (ac)	Incremental Volume (ft³)	Cumulative Volume (ft³)	Notes
1,015.67	0.00	0	***0.000000***	0	0	
1,016.00	0.33	1,481	***0.033999***	244	244	
1,017.00	1.00	11,979	***0.275000***	6,730	6,974	
1,018.00	1.00	22,564	***0.517998***	17,272	24,246	
1,018.50	0.50	30,448	***0.698990***	13,253	37,499	WQ Volume

WATER QUALITY SUMMARY TABLE	
Required WQ Volume (80% removal) (ft^3)	33,941
Provided WQ Volume (ft^3)	37,499

PROGRAMMABLE LOGIC FLOW CHART

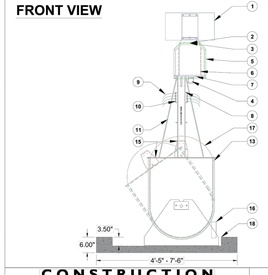


TOP VIEW

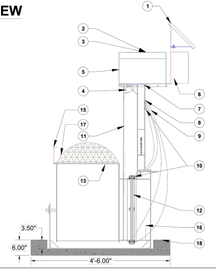


Parts List	
Item	smartBATCH Components
1	12 V SOLAR PANEL WITH 30 WATT CHARGING CAPACITY
2	ANTENNA (NOT DISPLAYED)
3	CELL DATA MODEM (NOT DISPLAYED)
4	CAMERA
5	WEATHERPROOF ELECTRONIC BOX
6	CONTROL BOX
7	PEDESTAL
8	REMOTE GREASE MANIFOLD
9	GREASE TUBES
10	GREASE FITTINGS
11	3/16" Galvanized Cables
12	24" Rotary Valve
13	24" Drum
14	Outlet Pipe (Size TBD By Engineer, Max 24")
15	Inclinometer
16	Level Transducer
17	Beehive Grate
18	6" Concrete Pad (By Others, Size Varies)

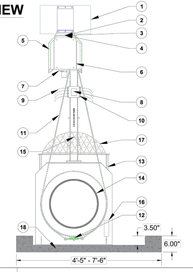
FRONT VIEW



SIDE VIEW



BACK VIEW



CONSTRUCTION ECO SERVICES

smartBATCH Automated Batch Detention Systems

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

CONVERGENT WATER TECHNOLOGIES

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Fuze Leander

Date Prepared: 10/24/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 — Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 28.93(A_N \times P)$

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

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

County =	Williamson		
Total project area included in plan * =	14.00	acres	Total Lot Area
Predevelopment impervious area within the limits of the plan * =	0.00	acres	
Total post-development impervious area within the limits of the plan* =	5.48	acres	Total Lot IC
Total post-development impervious cover fraction * =	0.39		
P =	32	inches	
$L_{M\ TOTAL\ PROJECT}$ =	5073	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. = 1

Total drainage basin/outfall area =	8.39	acres	O2+P1
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres	
Post-development impervious area within drainage basin/outfall area =	5.52	acres	IC(O2+P1)
Post-development impervious fraction within drainage basin/outfall area =	0.66		
$L_{M\ THIS\ BASIN}$ =	5106	lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Batch Detention Pond
Removal efficiency = 91 percent

- Aqualogic Cartridge Filter
- Bioretention
- Contech StormFilter
- Constructed Wetland
- Extended Detention
- Grassy Swale
- Retention / Irrigation
- Sand Filter
- Stormceptor
- Vegetated Filter Strips
- Vortechs
- Wet Basin
- Wet Vault

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
- A_C = Total On-Site drainage area in the BMP catchment area
- A_I = Impervious area proposed in the BMP catchment area
- A_P = Pervious area remaining in the BMP catchment area
- L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	8.39	acres
A_I =	5.52	acres
A_P =	2.88	acres
L_R =	5602	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	5106	lbs.
F =	0.91	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 — Pages 3-34 to 3-36

Rainfall Depth =	1.80	inches
Post Development Runoff Coefficient =	0.47	
On-site Water Quality Volume =	25537	cubic feet

Calculations from RG-348 — Pages 3-36 to 3-37

Off-site area draining to BMP =	0.57	acres
Off-site Impervious cover draining to BMP =	0.52	acres
Impervious fraction of off-site area =	0.90	
Off-site Runoff Coefficient =	0.74	
Off-site Water Quality Volume =	2748	cubic feet
Storage for Sediment =	5657	cubic feet
Total Capture Volume (required water quality volume(s) x 1.20) =	33941	cubic feet

NO.	REVISION	DATE

STATE OF TEXAS — SHELLY MITCHELL — 103662 — LICENSED PROFESSIONAL ENGINEER

04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

POND CALCULATIONS & DETAILS

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 34 of 55

Date: Mar 29, 2024, 9:43am User ID: jrobinson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\P05128301.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

SECTION VII

TEMPORARY STORMWATER SECTION : ATTACHMENT I

Inspection and Maintenance for BMP's

INSPECTION AND MAINTENANCE FOR BMPS

Silt Fence Inspection and Maintenance Guidelines:

1. Inspect all fencing weekly, and after any rainfall.
2. Remove sediment when buildup reaches 6 inches.
3. Replace any torn fabric or install a second line of fencing parallel to the torn section.
4. Replace or repair any sections crushed or collapsed during construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.
5. When construction is complete, the sediment should be disposed of in a manner what will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

Inlet Protection Inspection and Maintenance Guidelines:

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

Stabilized Construction Entrance Inspection and Maintenance Guidelines:

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

SECTION VII

TEMPORARY STORMWATER SECTION : ATTACHMENT J

Schedule of Interim and Permanent Soil Stabilization Practices

SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION PRACTICES

Interim on-site stabilization measures, which are continuous, will include minimizing soil disturbances by exposing the smallest practical area of land required for the shortest period of time and maximizing use of natural vegetation. As soon as practical, all disturbed soil will be stabilized as per project specifications in accordance with pages 1-35 to 1-60 of TCEQ's Technical Guidance Manual (TGM) RG-348 (2005). Mulching, netting, erosion blankets and seeding are acceptable.

Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided below, will be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practicable.

SECTION VIII

PERMANENT STORMWATER SECTION (TCEQ-0600)

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: Trevor Riek

Date: 04/11/24

Signature of Customer/Agent

Regulated Entity Name: Gateway 29, Lots 9 & 10

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

SECTION VIII

PERMANENT STORMWATER SECTION : ATTACHMENT B

BMP's for Upgradient Stormwater

BMPS FOR UPGRADIENT STORMWATER

Under both existing and proposed conditions, approximately 1.16 acres along the length of Kauffman loop road drains onto the site. The original site conditions allow for a majority of these flows to sheet flow across the 14.00-acre site and drain towards the east and northeast property corners. Under proposed conditions, approximately half of the of this offsite flow is to be captured by proposed storm drains and discharge to the water quality and detention pond. The remaining half of the road is to be uncaptured, and drainage through the proposed parkland area is not expected to significantly change under proposed conditions.

SECTION VIII

PERMANENT STORMWATER SECTION : ATTACHMENT C

BMP's for On-site Stormwater

BMPS FOR ON-SITE STORMWATER

Stormwater that originates in the approximately 7.741 acres of the southwest portion of the site will drain to a proposed batch detention water quality pond in the west of the site. The water quality pond was designed to exceed TCEQ's Edwards Aquifer Rules on Best Management Practices to reduce the increase in total suspended solids load associated with the proposed improvements. The remaining stormwater that originates in the 5.08-acre area to the north and west of the site will be uncaptured and drain to the north and northeast property corners. The flows are to be treated via vegetative filter strips designed in accordance with TCEQ guidelines.

SECTION VIII

PERMANENT STORMWATER SECTION : ATTACHMENT D

BMP's for Surface Streams

BMPS FOR SURFACE STREAMS

Silt fence will be implemented on the downstream end of each tract to prevent pollutants from leaving the site and entering surface streams. Storm water runoff will be treated via a proposed smart batch water quality pond in the west portion of the site to remove a minimum of 80% of Total Suspended Solids.

SECTION VIII

PERMANENT STORMWATER SECTION : ATTACHMENT F

Construction Plans

CITY OF LEANDER
GENERAL NOTES:
REVISED MARCH 27, 2023
ANY CHANGES TO THESE NOTES SHOULD BE CLOUDED ON THE PLANSET

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

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. 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 SUBGRADE 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 RESPONSIBILITY 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 "RECORD 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 VALVES/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. 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. 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. 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 SATISFACTION OF THE CITY.
22. TREES IN EXISTING ROW SHOULD BE PROTECTED OR NOTED IN THE PLANS TO BE REMOVED.

TRENCH SAFETY NOTES:

1. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT ARE DESCRIBED IN ITEM 5093 "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 AND SURVEY 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.
4. PROPERTY BOUNDARY INFORMATION PROVIDED BY LJA SURVEYING, INC.
5. THE EXISTING CONTOURS ARE COMPUTER GENERATED USING FIELD SURVEY DATA COLLECTED ON OR ABOUT JULY 2021, BY WESTAR ALAMO LAND SURVEYORS, LLC.

CONSTRUCTION SEQUENCE NOTES

1. THE OWNER/CONTRACTOR SHALL REQUEST A PRE-CONSTRUCTION CONFERENCE WITH THE CITY OF LEANDER ENGINEERING DEPARTMENT. THE SWPPP MUST BE SUBMITTED TO THE CITY A MINIMUM OF THREE DAYS BEFORE THE PRE-CONSTRUCTION MEETING. BRING SWPPP NOTEBOOK TO PRE-CONSTRUCTION MEETING FOR REVIEW BY STORMWATER SPECIALIST.
2. SWPPP IS REQUIRED FOR SUBMITTAL AND REVIEW AT LEAST 3 DAYS PRIOR TO THE SCHEDULING OF A PRE-CON. SWPPP TO BE PROVIDED BY CONTRACTOR.
3. A NOTICE OF INTENT (NOI) MUST BE SUBMITTED TO THE TCEQ FOR ANY SITE THAT IS A MINIMUM OF 5 ACRES; OR, ANY SITE THAT MEETS THE CRITERIA OF A LARGER COMMON PLAN OF DEVELOPMENT.
4. THE CONTRACTOR SHALL CALL THE CITY OF LEANDER INSPECTOR 48 HOURS PRIOR TO BEGINNING INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS.
5. THE CONTRACTOR SHALL INSTALL TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES AS SHOWN WITHIN THESE PLANS.
6. AN INITIAL SITE INSPECTION MUST BE CONDUCTED BY THE CITY OF LEANDER TO VERIFY THAT ALL EROSION AND SEDIMENT CONTROLS HAVE BEEN PROPERLY INSTALLED AND PER THE PLAN. APPROVAL BY THE CITY MUST BE GIVEN BEFORE CONSTRUCTION CAN BEGIN.
5. INSTALL ALL UTILITIES.
6. INSURE THAT ALL UNDERGROUND UTILITY CROSSINGS ARE COMPLETED.
7. COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED BY FINAL CONSTRUCTION ACTIVITIES.
8. ALL DISTURBED AREAS MUST BE RE-VEGETATED. A MINIMUM UNIFORM COVERAGE OF 90% OR MORE, AT A HEIGHT OF 1.5 INCHES AND NO BARE AREAS GREATER THAN 10 SQ. FT. IS PARAMOUNT BEFORE SITE APPROVAL. IT IS HIGHLY RECOMMENDED THAT RE-VEGETATION IS INITIATED EARLY IN ORDER TO MEET THE CITY'S STABILIZATION STANDARDS BEFORE THE FINAL WALK-THROUGH.
9. SOD OR A COMBINATION OF HYDRA-SEED / MULCH WITH A GEOTEXTILE MUST BE USED FOR THE STABILIZATION OF VEGETATED DRAINAGE WAYS AND SLOPES.
10. COMPLETE PERMANENT EROSION CONTROL AND RESTORATION ON SITE VEGETATION.
11. REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROL.
12. CONTRACTOR SHALL SCHEDULE FINAL WALKTHROUGH AND CONDUCT WALKTHROUGH WITH CITY DEPARTMENTS AND ENGINEER OF RECORD. ENGINEER OF RECORD IS RESPONSIBLE FOR PREPARING AND SUBMITTING 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.

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 LEGISLATION RELATED TO ACCESSIBILITY WITHIN THE LIMITS OF CONSTRUCTION SHOWN IN THESE PLANS. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARDS (TAS).
2. BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95% MAXIMUM DENSITY TO WITHIN 6" OF THE TOP OF THE 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 OF 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.
12. GEOTECHNICAL INVESTIGATION INFORMATION AND PAVEMENT RECOMMENDATIONS WERE PROVIDED BY ECS SOUTHWEST, LLP IN REPORT 17:5734-A DATED AUGUST 29, 2022. PAVEMENT RECOMMENDATIONS ARE AS FOLLOWS:

PAVEMENT SECTION	PARKING AREAS	DRIVE AREAS	MEDIUM DUTY CONCRETE
HOT MIX ASPHALTIC CONCRETE (HMAC)	2"	2.5"	5.5"
AGGREGATE BASE	8"	10"	

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 ROAD 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 9AM AND 4PM UNLESS OTHERWISE NOTED ON THE PLANS. ANY NIGHT TIME LANE CLOSURES REQUIRE APPROVAL OF THE CITY ENGINEER AND SHALL OCCUR BETWEEN THE HOURS OF 8PM AND 6AM. LANE CLOSURES OBSERVED BY THE CITY DURING PEAK HOURS OF 6AM TO 9AM OR 4PM TO 8PM 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 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 OF 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 DRIVEWAY 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 AREA.
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.

WATER AND WASTEWATER NOTES

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 AN 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:
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 INCHES 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 BLOCKING 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). ADDITIONAL THRUST RESTRAINTS MAY BE REQUIRED BASED UPON THE MANUFACTURER'S RECOMMENDATIONS AND/OR ENGINEER'S DESIGN.
8. PIPE MATERIAL FOR PUBLIC WATER MAINS SHALL BE PVC (AWWA C900-DR14 MIN. 305PSI 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.

PUBLIC INFRASTRUCTURE NOTE

1. ASSOCIATED PUBLIC INFRASTRUCTURE PLAN SET TO BE BUILT; CONTRACTOR TO COORDINATE CONSTRUCTION OF SITE PLAN SET WITH PUBLIC INFRASTRUCTURE PLAN SET.

ADD'L EROSION AND SEDIMENTATION CONTROL NOTE:

1. STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PROVIDED BY CONTRACTOR. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN, REVISE, AND UPDATE THE PROJECT SWPPP AS REQUIRED WITH THE GENERAL PERMIT.

BENCHMARK NOTES

BENCHMARKS ARE BASED ON NAD83
COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.99988001439827 2

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

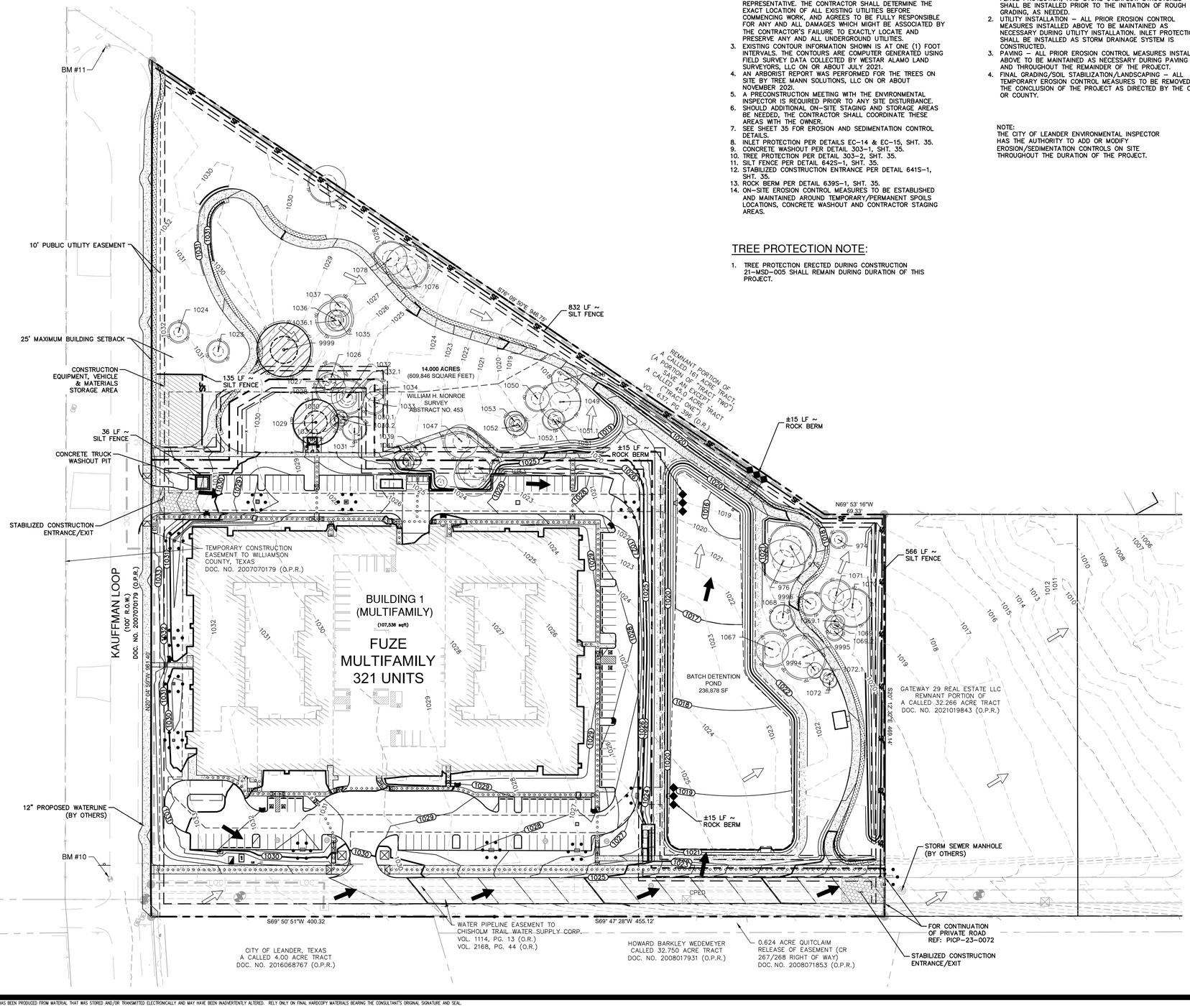
NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOT

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH



GENERAL NOTES:

1. LIMITS OF CONSTRUCTION = 14.00 ACRES.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
3. EXISTING CONTOUR INFORMATION SHOWN IS AT ONE (1) FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING FIELD SURVEY DATA COLLECTED BY WESTAR ALAMO LAND SURVEYORS, LLC ON OR ABOUT JULY 2021.
4. AN ARBORIST REPORT WAS PERFORMED FOR THE TREES ON SITE BY TREE MANN SOLUTIONS, LLC ON OR ABOUT NOVEMBER 2021.
5. A PRECONSTRUCTION MEETING WITH THE ENVIRONMENTAL INSPECTOR IS REQUIRED PRIOR TO ANY SITE DISTURBANCE.
6. SHOULD ADDITIONAL ON-SITE STAGING AND STORAGE AREAS BE NEEDED, THE CONTRACTOR SHALL COORDINATE THESE AREAS WITH THE OWNER.
7. SEE SHEET 35 FOR EROSION AND SEDIMENTATION CONTROL DETAILS.
8. INLET PROTECTION PER DETAILS EC-14 & EC-15, SHT. 35.
9. CONCRETE WASHOUT PER DETAIL 303-1, SHT. 35.
10. TREE PROTECTION PER DETAIL 303-2, SHT. 35.
11. SILT FENCE PER DETAIL 642S-1, SHT. 35.
12. STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 641S-1, SHT. 35.
13. ROCK BERM PER DETAIL 639S-1, SHT. 35.
14. ON-SITE EROSION CONTROL MEASURES TO BE ESTABLISHED AND MAINTAINED AROUND TEMPORARY/PERMANENT SPOILS LOCATIONS, CONCRETE WASHOUT AND CONTRACTOR STAGING AREAS.

TREE PROTECTION NOTE:

1. TREE PROTECTION ERECTED DURING CONSTRUCTION 21-MSD-005 SHALL REMAIN DURING DURATION OF THIS PROJECT.

EROSION CONTROL AND SEQUENCING:

1. ROUGH GRADING – CONSTRUCTION ENTRANCE/EXIT, SILT FENCE PROTECTION, AND STONE OVERFLOW STRUCTURES SHALL BE INSTALLED PRIOR TO THE INITIATION OF ROUGH GRADING, AS NEEDED.
2. UTILITY INSTALLATION – ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING UTILITY INSTALLATION. INLET PROTECTION SHALL BE INSTALLED AS STORM DRAINAGE SYSTEM IS CONSTRUCTED.
3. PAVING – ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING PAVING AND THROUGHOUT THE REMAINDER OF THE PROJECT.
4. FINAL GRADING/SOIL STABILIZATION/LANDSCAPING – ALL TEMPORARY EROSION CONTROL MEASURES TO BE REMOVED AT THE CONCLUSION OF THE PROJECT AS DIRECTED BY THE CITY OR COUNTY.

NOTE:
THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.

SCALE: 1" = 60'
0' 60' 120' 180'

LEGEND

- LOC — LIMITS OF CONSTRUCTION
- PROPERTY BOUNDARY
- EASEMENT LINE
- 800 — EXISTING CONTOUR LINE
- 800 — PROPOSED CONTOUR LINE
- PROPOSED GRATE INLET
- EXISTING CURB INLET
- PROPOSED CURB INLET
- SF — SILT FENCE
- TP TP TP — TREE PROTECTION
- VEGETATIVE FILTER STRIP
- ROCK BERM
- STABILIZED CONSTRUCTION ENTRANCE/EXIT (TO BE FIELD LOCATED)
- TEMPORARY STAGING AND STORAGE AREA (TO BE FIELD LOCATED)
- CONCRETE TRUCK WASHOUT PIT (TO BE FIELD LOCATED)
- INLET PROTECTION
- EXISTING FLOW ARROW
- PROPOSED FLOW ARROW
- PROPOSED BUILDING
- TREES TO BE PROTECTED
- HERITAGE TREE TO BE PROTECTED

BENCHMARKS:
BENCHMARKS ARE BASED ON NAD83
COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.99988001398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

EROSION & SEDIMENTATION CONTROL PLAN

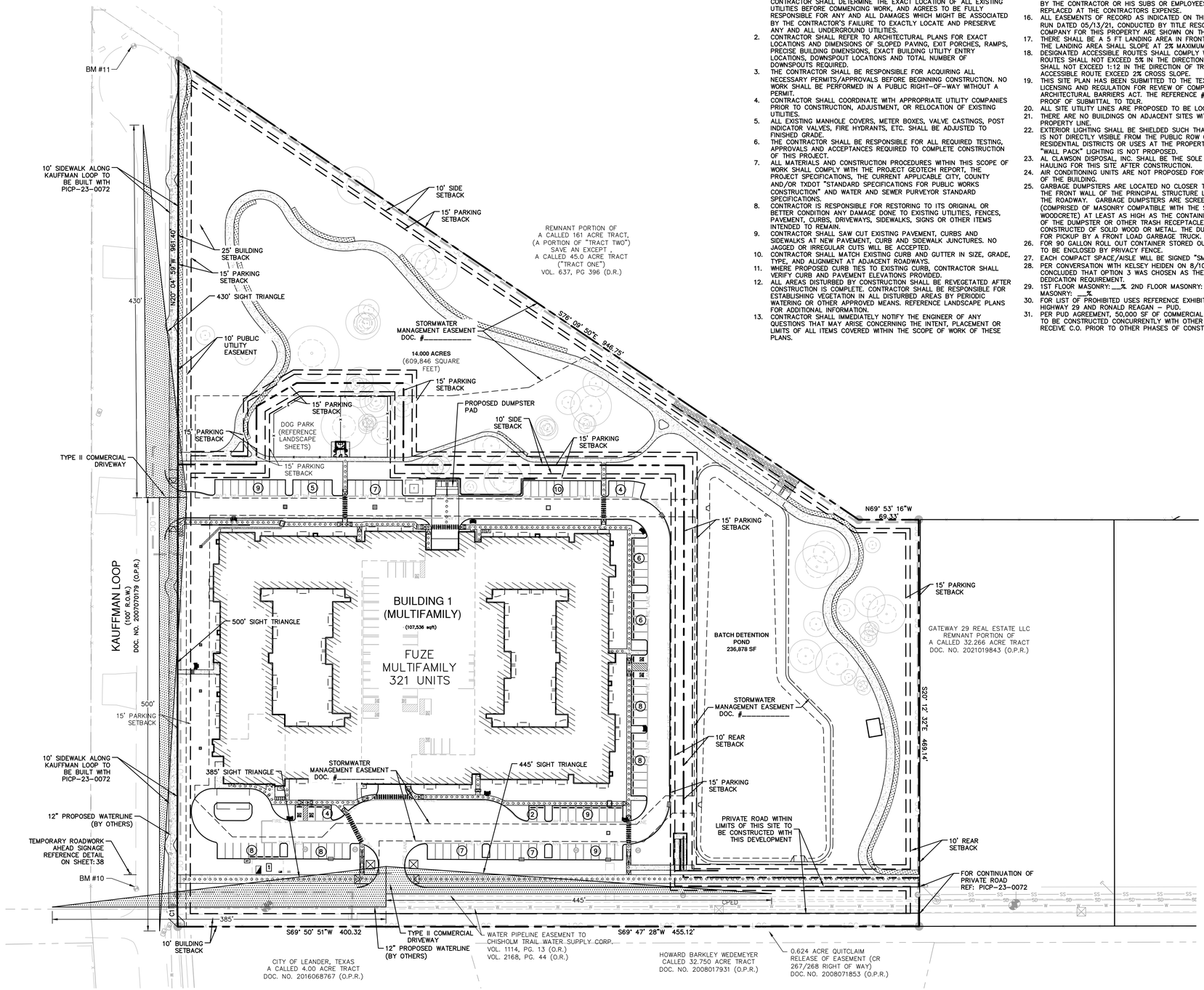
JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 09 of 55

