# ORGANIZED SEWAGE COLLECTION SYSTEM PLAN

#### VALOR SOUTHWEST AUSTIN, TRAVIS COUNTY, TEXAS

Prepared For:

#### **VALOR TEXAS EDUCATION FOUNDATION**

220 Foremost Drive Austin, TX 78745 (214) 514-3356

#### Prepared By: KIMLEY-HORN AND ASSOCIATES, INC.

5301 Southwest Parkway, Building 2, Suite 100 Austin, Texas 78735 (512) 646-2237

Firm No. 928 KHA Project No. 068910605

March 20, 2023

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# Kimley »Horn

# SECTION 1: EDWARDS AQUIFER APPLICATION COVER PAGE

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512 646 2237

#### 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 <u>30 TAC 213</u>.

#### Administrative Review

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

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

- 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 if not withdrawn the application will be denied and 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 to you:

- You can withdraw your application, and your fees will be refunded or credited for a resubmittal.
- 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 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 effected 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.

<b>1. Regulated Entity Name:</b> Valor Texas Education Foundation				2. Regulated Entity No.:					
3. Customer Name: Valor Texas Education Foundation			4. Customer No.:						
<b>5. Project Type:</b> (Please circle/check one)	🛛 New		Modification Ex		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)	Residentia	1	Non-residential			•	8. Site (acres):		25.42
9. Application Fee:	\$726		10. Permanent BMP			Permanent BMP(s): Retention-Rei		irrigation Pond	
11. SCS (Linear Ft.):	1,452 ft		12. AST/UST (No. Ta			Гаnks): N/A			
13. County:	Travis		14. Watershed:					Slaughter Cre	eek

#### 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.)		_ <u>X</u> _	—		
Region (1 req.)		_X_	_		
County(ies)		_ <u>X</u> _			
Groundwater Conservation District(s)	Edwards Aquifer Authority Barton Springs/ Edwards Aquifer Hays Trinity Plum Creek	<u>X</u> Barton Springs/ Edwards Aquifer	NA		
City(ies) Jurisdiction	Austin Buda Dripping Springs Kyle Mountain City San Marcos Wimberley Woodcreek	Austin Bee Cave Pflugerville Rollingwood Round Rock Sunset Valley West Lake Hills	X       Austin         Cedar Park         Florence         Georgetown         Jerrell         Leander         Liberty Hill         Pflugerville         Round Rock		

	San Antonio Region					
County:	Bexar	Comal	Kinney	Medina	Uvalde	
Original (1 req.)						
Region (1 req.)						
County(ies)						
Groundwater Conservation District(s)	Edwards Aquifer Authority Trinity-Glen Rose	Edwards Aquifer Authority	Kinney	EAA Medina	EAA Uvalde	
City(ies) Jurisdiction	Castle Hills Fair Oaks Ranch Helotes Hill Country Village Hollywood Park San Antonio (SAWS) Shavano Park	Bulverde Fair Oaks Ranch Garden Ridge New Braunfels Schertz	NA	San Antonio ETJ (SAWS)	NA	

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.

C.J. Ponton, P.E.

Print Name of Customer/Authorized Agent

C. J. Por

03/21/2023

Signature of Customer/Authorized Agent

Date

Date(s)Reviewed:	Date Administratively Complete:		
Received From:	Correct 1	Number of Copies:	
Received By:	Distribu	tion 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	Payable to TCEQ (Y/N):	
Core Data Form Complete (Y/N):	Check:	Signed (Y/N):	
Core Data Form Incomplete Nos.:		Less than 90 days old (Y/N):	

# Kimley *Whorn*

# SECTION 2: GENERAL INFORMATION

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512 646 2237

## **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: C.J. Ponton, P.E.

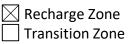
Date: 03/21/2023

Signature of Customer/Agent:

C. J. Pro-

#### **Project Information**

- 1. Regulated Entity Name: Valor Texas Education Foundation
- 2. County: Travis
- 3. Stream Basin: Slaughter
- 4. Groundwater Conservation District (If applicable): N/A
- 5. Edwards Aquifer Zone:



6. Plan Type:

WPAP	AST
⊴ scs	UST
Modification	Exception Request

7. Customer (Applicant):

Contact Person: <u>Jesse Bates</u> Entity: <u>Valor Texas Education Foundation</u> Mailing Address: <u>220 Foremost Drive</u> City, State: <u>Austin, TX</u> Telephone: <u>(214) 514-3356</u> Email Address: <u>jbates@valoreducation.org</u>

Zip: <u>78745</u> Fax: <u>N/A</u>

8. Agent/Representative (If any):

Contact Person: C.J. Ponton, P.E.Entity: Kimley-Horn & AssociatesMailing Address: 5301 Southwest Parkway, Building 2, Suite 100City, State: Austin, TexasZip: 78735Telephone: 737-787-8750Fax: N/AEmail Address: cj.ponton@kimley-horn.com

9. Project Location:

 $\boxtimes$  The project site is located inside the city limits of <u>Austin</u>.

The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of the city of \_\_\_\_\_\_.

- The project site is not located within any city's limits or ETJ.
- 10. The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

The project site is located at 11720 South Mopac Expressway, Austin, TX 78739

- 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: <u>12/15/2022</u>

- 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

 $\overline{\times}$  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)
$\boxtimes$	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)

Uvalde Counties)

- 20. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
- 21. No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

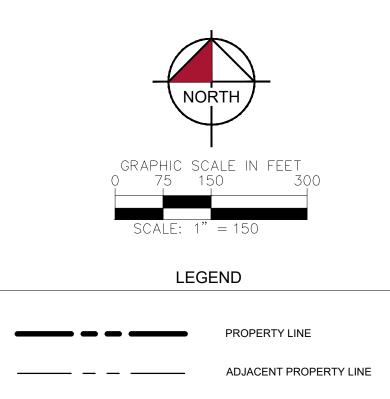
Attachment A - Road Map





Austin, Texas November 2022

> K:\SAU\_CIVIL\068910605-VALOR SOUTHWEST\CAD\EXHIBITS\20221114 - TCEQ\E-SER SITE LOCATION EXHIBIT.DWG 11/14/2022 6:26 PM



DIRECTIONS FROM TCEQ HEADQUARTERS TO PROJECT SITE

- TURN RIGHT ONTO PARK 35 CIRCLE
   TURN RIGHT ONTO S I-35 FRONTAGE ROAD
   TAKE THE RAMP ON THE LEFT ONTO I-35 S
   KEEP LEFT AT THE FORK TO CONTINUE ON I-35 S / US-290 W / N INTERERSTATE 35
   FOLLOW SIGNS FOR 32ND STREET
   KEEP LEFT TO CONTINUE ON I-35 S
   TAKE EXIST 230 TO MERGE ONTO TX-71 W / US-290 W
   KEEP LEFT TO CONTINUE ON US-290 W
   TAKE THE TX-1LOOP S EXIT
   SLIGHT RIGHT ONTO TX-1 LOOP S / S MOPAC EXPRESSWAY
   KEEP RIGHT AT THE FORK
   TURN RIGHT INTO THE SITE

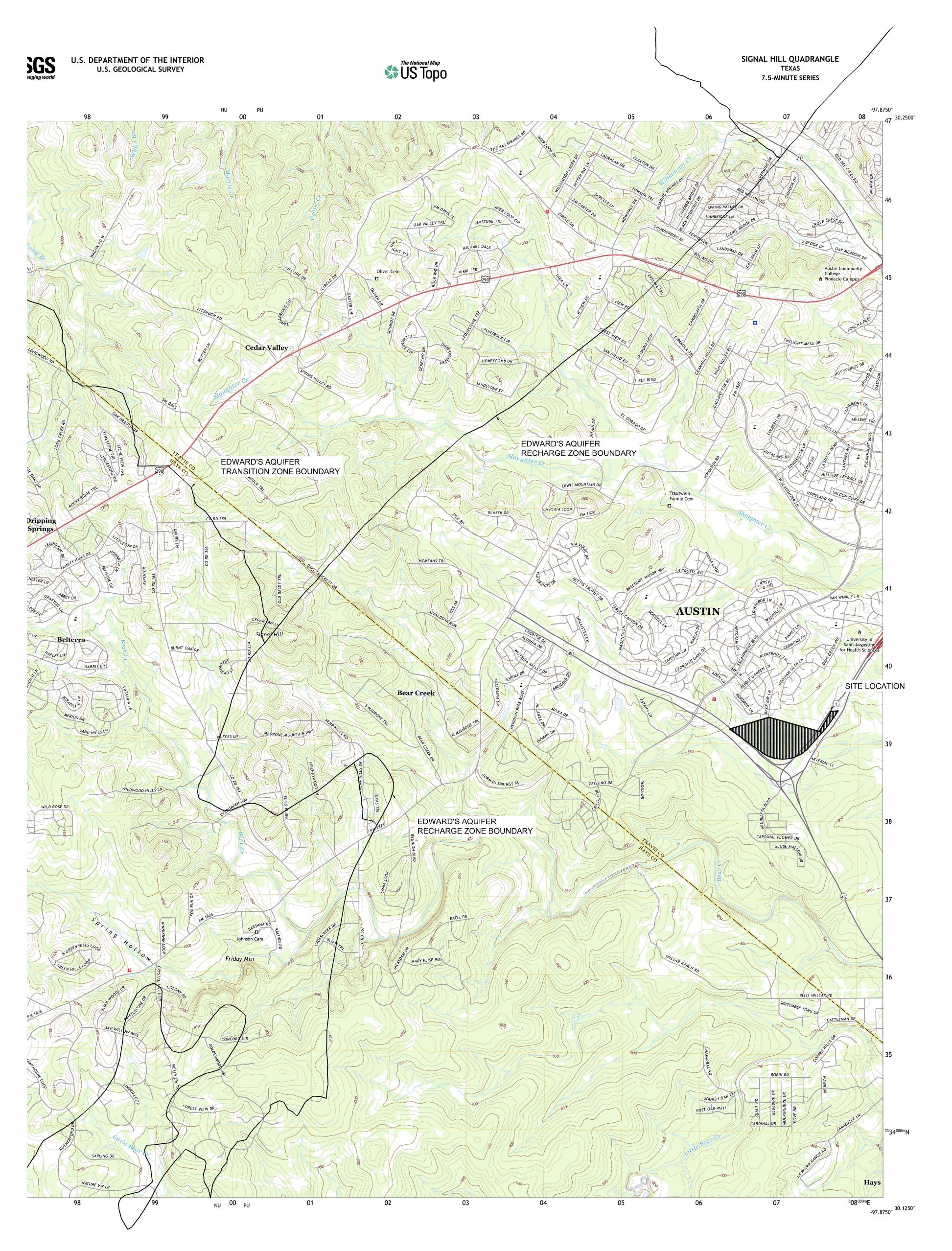


HOUT THE BENEFIT OF A

5301 Southwest Parkway, Building 2, Su Austin, TX 78735 - Ph: (512) 646-2237 State of Texas Registration No. F-928

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND HAS BEEN PRO SURVEY OR CONTACT WITH THE CITY, COUNTY, ETC.

Attachment B - USGS/Edwards Recharge Zone Map

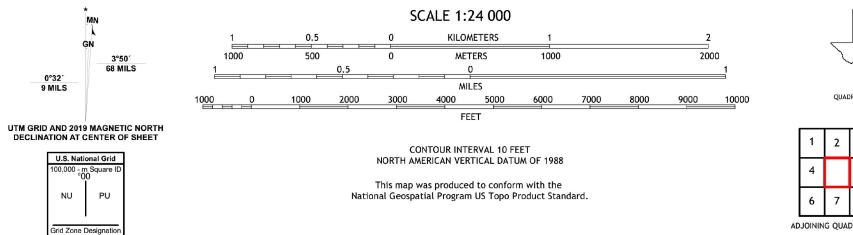


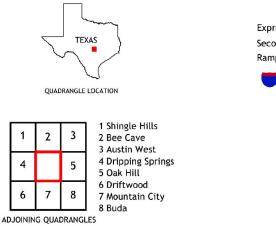
#### the United States Geological Survey atum of 1983 (NAD83) (stem of 1984 (WGS84). Projection and Universal Transverse Mercator, Zone 14R legal document. Boundaries may be is map scale. Private lands within government not be shown. Obtain permission before

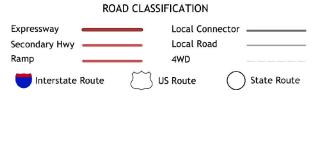
ands.

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	L	J.S.	Census	Bureau,	2015	-	2019
					GNIS, 197	9 -	2022
	Natio	nal H	ydrograph	y Datase	t, 2002	-	2018
		.Natio	nal Ele	vation	Dataset.		2019
Multiple					2019		2021

.....FWS National Wetlands Inventory Not Available







SIGNAL HILL, TX 2022

# NSN. 7 6 4 3 0 1 6 3 9 8 2 7 5 NGA REF NO. U S G S X 2 4 K 7 1 6 0 5

# Valor Southwest - USGS Map

MN

ĢN

U.S. National Grid

Grid Zone Designat 14R

NU

0,000 - m Square ID

PU

0°32′

9 MILS

Austin, Texas November 2022

DWG NAME

LAST SAVED

K:\SAU\_CIVIL\068910605-VALOR SOUTHWEST\CAD\EXHIBITS\PLANSHEETS\20221114 - TCEQ\USGS QUADRANGLE MAP.DWG 11/15/2022 8:16 AM

# **Kimley**»**Horn**

5301 Southwest Parkway, Bldg 2, Suite 100 Austin, Texas 78735 State of Texas Registration No. F-928

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND H SURVEY, TOPOGRAPHY, UTILITIES, CONTACT WITH T WITHOUT THE BENEFIT OF A

# Kimley »Horn

#### **Project Description**

#### Introduction

The Valor Southwest Public School is located at the intersection of I-45 and MoPac Expressway, Austin, Travis County, Texas. The existing tract (TCAD ID 0431470126) consists of one +/-25.42 acre tract located in the Austin Full-Purpose jurisdiction. The proposed development will include a K-12 Charter School and Gymnasium, that totals approximately 116,000 square-feet, and associated parking and utility improvements. A site plan application has been submitted to the City of Austin for approval. The development is located within the Edwards Aquifer Recharge Zone. Subsequently, water quality requirements set forth by the Texas Commission on Environmental Quality (TCEQ) will need to be met. Best managements practices (BMPs) used is a retention-reirrigation pond. This project is located within the Slaughter Creek Watershed. The proposed 25.42-acre site is not located in the Federal Emergency Management Agency's 100-year floodplain according to the FEMA FIRM map 48453C0595H. The site is located within the Edwards Aquifer Recharge Zone, per Edward's Aquifer GIS databases. The site contains five (5) environmental features as identified in the Environmental Resource Inventory. The development identifies the City of Austin appropriate Critical Environmental Feature (CEF) buffers for each feature and no impacts are proposed or mitigations have been identified to any of these areas.

#### Legal Description

The legal description of the subject tract is as follows:

ABS 340 SUR 163 HAMILTON S ACR 25.4150 by deed recorded in Document No. 2011060286TR of the Official Public Records of Travis County, Texas.

#### Land Use

The existing Valor Southwest Public School tract is undeveloped land.

#### **Existing Drainage Conditions**

The existing site has one drainage area. The runoff from the existing site is currently not treated. The existing drainage generally flows northeast to southwest. The total existing impervious cover is zero acres.

#### **Proposed Development**

The proposed Valor Southwest Public School project includes the construction of a school building, gymnasium, basketball court, and a retention-reirrigation pond.

#### **Proposed Drainage Conditions**

The proposed site has two drainage areas. all drainage on-site flows northeast to Danz Creek adjacent to the subject tract. Proposed flows on site will flow to a retention-reirrigation pond. Stormwater collected in the retention/irrigation pond will be used to irrigate landscaped areas and stormwater collected in the retention pond will discharge into Danz Creek.

Basin "PDA-2" will use retention proposed within the Valor Southwest Development Plans to reduce peak flows to existing conditions. For basin "PDA-1", no detention is proposed, as this area flows offsite and result in peak flows that are less than or equal to existing. These basins were analyzed using the SCS method and follow the City of Austin Drainage Criteria Manual.

#### **Detention and Water Quality**

The project proposes the use of a retention-reirrigation pond to provide retention and water quality measures for the proposed development. Drainage area PDA-2 will flow into the proposed pond and drainage area PDA-1 will bypass the pond. The flow from both drainage areas will meet at the point of analysis 1 (POA-1) discharge point. The proposed total flow from the development will be less than existing and the required TSS removal rate will be met.

# Kimley »Horn

#### **Erosion and Sedimentation Controls**

Temporary erosion and sedimentation controls during construction are proposed on the Erosion Control Plan and include silt fences, inlet protection, and a stabilized construction entrance designed to City of Austin criteria. The land disturbed during construction will drain into the proposed on-site storm sewer system where it will be conveyed to the proposed retention and retention-irrigation pond located on-site.

# Kimley *Whorn*

# SECTION 3: GEOLOGIC ASSESSMENT

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512 646 2237



### GEOLOGIC ASSESSMENT FOR THE APPROXIMATELY 25-ACRE VALOR SOUTHWEST TRACT

Travis County, Texas

December 2022

#### Submitted to: Kimley-Horn 10814 Jollyville Road Avallon IV, Suite 200 Austin, Texas 78759

#### **Prepared by:**

aci consulting 1001 Mopac Circle Austin, Texas 78746 TBPG Firm License No. 50260

aci project No.: 38-21-062

aci consulting

a division of aci group, LLC

Austin (512) 347.9000 • Denver (720) 440.5320

www.aci-consulting.net

## 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.

213.	
Print Name of Geologist: <u>Mark Adams</u>	Telephone: <u>(512) 347-9000</u>
Date: <u>12/19/2022</u>	Fax: <u>(512) 306-0974</u>
Representing: <u>aci Group LLC TBPG License No</u> registration number) 12-19-2022	o. 50260 (Name of Company and TBPG or TBPE
Signature of Geologist: 🦯 🍂	MARK T. ADAMS GEOLOGY No. 1835 CENSED CH.
Project Information	antances.
1. Date(s) Geologic Assessment was perform	ned: <u>8/27/2021 &amp; 9/7/2021</u>
2. Type of Project:	
WPAP SCS	AST UST

3. Location of Project:

$\ge$	Rec	harg	e Zon	ie

Transition Zone

Contributing Zone within the Transition Zone

- 4. X 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)
SsC—Speck clay loam, moist, 1 to 5 percent		
slopes, stony	D	0-3.3

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. X 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:  $1'' = \underline{80}'$ Site Geologic Map Scale:  $1'' = \underline{80}'$ Site Soils Map Scale (if more than 1 soil type):  $1'' = \underline{400}'$ 

9. Method of collecting positional data:

Global Positioning System (GPS) technology.

- Other method(s). Please describe method of data collection: \_\_\_\_\_
- 10. The project site and boundaries are clearly shown and labeled on the Site Geologic Map.

- 11. Surface geologic units are shown and labeled on the Site Geologic Map.
- 12. 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.  $\square$  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.



#### TABLE OF CONTENTS

1.0	INTRODUCTION	.2
2.0	PROJECT INFORMATION	. 2
3.0	INVESTIGATION METHODS	.3
4.0	SITE SPECIFIC SOILS AND GEOLOGY	.3
5.0	SUMMARY OF FINDINGS	5
6.0	REFERENCES	.7

#### LIST OF ATTACHMENTS

ATTA	CHMENT A
	Site Maps (Figures 1-4)
ATTA	CHMENT B13
	Geologic Table Geologic and Manmade Feature Map (Figure 5)
	Feature Descriptions and Recommendations
ATTA	CHMENT C
	Historia Aprial Photographs

Historic Aerial Photographs



#### December 2022

#### Geologic Assessment for the Valor Southwest Tract located in Travis County, Texas

#### **1.0 INTRODUCTION**

The Texas Commission on the Environmental Quality (TCEQ) regulates activities that have the potential to pollute the Edwards Aquifer through the Edwards Aquifer Protection Program. Projects meeting a certain criterion over the Edwards Aquifer Recharge Zone must submit an Edwards Aquifer Protection Plan (EAPP).

The purpose of this report is to identify all potential pathways for contaminant movement to the Edwards Aquifer and provide sufficient geologic information so that the appropriate Best Management Practices (BMPs) can be proposed in the Edwards Aquifer Protection Plan (EAPP). This report complies with the requirements of Title 30, Texas Administrative Code (TAC) Chapter 213 relating to the protection of the Edwards Aquifer Recharge Zone. Per the Rules, the Geologic Assessment (GA) must be completed by a Geologist licensed according to the Texas Geoscience Practice Act.

#### 2.0 PROJECT INFORMATION

The Valor Southwest Tract, hereafter referred to as the subject area or site, is located north of the Highway 1 (Mopac Boulevard) and State Highway (SH) 45 interchange, in the full purpose jurisdiction of Austin, Travis County, Texas (**Attachment A, Figure 1**). Pedestrian investigations of the 25-acre tract were initially performed by **aci consulting** staff in 2008. A Geologic Assessment and feature re-evaluation of previously identified features was conducted on August 27, 2021 and September 7, 2021 by Marcos Cardenas, Andrew Marlow, and Mason Finely, under the supervision of Mark Adams, P.G., and Stan Reece, P.G., with **aci consulting**. Subsequent features identified by the City of Austin (CoA) staff have been reviewed by **aci consulting** throughout the year 2022. Information from work performed by **aci consulting** in 2008, 2021, and 2022, as well as information from the CoA, was compiled to generate this report.

This report is intended to satisfy the requirements for a GA, which shall be included as a component of a Water Pollution Abatement Plan (WPAP) and Sewage Collection System (SCS). The site is approximately 25 acres in total. The proposed site use is for low-density,



single-family, residential development. The scope of the report consists of a site reconnaissance, field survey, and review of existing data and reports. Features identified during the field survey were ranked utilizing the TCEQ matrix for Edwards Aquifer Recharge Zone features. The ranking of the features will determine their viability as "sensitive" features.

#### 3.0 INVESTIGATION METHODS

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

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

#### 4.0 SOILS AND GEOLOGY

The following includes a site-specific description of the soils, geologic stratigraphy, geologic structure, and karstic characteristics as they relate to the Edwards aquifer. Also included in this section is a review of historic aerials for presence of geologic changes or changes to manmade features in bedrock.

<u>Soils</u>

According to the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey (2021), one soil unit, *Speck clay loam, moist, 1 to 5 percent slopes, stony (SsC),* occurs within the site. A description of the unit according to the NRCS (2021) is as follows (**Attachment A, Figure 2**):

• SsC - Speck clay loam, moist, 1 to 5 percent slopes, stony

The Speck, moist, stony component makes up approximately 95 percent of the map unit. Slopes are 1 to 5 percent. This component is found on ridges on dissected plateaus. The

3



parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 14 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet the criteria for hydric soils. Hydrologic Soil Group: D.

#### Geologic Stratigraphy

According to the Geologic Map of the Barton Springs Segment of the Edwards Aquifer, one geologic unit, *Kirshberg Evaporite Member (Lower Cretaceous) (ks)*, occurs within the project area (**Attachment A, Figure 3**). A description of the unit by Small et al. (1996) is as follows:

#### • *Kirshberg Evaporite Member (Lower Cretaceous) (ks)*

The Kirshberg Evaporite Member overlies the Dolomitic Member of the Kainer Formation of the Edwards Group and is described by Small et al. (1996) as consisting of light-gray, crystalline limestone and chalky to mudstone commonly containing chert nodules and lenses with Boxwork structure common locally. Most cave formation within the Edwards falls within the Kirshberg Evaporite Member, and it is one of the most porous and permeable members (Small et al. 1996). Average thickness ranges from 65 to 75 feet (ft).

#### Site-Specific Stratigraphic Column

Formation	Members	Thickness (Small et al. 1996)
Kainer	Kirshberg Evaporite	65-75

#### Geologic Structure

The geologic strata associated with the Edwards Aquifer include the Georgetown Limestone Formation of the Washita Group, the Edwards Limestone Group which is interfingered with the Comanche Peak Formation, followed by the Walnut formation,



and finally the Glen Rose Formation of the Trinity Group. These Groups dip gently to the southeast and are a characterized by the Balcones Fault Escarpment, a zone of en echelon normal faults downthrown to the southeast. Locally, the dominant structural trend of faults within the area is 15°, as evidenced by the mapped fault patterns (**Attachment A**, **Figure 4**). Thus, all features that have a trend ranging from 0° to 30° are considered "on trend" and were awarded the additional 10 points in the Geologic Assessment Table.

#### Karstic Characteristics

In limestone landscapes, karst is expressed by erratically developed cavernous porosity from dissolution of bedrock as water combined with weak acids moves through the subsurface. Karst terrains are typical of the Edwards Limestone, occurring across a vast region of Central Texas, including the Balcones Fault Escarpment. The features produced by karst processes include, but are not limited to, sinkholes, solution cavities, solution enlarged fractures, and caves. These features can eventually provide conduits for fluid movement such as surface water runoff, as "point recharge" to the Edwards Aquifer. Faults and manmade features within bedrock can also provide conduits for point recharge in many cases.

According to Edwards aquifer zone map produced by the TCEQ (2005), the entire subject area is within the northern segment of the Edwards Aquifer Recharge Zone. Thus, all karst features identified as sensitive within the project limits have the potential to be point recharge features into the Edwards aquifer.

#### Review of Historic Aerials

Aerial photographs were reviewed for the site, and it was determined that ranching, hunting, and or agricultural activities occurred on the site since the first aerial image dated 1995 (**Attachment C**). The site has been undeveloped and undisturbed from surrounding developments except for minor vegetation clearing throughout the aerial images.

#### 5.0 SUMMARY OF FINDINGS

This report documents the findings of a geologic assessment conducted by **aci consulting** personnel on August 27, 2021 through December 2022. Additional features identified by the CoA staff have been reviewed and incorporated into this report as required. Sixteen features (manmade features in bedrock, karst, and non-karst features) were noted on the



site. Comprehensive descriptions and recommendations for each feature can be found in **Attachment B**. Based on assessment of each feature, it was determined that there are six sensitive karst features on the subject property, the remaining six naturally occurring features were determined to be non-sensitive. Four features were man-made features in bedrock and have been designated as sensitive for the purpose of bringing to the attention of the project engineer.



#### **6.0 REFERENCES**

Hauwert, N., et. al.

2002. Geologic Map of the Barton Springs Segment of the Edwards Aquifer. Barton Springs Edwards Aquifer Conservation District and the United States Geologic Survey. Austin, Texas.

Small, T.A.; J.A. Hanson; and N.M. Hauwert.

1996. Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, (Barton Springs Segment) Northeastern Hays and Southwestern Travis Counties, Texas. U.S. Geological Survey Water Resources Investigations Report 96-4306.

(SCS) Soil Conservation Survey

1983 Soil Survey of Travis County, Texas. United States Department of Agriculture. Texas Agriculture Experiment Station.

(TCEQ) Texas Commission on Environmental Quality

2004 Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones. October 1, 2004. Austin, Texas.

(TCEQ) Texas Commission on Environmental Quality

2005 "Edwards Aquifer Protection Program, Chapter 213 Rules - Recharge Zone, Transition Zone, Contributing Zone, and Contributing Zone within the Transition Zone." Map. Digital data. September 1, 2005. Austin, Texas.

(TWDB) Texas Water Development Board

- 2021 Water Data Interactive Groundwater Data Viewer. Accessed on September 6, 2021. Available http://www2.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer
- (USDA NRCS) United States Department of Agriculture Natural Resources Conservation Service
- 2021 WebSoilSurvey.com. Soil Survey Area: Travis County, Texas. Date accessed: September 6, 2021.



#### ATTACHMENT A

Site Maps



Valor Southwest Tract Figure 1 - Site Location

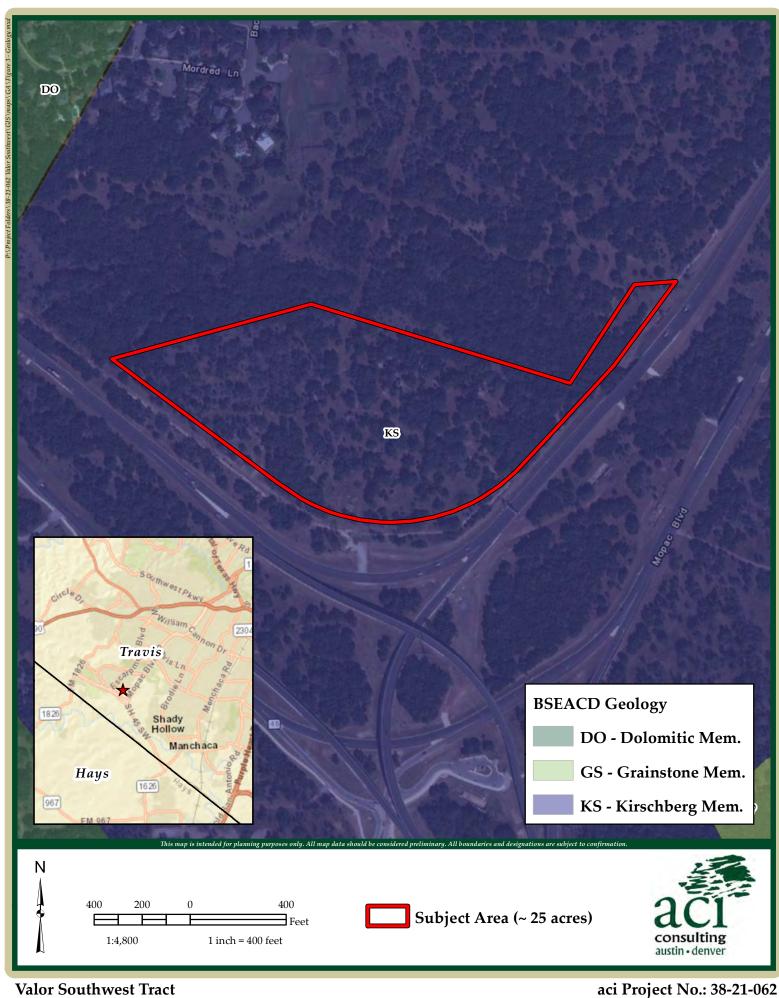
#### aci Project No.: 38-21-062 December 2022



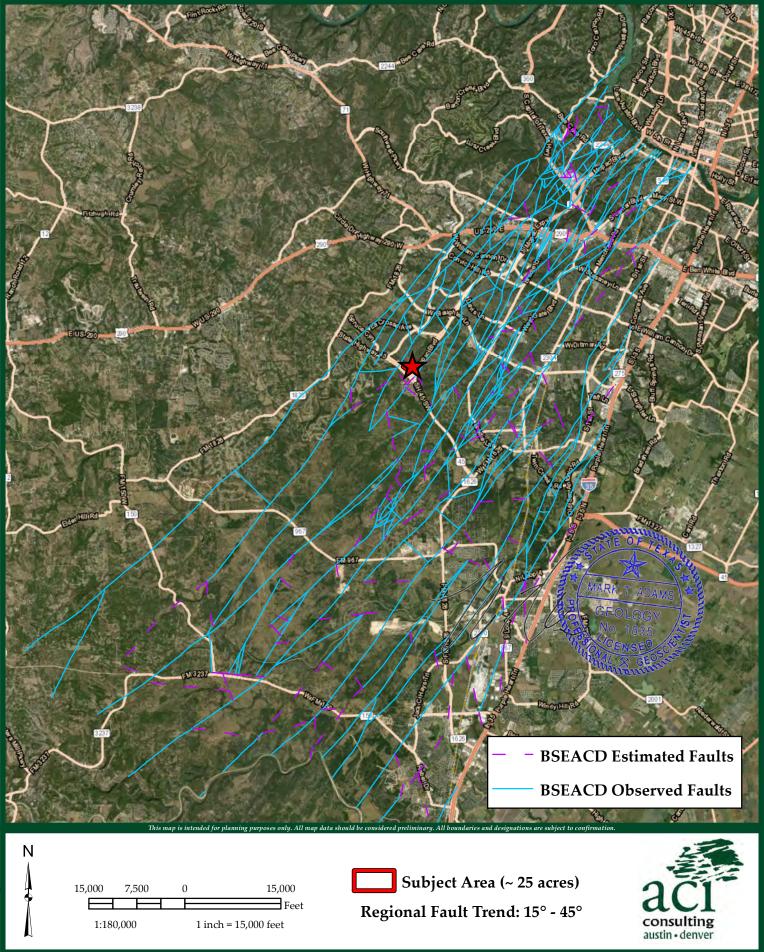
Valor Southwest Tract

**Figure 2 - Soils** 

aci Project No.: 38-21-062 December 2022



Valor Southwest Tract Figure 3 - Geology



Valor Southwest Tract Figure 4 - Regional Fault Trend aci Project No.: 38-21-062 December 2022

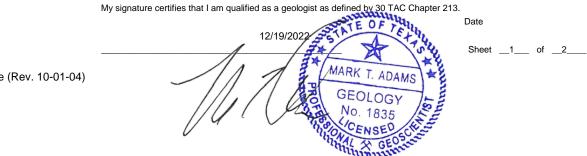


#### ATTACHMENT B

Geologic Table Geologic and Manmade Feature Map (Figure 5) Feature Descriptions and Recommendations

GEOLO	GIC ASSE		PROJECT NAME: Valor S										outhwest							
LOCATION							FEATURE CHARACTERISTICS										EVALUATION PHYSICAL SET			
1A	1B *	1C*	2A	2B	3		4	5	5A	6	7	8A	8B	9	9 10 11		12			
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIME	NSIONS (	TREND (DEGREES)			APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	TOTAL SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY	
						х	Y	Z		10						<40	<u>&gt;40</u>	<1.6	<u>&gt;1.6</u>	
COA1	30.176807	-97.88769	SC	20	ks	1.5	1.5	1	-		-	-	N, O	15	35	Х		Х		Hillside
COA2	30.176679	-97.887139	CD	5	ks	2	2	-	-		-	1x1x1	0, V	10	15	Х		Х		Hillside
COA3	30.178059	-97.889543	SC	20	ks	1	1	1	-		-	-	N, O	18	38	Х		Х		Hillside
HCC1	30.178003	-97.888489	SC	20	ks	2	2	-	-		-	1x1x3	C, O, V	25	45		Х	Х		Hillside
HCC2	30.177282	30.177282 -97.886562 O 5 ks 3 2 0.5 O,V 5									10	Х		Х		Hillside				
HCC4	30.177843	-97.885821	0	5	ks	25	5 15 2 30° 10 N, O, V 9 24 X X D										Drainage			
HCC4-1	30.177831	-97.885668	SF	20	ks	3											Drainage			
HCC5	30.177211	-97.888277	CD	5	ks	3	3 0.5 O, V 10 40 X X Hil										Hillside			
HCC8	30.176387	-97.889802	SF	20	ks	4	2.5	1	-		-	-	N, O, V	20	40		Х	Х		Hillside
HCC9	30.176501	-97.889619	Z	30	ks	3.5	2.5	4	25°	10	4/30	4	N, O, V	35	75		Х	Х		Hillside
HCC10	30.176185	-97.889524	SC	20	ks	4	3	2	-		-	-	N, O, V	20	40		Х	Х		Hillside
DH Sink	30.177643	-97.889004	SH	20	ks	2	2	1.5	-		-	-	0, V	20	40		Х	Х		Hillside
				Add	itional n	nan-r	nade	feat	ures in	bec	rock on	the ne	xt table							
* DATUM: NAD 1983 State Plane 4203																				
2A TYPE			8A INFILLING																	
С	Cave				30		Ν	None	, exposed	bedr	ock									
SC	Solution cavity 20 C Coarse - cobbles, breakdown, sand, gravel																			
SF	Solution-enlarged fracture(s) 20 O Loose or soft mud or soil, organics, leaves, sticks, dark colors																			
F	Fault 20 F Fines, compacted clay-rich sediment, soil profile, gray or red colors																			
0	Other natural bedrock features 5 V Vegetation. Give details in narrative description																			
MB	Manmade feature in bedrock 30 FS Flowstone, cements, cave deposits																			
SW	Swallow hole 30 X Other materials																			
SH	Sinkhole 20																			
CD	Non-karst closed depression 5 12 TOPOGRAPHY																			
z	Zone. clustered	Zone, clustered or aligned features 30 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.