Date: Mar 29, 2024, 9:38am User ID: Jrobinson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\EC51283-01.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

CURVE TABLE					
CURVE	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	1250.15'	1°43'07"	N20°56'02"W	37.50'	37.50'



GENERAL NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN THESE PLANS IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF SLOPED PAVING, EXIT PORCHES, RAMPS, PRECISE BUILDING DIMENSIONS, EXACT BUILDING UTILITY ENTRY LOCATIONS, DOWNSPOUT LOCATIONS AND TOTAL NUMBER OF DOWNSPOUTS REQUIRED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS/APPROVALS BEFORE BEGINNING CONSTRUCTION. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
4. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANIES PRIOR TO CONSTRUCTION, ADJUSTMENT, OR RELOCATION OF EXISTING UTILITIES.
5. ALL EXISTING MANHOLE COVERS, METER BOXES, VALVE CASTINGS, POST INDICATOR VALVES, FIRE HYDRANTS, ETC. SHALL BE ADJUSTED TO FINISHED GRADE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED TESTING, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
7. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK SHALL COMPLY WITH THE PROJECT GEOTECH REPORT, THE PROJECT SPECIFICATIONS, THE CURRENT APPLICABLE CITY, COUNTY AND/OR TXDOT "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" AND WATER AND SEWER PURVEYOR STANDARD SPECIFICATIONS.
8. CONTRACTOR IS RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION ANY DAMAGE DONE TO EXISTING UTILITIES, FENCES, PAVEMENT, CURBS, DRIVEWAYS, SIDEWALKS, SIGNS OR OTHER ITEMS INTENDED TO REMAIN.
9. CONTRACTOR SHALL SAW CUT EXISTING PAVEMENT, CURBS AND SIDEWALKS AT NEW PAVEMENT, CURB AND SIDEWALK JUNCTURES. NO JAGGED OR IRREGULAR CUTS WILL BE ACCEPTED.
10. CONTRACTOR SHALL MATCH EXISTING CURB AND GUTTER IN SIZE, GRADE, TYPE, AND ALIGNMENT AT ADJACENT ROADWAYS.
11. WHERE PROPOSED CURB TIES TO EXISTING CURB, CONTRACTOR SHALL VERIFY CURB AND PAVEMENT ELEVATIONS PROVIDED.
12. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE REVEGETATED AFTER CONSTRUCTION IS COMPLETE. CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING VEGETATION IN ALL DISTURBED AREAS BY PERIODIC WATERING OR OTHER APPROVED MEANS. REFERENCE LANDSCAPE PLANS FOR ADDITIONAL INFORMATION.
13. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT OR LIMITS OF ALL ITEMS COVERED WITHIN THE SCOPE OF WORK OF THESE PLANS.
14. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, ACCESS MUST BE PROVIDED TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
15. CONTRACTOR SHALL PRESERVE ALL PROPERTY CORNER MONUMENTATION, CONTROL POINTS & BENCHMARKS. IF ANY ARE DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS SUBS OR EMPLOYEES, THEY SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
16. ALL EASEMENTS OF RECORD AS INDICATED ON THE MOST RECENT TITLE RUN DATED 05/13/21, CONDUCTED BY TITLE RESOURCES GUARANTY COMPANY FOR THIS PROPERTY ARE SHOWN ON THIS SITE PLAN.
17. THERE SHALL BE A 5 FT LANDING AREA IN FRONT OF ALL ENTRANCES. THE LANDING AREA SHALL SLOPE AT 2% MAXIMUM.
18. DESIGNATED ACCESSIBLE ROUTES SHALL COMPLY WITH TAS. ACCESSIBLE ROUTES SHALL NOT EXCEED 5% IN THE DIRECTION OF TRAVEL; RAMPS SHALL NOT EXCEED 1:12 IN THE DIRECTION OF TRAVEL; NOR SHALL THE ACCESSIBLE ROUTE EXCEED 2% CROSS SLOPE.
19. THIS SITE PLAN HAS BEEN SUBMITTED TO THE TEXAS DEPARTMENT OF LICENSING AND REGULATION FOR REVIEW OF COMPLIANCE WITH THE ARCHITECTURAL BARRIERS ACT. THE REFERENCE #TABS2022017944 IS PROOF OF SUBMITTAL TO TDLR.
20. ALL SITE UTILITY LINES ARE PROPOSED TO BE LOCATED UNDERGROUND.
21. THERE ARE NO BUILDINGS ON ADJACENT SITES WITHIN 50' OF THE PROPERTY LINE.
22. 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.
23. AL CLAWSON DISPOSAL, INC. SHALL BE THE SOLE PROVIDER OF WASTE HAULING FOR THIS SITE AFTER CONSTRUCTION.
24. AIR CONDITIONING UNITS ARE NOT PROPOSED FORWARD THE FRONT WALL OF THE BUILDING.
25. GARBAGE DUMPSTERS ARE LOCATED NO CLOSER TO A ROADWAY THAN THE FRONT WALL OF THE PRINCIPAL 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 OF 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.
26. FOR 90 GALLON ROLL OUT CONTAINER STORED OUTSIDE, IT IS REQUIRED TO BE ENCLOSED BY PRIVACY FENCE.
27. EACH COMPACT SPACE/AISLE WILL BE SIGNED "SMALL CAR ONLY".
28. PER CONVERSATION WITH KELSEY HEIDEN ON 8/10/22 IT WAS CONCLUDED THAT OPTION 3 WAS CHOSEN AS THE PROPOSED PARKLAND DEDICATION REQUIREMENT.
29. 1ST FLOOR MASONRY: __% 2ND FLOOR MASONRY: __% 3RD FLOOR MASONRY: __%
30. FOR LIST OF PROHIBITED USES REFERENCE EXHIBIT A OF THE STATE HIGHWAY 29 AND RONALD REAGAN – PUD.
31. PER PUD AGREEMENT, 50,000 SF OF COMMERCIAL SPACE IS REQUIRED TO BE CONSTRUCTED CONCURRENTLY WITH OTHER DEVELOPMENTS AND RECEIVE C.O. PRIOR TO OTHER PHASES OF CONSTRUCTION.

SCALE: 1" = 60'

0' 60' 120' 180'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED EASEMENT LINE
- EXISTING BENCHMARK
- PROPOSED FIRE HYDRANT
- PROPOSED WASTEWATER MANHOLE
- PROPOSED GRATE INLET
- PROPOSED CURB INLET
- PROPOSED JUNCTION BOX W/ MANHOLE
- PROPOSED ELECTRIC TRANSFORMER
- (8) PARKING COUNT
- PROPOSED BUILDING
- PROPOSED CONCRETE SIDEWALK
- TREES TO BE PROTECTED

PROJECT DATA:

SITE ACREAGE:	14.000 AC.
# LIVING UNITS:	321
UNITS/ACRE	22.93

PARKING SUMMARY

ROOM TYPE	UNIT COUNT	REQUIRED SPACES
1 BED:	211	316.5
2 BED:	95	190
3 BED:	15	37.5
TOTAL:	321	544

PARKING TYPE	UNIT COUNT
STANDARD:	125
ADA:	4
COMPACT:	0
GARAGE STANDARD	406
GARAGE ADA	11
TOTAL:	546

STRIPING/SIGNAGE NOTES:

1. CURB, GUTTERS AND PAVEMENT DELINEATING THE FIRE LANE SHALL BE PAINTED RED WITH FOUR INCH (4') WHITE LETTERING STATING 'NO PARKING – FIRE LANE', 'FIRE LANE – TOW AWAY ZONE', OR SIMILAR WORDING. WORDING MAY NOT BE SPACED MORE THAN THIRTY (30') FEET APART.
2. FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE – NO PARKING" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET (25') INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.
3. ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT UNLESS NOTED OTHERWISE: WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS. REFERENCE DETAIL SHEET FOR STRIPED ISLANDS.
4. ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
5. ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION

BENCHMARKS:
BENCHMARKS ARE BASED ON NAD83
COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.99988001398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

OVERALL SITE & TRAFFIC CONTROL PLAN

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 10 of 55

Date: Mar 29, 2024, 9:38am User ID: jrobinson
File: H:\Projects\51283\01\301 Construction Documents\Civil\SP51283O1.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

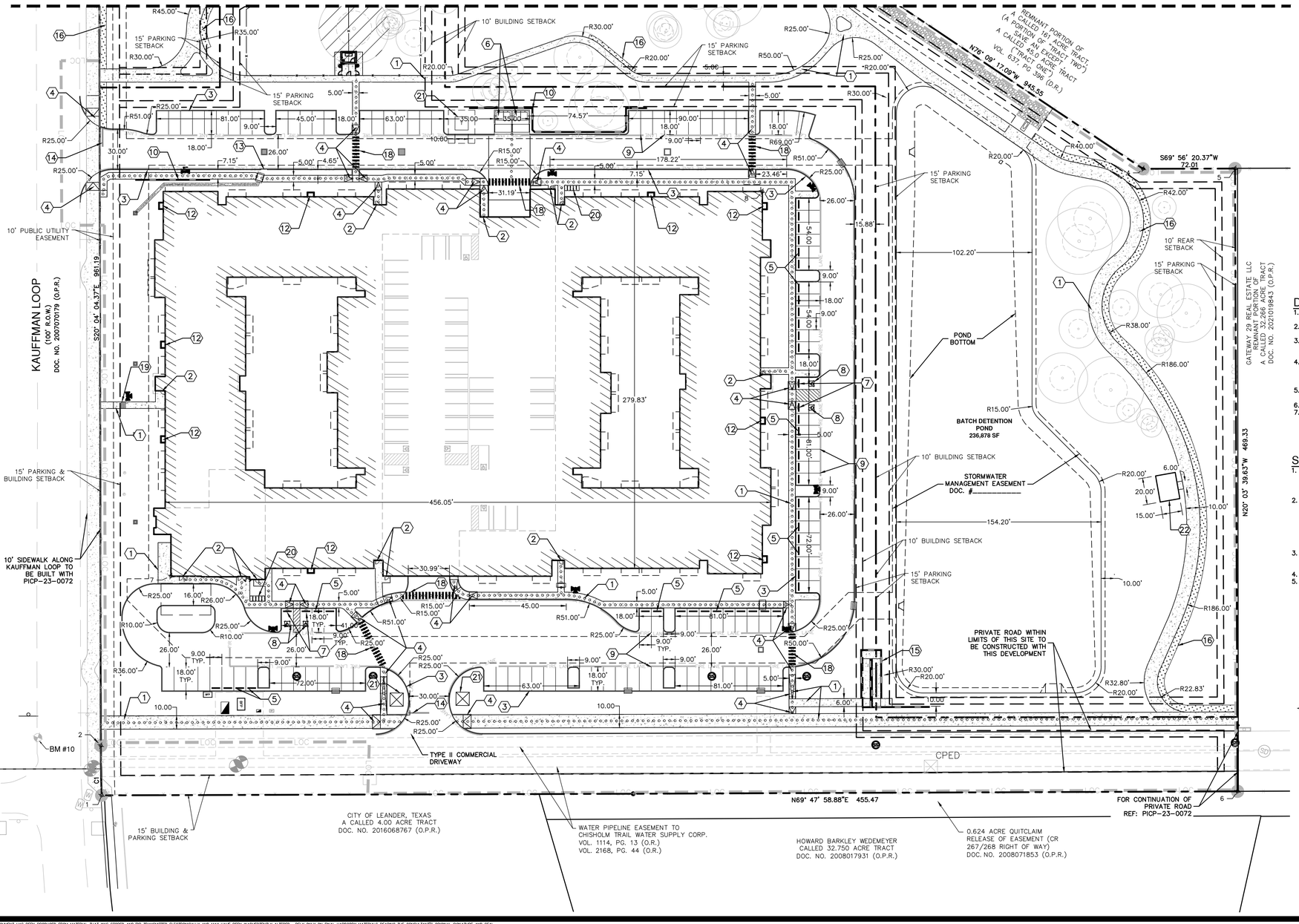
SD-23-0162

Point Table		
Point #	Northing	Easting
1	10204275.18	3083196.74
2	10204310.20	3083183.34
3	10205213.15	3082853.22
4	10204986.73	3083772.50
5	10205010.57	3083837.60
6	10204570.32	3083999.66
7	10204448.26	3083189.36
8	10204872.64	3083508.83

KEYED NOTES

1. CONCRETE SIDEWALK, RE: SHEET 36
2. BUILDING ENTRANCE
3. 6" CONCRETE CURB, RE: SHEET 37
4. PROPOSED ADA RAMP, RE: SHEET 36
5. WHEEL STOP
6. TRASH DUMPSTER/COMPACTOR
7. ACCESSIBLE PARKING SIGN & BUMPER CURB, RE: DETAILS, SHEET 37
8. ACCESSIBLE PARKING SPACE WITH ACCESS AISLE, TO SLOPE 2% MAX IN ALL DIRECTIONS. RE: DETAIL, SHEET 37
9. 4" WIDE PAVEMENT STRIPING
10. WALL WITH RAILING
11. WALL WITH FENCING; RE: LANDSCAPE PLANS
12. VENT – SEE ARCHITECTURAL PLANS
13. CURB CUT
14. 24" WHITE STOP BAR
15. RAMP WITH HANDRAIL (8.33% MAX) (REFERENCE ARCH)
16. VEGETATIVE FILTER STRIP
18. ACCESSIBLE CROSSWALK
19. SIDEWALK STEPS
20. BICYCLE PARKING
21. ELECTRIC TRANSFORMER
22. COVERED PATIO/SEATING AREA

MATCHLINE SEE SHEET 12



SCALE: 1" = 40'

0' 40' 80' 120'

LEGEND

- LOC — LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED EASEMENT LINE
- PROPOSED RETAINING WALL
- PROPOSED SIDEWALK
- EXISTING BENCHMARK
- PROPOSED WASTEWATER MANHOLE
- PROPOSED GRATE INLET
- PROPOSED CURB INLET
- PROPOSED JUNCTION BOX
- PROPOSED HEADWALL
- PROPOSED BUILDING

DIMENSIONAL CONTROL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL HORIZONTAL AND VERTICAL CONTROL PER THE CONSTRUCTION DRAWINGS.
3. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL USE THE PROPERTY PINS FOR HORIZONTAL CONTROL POINTS. BENCHMARKS ARE NOT TO BE USED FOR HORIZONTAL CONTROL.
4. DIMENSIONAL CONTROL POINTS ARE TO BACK OF CURB. DIMENSIONS ARE TO THE FACE OF CURB, FACE OF RETAINING WALL, AND CENTER OF PAINT STRIPING. ALL DIMENSIONS ARE PERPENDICULAR TO THE POINT OF REFERENCE.
5. REFER TO THE ARCHITECTURAL AND STRUCTURAL PLANS FOR ADDITIONAL DIMENSION CONTROL INFORMATION.
6. ALL CONCRETE CURB RADII ARE 3' UNLESS OTHERWISE NOTED.
7. COORDINATES FOR HORIZONTAL CONTROL POINTS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NAD NAVD88 DISPLAYED IN SURFACE VALUES USING A SURFACE ADJUSTMENT FACTOR FOR EACH COUNTY.
   (THE SURFACE ADJUSTMENT FACTOR FOR THIS SITE IS 0.99988)

STRIPING/SIGNAGE NOTES:

1. CURB, GUTTERS AND PAVEMENT DELINEATING THE FIRE LANE SHALL BE PAINTED RED WITH FOUR INCH (4') WHITE LETTERING STATING NO PARKING – FIRE LANE', FIRE LANE – TOW AWAY ZONE', OR SIMILAR WORDING. WORDING MAY NOT BE SPACED MORE THAN THIRTY (30') FEET APART.
2. FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE – NO PARKING" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET (25') INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.
3. ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT UNLESS NOTED OTHERWISE: WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS. REFERENCE DETAIL SHEET FOR STRIPED ISLANDS.
4. ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
5. ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION

CURVE TABLE					
CURVE #	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	1250.15'	001°43'07"	S20°56'02"E	37.50'	37.50'

BENCHMARKS:

BENCHMARKS ARE BASED ON NAD83
COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.99988001438272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

SITE & DIMENSIONAL CONTROL PLAN (1 OF 2)

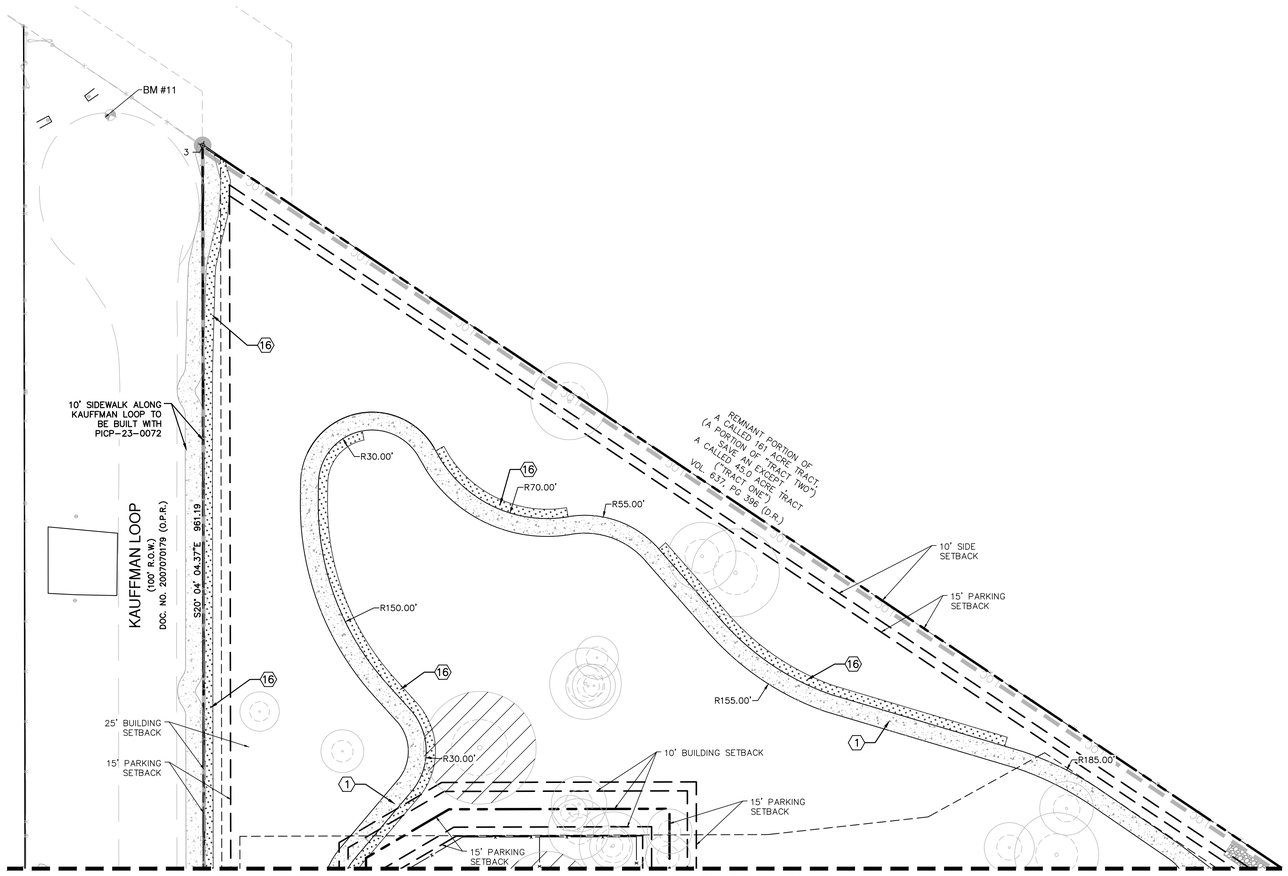
JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 11 of 55

Date: Mar 29, 2024, 9:38am User ID: jrobinson
File: H:\Projects\51283\01\301 Construction Documents\Civil\DC51283-01.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

KEYED NOTES

1. CONCRETE SIDEWALK, RE: SHEET 36
2. BUILDING ENTRANCE
3. 6" CONCRETE CURB, RE: SHEET 37
4. PROPOSED ADA RAMP, RE: SHEET 36
5. WHEEL STOP
6. TRASH DUMPSTER/COMPACTOR
7. ACCESSIBLE PARKING SIGN & BUMPER CURB, RE: DETAILS, SHEET 37
8. ACCESSIBLE PARKING SPACE WITH ACCESS AISLE, TO SLOPE 2% MAX IN ALL DIRECTIONS. RE: DETAIL, SHEET 37
9. 4" WIDE PAVEMENT STRIPING
10. WALL WITH RAILING
11. WALL WITH FENCING; RE: LANDSCAPE PLANS
12. VENT – SEE ARCHITECTURAL PLANS
13. CURB CUT
14. 24" WHITE STOP BAR
15. RAMP WITH HANDRAIL (8.33% MAX) (REFERENCE ARCH)
16. VEGETATIVE FILTER STRIP
18. ACCESSIBLE CROSSWALK
19. SIDEWALK STEPS
20. BICYCLE PARKING



MATCHLINE SEE SHEET 11

SCALE: 1"= 40'

0' 40' 80' 120'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED EASEMENT LINE
- PROPOSED RETAINING WALL
- PROPOSED SIDEWALK
- EXISTING BENCHMARK
- PROPOSED WASTEWATER MANHOLE
- PROPOSED GRATE INLET
- PROPOSED CURB INLET
- PROPOSED JUNCTION BOX
- PROPOSED HEADWALL
- PROPOSED BUILDING

DIMENSIONAL CONTROL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL HORIZONTAL AND VERTICAL CONTROL PER THE CONSTRUCTION DRAWINGS.
3. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL USE THE PROPERTY PINS FOR HORIZONTAL CONTROL POINTS. BENCHMARKS ARE NOT TO BE USED FOR HORIZONTAL CONTROL.
4. DIMENSIONAL CONTROL POINTS ARE TO BACK OF CURB. DIMENSIONS ARE TO THE FACE OF CURB, FACE OF RETAINING WALL, AND CENTER OF PAINT STRIPING. ALL DIMENSIONS ARE PERPENDICULAR TO THE POINT OF REFERENCE.
5. REFER TO THE ARCHITECTURAL AND STRUCTURAL PLANS FOR ADDITIONAL DIMENSION CONTROL INFORMATION.
6. ALL CONCRETE CURB RADII ARE 3' UNLESS OTHERWISE NOTED.
7. COORDINATES FOR HORIZONTAL CONTROL POINTS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NAD NAVD88 DISPLAYED IN SURFACE VALUES USING A SURFACE ADJUSTMENT FACTOR FOR EACH COUNTY. (THE SURFACE ADJUSTMENT FACTOR FOR THIS SITE IS 0.99988)

STRIPING/SIGNAGE NOTES:

1. CURB, GUTTERS AND PAVEMENT DELINEATING THE FIRE LANE SHALL BE PAINTED RED WITH FOUR INCH (4') WHITE LETTERING STATING 'NO PARKING – FIRE LANE', 'FIRE LANE – TOW AWAY ZONE', OR SIMILAR WORDING. WORDING MAY NOT BE SPACED MORE THAN THIRTY (30') FEET APART.
2. FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE – NO PARKING" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET (25') INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.
3. ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT UNLESS NOTED OTHERWISE: WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS. REFERENCE DETAIL SHEET FOR STRIPED ISLANDS.
4. ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
5. ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION

BENCHMARKS:

BENCHMARKS ARE BASED ON NAD83
COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.999880014398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

SITE & DIMENSIONAL CONTROL PLAN (2 OF 2)

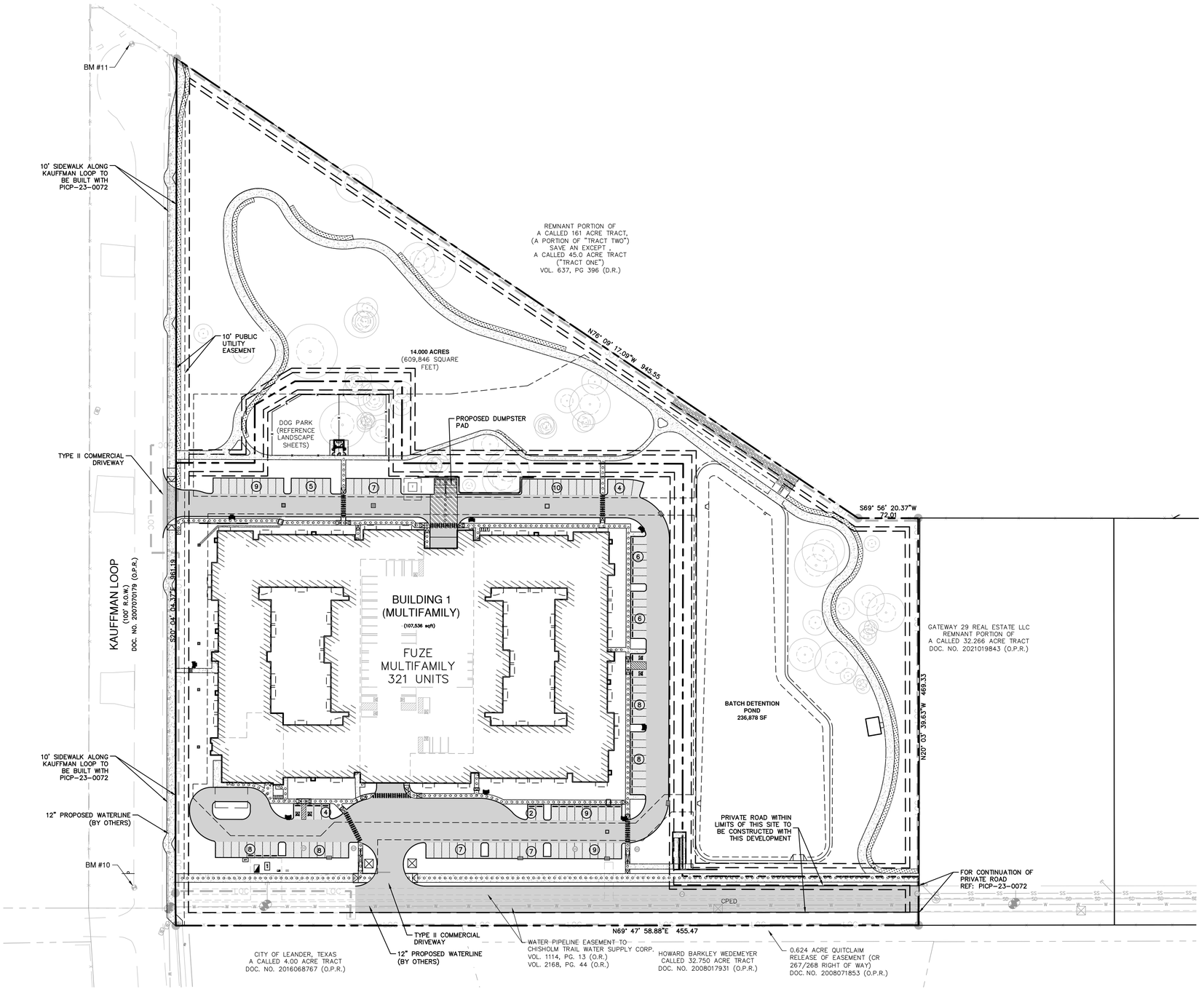
JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 12 of 55

SD-23-0162

Date: Mar 29, 2024, 9:38am User ID: jrobinson
File: I:\Projects\5128,83\01\301 Construction Documents\Civil\0c51283-01.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

CURVE TABLE					
CURVE	RADIUS	DELTA	CHORD BEARING	CHORD	LENGTH
C1	1250.15'	1°43'07"	N20°56'02"W	37.50'	37.50'



SCALE: 1"= 60'

0' 60' 120' 180'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED EASEMENT LINE
- EXISTING BENCHMARK
- PROPOSED FIRE HYDRANT
- PROPOSED WASTEWATER MANHOLE
- PROPOSED GRATE INLET
- PROPOSED CURB INLET
- PROPOSED JUNCTION BOX W/ MANHOLE
- PROPOSED ELECTRIC TRANSFORMER
- PARKING COUNT
- PROPOSED BUILDING
- PROPOSED CONCRETE SIDEWALK
- PROPOSED HEAVY DUTY CONCRETE DUMPSTER PAD (SEE SHEET 37)
- PROPOSED MEDIUM DUTY CONCRETE (SEE SHEET 37)
- PROPOSED LIGHT DUTY CONCRETE (SEE SHEET 37)
- TREES TO BE PROTECTED

PAVEMENT NOTES:

1. CONTRACTOR SHALL PROVIDE BOLLARDS FOR PROTECTION OF ALL ABOVE-GROUND UTILITIES AND APPURTENANCES IN DRIVE AREAS.
2. ALL UTILITIES SHALL BE INSTALLED PRIOR TO PAVEMENT CONSTRUCTION.
3. ALL SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT.
4. PAVEMENT INSTALLATION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT.
5. SEE SHEET 37 FOR PAVING DETAILS.

STRIPING/SIGNAGE NOTES:

1. CURB, GUTTERS AND PAVEMENT DELINEATING THE FIRE LANE SHALL BE PAINTED RED WITH FOUR INCH (4") WHITE LETTERING STATING NO PARKING – FIRE LANE', FIRE LANE – TOW AWAY ZONE', OR SIMILAR WORDING. WORDING MAY NOT BE SPACED MORE THAN THIRTY (30') FEET APART.
2. FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE – NO PARKING" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET (25') INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB.
3. ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT UNLESS NOTED OTHERWISE: WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS. REFERENCE DETAIL SHEET FOR STRIPED ISLANDS.
4. ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
5. ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION

BENCHMARKS:

BENCHMARKS ARE BASED ON NAD83
COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.99988001398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

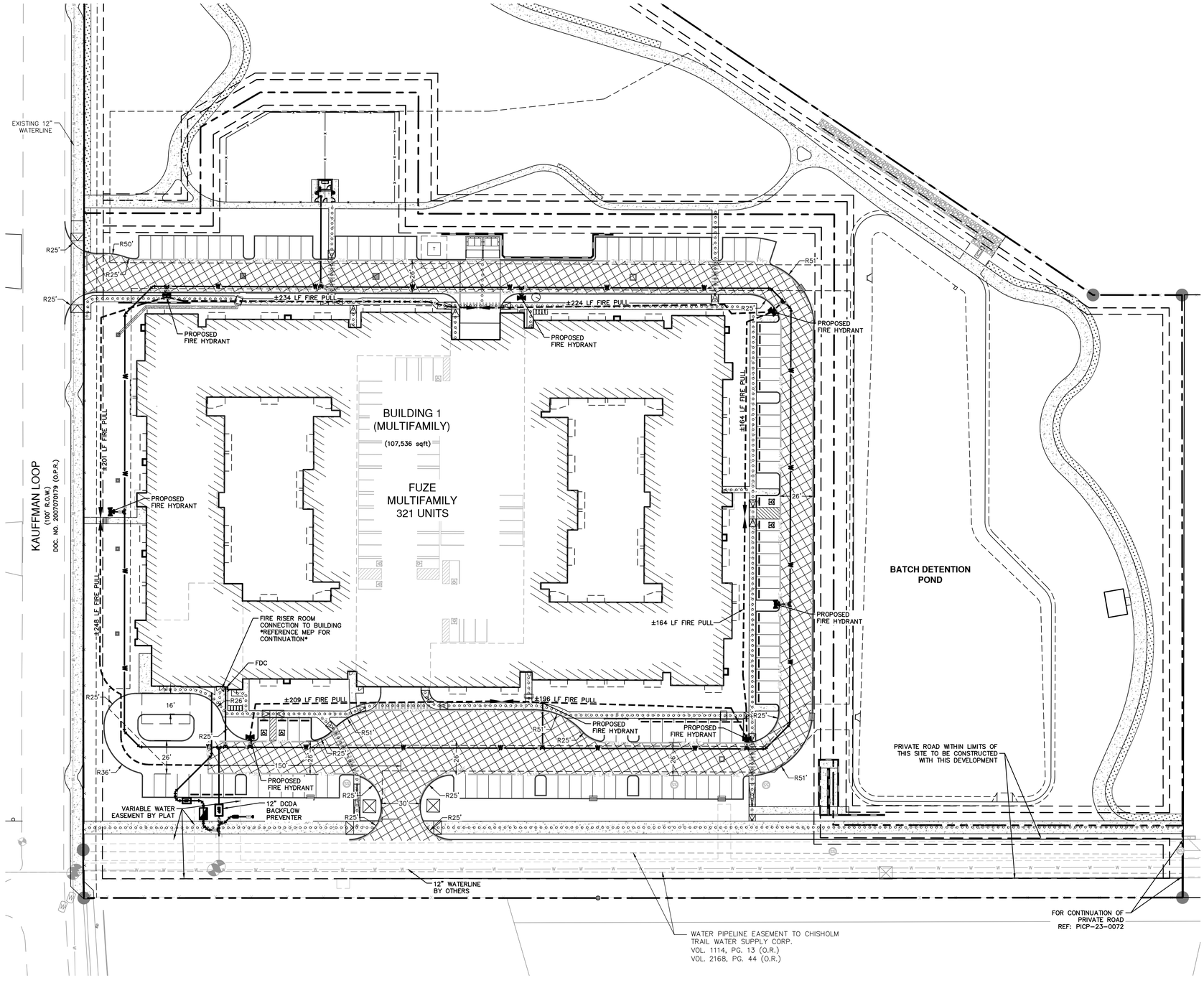
PAVING PLAN

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 13 of 55

Date: Mar 29, 2024, 9:38am User ID: jrobinson
File: H:\Projects\51283\01\301 Construction Documents\Civil\PV51283301.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162



SCALE: 1"= 40'

0' 40' 80' 120'

LEGEND

- PROPERTY LINE
- PROPOSED EASEMENT LINE
- PROPOSED WATERLINE
- EXISTING WATERLINE
- FIRE LANE STRIPING
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING ELECTRIC BOX
- BENCHMARK
- PROPOSED FIRE LANE
- PROPOSED WATER METER
- PROPOSED FIRE HYDRANT
- PROPOSED FIRE DEPARTMENT CONNECTION
- PROPOSED WATER VALVE

NOTES

1. FIRE LANE SIGNS: SIGNS SHALL READ "FIRE LANE TOW AWAY ZONE" OR "FIRE ZONE TOW AWAY ZONE" AND SHALL BE 12" WIDE AND 18" HIGH. SIGNS SHALL BE PAINTED ON A WHITE BACKGROUND WITH LETTERS AND BORDERS IN RED, USING NOT LESS THAN 2" LETTERING. SIGNS SHALL BE PERMANENTLY AFFIXED TO A STATIONARY POST AND THE BOTTOM OF THE SIGN SHALL BE SIX FEET, SIX INCHES (6'6") ABOVE FINISHED GRADE. SIGNS SHALL BE SPACED NOT MORE THAN THIRTY-FIVE FEET (35') APART. SIGNS MAY BE INSTALLED ON PERMANENT BUILDINGS OR WALLS OR AS APPROVED BY THE FIRE CODE OFFICIAL.
2. FIRE HYDRANTS SHALL BE INSTALLED WITH THE CENTER OF THE FOUR (4) INCH OPENING (STEAMER) LOCATED AT LEAST 18 INCHES ABOVE FINISHED GRADE. THE STEAMER OPENING OF FIRE HYDRANTS SHALL FACE THE APPROVED FIRE ACCESS DRIVEWAY OR PUBLIC STREET AND SET BACK FROM THE CURB LINE(S) AN APPROVED DISTANCE, TYPICALLY THREE (3) TO SIX (6) FEET. THE AREA WITHIN THREE (3) FEET IN ALL DIRECTIONS FROM ANY FIRE HYDRANT SHALL BE FREE OF OBSTRUCTIONS, AND THE AREA BETWEEN THE STEAMER OPENING AND THE STREET OR DRIVEWAY GIVING VEHICLE ACCESS SHALL BE FREE OF OBSTRUCTIONS.
3. TIMING OF INSTALLATIONS: WHEN FIRE PROTECTION FACILITIES ARE INSTALLED BY THE CONTRACTOR, SUCH FACILITIES SHALL INCLUDE SURFACE ACCESS ROADS. EMERGENCY ACCESS ROADS OR DRIVES SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING THE TIME OF CONSTRUCTION. WHEN THE FIRE DEPARTMENT APPROVES AN ALTERNATE METHOD OF PROTECTION, THIS REQUIREMENT MAY BE MODIFIED AS DOCUMENTED IN THE APPROVAL OF THE ALTERNATE METHOD.
4. ALL EMERGENCY ACCESS ROADWAYS AND FIRE LANES, INCLUDING PERVIOUS/DECORATIVE PAVING, SHALL BE ENGINEERED AND INSTALLED AS REQUIRED TO SUPPORT THE AXLE LOADS OF EMERGENCY VEHICLES. A LOAD CAPACITY SUFFICIENT TO MEET THE REQUIREMENTS TO HS-20 LOADING (16 KIPS/WHEEL) AND A TOTAL VEHICLE LIVE LOAD OF 80,000 POUNDS IS CONSIDERED COMPLIANT WITH THIS REQUIREMENT.
5. FIRE LANES DESIGNATED ON SITE PLANS SHALL BE REGISTERED WITH THE CITY OF LEANDER FIRE DEPARTMENT AND INSPECTED FOR FINAL APPROVAL.
6. THE MINIMUM VERTICAL CLEARANCE REQUIRED FOR EMERGENCY VEHICLE ACCESS ROADS OR DRIVES IS 14 FEET FOR THE FULL WIDTH OF THE ROADWAY OR DRIVEWAY.
7. UNDERGROUND MAINS FEEDING PRIVATE FIRE HYDRANTS MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 24 AND THE FIRE CODE BY A STATE LICENSED CONTRACTOR WITH A PLUMBING PERMIT FOR THE PROPOSED WORK. THE ENTIRE MAIN MUST BE HYDROSTATICALLY TESTED AT ONE TIME, UNLESS ISOLATION VALVES ARE PROVIDED BETWEEN TESTED SECTIONS.

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

FIRE PROTECTION PLAN

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 14 of 55

Date: Mar 29, 2024, 9:39am User ID: jrobinson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\FP51283D1.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

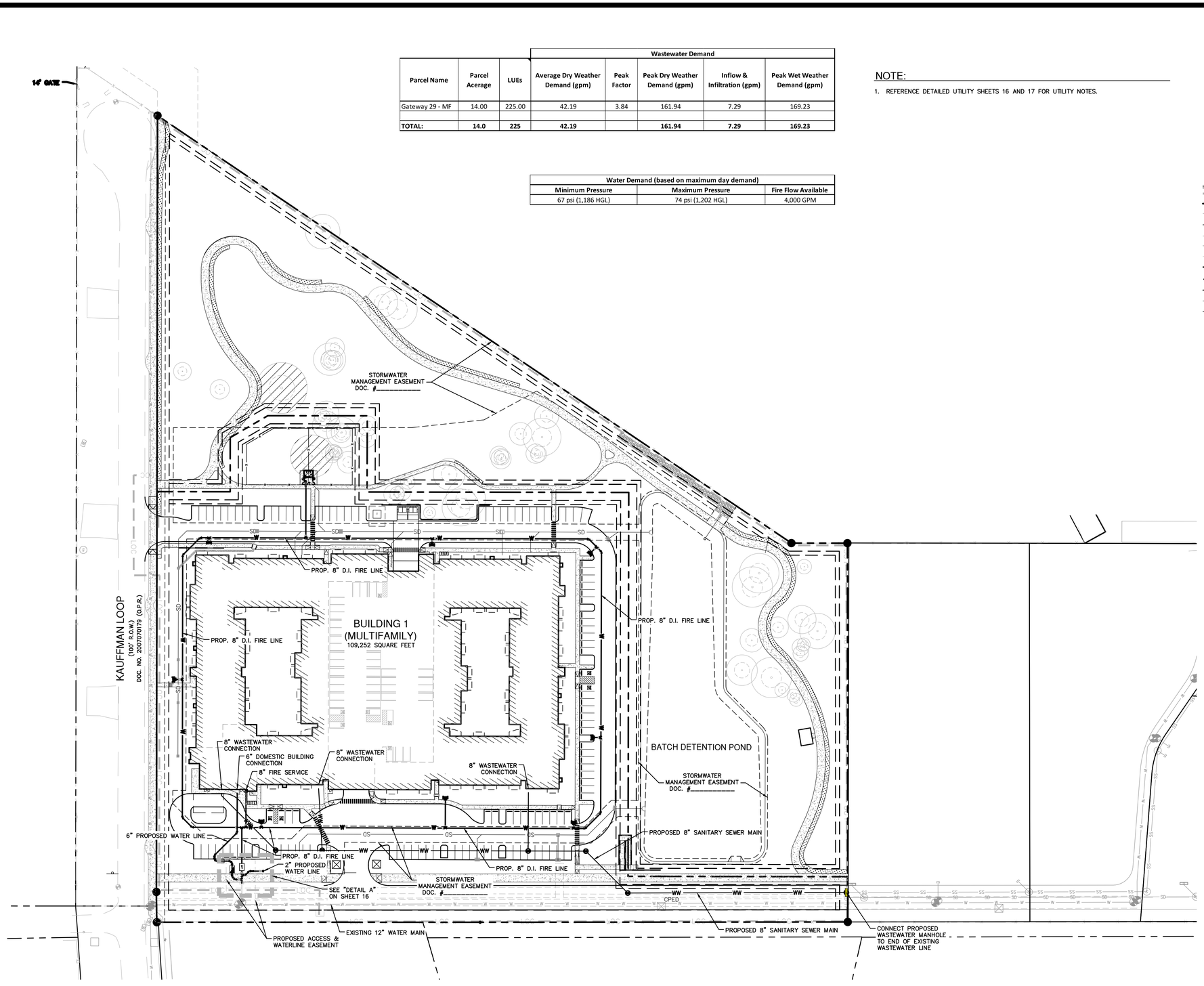
SD-23-0162

	Wastewater Demand						
Parcel Name	Parcel Acerage	LUEs	Average Dry Weather Demand (gpm)	Peak Factor	Peak Dry Weather Demand (gpm)	Inflow & Infiltration (gpm)	Peak Wet Weather Demand (gpm)
Gateway 29 - MF	14.00	225.00	42.19	3.84	161.94	7.29	169.23
TOTAL:	**14.0**	**225**	**42.19**		**161.94**	**7.29**	**169.23**

Water Demand (based on maximum day demand)		
Minimum Pressure	Maximum Pressure	Fire Flow Available
67 psi (1,186 HGL)	74 psi (1,202 HGL)	4,000 GPM

NOTE:

1. REFERENCE DETAILED UTILITY SHEETS 16 AND 17 FOR UTILITY NOTES.



SCALE: 1"= 60'

0' 60' 120' 180'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- EXISTING WASTEWATER LINE W/ MANHOLE
- PROPOSED EASEMENT LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- PROPOSED RETAINING WALL
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE W/ MANHOLE
- PROPOSED STORM DRAIN LINE
- PROPOSED FENCE
- PROPOSED FIRE HYDRANT W/ VALVE
- PROPOSED WATER METER
- PROPOSED JUNCTION BOX
- PROPOSED CURB INLET
- PROPOSED GRATE INLET
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE
- EXISTING UTILITY POLE
- BENCHMARK
- EXISTING WASTEWATER MANHOLE
- PROPOSED BUILDING

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

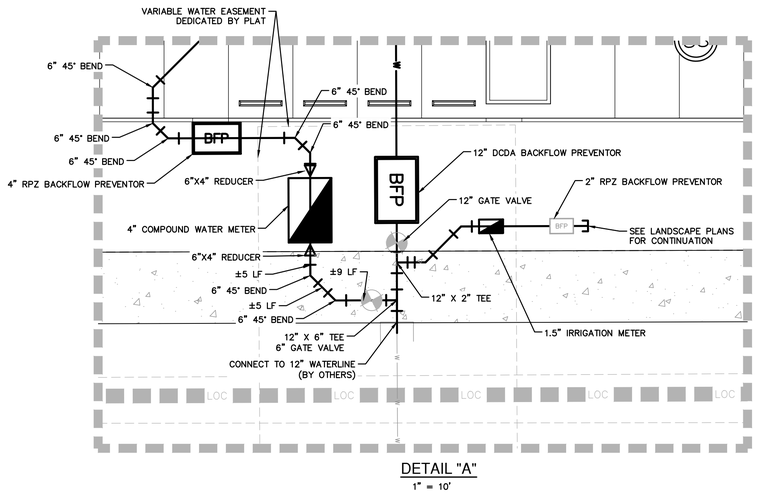
OVERALL UTILITY PLAN

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 15 of 55

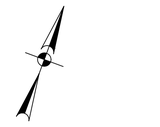
Date: Mar 29, 2024, 9:39am User ID: hbihnson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\UT 51283301.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162



DETAIL "A"
1" = 10'



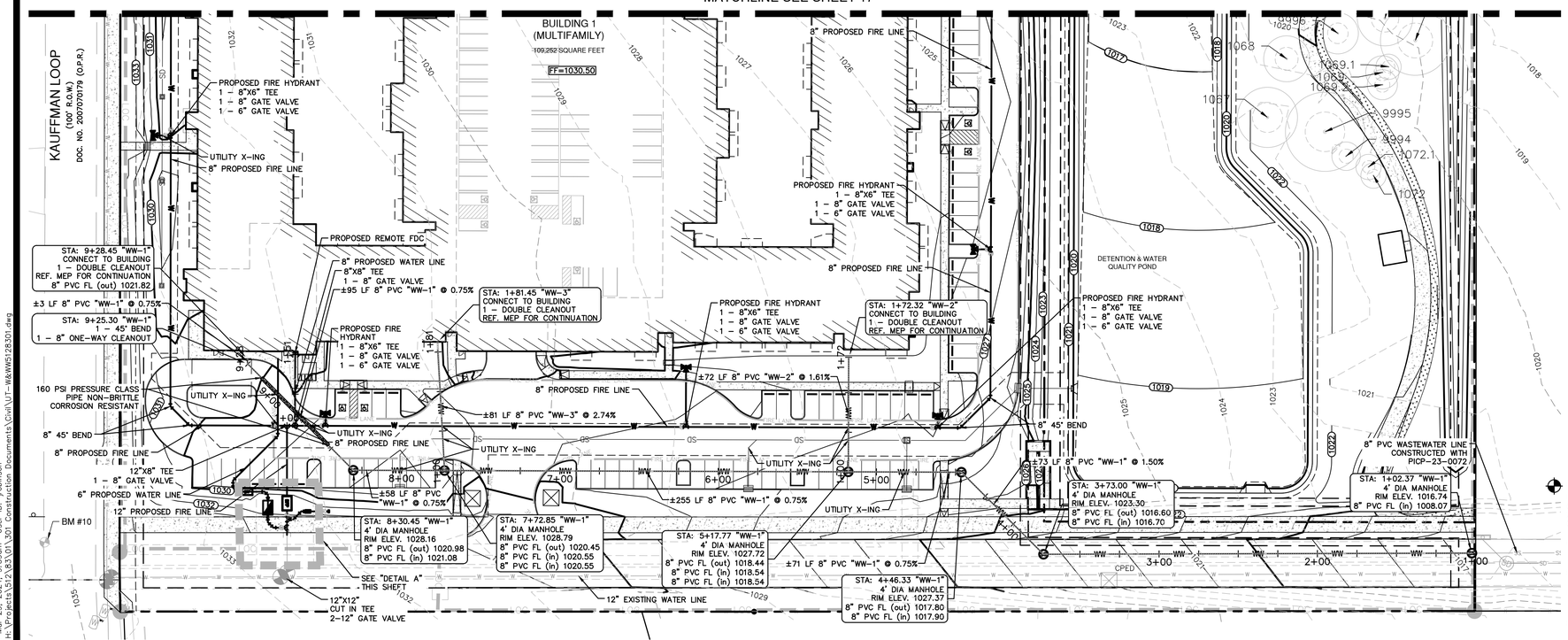
LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- EXISTING WASTEWATER LINE W/ MANHOLE
- PROPOSED EASEMENT LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- PROPOSED RETAINING WALL
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE W/ MANHOLE
- PROPOSED STORM DRAIN LINE
- PROPOSED FENCE
- PROPOSED FIRE HYDRANT W/ VALVE
- PROPOSED WATER METER
- PROPOSED JUNCTION BOX
- PROPOSED CURB INLET
- PROPOSED GRATE INLET
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE
- EXISTING UTILITY POLE
- BENCHMARK
- PROPOSED ELECTRIC TRANSFORMER
- PROPOSED BUILDING

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL 12" AND 8" WATER LINES ARE AWWA C900 DR 14, CLASS 305 PVC PIPE UNLESS OTHERWISE NOTED.
3. ALL WATER LINES AND SERVICE LINES WILL BE INSTALLED WITH TRACER TAPE.
4. NO WATER METERS LOCATED IN SIDEWALK OR DRIVEWAY AREAS.
5. FIRE HYDRANTS ARE SHOWN FOR SCHEMATIC PURPOSES ONLY. SEE DETAIL SHEET FOR PLACEMENT OF APPURTENANCES. FIRE HYDRANTS ASSEMBLY CONSISTS OF, BUT NOT LIMITED TO, 5¼" FIRE HYDRANT, 6" GATE VALVE, 6" D.I. FIRE LEAD.
6. ALL HORIZONTAL AND VERTICAL WATER LINE BENDS, TEE'S AND DEADEND'S SHALL BE RESTRAINED TO THE WATER MAIN USING MECHANICAL JOINT RESTRAINT DEVICES AS APPROVED IN SPL WW-27-A. THE CALCULATED RESTRAINT LENGTH(S) SHALL BE INCLUDED AS CALL OUT NOTES IN THE PLAN VIEW AND/OR PROFILE, CALLED OUT FROM BEGINNING STATION TO END STATION PER UCM SECTION 2.9.2.B.9.
7. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.
8. UNDERWATER MAINS SUPPLYING NFPA 13 SPRINKLER SYSTEMS MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 13 AND THE FIRE CODE, BY A LICENSED SPRINKLER CONTRACTOR WITH A PLUMBING PERMIT. THE ENTIRE MAIN MUST BE HYDROSTATICALLY TESTED AT ONE TIME, UNLESS ISOLATION VALVES ARE PROVIDED BETWEEN TEST SECTIONS
9. UNDERGROUND MAINS SUPPLYING PRIVATE HYDRANTS MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 24, AND THE FIRE CODE, BY A LICENSED CONTRACTOR WITH A PLUMBING PERMIT. THE ENTIRE MAIN MUST BE HYDROSTATICALLY TESTED AT ONE TIME, UNLESS ISOLATION VALVES ARE PROVIDED BETWEEN TESTED SECTIONS.