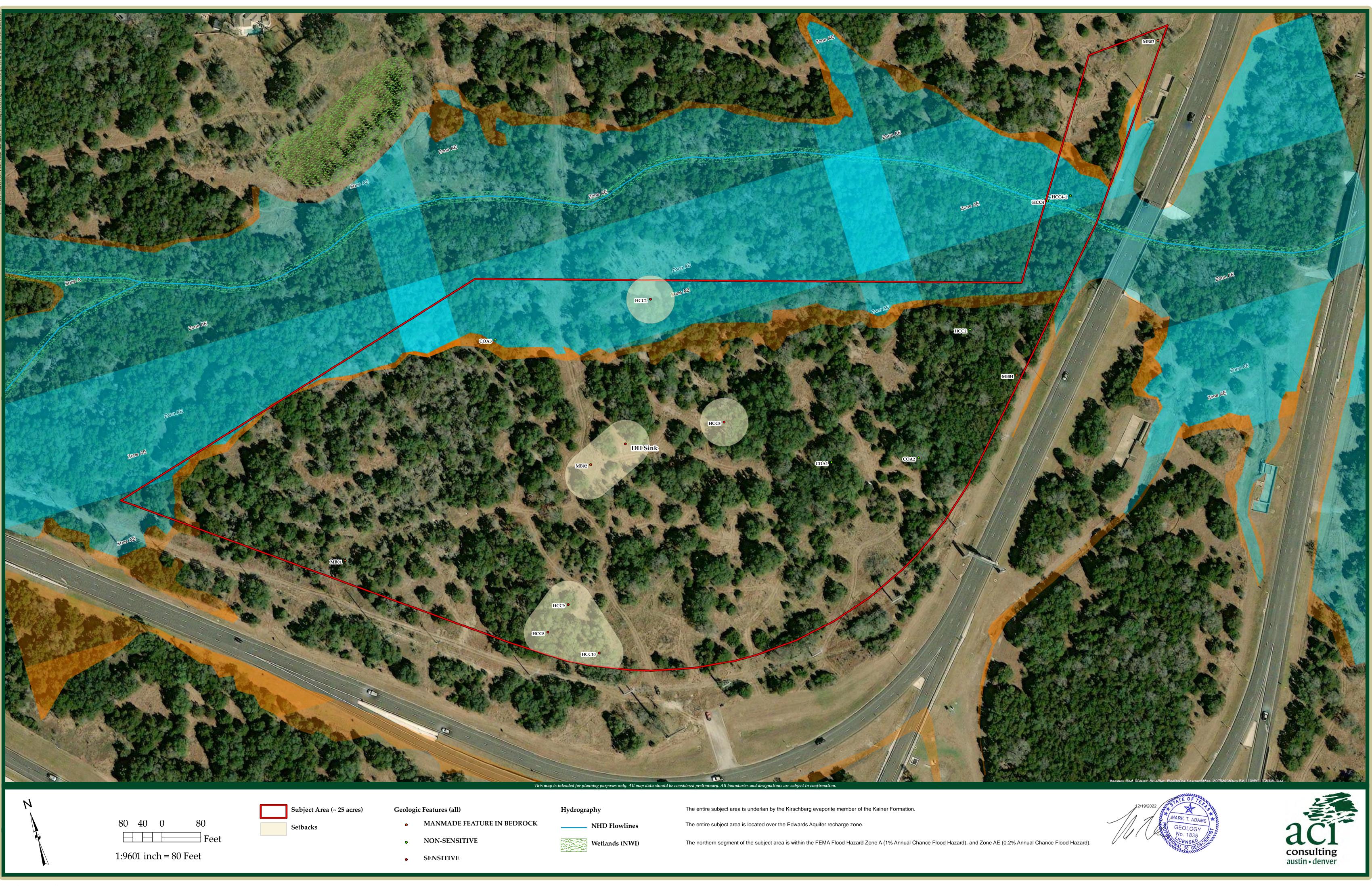
TCEQ-0585-Table (Rev. 10-01-04)

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Z Zone, clustered or aligned features 30 Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed	-																					

I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213. Date OF E 2/19/2022 Sheet \_\_2\_\_\_ of \_\_2\_\_\_\_ lunnt MARK T. ADAMS GEOLOGY

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



Valor Southwest Tract Geologic Feature Map

aci Project No.: 38-21-062 December 2022



## COA1 GPS: 30.176807 -97.88769

This feature is a solution cavity with an approximate diameter of 1.5 ft and a depth of approximately 1 ft. Light hand excavation was performed to assess extent of the feature and it was noted that the feature extended laterally for an addition 2.5 ft. The interior of this feature was rock lined, and contained loose leaf organics, dark, compact soils, roots and small cobbles. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group on a gently sloping hillside. This feature has a catchment area of less than 1.6-acres, and it was determined to have a low infiltration rate with a point value of 15. This feature is non-sensitive.



Photo of COA1.



## COA2 GPS: 30.176679 -97.887139

This feature is a non-karst closed depression with an approximate diameter of 2 ft. One aperture approximately 1 ft long by 1 ft wide by 1 ft deep was noted within the depression. Light hand excavation was performed to assess extent of the feature and it was noted that there was no vertical or lateral development within the aperture. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group on a gently sloping hillside. The interior of this feature was not rock lined, and contained loose leaf organics, dark, loose soils, roots and vegetation including green briar and a juvenile hackberry. The catchment area was determined to be less than 1.6-acres, and the infiltration rate was determined to be low with a point value of 10. This feature is non-sensitive.



Photo of COA2.



## COA3 GPS: 30.178059 -97.889543

This feature is a solution with an approximate diameter of 1 ft and a depth of approximately 1 ft. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group on a gently sloping hillside. The interior of the cavity was investigated for additional portals. It was noted that there was lateral development within the cavity extending for approximately 2 ft in multiple directions. The catchment area for this feature was less than 1.6 acres. Infill material consisted of loose organics and exposed bedrock. The infiltration rate for this feature was determined to be low and assigned a point value of 18. This feature was previously determined to be non-sensitive, and the City of Austin (COA) had dismissed any setbacks for this feature



Photo of COA3.





Interior view of CoA 3.



# HCC1 GPS: 30.178003 -97.888489

This feature is a solution cavity within a depression with an approximate diameter of 2 ft. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group on a gently sloping hillside. Light hand excavation was performed to assess the extent of this feature. After pulling away loose cobbles, the solution cavity was discovered. The approximate dimensions of this cavity were 1 ft long by 1 ft wide by 3 ft deep, at its maximum observable distance. The interior of the cavity contained medium, rounded cobbles, loose organics, grasses and roots. The catchment area for this feature was less than 1.6 acres. The infiltration rate for this feature was determined to be intermediate and assigned a point value of 25. Thus, this feature is determined to be sensitive.

Recommendation: A setback of 50 ft around this feature is to be established.



Photo of HCC1.





Close up of portal within HCC1 after light hand excavation.



# HCC2 GPS: 30.177282 -97.886562

This feature is a non-karst closed depression approximately 3 ft long by 2 ft wide by 0.5 ft deep. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group on a gently sloping hillside. Light hand excavation was performed to determine if any portals existed within the feature. There were no portals or vertical development observed within the feature. The infill material consisted of loose soils, organics, leaves, and vegetation including yaupon and live oak. The catchment area for this feature was less than 1.6 acres. The infiltration rate for this feature was determined to be low and assigned a point value of 5. Thus, this feature is determined to be non-sensitive.



Photo of HCC2.





Photo of HCC2 after light hand excavation.



#### HCC4 GPS: 30.177843 -97.885821

This feature is an "other natural bedrock feature", a fractured rock outcrop. The approximate dimensions of this feature are 25 ft long by 15 ft wide by 2 ft deep. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group within a drainage. The general trend of the fractures within this outcrop was approximately 30°, however, there were no portals or vertical development observed within this outcrop. The infill material consisted of loose soils, organics, leaves, and vegetation and large cobbles. The catchment area for this feature was greater than 1.6 acres. The infiltration rate for this feature was determined to be low and assigned a point value of 9. Thus, this feature is determined to be non-sensitive.



Photo of HCC4.



# HCC4-1 GPS: 30.177831 -97.885668

This feature is a solution fracture approximately 3 ft long by 0.5 ft wide by 1.5 ft deep. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group within a drainage. The general trend of this fracture was approximately 30°, however, there were no portals or vertical development observed within feature. The infill material consisted of loose soils, organics, leaves, and vegetation and large cobbles. The catchment area for this feature was greater than 1.6 acres. The infiltration rate for this feature is determined to be low and assigned a point value of 9. Thus, this feature is determined to be non-sensitive.



Photo of HCC4-1.



# HCC5

#### GPS: 30.177211 -97.888277

This feature is a sinkhole with an approximate diameter of 3 ft and a depth of approximately 0.5 ft. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group on a gently sloping hillside. There were no portals identified within the feature during the inspection. It was determined that the catchment area for this feature was less than 1.6 acres. Infill material consisted of loose organics, dark soils and vegetation. The infiltration rate for this feature was determined to be low and assigned a point value of 10. This feature is sensitive, and the COA had previously approved a setback of 50 ft around this feature.

**Recommendation**: A setback of 50 ft around this feature is to be established.



Photo of HCC5.



## HCC8 GPS: 30.176387 -97.889802

This feature is a solution cavity/solution fracture with an approximate of 4 ft in length, 2.5 ft in width, and 1 ft in depth. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group on a gently sloping hillside. It was determined that the catchment area for this feature was less than 1.6 acres. Infill material consisted of loose organics, dark soils, tree roots and vegetation. The infiltration rate for this feature was determined to be intermediate and assigned a point value of 20. This feature is sensitive, and the COA had previously approved a setback of 50 ft around this feature.

**Recommendation**: A combined setback with feature HCC8, HCC9, and HCC10 is to be established.



Photo of HCC8.



# HCC9 GPS: 30.176501 -97.889619

This feature is a zone of solution cavities and solution fractures. Located less than 100 ft northeast of HCC8. The dimensions of the features within this zone vary in size, though it was noted that the general trend of observable fractures was ranging between 25° and 38°, concluding that these features are on trend. The approximate depth, where visible, for features within this zone ranged from 3-6 ft in depth. Light hand excavation was performed near HCC9 where a solution cavity was observed. Clean, washed, rounded bedrock was observed within this solution cavity and the relative infiltration rate was determined to be high, and assigned a point value of 35. The catchment area was less than 1.6 acres. Infill material consisted of loose organics, cobbles and exposed bedrock. This feature is sensitive, and the COA had previously approved a setback combined with the setback for feature HCC8.

**Recommendation**: A combined setback with feature HCC8, HCC9, and HCC10 is to be established.



Photo of HCC9.





View of HCC 9-1, a solution cavity within the zone of HCC9 showing clean, washed bedrock extending to a depth of approximately 4 ft deep.



## HCC10 GPS: 30.176185 -97.889524

This feature is a solution cavity approximately 4 ft long by 3 ft wide with a vertical depth of 2 ft, located on a gently sloping hillside. There was approximately 4 ft of lateral development noted within the feature. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group. The infill material consisted of loose, dark soils, leaf litter and organics, roots from a nearby oak, and exposed bedrock. The feature has no trend, and a drainage area of less than 1.6 acres. It was determined that this feature had an intermediate infiltration rate and was assigned a point value of twenty (20). This feature is sensitive, and the COA had previously approved a setback of 50 ft around this feature.

**Recommendation**: A combined setback with feature HCC8, HCC9, and HCC10 is to be established.



Photo of HCC10.





Interior view of HCC10.



## Dryer Hose Sink GPS: 30.177643, -97.889004

This feature is a sink approximately 2 feet in diameter by 1.5 feet deep, located on a gently sloping hillside. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group. The infill material consisted of loose, dark soils, leaf litter and organics, and nearby vegetation including green briar, agarita, and Texas persimon. The feature has no trend, and a drainage area of less than 1.6 acres. Anecdotal information on this feature was provided by the CoA and the feature was identified during field investigations by **aci consulting** and CoA Staff on September 7, 2022. It was determined that this feature has an intermediate infiltration rate with a point value of twenty (20). This feature has been deemed sensitive, and a buffer of 150 feet upslope and 50 feet down and across the sink of the feature is being recommended.

**Recommendation**: A setback of 150 feet upslope and 50 feet across and downslope is recommended.



Overview of Dryer Hose Sink.



# MB01 GPS: 30.177127 -97.890918

This feature is a manmade feature in bedrock (a fire hydrant) with an apparent diameter of 1 ft extending below the surface for an unknown depth. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group on a gently sloping hillside. Infill material is unknown. The feature has no trend, and a drainage area of less than 1.6 acres. This feature was assigned a low infiltration rate of 10 points to designate it as sensitive, in order to bring it to the attention of the project engineer.



Photo of MB01.



#### **MB02**

## GPS: 30.177218 -97.889200

This feature is a manmade feature in bedrock (a fire hydrant and associated underground water utilities) with an apparent diameter of 1 ft extending below the surface for an unknown depth. A 2.5-ft by 2.5-ft concrete pad with underground water utilities is located adjacent to this hydrant. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group on a gently sloping hillside. Infill material is unknown. The feature has no trend, and a drainage area of less than 1.6 acres. This feature was assigned a low infiltration rate of 10 points to designate it as sensitive, in order to bring it to the attention of the project engineer.



Photo of MB02.



#### **MB03**

#### GPS: 30.178518 -97.884814

This feature is a manmade feature in bedrock (underground telecommunications utilities). A concrete pad approximately 4 ft long by 2.5 ft wide was noted, as well as a fiber optic cable marker. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group on a gently sloping hillside. Infill material is unknown. The feature has no trend, and a drainage area of less than 1.6 acres. This feature was assigned a low infiltration rate of 10 points to designate it as sensitive, in order to bring it to the attention of the project engineer.



Photo of MB03.



#### **MB04**

#### GPS: 30.176955 -97.88636

This feature is a manmade feature in bedrock (underground telecommunications utilities). A concrete pad approximately 4 ft long by 2.5 ft wide was noted, as well as a fiber optic cable marker. The feature is located in the Kirschberge Evaporite Member of the Edwards Limestone Group on a gently sloping hillside. Infill material is unknown. The feature has no trend, and a drainage area of less than 1.6 acres. This feature was assigned a low infiltration rate of 10 points to designate it as sensitive, in order to bring it to the attention of the project engineer.



Photo of MB04.



# ATTACHMENT C

Historic Aerial Photographs



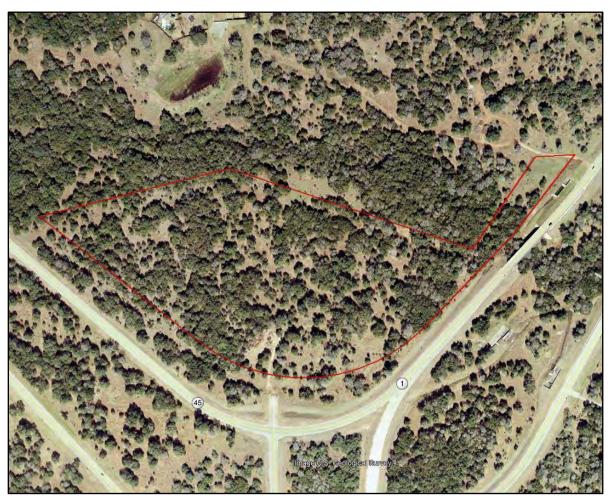


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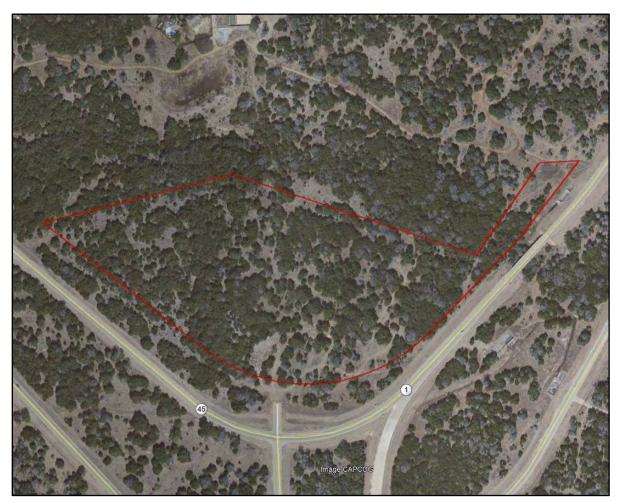


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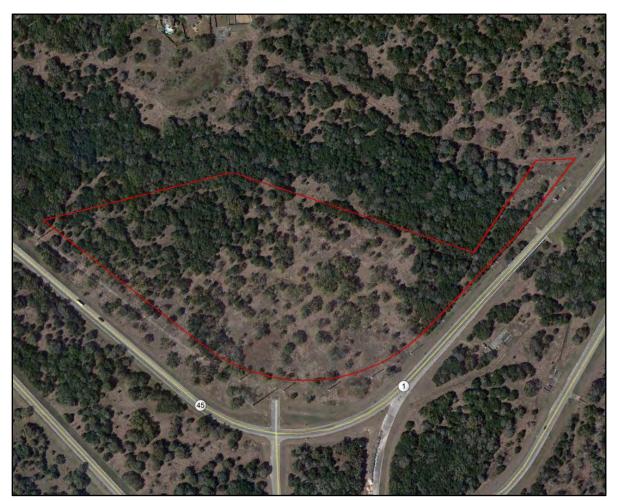


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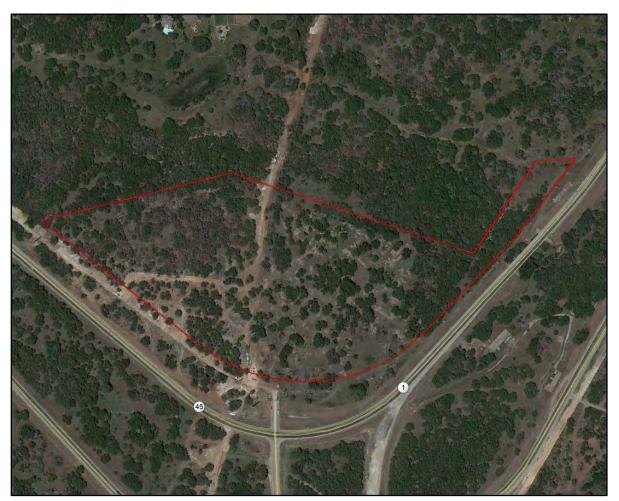


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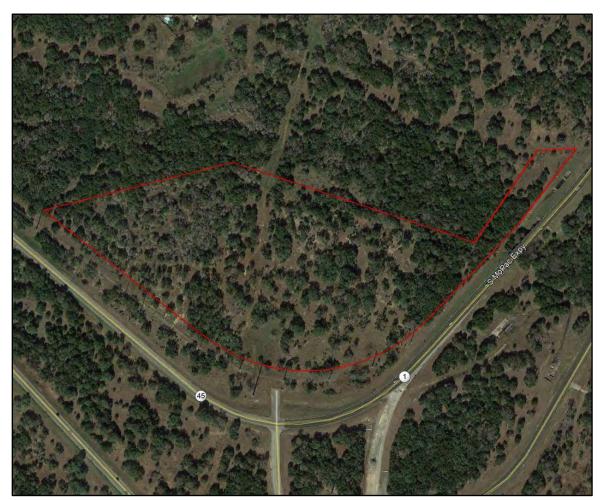


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# Kimley »Horn

# SECTION 4: ORGANIZED SEWAGE COLLECTION SYSTEM PLAN

kimley-horn.com 5301 Southwest Parkway, Building 2, Suite 100 Austin, Texas 78735

512 646 2237

# 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: Valor Texas Education Foundation

 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**

 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: Jesse Bates

 Entity: Valor Texas Education Foundation

 Mailing Address: 220 Foremost Drive

 City, State: Austin, Texas
 Zip: 78745

 Telephone: (214)514-335
 Fax:

 Email Address: jbates@valoreducation.org

 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: C.J. Ponton, P.E.Texas Licensed Professional Engineer's Number: 127280Entity: Kimley-Horn & AssociatesMailing Address: 5301 Southwest Parkway, Building 2, Suite 100City, State: Austin, TexasTelephone: 737-787-8750Email Address: cj.ponton@kimley-horn.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)
$\ge$	Other: <u>Charter School</u>

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

<u>100</u> % Domestic	<u>10,350</u> gallons/day
% Industrial	gallons/day
% Commingled	gallons/day
Total gallons/day: <u>10,350</u>	

- 6. Existing and anticipated infiltration/inflow is <u>0</u> gallons/day. This will be addressed by: <u>N/A</u>.
- 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 03/21/2023, 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)
6"	1,452 ft	PVC SDR-26	ASTM D-3034

#### Total Linear Feet: 1,452 ft

- (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 <u>South Regional</u> <u>Wastewater Treatment Plant</u> (name) Treatment Plant. The treatment facility is:

$\ge$	Existing
	Proposed

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

$\ge$	] The City of <u>Austin</u> 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)

			Manhole or Clean-
Line	Shown on Sheet	Station	out?
WWTR-1	29 Of 50	1+16.70	Manhole
WWTR-1	29 Of 50	3+21.79	Manhole
WWTR-1	29 Of 50	6+21.57	Manhole
WWTR-1	29 Of 50	9+04.65	Manhole
WWTR-1	29 Of 50	11+70.04	Manhole
WWTR-1	29 Of 50	14+67.57	Manhole
WWTR-1	29 Of 50	15+52.09	Manhole

#### Table 2 - Manholes and Cleanouts

- 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.  $\square$  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" = <u>30, 40, 60, 100</u>'.

- 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:

 $\square$  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
WWTR-1	29 of 50	3+21.79 to 6+21.57

#### 23. 5-year floodplain:

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

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

#### Table 4 - 5-Year Floodplain

Line	Sheet	Station
N/A	N/A	N/A

24. Elegal 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
WWTR-1	13+84.75	Crossing	0	5.5 feet

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
N/A	N/A	N/A	N/A

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(I)(2)(H).

#### Table 7 - Drop Manholes

Line	Manhole	Station	Sheet
WWTR-1	Drop Manhole	17+00.82	29 of 50

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):

imes	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								
1	Duefile Cheet	Chartien to Chartien	500	0/ Class				

|--|

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

\_

33. Assuming pipes are flowing full, where flows are  $\geq$  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(I)(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. 

# 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:

Standard Details	Shown on Sheet
Lateral stub-out marking [Required]	N/A
Manhole, showing inverts comply with 30 TAC §217.55(I)(2) [Required]	29 of 50
Alternate method of joining lateral to existing SCS line for potential future connections [Required]	N/A
Typical trench cross-sections [Required]	N/A
Bolted manholes [Required]	29 of 50
Sewer Service lateral standard details [Required]	29 of 50
Clean-out at end of line [Required, if used]	29 of 50
Baffles or concrete encasement for shock/erosion protection [Required, if flow velocity of any section of pipe >10 fps]	N/A
Detail showing Wastewater Line/Water Line Crossing [Required, if crossings are proposed]	34 of 50
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) [Required, if Flexible Pipe is used]	34 of 50

#### Table 9 - Standard Details

Standard Details	Shown on Sheet
Drop manholes [Required, if a pipe entering a manhole is more than 24 inches above manhole invert]	29 of 50

- 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: C.J. Ponton, P.E.

Date: 03/21/2023

Place engineer's seal here:



Signature of Licensed Professional Engineer:

C. J. Por

# 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.

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	*	*		

#### Table 10 - Slope Velocity

\*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) S = slope (ft/ft)

# Attachment A

# Engineering Design Report

### **Engineer's Design Report**

This Engineering Design Report has been prepared to comply with the Texas Commission on Environmental Quality Design Criteria for Domestic Wastewater Systems, 30 TAC Chapter 217, including 217.10 of Subchapter A,  $\S$ 217.51 – 217.70 of Subchapter C, and Subchapter D as applicable. Please note that throughout this application, the more stringent of AWU or TCEQ regulations shall apply.

# **Project Description**

#### Introduction

The Valor Southwest Public School is located at the intersection of I-45 and MoPac Expressway, Austin, Travis County, Texas. The existing tract (TCAD ID 0431470126) consists of one +/-25.42 acre tract located in the Austin Full-Purpose jurisdiction. The proposed development will include a K-12 Charter School and Gymnasium, that totals approximately 116,000 square-feet, and associated parking and utility improvements. A site plan application has been submitted to the City of Austin for approval. The development is located within the Edwards Aquifer Recharge Zone. Subsequently, water quality requirements set forth by the Texas Commission on Environmental Quality (TCEQ) will need to be met. Best managements practices (BMPs) used is a retention-reirrigation pond. This project is located within the Slaughter Creek Watershed. The proposed 25.42-acre site is not located in the Federal Emergency Management Agency's 100-year floodplain according to the FEMA FIRM map 48453C0595H. The site is located within the Edwards Aquifer Recharge Zone, per Edward's Aquifer GIS databases. The site contains five (5) environmental features as identified in the Environmental Resource Inventory. The development identifies the City of Austin appropriate Critical Environmental Feature (CEF) buffers for each feature and no impacts are proposed or mitigations have been identified to any of these areas.

# Pipe Design

#### Flow Design Basis

The build-out of the 25.42-acre site will be served by this wastewater system. The City of Austin Criteria Manuals were used to determine the parameters for the design of the wastewater line extension.

#### Gravity Pipe and Joint Materials

The proposed pipe to be used for the 6 wastewater line will be ASTM D3034 SDR-26 PVC pipe (cell class 12454). The joints for this pipe shall meet the requirements of ASTM D3212. The pipe joints shall have an integral bell and rubber gasket seal with the locked-in type gasket.

#### Separation Distances for Water and Wastewater

At all waterline crossings a two-foot vertical separation is maintained. A nine-foot minimum horizontal separation is maintained between all proposed wastewater infrastructure and existing and proposed public water supply lines.

#### **Building Laterals and Taps**

A two service laterals are provided for the development.

#### Boring and Tunneling of Crossings

No boring or tunneling of crossings are proposed for this project.

#### **Corrosion Potential**

PVC pipe will be utilized for or all proposed wastewater lines. No deterioration of the proposed pipe or its associated components is anticipated in this application.

#### **Odor Control**

All flows contributing to the proposed wastewater lines are domestic sewage. No odor control is used.

#### **Active Geologic Faults**

Per the Geologic Assessment, no active geologic faults were located within the area of the project.

#### **Capacity Analysis**

The capacity of each proposed wastewater segment is calculated below based on Manning's Equation. The calculation for each segment is based on the minimum proposed slope.

Capacity:

$$Q = \frac{1.49}{n} * A * R^{0.67} * S^{0.5}$$

Where:

Qfull =	flow rate of fluid in pipe at full flow (ft <sup>3</sup> /s) (cfs)
Q90%=	flow rate of fluid in pipe at 90% full flow (ft <sup>3</sup> /s) (cfs)
A =	area of pipe (ft^2) = $\frac{\pi * d^2}{4}$
d =	internal pipe diameter (ft) = Do – 2t
Do =	outside diameter (in)
t =	pipe wall thickness (in)
n =	Manning's Roughness coefficient = 0.013
Rfull =	hydraulic radius of pipe (full flow) = A/P = D/4 (ft)
R90%=	hydraulic radius of pipe (90% full flow) = $0.9*A/P = 0.9*D/4$ (ft)
PW =	wetted perimeter of pipe = $ \mathcal{T} $ *D (ft)
S =	slope of energy line

PIPE-ID	LENGTH	H AVERAGE SLOP	PIPE DIAMETER		MANNING'S	PW A	Α	Rfull	R90%	Qfull	Qfull	Q90% (Qcap)	Q90% (Qcap)	Vfull	V90%
PIPE-ID	FT	FT/FT	IN	FT		FT	SF	FT	FT	CFS	MGD	CFS	MGD	FPS	FPS
1	99.72	0.0100	6	0.50	0.013	1.57	0.20	0.13	0.11	0.56	0.36	0.50	0.33	2.85	2.56
2	105.38	0.0100	6	0.50	0.013	1.57	0.20	0.13	0.11	0.56	0.36	0.50	0.33	2.85	2.56
3	289.76	0.0100	6	0.50	0.013	1.57	0.20	0.13	0.11	0.56	0.36	0.50	0.33	2.85	2.56
4	283.08	0.0100	6	0.50	0.013	1.57	0.20	0.13	0.11	0.56	0.36	0.50	0.33	2.85	2.56
5	265.39	0.0100	6	0.50	0.013	1.57	0.20	0.13	0.11	0.56	0.36	0.50	0.33	2.85	2.56
6	297.53	0.0100	6	0.50	0.013	1.57	0.20	0.13	0.11	0.56	0.36	0.50	0.33	2.85	2.56
7	84.52	0.0100	6	0.50	0.013	1.57	0.20	0.13	0.11	0.56	0.36	0.50	0.33	2.85	2.56

**Project Flows:** 

#### 6" ASTM D3034 SDR-26

LUE = Living Unit Equivalent = Population of Service

SA = Service Acreage: 2.55-Acres Existing LUE's: 0 Valor Southwest LUE's: 109 Total LUE's: 109

Peak Dry Flows

PDWF = F\*LUE\*PF/1,000,000

Where:

PDWF = Peak Dry Weather Flow (MGD) F = Flow per capita per day = 70 GPD PF = Peaking Factor = 4.0 Used for Lines <15"

PDWF = 70\*109\*4 / 1,000,000

#### PDWF = 0.03 MGD

Minimum Dry Weather Flows

 $MDWF = [0.2*(0.0144*ADWF*1,000,000)^{0.198}]*ADWF / 1,000,000$ 

Where:

MDWF = Minimum Dry Weather Flow (MGD) ADWF = Average Dry Weather Flow (GPD) = <u>0.38 MGD Per City of Austin Model</u> ADWF = 0.38\*1,000,000 = 380,000 GPD

 $MDWF = [0.2*(0.144*380,000)^{0.198}]*380,000 / 1,000,000$ 

#### MDWF = 0.42 MGD

Infiltration & Inflow

I&I = 750\*SA / 1,000,000 (MGD)

I&I = 750\*2.55 / 1,000,000

#### I&I = 0.0019 MGD

Peak Wet Flows

PWWF = PDWF + I&I

Where:

PWWF = Peak Wet Weather Flow (MGD)

PWWF = 0.03 + 0.0019

#### **PWWF = 0.0319 MGD**

Minimum and Maximum Velocity

Minimum Velocity occurs during Average Dry Weather Flow. Flow calculations are based on Partial flow velocity calculations for pipe's flowing less than half full as noted in tables above.