MATCHLINE SEE SHEET 17



BENCHMARKS:
BENCHMARKS ARE BASED ON NAD83 COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.99988014398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

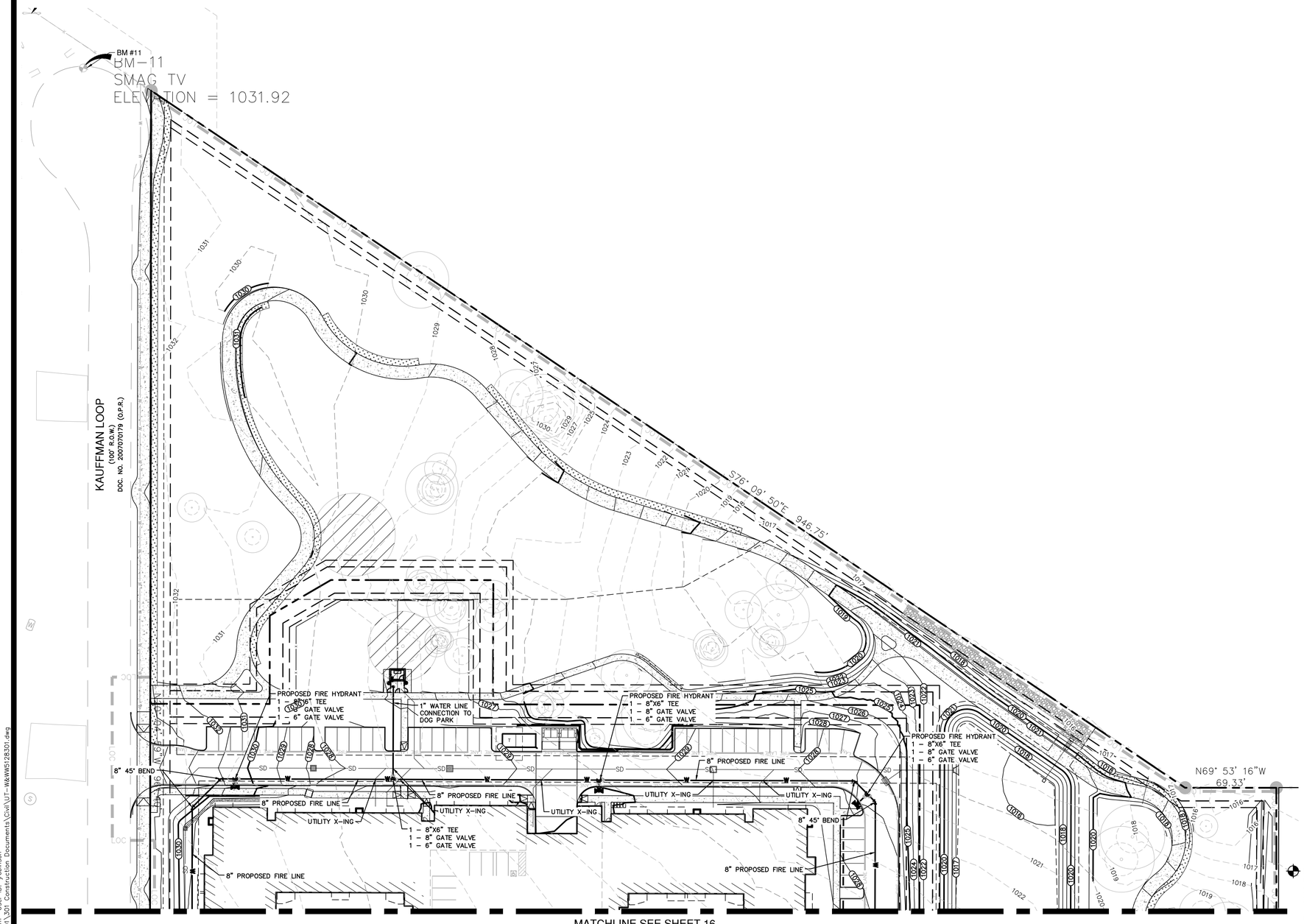
GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

DETAILED UTILITY PLAN (1 OF 2)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 16 of 55

Date: Mar 29, 2024, 9:39am User ID: jrobinson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\UT-WW\W51283301.dwg
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162



MATCHLINE SEE SHEET 16

SCALE: 1"= 40'

0' 40' 80' 120'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- EXISTING WASTEWATER LINE W/ MANHOLE
- PROPOSED EASEMENT LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- PROPOSED RETAINING WALL
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE W/ MANHOLE
- PROPOSED STORM DRAIN LINE
- PROPOSED FENCE
- PROPOSED FIRE HYDRANT W/ VALVE
- PROPOSED WATER METER
- PROPOSED JUNCTION BOX
- PROPOSED CURB INLET
- PROPOSED GRATE INLET
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WASTEWATER MANHOLE
- EXISTING UTILITY POLE
- BENCHMARK
- PROPOSED BUILDING

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. ALL 12" AND 8" WATER LINES ARE AWWA C900 DR 14, CLASS 305 PVC PIPE UNLESS OTHERWISE NOTED.
3. ALL WATER LINES AND SERVICE LINES WILL BE INSTALLED WITH TRACER TAPE.
4. NO WATER METERS LOCATED IN SIDEWALK OR DRIVEWAY AREAS.
5. FIRE HYDRANTS ARE SHOWN FOR SCHEMATIC PURPOSES ONLY. SEE DETAIL SHEET FOR PLACEMENT OF APPURTENANCES. FIRE HYDRANTS ASSEMBLY CONSISTS OF, BUT NOT LIMITED TO, 5¼" FIRE HYDRANT, 6" GATE VALVE, 6" D.I. FIRE LEAD.
6. ALL HORIZONTAL AND VERTICAL WATER LINE BENDS, TEE'S AND DEADEND'S SHALL BE RESTRAINED TO THE WATER MAIN USING MECHANICAL JOINT RESTRAINT DEVICES AS APPROVED IN SPL WW-27-A. THE CALCULATED RESTRAINT LENGTH(S) SHALL BE INCLUDED AS CALL OUT NOTES IN THE PLAN VIEW AND/OR PROFILE, CALLED OUT FROM BEGINNING STATION TO END STATION PER UCM SECTION 2.9.2.B.9.
7. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.
8. UNDERWATER MAINS SUPPLYING NFPA 13 SPRINKLER SYSTEMS MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 13 AND THE FIRE CODE, BY A LICENSED SPRINKLER CONTRACTOR WITH A PLUMBING PERMIT. THE ENTIRE MAIN MUST BE HYDROSTATICALLY TESTED AT ONE TIME, UNLESS ISOLATION VALVES ARE PROVIDED BETWEEN TEST SECTIONS
9. UNDERGROUND MAINS SUPPLYING PRIVATE HYDRANTS MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 24, AND THE FIRE CODE, BY A LICENSED CONTRACTOR WITH A PLUMBING PERMIT. THE ENTIRE MAIN MUST BE HYDROSTATICALLY TESTED AT ONE TIME, UNLESS ISOLATION VALVES ARE PROVIDED BETWEEN TESTED SECTIONS.

BENCHMARKS:

BENCHMARKS ARE BASED ON NAD83 COORDINATES ARE STATE PLANE CENTRAL ZONE WITH A COMBINED SCALE FACTOR OF 0.999880014398272

BM #10: SIX COTTON SPINDLE
GRID NORTH: 10,203,075.39
GRID EAST: 3,082,766.80
ELEV: 1035.47

BM #11: SET MAGNETIC NAIL (TRAVIS)
GRID NORTH: 10,203,986.98
GRID EAST: 3,082,429.05
ELEV: 1031.92'

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

DETAILED UTILITY PLAN (2 OF 2)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 17 of 55

Date: Mar 29, 2024, 9:39am User ID: jhobson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\UT-W&WW\512830 1.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

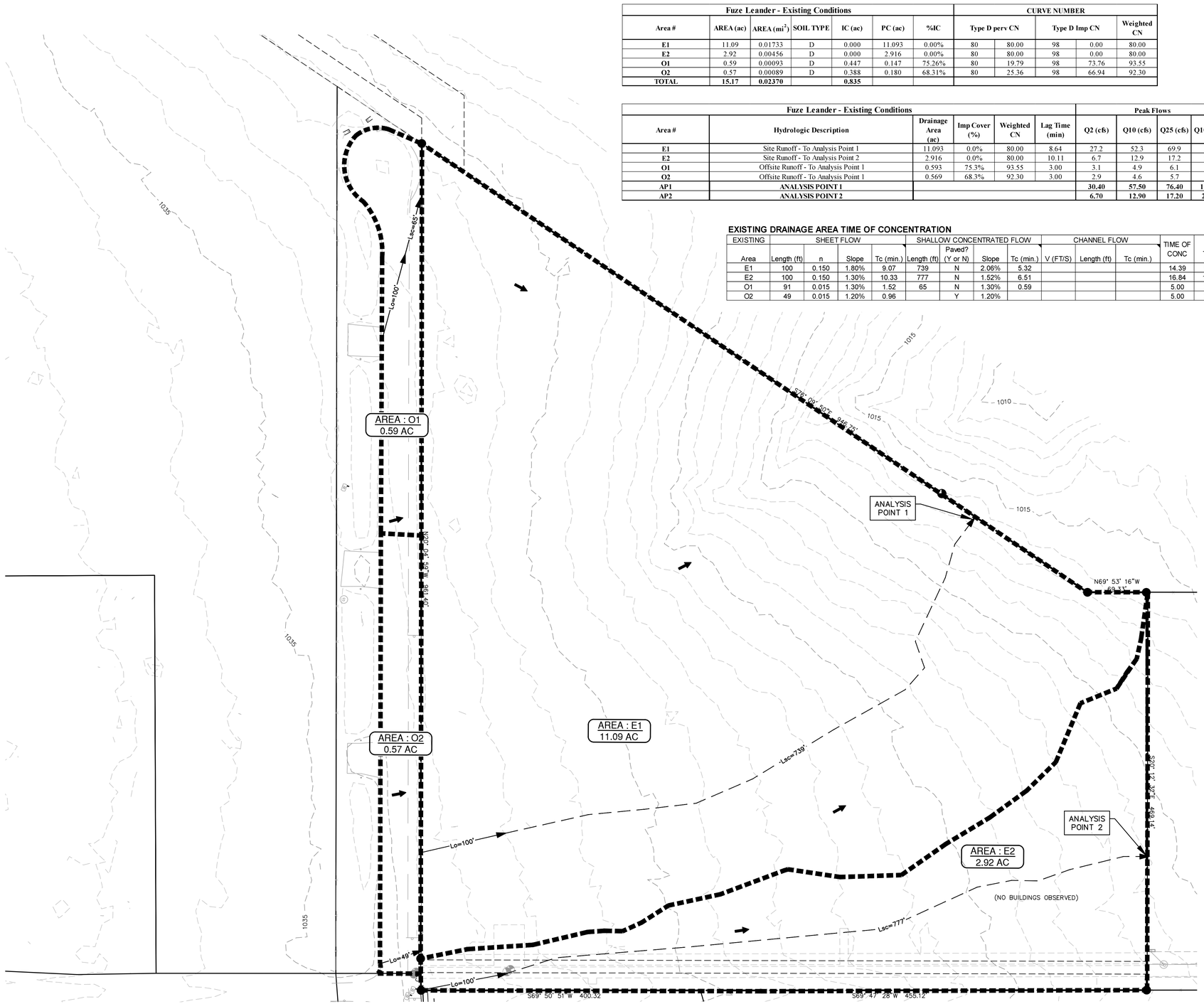
SD-23-0162

Fuze Leander - Existing Conditions							CURVE NUMBER				
Area #	AREA (ac)	AREA (mi^2)	SOIL TYPE	IC (ac)	PC (ac)	%IC	Type D perv CN		Type D Imp CN		Weighted CN
E1	11.09	0.01733	D	0.000	11.093	0.00%	80	80.00	98	0.00	80.00
E2	2.92	0.00456	D	0.000	2.916	0.00%	80	80.00	98	0.00	80.00
O1	0.59	0.00093	D	0.447	0.147	75.26%	80	19.79	98	73.76	93.55
O2	0.57	0.00089	D	0.388	0.180	68.31%	80	25.36	98	66.94	92.30
TOTAL	15.17	0.02370		0.835							

Fuze Leander - Existing Conditions						Peak Flows			
Area #	Hydrologic Description	Drainage Area (ac)	Imp Cover (%)	Weighted CN	Lag Time (min)	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)
E1	Site Runoff - To Analysis Point 1	11.093	0.0%	80.00	8.64	27.2	52.3	69.9	99.8
E2	Site Runoff - To Analysis Point 2	2.916	0.0%	80.00	10.11	6.7	12.9	17.2	24.6
O1	Offsite Runoff - To Analysis Point 1	0.593	75.3%	93.55	3.00	3.1	4.9	6.1	8.1
O2	Offsite Runoff - To Analysis Point 1	0.569	68.3%	92.30	3.00	2.9	4.6	5.7	7.7
AP1	ANALYSIS POINT 1					30.40	57.50	76.40	108.60
AP2	ANALYSIS POINT 2					6.70	12.90	17.20	24.60

EXISTING DRAINAGE AREA TIME OF CONCENTRATION

EXISTING	SHEET FLOW				SHALLOW CONCENTRATED FLOW				CHANNEL FLOW			TIME OF CONC	LAG TIME
Area	Length (ft)	n	Slope	Tc (min.)	Length (ft)	Paved? (Y or N)	Slope	Tc (min.)	V (FT/S)	Length (ft)	Tc (min.)		
E1	100	0.150	1.80%	9.07	739	N	2.06%	5.32				14.39	8.64
E2	100	0.150	1.30%	10.33	777	N	1.52%	6.51				16.84	10.11
O1	91	0.015	1.30%	1.52	65	N	1.30%	0.59				5.00	3.00
O2	49	0.015	1.20%	0.96		Y	1.20%					5.00	3.00



SCALE: 1"= 60'

0' 60' 120' 180'

LEGEND

- DRAINAGE BOUNDARY
- PROPERTY BOUNDARY
- EASEMENT LINE
- 760 EXISTING CONTOUR LINE
- 760 PROPOSED CONTOUR LINE
- Lo=100' OVERLAND FLOW
- Lsc=100' SHALLOW CONCENTRATED FLOW
- DIRECTION OF FLOW

GENERAL NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT ONE (1) FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING FIELD DATA COLLECTED ON OR ABOUT JULY 2021.

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

EXISTING OVERALL DRAINAGE AREA MAP

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 24 of 55

Date: Mar 29, 2024, 9:41am User ID: jrobinson
File: H:\Projects\51283\83\01\301 Construction Documents\Civil\EX0R51283-01.dwg
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

Fuze Leander - Proposed Conditions							CURVE NUMBER				
Area #	AREA (ac)	AREA (mi^2)	SOIL TYPE	IC (ac)	PC (ac)	%IC	Type D perv CN		Type D Imp CN		Weighted CN
P1	7.74	0.01210	D	4.846	2.895	62.60%	80	29.92	98	61.35	91.27
P2	5.08	0.00794	D	0.237	4.843	4.67%	80	76.27	98	4.57	80.84
O1	0.59	0.00093	D	0.540	0.053	91.07%	80	7.14	98	89.25	96.39
O2	0.57	0.00089	D	0.515	0.054	90.56%	80	7.55	98	88.75	96.30
TOTAL	13.98	0.02096		6.138							

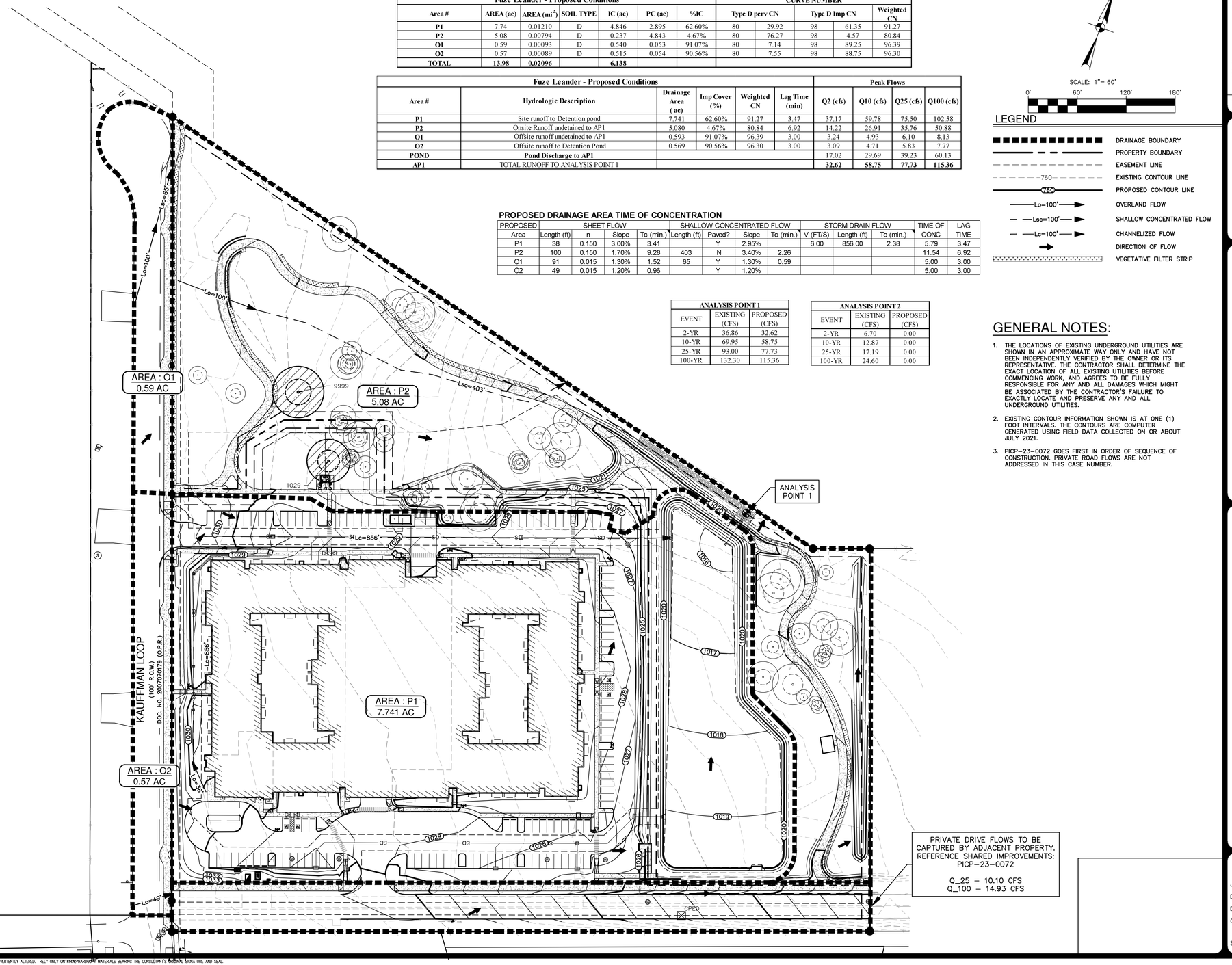
Fuze Leander - Proposed Conditions						Peak Flows			
Area #	Hydrologic Description	Drainage Area (ac)	Imp Cover (%)	Weighted CN	Lag Time (min)	Q2 (cfs)	Q10 (cfs)	Q25 (cfs)	Q100 (cfs)
P1	Site runoff to Detention pond	7.741	62.60%	91.27	3.47	37.17	59.78	75.50	102.58
P2	Onsite Runoff undetained to AP1	5.080	4.67%	80.84	6.92	14.22	26.91	35.76	50.88
O1	Offsite runoff undetained to AP1	0.593	91.07%	96.39	3.00	3.24	4.93	6.10	8.13
O2	Offsite runoff to Detention Pond	0.569	90.56%	96.30	3.00	3.09	4.71	5.83	7.77
POND	Pond Discharge to AP1					17.02	29.69	39.23	60.13
AP1	TOTAL RUNOFF TO ANALYSIS POINT 1					32.62	58.75	77.73	115.36

PROPOSED DRAINAGE AREA TIME OF CONCENTRATION

PROPOSED	SHEET FLOW				SHALLOW CONCENTRATED FLOW				STORM DRAIN FLOW			TIME OF	LAG
Area	Length (ft)	n	Slope	Tc (min.)	Length (ft)	Paved?	Slope	Tc (min.)	V (FT/S)	Length (ft)	Tc (min.)	CONC	TIME
P1	38	0.150	3.00%	3.41		Y	2.95%		6.00	856.00	2.38	5.79	3.47
P2	100	0.150	1.70%	9.28	403	N	3.40%	2.26				11.54	6.92
O1	91	0.015	1.30%	1.52	65	Y	1.30%	0.59				5.00	3.00
O2	49	0.015	1.20%	0.96		Y	1.20%					5.00	3.00

ANALYSIS POINT 1		
EVENT	EXISTING (CFS)	PROPOSED (CFS)
2-YR	36.86	32.62
10-YR	69.95	58.75
25-YR	93.00	77.73
100-YR	132.30	115.36

ANALYSIS POINT 2		
EVENT	EXISTING (CFS)	PROPOSED (CFS)
2-YR	6.70	0.00
10-YR	12.87	0.00
25-YR	17.19	0.00
100-YR	24.60	0.00



SCALE: 1"= 60'

0' 60' 120' 180'

LEGEND

- DRAINAGE BOUNDARY
- PROPERTY BOUNDARY
- EASEMENT LINE
- 760 EXISTING CONTOUR LINE
- 760 PROPOSED CONTOUR LINE
- Lo=100' OVERLAND FLOW
- Lsc=100' SHALLOW CONCENTRATED FLOW
- Lc=100' CHANNELIZED FLOW
- DIRECTION OF FLOW
- VEGETATIVE FILTER STRIP

GENERAL NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT ONE (1) FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING FIELD DATA COLLECTED ON OR ABOUT JULY 2021.
3. PICP-23-0072 GOES FIRST IN ORDER OF SEQUENCE OF CONSTRUCTION. PRIVATE ROAD FLOWS ARE NOT ADDRESSED IN THIS CASE NUMBER.

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS

AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

PROPOSED OVERALL DRAINAGE AREA MAP

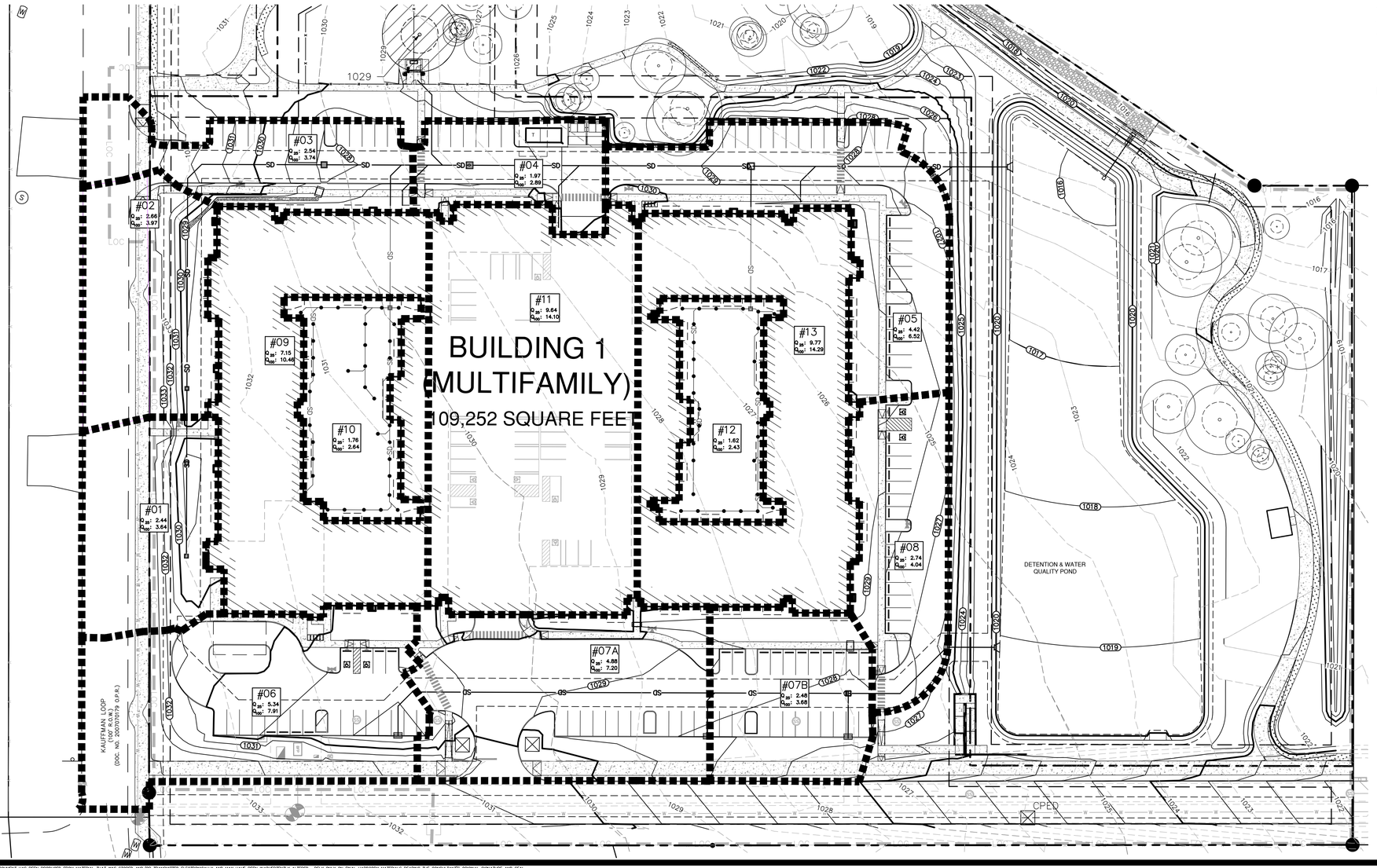
JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 25 of 55

Date: Mar 29, 2024, 9:41am User ID: jrobinson
File: H:\Projects\5120\83\01\301 Construction Documents\Civil\0851283-01.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S SEAL, SIGNATURE AND SEAL.