Maximum Velocity occurs during Peak Wet Weather Flow. Flow calculations are based on Partial flow velocity calculations for pipe's flowing greater than half full as noted in tables above.

#### Capacity

The proposed wastewater lines will have a higher slope and capacity than the controlling existing 10" wastewater line with slope of 2.05 %, full flow capacity of 14.66 MGD, and 90% capacity of 13.20 MGD.

#### PWWF 0.0319 MGD < Q<sub>90</sub> = 13.20 MGD

#### 6" ASTM D3034 SDR-26

The 6" wastewater lines proposed as part of this each serve approximately 0.0319 MGD of PWWF. The private laterals are also designed to meet applicable plumbing codes. No additional wastewater flow above the 0.04 MGD is anticipated to be added to the private 6" laterals.

#### Structural Analysis

Flexible pipe is proposed on this project. Structural calculations are provided for the flexible pipe to be installed. The proposed collection system piping is designed to have a minimum structural life of 50 years. As previously mentioned, all proposed PVC pipe shall be cell class 12454 with a tensile strength of 7,000 psi.

Live Load Calculations - no significant live loads are anticipated on any segment of this project.

*Buckling Pressure* - the following equations utilized for the calculation of buckling pressure are taken from the *Handbook of PVC Pipe: Design and Construction* (Uni-Bell PVC Pipe Association, 2001).

Pcr = 
$$\frac{2 * E}{(1 - v^2) * (DR - 1)^3}$$
 (Equation 7.14)

$$\mathsf{Pb} = 1.15 * \sqrt{Pcr * E'}$$

(Equation 7.18)

H = (Pb\*144)/w

(Equation 6.7)

Where:

Pcr =	critical buckling pressure (psi)
E =	modulus of elasticity (psi) = 400,000 psi for PVC
v =	Poisson's Ratio = 0.38 for PVC
DR =	dimension ratio
Pb =	buckling pressure in soil (psi)
E' =	modulus of soil reaction (psi) = 2,000 psi for crushed rock compacted to greater than 95% relative density
H =	maximum allowable cover height of soil (ft)
w =	weight of soil (lbs/ft <sup>3</sup> ) = 120 lbs/ft <sup>3</sup>

#### 6" ASTM D3034 SDR-26

$$Pcr = \frac{2 * 400,000}{(1 - 0.38^2) * (26 - 1)^3}$$

Pcr = 59.84 psi

Pb = 
$$1.15 * \sqrt{59.84 * 2,000}$$

Pb = 397.84 psi

H = (397.84\*144) / 120

H = 477.41 ft height of soil to cause pipe buckling

*Prism Load Calculations* - the following equations utilized for the calculation of prism loads are taken from the *Handbook of PVC Pipe: Design and Construction* (Uni-Bell PVC Pipe Association, 2001).  $P = H^*w$  (Equation 6.7)

Where:

P = prism load pressure due to soil weight (lbs/ft<sup>2</sup>)

H = depth of pipe (ft)

w = soil density (lbs/ft<sup>3</sup>) = 120 lbs/ft<sup>3</sup>

#### 6" ASTM D3034 SDR-26

H = 20' (Max Depth for System)

P = 20 \* 120

P = 2,400 lbs/ft<sup>2</sup> or 12.50 psi

*Long Term Deflection Calculations* - the following equations utilized for the calculation of long term deflection are taken from the *Handbook of PVC Pipe: Design and Construction* (Uni-Bell PVC Pipe Association, 2001).

$$\Delta Y/D = \frac{DL * K * P + K * W_1}{[2E/(3(DR-1)^3)] + 0.061 * E'} * 100$$
 (Equation 7.10)

Where:

 $\Delta Y/D = \text{long term deflection (%)}$ 

DL = Deflection Lag Factor = 1.0 for prism load calculation

K = bedding constant = 0.096 for 90°

P = prism load pressure due to soil weight (lbs/ft<sup>2</sup>)

W<sub>1</sub> = live load (psi) = 0 psi

E = modulus of elasticity (psi) = 400,000 psi for PVC

DR = dimension ratio

E' = modulus of soil reaction (psi) = 2,000 psi for crushed rock bedding compacted to greater than 95% relative density

Note: Leonhardt's Zeta factor is assumed to equal 1, and thus is not required in the calculation. This is a conservative assumption that results in a more conservatively calculated value for long term deflection.

#### 6" ASTM D3034 SDR-26

 $\Delta Y/D = \frac{1.0*0.096*12.50 + 0.096*0}{[2(400,000)/(3(26-1)^3)] + 0.061*2,000} * 100$ 

ΔY/D = 0.86%

*Wall Crushing Calculations* - the following equations utilized for the calculation of wall crushing are taken from the *Handbook of PVC Pipe: Design and Construction* (Uni-Bell PVC Pipe Association, 2001).

$$Py = \frac{\Theta_{C} * 2 * A}{D}$$
 (Equation 7.20)  
H = Py / w (Equation 6.7)

Where:

ipe

soil density (lbs/ft<sup>3</sup>) = 120 lbs/ft<sup>3</sup>

#### 6" ASTM D3034 SDR-26

w =

D = 6.275 - 0.241 = 6.034 in, A = 2.89 in<sup>2</sup>/ft (0.241 in \* 12 in/ft)

 $\mathsf{P}\mathsf{y} = \frac{4,000 * 2 * (2.89/12)}{6.034}$ 

Py = 319.30 psi

H = (319.30\*144) / 120

H = 383.16 ft height of soil to cause wall crushing

*Strain Calculations* - the following equations utilized for the calculation of strain are taken from the *Handbook of PVC Pipe: Design and Construction* (Uni-Bell PVC Pipe Association, 2001).

$$\varepsilon h = \frac{P * D}{2 * t * E}$$
(Equation 7.22)
$$\varepsilon f = \frac{t}{D} * \frac{[3 * \Delta Y / D]}{[1 - 2 * \Delta Y / D]}$$
(Equation 7.24)
$$\varepsilon = \varepsilon h + \varepsilon f$$
(Equation 7.25)

Where:

εh =	maximum strain in the pipe wall due to hoop stress (in/in)		
P =	prism load pressure due to soil weight (psi)		
D =	mean pipe diameter (in) = Do – t		
t =	pipe wall thickness (in)		
E =	modulus of elasticity (psi) = 400,000 psi for PVC		
εf =	maximum strain in the pipe due to ring deflection or flexure (in/in)		
$\Delta Y/D = long term deflection$			

ε = maximum combined strain in pipe wall (in/in)

#### 6" ASTM D3034 SDR-26

 $\epsilon h = \frac{12.50 * 6.034}{2 * 0.241 * 400,000}$   $\epsilon h = 0.00039 \text{ in/in}$   $\epsilon f = \frac{0241}{6.034} * \frac{[3*0.0086]}{[1-2*0.0086]}$   $\epsilon f = 0.00105 \text{ in/in}$   $\epsilon = 0.00039 + 0.00105$  $\epsilon = 0.00144 \text{ in/in}$ 

Per the *Handbook of PVC Pipe: Design and Construction* (Uni-Bell PVC Pipe Association, 2001), deflection test samples have experienced a pipe wall strain of up to 0.025 in/in and have not "showed any failures or cracks". The calculated strains for this project are significantly below this level, so no failure due to strain is anticipated.

*Pipe Stiffness Calculation* - the following equations utilized for the calculation of pipe stiffness are taken from the *Handbook of PVC Pipe: Design and Construction* (Uni-Bell PVC Pipe Association, 2001).

$$P_{S} = 4.47 * \frac{E}{(DR-1)^{3}}$$
 (Equation 7.3)

Where:

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

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- Ps = pipe stiffness (psi)
- DR = Dimensional Ration = Do / t
- Do = Outside diameter (in)
- t = pipe wall thickness (in)
- E = modulus of elasticity (psi) = 400,000 psi for PVC

#### 6", 8" & 10" ASTM D3034 SDR-26

DR = 26

$$P_{\rm S} = 4.47 * \frac{400,000}{(26-1)^3}$$

Ps = 115 psi

#### Criteria for Laying Pipe

#### **Pipe Embedment**

Bedding and initial backfill material selection and installation will be carried out in accordance with applicable governing procedures contained within the *City of Austin Criteria Manual, TCEQ Chapter 217.54(a),* and in accordance with the City of Austin. Brush, debris, and junk shall not be utilized as a backfilling material.

#### Compaction

Trench compaction will be carried out in accordance with the *City of Austin Code of Ordinances* and *TCEQ Chapter* 217.54(b). Proper placement of the backfill and compaction per City of Austin requirements will not negatively impact the structural integrity of the pipe.

#### **Envelope Size**

Envelope size will be in accordance with *City of Austin Code of Ordinances* and *TCEQ Chapter 217.54(c)*. Per the City of Austin, a minimum of 6-inch and maximum of 24-inch space shall be allowed between the outside diameter of the pipe and the trench wall and floor. The embedment and initial backfill must be installed to a minimum depth of 12 inches above the crown of the pipe.

#### Trench Width

Trench width will be in accordance with the *City of Austin Code of Ordinances* and *TCEQ Chapter 217.54(d)*. Per the City of Austin, a minimum of 6-inch and maximum of 24-inch space shall be allowed between the outside diameter of the pipe and the trench wall and floor. These limits shall be maintained to protect the structural integrity of the pipe and will be sufficient for the placement of materials and use of compaction equipment in the pipe zone.

# Manholes and Related Structures

#### Manhole and Appurtenance Placement

Manholes are located at all points of change in alignment or grade and at the intersection of all pipes for this project.

#### **Manhole Stub Outs**

No manhole stub outs are proposed in this project.

#### Cleanouts

Cleanouts are proposed along the wastewater line and all dead ends.

#### **Manhole Material**

Monolithic or precast manholes are acceptable for the contractor to utilize.

#### **Manhole Spacing**

Manhole spacing meets the requirements of Table C.2 in TCEQ Chapter 217.55.

#### Manholes within Waterways

No manholes will be located within flow paths of waterways or in areas where water ponding is probable.

#### Manhole Covers, Inlets, and Bases

Manhole covers shall be constructed of cast iron and have no openings for water to infiltrate. No proposed manholes are located within the 100-year flood plain. All manholes shall be watertight, with watertight rings and covers, as shown per the Austin detail on the Utility Detail Sheet.

#### **Manhole Steps**

No steps shall be allowed in any proposed manholes.

#### **Manhole Connections**

Manhole-pipe connections shall be watertight per City of Austin Code of Ordinances.

#### **Manhole Venting**

The proposed manholes are spaced at less than 500-foot intervals and none are located within the 100-year flood plain. Therefore, no vented manholes are proposed in this project.

#### **Trenchless Pipe Installation**

There will be no trenchless pipe installation.

#### Testing Requirements for Gravity Pipes

#### Infiltration/Exfiltration and Low Pressure Air Test

All testing will be in compliance with Texas Administrative Code title 30 Part 1 Chapter 217 Subchapter C 217.57 and 217.58. Infiltration and exfiltration or low-pressure air testing in accordance with ASTM C828, C924 or F1417 are required for all proposed gravity wastewater pipe as specified in the project notes. The requirements specified are in accordance with *TCEQ Chapter 217.57*.

#### **Deflection Testing**

For the proposed 8-inch wastewater line, deflection shall be measured with a rigid mandrel. The requirements specified are in accordance with *TCEQ Chapter 217.57*.

#### **Owner Inspection**

The Owner shall have an inspector onsite during construction of the project. A professional engineer registered in the state of Texas (C.J. Ponton, P.E.) shall be present to witness the testing of the wastewater lines.

#### **Testing Requirements for Manholes**

Manhole testing in accordance with *TCEQ Chapter 217.58* is specified in the project notes. Manholes will be tested after assembly and backfilling for leakage by either a hydrostatic test and/or a vacuum test.

For the vacuum test, all lift holes and exterior joints shall be plugged with an approved non-shrink grout and no grout shall be placed in horizontal joints before testing. All pipes entering the manhole shall be plugged, taking care to securely brace the plugs from being drawn into the manhole. Stub outs, manhole boots and pipe plugs shall be secured to prevent movement while the vacuum is drawn. A minimum 60-inch/lb torque wrench shall be used to tighten the external clamps that secure the test cover to the top of the manhole. The test head shall be placed at the inside of the top of the cone section and the seal inflated in accordance with the manufacturer's recommendation. A vacuum of 10 inches of mercury shall be drawn and the vacuum pump shut off. With the valves closed, the time shall be measured for the vacuum to drop to 9 inches of mercury. The manhole shall pass if the time is greater than 2 minutes. If the manhole fails the initial test, necessary repairs shall be made with a non-shrink grout while the vacuum is still being drawn. If the manhole fails a second time, repairs should again be made and the manhole shall be tested by means of a hydrostatic test. If any manhole fails the hydrostatic test, after failing the vacuum test twice, the contractor should consider replacing that manhole. If the contractor chooses to attempt to repair that manhole, the manhole must be retested by means of the hydrostatic test until it passes.

Inspection will be provided during critical phases of construction by a qualified inspector under the direction of a P.E. (C.J. Ponton, P.E.). Critical phases of construction are deemed at a minimum to include testing of pipe and manholes for leakage, and testing of flexible pipe for installed deflection.

TCEQ approval letters for plans and specifications review contain the requirement that once the project is completed, a P.E. registered in the state of Texas (C.J. Ponton, P.E.) much certify that the construction was performed substantially in accordance with the approved plans and specifications.

#### Notification and Inspection

*TCEQ Chapter 213* requires that the applicant must provide written notification to the Austin regional office at least 48 hours prior to commencing construction on the regulated activity. If any sensitive feature is discovered during construction then the work shall be suspended immediately and the Austin regional office shall be notified to then determine the appropriate course of action. All other notification and inspection requirements identified in *TCEQ Chapter 213.5(c)* shall be met. Justification and Calculations for Deviation in Straight Alignment without Manholes.



C. J. Poo

03/21/23

# Attachment B

# *Justification and Calculations for Deviation in Straight Alignment Manholes*

Not applicable.

# Attachment C

# Justification of Variance for Manhole Spacing

Not applicable.

# Attachment D

# *Exception of Slopes for Flows Greater Than 10.0 FPS*

Not applicable.

# Kimley »Horn

# SECTION 5: TEMPORARY STORMWATER SECTION

kimley-horn.com 5301 Southwest Parkway, Building 2, Suite 100 Austin, Texas 78735

512 646 2237

# **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: C.J. Ponton, P.E.

Date: 03/21/2023

Signature of Customer/Agent:

C. J. Pro-

Regulated Entity Name: Valor Texas Education Foundation

### **Project Information**

# Potential Sources of Contamination

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

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

The following fuels and/or hazardous substances will be stored on the site: \_\_\_\_\_

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

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

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

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

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

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

### Sequence of Construction

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

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

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

6. Name the receiving water(s) at or near the site which will be disturbed, or which will receive discharges from disturbed areas of the project: <u>Danz Creek</u>

### Temporary Best Management Practices (TBMPs)

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

- 7. Attachment D Temporary Best Management Practices and Measures. TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:
  - A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

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

# Attachment A Spill Response Actions

If there is an accidental spill on site, the contractor shall respond with appropriate action. The contractor will be required to contact the owner and in turn the owner will contact the TCEQ in the event of a spill on site. In addition to the following guidance, reference the latest version of TCEQ's Technical Guidance Manual (TGM) RG-348 Section 1.4.16 and https://www.tceq.texas.gov/response/spills/spill\_rq.html for rreportable quantities.

#### **Cleanup and Good House Keeping**

- Clean up leaks and spills immediately.
- Neat and orderly storage of any chemicals, pesticides, fertilizers, fuels, etc. that are being stored on site.
- Regular garbage, rubbish, construction waste and sanitary waste disposal.
- Cleanup of sediments that have been tracked by vehicles or have been transported by wind or storm water about the site or onto nearby roads.
- Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

#### **Minor Spills**

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

#### **Semi-Significant Spills**

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

Manufacturer's recommended methods of spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and the cleanup supplies. Spills should be cleaned up immediately:

- Contain spread of the spill.
- Notify the project foreman immediately.
- If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
- If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.

• If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

#### Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

- 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 not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc. The local emergency authority, as necessary, will implement its emergency management plans, which may include notifying and evacuating affected personnel. In the absence of a local emergency authority, the contractor shall take reasonable measure to notify potentially affected persons of the imminent health threat.

## Attachment B Potential Sources of Contamination

*Potential Source:* Oil, grease, fuel, and hydraulic fluid contamination from construction equipment and vehicle dripping. Any spills shall be handled according to the Spill Response Actions in *Attachment A*.

Preventative Measures: Vehicle maintenance will be performed within the construction staging area or a local maintenance shop.

Potential Source: Asphalt wash -off after unexpected rain.

Preventative Measures: After placement of asphalt, emulsion, or coatings, the applicant will be responsible for immediate cleanup should an unexpected rain occur. During the entirety of the asphalt curing time, the applicant should maintain standby personnel and equipment to contain any asphalt wash-off.

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

Preventative Measures: Trash containers will be placed throughout the site to encourage proper disposal of trash.

Potential Source: Silt leaving the site.

Preventative Measures: Contractor will install all temporary best management practices, described in *Attachment D*, prior to start of construction including the stabilized construction entrance to prevent tracking onto adjoining streets and to prevent the discharge of sediment to the San Gabriel River.

Potential Source: Construction Debris.

Preventative Measures: 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: Soil and Mud from Construction Vehicle tires as they leave the site.

Preventative Measures: A stabilized construction exit shall be utilized as vehicles leave the site. Any soil, mud, etc. carried from the project onto public roads shall be cleaned up within 24 hours.

Potential Source: Sediment from soil, sand, gravel and excavated materials stock piled on site.

Preventative Measures: Silt fence shall be installed on the down gradient side of the stock piled materials. Reinforced rock berms shall be installed at all downstream discharge locations.

Potential Source: Portable toilet spill.

*Preventative Measures*: Toilets on the site will be emptied on a regular basis by the contracted toilet company.

## Attachment C Sequence of Major Activities

The installation of erosion and sedimentation controls shall occur prior to any excavation of materials or major disturbances on the site. The sequence of major construction activities will be as follows. Approximate acreage to be disturbed is listed in parentheses next to each activity. The location of the temporary erosion control measures is shown on the Erosion & Sedimentation Control Sheets.

### Intended Schedule or Sequence of Major Activities:

Site Construction:

- 1. Construct Access (0.05 acres)
- 2. Installation of Temporary BMPs (2,506 LF silt fence, 20 LF rock berm, 18 EA inlet protection)
- 3. Initiate Grubbing and Topsoil Stripping of Site (15.41 acres onsite)
- 4. Rough Subgrade Preparation (earthwork, grading, street and drainage excavation and embankment) (15.41 acres onsite)
- 5. Wet and Dry Utility Construction (0.42 acres)
- 6. Final Subgrade Preparation (15.41 acres)
- 7. Installation of Base Materials (15.41 acres)
- 8. Concrete (foundations, curbs, flatwork) (1.19 acres)
- 9. Building Construction (1.19 acres)
- 10. Paving Activities (3.35 acres)
- 11. Topsoil, Irrigation and Landscaping (10.29 acres)
- 12. Site cleanup and Removal of Temporary BMPs (2,506 LF silt fence, 20 LF rock berm, 18 EA inlet protection)

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

### Attachment D Temporary Best Management Practices and Measures

A. There is no storm water that originates up gradient from the site that will flow across the site.

**B.** Temporary BMPs will be installed prior to soil disturbing construction activity. Silt fencing will be placed along the down-gradient sides of the property to prevent silt from escaping the construction area. A temporary construction entrance will be placed on site to reduce vehicle "tracking" onto adjoining streets. A concrete washout pit will be used to collect all excess concrete during construction. Inlet protection will be placed over all existing and proposed inlets to stop the discharge of sediments into the sewer system. Please reference the attached copy of the Erosion and Sedimentation Control Plans for specific locations and details of all controls.

BMPs for this project will protect surface water or groundwater from turbid water, phosphorus, sediment, oil, and other contaminants, which may mobilize in storm water flows by slowing the flow of runoff to allow sediment and suspended solids to settle out of the runoff.

Practices may also be implemented on site for interim and permanent stabilization. Stabilization practices may include but are not limited to: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, and other similar measures.

The contractor is expected to inspect the controls weekly and after significant rainfalls to ensure proper function.

- **C.** There are sensitive features and surface streams within the boundaries of the project. The temporary onsite BMPs will be used to treat stormwater runoff before it leaves the project and prevent pollutants from entering into surface streams or any sensitive features down-gradient of the site.
- **D.** There are sensitive features on the 25.41-acre site identified during the geologic assessment. However, the BMPs for this project are designed to allow water to pass through after sedimentation has occurred. Existing flow patterns will be maintained to any naturally occurring sensitive features that are discovered during construction.

## Attachment E Request to Temporarily Seal a Feature

Naturally-occurring features will not be sealed on the site; therefore this section is not applicable.

## Attachment F Structural Practices

Structural BMPs will be used to limit runoff discharge of pollutants from exposed areas of the site. BMPs will be installed prior to soil disturbing construction activity. Silt fencing will be placed along the downgradient sides of the property to prevent silt from escaping the construction area. A temporary construction entrance will be placed at the site entry/exit point to reduce tracking onto adjoining streets. A construction staging area will be used onsite to perform all vehicle maintenance and for equipment and material storage. A concrete truck washout pit will be placed on site to provide containment and easier cleanup of waste from concrete operations. The location of all structural temporary BMP's are shown on the erosion control plan sheet and details and specifications are provided on the erosion control details sheet which can be found at the end of this report under Section 9.

### **Description of Temporary BMPs**

#### **Temporary Construction Entrance/Exit**

The purpose of a temporary gravel construction entrance is to provide a stable entrance/exit condition from the construction site and keep mud and sediment off public roads. A stabilized construction entrance is a stabilized pad of crushed stone located at any point traffic will be entering or leaving the construction site from a public right-of-way, street, alley, sidewalk or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking or flowing of sediment onto public rights-of-way. This practice should be used at all points of construction ingress and egress.

Excessive amounts of mud can also present a safety hazard to roadway users. To minimize the amount of sediment loss to nearby roads, access to the construction site should be limited to as few points as possible and vegetation around the perimeter should be protected were access is not necessary. A rock stabilized construction entrance should be used at all designated access points.

#### Silt Fence

The purpose of a silt fence is to intercept and detain water-borne sediment from unprotected areas of a limited extent. Silt fence is used during the period of construction near the perimeter of a disturbed area to intercept sediment while allowing water to percolate through. This fence should remain in place until the disturbed area is permanently stabilized. Silt fence should not be used where there is a concentration of water in a channel or drainage way. If concentrated flow occurs after installation, corrective action must be taken such as placing a rock berm in the areas of concentrated flow.

Silt fencing within the site may be temporarily moved during the day to allow construction activity provided it is replaced and properly anchored to the ground at the end of the day. Silt fences on the perimeter of the site or around drainage ways should not be moved at any time.

#### **Concrete Washout Area**

The purpose of concrete washout areas is to prevent or reduce the discharge of pollutants to stormwater from concrete waste by conducting washout offsite, performing onsite washout in a designated area, and training employees and subcontractors.

The following steps will help reduce stormwater pollution from concrete wastes:

- Incorporate requirements for concrete waste management into material supplier and subcontractor agreements.
- Avoid mixing excess amounts of fresh concrete.
- Perform washout of concrete trucks in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.

- Do not allow excess concrete to be dumped onsite, except in designated areas.
- For onsite washout:
- Locate washout area at least 50 feet from sensitive features, storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
- Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly.

Below grade concrete washout facilities are typical. These consist of a lined excavation sufficiently large to hold expected volume of washout material. Above grade facilities are used if excavation is not practical. Temporary concrete washout facility (type above grade) should be constructed as shown on the details at the end of this section, with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations. Plastic lining material should be a minimum of 10 mil in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.

When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and disposed of. Materials used to construct temporary concrete washout facilities should be removed from the site of the work and disposed of. Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

#### **Rock Berm**

The purpose of a rock berm is to serve as a check dam in areas of concentrated flow, to intercept sediment-laden runoff, detain the sediment and release the water in sheet flow. The rock berm should be used when the contributing drainage area is less than 5 acres. Rock berms are used in areas where the volume of runoff is too great for a silt fence to contain. They are less effective for sediment removal than silt fences, particularly for fine particles, but are able to withstand higher flows than a silt fence. As such, rock berms are often used in areas of channel flows (ditches, gullies, etc.). Rock berms are most effective at reducing bed load in channels and should not be substituted for other erosion and sediment control measures further up the watershed.

#### **Triangular Filter Dike**

The purpose of a triangular sediment filter dike is to intercept and detain water-borne sediment from unprotected areas of limited extent. The triangular sediment filter dike is used where there is no concentration of water in a channel or other drainage way above the barrier and the contributing drainage area is less than one acre. If the uphill slope above the dike exceeds 10%, the length of the slope above the dike should be less than 50 feet. If concentrated flow occurs after installation, corrective action should be taken such as placing rock berm in the areas of concentrated flow. This measure is effective on paved areas where installation of silt fence is not possible or where vehicle access must be maintained. The advantage of these controls is the ease with which they can be moved to allow vehicle traffic and then reinstalled to maintain sediment.

#### **Inlet Protection**

In developments for which drainage is to be conveyed by underground storm sewers (i.e., streets with curbs and gutters), all inlets that may receive storm runoff from disturbed areas should be protected. Temporary inlet protection is a series of different measures that provide protection against silt transport or accumulation in storm sewer systems. This clogging can greatly reduce or completely stop the flow in the pipes. The different measures are used for different site conditions and inlet types

### Attachment G Drainage Area Map

An existing and proposed drainage area map is provided at the end of this report in Section 9 to support the aforementioned requirement.

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

The proposed development will disturb areas over 10 acres. Therefore, a temporary sediment pond is proposed and will be located in the area proposed to be used for the retention and retention-irrigation pond. A surface skimmer will be utilized for dewatering during construction if warranted. Any excess sediment generated during construction will be spoiled in the location outlined on the construction plans. The entire system shall be protected from erosion and maintained throughout the course of construction until final site restoration is complete.

### Attachment I

### **Inspection and Maintenance for BMPs**

#### **Personnel Responsible for Inspections**

The agent that performs the inspections should be knowledgeable of this general permit, familiar with the construction site, and knowledgeable of the SWPPP for the site. The contractor is to provide an inspector with a CPESC, CESSWI, or CISEC certification. Documentation of the inspector's qualifications is to be included in the attached Inspector Qualifications Log.

#### **Inspection Guidelines for BMPs**

The following sections address inspection and maintenance taken from the TNRCC Manual, "Complying with Edwards Aquifer Rules: Technical Guidance on Best Management Practices."

Silt Fence:

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

Inlet Protection:

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

Stabilized Construction Fence:

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

Sediment Basins:

- 1. Inspection should be made weekly and after each rainfall in accordance to Section 1.4.13 of RG-348.
- 2. To prevent clogging of the outlet structure of proposed water quality facilities implemented as temporary sediment basins, trash and other debris shall be removed promptly after each rainfall event.
- 3. Silt accumulation should be removed as well as basin re-graded to original dimensions once the capability of the facility has been reduced to 75% of original storage capacity.
- 4. Removed sediment should be redistributed in the respective phases' stockpiling area.

Rock Berm:

- 1. Inspection should be made weekly and after each rainfall in accordance to Section 1.4.5 of RG-348. If placed in streambeds, inspection should occur daily.
- 2. Accumulated silt shall be removed when it reached a depth of six (6) inches. The silt shall be disposed of on an approved site and in such a manner that will not contribute to additional siltation.
- 3. Loose wire sheathing shall be repaired immediately when necessary and the berm shall be reshaped as needed during inspection.

- 4. Berm shall be replaced if the structure ceases to function as initially intended due to factors such as silt accumulation, washout, construction traffic damage, etc.
- When all upstream areas are stabilized and the accumulated silt has been removed, the rock berm 5. should be removed and disposed of.

#### **Inspection Schedule**

The primary operator is required to complete inspections as specified above, and choose one of the two inspections listed below for all temporary stormwater controls not specifically listed.

- Π **Option 1:** Once every seven calendar days. If this alternative schedule is developed, then the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.
- $\square$ **Option 2:** Once every 14 calendar days and within 24 hours of the end of a storm event of two inches or greater.

The inspections may occur on either schedule provided that documentation reflects the current schedule and that any changes to the schedule are conducted in accordance with the following provisions: the schedule may be changed a maximum of one time each month, the schedule change must be implemented at the beginning of a calendar month, and the reason for the schedule change must be documented (e.g., end of "drv" season and beginning of "wet" season).

If option 2 is the chosen frequency of inspections a rain gauge must be properly maintained on site or the storm event information from a weather station that is representative of the site location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, proper documentation of the total rainfall measured for that day must be recorded.

Personnel provided by the permittee must inspect:

- disturbed areas of the construction site that have not been finally stabilized;
- areas used for storage of materials that are exposed to precipitation:
- structural controls (for evidence of, or the potential for, pollutants entering the drainage system); •
- sediment and erosion control measures identified in the SWP3 (to ensure they are operating correctly); and
- locations where vehicles enter or exit the site (for evidence of off-site sediment tracking).

#### **Reductions in Inspection Frequency**

Where sites have been finally or temporarily stabilized or where runoff is unlikely due to winter conditions (e.g. site is covered with snow, ice, or frozen ground exists), inspections must be conducted at least once every month. In arid, semi-arid, or drought-stricken areas, inspections must be conducted at least once every month and within 24 hours after the end of a storm event of 0.5 inches or greater. A record of the total rainfall measured, as well as the approximate beginning and ending dates of winter or drought conditions resulting in monthly frequency of inspections in the attached Rain Gauge Log.

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

#### **Inspection Report Forms**

Use the Inspection Report Forms given as a checklist to ensure that all required areas of the construction site are addressed. There is space to document the inspector's name as well as when the inspections regularly take place. The tables will document that the required area was inspected. (If there were any areas of concern, briefly describe them in this space with a more detailed description in the narrative section. Use the last table to document any discharges found during the inspections).

Describe how effective the installed BMPs are performing. Describe any BMP failures that were noted during the investigation and describe any maintenance required due to the failure. If new BMPs are needed as the construction site changes, the inspector can use the space at the bottom of the section to list BMPs to be implemented before the next inspection.

Describe the inspector's qualifications, how the inspection was conducted, and describe any areas of noncompliance in detail. If an inspection report does not identify any incidents of non-compliance, then it must contain a certifying signature stating that the facility or site is in compliance. The report must be signed by a person and in a manner required by 30 TAC 305.128. There is space at the end of the form to allow for this certifying signature.

Whenever an inspection shows that BMP modifications are needed to better control pollutants in runoff, the changes must be completed within seven calendar days following the inspection. If existing BMPs are modified or if additional BMPs are needed, you must describe your implementation schedule, and wherever possible, make the required BMP changes before the next storm event.

The Inspection Report Form functions as the required report and must be signed in accordance with TCEQ rules at 30 TAC 305.128.