SD-23-0162

Drainage Area	Area (ac)	Percent Imp. Cover	Time of Concentration (min)	I (2-yr)	I (10-yr)	I (25-yr)	I (100-yr)	c (2-yr)	c (10-yr)	c (25-yr)	c (100-yr)	Q (2-yr)	Q (10-yr)	Q (25-yr)	Q (100-yr)
				inches per hour								cubic feet per second			
1	0.33	53.94%	5.00	6.14	9.19	11.30	15.00	0.54	0.61	0.65	0.74	1.09	1.85	2.44	3.64
2	0.36	52.67%	5.00	6.14	9.19	11.30	15.00	0.53	0.60	0.65	0.73	1.19	2.01	2.66	3.97
3	0.29	81.07%	5.00	6.14	9.19	11.30	15.00	0.66	0.74	0.79	0.87	1.16	1.94	2.54	3.74
4	0.21	91.35%	5.00	6.14	9.19	11.30	15.00	0.71	0.79	0.84	0.93	0.91	1.51	1.97	2.89
5	0.52	74.70%	5.00	6.14	9.19	11.30	15.00	0.63	0.71	0.76	0.84	2.01	3.36	4.42	6.52
6	0.66	66.77%	5.00	6.14	9.19	11.30	15.00	0.60	0.67	0.72	0.80	2.42	4.06	5.34	7.91
7A	0.58	73.32%	5.00	6.14	9.19	11.30	15.00	0.63	0.70	0.75	0.83	2.22	3.71	4.88	7.20
7B	0.32	62.08%	5.00	6.14	9.19	11.30	15.00	0.58	0.65	0.69	0.78	1.12	1.88	2.48	3.68
8	0.32	74.88%	5.00	6.14	9.19	11.30	15.00	0.63	0.71	0.76	0.84	1.25	2.09	2.74	4.04
9	0.72	100.00%	5.00	6.14	9.19	11.30	15.00	0.75	0.83	0.88	0.97	3.31	5.48	7.15	10.46
10	0.26	43.15%	5.00	6.14	9.19	11.30	15.00	0.49	0.56	0.60	0.68	0.78	1.33	1.76	2.64
11	0.97	100.00%	5.00	6.14	9.19	11.30	15.00	0.75	0.83	0.88	0.97	4.46	7.39	9.64	14.10
12	0.23	45.42%	5.00	6.14	9.19	11.30	15.00	0.50	0.57	0.61	0.69	0.72	1.22	1.62	2.43
13	0.98	100.00%	5.00	6.14	9.19	11.30	15.00	0.75	0.83	0.88	0.97	4.52	7.49	9.77	14.29



SCALE: 1"= 40'

0' 40' 80' 120'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- EXISTING WASTEWATER LINE
- PROPOSED EASEMENT LINE
- EXISTING WATER LINE
- EXISTING CONTOUR
- PROPOSED CONTOURS
- PROPOSED STORM DRAIN LINE
- PROPOSED FENCE
- PROPOSED GRATE INLET
- PROPOSED JUNCTION BOX
- PROPOSED CURB INLET–GRATE
- DRAINAGE AREA BOUNDARY

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT ONE (1) FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING FIELD SURVEY DATA FROM JULY 2021.
3. ROOF DOWNSPOUTS TO OUTFALL VIA SPLASH BLOCK ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED.
4. ALL PUBLIC STORM SEWER TO BE CLASS 5 CONCRETE. PRIVATE STORM SEWER WITH MORE THAN OR EQUAL TO 2 FEET OF SEPARATION FROM TOP OF PIPE TO SUBGRADE CAN BE HDPE PIPE OR EQUIVALENT. PRIVATE STORM SEWER PIPE WITH LESS THAN 2 FEET FROM TOP OF PIPE TO SUBGRADE, OR EQUAL TO OR GREATER THAN 48" PIPE, SHALL BE HP DUAL WALL OR CLASS 5 CONCRETE PIPE.

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS

AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

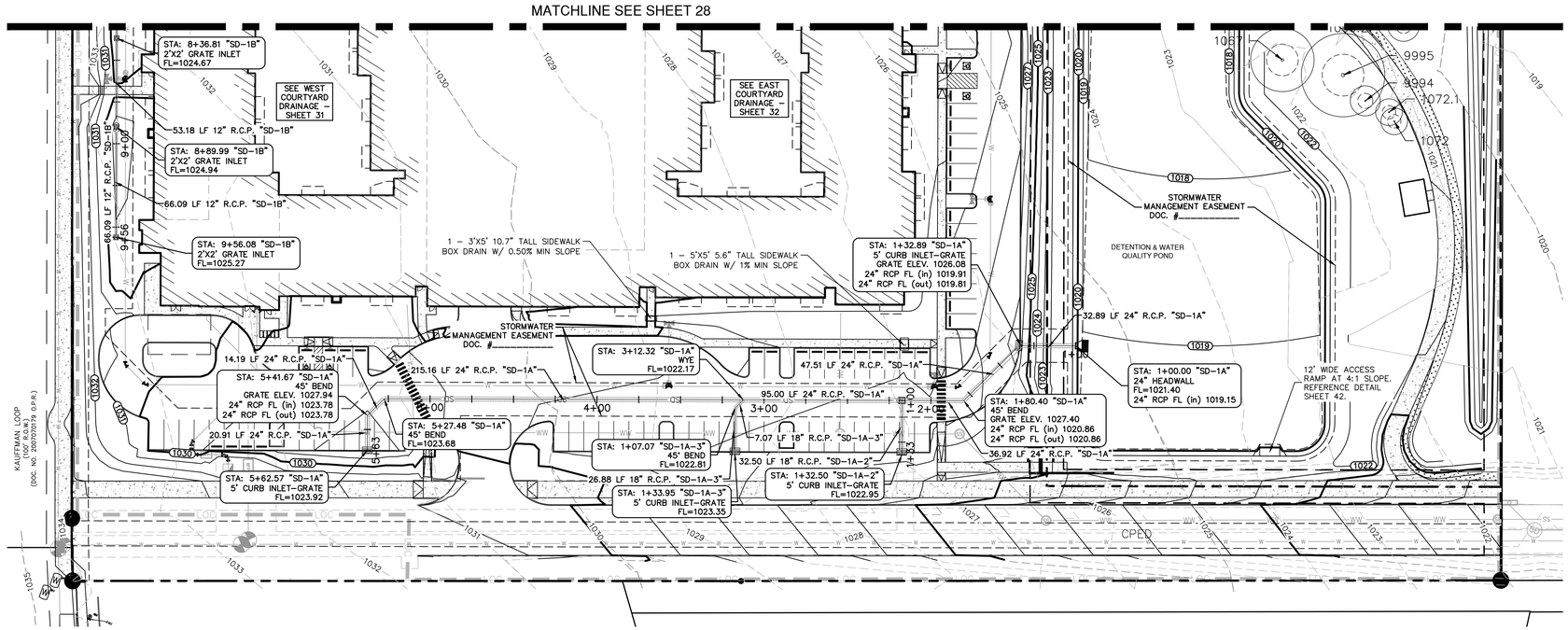
OVERALL STORM DRAIN PLAN

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 26 of 55

Date: Mar 29, 2024, 9:42am User ID: jrobinson
File: H:\Projects\512\283\01\301 Construction Documents\Civil\SDOA51283301.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162



SCALE: 1"= 40'

0' 40' 80' 120'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- EXISTING WASTEWATER LINE
- PROPOSED EASEMENT LINE
- EXISTING WATER LINE
- EXISTING CONTOUR
- PROPOSED CONTOURS
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED FENCE
- PROPOSED GRATE INLET
- PROPOSED JUNCTION BOX
- PROPOSED CURB INLET-GRATE

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT ONE (1) FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING FIELD SURVEY DATA FROM JULY 2021.
3. ROOF DOWNSPOUTS TO OUTFALL VIA SPLASH BLOCK ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED.
4. ALL PUBLIC STORM SEWER TO BE CLASS 5 CONCRETE. PRIVATE STORM SEWER WITH MORE THAN OR EQUAL TO 2 FEET OF SEPARATION FROM TOP OF PIPE TO SUBGRADE CAN BE HDPE PIPE OR EQUIVALENT. PRIVATE STORM SEWER PIPE WITH LESS THAN 2 FEET FROM TOP OF PIPE TO SUBGRADE, OR EQUAL TO OR GREATER THAN 48" PIPE, SHALL BE HP DUAL WALL OR CLASS 5 CONCRETE PIPE.

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

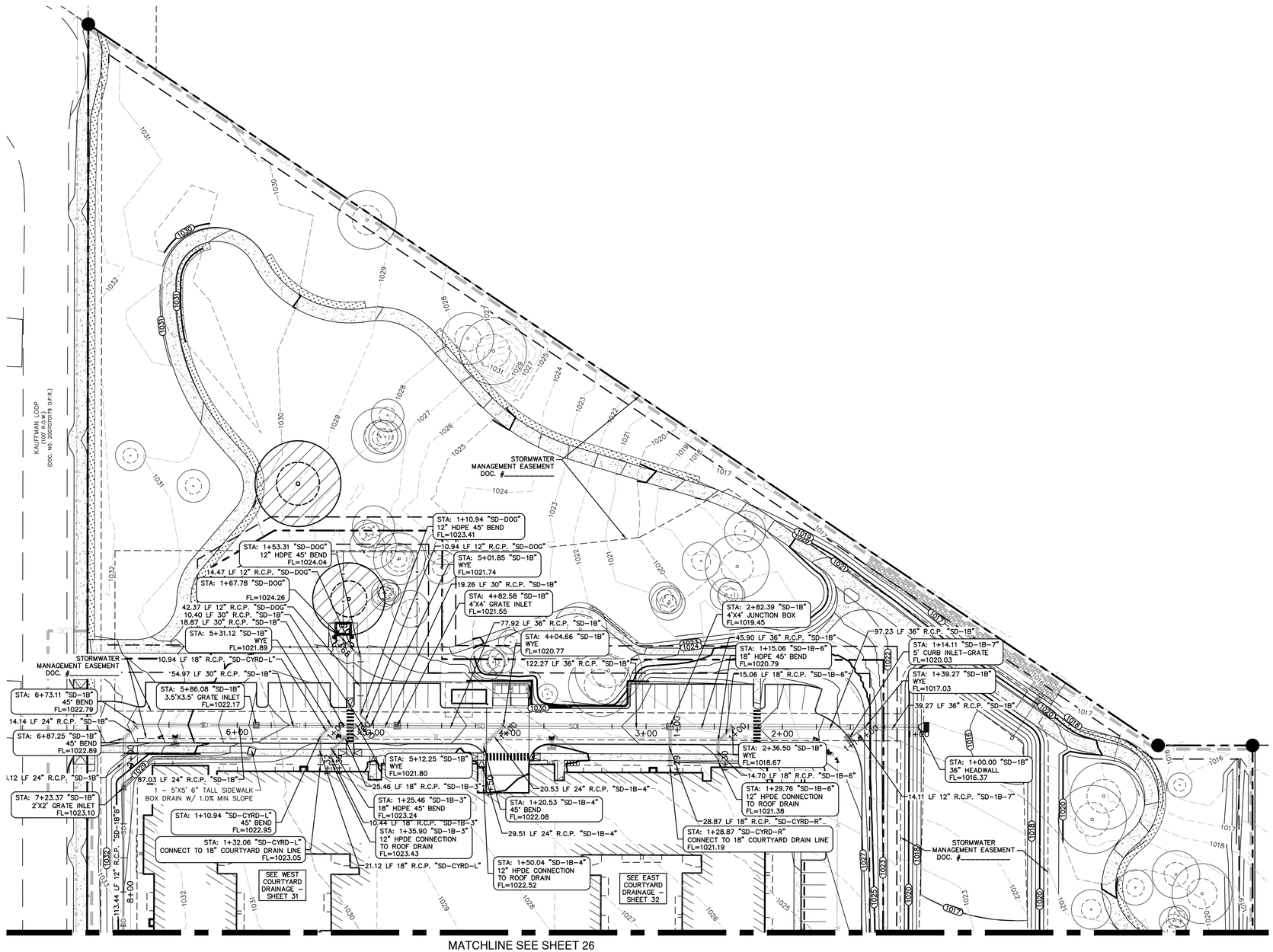
100 KAUFFMAN LOOP
LEANDER, TEXAS

STORM DRAIN PLAN (1 OF 2)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 26 of 55

SD-23-0162

Date: Mar 29, 2024, 9:42am User ID: jrobinson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\SD51283O1.dwg
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.



MATCHLINE SEE SHEET 26

SCALE: 1"= 40'

0' 40' 80' 120'

LEGEND

- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- EXISTING WASTEWATER LINE
- PROPOSED EASEMENT LINE
- EXISTING WATER LINE
- EXISTING CONTOUR
- PROPOSED CONTOURS
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED FENCE
- PROPOSED GRATE INLET
- PROPOSED JUNCTION BOX
- PROPOSED CURB INLET-GRATE

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT ONE (1) FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING FIELD SURVEY DATA FROM JULY 2021.
3. ROOF DOWNSPOUTS TO OUTFALL VIA SPLASH BLOCK ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED.
4. ALL PUBLIC STORM SEWER TO BE CLASS 5 CONCRETE. PRIVATE STORM SEWER WITH MORE THAN OR EQUAL TO 2 FEET OF SEPARATION FROM TOP OF PIPE TO SUBGRADE CAN BE HDPE PIPE OR EQUIVALENT. PRIVATE STORM SEWER PIPE WITH LESS THAN 2 FEET FROM TOP OF PIPE TO SUBGRADE, OR EQUAL TO OR GREATER THAN 48" PIPE, SHALL BE HP DUAL WALL OR CLASS 5 CONCRETE PIPE.

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

STORM DRAIN PLAN (2 OF 2)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 28 of 55

Date: Mar 29, 2024, 9:42am User ID: jhobson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\SD51283301.dwg
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

SCALE: 1" = 40'

0' 40' 80' 120'

LEGEND

- PROPERTY BOUNDARY
- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE
- CURB INLET
- JUNCTION BOX
- FIRE HYDRANT
- HEADWALL
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING SURFACE WATER

PROFILE SCALES:

1" = 40' HORIZONTAL
1" = 4' VERTICAL

PROFILE LEGEND:

NATURAL GROUND

FINISHED GRADE

PROPOSED STORM DRAIN

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

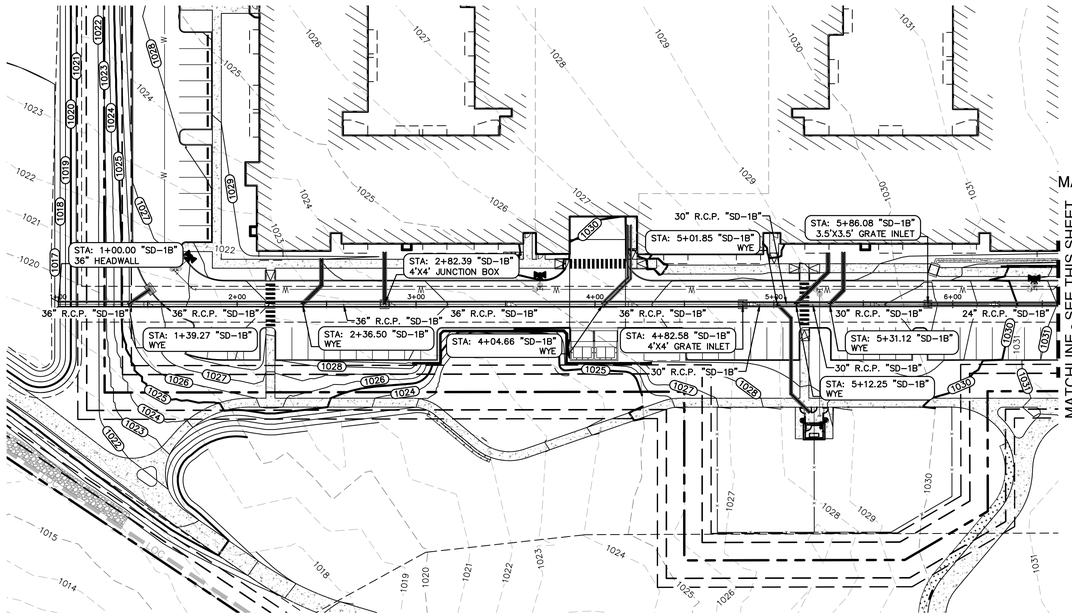
100 KAUFFMAN LOOP
LEANDER, TEXAS

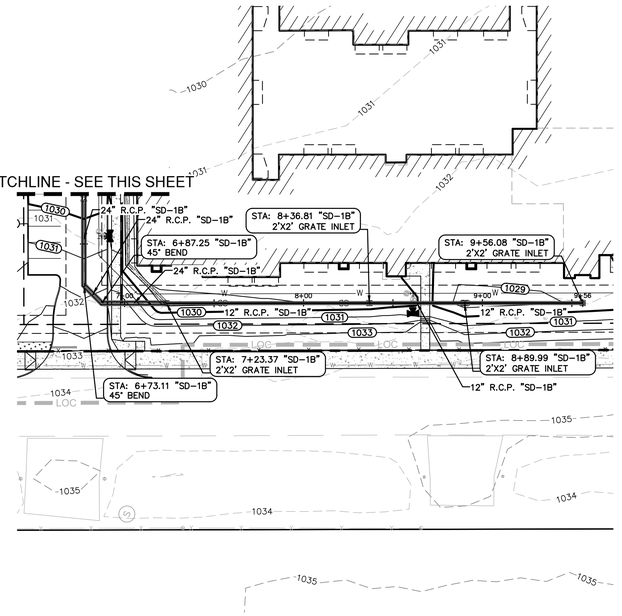
STORM DRAIN PLAN & PROFILE (1 OF 2)

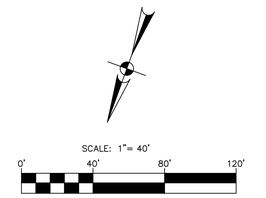
JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 29 of 55

Date: Mar 29, 2024, 9:43am User ID: jrobinson
File: I:\Projects\512\83\01\301 Construction Documents\Civil\SD-PP5128301.dwg
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

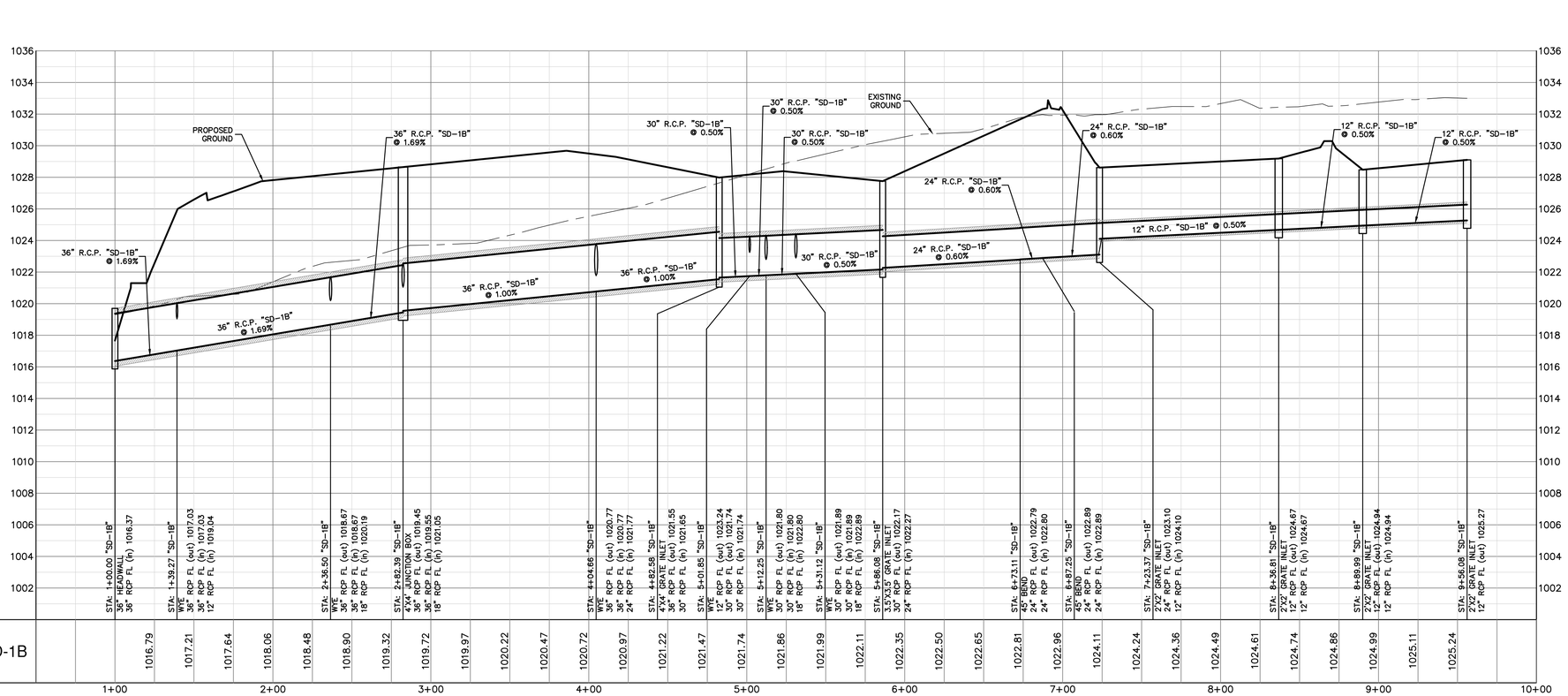






LEGEND

- PROPERTY BOUNDARY
- WATER LINE
- WASTEWATER LINE & MH
- STORM DRAIN LINE
- CURB INLET
- JUNCTION BOX
- FIRE HYDRANT
- HEADWALL
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING SURFACE WATER



PROFILE SCALES:

1" = 40' HORIZONTAL
1" = 4' VERTICAL

PROFILE LEGEND:

NATURAL GROUND

FINISHED GRADE

PROPOSED STORM DRAIN

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

STORM DRAIN PLAN & PROFILE (2 OF 2)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 30 of 55

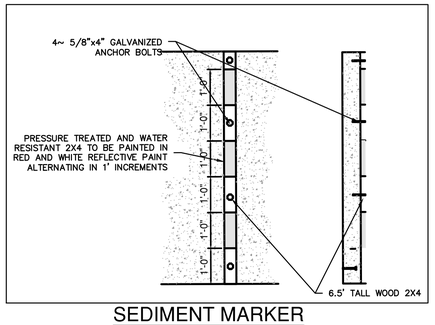
Date: Mar 29, 2024, 9:43am User ID: jrobinson
File: I:\Projects\512\83\01\301 Construction Documents\Civil\SD-PP51283301.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

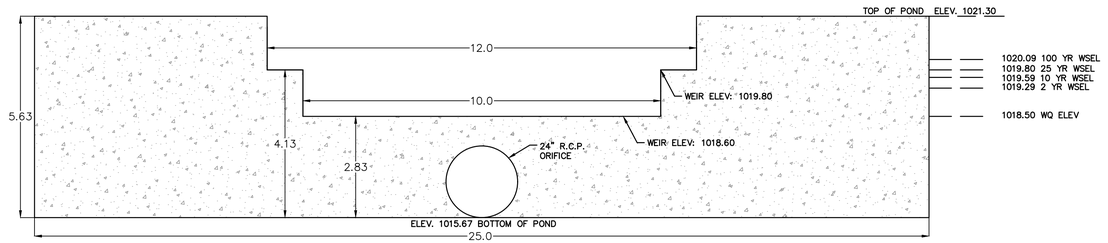
Table 3-6 Clay Liner Specifications (COA, 2004)

Property	Test Method	Unit	Specification
Permeability	ASTM D-2434	cm/sec	1×10^{-6}
Plasticity Index of Clay	ASTM D-423 & D-424	%	Not less than 15
Liquid Limit of Clay	ASTM D-2216	%	Not less than 30
Clay Particles Passing	ASTM D-422	%	Not less than 30
Clay Compaction	ASTM D-2216	%	95% of Standard Proctor Density



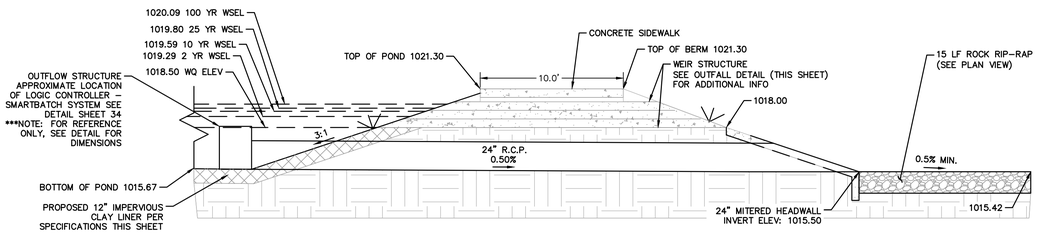
SEDIMENT MARKER

NOT TO SCALE



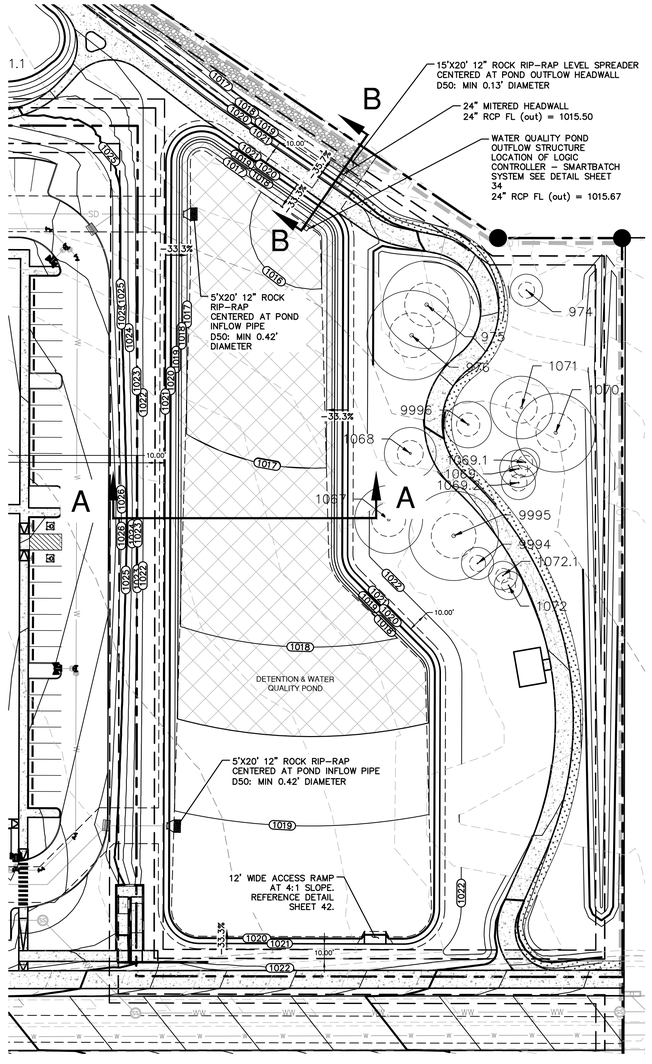
DETENTION POND WEIR

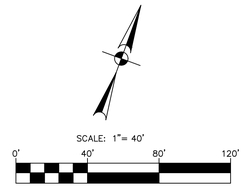
1" = 2'



DETENTION POND OUTFALL SECTION B-B

1" = 5'





LEGEND

- PROPERTY LINE
- SD — PROPOSED STORM DRAIN LINE
- 790 — PROPOSED CONTOUR LINE
- 790 — EXISTING CONTOUR LINE
- LIMITS OF CLAY LINER RE: CLAY LINER SPEC. THIS SHEET

NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT ONE (1) FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING FIELD DATA COLLECTED ON OR ABOUT JULY 2021.
3. WATERSTOPS SHALL BE PROVIDED DURING CONSTRUCTION OF EXPANSION JOINTS IN RETAINING WALLS PER STANDARD SPECIFICATION 414S, CONCRETE RETAINING WALLS.
4. ALL FILL AREAS SHALL BE COMPACTED TO 95% PRIOR TO UTILITY INSTALLATION.
5. WEIR COEFFICIENT WAS ASSUMED TO BE 3.0 FOR THE PURPOSES OF HEC-HMS MODELING.
6. 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 OR CLAD IN STONE AS LISTED ABOVE OR TEXTURED AND TINTED IN EARTHERN COLORS. IN THE EVENT THAT THE DRAINAGE FACILITY IS BELOW GRADE, STRUCTURAL STABILIZATION IS PERMITTED FOR THE FULL PERIMETER AND SCREENING REQUIREMENTS LISTED IN ARTICLE VI, SECTION 1 (D) OF THE CITY OF LEANDER CODE OF ORDINANCES SHALL APPLY.

POND RIP-RAP:

D50 CALCULATION:
V = 8.74 FPS

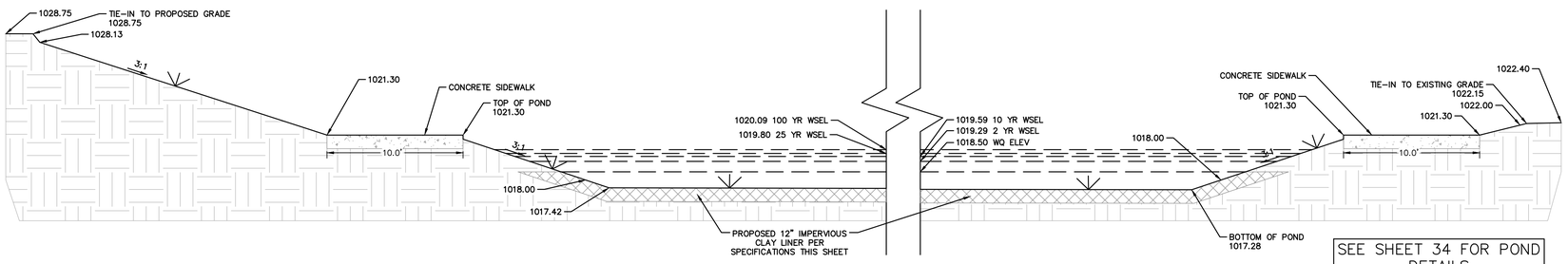
D50 = 0.0105 * (V)^2.06
D50 = 0.0105 * (8.74)^2.06
D50 = 0.91 FT

D50 CALCULATION:
V = 3.43 FPS

D50 = 0.0105 * (V)^2.06
D50 = 0.0105 * (3.43)^2.06
D50 = 0.13 FT

V = 5.97 FPS

D50 = 0.0105 * (V)^2.06
D50 = 0.0105 * (5.97)^2.06
D50 = 0.42 FT



SECTION A-A

1" = 5'

SEE SHEET 34 FOR POND DETAILS

NO. REVISION | DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10

100 KAUFFMAN LOOP
LEANDER, TEXAS

POND PLAN

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 33 of 55

Date: Mar 29, 2024, 9:43am User ID: jrobison
Files: H:\Projects\51283.01\301 Construction Documents\Civil\PD51283301.dwg
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

DETENTION POND						
Elev. (ft)	Depth (ft)	Pr. Area (ft²)	Area (ac)	Incremental Volume (ft³)	Cumulative Volume (ft³)	Notes
1015.67	0	0	0.00000	0	0	
1016.00	0.33	1,481	0.03400	244	244	
1017.00	1.00	11,979	0.27500	6730	6974	
1018.00	1.00	22,564	0.51800	17272	24246	
1018.50	0.50	30,448	0.69899	13253	37499	WQ Volume
1019.00	0.40	38,681	0.88799	17282	54781	
1020.00	1.00	50,747	1.16499	44714	99495	
1020.23	0.23	51,412	1.18026	10216	109711	100-YR WSEL
1021.00	0.77	54,099	1.24194	42204	151915	Top of Pond

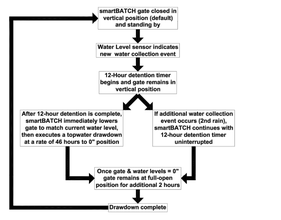
DETENTION POND WSEL	
2 YEAR	1019.29
10 YEAR	1019.59
25 YEAR	1019.80
100 YEAR	1020.09

Detention Pond Routing				
Return Event	Peak In-Flow (CFS)	Peak Out-Flow (CFS)	Max Water Surface Elevation (ft)	Max Storage (Ac-ft)
2	40.26	17.02	1019.29	0.69
10	64.50	29.69	1019.59	1.00
25	81.33	39.23	1019.80	1.21
100	110.35	60.13	1020.09	1.53

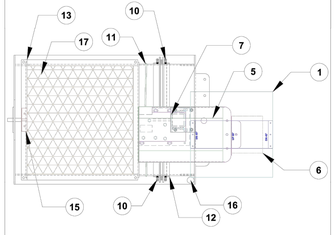
WQ POND						
BATCH DETENTION POND						
Elev. (ft)	Depth (ft)	Pr. Area (ft²)	Area (ac)	Incremental Volume (ft³)	Cumulative Volume (ft³)	Notes
1,015.67	0.00	0	***0.000000***	0	0	
1,016.00	0.33	1,481	***0.033999***	244	244	
1,017.00	1.00	11,979	***0.275000***	6,730	6,974	
1,018.00	1.00	22,564	***0.517998***	17,272	24,246	
1,018.50	0.50	30,448	***0.698990***	13,253	37,499	WQ Volume

WATER QUALITY SUMMARY TABLE	
Required WQ Volume (80% removal) (ft^3)	33,941
Provided WQ Volume (ft^3)	37,499

PROGRAMMABLE LOGIC FLOW CHART

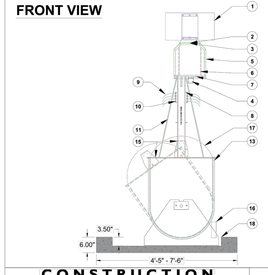


TOP VIEW

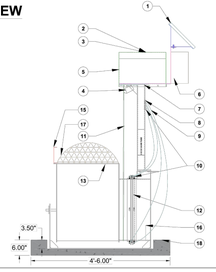


Parts List	
Item	smartBATCH Components
1	12 V SOLAR PANEL WITH 30 WATT CHARGING CAPACITY
2	ANTENNA (NOT DISPLAYED)
3	CELL DATA MODEM (NOT DISPLAYED)
4	CAMERA
5	WEATHERPROOF ELECTRONIC BOX
6	CONTROL BOX
7	PEDESTAL
8	REMOTE GREASE MANIFOLD
9	GREASE TUBES
10	GREASE FITTINGS
11	3/16" Galvanized Cables
12	24" Rotary Valve
13	24" Drum
14	Outlet Pipe (Size TBD By Engineer, Max 24")
15	Inclinometer
16	Level Transducer
17	Beehive Grate
18	6" Concrete Pad (By Others, Size Varies)

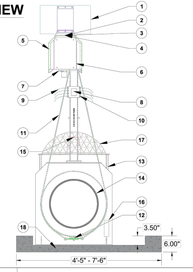
FRONT VIEW



SIDE VIEW



BACK VIEW



CONSTRUCTION ECO SERVICES

smartBATCH Automated Batch Detention Systems

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

CONVERGENT WATER TECHNOLOGIES

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Fuze Leander

Date Prepared: 10/24/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 — Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 28.93(A_N \times P)$

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

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

County =	Williamson		
Total project area included in plan * =	14.00	acres	Total Lot Area
Predevelopment impervious area within the limits of the plan * =	0.00	acres	
Total post-development impervious area within the limits of the plan* =	5.48	acres	Total Lot IC
Total post-development impervious cover fraction * =	0.39		
P =	32	inches	
$L_{M\ TOTAL\ PROJECT}$ =	5073	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. = 1

Total drainage basin/outfall area =	8.39	acres	O2+P1
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres	
Post-development impervious area within drainage basin/outfall area =	5.52	acres	IC(O2+P1)
Post-development impervious fraction within drainage basin/outfall area =	0.66		
$L_{M\ THIS\ BASIN}$ =	5106	lbs.	

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Batch Detention Pond
Removal efficiency = 91 percent

- Aqualogic Cartridge Filter
- Bioretention
- Contech StormFilter
- Constructed Wetland
- Extended Detention
- Grassy Swale
- Retention / Irrigation
- Sand Filter
- Stormceptor
- Vegetated Filter Strips
- Vortechs
- Wet Basin
- Wet Vault

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:
- A_C = Total On-Site drainage area in the BMP catchment area
- A_I = Impervious area proposed in the BMP catchment area
- A_P = Pervious area remaining in the BMP catchment area
- L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	8.39	acres
A_I =	5.52	acres
A_P =	2.88	acres
L_R =	5602	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	5106	lbs.
F =	0.91	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 — Pages 3-34 to 3-36

Rainfall Depth =	1.80	inches
Post Development Runoff Coefficient =	0.47	
On-site Water Quality Volume =	25537	cubic feet

Calculations from RG-348 — Pages 3-36 to 3-37

Off-site area draining to BMP =	0.57	acres
Off-site Impervious cover draining to BMP =	0.52	acres
Impervious fraction of off-site area =	0.90	
Off-site Runoff Coefficient =	0.74	
Off-site Water Quality Volume =	2748	cubic feet
Storage for Sediment =	5657	cubic feet
Total Capture Volume (required water quality volume(s) x 1.20) =	33941	cubic feet

NO.	REVISION	DATE

STATE OF TEXAS — SHELLY MITCHELL — 103662 — LICENSED PROFESSIONAL ENGINEER

04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

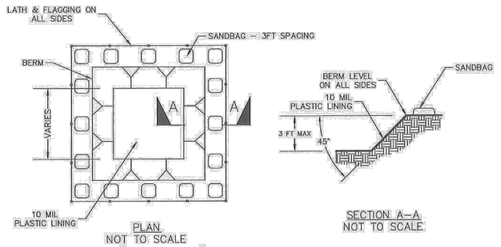
POND CALCULATIONS & DETAILS

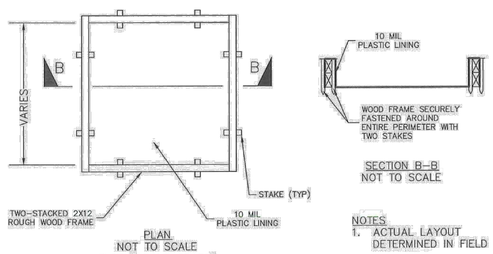
JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 34 of 55

Date: Mar 29, 2024, 9:43am User ID: jrobinson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\P05128301.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

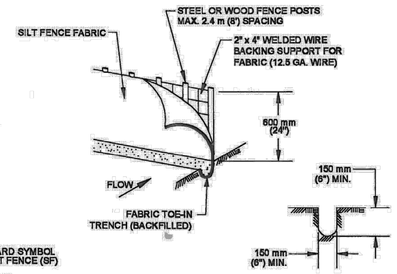




NOTES
1. ACTUAL LAYOUT DETERMINED IN FIELD

STATE OF TEXAS
WAYNE S. WATTS
89134
LICENSED
PROFESSIONAL ENGINEER
Wayne S. Watts
01/30/15

City Of Leander, Texas
303-1
CONCRETE WASHOUT

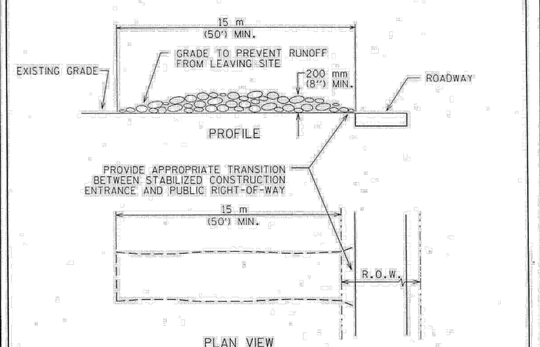


STANDARD SYMBOL FOR SILT FENCE (SF)

SF

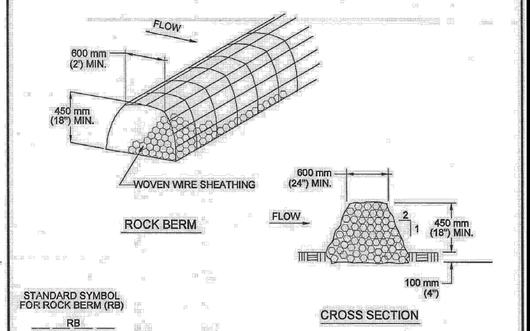
1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 Inches) DEPTH, USE STEEL POSTS.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED 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	
ADOPTED 9/1/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-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	
ADOPTED 5/23/06	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1



STANDARD SYMBOL FOR ROCK BERM (RB)

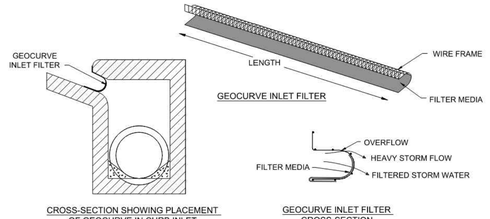
RB

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	
ADOPTED 8/24/2010	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S-1

GeoSolutions, Inc. — Product Data Sheet
GeoCurve Inlet Filter

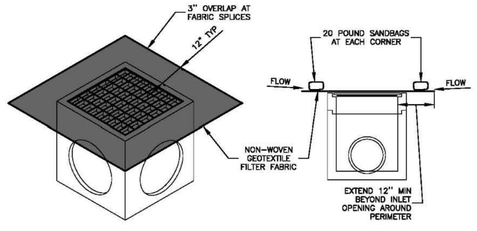
The GeoCurve Inlet Filter is a stormwater filter for placement into a stormwater curb inlet for the purpose of capturing debris and sediment that is transported by stormwater runoff. The device is comprised of a filter media (woven monofilament filter fabric) affixed to the lower portion of a "C" shaped 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

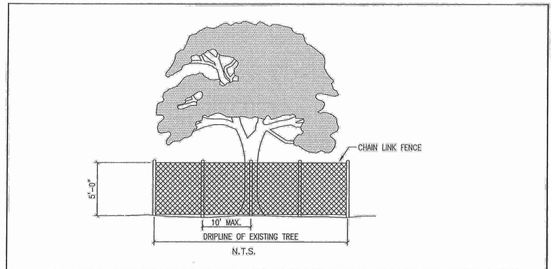
PROPERTY	ASTM TEST METHOD	VALUE	C.O.A. REQ'T
Fabric Weight	D 3776	4.5 oz/sy	3 oz/sy
Grab Tensile Strength	D 4632	170 lbs	----
Mullen Burst Strength	D 3786	410 lbs/sq in	120 lbs/sq in
UV Stability	D 4355	80 %	70 %
Water Flow Rate	D 4491	325 gal/min/sf	275 gal/min/sf

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



NOTES:
1. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
2. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY CLEAN THE INLET PROTECTION IF EXCESSIVE PONDING OCCURS.
3. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS	CITY OF ROUND ROCK	DRAWING NO: EC-15
APPROVED 03-25-11 DATE	AREA INLET PROTECTION DETAIL	ROUND ROCK, TEXAS
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		



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
89134
LICENSED
PROFESSIONAL ENGINEER
Wayne S. Watts
08/21/15

City Of Leander, Texas
303-2
TREE PROTECTION

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024
Shelly Mitchell

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

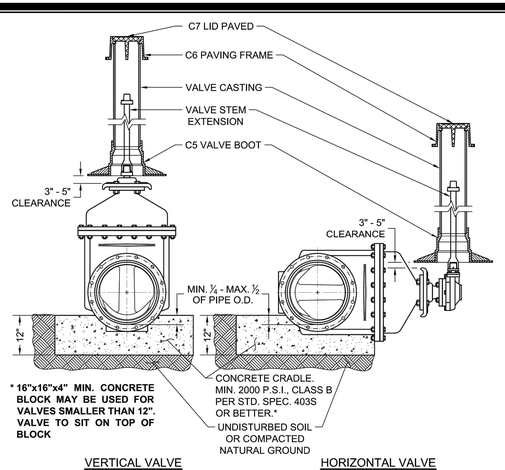
EROSION & SEDIMENTATION CONTROL DETAILS

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 35 OF 55

Date: Mar 29, 2024, 9:44am User ID: jrobinson
File: H:\Projects\512\83\01\30\ Construction Documents\Civil\D75128301.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162



VERTICAL VALVE

HORIZONTAL VALVE

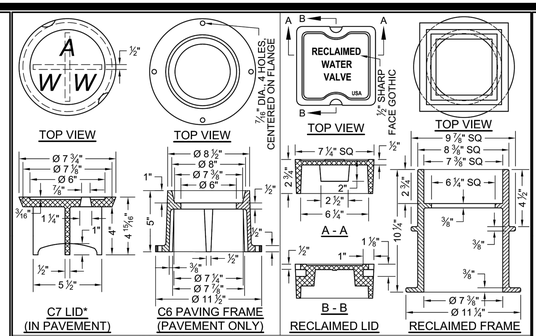
ONLY TO BE USED WHEN CALLED OUT ON THE DRAWINGS.

NOTES:

1. WELD SOCKET 2½" x 2" DEEP TO 1" SCH. 40 CARBON STEEL ROUND STEM EXTENSION, FITTED ON OPERATING NUT, [SCH. 80 FOR LENGTHS OVER 10'.]
2. VALVE CASTING SHALL BE 6" DI PIPE WITH BELL OR COLLAR CENTERED OVER VALVE BOOT.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
4. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 12" AND 18" FROM FINISHED GRADE.

RECLAIMED WATER: ALL RECLAIMED PVC PIPE SHALL BE MANUFACTURED PURPLE PIPE. HDPE PIPE SHALL BE MANUFACTURED WITH PURPLE STRIPES. ALL OTHER PIPE AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL PIPE AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE **"RECLAIMED WATER"** CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 1 OF 4



NOTES:

1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID, FRAME, COLLAR AND BASE.
3. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
4. CASTING FINISH BY MANUFACTURER SHALL INCLUDE REMOVAL OF FINS AND FLASHING, AND PAINT WITH BLACK ASPHALT COATING.

WEIGHTS:

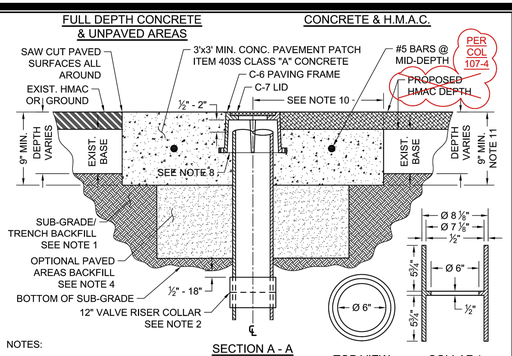
C7 LID: 13 LBS
RECLAIMED LID: 15 LBS
C6 FRAME: 23 LBS
RECLAIMED FRAME: 33 LBS
C5 BASE: 78 LBS

* LETTERING SHALL BE 1 ½" 2 PICK BAR SLOTS REQUIRED

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 2 OF 4

FULL DEPTH CONCRETE & UNPAVED AREAS

CONCRETE & H.M.A.C.



NOTES:

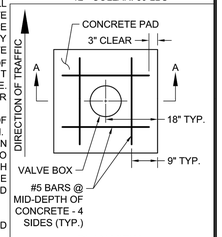
1. SUB-GRADE/TRENCH BACKFILL SHALL BE COMPACTED AS PER ITEM 201S, SUB-GRADE PREPARATION.
2. TO ADJUST VALVE CASTINGS TO FINAL GRADE, REMOVE RISER PIPE BELOW SUB-GRADE AND INSTALL APPROPRIATE LENGTH OF NEW RISER PIPE TO ACHIEVE FINAL GRADE. CONNECT THE TWO PIECES OF RISER PIPE WITH A 6" COLLAR MIN. 12" LENGTH APPROXIMATELY CENTERED ON THE JOINT WITH THE TOP OF SLEEVE LOCATED ½" - 18" BELOW SUB-GRADE. THE INSIDE "LIP" OF COLLAR TO BE PAINTED WITH FLUORESCENT WHITE PAINT OR COVERED WITH FLUORESCENT WHITE TAPE. ALTERNATE: FOR OPTIONAL SINGLE PIECE RISER INSTALLATION SEE SHEET 4 OF 4.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE NUT OF THE VALVE; NUT SHALL OPERATE WITH NO OBSTRUCTION.
4. WHERE CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20" DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL (SPEC. ITEM 402S) TO THE UNDERSIDE OF THE CONCRETE. PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
5. REINFORCING STEEL SHALL MEET SPEC. ITEM 406S.7.
6. NO MORE THAN 2 SECTIONS OF PIPE SHALL BE USED FROM VALVE TO FINAL GRADE.
7. BELL AND SPIGOT IS ACCEPTABLE FOR DEPTH OVER 18'.

SECTION A - A

TOP VIEW COLLAR *

12" VALVE RISER COLLAR

* 12" COLLAR: 39 LBS

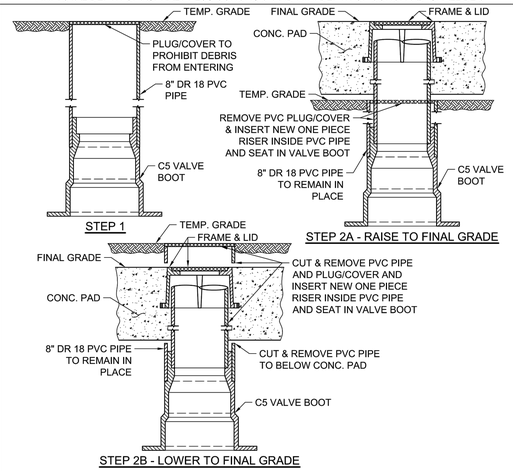


PLAN VIEW

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 3 OF 4

NOTES (CON'T):

8. PAVING FRAME SHALL BE FLUSH WITH THE CONC. PAD AND PLACED ½" - 2" ABOVE RISER PIPE (FRAME SHALL NOT REST ON RISER.)
9. IN UNPAVED AREAS, INSTALL ONE DELINEATOR STAKE IMMEDIATELY ADJACENT TO THE EDGE OF THE CONCRETE PAD. DELINEATOR SHALL BE BLUE FOR POTABLE WATER AND PURPLE FOR RECLAIMED WATER AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE IN COLOR, TYPE I REFLECTIVE TAPE MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES.
10. VALVE SHALL TYPICALLY BE CENTERED IN CONCRETE DIAMOND BUT MAY BE OFFSET WITH A MIN. OF 12" FROM CENTER OF VALVE LID TO EDGE OF CONCRETE IN ALL DIRECTIONS.
11. MIN. TOTAL DEPTH OF ASPHALT PLUS CONC. IS 9" AND MIN. DEPTH OF CONC. PAD SHALL BE 5"



OPTIONAL ONE PIECE VALVE CASTING INSTALLATION

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-01 4 OF 4

NO. | REVISION | DATE

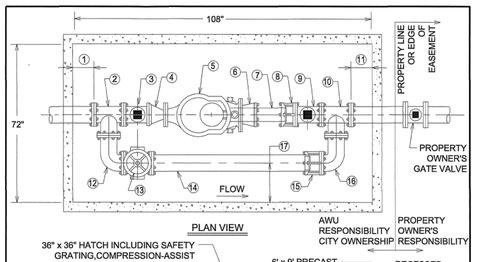
STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

UTILITY DETAILS (1 OF 3)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 39 OF 55



CITY OF AUSTIN AUSTIN WATER UTILITY	3", 4" AND 6" COMPOUND & TURBINE METER INSTALLATIONS	
Kathi L Flowers 11/19/2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-06 1 OF 2

LARGE METER INSTALLATIONS

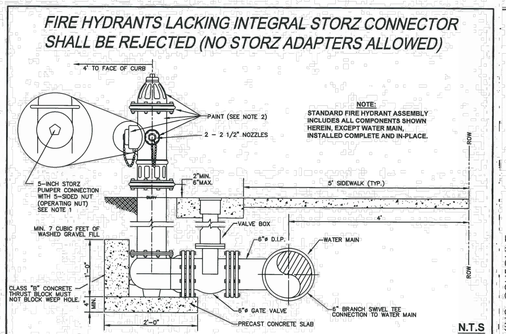
DIMENSIONS IN INCHES		3" TURBINE	3" COMPOUND	4" TURBINE	4" COMPOUND	6" TURBINE	6" COMPOUND
No.	**METER LINE**	4" BYPASS	4" BYPASS	4" BYPASS	4" BYPASS	6" BYPASS	6" BYPASS
1	CLEARANCE FROM VALVE WALL TO TEE	8"	8"	12"	12"	6"	6"
2	FLANGED TEE	13"	13"	13"	13"	16"	16"
3	COA GATE VALVE SQUARE NUT	9"	9"	9"	9"	10 1/2"	10 1/2"
4	3" X 4" FLANGED REDUCER (3" METER ONLY)	7"	7"	–	–	–	–
5	METER	17"	19"	20"	23"	24"	27"
6	3" X 4" FLANGED REDUCER (3" METER ONLY)	7"	7"	–	–	–	–
7+8	⑦ FLANGED X PLAIN END DI PIPE + ⑧ RESTRAINED FLANGE COUPLING ADAPTER (RFCA) OR ⑦ FLANGE X DI PIPE + ⑧ DISMANTLING JOINT (DJ)	17"	15"	20"	17"	19"	16"
9	COA GATE VALVE SQUARE NUT	9"	9"	9"	9"	10 1/2"	10 1/2"
10	FLANGED TEE	13"	13"	13"	13"	16"	16"
11	CLEARANCE FROM INSIDE WALL TO TEE	8"	8"	12"	12"	6"	6"
	TOTAL (INCHES)	108.0"	108.0"	108.0"	108.0"	108.0"	108.0"
	BYPASS LINE						
1	CLEARANCE FROM INSIDE WALL TO TEE	8"	8"	12"	12"	6"	6"
	1/2 TEE	6 1/2"	6 1/2"	6 1/2"	6 1/2"	8"	8"
12	FLANGED 90° ELBOW	6 1/2"	6 1/2"	6 1/2"	6 1/2"	8"	8"
13	BYPASS GATE VALVE WITH HAND WHEEL	9"	9"	9"	9"	10 1/2"	10 1/2"
14+15	⑭ FLANGED X PLAIN END DI PIPE + ⑮ RESTRAINED FLANGE COUPLING ADAPTOR (RFCA) OR ⑭ FLANGE X FLANGE DI PIPE + ⑮ DISMANTLING JOINT (DJ)	57"	57"	49"	49"	53 1/2"	53 1/2"
16	FLANGED 90° ELBOW	6 1/2"	6 1/2"	6 1/2"	6 1/2"	8"	8"
	1/2 TEE	6 1/2"	6 1/2"	6 1/2"	6 1/2"	8"	8"
11	CLEARANCE FROM VALVE WALL TO TEE	8"	8"	12"	12"	6"	6"
	TOTAL (INCHES)	108.0"	108.0"	108.0"	108.0"	108.0"	108.0"
17	CLEARANCE FROM INSIDE WALL TO CENTER OF BYPASS LINE	23"	23"	23"	23"	20"	20"

NOTES:

1. METER VAULT MUST BE PLACED AT THE PROPERTY LINE WITHIN PUBLIC RIGHT-OF-WAY OR WITHIN A DEDICATED WATER METER EASEMENT. METER SHALL NOT BE PLACED IN THE PATH OF VEHICULAR TRAFFIC INCLUDING ROADWAYS, DRIVEWAYS AND PARKING LOTS. METERS MAY NOT BE PLACED IN SIDEWALKS UNLESS SPECIFICALLY APPROVED BY AUSTIN WATER. METERS MUST BE ACCESSIBLE TO SERVICE VEHICLES AND SHALL NOT BE ENCLOSED WITHIN PROPERTY FENCES.
2. ALL PIPE AND FITTINGS FROM MAIN TO CUSTOMER VALVE SHALL BE RESTRAINED.
3. FACTORY NOTCHES WHERE PIPING GOES THROUGH VAULT WALL SHALL BE FILLED WITH NON-SHRINK GROUT PER SPL NO. WW-704A.