### **Corrective Action**

#### **Personnel Responsible for Corrective Actions**

Both Primary and Secondary Operators are responsible for maintaining all necessary Corrective Actions. If an individual is specifically identified as the responsible party for modifying the contact information for that individual should be documented in the attached Inspector Qualifications Log.

#### **Corrective Action Forms**

The Temporary BMPs must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions must be completed within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the attached forms and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable. Actions taken as a result of inspections must be properly documented by completing the corrective action forms given.

### Attachment J Schedule of Interim and Permanent Soil Stabilization

Construction practices shall disturb the minimal amount of existing ground cover as required for land clearing, grading, and construction activity for the shortest amount of time possible to minimize the potential of erosion and sedimentation from the site. Existing vegetation shall be maintained and left in place until it is necessary to disturb for construction activity. For this project the following stabilization practices will be implemented:

- 1. Hydraulic Mulch and Seeding: Disturbed areas subject to erosion shall be stabilized with hydraulic mulch and/or seeded and watered to provide interim stabilization. For areas that are not to be sodded as per the project landscaping plan, a minimum of 85% vegetative cover will be established to provide permanent stabilization.
- 2. Sodding and Wood Mulch: As per the project landscaping plan, Sodding and wood mulch will be applied to landscaped areas to provide permanent stabilization prior to project completion.

Records of the following shall be maintained:

- a) The dates when major grading activities occur;
- b) The dates when construction activities temporarily or permanently cease on a portion of the site; and
- c) The dates when stabilization measures are initiated.

Stabilization measures must be initiated as soon as practical in portions of the site where construction activities have temporarily or permanently ceased, and except as provided in the following, must be initiated no more that fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased:

Where the initiation of stabilization measures by the 14<sup>th</sup> day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practical.

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 the site.

In arid areas (areas with an average rainfall of 0-10 inches), semiarid areas (areas with an average annual rainfall of 10 to 20 inches), and areas experiencing droughts where the initiation of stabilization measures by the 14<sup>th</sup> day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practical.

#### Maintenance

Below are some maintenance practices to be used to maintain erosion and sediment controls:

- All measures will be maintained in good working order. The operator should correct any damage or deficiencies as soon as practicable after the inspection, but in no case later than seven (7) calendar days after the inspection.
- BMP Maintenance (as applicable)
- Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.

- Silt fence will be inspected for depth of sediment, tears, to see of the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
- Drainage swale will be inspected and repaired as necessary.
- Inlet control will be inspected and repaired as necessary.
- Check dam will be inspected and repaired as necessary.
- Straw bale dike will be inspected and repaired as necessary.
- Diversion dike will be inspected, and any breaches promptly repaired.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
- If sediment escapes the site, accumulations must be removed at a frequency that minimizes offsite impacts, and prior to the next rain event, if feasible. If the permittee does not own or operate the off-site conveyance, then the permittee must work with the owner or operator of the property to remove the sediment.
- Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

To maintain the above practices, the following will be performed:

• Maintenance and repairs will be conducted before the next anticipated storm event or as necessary to maintain the continued effectiveness of storm water controls. Following an inspection, deficiencies should be corrected no later than seven (7) calendar days after the inspection.

### **Inspector Qualifications Log\***

Inspector Name: Qualifications (Check as appropriate and provide description):
□ Training Course
Other
Inspector Name:
Qualifications (Check as appropriate and provide description):
<ul> <li>Supervised Experience</li> <li>Other</li> </ul>
Inspector Name:
Qualifications (Check as appropriate and provide description): □ Training Course
<ul> <li>Supervised Experience</li> <li>Other</li> </ul>
Inspector Name: Qualifications (Check as appropriate and provide description):
Training Course
<ul> <li>Supervised Experience</li> <li>Other</li> </ul>
Inspector Name:
Qualifications (Check as appropriate and provide description): □ Training Course
□ Supervised Experience □ Other
Inspector Name:
Qualifications (Check as appropriate and provide description):
<ul> <li>Training Course</li> <li>Supervised Experience</li> </ul>
□ Other

\* The agent that performs the inspections should be knowledgeable of this general permit, familiar with the construction site, and knowledgeable of the SWPPP for the site. The contractor is to provide an inspector with a CPESC, CESSWI, or CISEC certification.

Amendm	ent	Log
--------	-----	-----

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

### Construction Activity Sequence Log

Name of Operator	Projected dates Month/year	Activity Disturbing Soil clearing, excavation, etc.	Location on-site where activity will be conducted	Acreage being disturbed

\*Construction activity sequences for linear projects may be conducted on a rolling basis. As a result, construction activities may be at different stages at different locations in the project area. The Contractor is required to complete and update the schedule and adjust as necessary.

### Stormwater Control Installation and Removal Log

Stormwater Control	Location On-Site	Installation Date	Removal Date

### Stabilization Activities Log

Date Activity Initiated	Description of Activity	Description of Stabilization Measure and Location	Date Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures Initiated

Stabilization and erosion control practices may include, but are not limited to: establishing temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, and protecting existing trees and vegetation. List practices used where they are located, when they will be implemented, and whether they are temporary (interim) or permanent.

Date	Frequency Schedule and Reason for Change

### Rain Gauge Log

Date	Location of Rain Gauge	Gauge Reading
	0	

General Information						
Name of Project	Tracking No. Inspection Date					
Inspector Name, T Contact Informatio						
Present Phase of Co	onstruction					
<b>Inspection Location</b> inspections are require location where this ins being conducted)	ed, specify					
Reduced Freque         -       Once per n         -       Once per n	<b>uency</b> : V <b>uency</b> : C ency: nonth (for stabi nonth and with	Veekly Devery 14 days and within Every 7 days and within 24 hours of a 0 lized areas) in 24 hours of a 0.25" rain (for arid, semi-ari in conditions where earth-disturbing activiti	25" rain d, or drought-stricken areas during seasona	ally dry periods or during drought)		
If yes, how did y	Was this inspection triggered by a 0.25" storm event?       Yes       No         If yes, how did you determined whether a 0.25" storm event has occurred?       Rain gauge on site       Weather station representative of site. Specify weather station source:         Total rainfall amount that triggered the inspection (in inches):					
<b>If "yes", con</b> - Describe	ine that any mplete the for the conditions	portion of your site was unsafe for ollowing: that prevented you from conducting the ins	-			
- Location(	s) where condit	ions were found:				

	Condition and Effectiveness of Erosion and Sediment (E&S) Controls				
Type/Location of E&S Control	Repairs or Other Maintenance Needed?	Corrective Action Required?	Date on Which Maintenance or Corrective Action First Identified?	Notes	
1.	□Yes □No	□Yes □No			
2.	□Yes □No	□Yes □No			
3.	□Yes □No	□Yes □No			
4.	□Yes □No	□Yes □No			
5.	□Yes □No	□Yes □No			
6.	□Yes □No	□Yes □No			
7.	□Yes □No	□Yes □No			
8.	□Yes □No	□Yes □No			
9.	□Yes □No	□Yes □No			
10.	□Yes □No	□Yes □No			

	Condition and Effectiveness of Pollution Prevention (P2) Practices					
Type/Location of P2 Practices	Repairs or Other Maintenance Needed?	Corrective Action Required?	Identification Date	Notes		
1.	□Yes □No	□Yes □No				
2.	□Yes □No	□Yes □No				
3.	□Yes □No	□Yes □No				
4.	□Yes □No	□Yes □No				
5.	□Yes □No	□Yes □No				
6.	□Yes □No	□Yes □No				
7.	□Yes □No	□Yes □No				
8.	□Yes □No	□Yes □No				
9.	□Yes □No	□Yes □No				
10.	□Yes □No	□Yes □No				

Stabilization of Exposed Soil				
Stabilization Area	Stabilization Method	Have You Initiated Stabilization?	Notes	
1.		☐ YES ☐ NO If yes, provide date:		
2.		☐ YES ☐ NO If yes, provide date:		
3.		☐ YES ☐ NO If yes, provide date:		
4.		☐ YES ☐ NO If yes, provide date:		
5.		YES NO If yes, provide date:		
Description of Discharges				
	a stormwater discharge or other discharge occurring from any part of your site at the time of the inspection? 🗌 Yes 🗌 No If "yes", provide the following information for each point of discharge:			
Discharge Location	Observations			
1.	Describe the discharge: At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:			
2.	Describe the discharge:	Describe the discharge:		
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:			
3.	Describe the discharge:	Describe the discharge:		
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:			
kimley-horn.com	5301 Southwest Parkway, Building	g 2, Suite 100 Austin, Texas 78735	512 646 2237	

#### **Contractor or Subcontractor Certification and Signature**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Contractor or Subcontractor:

Printed Name and Affiliation:

....

~.

**Certification and Signature by Permittee** 

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Permittee or "Duly Authorized Representative":	Date:
Printed Name and Affiliation:	

Date:

<b>Section A – Initial Report</b> (Complete this section <u>within 24 hours</u> of discovering the condition that triggered corrective action)						
Name of Project	Tracking N	lo.		Today's Date		
Date Problem First Discov	vered		Time Problem Firs	t Discovered		
Name and Contact Inform Form	nation of Individual Completing this					
A required stormwater	What site conditions triggered the requirement to conduct corrective action:          A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Part 2 and/or 3         The stormwater controls that have been installed and maintained are not effective enough for the discharge to meet applicable water quality standards         A prohibited discharge has occurred or is occurring					
Provide a description of th	ne problem:					
Deadline for completing c infeasible to complete wo	orrective action (Enter date that is eith rk within the first 7 days, enter the da	her: (1) no moi te that is as soo	re than 7 calendar d on as practicable fol	ays after the date you discovered lowing the 7th day):	d the problem, or (2) if it is	
	If your estimated date of completion falls after the 7-day deadline, explain (1) why you believe it is infeasible to complete work within 7 days, and (2) why the date you have established for making the new or modified stormwater control operational is the soonest practicable timeframe:					
	Section B – Corrective Action Progress (Complete this section <u>no later than 7 calendar days</u> after discovering the condition that triggered corrective action)					
Section B.1 – Why the	Problem Occurred					
Cause(s) of Problem (Add	Cause(s) of Problem (Add an additional sheet if necessary) How This Was Determined and the Date You Determined the Cause					
1.	1. 1.					
2.	2. 2.					
3.	. 3.					
Section B.2 - Stormwater Control Modifications to be Implemented to Correct the Problem						
List of Stormwater Contro Problem (Add an addition	ol Modification(s) Needed to Correct al sheet if necessary)	Completion Date	SWPPP Update Necessary?	Notes		
1.			□Yes □No Date:			
2.			□Yes □No Date:			
3.			□Yes □No Date:			

<b>Section A – Initial Report</b> (Complete this section <u>within 24 hours</u> of discovering the condition that triggered corrective action)						
Name of Project	Tracking N	Io.		Today's Date		
Date Problem First Discover	red		Time Problem Firs	t Discovered		
Name and Contact Informat Form	ion of Individual Completing this					
A required stormwater of The stormwater controls	What site conditions triggered the requirement to conduct corrective action: <ul> <li>A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Part 2 and/or 3</li> <li>The stormwater controls that have been installed and maintained are not effective enough for the discharge to meet applicable water quality standards</li> <li>A prohibited discharge has occurred or is occurring</li> </ul>					
Provide a description of the	problem:					
	rective action (Enter date that is eith within the first 7 days, enter the dat				the problem, or (2) if it is	
	npletion falls after the 7-day deadlin r making the new or modified storm				n 7 days, and (2) why the	
	<b>Sectio</b> (Complete this section <u>no later than 7 ca</u>		ctive Action Progr r discovering the condi			
Section B.1 – Why the Pr	roblem Occurred					
Cause(s) of Problem (Add an additional sheet if necessary) How This Was Determined and the Date You Determined the Cause						
1.	1. 1.					
2.	2. 2.					
3.	3.					
Section B.2 – Stormwater Control Modifications to be Implemented to Correct the Problem						
List of Stormwater Control I Problem (Add an additional	Modification(s) Needed to Correct sheet if necessary)	Completion Date	SWPPP Update Necessary?	Notes		
1.			□Yes □No Date:			
2.			□Yes □No Date:			
3.			□Yes □No Date:			

#### **Contractor or Subcontractor Certification and Signature**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Contractor or Subcontractor:

Printed Name and Affiliation:

**Certification and Signature by Permittee** 

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Permittee or "Duly Authorized Representative":	Date:
Printed Name and Affiliation:	

Date:

# SECTION 6: Additional Forms

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512 646 2237

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

I	Jesse Bates	
	Print Name	
	Owner	,
	Title - Owner/President/Other	
of	Valor Texas Education Foundation Corporation/Partnership/Entity Name	,
have authorized	C.J. Ponton, P.E. Print Name of Agent/Engineer	
of	Kimley-Horn and Associates, LLC 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.

Applicant's Signature

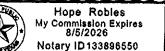
11/28/22

THE STATE	OF <u>e</u>	xas	§
County of	Travis	§	

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

GIVEN under my hand and seal of office on this 28th day of November

NOTARY PUBLIC



Hope Robles Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 08 05 2026

## **Application Fee Form**

Texas Commission on Environmental QualityName of Proposed Regulated Entity: Valor Texas Education FoundationRegulated Entity Location: 220 Foremost Drive, Austin, Texas 78745Name of Customer: Jesse BatesContact Person: CJ PontonPhone: 737-787-8750Customer Reference Number (if issued): CNRegulated Entity Reference Number (if issued): RN			
Austin Regional Office (3373)			
Hays San Antonio Regional Office (3362	Travis	🗌 Wil	liamson
Bexar Comal Application fees must be paid by c Commission on Environmental Qu		money order, payable	
form must be submitted with you	-	•	•
<ul> <li>Austin Regional Office</li> <li>Mailed to: TCEQ - Cashier</li> <li>Revenues Section</li> <li>Mail Code 214</li> <li>P.O. Box 13088</li> <li>Austin, TX 78711-3088</li> <li>Site Location (Check All That Appl</li> </ul>	Ον 12 Βι Αι (5	n Antonio Regional Of vernight Delivery to: T( 2100 Park 35 Circle uilding A, 3rd Floor ustin, TX 78753 12)239-0357	
🔀 Recharge Zone	Contributing Zone	🗌 Transit	ion Zone
Type of Plan	n	Size	Fee Due
Water Pollution Abatement Plan, Plan: One Single Family Residenti	-	Acres	\$
Water Pollution Abatement Plan, Plan: Multiple Single Family Resid	-	Acres	\$
Water Pollution Abatement Plan, Plan: Non-residential	Contributing Zone	Acres	\$
Sewage Collection System		1,452 L.F.	\$ 726
Lift Stations without sewer lines		Acres	\$
Underground or Aboveground St	orage Tank Facility	Tanks	\$
Piping System(s)(only)		Each	\$
Exception		Each	\$

Signature: TCEQ-0574 (Rev. 02-24-15)

Date: 03/21/2023

### Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

### Water Pollution Abatement Plans and Modifications

### **Contributing Zone Plans and Modifications**

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

### **Organized Sewage Collection Systems and Modifications**

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

# Underground and Aboveground Storage Tank System Facility Plans and Modifications

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

### **Exception Requests**

Project	Fee
Exception Request	\$500

### **Extension of Time Requests**

Project	Fee
Extension of Time Request	\$150

*Check Payable to the "Texas Commission on Environmental Quality"* 

Core Data Form



### **TCEQ Core Data Form**

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

<b>SECTION</b>	I: Gen	eral Inforn	nation										
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)						)	C Other						
2. Customer Reference Number (if issued) Follow this link							3. Regulated Entity Reference Number (if issued)						
CN					<u>l or RN</u> entral R			RN					
SECTION II: Customer Information													
4. General Customer Information 5. Effective Date for Customer Infor							r Inforr	rmation 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) <u>If new Customer, enter previous Customer below:</u>													
Valor Texas Education Foundation													
7. TX SOS/CPA Filing Number 8. TX Sta				te Tax ID (11 digits)				9. Federal Tax ID (9 digits) 10. DUNS Number (if applicable)					
11. Type of Customer: 🛛 Corporation				Individual				Partnership:  General  Limited					
Government: City County Federal State Other					Sole Proprietor				torship 🔲 Other:				
12. Number of Employees           □ 0-20         ≥ 21-100         □ 101-250         □ 251-500				) 🗌 501 and higher				13. Independently Owned and Operated? ☑ Yes □ No					
14. Custome	<b>r Role</b> (Pro	oposed or Actual) -	- as it relates to	the Re	gulated	Entity I	isted on	this fo	rm. Plea	se check one of the	e following		
Owner       Operator         Occupational Licensee       Responsible Party         Voluntary Cleanup Applicant       Other:													
	2022 F	Foremost Dri	ve										
15. Mailing Address:													
	City	Austin		S	tate	TX		ZIP	787	45	ZIP + 4		
16. Country Mailing Information (if outside USA) 17. E-Mail Address (if applicable)													
jba					jbat	tes@valoreducation.org							
18. Telephone Number			19. Extension or Code				20. Fax Number (if applicable)						
(214)514-3356					( )						-		

#### **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.)

Valor Texas Education Foundation

	2022 Fo	premost Driv	ve							
23. Street Address of the Regulated Entity:										
(No PO Boxes)	City Austin		State	State TX		P 78745		ZIP + 4		
24. County	Travis									
	E	nter Physical L	ocation Descript	ion if no	street a	ddress	is provid	ded.		
25. Description to Physical Location:	11720 S	outh Mopac	e Expressway							
26. Nearest City State Nearest ZIP Code										
Austin						r	TX		78	739
27. Latitude (N) In Decin	nal:	30.176712		2	B. Longi	tude (W	/) In Deci	mal:	97.88851	.7
Degrees	Minutes		Seconds	De	egrees		Mi	nutes		Seconds
30		17	67.12		9	97		8	38	85.17
29. Primary SIC Code (4	digits) <b>30.</b>	Secondary SIC	Code (4 digits)	ts) 31. Primary NAICS Code 32. Secondary NAICS Code (5 or 6 digits) (5 or 6 digits)				ICS Code		
33. What is the Primary	Business o	f this entity?	(Do not repeat the SIC	or NAICS	descriptior	ı.)				
	1									
				2022	Forem	ost Driv	/e			
34. Mailing										
Address:	City	Austin	State	ТХ		ZIP	78	745	ZIP + 4	
35. E-Mail Address	:			jbate	s@valo	reducat	tion.org			
36. Telepho	one Numbe	r	37. Extension or Code 38. Fax Nu				mber <i>(if applicable)</i>			
( 214 ) 514-3356								(	) -	
<b>39. TCEQ Programs and ID</b> form. See the Core Data Form	<b>) Numbers</b> ( instructions fo	Check all Program r additional guida	is and write in the pence.	ermits/regi	stration n	umbers f	that will be	affected	by the updates	s submitted on this
Dam Safety	District	S	Edwards Aqu	uifer		Emissio	ns Invento	ry Air	🗌 Industria	al Hazardous Waste
Municipal Solid Waste					Petroleum Storage Tank					
Sludge	Storm	Water	🗌 Title V Air			Tires			🗌 Used Oi	
Voluntary Cleanup	U Waste	Water	Wastewater /	Agricultur	• 🗌	Water R	lights		Other:	
ECTION IV. D.	-									

#### **SECTION IV: Preparer Information**

40. Name:	CJ Ponton			41. Title:	Project Manager
42. Tele	phone Number	43. Ext./Code	44. Fax Number	45. E-Mail	Address
(737)	787-8750		( ) -	cj.pontor	n@kimley-horn.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:	Kimley-Horn Job Title: P			Manager		
Name (In Print):	C.J. Ponton, P.E.			Phone:	( 737 ) 787- <b>8750</b>	
Signature:	C. J. Pro-			Date:	03/21/23	

## Kimley **»Horn**

# SECTION 8: EXHIBITS

kimley-horn.com 5301 Southwest Parkway, Building 2, Suite 100 Austin, Texas 78735

512 646 2237

## Kimley »Horn

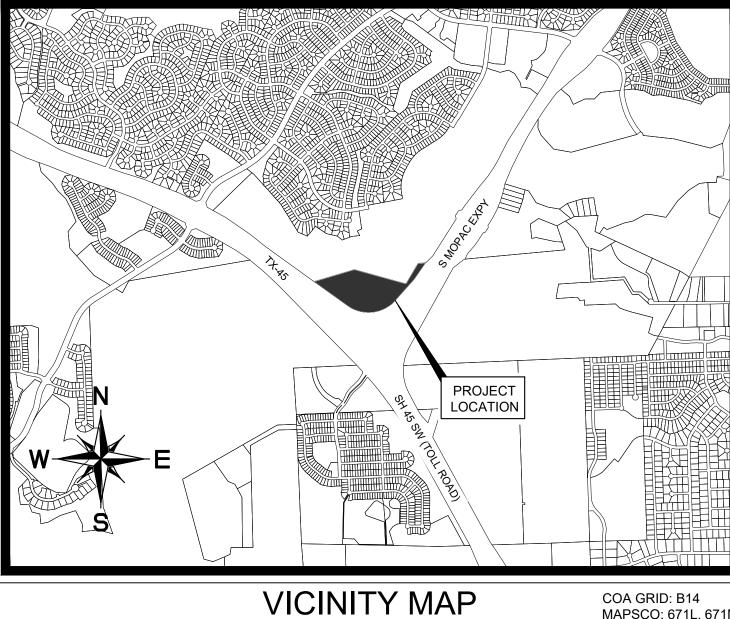
Civil Design Plan Set

		REVISE (R)	TOTAL NO.		TOTAL SITE	CITY OF	D		VIL	5
NO.	DESCRIPTION	VOID (V) ADD (A) SHEET NO.'S	SHEETS IN PLAN SET	CHANGE IMP. COVER (SQ. FT.)	IMP. COVER (SQ. FT.)/%	AUSTIN APPROVAL DATE	DATE IMAGED			
								-		
								-	VΔ	
								-		
G	ENERAL PLAN NOTES	:						-		
1.	ALL RESPONSIBILI REGISTERED PROF THESE PLANS THE WORK OF THE DES	ESSIONAL ENC CITY OF AUST	GINEER WH	O PREPARED	THEM. IN REVIE	EWING				
2.	A PORTION OF THI PANEL NO. 48453C	S SITE IS LOCA								
3.		EWATER SERV	ICE WILL BE		Y AUSTIN WATI	ER UTILITY,				V
4.	CONDITIONED UPC				S OF 15%.					
5.	CRITICAL ENVIRON ACTIVITIES WITHIN CODE AND CRITER	I THE CEF SETE				AUSTIN		/DEVELOPER NAM	E AND ADDRESS:	
6.	NO STRUCTURES (		VITHIN WAT	ER & WASTEW	ATER EASEME	NTS.	220 FOF AUSTIN	REMOST DRIVE , TX 78745 /ALORPUBLICSCHO	OLS.ORG	
7.	RELEASE OF THIS DATA, INFORMATIC ENGINEER OF REC	ON AND CALCU	LATIONS SL ( RESPONS	JPPLIED BY TH	E APPLICANT. COMPLETENE	THE SS,		CASE NO.: N/A		
8	ACCURACY AND A APPLICATION IS RE	EVIEWED FOR (	CODE COMF	PLIANCE BY CI	TY ENGINEERS			US RELATED SITE D	DEVELOPMENT CASE NO.	: N/A
9.	(SWPPP) IS REQUI	RED TO BE ON	SITE AT ALL	_ TIMES.			WATER	SHED: SLAUGHTER	CREEK (BARTON SPRING	GS ZONE)
	). THIS SITE IS LOCA							J <u>RE ZONE</u> : SOUTHV		
11	<ol> <li>APPROVAL OF THE APPLICABLE CITY ENTITIES MAY BE F APPLICANT IS RES MAY BE NECESSAF</li> </ol>	REGULATIONS REQUIRED PRIC PONSIBLE FOR	ONLY. APPI OR TO THE \$	ROVAL BY OTH START OF CON	IER GOVERNMI ISTRUCTION. T	ENTAL HE	<u>SUBMIT</u>	<u>TAL DATE:</u> 06/10/202	22	
12	2. THIS PROJECT IS L CLASSIFIED AS A E	OCATED IN TH			TERSHED, WH	CH IS		= A 25.4200 ACRE (	(1,107,296 SQUARE FEET)	
13	3. THIS PROJECT IS S ECM 1.12.0 AND CC GREATER THAN 5 I OR A GEOLOGIST'S	DA ITEM NO.658 FEET DEEP MU	S OF THE S ST BE INSP	SM) PROVISIO	N THAT ALL TR	ENCHING	THE SAME TI	RACT CONVEYED	JRVEY NO. 16, ABSTRAC TO RDD 45 LP, RECORD BLIC RECORDS OF TRAVI	ED IN DOCUI
14	IF AT ANY TIME DU STORAGE TANK (U A CITY OF AUSTIN ANY UST REMOVAL REGISTERED WITH CONTACT ELIZABE YOU HAVE ANY QU	ST) IS FOUND, UST CONSTRU L WORK MUST I I THE TEXAS CO TH SIMMONS A	CONSTRUC CTION PER BE CONDUC DMMISSION T ELIZABET	TION IN THAT A MIT IS APPLIED CTED BY A UST ON ENVIRONM	AREA MUST ST ) FOR AND APF ' CONTRACTOF //ENTAL QUALI'	OP UNTIL PROVED. R THAT IS FY (TCEQ).	FOR INTEGRA		I <u>T:</u> EMENT PLAN, SEE AGREE CIAL PUBLIC RECORDS, T	
15	5. ALL PERMANENT F CRITICAL ENVIRON ANY CONSTRUCTIO ACCORDANCE WIT ARE APPROVED BY INSTALLED FOR EA	IMENTAL FEATI ON OR CLEANIN TH COA ITEM NO Y THE CITY OF J	JRES (CEF) NG ACTIVITY D. 701S OF <sup>-</sup> AUSTIN. A L	SETBACK PRI Y. THE FENCE THE SSM, UNLE OCKABLE ACC	OR TO THE INI <sup>-</sup> MATERIAL SHA ESS OTHER MA ESS GATE SHA	TIATION OF LL BE IN TERIALS ALL BE				
16	<ol> <li>DEVELOPMENT OF SITE PLAN, OR REV AUSTIN STREET IM [HTTPS://WWW.AUS 20201210-062 [HTTI AS APPLICABLE, PL START COLLECTIN OR AFTER JUNE 21 IMPACT FEE WEBS</li> </ol>	/ISIONS THERE IPACT FEE ORE STINTEXAS.GOV PS://WWW.AUS RIOR TO ACQUI G STREET IMP/ I, 2022. FOR MC	OF, ARE RE DINANCES 2 //EDIMS/DC TINTEXAS.C RING THE E ACT FEES V DRE INFORM	EQUIRED TO CO 0201220-061 DCUMENT.CFM GOV/EDIMS/DO BUILDING PERI VITH ALL BUILE MATION PLEAS	OMPLY WITH T ?ID=352887] AN CUMENT.CFM? MIT. THE CITY S DING PERMITS E VISIT THE ST	HE CITY OF D ID=352739], SHALL SSUED ON				
DESIGNE	<u>RS:</u>			LISTS C	F CONTACTS:					
MIKE HAD 2301 E. RI BUILDING	+ COWAN ARCHITECT DON VERSIDE DRIVE A, SUITE 80	S		AUSTIN 625 E. 1 AUSTIN	& SANITARY S WATER UTILIT 0TH STREET, S , TX 78701 2) 972-0207	Ϋ́	GAS TEXAS GAS S LINDA BARGA 5613 AVENUE AUSTIN, TX 7 PH. (512) 465-	AR 5 F 8751 1134	STORM SEWER CITY OF AUSTIN PLANNING & DEVELOPI REVIEW DEPARTMENT 505 BARTON SPRINGS AUSTIN, TX 78704 PH. (512) 974-2680	
AUSTIN, T PH. (512) ( LANDSCA				<u>FIRE</u> AUSTIN I	FIRE DEPARTM	ENT	LBARGAR@T <u>ELECTRIC</u> AUSTIN ENEF		TELEPHONE AT&T	
SEC PLAN BEN DEBE 4201 W P/ AUSTIN, T PH. (512)	NNING, LLC ELLIS ARMER LN, FX 78727 537-2384			505 BAR <sup>-</sup> AUSTIN,	ALLEN (AS CENTER SU TON SPRING R TX 78704 974-0191		JIM ROWIN	R LANE, BUILDING C AS 78758	DAVID A. WILLIAMS 712 EAST HUNTLAND, I AUSTIN, TX 78752 PH. (512) 870-4760 DW8132@ATT.COM	ROOM 229
JASON W	— AND SURVEYING ARD									
200 AUSTIN, T						PFUL WEBSITE				7
PH. (512)					http:	//austintexas.go	PELINE ENGINE	engineering		
<u>PREPARE</u>	mley	<i>"</i> иЦ	hr	n	http:	//www.austintex		nmon-easement-and-	restrictive-covenants#pdrd	
	est Pkwy Suite 100, Building 2			lo. (512) 418-17	http:	//www.austintex	ION REQUESTS (as.gov/departme ANHOLE RESOL	ent/service-extension-	-requests	
Austin, TX 78				o. (512) 418-17			arts-pricing-subn			

# ITE DEVELOPMENT PLANS FOR LOR SOUTHWEST 11720 SOUTH MOPAC PRESSWAY, AUSTIN, TX

AND OUT ND BEING MENT NO

TY, TEXAS.



SCALE: 1" = 2,000'

MAPSCO: 671L, 671M

# JUNE 10, 2022

AUSTIN WATER UTILITY	DATE
AUSTIN INDUSTRIAL WASTE DEPARTMENT	DATE
CITY OF AUSTIN FIRE DEPARTMENT	DATE
FOR DIRECTOR, DEVELOPMENT SERVICES DEPARTMENT	DATE
I CERTIFY THAT THESE ENGINEERING DOCUMENTS ARE COMPLETE, ACCURATE AND ADEQUATE FOR THE INTENDED PURPOSES, INCLUDING CONSTRUCTION, BUT ARE NOT AUTHORIZED FOR CONSTRUCTION PRIOR TO FORMAL CITY APPROVAL.	

APPLICABLE WATERSHED ORDINANCE	
OPERATING PERMIT WHERE APPLICABLE UNDER 25-8-233	
WPDR SIGN-OFF AND DATE	

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	LAND STATUS
3	GENERAL NOTES
4	KIMLEY-HORN GENERAL NOTES
5	AWU GENERAL NOTES
6	EXISTING CONDITIONS AND DEMO PLAN
7	TREE LIST
8	OVERALL EROSION CONTROL PLAN
9	EROSION CONTROL PLAN (SHEET 1 OF 2)
10	EROSION CONTROL PLAN (SHEET 2 OF 2)
11	OVERALL SITE PLAN
12	DIMENSION CONTROL PLAN (SHEET 1 OF 2)
13	DIMENSION CONTROL PLAN (SHEET 2 OF 2)
14	PAVING PLAN (SHEET 1 OF 2)
15	PAVING PLAN (SHEET 2 OF 2)
16	OVERALL GRADING PLAN
17	GRADING PLAN (SHEET 1 OF 2)
18	GRADING PLAN (SHEET 2 OF 2)
19	EXISTING DRAINAGE AREA MAP
20	PROPOSED DRAINAGE AREA MAP
21	DRAINAGE CALCULATIONS
22	OVERALL STORM PLAN
23	STORM PLAN (SHEET 1 OF 2)
24	STORM PLAN (SHEET 2 OF 2)
25	POND PLAN
26	POND DETAILS
27	PRIVATE WATER PLAN (SHEET 1 OF 2)
28	PRIVATE WATER PLAN (SHEET 2 OF 2)
29	WASTEWATER PLAN
30	UTILITY PLAN AND PROFILE
31	FIRE PROTECTION PLAN
32	PAVING DETAILS
33	STORM DRAIN DETAILS
34	UTILITY DETAILS
35	EROSION CONTROL DETAILS
36	CUT FILL
37	SLOPE MAP
38	LN-1
39	LN-2
40	LP-1
41	LP-2
42	LP-3
43	LP-4
43	LP-5
44	LP-6
45	LP-0
40	
	IRWQ-1
48	IRWQ-2
49	IRWQ-3
50	IRWQ-4

SHEET INDEX

VALOR SOUTHW Ш SHE OVER ()U. HW PY SB ш C

THIS NOTE IS BEING PLACED ON THE PLAN SET IN PLACE OF A TEMPORARY TRAFFIC CONTROL STRATEGY WITH THE FULL UNDERSTANDING THAT, AT A MINIMUM OF 6 WEEKS PRIOR TO THE START OF CONSTRUCTION, A TEMPORARY TRAFFIC CONTROL PLAN MUST BE REVIEWED AND APPROVED BY THE RIGHT OF WAY MANAGEMENT DIVISION. THE OWNER/REPRESENTATIVE FURTHER RECOGNIZES THAT A REVIEW FEE, AS PRESCRIBED BY THE MOST CURRENT VERSION OF THE CITY'S FEE ORDINANCE, SHALL BE PAID EACH TIME A PLAN OR PLAN REVISION IS SUBMITTED TO RIGHT OF WAY MANAGEMENT DIVISION FOR REVIEW. THE FOLLOWING MUST BE TAKEN INTO CONSIDERATION WHEN DEVELOPING FUTURE TRAFFIC CONTROL STRATEGIES:

PEDESTRIAN AND BICYCLE TRAFFIC ACCESS MUST BE MAINTAINED AT ALL TIMES, UNLESS OTHER WISE AUTHORIZED BY RIGHT OF WAY MANAGEMENT.

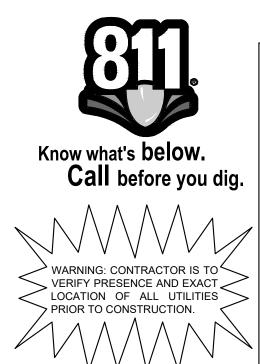
NO LONG-TERM LANE CLOSURES WILL BE AUTHORIZED, UNLESS RIGHT OF WAY MANAGEMENT DETERMINES THAT ADEQUATE ACCOMMODATIONS HAVE BEEN MADE TO MINIMIZE TRAFFIC IMPACT.

PROJECT SHOULD BE PHASED SO THAT UTILITY INSTALLATION MINIMALLY IMPACTS EXISTING OR TEMPORARY PEDESTRIAN FACILITIES.

## BENCHMARKS

- SQUARE CUT IN CONCRETE, ON THE EAST SIDE OF THE BASE OF A UTILITY POLE, AND BEING ALONG THE NORTH SIDE OF STATE HIGHWAY 45, ± 1200' SOUTHEAST OF SUBJECT TRACTS NORTHWEST CORNER, ± 100' NORTHWEST OF A STORM SEWER MANHOLE AND ± 78' NORTHEAST OF A REFLECTOR.
- LEVATION=817.59' SQUARE CUT ON TOP OF A CONCRETE CURB INLET,
- ALONG THE CURB LINE OF A RAMP OF STATE HIGHWAY 45, ± 740' SOUTHEAST OF SUBJECT TRACTS NORTHWEST CORNER, ± 3' NORTHWEST OF A STORM SEWER MANHOLE AND ± 124' SOUTHEAST FROM A "DO NOT ENTER/MERGE" SIGN.

EVATION=824.35



		-	-
FILE NUMBER SP-20	22-0296CE APPLICATION	N DATE 06/10/202	2
APPROVED BY COMM	ISSION ON	UNDER SECTIO	N_112_OI
CHAPTER <b>25-5</b> O	F THE CITY OF AUSTIN C	CODE.	
EXPIRATION DATE (25	5-5-81,LDC)CAS	SE MANAGER C.	CAMPBELL
	NDATE (ORD.#970905-A)		
Director, Development Se	1		
RELEASED FOR GENE	RAL COMPLIANCE:	ZONING	GR-CO
Rev. 1	Correction 1		
Rev. 2	Correction 2		
Rev. 3	Correction 3		
Final plat must be recorde	Correction 3 ed by the Project Expiration D the Code current at the time of	Date, if applicable. Su	ibsequent S

approved prior to the Project Expiration Date.

OF 50 SP-2022-0296CE

SHEET NUMBER

 $\mathsf{O}$ 



## **Development Services Department** Land Status Determination **Legal Tract Platting Exception** Certification

May 18, 2022

File Number: **C8I-2022-0167** 

Address: **S SH 45 W** 

Tax Parcel I.D.# 0431470126 Tax Map Date: 05/16/2022

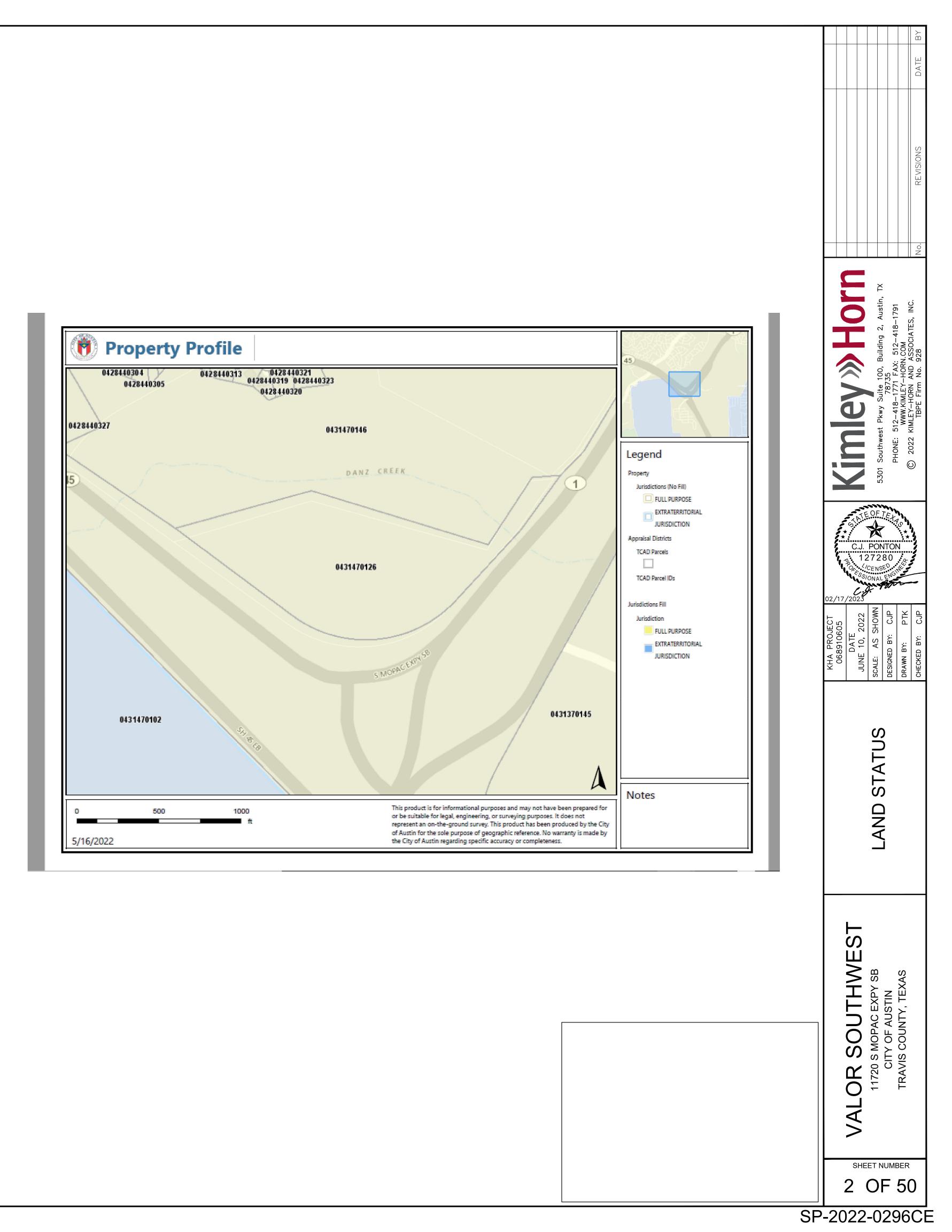
The Development Services Department has determined that the property described below and as shown on the attached tax map:

is over five acres consisting of THAT CERTAIN TRACT OR PARCEL OF LAND CONTAINING 25.415 ACRES, MORE OR LESS, SITUATED IN THE SAMUEL HAMILTON SURVEY NO. 16, TRAVIS COUNTY, TEXAS in Travis County, Texas, according to the deed recorded in **Document #2011060286**, of the Travis County Deed Records on Apr. 28, 2011 and is eligible to receive utility service. The cost of water and/or wastewater service improvements, including easements, tap and impact fees, are the landowner's responsibility and expense, and must be accomplished according to the City of Austin Utility Design Criteria, Specifications and Procedures.

This determination of the status of the property is based on the five-acre subdivision exception provided in Texas Local Government Code, Section 212.004(a). Recognition hereby does not imply approval of any other portion of the Austin City Code or any other regulation.

By: Joey de la Garza

Joey de la Garza, Representative of the Director **Development Services Department** 



Г	CITY OF AUSTIN STANDARD SITE PLAN NOTES	
	<ol> <li>ALL IMPROVEMENTS SHALL BE MADE IN ACCORDANCE WITH THE RELEASED SITE PLAN. ANY ADDITIONAL IMPROVEMENTS WILL REQUIRE SITE PLAN AMENDMENT AND APPROVAL OF THE DEVELOPMENT SERVICES DEPARTMENT.</li> </ol>	APPENDIX P-1 - EROSION CONTROL NOTES 1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS, TREE/NATURAL AREA PROTECTIVE FENCING, AND CONDUCT "PRE-CONSTRUCTION" TREE FERTILIZATION (IF APPLICABLE) PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).
Horn and Associates, Inc.	<ol> <li>ALL SIGNS MUST COMPLY WITH REQUIREMENTS OF THE LAND DEVELOPMENT CODE (CHAPTER 25-10).</li> <li>ADDITIONAL ELECTRIC EASEMENTS MAY BE REQUIRED AT A LATER DATE.</li> <li>WATER AND WASTEWATER SERVICE WILL BE PROVIDED BY THE CITY OF AUSTIN.</li> <li>ALL EXISTING STRUCTURES SHOWN TO BE REMOVED WILL REQUIRE A DEMOLITION PERMIT FROM THE CITY OF AUSTIN DEVELOPMENT SERVICES DEPARTMENT.</li> <li>FOR DRIVEWAY CONSTRUCTION: THE OWNER IS RESPONSIBLE FOR ALL COSTS FOR RELOCATION OF, OR DAMAGE TO UTILITIES.</li> <li>FOR CONSTRUCTION WITHIN THE RIGHT-OF-WAY, A ROW EXCAVATION PERMIT IS REQUIRED.</li> <li>NO CERTIFICATE OF OCCUPANCY MAY BE ISSUED FOR THE PROPOSED RESIDENTIAL CONDOMINIUM PROJECT UNTIL THE OWNER OR OWNERS OF THE PROPERTY HAVE COMPLIED WITH CHAPTER 81 AND 82 OF THE PROPERTY CODE OF THE STATE OF TEXAS OR ANY OTHER STATUTES ENACTED BY THE STATE CONCERNING CONDOMINIUMS.</li> </ol>	<ul> <li>2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE ENVIRONMENTAL CRITERIA MANUAL AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN. THE COA ESC PLAN SHALL BE CONSULTED AND USED AS THE BASIS FOR A TPDES REQUIRED SWPPP. IF A SWPPP IS REQUIRED, IT SHALL BE AVAILABLE FOR REVIEW BY THE CITY OF AUSTIN ENVIRONMENTAL INSPECTOR AT ALL TIMES DURING CONSTRUCTION, INCLUDING AT THE PRE-CONSTRUCTION MEETING. THE CHECKLIST BELOW CONTAINS THE BASIC ELEMENTS THAT SHALL BE REVIEWED FOR PERMIT APPROVAL BY COA EV PLAN REVIEWERS AS WELL AS COA EV INSPECTORS.</li> <li>3. PLAN SHEETS SUBMITTED TO THE CITY OF AUSTIN MUST SHOW THE FOLLOWING:</li> <li>✓ DIRECTION OF FLOW DURING GRADING OPERATIONS.</li> <li>✓ LOCATION, DESCRIPTION, AND CALCULATIONS FOR OFF-SITE FLOW DIVERSION STRUCTURES.</li> <li>✓ AREAS THAT WILL NOT BE DISTURBED; NATURAL FEATURES TO BE PRESERVED.</li> <li>✓ DELINEATION OF CONTRIBUTING DRAINAGE AREA TO EACH PROPOSED BMP (E.G., SILT FENCE, SEDIMENT BASIN, ETC.).</li> </ul>
liability to Kimley—H	1. THE AUSTIN FIRE DEPARTMENT REQUIRES FINAL ASPHALT OR CONCRETE PAVEMENT ON REQUIRED ACCESS ROADS PRIOR TO THE START OF COMBUSTIBLE CONSTRUCTION. ANY OTHER METHOD OF PROVIDING "ALL-WEATHER DRIVING CAPABILITIES" SHALL BE REQUIRED TO BE DOCUMENTED AND APPROVED AS AN ALTERNATIVE METHOD OF	<ul> <li>LOCATION AND TYPE OF E&amp;S BMPS FOR EACH PHASE OF DISTURBANCE.</li> <li>CALCULATIONS FOR BMPS AS REQUIRED.</li> <li>LOCATION AND DESCRIPTION OF TEMPORARY STABILIZATION MEASURES.</li> <li>LOCATION OF ON-SITE SPOILS, DESCRIPTION OF HANDLING AND DISPOSAL OF BORROW MATERIALS, AND DESCRIPTION OF ON-SITE PERMANENT SPOILS DISPOSAL AREAS, INCLUDING SIZE, DEPTH OF FILL AND REVEGETATION PROCEDURES.</li> </ul>
shall be without	OPENING (STEAMER) LOCATED AT LEAST 18 INCHES ABOVE FINISHED GRADE. THE STEAMER OPENING OF THE 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 THE THREE (3) FEET IN ALL DIRECTIONS FROM ANY FIRE HYDRANT SHALL BE FREE OF OBSTRUCTIONS, AND THE AREA BETWEEN THE STEAMER OPENING AN THE STREET OR DRIVEWAY GIVING EMERGENCY VEHICLE ACCESS SHALL BE FREE OF OBSTRUCTIONS.	<ul> <li>✓ DESCRIBE SEQUENCE OF CONSTRUCTION AS IT PERTAINS TO ESC INCLUDING THE FOLLOWING ELEMENTS:</li> <li>1. INSTALLATION SEQUENCE OF CONTROLS (E.G. PERIMETER CONTROLS, THEN SEDIMENT BASINS, THEN TEMPORARY STABILIZATION, THEN PERMANENT, ETC.)</li> <li>2. PROJECT PHASING IF REQUIRED (LOC GREATER THAN 25 ACRES)</li> <li>3. SEQUENCE OF GRADING OPERATIONS AND NOTATION OF TEMPORARY STABILIZATION</li> </ul>
and Associates, Inc.	<ol> <li>TIMING OF INSTALLATION: WHEN FIRE PROTECTION FACILITIES ARE INSTALLED BY THE CONTRACTOR, SUCH FACILITIES SHALL INCLUDE SURFACE ACCESS ROADS.</li> <li>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.</li> <li>4 ALL EMERGENCY ACCESS ROADWAYS AND FIRE LANES INCLUDING</li> </ol>	<ul> <li>MEASURES TO BE USED</li> <li>4. SCHEDULE FOR CONVERTING TEMPORARY BASINS TO PERMANENT WQ CONTROLS</li> <li>5. SCHEDULE FOR REMOVAL OF TEMPORARY CONTROLS</li> <li>6. ANTICIPATED MAINTENANCE SCHEDULE FOR TEMPORARY CONTROLS <ul> <li>CATEGORIZE EACH BMP UNDER ONE OF THE FOLLOWING AREAS OF BMP ACTIVITY AS DESCRIBED BELOW:</li> </ul> </li> </ul>
by Kimley-Horn a	<ul> <li>SUFFICIENT TO MEET THE REQUIREMENTS FOR HS-20 LOADING (16KIPS/WHEEL) AND A TOTAL VEHICLE LIVE LOAD OF 80,000 POUNDS IS CONSIDERED COMPLIANT WITH THIS REQUIREMENT.</li> <li>FIRE LANES DESIGNATED ON SITE PLAN SHALL BE REGISTERED WITH CITY OF AUSTIN FIRE DEPARTMENT AND INSPECTED FOR FINAL APPROVAL.</li> <li>THE MINIMUM VERTICAL CLEARANCE REQUIRED FOR EMERGENCY VEHICLE ACCESS</li> </ul>	<ul> <li>3.1 MINIMIZE DISTURBED AREA AND PROTECT NATURAL FEATURES AND SOIL</li> <li>3.2 CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT</li> <li>3.3 STABILIZE SOILS</li> <li>3.4 PROTECT SLOPES</li> <li>3.5 PROTECT STORM DRAIN INLETS</li> </ul>
on and adaptation	GENERAL CONSTRUCTION NOTES	<ul> <li>3.6 ESTABLISH PERIMETER CONTROLS AND SEDIMENT BARRIERS</li> <li>3.7 RETAIN SEDIMENT ON-SITE AND CONTROL DEWATERING PRACTICES</li> <li>3.8 ESTABLISH STABILIZED CONSTRUCTION EXITS</li> <li>3.9 ANY ADDITIONAL BMPS</li> <li> NOTE THE LOCATION OF EACH BMP ON YOUR SITE MAP(S).</li> </ul>
ten authorization		<ul> <li>FOR ANY STRUCTURAL BMPS, YOU SHOULD PROVIDE DESIGN SPECIFICATIONS AND DETAILS AND REFER TO THEM.</li> <li>FOR MORE INFORMATION, SEE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL 1.4.</li> <li>THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN</li> </ul>
ent without written	SCHEDULE THE REQUIRED SITE AND SUBDIVISION PRE-CONSTRUCTION MEETING. THIS         MEETING MUST BE HELD PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN THE R.O.W.         OR       PUBLIC       EASEMENTS.       PLEASE       VISIT         HTTP://AUSTINTEXAS GOV/PAGE/COMMERCIAL-SITE-AND-SUBDIVISION-INSPECTIONS FOR	<ul> <li>ACCORDANCE WITH THE CITY OF AUSTIN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION AND THE APPROVED GRADING/TREE AND NATURAL AREA PLAN.</li> <li>4. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD ON-SITE WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND ENVIRONMENTAL INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS, TREE/NATURAL AREA PROTECTION MEASURES AND "PRE-CONSTRUCTION" TREE FERTILIZATION (IF</li> </ul>
ce on this document	ADDED STATING: "ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION." (OSHA STANDARDS MAY BE PURCHASED FROM THE	<ul> <li>APPLICABLE) PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE OWNER OR OWNER'S REPRESENTATIVE SHALL NOTIFY THE DEVELOPMENT SERVICES DEPARTMENT, 512-974-2278 OR BY EMAIL AT ENVIRONMENTAL.INSPECTIONS@AUSTINTEXAS.GOV, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE. COA APPROVED ESC PLAN AND TPDES SWPPP (IF REQUIRED) SHOULD BE REVIEWED BY COA EV INSPECTOR AT THIS TIME.</li> <li>5. ANY MAJOR VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM</li> </ul>
eral Notes.dwg Reuse of and improper reliance	<ul> <li>6. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS AND PRIOR TO THE FOLLOWING, THE ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DRAINAGE, FILTRATION AND DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS:         <ul> <li>RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE DEVELOPMENT SERVICES DEPARTMENT (INSIDE THE CITY LIMITS); OR</li> </ul> </li> </ul>	<ul> <li>THOSE SHOWN ON THE APPROVED PLANS WILL REQUIRE A REVISION AND MUST BE APPROVED BY THE REVIEWING ENGINEER, ENVIRONMENTAL SPECIALIST OR CITY ARBORIST AS APPROPRIATE. MAJOR REVISIONS MUST BE APPROVED BY AUTHORIZED COA STAFF. MINOR CHANGES TO BE MADE AS FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE ENVIRONMENTAL INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES.</li> <li>6. THE CONTRACTOR IS REQUIRED TO PROVIDE A CERTIFIED INSPECTOR THAT IS EITHER A LICENSED ENGINEER (OR PERSON DIRECTLY SUPERVISED BY THE LICENSED ENGINEER) OR CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC OR CPESC - IT), CERTIFIED EROSION, SEDIMENT AND STORMWATER - INSPECTOR (CESSWI OR</li> </ul>
uas prepared. R	VALOR PUBLIC SCHOOLS     (512)646-4170       OWNER     PHONE #       220 EOREMOST DRIVE AUSTIN, TEXAS 78745	CESSWI - IT) OR CERTIFIED INSPECTOR OF SEDIMENTATION AND EROSION CONTROLS (CISEC OR CISEC - IT) CERTIFICATION TO INSPECT THE CONTROLS AND FENCES AT WEEKLY OR BI-WEEKLY INTERVALS AND AFTER ONE-HALF (½) INCH OR GREATER RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT
d \plansnee for which it	C.J. PONTON, KIMLEY-HORN AND ASSOCIATES, INC. (512)418-1771 OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS PHONE # VALOR PUBLIC SCHOOLS (512)646-4170 SEDIMENTATION CONTROL MAINTENANCE PHONE #	<ul> <li>CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES OR ONE-THIRD (<sup>1</sup>/<sub>3</sub>) OF THE INSTALLED HEIGHT OF THE CONTROL WHICHEVER IS LESS.</li> <li>7. PRIOR TO FINAL ACCEPTANCE BY THE CITY, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE</li> </ul>
r southwest/ca	VALOR PUBLIC SCHOOLS(512)646-4170PERSON OR FIRM RESPONSIBLE FOR TREE/NATURALPHONE #AREA PROTECTION MAINTENANCE	<ul> <li>DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.</li> <li>8. ALL WORK MUST STOP IF A VOID IN THE ROCK SUBSTRATE IS DISCOVERED WHICH IS; ONE SQUARE FOOT IN TOTAL AREA; BLOWS AIR FROM WITHIN THE SUBSTRATE AND/OR CONSISTENTLY RECEIVES WATER DURING ANY RAIN EVENT. AT THIS TIME IT IS THE RESPONSIBILITY OF THE PROJECT MANAGER TO IMMEDIATELY CONTACT A CITY OF AUSTIN ENVIRONMENTAL INSPECTOR FOR FURTHER INVESTIGATION.</li> <li>9. TEMPORARY AND PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE</li> </ul>
for the specific	THE CITY OF AUSTIN HAS REVIEWED THIS PLAN FOR COMPLIANCE WITH CITY DEVELOPMENT REGULATIONS ONLY. THE APPLICANT, PROPERTY OWNER, AND OCCUPANT OF THE PREMISES ARE RESPONSIBLE FOR DETERMINING WHETHER THE PLAN COMPLIES WITH ALL OTHER LAWS, REGULATIONS, AND RESTRICTIONS WHICH MAY BE APPLICABLE TO THE PROPERTY AND ITS USE.	<ul> <li>RESTORED AS NOTED BELOW:</li> <li>A. ALL DISTURBED AREAS TO BE REVEGETATED ARE REQUIRED TO PLACE A MINIMUM OF SIX (6) INCHES OF TOPSOIL [SEE STANDARD SPECIFICATION ITEM NO. 601S.3(A)]. DO NOT ADD TOPSOIL WITHIN THE CRITICAL ROOT ZONE OF EXISTING TREES.</li> <li>TOPSOIL SALVAGED FROM THE EXISTING SITE IS ENCOURAGED FOR USE, BUT IT SHOULD MEET THE STANDARDS SET FORTH IN 601S.</li> </ul>
: \sau_civil \U68 e, is intended only	<ol> <li>ALL ACCESSIBLE PARKING SPACES SHALL BE IDENTIFIED BY A SIGN, CENTERED AT THE HEAD OF THE TWO PARKING SPACES. SIGN TO INCLUDE INTERNATIONAL SYMBOL OF ACCESSIBILITY AND STATE RESERVED OR EQUIVALENT LANGUAGE.</li> <li>COMPACT PARKING SPACES MUST BE IDENTIFIED BY A SIGN STATING "SMALL CAR ONLY"</li> </ol>	AN OWNER/ENGINEER MAY PROPOSE USE OF ONSITE SALVAGED TOPSOIL WHICH DOES NOT MEET THE CRITERIA OF STANDARD SPECIFICATION 601S BY PROVIDING A SOIL ANALYSIS AND A WRITTEN STATEMENT FROM A QUALIFIED PROFESSIONAL IN SOILS, LANDSCAPE ARCHITECTURE, OR AGRONOMY INDICATING THE ONSITE TOPSOIL WILL PROVIDE AN EQUIVALENT GROWTH MEDIA AND SPECIFYING WHAT, IF ANY, SOIL AMENDMENTS ARE REQUIRED.
File Path:K trument of service	<ol> <li>RAISED CONCRÈTE CURBS SHALL BE PROVIDED AT THE END OF PARKING BAY SAND ALL LANDSCAPED ISLANDS UNLESS OTHERWISE NOTED.</li> <li>ALL PARKING AISLES ARE DESIGNED FOR TWO-WAY TRAFFIC UNLESS OTHERWISE NOTED.</li> <li>WASTE HAULING WILL OPERATE OUTSIDE OF BUSINESS HOURS AFTER 8PM AND BEFORE 6AM.</li> <li><u>AUSTIN ENERGY STANDARD NOTES</u></li> </ol>	SOIL AMENDMENTS SHALL BE WORKED INTO THE EXISTING ONSITE TOPSOIL WITH A DISC OR TILLER TO CREATE A WELL-BLENDED MATERIAL. THE VEGETATIVE STABILIZATION OF AREAS DISTURBED BY CONSTRUCTION SHALL BE AS FOLLOWS: TEMPORARY VEGETATIVE STABILIZATION: 1 FROM SERTEMBER 15 TO MARCH 1 SEEDING SHALL BE WITH OR INCLUDE A COOL
UT: 59: UZpm herein, as an inst	<ol> <li>AUSTIN ENERGY HAS THE RIGHT TO PRUNE AND/OR REMOVE TREES, SHRUBBERY AND OTHER OBSTRUCTIONS TO THE EXTENT NECESSARY TO KEEP THE EASEMENTS CLEAR. AUSTIN ENERGY WILL PERFORM ALL TREE WORK IN COMPLIANCE WITH CHAPTER 25-8, SUBCHAPTER B OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE.</li> <li>THE OWNER/DEVELOPER OF THIS SUBDIVISION/LOT SHALL PROVIDE AUSTIN ENERGY WITH ANY EASEMENT AND/OR ACCESS REQUIRED, IN ADDITION TO THOSE INDICATED, DOT THE MUST AND THE AUGUSTION AND THE AUGUST AND A DEVELOPMENT AND</li></ol>	1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH OR INCLUDE A COOL SEASON COVER CROP: (WESTERN WHEATGRASS ( <i>PASCOPYRUM SMITHII</i> ) AT 5.6 POUNDS PER ACRE, OATS ( <i>AVENA SATIVA</i> ) AT 4.0 POUNDS PER ACRE, CEREAL RYE GRAIN ( <i>SECALE CEREALE</i> ) AT 45 POUNDS PER ACRE. CONTRACTOR MUST ENSURE THAT ANY SEED APPLICATION REQUIRING A COOL SEASON COVER CROP DOES NOT UTILIZE ANNUAL RYEGRASS ( <i>LOLIUM MULTIFLORUM</i> ) OR PERENNIAL RYEGRASS ( <i>LOLIUM PERENNE</i> ). COOL SEASON COVER CROPS ARE NOT PERMANENT EROSION CONTROL.
arch 22, 2025 designs presented	<ul> <li>UNDERGROUND ELECTRIC FACILITIES. THESE EASEMENTS AND/OR ACCESS ARE REQUIRED TO PROVIDE ELECTRIC SERVICE TO THE BUILDING AND WILL NOT BE LOCATED SO AS TO CAUSE THE SITE TO BE OUT OF COMPLIANCE WITH CHAPTER 25-8 OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE.</li> <li>3. THE OWNER SHALL BE RESPONSIBLE FOR INSTALLATION OF TEMPORARY EROSION CONTROL, REVEGETATION AND TREE PROTECTION. IN ADDITION, THE OWNER SHALL BE RESPONSIBLE FOR ANY INITIAL TREE PRUNING AND TREE REMOVAL THAT IS</li> </ul>	<ol> <li>FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 45 POUNDS PER ACRE OR A NATIVE PLANT SEED MIX CONFORMING TO ITEM 604S OR 609S.</li> <li>A. FERTILIZER SHALL BE APPLIED ONLY IF WARRANTED BY A SOIL TEST AND SHALL CONFORM TO ITEM NO. 606S, FERTILIZER. FERTILIZATION SHOULD NOT OCCUR WHEN RAINFALL IS EXPECTED OR DURING SLOW PLANT GROWTH OR DORMANCY. CHEMICAL FERTILIZER MAY NOT BE APPLIED IN THE CRITICAL WATER QUALITY ZONE.</li> </ol>
erena Date:Mc he concepts and a	<ul> <li>WITHIN TEN FEET OF THE CENTER LINE OF THE PROPOSED OVERHEAD ELECTRICAL FACILITIES DESIGNED TO PROVIDE ELECTRIC SERVICE TO THIS PROJECT. THE OWNER SHALL INCLUDE AUSTIN ENERGY'S WORK WITHIN THE LIMITS OF CONSTRUCTION FOR THIS PROJECT.</li> <li>4. THE OWNER OF THE PROPERTY IS RESPONSIBLE FOR MAINTAINING CLEARANCES REQUIRED BY THE NATIONAL ELECTRIC SAFETY CODE, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, CITY OF AUSTIN RULES AND</li> </ul>	<ul> <li>B. HYDROMULCH SHALL COMPLY WITH TABLE 1, BELOW.</li> <li>C. TEMPORARY EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1<sup>1</sup>/<sub>2</sub> INCHES HIGH WITH A MINIMUM OF 95% TOTAL COVERAGE SO THAT ALL AREAS OF A SITE THAT RELY ON VEGETATION FOR TEMPORARY STABILIZATION ARE UNIFORMLY VEGETATED, AND PROVIDED THERE ARE NO BARE SPOTS LARGER THAN 10 SQUARE FEET.</li> <li>D. WHEN REQUIRED, NATIVE PLANT SEEDING SHALL COMPLY WITH REQUIREMENTS OF</li> </ul>
rrinon, Se ther with th	REGULATIONS AND TEXAS STATE LAWS PERTAINING TO CLEARANCES WHEN WORKING IN CLOSE PROXIMITY TO OVERHEAD POWER LINES AND EQUIPMENT. AUSTIN ENERGY WILL NOT RENDER ELECTRIC SERVICE UNLESS REQUIRED CLEARANCES ARE MAINTAINED. ALL COSTS INCURRED BECAUSE OF FAILURE TO COMPLY WITH THE REQUIRED CLEARANCES WILL BE CHARGED TO THE OWNER.	THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL, AND STANDARD SPECIFICATION 604S OR 609S.