CITY OF AUSTIN AUSTIN WATER UTILITY	3", 4" AND 6" COMPOUND & TURBINE METER INSTALLATIONS	
Kathi L Flowers 11/19/2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-06 2 OF 2

FIRE HYDRANTS LACKING INTEGRAL STORZ CONNECTOR SHALL BE REJECTED (NO STORZ ADAPTERS ALLOWED)



N.T.S

NOTES:

1. FIRE HYDRANT SHALL BE CLOW MEDALLION F2545, AMERICAN DARLING B-84-B-5, MUELLER SUPER CENTURION, EJ 5CD250 WATERMASTER, KENNEDY K81D GUARDIAN, AVK 2780, OR APPROVED EQUAL VIA SUBMITTAL PROCESS. THE PRIMARY FEATURES REQUIRED INCLUDE: FACTORY INSTALLED INTEGRAL 5-INCH STORZ PUMPER NOZZLE; 1.5-INCH PENT OPERATING NUT ON NOZZLE CAP; OPEN LEFT; FACTORY PAINTED.
2. HYDRANTS SHALL BE FACTORY PAINTED WITH FLYNT ALUMINUM SILVER PAINT OR SHERWIN WILLIAMS SILVER B59S11. HYDRANTS WILL NOT BE ACCEPTED IF PAINTED AFTER DELIVERY OR IF PAINT IS FLAT IN APPEARANCE.
3. ALL DUCTILE OR CAST IRON FITTINGS AND/OR PIPE SHALL BE POLYWRAPPED.
4. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE. ALL FITTINGS SHALL BE EQUIPPED WITH JOINT RESTRAINT "MEGALUG" OR APPROVED EQUAL. ALL ANCHOR FITTING TO BE CONCRETE THRUST BLOCKED.
5. BLUE, BI-DIRECTIONAL REFLECTIVE PAVEMENT MARKER, ULTIMATE WET NIGHT VISIBILITY SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION AT THE CORRESPONDING ROADWAY STATION OFFSET 6" (SIX INCHES) FROM CENTER OF STREET TO THE SIDE HYDRANT IS LOCATED. AT INTERSECTIONS, MARKERS SHALL BE PLACED ON BOTH ROADWAYS ADJACENT TO HYDRANT.

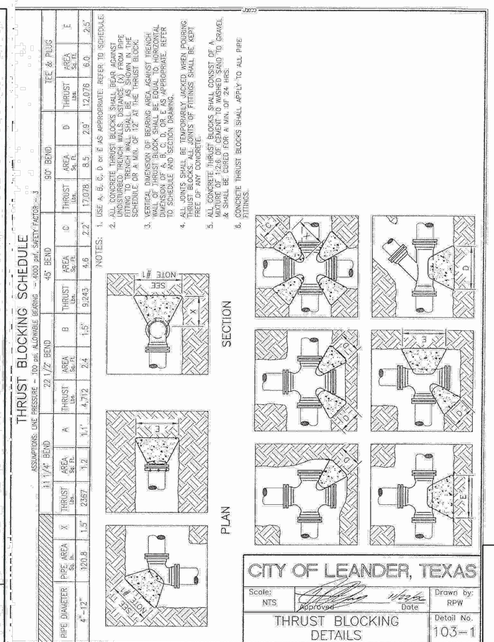
LOCATION:

6. SET F.H. ON LOT LINE (EXTENDED WHEN POSSIBLE)
7. F.H. LOCATED AT STREET INTERSECTIONS SHALL BE PLACED A MINIMUM OF TEN FEET (10') FROM RADIUS TANGENT POINT
8. NO OBSTRUCTIONS SHALL BE PERMITTED WITHIN THREE FEET (3') IN ALL DIRECTIONS FROM F.H.
9. 5-INCH STORZ PUMPER NOZZLE SHALL FACE THE FIRE LANE OR TRAVEL WAY UNLESS OTHERWISE NOTED.

WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER
Wayne A. Watts 02/05/19

City Of Leander, Texas
DETAIL #101-s
STANDARD FIRE HYDRANT ASSEMBLY

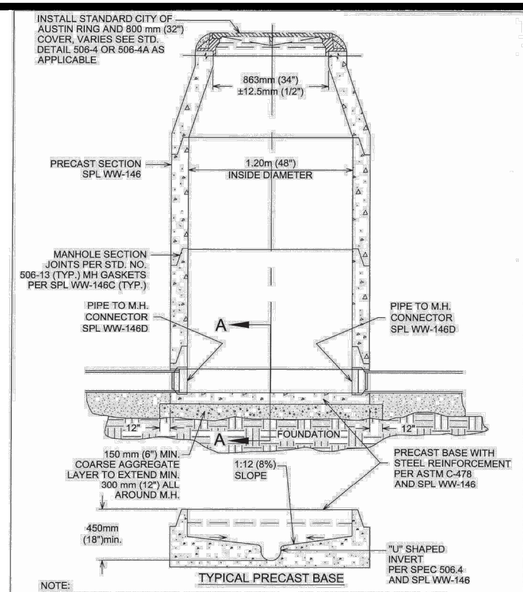
THRUST BLOCKING SCHEDULE



CITY OF LEANDER, TEXAS
Scale: NTS
Approved
Date
Drawn by: RPW
THRUST BLOCKING DETAILS
Detail No. 103-1

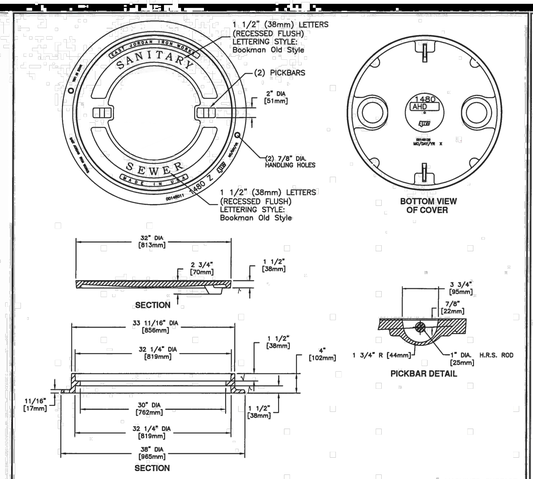
Date: Mar 29, 2024, 9:44am User ID: jrobinson
File: I:\L\Projects\512\83\01\301 Construction Documents\Civil\D75128301.dwg
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162



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	
Kathi K Reeves 8/31/2011	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-10



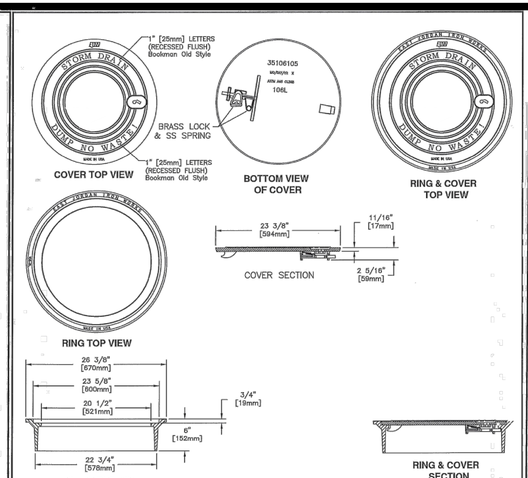
MACHINED SURFACE

MANHOLE ASSEMBLY	EST. WT. COVER: 200 LBS 91kg FRAME: 155 LBS 70kg UNIT: 355 LBS 161kg
EAST JORDAN IRON WORKS PRODUCT NO. 00148107 OR NEENAH FOUNDRY DF-1274 LEANDER SANITARY	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 86134 LICENSED PROFESSIONAL ENGINEER 02/22/16

City Of Leander, Texas
DETAIL #107-1
SANITARY SEWER MANHOLE COVER

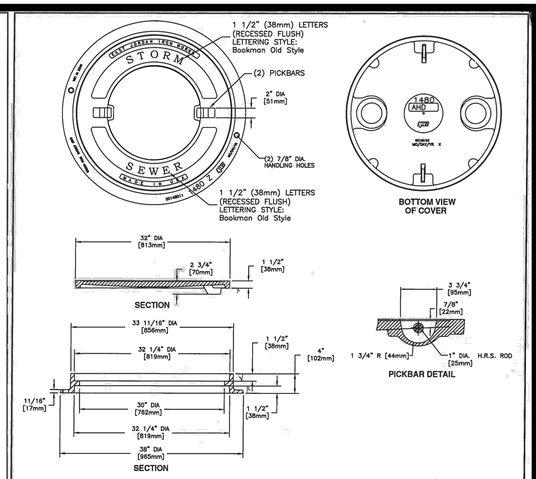


MANHOLE ASSEMBLY WITH LOCK	EST. WT. COVER: 86 LBS 39kg RING: 95 LBS 43kg TOTAL: 181 LBS 82kg
EAST JORDAN IRON WORKS PRODUCT NO. 35505205 OR APPROVED EQUAL	OPEN AREA N/A
	MAT'L SPEC. COVER – GRAY IRON ASTM A48 CL35B FRAME – GRAY IRON ASTM A48 CL35B

LOAD RATING: NON-TRAFFIC

STATE OF TEXAS WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER 02/04/14

City Of Leander, Texas
DETAIL #107-2
STORM SEWER INLET COVER [LOCKING]



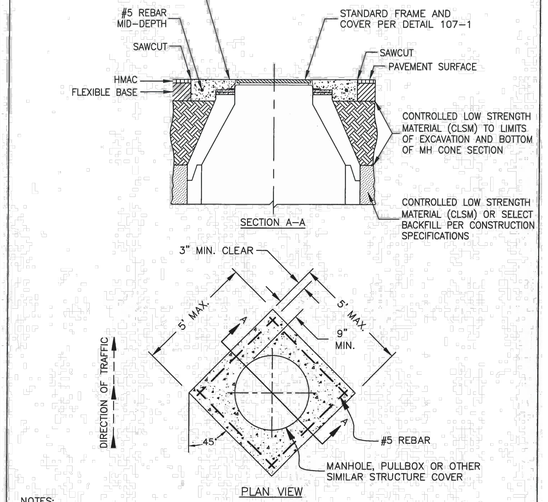
MACHINED SURFACE

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 86134 LICENSED PROFESSIONAL ENGINEER 02/22/16

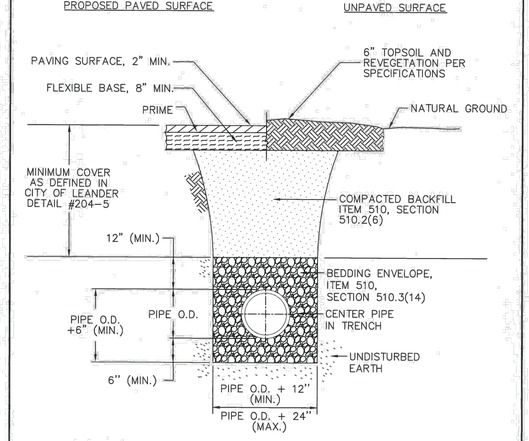
City Of Leander, Texas
DETAIL #107-3
STORM SEWER MANHOLE COVER [HEAVY DUTY]



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 86134 LICENSED PROFESSIONAL ENGINEER 02/22/17

City Of Leander, Texas
DETAIL #107-4
MANHOLE CASTING ADJUSTMENT

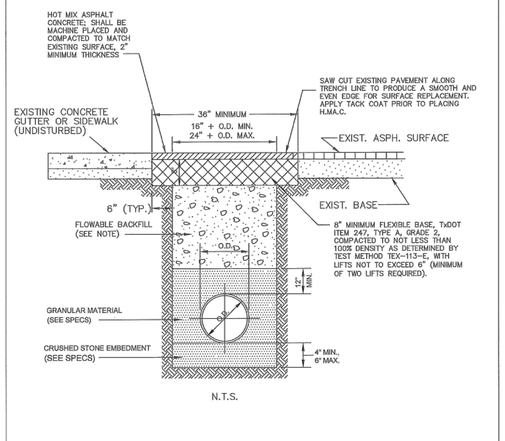


NOTES:
1. SEE CITY OF LEANDER DETAIL #104–2 FOR TYPICAL PIPE TRENCH AND EMBEDMENT IN EXISTING PAVED SURFACES.

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



N.T.S.

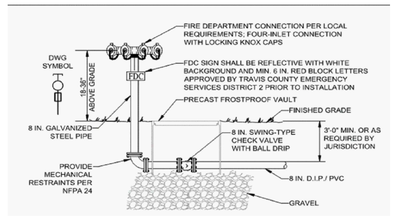
NOTES:
FLOWABLE BACKFILL SHALL CONSIST OF A MIXTURE OF NATIVE SOILS OR MANUFACTURED MATERIALS, CEMENT AND/OR FLY ASH, AND WATER WHICH PRODUCES A MATERIAL WITH UNCONFINED COMPRESSIVE STRENGTH OF BETWEEN 250 AND 450 PSI AFTER 28 DAYS. ANY MATERIALS USED SHALL BE PRIMARILY GRANULAR, WITH A PLASTICITY INDEX <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 PACEMENT 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 250–2640 PRIOR TO COMMENCEMENT OF BACKFILL OPERATIONS.

STATE OF TEXAS WAYNE S. WATTS 86134 LICENSED PROFESSIONAL ENGINEER 02/20/12

City Of Leander, Texas
DETAIL #104-2
TYPICAL TRENCH AND H.M.A.C. SURFACE REMOVAL AND REPLACEMENT DETAIL



NO.	REVISION	DATE

STATE OF TEXAS SHELLY MITCHELL 103662 LICENSED PROFESSIONAL ENGINEER
04/01/2024

PAPE-DAWSON ENGINEERS
AUSTIN I SAN ANTONIO I HOUSTON I FORT WORTH I DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 I AUSTIN, TX 78759 I 512.454.8711
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028801

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

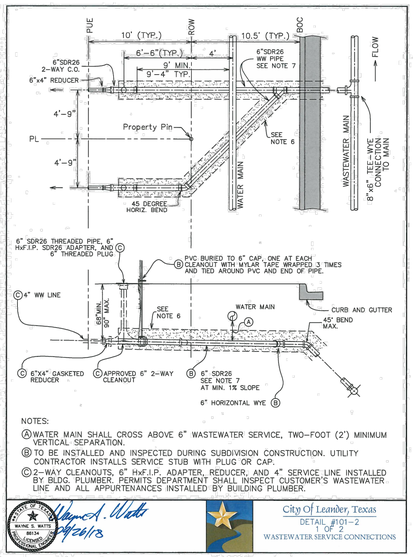
UTILITY DETAILS (2 OF 3)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 40 OF 55

Date: Mar 29, 2024, 9:44am User ID: Irobinson
File: H:\Projects\512\83\01\301 Construction Documents\Civil\D75128301.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162



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" Hxf.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 D. WATTS
88134
LICENSED PROFESSIONAL ENGINEER
4/26/18

City Of Leander, Texas
DETAIL #101–2
2 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 REGULATIONS. 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 DIVISION.

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.

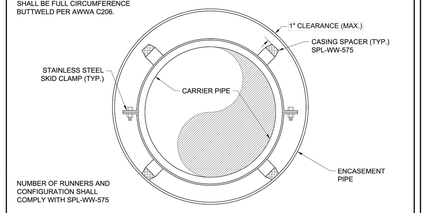
WAYNE D. WATTS
88134
LICENSED PROFESSIONAL ENGINEER
4/26/18

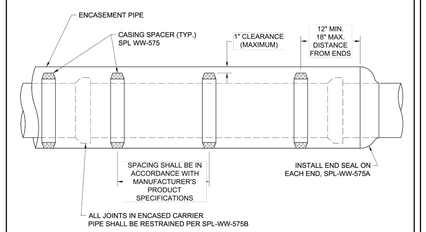
City Of Leander, Texas
DETAIL #101–2
2 OF 2
WASTEWATER SERVICE CONNECTIONS

CITY OF AUSTIN AUSTIN WATER	SINGLE AND DOUBLE WASTEWATER SERVICE CONNECTION	
RECORD COPY SIGNED *JEFF A. KYLE* 11/07/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-01C 1 OF 4

CITY OF AUSTIN AUSTIN WATER	SINGLE AND DOUBLE WASTEWATER SERVICE CONNECTION	
RECORD COPY SIGNED *JEFF A. KYLE* 11/07/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-01C 2 OF 4

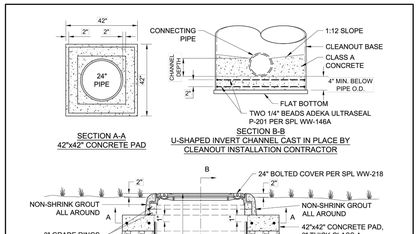
FIELD WELDS IN ENCASEMENT PIPE SHALL BE FULL CIRCUMFERENCE BUTTWELD PER AWWA C206.





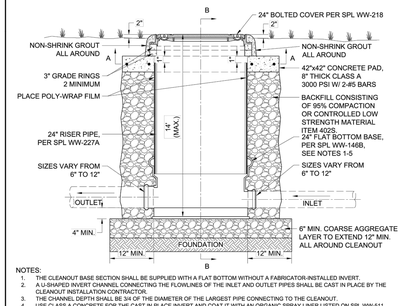
APPLICABLE REFERENCES:
STANDARD SPECIFICATION: ITEM 505.4 & 510.3 (19)

CITY OF AUSTIN AUSTIN WATER	ENCASEMENT PIPE DETAIL WITH CASING SPACERS	
JEFF A. KYLE 02/22/2021 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 501-AW-01 1 OF 1



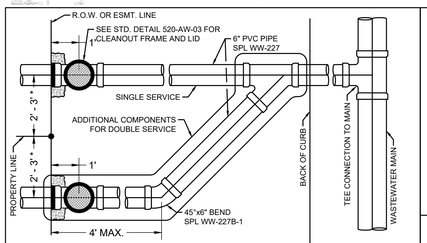
SECTION A-A
42"x42" CONCRETE PAD

SECTION B-B
U-SHAPED INVERT CHANNEL CAST IN PLACE BY
CLEANOUT INSTALLATION CONTRACTOR



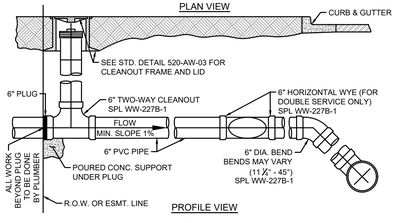
NOTES:
1. THE CLEANOUT BASE SECTION SHALL BE SUPPLIED WITH A FLAT BOTTOM WITHOUT A FABRICATOR-INSTALLED INVERT.
2. A U-SHAPED INVERT CHANNEL CONNECTING THE FLOWLINES OF THE INLET AND OUTLET PIPES SHALL BE CAST IN PLACE BY THE CLEANOUT INSTALLATION CONTRACTOR.
3. THE CHANNEL DEPTH SHALL BE 3/4 OF THE DIAMETER OF THE LARGEST PIPE CONNECTING TO THE CLEANOUT.
4. USE CLASS A CONCRETE FOR THE CAST IN PLACE INVERT AND COAT IT WITH AN ORGANIC SPRAY LINER LISTED ON SPL WW-511.
5. THE CLEANOUT FOUNDATION SHALL MEET OR EXCEED STANDARD SPECIFICATION ITEM 506.5B.
6. IN CASES WHERE THE WASTEWATER SERVICE LINE IS LARGER THAN 12" DIAMETER, THE CONTRACTOR MUST INSTALL A MINIMUM 48" DIAMETER MANHOLE IN LIEU OF THE LARGE DIAMETER CLEANOUT. THE ENGINEER MUST PROVIDE AN ACCEPTABLE SAMPLE PORT AND RECEIVE APPROVAL IN WRITING FROM THE INDUSTRIAL WASTE REVIEWER BEFORE INSTALLATION. THE 48" DIA. MANHOLE SHALL CONFORM TO STD. 506S-10 AND INCLUDE A SAMPLE PORT.

CITY OF AUSTIN AUSTIN WATER	LARGE DIAMETER CLEANOUT	
JEFF A. KYLE 08/14/2020 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 506-AW-04 1 OF 1



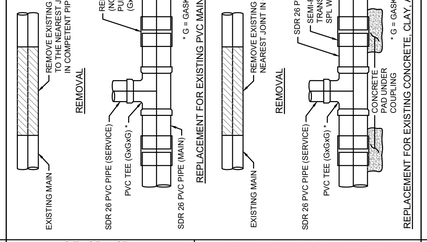
* OFFSET FROM PROPERTY LINE IS FOR DOUBLE WASTEWATER SERVICE INSTALLATION ONLY.

WHERE WATER & WASTEWATER SERVICES ARE INSTALLED ON A COMMON LOT LINE, SEE DETAIL 520-AW-01A

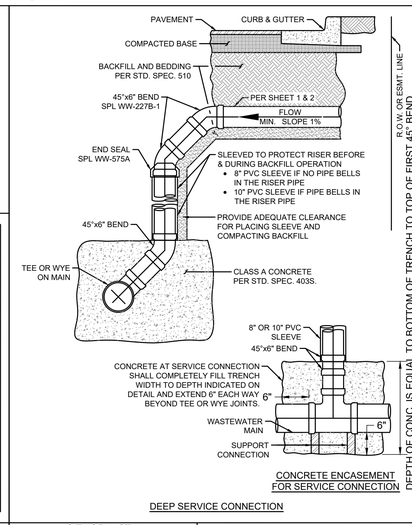


NOTES:

1. DURING SUBDIVISION CONSTRUCTION, UTILITY CONTRACTOR INSTALLS WASTEWATER TEE CONNECTION TO MAIN, 6" STUB, HORIZONTAL WYE FOR DOUBLE SERVICES, 6" SERVICE BRANCH WITH TWO-WAY CLEANOUT(S) AND RISER, FRAME, AND COVER. CLEANOUT(S) TO BE PLUGGED AT PROPERTY LINE OR EASEMENT LINE END. ALL WASTEWATER PIPING SHALL HAVE ELASTOMERIC GASKET TYPE JOINTS AND SLOPE DOWNWARD TO MAIN 1% MIN. TO 45° MAX. DEPTH OF SERVICE AT PROPERTY LINE WILL BE SHOWN ON PLANS BY ENGINEER IF GREATER THAN 4', OTHERWISE THE INSTALLED DEPTH WILL BE 4' MIN. AND 6' MAX. AT PROPERTY LINE. IF WASTEWATER SERVICE LINE TO MAIN REQUIRES DEFLECTION EXCEEDING 45°, SEE SHEET 3 OF 4.
2. PIPING IN STREET RIGHT-OF-WAY AND IN EASEMENT AREA SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY CITY OF AUSTIN STANDARD SPECIFICATION 510.3 (14). MATERIALS SHALL BE AS SPECIFIED IN 510.2 (2)(A) AND (3)(B). BACKFILL ABOVE THE GRANULAR BEDDING SHALL BE AS REQUIRED BY SECTION 510.3 (25). SERVICE LINES IN THESE AREAS SHALL HAVE A MIN. COVER BELOW FINAL STREET GRADE OF 42".
3. PLUMBER SHALL REMOVE PLUG AND CONNECT TO TWO-WAY CLEANOUT. NO CONNECTION TO CLEANOUT STACK IS ALLOWED.



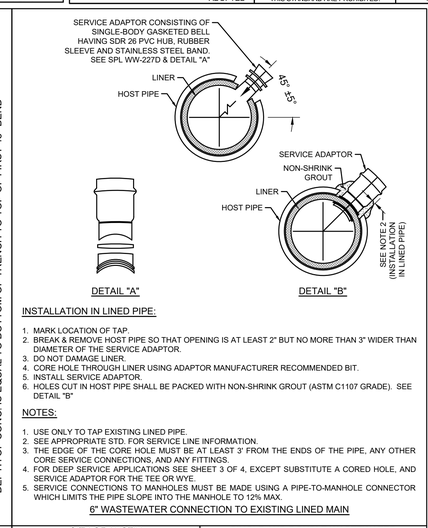
CITY OF AUSTIN AUSTIN WATER	SINGLE AND DOUBLE WASTEWATER SERVICE CONNECTION	
RECORD COPY SIGNED *JEFF A. KYLE* 11/07/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-01C 3 OF 4



CONCRETE ENCASEMENT
FOR SERVICE CONNECTION

DEEP SERVICE CONNECTION

CITY OF AUSTIN AUSTIN WATER	SINGLE AND DOUBLE WASTEWATER SERVICE CONNECTION	
RECORD COPY SIGNED *JEFF A. KYLE* 11/07/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-01C 4 OF 4



INSTALLATION IN LINED PIPE:

1. MARK LOCATION OF TAP.
2. BREAK & REMOVE HOST PIPE SO THAT OPENING IS AT LEAST 2" BUT NO MORE THAN 3" WIDER THAN DIAMETER OF THE SERVICE ADAPTOR.
3. DO NOT DAMAGE LINER.
4. CORE HOLE THROUGH LINER USING ADAPTOR MANUFACTURER RECOMMENDED BIT.
5. INSTALL SERVICE ADAPTOR.
6. HOLES CUT IN HOST PIPE SHALL BE PACKED WITH NON-SHRINK GROUT (ASTM C1107 GRADE). SEE DETAIL "B"

NOTES:

1. USE ONLY TO TAP EXISTING LINED PIPE.
2. SEE APPROPRIATE STD. FOR SERVICE LINE INFORMATION.
3. THE EDGE OF THE CORE HOLE MUST BE AT LEAST 3" FROM THE ENDS OF THE PIPE, ANY OTHER CORE SERVICE CONNECTIONS, AND ANY FITTINGS.
4. FOR DEEP SERVICE APPLICATIONS SEE SHEET 3 OF 4, EXCEPT SUBSTITUTE A CORED HOLE, AND SERVICE ADAPTOR FOR THE TEE OR WYE.
5. SERVICE CONNECTIONS TO MANHOLES MUST BE MADE USING A PIPE-TO-MANHOLE CONNECTOR WHICH LIMITS THE PIPE SLOPE INTO THE MANHOLE TO 12% MAX.

6" WASTEWATER CONNECTION TO EXISTING LINED MAIN

CITY OF AUSTIN AUSTIN WATER	SINGLE AND DOUBLE WASTEWATER SERVICE CONNECTION	
RECORD COPY SIGNED *JEFF A. KYLE* 11/07/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520-AW-01C 4 OF 4

STUB-OUT MARKING DETAIL

NOT–TO–SCALE

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT–TO–SCALE

ALL JOINTS ARE FULLY RESTRAINED IN ACCORDANCE WITH SAWS SPECIFICATION TABLE DD–839–06.

TYPICAL UTILITY/WATER CROSSING DETAIL

NOT–TO–SCALE

PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

NO.	REVISION	DATE

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

GATEWAY 29, LOTS 9 & 10

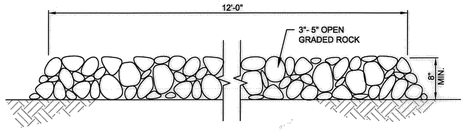
100 KAUFFMAN LOOP
LEANDER, TEXAS

UTILITY DETAILS (3 OF 3)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 41 OF 55

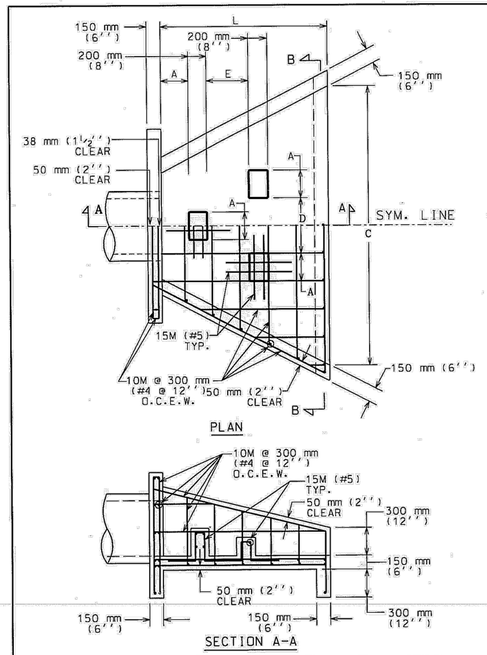
Date: Mar 29, 2024, 9:45pm User ID: jrobinson
File: H:\Projects\51283\01\301 Construction Documents\Civil\D75128301.dwg
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

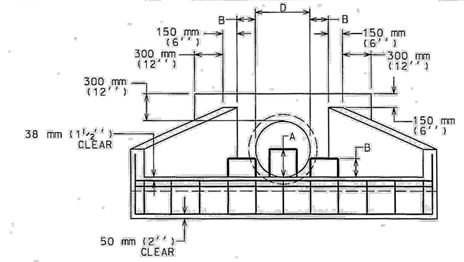


NOTES:
1. STONE SIZE: 75–125 mm (3–5") OPEN GRADED ROCK.
2. THICKNESS: NOT LESS THAN 200 mm (8").
3. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	POND MAINTENANCE ROAD CROSS SECTION	
E. D. L., P.E. 1/4/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 662S-2



CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	STANDARD HEADWALL AND ENERGY DISSIPATORS	
Bill Gardner 8/20/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-13 1 OF 2



NOTES:
1. ALL CONCRETE SHALL BE TYPE "C" AS PER SPEC. 403S. CONCRETE FOR STURCTURES.
2. CHAMFER ALL EXTERNAL VISIBLE CORNERS.
3. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.

D	457 mm (18")	533 mm (21")	610 mm (24")	685 mm (27")	765 mm (30")	838 mm (33")	914 mm (36")	.067 m (42")	.219 m (48")	.372 m (54")	.524 m (60")	
A	225 mm (9")	250 mm (10")	300 mm (12")	350 mm (14")	375 mm (15")	400 mm (16")	450 mm (18")	525 mm (21")	600 mm (24")	675 mm (27")	750 mm (30")	
B	150 mm (6")	175 mm (7")	200 mm (8")	225 mm (9")	250 mm (10")	275 mm (11")	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")	
C	2.29 m (90")	2.67 m (105")	3.05 m (120")	343 m (135")	3.81 m (150")	4.19 m (165")	4.57 m (180")	5.33 m (210")	6.10 m (240")	6.86 m (270")	7.62 m (300")	
L	1.37 m (54")	1.60 m (63")	1.83 m (72")	2.06 m (81")	2.29 m (90")	2.51 m (99")	2.74 m (108")	3.20 m (126")	3.66 m (144")	4.11 m (162")	4.57 m (180")	
E	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")	550 mm (22")	600 mm (24")	700 mm (28")	800m (32")	900 mm (36")	1000 mm (40")	

DIMENSIONS IN MILLIMETERS, METERS AND (INCHES).

DISCHARGE VELOCITIES GREATER THAN 3 METERS/SECOND (10 fps) REQUIRE ROCK OUTLET PROTECTION.

CITY OF AUSTIN DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW	STANDARD HEADWALL AND ENERGY DISSIPATORS	
Bill Gardner 8/20/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-13 2 OF 2

NO.	REVISION	DATE

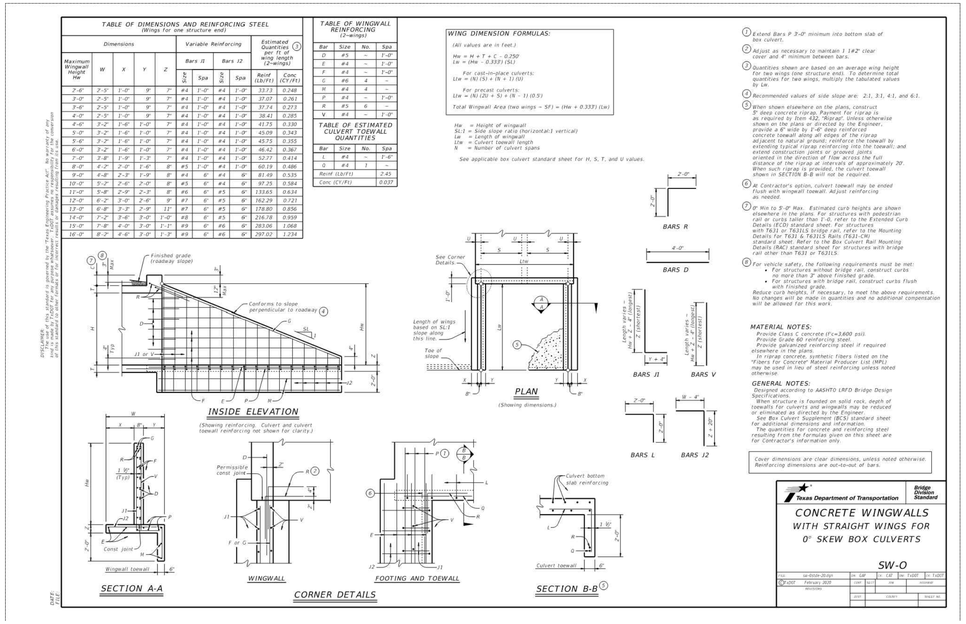
PAPE-DAWSON ENGINEERS
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N MOPAC EXPY, BLDG 3, STE 200 | AUSTIN, TX 78759 | 512.454.8711
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028801

STATE OF TEXAS
SHELLY MITCHELL
103662
LICENSED
PROFESSIONAL ENGINEER
04/01/2024

GATEWAY 29, LOTS 9 & 10
100 KAUFFMAN LOOP
LEANDER, TEXAS

STORM DETAILS (1 OF 2)

JOB NO. 51283-01
DATE DECEMBER 5 2023
DESIGNER JR
CHECKED TR DRAWN KT
SHEET 42 OF 55



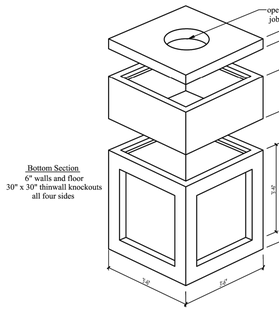
DISCLAIMER: This standard is governed by the Texas Engineering Practice Act. Its use for all or portions of other projects, extensions to this project, or on any other projects without the written authorization of the Texas Department of Transportation is prohibited. The Department shall not be responsible for any unauthorized use of this standard.

Date: Mar 29, 2024, 9:45am User ID: jrobinson
File: H:\Projects\5123\83\01\301 Construction Documents\Civil\D7512B301.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

SD-23-0162

30" x 30" x var Junction Box



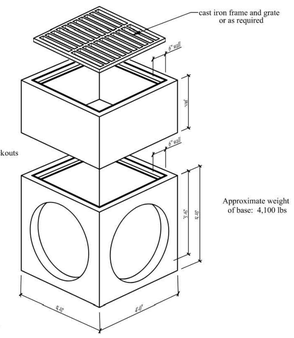
Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC.
6905 SOUTH OLD BASTROP HWY
SAN MARCOS, TEXAS 78666
PH. (830) 606-6200

FOR 30" x 30" x var Junction Box
JOB
DRAWN RW DATE 12/1/2015 Rev. No.
FILE catalog/junction boxes/30x30JB
SHEET 1 OF 1

3' x 3' x var Grate Inlet



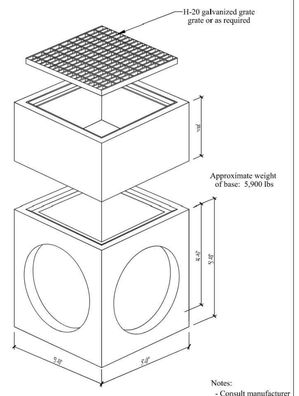
Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC.
6905 SOUTH OLD BASTROP HWY
SAN MARCOS, TEXAS 78666
PH. (830) 606-6200

FOR 3' x 3' x var Grate Inlet
JOB
DRAWN RW DATE 12/1/2015 Rev. No.
FILE catalog/grate inlets/3x3 Grate Inlet
SHEET 1 OF 1

4' x 4' x var Grate Inlet



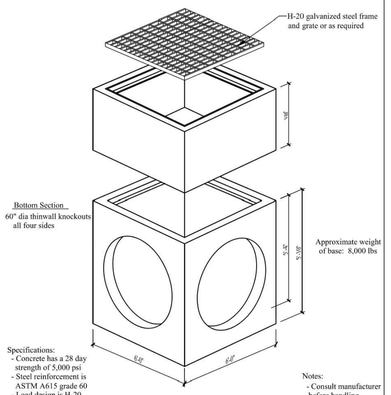
Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC.
6905 SOUTH OLD BASTROP HWY
SAN MARCOS, TEXAS 78666
PH. (830) 606-6200

FOR 4' x 4' x var Grate Inlet
JOB
DRAWN RW DATE 12/1/2015 Rev. No.
FILE catalog/grate inlets/4x4 Grate Inlet
SHEET 1 OF 1

5' x 5' x var Grate Inlet

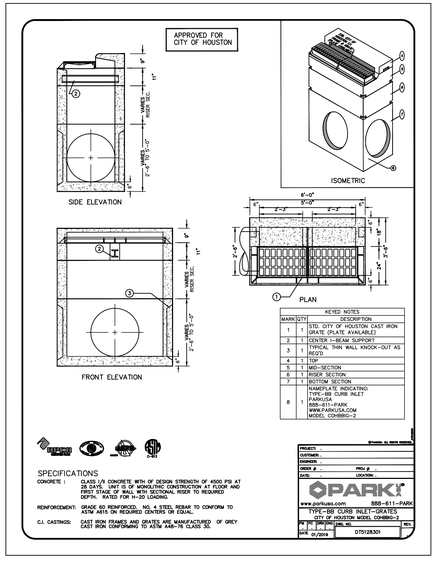


Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC.
6905 SOUTH OLD BASTROP HWY
SAN MARCOS, TEXAS 78666
PH. (830) 606-6200

FOR 5' x 5' x var Grate Inlet
JOB
DRAWN RW DATE 12/1/2015 Rev. No.
FILE catalog/grate inlets/5x5 Grate Inlet
SHEET 1 OF 1


APPROVED FOR CITY OF HOUSTON
ISOMETRIC
SIDE ELEVATION
FRONT ELEVATION
PLAN
6'-0"
5'-0"
2'-3"
2'-3"
2'-6"
2'-6"
6"
11"
1"
4"
1"
1"
1

SECTION VIII

PERMANENT STORMWATER SECTION : ATTACHMENT G

Inspection, Maintenance, Repair and Retrofit Plan

PERMANENT POLLUTION ABATEMENT MEASURES
MAINTENANCE SCHEDULE AND MAINTENANCE PROCEDURES

This document has been prepared to provide a description and schedule for the performance of maintenance on permanent pollution abatement measures. Maintenance measures to be performed will be dependent on what permanent pollution abatement measures are incorporated into the project. The project specific water pollution abatement plan should be reviewed to determine what permanent pollution abatement measures are incorporated into a project.

It should also be noted that the timing and procedures presented herein are general guidelines, adjustment to the timing and procedures may have to be made depending on project specific characteristics as well as weather related conditions but may not be altered without TCEQ approval.

Where a project is occupied by the owner, the owner may provide for maintenance with his own skilled forces or contract for recommended maintenance of Permanent Best Management Practices. Where a project is occupied or leased by a tenant, the owner shall require tenants to contract for such maintenance services either through a lease agreement, property owners association covenants, or other binding document.

I understand that I am responsible for maintenance of the Permanent Pollution Abatement Measures included in this project until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property or ownership is transferred.

I, the owner, have read and understand the requirements of the attached Maintenance Plan and Schedule.

Arthur Walston

Digitally signed by Arthur Walston
DN: C=US, E=arthur.walston@zekelman.com, O=Zekelman Industries, OU="Z-Modular ", CN=Arthur Walston
Reason: I agree to the terms defined by the placement of my signature on this document
Date: 2024.04.03 09:14:27-05'00'

Signature

4/3/24

Date

INSPECTION AND MAINTENANCE SCHEDULE
FOR
PERMANENT POLLUTION ABATEMENT MEASURES

Recommended Frequency	Task to be Performed												
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
After Rainfall	√							√			√		√
Biannually*	√	√	√	√	√	√	√	√	√	√	√	√	√

At least one biannual inspection must occur during or immediately after a rainfall event.
√Indicates maintenance procedure that applies to this specific site.

See description of maintenance task to be performed on the following pages. Frequency of maintenance tasks may vary depending on amount of rainfall and other weather-related conditions but may not be altered without TCEQ approval.

A w*ritten record should be kept of inspection results and maintenance performed.*

Task No. & Description	***Included in this project***	
1. Mowing	**Yes**	~~No~~
2. Litter and Debris Removal	**Yes**	~~No~~
3. Erosion Control	**Yes**	~~No~~
4. Level Sensor	**Yes**	~~No~~
5. Nuisance Control	**Yes**	~~No~~
6. Structural Repairs and Replacement	**Yes**	~~No~~
7. Discharge Pipe	**Yes**	~~No~~
8. Detention and Drawdown Time	**Yes**	~~No~~
9. Sediment Removal	**Yes**	~~No~~
10. Logic Controller	**Yes**	~~No~~
11. Vegetated Filter Strips	**Yes**	~~No~~
12. Visually Inspect Security Fencing for Damage or Breach	**Yes**	~~No~~
13. Recordkeeping for Inspections, Maintenance, and Repairs	**Yes**	~~No~~

MAINTENANCE PROCEDURES FOR PERMANENT POLLUTION ABATEMENT MEASURES

Note: Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 3.5.

Inspections. Inspections should take place a minimum of twice a year. One inspection should take place during wet weather to determine if the basin is meeting the target detention time of 12 hours and a drawdown time of no more than 48 hours. The remaining inspections should occur between storm events so that manual operation of the valve and controller can be verified. The level sensor in the basin should be inspected and any debris or sediment in the area should be removed. The outlet structure and the trash screen should be inspected for signs of clogging. Debris and sediment should be removed from the orifice and outlet(s) as described in previous sections. Debris obstructing the valve should be removed. During each inspection, erosion areas inside and downstream of this BMP should be identified and repaired/revegetated immediately. *A written record should be kept of inspection results and corrective measures taken*

1. Mowing. The basin, basin side-slopes, and embankment of the basin must be mowed to prevent woody growth and control weeds. A mulching mower should be used, or the grass clippings should be caught and removed. Mowing should take place at least twice a year, or more frequently if vegetation exceeds 18 inches in height. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas.

2. Litter and Debris Removal. Litter and debris removal should take place at least twice a year, as part of the periodic mowing operations and inspections. Debris and litter should be removed from the surface of the basin. Particular attention should be paid to floatable debris around the outlet structure. The outlet should be checked for possible clogging or obstructions and any debris removed.

3. Erosion control. The basin side slopes and embankment all may periodically suffer from slumping and erosion. To correct these problems, corrective action, such as regrading and revegetation, may be necessary. Correction of erosion control should take place whenever required based on the periodic inspections.

4. Level Sensor. The level sensor in the basin should be inspected and any debris or sediment in the area should be removed. Litter and debris removal should take place at least twice a year, as part of the periodic mowing operations and inspections. Debris and litter should be removed from the surface of the basin.

5. Nuisance Control. Standing water or soggy conditions may occur in the basin. Some standing water may occur after a storm event since the valve may close with 2 to 3 inches of water in the basin. Some flow into the basin may also occur between storms due to spring flow and residential water use that enters the storm sewer system. Twice a year, the facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.).

6. Structural Repairs and Replacement. With each inspection, any damage to structural elements of the basin (pipes, concrete drainage structures, retaining walls, etc.) should be identified and repaired immediately. An example of this type of repair can include patching of cracked concrete,

sealing of voids, removal of vegetation from cracks and joints. The various inlet/outlet structures in a basin will eventually deteriorate and must be replaced. *A written record should be kept of inspection results and corrective measures taken*

7. Discharge Pipe. The basin discharge pipe shall be checked for accumulation of silt, debris or other obstructions which could block flow. Soil accumulations, vegetative overgrowth and other blockages should be cleared from the pipe discharge point. Erosion at the point of discharge shall be monitored. If erosion occurs, the addition of rock rubble to disperse the flow should be accomplished. *A written record should be kept of inspection results and corrective measures taken*

8. Detention and Drawdown Time. One inspection should take place during wet weather to determine if the basin is meeting the target detention time of 12 hours and a drawdown time of no more than 48 hours. This characteristic can be a sign of the need for maintenance. The minimum drawdown time is 24 hours. If drawdown time is less than 24 hours, the actuator valve shall be checked and partially closed to limit the drawdown time. Extensive drawdown time greater than 48 hours may indicated blockage of the discharge pipe. Corrective actions should be performed and completed within 15 working days. *A written record of the inspection findings and corrective actions performed should be made.*

9. Sediment Removal. A properly designed batch detention basin will accumulate quantities of sediment over time. The accumulated sediment can detract from the appearance of the facility and reduce the pollutant removal performance of the facility. The sediment also tends to accumulate near the outlet structure and can interfere with the level sensor operation. Sediment shall be removed from the basin at least every 5 years, when sediment depth exceeds 6 inches, when the sediment interferes with the level sensor or when the basin does not drain within 48 hours. Care should be taken not to compromise the basin lining during maintenance.

10. Logic Controller. The Logic Controller should be inspected as part of the twice-yearly investigations. Verify that the external indicators (active, cycle in progress) are operating properly by turning the controller off and on, and by initiating a cycle by triggering the level sensor in the basin. The valve should be manually opened and closed using the open/close switch to verify valve operation and to assist in inspecting the valve for debris. The solar panel should be inspected and any dust or debris on the panel should be carefully removed. The controller and all other circuitry and wiring should be inspected for signs of corrosion, damage from insects, water leaks, or other damage. At the end of the inspection, the controller should be reset.

11. Vegetated Filter Strips. Vegetation height for native grasses shall be limited to no more than 18-inches. When vegetation exceeds that height, the filter strip shall be cut to a height of approximately 4 inches. Turf grass shall be limited to a height of 4-inches with regular maintenance that utilizes a mulching mower. Trash and debris shall be removed from filter strip prior to cutting. Check filter strip for signs of concentrated flow and erosion. Areas of filter strip showing signs of erosion shall be repaired by scarifying the eroded area, reshaping, regrading, and placement of solid block sod over the affected area. *A written record of the inspection findings and corrective actions performed should be made*

12. Visually Inspect Security Fencing for Damage or Breach. Check maintenance access gates for proper operation. Damage to fencing or gates shall be repaired within 5 working days. *A written record should be kept of inspection results and maintenance performed.*

13. Recordkeeping Procedures for Inspections, Maintenance, Repairs, and Retrofits.
    - Written records shall be kept by the party responsible for maintenance or a designated representative.
    - Written records shall be retained for a minimum of five years.

SECTION VIII

PERMANENT STORMWATER SECTION : ATTACHMENT I

Measures for Minimizing Surface Stream Contamination

MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

Storm water runoff resulting from the proposed improvements will be routed to an onsite detention pond that will detain the peak flows and release them at a rate less than the peak flow rates under existing conditions.

SECTION IX

AGENT AUTHORIZATION FORM (TCEQ-0599)

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

I Angela Miu,
Print Name

Vice President,
Title - Owner/President/Other

of Zekelman Property Leander 53, LLC,
Corporation/Partnership/Entity Name

have authorized Trevor Riek
Print Name of Agent/Engineer

of Pape-Dawson Engineers
Print Name of Firm

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

I also understand that:

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

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

4/24/2024
Date

THE STATE OF Illinois §

County of Cook §

BEFORE ME, the undersigned authority, on this day personally appeared Angela Mu 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 4th day of April, 2024.

NOTARY PUBLIC

Jvliann Egizio
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 3/10/2026

Official Seal
JULIANN EGIZIO
Notary Public, State of Illinois
Commission No. 948213
My Commission Expires March 10, 2026

SECTION X

APPLICATION FEE FORM (TCEQ-0574)

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Gateway 29, Lots 9 & 10
Regulated Entity Location: 100 Kauffman Loop, Leander TX
Name of Customer: ZEKELMAN PROPERTY LEANDER 53 LLC
Contact Person: TREVOR RIEK Phone: (512) 454-8711
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	14.00 Acres	$ 6500
Sewage Collection System	828 L.F.	$ 650
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: Arthur Walston Digitally signed by Arthur Walston DN: C=US, E=arthur.walston@zekelman.com, O=Zekelman Industries, OU="Z-Modular ", CN=Arthur Walston Reason: I agree to the terms defined by the placement of my signature on this document Date: 2024.04.03 09:10:37-05'00' Date: 4/3/24

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 828 LF * 0.5 = 414	$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

SECTION XI

TCEQ-CORE DATA FORM (TCEQ-10400)

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal (*Core Data Form should be submitted with the renewal form*) ☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN		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:*

Zekelman Property Leander 53, LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
0804261060	32081307244	87-2191966	

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

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

13. Independently Owned and Operated?
☒ **Yes** ☐ **No**

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

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

15. Mailing Address:

227 West Monroe St., Suite 2600

City	State	ZIP	ZIP + 4
Chicago	IL	60606	5082

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

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

SECTION III: Regulated Entity Information

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

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

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

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

Fuze Leander

23. Street Address of the Regulated Entity: *(No PO Boxes)*	100 Kauffman Loop							
	City	Leander	**State**	TX	**ZIP**	78641	**ZIP + 4**	
24. County								

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:					
26. Nearest City			**State**	**Nearest ZIP Code**	
Leander			TX	78641	
27. Latitude (N) In Decimal:	30.63498		**28. Longitude (W) In Decimal:**	-97.83267	
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)
1522		236116	

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

Construction of Multi-Family Residential Development

34. Mailing Address:	**227 West Monroe St, Suite 2600**							
	City	**Chicago**	**State**	**IL**	**ZIP**	**60606**	**ZIP + 4**	**5082**

35. E-Mail Address:		
36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
( ) -		( ) -

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

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

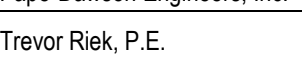
SECTION IV: Preparer Information

40. Name:	Trevor Riek, P.E.	**41. Title:**	Project Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 454-8711		( ) -	triek@pape-dawson.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Pape-Dawson Engineers, Inc.	**Job Title:**	Project Manager
Name *(In Print):*	Trevor Riek, P.E.	**Phone:**	(512) 454- **8711**
Signature:		**Date:**	04/11/24