TABLE 1 HYDROMULCHING FOR TEMPORARY VEGETATIVE STABILIZATION							
MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	APPLICATION RATES			
100%, OR ANY BLEND OF WOOD, CELLULOSE, STRAW, AND/OR COTTON PLANT MATERIAL (EXCEPT NO MULCH SHALL EXCEED 30% PAPER)	70% OR GREATER WOOD/STRAW 30% OR LESS PAPER OR NATURAL FIBERS	0-3 MONTHS	MODERATE SLOPES; FROM FLAT TO 3:1	1500 TO 2000 LBS PER ACRE			

#### PERMANENT VEGETATIVE STABILIZATION:

- 1. FROM SEPTEMBER 15 TO MARCH 1. SEEDING IS CONSIDERED TO BE TEMPORARY STABILIZATION ONLY. IF COOL SEASON COVER CROPS EXIST WHERE PERMANENT VEGETATIVE STABILIZATION IS DESIRED, THE GRASSES SHALL BE MOWED TO A HEIGHT OF LESS THAN ONE-HALF (1/2) INCH AND THE AREA SHALL BE RE-SEEDED IN ACCORDANCE WITH TABLE 2 BELOW. ALTERNATIVELY. THE COOL SEASON COVER CROP CAN BE MIXED WITH BERMUDAGRASS OR NATIVE SEED AND INSTALLED TOGETHER, UNDERSTANDING THAT GERMINATION OF WARM-SEASON SEED TYPICALLY REQUIRES SOIL TEMPERATURES OF 60 TO 70 DEGREES.
- FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 45 POUNDS PER ACRE WITH A PURITY OF 95% AND A MINIMUM PURE LIVE SEED (PLS) OF 0.83. BERMUDA GRASS IS A WARM SEASON GRASS AND IS CONSIDERED PERMANENT EROSION CONTROL. PERMANENT VEGETATIVE STABILIZATION CAN ALSO BE ACCOMPLISHED
- WITH A NATIVE PLANT SEED MIX CONFORMING TO ITEM 604S OR 609S. A. FERTILIZER USE SHALL FOLLOW THE RECOMMENDATION OF A SOIL TEST. SEE ITEM 606S, FERTILIZER. APPLICATIONS OF FERTILIZER (AND PESTICIDE) ON CITY-OWNED AND MANAGED PROPERTY REQUIRES THE YEARLY SUBMITTAL OF A PESTICIDE AND FERTILIZER APPLICATION RECORD. ALONG WITH A CURRENT COPY OF THE APPLICATOR'S LICENSE. FOR CURRENT COPY OF THE RECORD TEMPLATE CONTACT THE CITY OF AUSTIN'S IPM COORDINATOR.
- B. HYDROMULCH SHALL COMPLY WITH TABLE 2, BELOW. C. WATER THE SEEDED AREAS IMMEDIATELY AFTER INSTALLATION TO ACHIEVE GERMINATION AND A HEALTHY STAND OF PLANTS THAT CAN ULTIMATELY SURVIVE WITHOUT SUPPLEMENTAL WATER. APPLY THE WATER UNIFORMLY TO THE PLANTED AREAS WITHOUT CAUSING DISPLACEMENT OR EROSION OF THE MATERIALS OR SOIL. MAINTAIN THE SEEDBED IN A MOIST CONDITION FAVORABLE FOR PLANT GROWTH. ALL WATERING SHALL COMPLY WITH CITY CODE CHAPTER 6-4 (WATER CONSERVATION), AT RATES AND FREQUENCIES DETERMINED BY A LICENSED IRRIGATOR OR OTHER QUALIFIED PROFESSIONAL. AND AS ALLOWED BY THE AUSTIN WATER UTILITY AND
- CURRENT WATER RESTRICTIONS AND WATER CONSERVATION INITIATIVES. . PERMANENT EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 11/2 INCHES HIGH WITH A MINIMUM OF 95 PERCENT FOR THE NON-NATIVE MIX, AND 95 PERCENT COVERAGE FOR THE NATIVE MIX SO THAT ALL AREAS OF A SITE THAT RELY ON VEGETATION FOR STABILITY MUST BE UNIFORMLY VEGETATED, AND PROVIDED THERE ARE NO BARE SPOTS LARGER THAN 10 SQUARE FEET.
- . WHEN REQUIRED, NATIVE PLANT SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL, ITEMS 604S AND 609S.

#### TABLE 2: HYDROMULCHING FOR PERMANENT VEGETATIVE STABILIZATION

	TABLE 2: HYDROMOLCHING FOR PERMANENT VEGETATIVE STABILIZATION							
MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	APPLICATION RATES				
BONDED FIBER MATRIX (BFM)	80% ORGANIC DEFIBRATED FIBERS							
10% TACKIFIER	6 MONTHS	ON SLOPES UP TO 2:1 AND EROSIVE SOIL CONDITIONS	2,500 TO 4,000 LBS PER ACRE (SEE MANUFACTURES RECOMMENDATIONS)					
FIBER REINFORCED MATRIX (FRM)	65% ORGANIC DEFIBRATED FIBERS 25% FIBERS OR LESS 10% TACKIFIER	UP TO 12 MONTHS	ON SLOPES UP TO 1:1 AND EROSIVE SOIL CONDITIONS	3,000 TO 4,500 LBS PER ACRE (SEE MANUFACTURES RECOMMENDATIONS)				

TARLE 2. UNREAMULATION FOR REPMANENT VECTATIVE STARU IZATION

10. THE CONTRACTOR SHALL NOT DISPOSE OF SURPLUS EXCAVATED MATERIAL FROM THE SITE WITHOUT NOTIFYING THE DEVELOPMENT SERVICES DEPARTMENT AT 512-974-2278 AT LEAST 48 HOURS PRIOR WITH THE LOCATION AND A COPY OF THE PERMIT ISSUED TO RECEIVE THE MATERIAL SOURCE: RULE NO. R161-15.13, 1-4-2016 ; RULE NO. R161-17.03 , 3-2-2017.

#### ECM SECTION 3: MODIFIED TREE AND NATURAL AREA PROTECTION STANDARD PLAN NOTE

#### BEFORE CONSTRUCTION

- 1. ALL TREES AND NATURAL AREAS SHOWN ON PLAN TO BE PRESERVED SHALL BE PROTECTED PER ECM 3.6.1.
- TREE PROTECTION SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE WORK, INCLUDING DEMOLITION OR SITE PREPARATION. REFER TO ECM 3.6.1.A.
- 3. FENCING FOR TREE PROTECTION SHALL BE CHAIN-LINK MESH WITH A MINIMUM HEIGHT OF 5 FEET AND SHALL BE INSTALLED AROUND OR BEYOND THE CRITICAL ROOT ZONE EXCEPT AS ALLOWED IN ECM 3.6.1.B.4.
- 4. UNFENCED SECTIONS OF THE CRITICAL ROOT ZONE SHALL BE COVERED WITH MULCH AT A MINIMUM DEPTH OF 8 INCHES AND A MAXIMUM DEPTH OF 12 INCHES PER ECM 3.6.1.C 5. WHERE FENCING IS LOCATED 5 FEET OR LESS FROM THE TRUNK OF A PRESERVED TREE,
- TRUNK WRAPPING SHALL BE INSTALLED PER ECM 3.6.1.D. 6. EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AND MAINTAINED SO AS NOT TO CAUSE IMPACTS THAT EXCEED PRESERVATION CRITERIA LISTED IN ECM 3.5.3.D.
- DURING CONSTRUCTION TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER THAT DOES NOT
- EXCEED PRESERVATION CRITERIA FOR THE TREES TO REMAIN, REFER TO ECM 3.5.2 A. FENCING MAY NOT BE TEMPORARILY MOVED OR REMOVED DURING DEVELOPMENT WITHOUT PRIOR AUTHORIZATION. THE FENCED CRITICAL ROOT ZONE SHALL NOT BE USED FOR TOOL OR MATERIAL STORAGE OF ANY KIND AND SHALL BE KEPT FREE OF LITTER. REFER
- TO ECM 3.6.1.B.3. 3. PRUNING SHALL BE IN COMPLIANCE WITH THE CURRENT ANSI A300 STANDARD FOR TREE CARE.

#### AFTER CONSTRUCTION

- TREE PROTECTION SHALL BE REMOVED AT THE END OF THE PROJECT AFTER ALL CONSTRUCTION AND FINAL GRADING IS COMPLETE, BUT BEFORE FINAL INSPECTION. REFER TO ECM 3.6.1.A
- 2. LANDSCAPE INSTALLATION WITHIN THE CRZ OF PRESERVED TREES, INCLUDING IRRIGATION, SOIL PLANTINGS, SHALL NOT EXCEED PRESERVATION CRITERIA LISTED IN ECM 3.5.2.
- 3. DOCUMENTATION OF TREE WORK PERFORMED MUST BE PROVIDED TO INSPECTOR PER ECM APPENDIX P-6. THIS LIST IS NOT EXHAUSTIVE.

#### REFER TO APPROPRIATE ECM SECTIONS FOR FULL REQUIREMENTS.

PENDIX P-4: - STANDARD SEQUENCE OF CONSTRUCTION

- HE FOLLOWING SEQUENCE OF CONSTRUCTION SHALL BE USED FOR ALL DEVELOPMENT. THE APPLICANT IS ENCOURAGED TO PROVIDE ANY ADDITIONAL DETAILS APPROPRIATE FOR THE PARTICULAR DEVELOPMENT. 1. TEMPORARY EROSION AND SEDIMENTATION CONTROLS ARE TO BE INSTALLED AS INDICATED ON THE APPROVED SITE PLAN OR SUBDIVISION CONSTRUCTION
- PLAN AND IN ACCORDANCE WITH THE EROSION SEDIMENTATION CONTROL PLAN (ESC) AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) THAT IS REQUIRED TO BE POSTED ON THE SITE. INSTALL TREE PROTECTION, INITIATE TREE MITIGATION MEASURES AND CONDUCT "PRE - CONSTRUCTION" TREE FERTILIZATION (IF APPLICABLE). THE ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR MUST CONTACT
- THE DEVELOPMENT SERVICES DEPARTMENT, ENVIRONMENTAL INSPECTION, AT 512-974-2278, 72 HOURS PRIOR TO THE SCHEDULED DATE OF THE REQUIRED ON-SITE PRECONSTRUCTION MEETING.
- THE ENVIRONMENTAL PROJECT MANAGER, AND/OR SITE SUPERVISOR, AND/OR DESIGNATED RESPONSIBLE PARTY, AND THE GENERAL CONTRACTOR WILL FOLLOW THE EROSION SEDIMENTATION CONTROL PLAN (ESC) AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) POSTED ON THE SITE. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE REVISED, IF NEEDED, TO COMPLY WITH CITY INSPECTORS' DIRECTIVES, AND REVISED CONSTRUCTION SCHEDULE RELATIVE TO THE WATER QUALITY PLAN REQUIREMENTS AND THE EROSION PLAN
- TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE EROSION SEDIMENTATION CONTROL PLAN (ESC) AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) POSTED ON THE SITE BEGIN SITE CLEARING/CONSTRUCTION (OR DEMOLITION) ACTIVITIES.
- COMPLETE CONSTRUCTION AND START REVEGETATION OF THE SITE AND INSTALLATION OF LANDSCAPING. UPON COMPLETION OF THE SITE CONSTRUCTION AND REVEGETATION OF A
- PROJECT SITE, THE DESIGN ENGINEER SHALL SUBMIT AN ENGINEER'S LETTER OF CONCURRENCE BEARING THE ENGINEER'S SEAL, SIGNATURE, AND DATE TO THE DEVELOPMENT SERVICES DEPARTMENT INDICATING THAT CONSTRUCTION, INCLUDING REVEGETATION. IS COMPLETE AND IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLANS. AFTER RECEIVING THIS LETTER, A FINAL INSPECTION WILL BE SCHEDULED BY THE APPROPRIATE CITY INSPECTOR.
- 8. UPON COMPLETION OF LANDSCAPE INSTALLATION OF A PROJECT SITE, THE LANDSCAPE ARCHITECT SHALL SUBMIT A LETTER OF CONCURRENCE TO THE DEVELOPMENT SERVICES DEPARTMENT INDICATING THAT THE REQUIRED LANDSCAPING IS COMPLETE AND IN SUBSTANTIAL CONFORMITY WITH THE APPROVED PLANS. AFTER RECEIVING THIS LETTER, A FINAL INSPECTION WILL BE SCHEDULED BY THE APPROPRIATE CITY INSPECTOR.
- AFTER A FINAL INSPECTION HAS BEEN CONDUCTED BY THE CITY INSPECTOR AND WITH APPROVAL FROM THE CITY INSPECTOR, REMOVE THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS AND COMPLETE ANY NECESSARY FINAL REVEGETATION RESULTING FROM REMOVAL OF THE CONTROLS. SOURCE: RULE NO. R161-17.03 , 3-2-2017.

#### TCEQ WPAP GENERAL CONSTRUCTION NOTES

- 1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE: - THE NAME OF THE APPROVED PROJECT;
- THE ACTIVITY START DATE: AND - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
- ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.
- IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS
- AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY. NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND
- MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY. THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE
- THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT
- OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
- ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE. THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.
- 10. IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY. STABILIZATION MEASURES 11. ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE. THE FOLLOWING RECORDS SHALL BE
- MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST: - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR: - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE
- SITE: AND - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED. 12. THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE
- FOLLOWING: A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION
- ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;
- B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY
- IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER: C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

### TCEQ SCS GENERAL CONSTRUCTION NOTES

PROHIBITED.

- 1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM (SCS) MUST BE CONSTRUCTED IN ACCORDANCE WITH 30 TEXAS ADMINISTRATIVE CODE (TAC) §213.5(C), THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS AQUIFER RULES AND ANY LOCAL GOVERNMENT STANDARD SPECIFICATIONS.
- ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROPOSED REGULATED PROJECT MUST BE PROVIDED WITH COPIES OF THE SCS PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS MUST BE REQUIRED TO KEEP ON-SITE COPIES OF THE PLAN AND THE APPROVAL LETTER.
- 3. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE PRESIDING TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE: - THE NAME OF THE APPROVED PROJECT; - THE ACTIVITY START DATE; AND
  - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
- 4. ANY MODIFICATION TO THE ACTIVITIES DESCRIBED IN THE REFERENCED SCS APPLICATION FOLLOWING THE DATE OF APPROVAL MAY REQUIRE THE SUBMITTAL OF AN SCS APPLICATION TO MODIFY THIS APPROVAL, INCLUDING THE PAYMENT OF APPROPRIATE FEES AND ALL INFORMATION NECESSARY FOR ITS REVIEW AND APPROVAL.
- PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
- IF ANY SENSITIVE FEATURES ARE DISCOVERED DURING THE WASTEWATER LINE TRENCHING ACTIVITIES, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPLICANT MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TCEQ OF THE FEATURE DISCOVERED. A GEOLOGIST'S ASSESSMENT OF THE LOCATION AND EXTENT OF THE FEATURE DISCOVERED MUST BE REPORTED TO THAT REGIONAL OFFICE IN WRITING AND THE APPLICANT MUST SUBMIT A PLAN FOR ENSURING THE STRUCTURAL INTEGRITY OF THE SEWER LINE OR FOR MODIFYING THE PROPOSED COLLECTION SYSTEM ALIGNMENT AROUND THE FEATURE. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE LINE.
- 7. SEWER LINES LOCATED WITHIN OR CROSSING THE 5-YEAR FLOODPLAIN OF A DRAINAGE WAY WILL BE PROTECTED FROM INUNDATION AND STREAM VELOCITIES WHICH COULD CAUSE EROSION AND SCOURING OF BACKFILL. THE TRENCH MUST BE CAPPED WITH CONCRETE TO PREVENT SCOURING OF BACKFILL, OR THE SEWER LINES MUST BE ENCASED IN CONCRETE. ALL CONCRETE SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES.
- BLASTING PROCEDURES FOR PROTECTION OF EXISTING SEWER LINES AND OTHER UTILITIES WILL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION CRITERIA. SAND IS NOT ALLOWED AS BEDDING OR BACKFILL IN TRENCHES THAT HAVE BEEN BLASTED. IF ANY EXISTING SEWER LINES ARE DAMAGED. THE LINES MUST BE REPAIRED AND RETESTED
- ALL MANHOLES CONSTRUCTED OR REHABILITATED ON THIS PROJECT MUST HAVE WATERTIGHT SIZE ON SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT. IF MANHOLES ARE CONSTRUCTED WITHIN THE 100-YEAR FLOODPLAIN, THE COVER MUST HAVE A GASKET AND BE BOLTED TO THE RING. WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE OR FOR MORE THAN 1500 FEET. ALTERNATE MEANS OF VENTING WILL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIAL FOR ANY PORTION OF THE MANHOLE.
- THE DIAMETER OF THE MANHOLES MUST BE A MINIMUM OF FOUR FEET AND THE MANHOLE FOR ENTRY MUST HAVE A MINIMUM CLEAR OPENING DIAMETER OF 30 INCHES. THESE DIMENSIONS AND OTHER DETAILS SHOWING COMPLIANCE WITH THE COMMISSION'S RULES CONCERNING MANHOLES AND SEWER LINE/MANHOLE INVERTS DESCRIBED IN 30 TAC §217.55 ARE INCLUDED ON PLAN SHEET OF
- IT IS SUGGESTED THAT ENTRANCE INTO MANHOLES IN EXCESS OF FOUR FEET DEEP BE ACCOMPLISHED BY MEANS OF A PORTABLE LADDER. THE INCLUSION OF STEPS IN A MANHOLE IS
- 10. WHERE WATER LINES AND NEW SEWER LINE ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION)
- WHERE SEWERS LINES DEVIATE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE ALL CURVATURE OF SEWER PIPE MUST BE ACHIEVED BY THE FOLLOWING PROCEDURE WHICH IS RECOMMENDED BY THE PIPE MANUFACTURER:
- IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOINT MUST BE USED:
- SPECIFIC CARE MUST BE TAKEN TO ENSURE THAT THE JOINT IS PLACED IN THE CENTER OF THE TRENCH AND PROPERLY BEDDED IN ACCORDANCE WITH 30 TAC §217.54.
- NEW SEWAGE COLLECTION SYSTEM LINES MUST BE CONSTRUCTED WITH STUB OUTS FOR THE CONNECTION OF ANTICIPATED EXTENSIONS. THE LOCATION OF SUCH STUB OUTS MUST BE MARKED ON THE GROUND SUCH THAT THEIR LOCATION CAN BE EASILY DETERMINED AT THE TIME OF CONNECTION OF THE EXTENSIONS. SUCH STUB OUTS MUST BE MANUFACTURED WYES OR TEES THAT ARE COMPATIBLE IN SIZE AND MATERIAL WITH BOTH THE SEWER LINE AND THE EXTENSION. AT THE TIME OF ORIGINAL CONSTRUCTION, NEW STUB-OUTS MUST BE CONSTRUCTED SUFFICIENTLY TO EXTEND BEYOND THE END OF THE STREET PAVEMENT. ALL STUB-OUTS MUST BE SEALED WITH A MANUFACTURED CAP TO PREVENT LEAKAGE. EXTENSIONS THAT WERE NOT ANTICIPATED AT THE TIME OF ORIGINAL CONSTRUCTION OR THAT ARE TO BE CONNECTED TO AN EXISTING SEWER LINE NOT FURNISHED WITH STUB OUTS MUST BE CONNECTED USING A MANUFACTURED SADDLE AND IN ACCORDANCE WITH ACCEPTED PLUMBING TECHNIQUES.
- IF NO STUB-OUT IS PRESENT AN ALTERNATE METHOD OF JOINING LATERALS IS SHOWN IN THE DETAIL ON PLAN SHEET \_\_ OF (FOR POTENTIAL FUTURE LATERALS).
- THE PRIVATE SERVICE LATERAL STUB-OUTS MUST BE INSTALLED AS SHOWN ON THE PLAN AND PROFILE SHEETS ON PLAN SHEET \_\_ OF \_\_ AND MARKED AFTER BACKFILLING AS SHOWN IN THE DETAIL ON PLAN SHEET \_\_ OF \_\_.
- 13. TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE MUST COMPLY WITH THE STANDARDS OF ASTM D-2321, CLASSES IA, IB, II OR III. RIGID PIPE BEDDING MUST COMPLY WITH THE REQUIREMENTS OF ASTM C 12 (ANSI A 106.2) CLASSES A, B OR C.

Pipe Diameter (inches)	Minim (sec
6	
8	4
10	5
12	6
15	8
18	1
21	1
24	1
27	1
30	1
33	1

14	. SEWER LINES MUST BE TESTED FROM MANHOLE TO MANHOLE. WHEN A NEW SEWER LINE IS CONNECTED TO AN EXISTING STUB OR CLEAN-OUT, IT MUST BE TESTED FROM EXISTING MANHOLE TO NEW MANHOLE. IF A STUB OR CLEAN-OUT IS USED AT THE END OF THE PROPOSED SEWER LINE, NO PRIVATE SERVICE ATTACHMENTS MAY BE CONNECTED BETWEEN THE LAST MANHOLE AND THE CLEANOUT UNLESS IT CAN BE CERTIFIED AS CONFORMING WITH THE PROVISIONS OF 30 TAC §213.5(C)(3)(E).	DATE B
(A)	ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57. THE ENGINEER MUST RETAIN COPIES OF ALL TEST RESULTS WHICH MUST BE MADE AVAILABLE TO THE EXECUTIVE DIRECTOR UPON REQUEST. THE ENGINEER MUST CERTIFY IN WRITING THAT ALL WASTEWATER LINES HAVE PASSED ALL REQUIRED TESTING TO THE APPROPRIATE REGIONAL OFFICE WITHIN 30 DAYS OF TEST COMPLETION AND PRIOR TO USE OF THE NEW COLLECTION SYSTEM. TESTING METHOD WILL BE: ) FOR A COLLECTION SYSTEM PIPE THAT WILL TRANSPORT WASTEWATER BY GRAVITY FLOW, THE DESIGN MUST SPECIFY AN FILTRATION AND EXFILTRATION TEST OR A LOW-PRESSURE AIR TEST. A TEST MUST CONFORM TO THE FOLLOWING REQUIREMENTS:	
(1) (A) (A)	Image: box of the second se	EVISIONS
(I) (II)	A PIPE MUST BE PRESSURIZED TO 3.5 POUNDS PER SQUARE INCH (PSI) GREATER THAN THE PRESSURE EXERTED BY GROUNDWATER ABOVE THE PIPE.	REVIS
	EQUATION C.3 WHERE:	
	<ul> <li>T = TIME FOR PRESSURE TO DROP 1.0 POUND PER SQUARE INCH GAUGE IN SECONDS</li> <li>K = 0.000419 X D X L, BUT NOT LESS THAN 1.0</li> <li>D = AVERAGE INSIDE PIPE DIAMETER IN INCHES</li> <li>L = LENGTH OF LINE OF SAME SIZE BEING TESTED, IN FEET</li> <li>O = PATE OF LOSS 0.0045 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SUBFACE</li> </ul>	
(C	<ul> <li>Q = RATE OF LOSS, 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SURFACE</li> <li>SINCE A K VALUE OF LESS THAN 1.0 MAY NOT BE USED, THE MINIMUM TESTING TIME FOR EACH PIPE DIAMETER IS SHOWN IN THE FOLLOWING TABLE C.3:</li> </ul>	
	(D) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 25% OF THE CALCULATED TESTING ME. (E) IF ANY PRESSURE LOSS OR LEAKAGE HAS OCCURRED DURING THE FIRST 25% OF A TESTING PERIOD, THEN THE TEST MUST	<b>OT</b> Austin, TX 1791 S, INC.
EA	DNTINUE         FOR THE ENTIRE TEST DURATION AS OUTLINED ABOVE OR UNTIL FAILURE.         (F)       WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT         ACH JOINT       INSTEAD OF FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.         (G)       A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMETER GREATER THAN 33 INCHES MUST BE APPROVED BY THE         KECUTIVE       DIRECTOR.	uilding 2, Austi 512–418–1791 COM SSOCIATES, INC
(2)	<ul> <li>INFILTRATION/EXFILTRATION TEST.</li> <li>(A) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH OF AMETER</li> </ul>	0, Buildi AX: 512 AX: 512 DRN.COM D ASSC
MA	PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF 2.0 FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM ANHOLE. (B) AN OWNER SHALL USE AN INFILTRATION TEST IN LIEU OF AN EXFILTRATION TEST WHEN PIPES ARE INSTALLED BELOW THE GROUNDWATER LEVEL.	11771 FJ IT771 FJ IT771 FJ IT771 FJ IT771 FJ IT771 FJ IT771 FJ IT771 FJ IT771 FJ
	<ul> <li>(C) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH</li> <li>AMETER PER</li> <li>MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM</li> <li>ANHOLE, OR</li> </ul>	Pkwy Su TBPE F
	AT LEAST TWO FEET ABOVE EXISTING GROUNDWATER LEVEL, WHICHEVER IS GREATER. (D) FOR CONSTRUCTION WITHIN A 25-YEAR FLOOD PLAIN, THE INFILTRATION OR EXFILTRATION MUST NOT EXCEED 10 GALLONS ER INCH	KIN 51
PA	DIAMETER PER MILE OF PIPE PER 24 HOURS AT THE SAME MINIMUM TEST HEAD AS IN SUBPARAGRAPH (C) OF THIS ARAGRAPH. (E) IF THE QUANTITY OF INFILTRATION OR EXFILTRATION EXCEEDS THE MAXIMUM QUANTITY SPECIFIED, AN OWNER SHALL UNDERTAKE	I Southwest PHONE: 5- © 2022 KI
s PF	REMEDIAL ACTION IN ORDER TO REDUCE THE INFILTRATION OR EXFILTRATION TO AN AMOUNT WITHIN THE LIMITS SPECIFIED. AN OWNER SHALL RETEST A PIPE FOLLOWING A REMEDIATION ACTION. ) IF A GRAVITY COLLECTION PIPE IS COMPOSED OF FLEXIBLE PIPE, DEFLECTION TESTING IS ALSO REQUIRED. THE FOLLOWING ROCEDURES MUST BE FOLLOWED:	5301
	<ul> <li>FOR A COLLECTION PIPE WITH INSIDE DIAMETER LESS THAN 27 INCHES, DEFLECTION MEASUREMENT REQUIRES A RIGID MANDREL.</li> <li>(A) MANDREL SIZING.</li> <li>(I) A RIGID MANDREL MUST HAVE AN OUTSIDE DIAMETER (OD) NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER</li> <li>(I) A RIGID MANDREL MUST HAVE AN OUTSIDE DIAMETER (OD) NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER</li> <li>(I) OR AVERAGE ID OF A PIPE, AS SPECIFIED IN THE APPROPRIATE STANDARD BY THE ASTMS, AMERICAN WATER</li> <li>(I) OR AVERAGE ID OF A PIPE, AS SPECIFIED IN THE APPROPRIATE STANDARD BY THE ASTMS, AMERICAN WATER</li> <li>(I) OR AVERAGE ID OF A PIPE, AS SPECIFIED IN THE APPROPRIATE STANDARD BY THE ASTMS, AMERICAN WATER</li> </ul>	STATE OF TEL
EC	(II) IF A MANDREL SIZING DIAMETER IS NOT SPECIFIED IN THE APPROPRIATE STANDARD, THE MANDREL MUST HAVE AN OD QUAL TO 95% OF THE ID OF A PIPE. IN THIS CASE, THE ID OF THE PIPE, FOR THE PURPOSE OF DETERMINING THE OD THE MANDREL, MUST EQUAL BE THE AVERAGE OUTSIDE DIAMETER MINUS TWO MINIMUM WALL THICKNESSES FOR OD CONTROLLED PIPE AND THE	C.J. PONTON
A۱	/ERAGE INSIDE DIAMETER FOR ID CONTROLLED PIPE. (III) ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD. (B) MANDREL DESIGN.	BONG CONSERVING
PS	<ul> <li>(I) A RIGID MANDREL MUST BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200</li> <li>(II) DEFORMED.</li> <li>(II) A MANDREL MUST HAVE NINE OR MORE ODD NUMBER OF RUNNERS OR LEGS.</li> <li>(III) A BARREL SECTION LENGTH MUST EQUAL AT LEAST 75% OF THE INSIDE DIAMETER OF A PIPE.</li> </ul>	02/17/2023
<u>.</u>	<ul> <li>(IV) EACH SIZE MANDREL MUST USE A SEPARATE PROVING RING.</li> <li>(C) METHOD OPTIONS.</li> <li>(I) AN ADJUSTABLE OR FLEXIBLE MANDREL IS PROHIBITED.</li> <li>(II) A TEST MAY NOT USE TELEVISION INSPECTION AS A SUBSTITUTE FOR A DEFLECTION TEST.</li> </ul>	0JECT 0605 E 2022 SHOWN : CJP : CJP : CJP
	<ul> <li>(III) IF REQUESTED, THE EXECUTIVE DIRECTOR MAY APPROVE THE USE OF A DEFLECTOMETER OR A MANDREL WITH</li> <li>EMOVABLE LEGS OR RUNNERS ON A CASE-BY-CASE BASIS.</li> <li>(2) FOR A GRAVITY COLLECTION SYSTEM PIPE WITH AN INSIDE DIAMETER 27 INCHES AND GREATER, OTHER TEST METHODS MAY</li> <li>E USED TO DETERMINE</li> </ul>	KHA PROJECT 068910605 DATE JUNE 10, 202 SCALE: AS SHO SCALE: AS SHO DESIGNED BY: C. DRAWN BY: PT CHECKED BY: C.
	<ul> <li>VERTICAL DEFLECTION.</li> <li>(3) A DEFLECTION TEST METHOD MUST BE ACCURATE TO WITHIN PLUS OR MINUS 0.2% DEFLECTION.</li> <li>(4) AN OWNER SHALL NOT CONDUCT A DEFLECTION TEST UNTIL AT LEAST 30 DAYS AFTER THE FINAL BACKFILL.</li> <li>(5) GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%).</li> <li>(6) IF A PIPE SECTION FAILS A DEFLECTION TEST. AN OWNER SHALL CORRECT THE PROBLEM AND CONDUCT A SECOND TEST</li> </ul>	KHA 06 JUNE SCALE: DESIGNE DRAWN CHECKE
	TER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. . ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58. (A) ALL MANHOLES MUST PASS A LEAKAGE TEST.	S
TH	(B) AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING) FOR LEAKAGE, SEPARATE AND INDEPENDENT OF IE COLLECTION SYSTEM PIPES, BY HYDROSTATIC EXFILTRATION TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE	
(A)	KECUTIVE DIRECTOR. (1) HYDROSTATIC TESTING. ) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHODS IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.	Z O
	(B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL ALL WASTEWATER PIPES COMING INTO A ANHOLE WITH AN INTERNAL PIPE PLUG, FILL THE MANHOLE WITH WATER, AND MAINTAIN THE TEST FOR AT LEAST ONE DUR.	AL
OF	<ul> <li>(C) A TEST FOR CONCRETE MANHOLES MAY USE A 24-HOUR WETTING PERIOD BEFORE TESTING TO ALLOW SATURATION</li> <li>THE CONCRETE.</li> <li>(2) VACUUM TESTING.</li> <li>(A) TO PERFORM A VACUUM TEST, AN OWNER SHALL PLUG ALL LIFT HOLES AND EXTERIOR JOINTS WITH A NON-SHRINK</li> </ul>	
	ROUT AND PLUG ALL PIPES ENTERING A MANHOLE. (B) NO GROUT MUST BE PLACED IN HORIZONTAL JOINTS BEFORE TESTING. (C) STUB-OUTS, MANHOLE BOOTS, AND PIPE PLUGS MUST BE SECURED TO PREVENT MOVEMENT WHILE A VACUUM IS	
	RAWN. (D) AN OWNER SHALL USE A MINIMUM 60 INCH/LB TORQUE WRENCH TO TIGHTEN THE EXTERNAL CLAMPS THAT SECURE A EST COVER TO THE TOP OF A MANHOLE. (E) A TEST HEAD MUST BE PLACED AT THE INSIDE OF THE TOP OF A CONE SECTION, AND THE SEAL INFLATED IN	U U
AC	CCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. (F) THERE MUST BE A VACUUM OF 10 INCHES OF MERCURY INSIDE A MANHOLE TO PERFORM A VALID TEST. (G) A TEST DOES NOT BEGIN UNTIL AFTER THE VACUUM PUMP IS OFF. (H) A MANHOLE PASSES THE TEST IF AFTER 2.0 MINUTES AND WITH ALL VALVES CLOSED. THE VACUUM IS AT LEAST 9.0	
	(H) A MANHOLE PASSES THE TEST IF AFTER 2.0 MINUTES AND WITH ALL VALVES CLOSED, THE VACUUM IS AT LEAST 9.0 CHES OF MERCURY. . ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION	
OF A IN	AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY SPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS	ST
SY	ONSTRUCTED IN CONFORMITY WITH THEAPPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION(STEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS ANDFORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON(STEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS ANDFORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON(STEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS ANDFORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON(SUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGECOLLECTION SYSTEM.	N N N
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C		C EXI USTI TY, T
F		SOU S MOPAC ITY OF AU IS COUNT
E Time	Maximum Length for Time for	OR S 11720 S CIT CIT CIT
ls)	Minimum Time (feet)     Longer Length (seconds/foot)       398     0.855       209     1.520	VAL(
	298         1.520           239         2.374           199         3.419	
	159         5.342           133         7.693           114         10.471	SHEET NUMBER
	100         13.676           88         17.309           80         21.369	3 OF 50
	72 25.856	-2022-0296CE
	J	



NOTIFY THE ENGINEER

- 11. OFF-SITE SOIL BORROW, SPOIL, AND STORAGE AREAS (IF APPLICABLE) ARE CONSIDERED AS PART OF THE PROJECT SITE AND MUST REGARDING EXISTING TREES TO BE REMOVED AND PRESERVED. ALSO COMPLY WITH THE EROSION CONTROL REQUIREMENTS FOR THIS PROJECT. THIS INCLUDES THE INSTALLATION OF BMP'S TO 32.NO TREE SHALL BE REMOVED UNLESS A TREE REMOVAL PERMIT HAS BEEN ISSUED BY THE CITY, OR CITY HAS OTHERWISE CONFIRI CONTROL EROSION AND SEDIMENTATION AND THE ESTABLISHMENT OF PERMANENT GROUND COVER ON DISTURBED AREAS PRIOR TO IN WRITING THAT ONE IS NOT NEEDED FOR THE TREE(S) FINAL APPROVAL OF THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR MODIFYING THE SWPPP AND EROSION CONTROL PLAN TO 33.NO TREE SHALL BE REMOVED OR DAMAGED WITHOUT PRIOR AUTHORIZATION OF THE OWNER OR OWNER'S REPRESENTATIVE. INCLUDE BMPS FOR ANY OFF-SITE THAT ARE NOT ANTICIPATED OR SHOWN ON THE EROSION CONTROL PLAN. EXISTING TREES SHALL BE PRESERVED WHENEVER POSSIBLE AND GRADING IMPACT TO THEM HELD TO A MINIMUM. 34.AFTER PLACEMENT OF SUBGRADE AND PRIOR TO PLACEMENT OF PAVEMENT, CONTRACTOR SHALL TEST AND OBSERVE PAVEMENT 12. ALL STAGING, STOCKPILES, SPOIL, AND STORAGE SHALL BE LOCATED SUCH THAT THEY WILL NOT ADVERSELY AFFECT STORM WATER QUALITY. PROTECTIVE MEASURES SHALL BE PROVIDED IF NEEDED TO ACCOMPLISH THIS REQUIREMENT, SUCH AS COVERING OR AREAS FOR EVIDENCE OF PONDING AND INADEQUATE SLOPE FOR DRAINAGE. ALL AREAS SHALL ADEQUATELY DRAIN TOWARDS TH
- INTENDED STRUCTURE TO CONVEY STORMWATER RUNOFF. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER AND ENGINEER IF AI ENCIRCLING THE AREA WITH AN APPROPRIATE BARRIER. 13. CONTRACTORS SHALL INSPECT ALL EROSION CONTROL DEVICES, BMPS, DISTURBED AREAS, AND VEHICLE ENTRY AND EXIT AREAS AREAS OF POOR DRAINAGE ARE DISCOVERED. WEEKLY AND WITHIN 24 HOURS OF ALL RAINFALL EVENTS OF 0.5 INCHES OR GREATER, AND KEEP A RECORD OF THIS INSPECTION IN 35. CONTRACTOR FIELD ADJUSTMENT OF PROPOSED SPOT GRADES IS ALLOWED, IF THE APPROVAL OF THE CIVIL ENGINEER IS OBTAINE THE SWPPP BOOKLET IF APPLICABLE. TO VERIFY THAT THE DEVICES AND EROSION CONTROL PLAN ARE FUNCTIONING PROPERLY. 14. CONTRACTOR SHALL CONSTRUCT A STABILIZED CONSTRUCTION ENTRANCE AT ALL PRIMARY POINTS OF ACCESS IN ACCORDANCE RETAINING WALLS WITH CITY SPECIFICATIONS. CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION TRAFFIC USES THE STABILIZED ENTRANCE AT RETAINING WALLS SHOWN ARE FOR SITE GRADING PURPOSES ONLY, AND INCLUDE ONLY LOCATION AND SURFACE SPOT ELEVATION ALL TIMES FOR ALL INGRESS/EGRESS. AT THE TOP AND BOTTOM OF THE WALL. 15. SITE ENTRY AND EXITS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING AND FLOWING OF SEDIMENT AND P RETAINING WALL TYPE OR SYSTEM SHALL BE SELECTED BY THE OWNER
- DIRT ONTO OFF-SITE ROADWAYS. ALL SEDIMENT AND DIRT FROM THE SITE THAT IS DEPOSITED ONTO AN OFF-SITE ROADWAY SHALL BE 3. RETAINING WALL DESIGN SHALL BE PROVIDED BY OTHERS AND SHALL FIT IN THE WALL ZONE OR LOCATION SHOWN ON THESE PLAN STRUCTURAL DESIGN AND PERMITTING OF RETAINING WALLS, RAILINGS, AND OTHER WALL SAFETY DEVICES SHALL BE PERFORMED REMOVED IMMEDIATELY 16. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL SILT AND DEBRIS FROM THE AFFECTED OFF-SITE ROADWAYS THAT ARE A A LICENSED ENGINEER AND ARE NOT PART OF THIS PLAN SET. RESULT OF THE CONSTRUCTION, AS REQUESTED BY OWNER AND CITY. AT A MINIMUM, THIS SHOULD OCCUR ONCE PER DAY FOR THE 4. RETAINING WALL DESIGN SHALL MEET THE INTENT OF THE GRADING PLAN AND SHALL ACCOUNT FOR ANY INFLUENCE ON ADJACENT
- **OFF-SITE ROADWAYS**
- STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP BMP.
- MATERIAL, AND TRASH AS CONSTRUCTION PROGRESSES.
- PAVEMENT, OR A UNIFORM PERENNIAL VEGETATIVE COVER. ACCORDANCE WITH APPLICABLE REGULATIONS.
- STORM WATER DISCHARGE AUTHORIZATION
- POLI UTANT DISCHARGE FLIMINATION SYSTEM TXR 150000
- RECEIVING DISCHARGE FROM THE SITE BY THE TCEQ AND EPA (E.G. NOI).
- 5. ALL CONTRACTORS AND SUBCONTRACTORS PROVIDING SERVICES RELATED TO THE SWPPP SHALL SIGN THE REQUIRED CONTRACTOR SYMBOLS, AND MISCELLANEOUS STRIPING WITHIN PARKING LOT AND AROUND BUILDING AS SHOWN ON THE PLANS. ALL PAINT AND CERTIFICATION STATEMENT ACKNOWLEDGING THEIR RESPONSIBILITIES AS SPECIFIED IN THE SWPPP PAVEMENT MARKINGS SHALL ADHERE TO CITY AND OWNER STANDARDS. 6. A COPY OF THE SWPPP, INCLUDING NOI, SITE NOTICE, CONTRACTOR CERTIFICATIONS, AND ANY REVISIONS, SHALL BE SUBMITTED TO 14. REFER TO GEOTECHNICAL REPORT FOR PAVING JOINT LAYOUT PLAN REQUIREMENTS FOR PRIVATE PAVEMENT. 15. REFER TO CITY STANDARD DETAILS AND SPECIFICATIONS FOR JOINT LAYOUT PLAN REQUIREMENTS FOR PUBLIC PAVEMENT THE CITY BY THE CONTRACTOR AND SHALL BE RETAINED ON-SITE DURING CONSTRUCTION. 7. A NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO TCEQ BY ANY PRIMARY OPERATOR WITHIN 30 DAYS AFTER ALL SOIL 16. ALL REINFORCING STEEL SHALL CONFORM TO THE GEOTECHNICAL REPORT, CITY STANDARDS, AND ASTM A-615, GRADE 60, AND SH DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND A UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED ON ALL BE SUPPORTED BY BAR CHAIRS. CONTRACTOR SHALL USE THE MORE STRINGENT OF THE CITY AND GEOTECHNICAL STANDARDS. UNPAVED AREAS AND AREAS NOT COVERED BY STRUCTURES, A TRANSFER OF OPERATIONAL CONTROL HAS OCCURRED, OR THE 17. ALL JOINTS SHALL EXTEND THROUGH THE CURB.
- OPERATOR HAS OBTAINED ALTERNATIVE AUTHORIZATION UNDER A DIFFERENT PERMIT. A COPY OF THE NOT SHALL BE PROVIDED TO 18. THE MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS SHALL BE 2 FEET. 19. CONTRACTOR SHALL SUBMIT A JOINTING PLAN TO THE ENGINEER AND OWNER PRIOR TO BEGINNING ANY OF THE PAVING WORK. THE OPERATOR OF ANY MS4 RECEIVING DISCHARGE FROM THE SITE. 20.ALL SAWCUTS SHALL BE FULL DEPTH FOR PAVEMENT REMOVAL AND CONNECTION TO EXISTING PAVEMENT 21.FIRE LANES SHALL BE MARKED AND LABELED AS A FIRELANE PER CITY STANDARDS. 1. KH IS NOT RESPONSIBLE FOR THE MEANS AND METHODS EMPLOYED BY THE CONTRACTOR TO IMPLEMENT THIS DEMOLITION PLAN.
- AND REMOVED FROM THE SITE
- THIS PRELIMINARY DEMOLITION PLAN SIMPLY INDICATES THE KNOWN OBJECTS ON THE SUBJECT TRACT THAT ARE TO BE DEMOLISHED 23.CONTRACTOR IS RESPONSIBLE FOR INSTALLING NECESSARY CONDUIT FOR LIGHTING, IRRIGATION. ETC. PRIOR TO PLACEMENT OF 2. KH DOES NOT WARRANT OR REPRESENT THAT THE PLAN, WHICH WAS PREPARED BASED ON SURVEY AND UTILITY INFORMATION PAVEMENT. ALL CONSTRUCTION DOCUMENTS (CIVIL, MEP, LANDSCAPE, IRRIGATION, AND ARCHITECT) SHALL BE CONSULTED. PROVIDED BY OTHERS, SHOWS ALL IMPROVEMENTS AND UTILITIES, THAT THE IMPROVEMENTS AND UTILITIES ARE SHOWN 24.BEFORE PLACING PAVEMENT, CONTRACTOR SHALL VERIFY THAT SUITABLE ACCESSIBLE PEDESTRIAN ROUTES (PER ADA, TAS, AND ACCURATELY, OR THAT THE UTILITIES SHOWN CAN BE REMOVED. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ITS OWN SITE FHA) EXIST TO AND FROM EVERY DOOR AND ALONG SIDEWALKS, ACCESSIBLE PARKING SPACES, ACCESS AISLES, AND ACCESSIBLE RECONNAISSANCE TO SCOPE ITS WORK AND TO CONFIRM WITH THE OWNERS OF IMPROVEMENTS AND UTILITIES THE ABILITY AND ROUTES. IN NO CASE SHALL AN ACCESSIBLE RAMP SLOPE EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWALK CROSS SLOPE EXCEED 2.0 PERCENT. IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPE EXCEED 5.0 PERCENT. ACCESSIBLE PARK PROCESS FOR THE REMOVAL OF THEIR FACILITIES. 3. THIS PLAN IS INTENDED TO GIVE A GENERAL GUIDE TO THE CONTRACTOR, NOTHING MORE. THE GOAL OF THE DEMOLITION IS TO LEAVE SPACES AND ACCESS AISLES SHALL NOT EXCEED 2.0 PERCENT SLOPE IN ANY DIRECTION. THE SITE IN A STATE SUITABLE FOR THE CONSTRUCTION OF THE PROPOSED DEVELOPMENT. REMOVAL OR PRESERVATION OF 25.CONTRACTOR SHALL TAKE FIELD SLOPE MEASUREMENTS ON FINISHED SUBGRADE AND FORM BOARDS PRIOR TO PLACING PAVEME TO VERIFY THAT ADA/TAS SLOPE REQUIREMENTS ARE PROVIDED. CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO PAVING IF AN IMPROVEMENTS, UTILITIES, ETC. TO ACCOMPLISH THIS GOAL ARE THE RESPONSIBILITY OF THE CONTRACTOR. EXCESSIVE SLOPES ARE ENCOUNTERED. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR ADA AND TAS SLOPE IMPLEMENTING THE DEMOLITION PLAN. COMPLIANCE ISSUES.
- a. ENVIRONMENTAL SITE ASSESSMENT PROVIDED BY THE OWNER.
- b. ASBESTOS BUILDING INSPECTION REPORT(S) PROVIDED BY THE OWNER, C GEOTECHNICAL REPORT PROVIDED BY THE OWNER
- STARTING ANY WORK ON THE SITE.
- SHOWING ALL ITEMS THAT WILL NEED TO BE DEMOLISHED AND REMOVED.

# FOUNDATIONS OR WALLS, THAT ARE ALSO TO BE REMOVED.

- ANY DISCREPANCIES 2 CONTRACTOR SHALL OBTAIN ANY REQUIRED GRADING PERMITS FROM THE CITY
- ELEVATION. DISCREPANCY.
- 6. ALL FINISHED GRADES SHALL TRANSITION UNIFORMLY BETWEEN THE FINISHED ELEVATIONS SHOWN
- PAVEMENT SECTION.
- SUBSEQUENT ADDENDA. CONTRACTOR AT NO ADDITIONAL EXPENSE
- REQUIREMENTS.
- GRADE CONTROL POINTS RELATED TO EARTHWORK. THE RECEIVING LANDOWNER'S APPROVAL TO DO SO.
- DITCHES OR CULVERTS FREE OF OBSTRUCTIONS AT ALL TIMES.

- 17. TEMPORARY CULVERTS MAY BE REQUIRED IN SOME LOCATIONS TO CONVEY RUN-OFF. 18. REFER TO DIMENSION CONTROL PLAN, AND PLAT FOR HORIZONTAL DIMENSIONS. PI ACEMENT
- AGENCY
- CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS. IN THE BUILDING PAD.
- FLATWORK ADJACENT TO THE BUILDING. IF NONE IS CURRENTLY EXISTING.
- INFORMATION
- IN THE FIELD THAT AFFECT THE GRADING PLAN TO THE CIVIL ENGINEER. PRESERVATION PLAN BY THE LANDSCAPE ARCHITECT PRIOR TO COMMENCING THE WORK.

- 17. WHEN WASHING OF VEHICLES IS REQUIRED TO REMOVE SEDIMENT PRIOR TO EXITING THE SITE, IT SHALL BE DONE IN AN AREA
- 18. CONTRACTOR SHALL INSTALL A TEMPORARY SEDIMENT BASIN FOR ANY ON-SITE DRAINAGE AREAS THAT ARE GREATER THAN 10 ACRES, PER TCEQ AND CITY STANDARDS. IF NO ENGINEERING DESIGN HAS BEEN PROVIDED FOR A SEDIMENTATION BASIN ON THESE PLANS, THEN THE CONTRACTOR SHALL ARRANGE FOR AN APPROPRIATE DESIGN TO BE PROVIDED. 19. ALL FINES IMPOSED FOR SEDIMENT OR DIRT DISCHARGED FROM THE SITE SHALL BE PAID BY THE RESPONSIBLE CONTRACTOR.
- ONTO A ROADWAY, THE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASH-DOWN OPERATION SHALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF SITE WITHOUT FIRST FLOWING THROUGH ANOTHER BMP TO CONTROL SEDIMENTATION. PERIODIC RE-GRADING OR NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFECTIVENESS OF THE CONSTRUCTION ENTRANCE. AREA, UNLESS ADDITIONAL CONSTRUCTION IN THE AREA IS EXPECTED WITHIN 21 DAYS OF THE LAST DISTURBANCE. 22.CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING CONSTRUCTION, ALWAYS CLEANING UP DIRT, LOOSE
- 23. UPON COMPLETION OF FINE GRADING, ALL SURFACES OF DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED. STABILIZATION IS ACHIEVED WHEN THE AREA IS EITHER COVERED BY PERMANENT IMPERVIOUS STRUCTURES, SUCH AS BUILDINGS, SIDEWALK, 24.AT THE CONCLUSION OF THE PROJECT, ALL INLETS, DRAIN PIPE, CHANNELS, DRAINAGEWAYS AND BORROW DITCHES AFFECTED BY THE CONSTRUCTION SHALL BE DREDGED, AND THE SEDIMENT GENERATED BY THE PROJECT SHALL BE REMOVED AND DISPOSED IN
- . CONTRACTOR SHALL COMPLY WITH ALL TCEQ AND EPA STORM WATER POLLUTION PREVENTION REQUIREMENTS. 2. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE TCEQ GENERAL PERMIT TO DISCHARGE UNDER THE TEXAS
- 3. THE CONTRACTOR SHALL ENSURE THAT ALL PRIMARY OPERATORS SUBMIT A NOI TO TCEQ AT LEAST SEVEN DAYS PRIOR TO COMMENCING CONSTRUCTION (IF APPLICABLE), OR IF UTILIZING ELECTRONIC SUBMITTAL, PRIOR TO COMMENCING CONSTRUCTION. ALL PRIMARY OPERATORS SHALL PROVIDE A COPY OF THE SIGNED NOI TO THE OPERATOR OF ANY MS4 (TYPICALLY THE CITY)
- 4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IF APPLICABLE, INCLUDING POSTING SITE NOTICE, INSPECTIONS, DOCUMENTATION, AND SUBMISSION OF ANY INFORMATION REQUIRED

- 5. CONTRACTOR SHALL CONTACT THE OWNER TO VERIFY WHETHER ADDITIONAL REPORTS OR AMENDMENTS TO THE ABOVE CITED REPORTS HAVE BEEN PREPARED AND TO OBTAIN/REVIEW/AND COMPLY WITH THE RECOMMENDATION OF SUCH STUDIES PRIOR TO
- 6. CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS REGARDING THE DEMOLITION OF OBJECTS ON THE SITE AND THE DISPOSAL OF THE DEMOLISHED MATERIALS OFF-SITE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO REVIEW THE SITE, DETERMINE THE APPLICABLE REGULATIONS, RECEIVE THE REQUIRED PERMITS AND AUTHORIZATIONS. AND COMPLY. . KH DOES NOT REPRESENT THAT THE REPORTS AND SURVEYS REFERENCED ABOVE ARE ACCURATE, COMPLETE, OR COMPREHENSIVE 8. SURFACE PAVEMENT INDICATED MAY OVERLAY OTHER HIDDEN STRUCTURES, SUCH AS ADDITIONAL LAYERS OF PAVEMENT
- 1. THE CONTRACTOR AND GRADING SUBCONTRACTOR SHALL VERIFY THE SUITABILITY OF EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE START OF CONSTRUCTION. THE CIVIL ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF
- 3. UNLESS OTHERWISE NOTED, PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN IN PAVED AREA REFLECT TOP OF PAVEMENT SURFACE. IN LOCATIONS ALONG A CURB LINE, ADD 6-INCHES (OR THE HEIGHT OF THE CURB) TO THE PAVING GRADE FOR TOP OF CURB
- 4. PROPOSED SPOT ELEVATIONS AND CONTOURS OUTSIDE THE PAVEMENT ARE TO TOP OF FINISHED GRADE. 5. PROPOSED CONTOURS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND DESIGNATED GRADIENT ARE TO BE USED IN CASE OF
- 7. CONTOURS AND SPOT GRADES SHOWN ARE ELEVATIONS OF TOP OF THE FINISHED SURFACE. WHEN PERFORMING THE GRADING OPERATIONS, THE CONTRACTOR SHALL PROVIDE AN APPROPRIATE ELEVATION HOLD-DOWN ALLOWANCE FOR THE THICKNESS OF PAVEMENT SIDEWALK TOPSOIL MULCH STONE LANDSCAPING RIP-RAP AND ALL OTHER SURFACE MATERIALS THAT WILL CONTRIBUTE TO THE TOP OF FINISHED GRADE. FOR EXAMPLE, THE LIMITS OF EARTHWORK IN PAVED AREAS IS THE BOTTOM OF THE
- 8. NO REPRESENTATIONS OF EARTHWORK QUANTITIES OR SITE BALANCE ARE MADE BY THESE PLANS. THE CONTRACTOR SHALL PROVIDE THEIR OWN EARTHWORK CALCULATION TO DETERMINE THEIR CONTRACT QUANTITIES AND COST. ANY SIGNIFICANT VARIANCE FROM A BALANCED SITE SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CIVIL ENGINEER. 9. ALL GRADING AND EARTHWORK SHALL COMPLY WITH THE PROJECT'S FINAL GEOTECHNICAL REPORT (OR LATEST EDITION), INCLUDING
- 10. ALL EXCAVATION IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED. UNUSABLE EXCAVATED MATERIAL AND ALL WASTE RESULTING FROM SITE CLEARING AND GRUBBING SHALL BE REMOVED FROM THE SITE AND APPROPRIATELY DISPOSED BY THE 11. EROSION CONTROL DEVICES SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF GRADING. REFERENCE EROSION CONTROL PLAN, DETAILS, GENERAL NOTES, AND SWPPP FOR ADDITIONAL INFORMATION AND
- 12. BEFORE ANY EARTHWORK IS PERFORMED, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF THE PROJECT'S PROPERTY LINE AND SITE IMPROVEMENTS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND 13. CONTRACTOR TO DISPOSE OF ALL EXCESS EXCAVATION MATERIALS IN A MANNER THAT ADHERES TO LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS. THE CONTRACTOR SHALL KEEP A RECORD OF WHERE EXCESS EXCAVATION WAS DISPOSED, ALONG WITH
- 14 CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF TOPSOIL AT THE COMPLETION OF FINE GRADING. CONTRACTOR SHALL REFER TO LANDSCAPE ARCHITECTURE PLANS FOR SPECIFICATIONS AND REQUIREMENTS FOR TOPSOIL. 15. CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION, INCLUDING MAINTAINING EXISTING
- 16.NO EARTHWORK FILL SHALL BE PLACED IN ANY EXISTING DRAINAGE WAY, SWALE, CHANNEL, DITCH, CREEK, OR FLOODPLAIN FOR ANY REASON OR ANY LENGTH OF TIME. UNLESS THESE PLANS SPECIFICALLY INDICATE THIS IS REQUIRED
- 19. THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND CONDITION FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO 20.CONTRACTOR IS RESPONSIBLE FOR ALL SOILS TESTING AND CERTIFICATION, UNLESS SPECIFIED OTHERWISE BY OWNER. ALL SOILS
- TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR AND SHALL COMPLY WITH CITY STANDARD SPECIFICATIONS AND THE GEOTECHNICAL REPORT. SOILS TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING SOILS. THE OWNER SHALL APPROVE THE AGENCY NOMINATED BY THE CONTRACTOR FOR SOILS TESTING. 21.ALL COPIES OF SOILS TEST RESULTS SHALL BE SENT TO THE OWNER, ENGINEER AND ARCHITECT DIRECTLY FROM THE TESTING
- 22.IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SHOW, BY THE STANDARD TESTING PROCEDURES OF THE SOILS, THAT THE WORK 23. THE SCOPE OF WORK FOR CIVIL IMPROVEMENT SHOWN ON THESE PLANS TERMINATES 5-FEET FROM THE BUILDING. CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT AND STRUCTURAL PLANS AND SPECIFICATIONS FILL, CONDITIONING, AND PREPARATION
- 24.DUE TO THE POTENTIAL FOR DIFFERENTIAL SOIL MOVEMENT ADJACENT TO THE BUILDING, THE CONTRACTOR SHALL ADHERE TO GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PROPOSED BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC TO
- OF THE PROPOSED BUILDING(S) DURING GRADING OPERATIONS AND IN THE FINAL CONDITION. IF THE CONTRACTOR OBSERVES THAT THIS WILL NOT BE ACHIEVED, THE CONTRACTOR SHALL CONTACT THE ENGINEER TO REVIEW THE LOCATION. 26. THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. CONTRACTOR SHALL CONTROL DUST BY SPRINKLING WATER. OR BY OTHER MEANS APPROVED BY THE CITY. AT NO ADDITIONAL COST TO THE OWNER.
- 27. CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS NEEDED FOR GRADING OPERATIONS AND TO ACCOMMODATE PROPOSED GRADE, INCLUDING THE UNKNOWN UTILITIES NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL REFER TO THE GENERAL NOTES "OVERALL" SECTION THESE PLANS FOR ADDITIONAL 28.EXISTING TREE LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE. CONTRACTOR SHALL REPORT ANY DISCREPANCIES FOUND
- 29.CONTRACTOR SHALL FIELD VERIFY ALL PROTECTED TREE LOCATIONS, INDIVIDUAL PROTECTED TREE CRITICAL ROOT ZONES, AND PROPOSED SITE GRADING, AND NOTIFY THE CIVIL ENGINEER AND LANDSCAPE ARCHITECT OF ANY CONFLICTS WITH THE TREE
- 30. TREE PROTECTION MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY STANDARD TREE PROTECTION DETAILS AND THE

APPROVED TREE PRESERVATION PLANS BY THE LANDSCAPE ARCHITECT. 31. CONTRACTOR SHALL REFER TO THE LANDSCAPING AND TREE PRESERVATIONS PLANS FOR ALL INFORMATION AND DETAILS

- BUILDING FOUNDATIONS, UTILITIES, PROPERTY LINES AND OTHER CONSTRUCTABILITY NOTES. 5 RETAINING WALL ENGINEER SHALL CONSULT THESE PLANS AND THE GEOTECHNICAL REPORT FOR POTENTIAL CONFLICTS
- 1. ALL PAVING MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS, THE CITY STANDARD DETAILS AND SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT AND ALL ISSUED ADDENDA, AND COMMONLY ACCEPTED CONSTRUCTION STANDARDS. THE CITY SPECIFICATIONS SHALL GOVERN WHERE OTHER SPECIFICATIONS DO NOT EXIST. IN CASE OF CONFLICTING SPECIFICATIONS OR DETAILS, THE MORE RESTRICTIVE SPECIFICATION/DETAIL SHALL BE FOLLOWED
- 2. ALL PRIVATE ON-SITE PAVING AND PAVING SUBGRADE SHALL COMPLY WITH THE PROJECT'S FINAL GEOTECHNICAL REPORT (OR LAT EDITION), INCLUDING ALL ADDENDA 3. ALL FIRELANE PAVING AND PAVING SUBGRADE SHALL COMPLY WITH CITY STANDARDS AND DETAILS. IF THESE ARE DIFFERENT THA
- THOSE IN THE GEOTECHNICAL REPORT. THEN THE MORE RESTRICTIVE SHALL BE FOLLOWED 4. ALL PUBLIC PAVING AND PAVING SUBGRADE SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS. 5. CONTRACTOR IS RESPONSIBLE FOR ALL PAVING AND PAVING SUBGRADE TESTING AND CERTIFICATION, UNLESS SPECIFIED OTHERV BY OWNER. ALL PAVING AND PAVING SUBGRADE TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR. TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING PAVING AND SUBGRADE. OWNER SHALL
- APPROVE THE AGENCY NOMINATED BY THE CONTRACTOR FOR PAVING AND PAVING SUBGRADE TESTING 6. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SHOW, BY THE STANDARD TESTING PROCEDURES OF THE PAVING AND PAVING SUBGRADE, THAT THE WORK CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS. 7. DUE TO THE POTENTIAL FOR DIFFERENTIAL SOIL MOVEMENT ADJACENT TO THE BUILDING, THE CONTRACTOR SHALL ADHERE TO
- GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PROPOSI BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC TO FLATWORK ADJACENT TO THE BUILDING, IF NONE IS CURRENTLY EXISTING. 8. CURB RAMPS ALONG PUBLIC STREETS AND IN THE PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED BASED ON THE CITY STANDARD
- CONSTRUCTION DETAIL AND SPECIFICATIONS 9. PRIVATE CURB RAMPS ON THE SITE (I.E. OUTSIDE PUBLIC STREET RIGHT-OF-WAY) SHALL CONFORM TO ADA AND TAS STANDARDS A SHALL HAVE A DETECTABLE WARNING SURFACE THAT IS FULL WIDTH AND FULL DEPTH OF THE CURB RAMP, NOT INCLUDING FLARE 10. ALL ACCESSIBLE RAMPS, CURB RAMPS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA AND TAS STANDARDS, LATE
- EDITION. 11. ANY COMPONENTS OF THE PROJECT SUBJECT TO RESIDENTIAL USE SHALL ALSO CONFORM TO THE FAIR HOUSING ACT, AND COMP WITH THE FAIR HOUSING ACT DESIGN MANUAL BY THE US DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT. 12. CONTRACTOR SHALL CONSTRUCT PROPOSED PAVEMENT TO MATCH EXISTING PAVEMENT WITH A SMOOTH, FLUSH, CONNECTION. 13. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS FOR FIRE LANES, PARKING STALLS, HANDICAPPED PARKING
- 22.UNLESS THE PLANS SPECIFICALLY DICTATE TO THE CONTRARY, ON-SITE AND OTHER DIRECTIONAL SIGNS SHALL BE ORIENTED SO THEY ARE READILY VISIBLE TO THE ONCOMING TRAFFIC FOR WHICH THEY ARE INTENDED.
- STORM DRAINAGE
- 1. ALL STORM SEWER MATERIALS AND CONSTRUCTION SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS. 2. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION
- THE STORM SEWER. THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, CONDITION, HORIZONTAL, AND VERTICAL LOCATIONS OF ALL EXISTING STORM
- SEWER FACILITIES THAT ARE TO BE CONNECTED TO, PRIOR TO START OF CONSTRUCTION OF ANY STORM SEWER, AND SHALL NOTI THE ENGINEER OF ANY CONFLICTS DISCOVERED. 4 THE CONTRACTOR SHALL VERIEV AND COORDINATE ALL DIMENSIONS SHOWN INCLUDING THE HORIZONTAL AND VERTICAL LOCATIO
- OF CURB INLETS AND GRATE INLETS AND ALL UTILITIES CROSSING THE STORM SEWER. 5. FLOW LINE, TOP-OF-CURB, RIM, THROAT, AND GRATE ELEVATIONS OF PROPOSED INLETS SHALL BE VERIFIED WITH THE GRADING PL
- AND FIELD CONDITIONS PRIOR TO THEIR INSTALLATION 6. ALL PUBLIC STORM SEWER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO CITY PUBLIC WORKS STANDARD
- DETAILS AND SPECIFICATIONS CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS 7. ALL PRIVATE STORM SEWER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO THE APPLICABLE PLUMBING C
- CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS. 8. ALL PVC TO RCP CONNECTIONS AND ALL STORM PIPE CONNECTIONS ENTERING STRUCTURES OR OTHER STORM PIPES SHALL HAVI CONCRETE COLLAR AND BE GROUTED TO ASSURE THE CONNECTION IS WATERTIGHT. 9. ALL PUBLIC STORM SEWER LINES SHALL BE MINIMUM CLASS III RCP. PRIVATE STORM SEWER LINES 18-INCHES AND GREATER SHALL
- CLASS III RCP OR OTHER APPROVED MATERIAL 10. WHERE COVER EXCEEDS 20-FEET OR IS LESS THAN 2-FEET, CLASS IV RCP SHALL BE USED. 11.IF CONTRACTOR PROPOSES TO USE HDPE OR PVC IN LIEU OF RCP FOR PRIVATE STORM SEWER, CONTRACTOR SHALL SUBMIT
- TECHNICAL DATA TO THE OWNER, ENGINEER AND CITY ENGINEER/INSPECTOR FOR APPROVAL PRIOR TO ORDERING THE MATERIAL. ANY PROPOSED HDPE AND PVC SHALL BE WATERTIGHT. 12. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION SURVEYING FOR ALL STORM SEWER LINES.
- 13.EMBEDMENT FOR ALL STORM SEWER LINES, PUBLIC OR PRIVATE, SHALL BE PER CITY STANDARD DETAILS. 14. ALL WYE CONNECTIONS AND PIPE BENDS ARE TO BE PREFABRICATED AND INSTALLED PER MANUFACTURERS SPECIFICATIONS.
- 15. USE 4 FOOT JOINTS WITH BEVELED ENDS IF RADIUS OF STORM SEWER IS LESS THAN 100 FEET. 16 THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND SUBMITTING A TRENCH SAFETY PLAN. PREPARED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRE SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENCHES. OPEN TRENCHES SHALL BE ALLOWED OVERNIGHT WITHOUT PRIOR WRITTEN APPROVAL OF THE CITY. 17. THE CONTRACTOR SHALL KEEP TRENCHES FREE FROM WATER.
- ANY PONDS THAT ARE INTENDED TO HOLD WATER INDEFINITELY SHALL BE CONSTRUCTED WATERTIGHT. 2. FOR ANY PONDS INTENDED TO HOLD WATER INDEFINITELY: THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR
- POND LINER SPECIFICATIONS 3. A GEOTECHNICAL ENGINEER SHALL REVIEW AND APPROVE ALL POND LINER MATERIAL, PLACEMENT PROCEDURES, AND PROVIDE
- TESTING TO ENSURE THE POND LINER MATERIAL PLACED IS WATERTIGHT. 4. STORM SEWER PIPES AND HEADWALLS THAT CONNECT TO A POND INTENDED TO HOLD WATER INDEFINITELY SHALL BE INSTALLED
- WITH WATERTIGHT JOINTS TO AT LEAST 1-FOOT ABOVE THE NORMAL POOL WATER SURFACE ELEVATION. 5. ANY GRAVEL OR OTHER PERVIOUS EMBEDMENT AROUND PIPES OR OUTFALL STRUCTURES NEAR THE POND SHALL BE ELIMINATED F
- AT LEAST 20-FEET FROM THE POND SO NO ROUTE FOR WATER TO LEAK THROUGH THE EMBEDMENT MATERIAL IS PROVIDED. BACKI IN THESE AREAS SHALL BE OF IMPERVIOUS MATERIAL 6. FOR ANY PONDS INTENDED TO HOLD WATER INDEFINITELY: THE WATER LEVEL FOLLOWING COMPLETION AND FILLING OF THE POND
- SHALL BE MONITORED BY THE CONTRACTOR FOR AT LEAST 60 DAYS TO OBSERVE WATER INFLOW, OUTFLOW, AND CALCULATE EVAPORATION TO VERIFY THAT THE POND IS WATERTIGHT. 7. FOR ANY PONDS INTENDED TO HOLD WATER INDEFINITELY: THE POND WATER LEVEL SHALL ALSO BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION SO THAT IT REMAINS FULL TO ITS DESIGN WATER LEVEL. AND IS NOT LOWEF
- ALL WATER AND WASTEWATER MATERIALS AND CONSTRUCTION SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAILS AN SPECIFICATIONS. 2. CONTRACTOR SHALL FIELD VERIFY THE SIZE, CONDITION, HORIZONTAL, AND VERTICAL LOCATIONS OF ALL EXISTING WATER AND WASTEWATER FACILITIES THAT ARE TO BE CONNECTED TO, PRIOR TO START OF CONSTRUCTION OF ANY WATER OR WASTEWATER
- CONSTRUCTION, AND SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. 3. CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OI ALL UTILITY SERVICES ENTERING THE BUILDING.
- 5. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION THE WATER AND WASTEWATER IMPROVEMENTS. 6. ALL PUBLIC WATER AND WASTEWATER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO CITY PUBLIC WORKS
- STANDARD DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS. 7. ALL PRIVATE WATER AND WASTEWATER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO THE APPLICABLE PLUMBING CODE. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS.
- APPLICABLE CODES AND INSPECTIONS REQUIRED. THESE PLANS WERE PREPARED WITHOUT THE BENEFIT OF THE FIRE SPRINKLER DESIGN. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES. 9. EMBEDMENT FOR ALL WATER AND WASTEWATER LINES, PUBLIC OR PRIVATE, SHALL BE PER CITY STANDARD DETAILS.
- WATER PIPE AND FITTINGS CLEAN AND CAPPED AT TIMES WHEN INSTALLATION IS NOT IN PROGRESS. 11. CONTRACTOR SHALL PROVIDE CONSTRUCTION SURVEYING FOR ALL WATER AND WASTEWATER LINES
- 25.CONTRACTOR SHALL ENSURE THAT SUFFICIENT POSITIVE SLOPE AWAY FROM THE BUILDING PAD IS ACHIEVED FOR ENTIRE PERIMETER 12. ALL WATER AND WASTEWATER SERVICES SHALL TERMINATE 5-FEET OUTSIDE THE BUILDING, UNLESS NOTED OTHERWISE. 13. CONTRACTOR SHALL COMPLY WITH CITY REQUIREMENTS FOR WATER AND WASTEWATER SERVICE DISRUPTIONS AND THE AMOUNT PRIOR NOTICE THAT IS REQUIRED, AND SHALL COORDINATE DIRECTLY WITH THE APPROPRIATE CITY DEPARTMENT 14. CONTRACTOR SHALL SEQUENCE WATER AND WASTEWATER CONSTRUCTION TO AVOID INTERRUPTION OF SERVICE TO SURROUNDII PROPERTIES
  - 15. CONTRACTOR SHALL MAINTAIN WATER SERVICE AND WASTEWATER SERVICE TO ALL CUSTOMERS THROUGHOUT CONSTRUCTION (I NECESSARY, BY USE OF TEMPORARY METHODS APPROVED BY THE CITY AND OWNER). THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. 16. THE CONTRACTOR IS RESPONSIBLE TO PROTECT ALL WATER AND WASTEWATER LINES CROSSING THE PROJECT. THE CONTRACTO
  - SHALL REPAIR ALL DAMAGED LINES IMMEDIATELY ALL REPAIRS OF EXISTING WATER MAINS WATER SERVICES SEWER MAINS AND SANITARY SEWER SERVICES ARE SUBSIDIARY TO THE WORK, AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. 17. VALVE ADJUSTMENTS SHALL BE CONSTRUCTED SUCH THAT THE COVERS ARE AT FINISHED SURFACE GRADE OF THE PROPOSED **PAVEMEN**
  - 18. THE ENDS OF ALL EXISTING WATER MAINS THAT ARE CUT, BUT NOT REMOVED, SHALL BE PLUGGED AND ABANDONED IN PLACE. THI WORK SHALL BE CONSIDERED AS A SUBSIDIARY COST TO THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

- AS THIS MAY DRY-OUT THE POND LINER AND RISK ITS WATERTIGHT PROPERTIES. WATER AND WASTEWATER
- 4. THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATION OF ALL UTILITY CROSSINGS PRIOR TO THE INSTALLATION OF ANY PIPE.
- 8. FIRE SPRINKLER LINES SHALL BE DESIGNED AND INSTALLED BY A LICENSED FIRE SPRINKLER CONTRACTOR, AND COMPLY TO THE
- 10. CONTRACTOR SHALL TAKE REQUIRED SANITARY PRECAUTIONS, FOLLOWING ANY CITY, TCEQ, AND AWWA STANDARDS, TO KEEP

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	THRUST	BLOCKED TO CITY STANDARDS.		IALL BE MECHANICALLY RESTRAINED AND/OR		B		
MED	JOINTS 21.ALL CRO	ARE GREATER THAN 9-FEET FROM THE CRO DSSINGS AND LOCATIONS WHERE WASTEW	DSSING. ATER IS LESS THAN 9-FEET FROM WA	TERED AT ALL UTILITY CROSSINGS SO THAT THE TER, WASTEWATER CONSTRUCTION AND		DATE		
-	22.ALL CRO SHALL C	COMPLY WITH TCEQ CHAPTER 290.44.	LESS THAN 9-FEET FROM WASTEWATI	ER, WATER CONSTRUCTION AND MATERIALS				
	SPECIFI a. ALL WA	TER AND WASTEWATER SHALL BE TESTED I CATIONS. AT A MINIMUM, THIS SHALL CONS TERLINES SHALL BE HYDROSTATICALLY TES	SIST OF THE FOLLOWING: STED AND CHLORINATED BEFORE BEI	NG PLACED INTO SERVICE. CONTRACTOR				
ED.	b. WASTE\ REQUIR	ED PROCEDURES AND SHALL ALSO COMPL	ESSURE TESTED. CONTRACTOR SHA Y WITH TCEQ REGULATIONS. AFTER (	LL COORDINATE WITH THE CITY FOR THEIR COMPLETION OF THESE TESTS, A TELEVISION				
NS	REQUIRED PROCEDURES AND SHALL ALSO COMPLY WITH TCEQ REGULATIONS. AFTER COMPLETION OF THESE TESTS, A TELEVISION INSPECTION SHALL BE PERFORMED AND PROVIDED TO THE CITY AND OWNER ON A DVD. 24.CONTRACTOR SHALL INSTALL DETECTABLE WIRING OR MARKING TAPE A MINIMUM OF 12" ABOVE WATER AND WASTEWATER LINES. MARKER DECALS SHALL BE LABELED "CAUTION - WATER LINE", OR "CAUTION - SEWER LINE". DETECTABLE WIRING AND MARKING TAPE							
NS. D BY	25.DUCTILE SINGLE	LAYER OF 8-MIL. ALL DUCTILE IRON JOINTS	ORROSION BY A LOW-DENSITY POLYE SHALL BE BONDED.	ETHYLENE LINER WRAP THAT IS AT LEAST A		EVISION		
Т	27.CONTRA	LINES SHALL BE INSTALLED AT NO LESS THA ACTOR SHALL PROVIDE CLEAN-OUTS FOR P ALS, OR AS REQUIRED BY THE APPLICABLE	RIVATE SANITARY SEWER LINES AT AI PLUMBING CODE. CLEAN-OUTS REQU	LL CHANGES IN DIRECTION AND 100-FOOT		ж Ш		
	HAVE CA 28.CONTRA FLOOR I	AST IRON COVERS FLUSH WITH FINISHED G ACTOR SHALL PROVIDE BACKWATER VALVE ELEVATION OF FIXTURE UNIT IS BELOW THE	RADE. S FOR PLUMBING FIXTURES AS REQU ELEVATION OF THE MANHOLE COVEF	IIRED BY THE APPLICABLE PLUMBING CODE (E.G. R OF THE NEXT UPSTREAM MANHOLE IN THE				
	PUBLIC 29.THE CO ENGINE	SEWER). CONTRACTOR SHALL REVIEW BO NTRACTOR IS RESPONSIBLE FOR OBTAININ ER IN THE STATE OF TEXAS, TO THE CITY P	TH MEP AND CIVIL PLANS TO CONFIRM G AND SUBMITTING A TRENCH SAFET RIOR TO CONSTRUCTION. CONTRACT	A WHERE THESE ARE REQUIRED. Y PLAN, PREPARED BY A PROFESSIONAL FOR IS RESPONSIBLE FOR MAINTAINING TRENCH				
TEST	SAFETY OPEN TI		Y, STATE, AND FEDERAL REQUIREME WITHOUT PRIOR WRITTEN APPROVAL	NTS, INCLUDING OSHA FOR ALL TRENCHES. NO		0 Z		
WISE	ABBREVIA	TIONS AND DEFINITIONS:						
	A ADA	AREA AMERICANS WITH DISABILITIES ACT				ž		
G	AWWA B-B BC	AMERICAN WATER WORKS ASSOCIATION BACK TO BACK BEGIN CURVE			5	Austin, 1791 3, INC.		
ED	BC BCR BMP	BACK OF CURB BEGIN CURB RETURN BEST MANAGEMENT PRACTICE				ng 2, Au -418-1 <sup>-</sup> CIATES,		
) ND	BOC BVCE	BACK OF CURB BEGIN VERTICAL CURVE ELEVATION				uildir 512- COM SSO( 28		
S. ST	BVCS BW CFS	BEGIN VERTICAL CURVE STATION BOTTOM OF WALL CUBIC FEET PER SECOND				100, B 55 FAX: HORN. No. 9.		
ĽΥ	CITY C/L CL	CITY, TOWN, OR OTHER APPLICABLE LOCA CENTERLINE CENTERLINE	L GOVERNMENT JURISDICTION			Suite 7 7875 -1771 ALEY- ALEY- ORN / Firm		
1	CONC CY	CONCRETE CUBIC YARD			<b>D</b>	Pkwy Si 2-418- MWW.KIN MLEY-HO TBPE TBPE		
IALL	DEMO DG DTL	DEMOLITION DECOMPOSED GRANITE DETAIL						
	EA EC ECR	EACH END CURVE END CURB RETURN				Southwest PHONE: 5 ) 2022 KI		
	EG EL ELEC	EXISTING GROUND ELEVATION ELECTRICAL / ELECTRICITY				5301 S		
	ELEV EPA	ELEVATION UNITES STATES ENVIRONMENTAL PROTEC	TION AGENCY			<i>μ</i> )		
	ESMT EVCE EVCS	EASEMENT END VERTICAL CURVE ELEVATION END VERTICAL CURVE STATION			ATE OF	TEX 3		
KING	EX. F-F FG	EXISTING FACE TO FACE FINISHED GROUND				***		
ENT NY	FH FL	FIRE HYDRANT FLOW LINE			C.J. PC	DNTON 280 ~ -		
	FOC FT HGL	FACE OF CURB FEET HYDRAULIC GRADE LINE			POR LICEN	NSED		
	KH KHA LAT	KIMLEY-HORN AND ASSOCIATES, INC. KIMLEY-HORN AND ASSOCIATES, INC. LATERAL			02/17/2023	for		
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IFY ON	MAX ME MH	MATCH EXISTING ELEVATION MANHOLE			ROJECT 0605 TE ), 2022 S.SHOWN			
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DE.	NOT NTS OC	NOTICE OF TERMINATION, REF. TCEQ GEN NOT TO SCALE ON CENTER			KHA 068 JUNE	DESIGNE DRAWN CHECKE		
ΕA	OFF OSHA	OFFSET OCCUPATIONAL SAFETY AND HEALTH ADM	INISTRATION					
L BE	PC PCC PGL	POINT OF CURVATURE PORTLAND CEMENT CONCRETE / POINT OF PROPOSED GRADE LINE	COMPOUND CURVATURE			S		
	PI PROP PRC	POINT OF INFLECTION PROPOSED POINT OF REVERSE CURVATURE						
	PSI PT	POUNDS PER SQUARE INCH POINT OF TANGENCY		THESE PLAN AND GENERAL NOTES REFER TO: GEOTECHNICAL ENGINEERING REPORT	L AC	<u>o</u>		
NCH	PVC PVI PVMT	POLYVINYL CHLORIDE POINT OF VERTICAL INFLECTION PAVEMENT		(FIRM)	-HORN	z		
NO	RCP ROW RT	REINFORCED CONCRETE PIPE RIGHT OF WAY RIGHT		(REPORT #: 96215351) (DATE)JUNE 10, 2022	— Ш	$\overline{A}$		
	SF SS SSMH	SQUARE FEET SANITARY SEWER SANITARY SEWER MANHOLE		INCLUDING ALL REVISIONS AND ADDENDA TO THIS REPORT THAT MAY HAVE BEEN RELEASED AFTER THE NOTED DATE.				
	STA STD	STATION STANDARD				Z		
	SY TAS TC	SQUARE YARD ARCHITECTURAL BARRIERS TEXAS ACCES TOP OF CURB		RONMENTAL AND		Ш Ю		
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ED,	VC WTR	VERTICAL CURVE WATER		<ul> <li>CWQZ- CRITICAL WATER QUALITY ZONE</li> <li>WQTZ- WATER QUALITY TRANSITION ZONE</li> </ul>				
ID	WW	WASTEWATER		<ul> <li>CEF - CRITICAL ENVIRONMENTAL FEATURE</li> </ul>	ST			
				- ATLAS 14 - 25 YR. FLOODPLAIN	Ц			
F			<b></b>	- ATLAS 14 - 100 YR. FLOODPLAIN 	N SB	(AS		
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SP-2022-0296CE

ALL RESPONSIBILITY FOR THE ADEQUECY OF THESE PLANS REMAINS WITH THE ENGINEER. APPROVAL OF THESE PLANS BY THE CITY OF AUSTIN DOES NOT REMOVE THESE RESPONSIBILITIES.

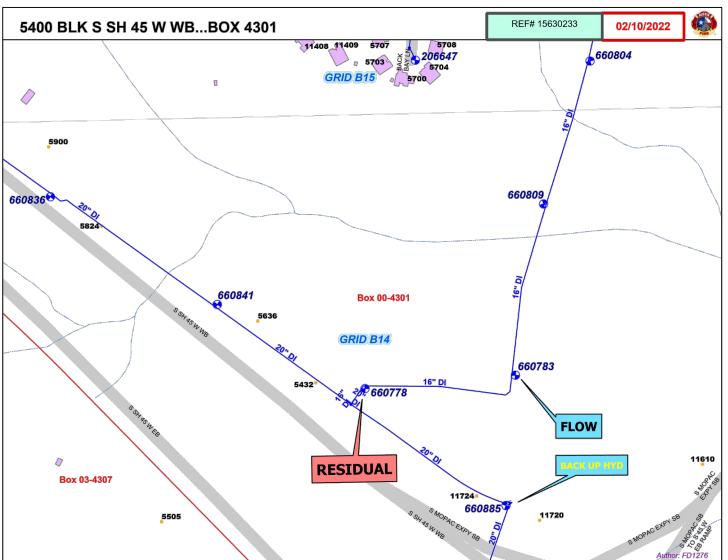
"REVIEWED BY AUSTIN WATER" APPLIES ONLY TO AW PUBLIC FACILITIES. ALL OTHER WATER AND WASTEWATER FACILITIES INSIDE PRIVATE PROPERTY ARE UNDER THE JURISDICATION OF BUILDING INSPECTIONS.

Use of Electronic Files General Disclaimer: Use of the attached files in any manner indicates your acceptance of terms and conditions as set forth below. If you do not agree to all of the terms and conditions, please contact Austin Water Pipeline Engineering, project coordinator prior to use of the referenced information. Please be advised that the attached files are in a format that can be altered by the user. Due to this fact, any reuse of the data will be at the user's sole risk without liability or legal exposure to the City of Austin and user shall indemnify and hold harmless The City of Austin from all claims, damages, losses and expenses including attorney's fees arising out of or resulting from using the digital file. In addition, it is the responsibility of the user to compare all data with the PDF version of this drawing. In the event there is a conflict between the PDF version drawing and the electronic file, the PDF version drawing shall prevail.

### OFFSITE UTILITY LETTER

EST DATE 02/17/2		Hydrant Flo	w Tost Ron	ort	
SIDALE $ \mathbf{U}\mathbf{Z} \mathbf{I} /\mathbf{Z}$		FIRE BOX		COMPANY	PREVENTION
TIME <b>1500</b>		MAP GRID ID	4301 B14	AFD STAFF	BALOGH, RANDY
1000	113			ALD SHAL	DALOUII, KAIU
		RESIDUAI	L HYDRANT		
RESIDUA	L HYDRANT # 660	0778		MAIN SIZE (in.)	16
BLK #	DIRECTION		STREET NAME		TYDE
5400	S		STREET NAME		TYPE
STATIC PRI	ESSURE (PSI) 77		RESIDUA	L PRESSURE (PSI)	67
		FLOW I	HYDRANT		
FLO	W HYDRANT # 660	0783		MAIN SIZE (in.)	16
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11700	S	M	OPAC EXPY S	В	
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STATIC P	1				
	•				
STATIC P			straig	harge coefficient tht $2\frac{1}{2}$ " butt = 0.9 $15^{\circ}$ elbow = 0.75	0.9

## FIRE FLOW MAP



## **GENERAL NOTES**

Automated Metering Infrastructure: Effective March 2022, new water meters
installed shall be in conformance with AW's automated metering infrastructure
technology, and with the applicable standard product list. Applicants filing a
site plan or subdivision plan will be required to coordinate with the Austin
Water Plan Reviewer for details on approval and installation.

Prior to the handling and disposal of Asbestos Pipe, the Contractor's work plans will be reviewed and coordinated through Austin Water's Asbestos Program Manager who can be reached at 512-972-0915. It is the Contractor's responsibility to utilize a trained, certified and licensed Asbestos Abatement Contractor in accordance with the Federal, State and Local regulations.

Modifications to Austin Water signed and stamped sheets are not permitted. All design modifications will need to be submitted via the ABC portal for a Plan Correction or Revision. All unethical engineering practices, including modifying City Stamped plan sheets, shall be reported to the Texas Board of Professional Engineers and Land Surveyors (PELS).

**Reference: Texas Engineering Practice Act and Rules, Subchapter C: Professional** Conduct and Ethics

#### SERVICE EXTENSION REQUESTS

#### Hi Paula,

I've reviewed the SER application and have determined that the existing 24-inch wastewater interceptor and 16-inch water main are suitable and sufficient to serve this project. Therefore, a formal SER review will not be necessary. This determination is based on the following project description:

- 725 student high school
- 800 student elementary school 109 LUEs
- 2,000 gpm fire demand
- If the proposed use and/or density changes, please let me know.

#### Thank you,

Katie Frazier, P.E. | Engineer, SER Program | 512-972-0232 | Katie.Frazier@austintexas.gov



## DDO JECT INICODMATION

GRID NUMBER:	B14
MAPSCO NUMBER:	671L, 671M
AW INTERSECTION NUMBER:	33314
BUILDING SIZE IN SQUARE FEET:	MAIN BLDG = 102,173, GYM = 13,064
BUILDING TYPE PER IFC:	II-B
BUILDING HEIGHT:	MAIN BLDG = 53', GYM = 31'
AVAILABLE FIRE FLOW CALCS AT 20 PSI:	3594
REQUIRED BUILDING FIRE FLOW PER IFC TABLE B105.1(2):	7000
REDUCED FIRE FLOW PER 75% FIRE SPRINKLER REDUCTION PER IFC TABLE B105.2:	1750
MINIMUM FIRE FLOW (SEE NOTE #2 BELOW):	1500
DOMESTIC WATER DEMAND IN GPM:	240 (MAIN BLDG = 155, GYM = 85)
WATER SUPPLY FIXTURE UNITS (WSFU) FLUSH TANKS OR FLUSHOMETERS (CIRCLE APPLICABLE ITEM):	740 (MAIN BLDG = 580, GYM = 160)
AUSTIN WATER PRESSURE ZONE:	SOUTHWEST A
STATIC WATER PRESSURE IN PSI:	77
STATIC PRESSURE AT THE HIGHEST LOT SERVED IN PSI:	77
STATIC PRESSURE AT THE LOWEST LOT SERVED IN PSI:	77
MAXIMUM IRRIGATION DEMAND:	100 GPM
FIRE LINE VELOCITY: <u>8</u> SIZE OF FIRE LINE IN FT/S	8.96
DOMESTIC LINE VELOCITY: <u>2"</u> SIZE OF DOMESTIC LINE IN FT/S	2.31
LIVING UNIT EQUIVALENTS (LUEs)	109

**1.** WITH THE EXCEPTION OF PROVIDING THE REQUIRED INFORMATION, DO NOT REVISE THESE TABLES IN ANYWAY. 2. MIN FIRE FLOW: DESIGN ENGINEER MUST INDICATE VALUES WHICH COMPLY WITH IFC TABLES B105.1(2) OR B105.2 (REQUIRED OR REDUCED FIRE FLOWS). MIN FIRE FLOW VALUE SHALL BE NO LESS THAN 1000 GPM FOR NFPA 13 SYSTEMS OR 1500 GPM FOR NFPA 13R SYSTEMS (FOOTNOTES a and b FOR TABLE B105.2).

3. IF DEMAND, OTHER THAN MINIMUM FIRE FLOW, IS UTILIZED IN FIRE LINE VELOCITY DETERMINATION, ENGINEERING JUSTIFICATION SHALL BE SHOWN ON THIS SHEET WITH APPLICABLE DATA AND CALCULATIONS.

### **INSPECTION NOTES**

Please contact Development Services Department, Site and Subdivision Inspection at sitesubintake@austintexas.gov for arrangements for payment of Inspection fees and job assignment for Inspection of the public utilities to this site. Inspection fees must be paid before any Pre-construction meeting can be held.

### STANDARD CONSTRUCTION NOTES

Additional Review Act	knowledgement						
Onsite Water Reuse & AW Reclaimed Information							
Does this development have a total gro area of 250,000 square feet or more?	Does this development have a total gross floor building area of 250,000 square feet or more?						
	□YES ⊠NO						
Distance to nearest existing AW reclair	med main?						
	☐ 250' or less ☐ 251' to 500' ⊠ Greater than 500'						
Automated Metering In	formation						
Is this project within the current serv Data Collection Units (DCUs)?	vice area of AW's						
	⊠YES □NO						
Does this project require a dedicated DCU infrastructure?	d easement for						
	⊠YES □NO						
AULCC Requirement	<u>nt</u>						
Does this project require an AULCC	review?						
	□YES ⊠NO						
IF YES, PLEASE PROVIDE UCC#							

THE CITY STANDARD CONSTRUCTION SPECIFICATIONS CURRENT AT THE TIME OF BIDDING SHALL COVER MATERIALS AND METHODS USED TO DO THIS WORK. 2. CONTRACTOR MUST OBTAIN A ROW PERMIT FROM AUSTIN TRANSPORTATION DEPT. RIGHT OF WAY MANAGEMENT DIVISION BEFORE BEGINNING CONSTRUCTION WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR ALLEY. ACTIVITY WITHIN RIGHT-OF-WAY SHALL COMPLY WITH APPROVED TCP. AT LEAST 48 HOURS PRIOR TO BEGINNING ANY UTILITY CONSTRUCTION ACTIVITY IN PUBLIC ROW OR PUBLIC EASEMENT, THE CONTRACTOR SHALL NOTIFY TH APPLICABLE CITY OF AUSTIN INSPECTION GROUP (AUSTIN TRANSPORTATION, DEVELOPMENT SERVICES, OR PUBLIC WORKS). SEE CURRENT NOTIFICATION REQUIREMENTS

AT WWW.AUSTINTEXAS.GOV. 4. THE CONTRACTOR SHALL CONTACT THE AUSTIN AREA "ONE CALL" SYSTEM AT 1-800-344-8377 FOR EXISTING UTILITY LOCATIONS PRIOR TO ANY EXCAVATION IN ADVANCE OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES TO BE EXTENDED, TIED TO, OR ALTERED, OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS. THE CITY OF AUSTIN WATER AND WASTEWATER MAINTENANCE RESPONSIBILITY ENDS AT R.O.W./EASEMENT LINES.

THE OWNER IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 1804S.04.

8. PRESSURE TAPS SHALL BE ALLOWED ON A CASE BY CASE BASIS, AS DETERMINED BY THE DIRECTOR'S DESIGNEE. NORMALLY PRESSURE TAPS 4 INCHES AND LARGER SHALL BE ALLOWED IN THE FOLLOWING CASES: A) A TEST SHUT OUT INDICATES AN ADEQUATE SHUT OUT TO PERFORM THE WORK IS NOT FEASIBLE B) MORE THAN 30 CUSTOMERS OR A SINGLE CRITICAL CUSTOMER (AS DEFINED BY AUSTIN WATER) WOULD BE IMPACTED BY THE SHUT OUT OR C) THE EXISTING WATER LINE WARRANTS IT. 9. WATER LINE TESTING AND STERILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEMS 510.3 (27)-(29), FORCE MAIN PRESSURE TESTING SHALL BE CONDUCTED AND FALL UNDER THE SPECIFICATIONS AS WATER LINES (PRESSURE PIPE) OR AT THE PRESSURES SHOWN ON THE APPROVED PLANS. 10. ALL MATERIAL USED ON THIS PROJECT MUST BE LISTED ON THE STANDARD PRODUCTS LISTING. ANY MATERIAL NOT LISTED HAS TO GO THROUGH THE REVIEW OF THE STANDARDS COMMITTEE FOR REVIEW AND APPROVAL PRIOR TO START OF PROJECT. TESTING AND EVALUATION OF PRODUCTS ARE REQUIRED BEFORE APPROVAL

WILL BE GIVEN ANY CONSIDERATION. 11. WHEN WATER SERVICES ARE DAMAGED AND THE SERVICE MATERIAL IS POLYETHYLENE (PE), THE LINE SHALL BE REPAIRED ONLY BY HEAT FUSION WELD, AT BRASS FITTINGS, OR THE FULL LENGTH SHALL BE REPLACED PER CURRENT STANDARD DETAIL(S). WHEN POLYBUTYLENE (PB) TUBING IS DAMAGED OR TAMPERED WITH IN ANY WAY, THE FULL LENGTH OF SERVICE LINE SHALL BE REPLACED. (NOTE: FULL LENGTH IS FROM THE CORPORATION STOP TO THE METER.) REPAIR COUPLINGS ARE NOT ALLOWED FOR ANY WATER OR WASTEWATER SERVICE LINE REPAIR, RECONNECT, OR REPLACEMENT. 12. WHEN AN EXISTING WATERLINE SHUT OUT IS NECESSARY AND POSSIBLE, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTOR WHO WILL THEN NOTIFY

- CONSTRUCTION PLANS. UTILITY WORK.

15. ALL WATER, WASTEWATER, AND RECLAIMED MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE SEPARATION DISTANCES INDICATED ON THE PLANS, PER UTILITY CRITERIA MANUAL AND TCEQ CHAPTERS 210, 217, AND 290. 16. PROJECT-SPECIFIC SHOP DRAWINGS SHALL BE SUBMITTED FOR AW APPROVAL FOR PRE-CAST CIRCULAR VERTICAL MANHOLE SECTIONS LARGER THAN 48" DIAMETER. THE SHOP DRAWINGS SHALL INCLUDE THE FLOWLINE ELEVATION OF ALL CONNECTING PIPES; ELEVATIONS OF TRANSITIONS FROM LARGE DIAMETER SECTIONS TO 48" DIAMETER SECTIONS; TOP OF MANHOLE AND SURROUNDING GROUND ELEVATIONS; AND DETAILS OF SPECIAL CONSTRUCTION CONSIDERATIONS SPECIFIED IN THE CONTRACT DOCUMENTS.

17. WHEN CONCRETE MANHOLES LARGER THAN 48 INCH DIAMETER ARE USED, DRAWINGS THAT ARE SEALED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED FOR BASE SLABS, FLAT TOP LIDS (IF USED), AND FLAT TYPE CONCRETE PIECES USED TO TRANSITION FROM LARGER TO SMALLER DIAMETER MANHOLE SECTIONS. 18. ALL FIRE HYDRANTS AND VALVES THAT ARE TO BE ABANDONED SHALL BE REMOVED, SALVAGED AND RETURNED TO AUSTIN WATER. NOTICE SHOULD BE GIVEN 48 HOURS PRIOR. TO PIPELINE OPERATIONS DISTRIBUTION SYSTEM -VALVES AND HYDRANT SERVICES SUPERVISOR AT 512-972-1280. 19. ALL EXISTING WATER METERS IDENTIFIED TO BE RELOCATED OR ABANDONED AT THE DEVELOPMENT SHALL BE REMOVED FROM THE METER BOX PRIOR TO CONSTRUCTION AND GIVEN IMMEDIATELY TO THE CITY OF AUSTIN INSPECTOR.

20. THE ENGINEER SHALL CALL OUT THE SIZE, TYPE AND USE (DOMESTIC OR IRRIGATION) OF ALL EXISTING WATER METERS TO BE RELOCATED OR REPURPOSED. WATER METER NUMBERS WILL NOT BE REQUIRED TO BE PLACED ON THE PLAN SHEET. A SEPARATE AUSTIN WATER TAPS OFFICE FORM WILL BE USED TO PROVIDE RELEVANT DATA FOR THE EXISTING INFORMATION ON EXISTING METERS TO RECEIVE APPROPRIATE CREDITS. THIS FORM SHALL BE DIRECTLY SUBMITTED TO AUSTIN WATER TAPS OFFICE FOR REVIEW AND PROCESSING. 21. NO CONNECTION MAY BE MADE BETWEEN THE PRIVATE PLUMBING AND AUSTIN WATER INFRASTRUCTURE UNTIL A CITY APPROVED WATER METER HAS BEEN INSTALLED.

22. METER BOXES AND CLEAN OUTS SHALL NOT BE LOCATED WITHIN PAVED AREAS SUCH AS DRIVEWAYS AND SIDEWALKS.

AW INFRASTRUCTURE INFORMATION								
PROPOSED PRODUCT TYPE (TO BE INSTALLED)	LENGTH OF PIPE (L.F.)	SIZE OF PIPE (INCH)	NO. OF SERVICES					
WATER SERVICE	20	10	1					
WASTEWATER SERVICE	142	8	1					

THE INFORMATION INCLUDED IN THIS TABLE ARE APPROXIMATE VALUES ESTIMATED BASED ON GENERAL ENGINEERING GUIDELINES

#### **Meter Notice:**

Meter 1.5 inches and larger must be purchased and ordered 90 days in advance of installation.

Meter(s) Requirement for Project: Address: 11720 SOUTH MOPAC EXPRESSWAY, AUSTIN, TX

Proposed Use: Domestic Type: COMBINATION FIRE AND DOMESTIC SERVICE Size: 10"x2" GPM: 55-4400

Service Units: 17.5

**Meter(s) Requirement for Project:** Address: 11720 SOUTH MOPAC EXPRESSWAY, AUSTIN, TX

Proposed Use: IRRIGATION **Type: TURBINE CL II** Size: 1.5" GPM: 4-120 Service Units: 9

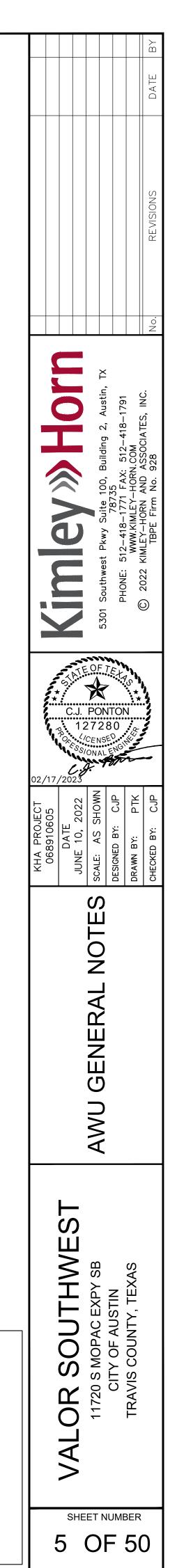
**Reclaimed Meter(s) Requirement for Project:** Address: N/A Proposed Use: N/A Type: N/A Size: N/A GPM: N/A

## October 1, 2021

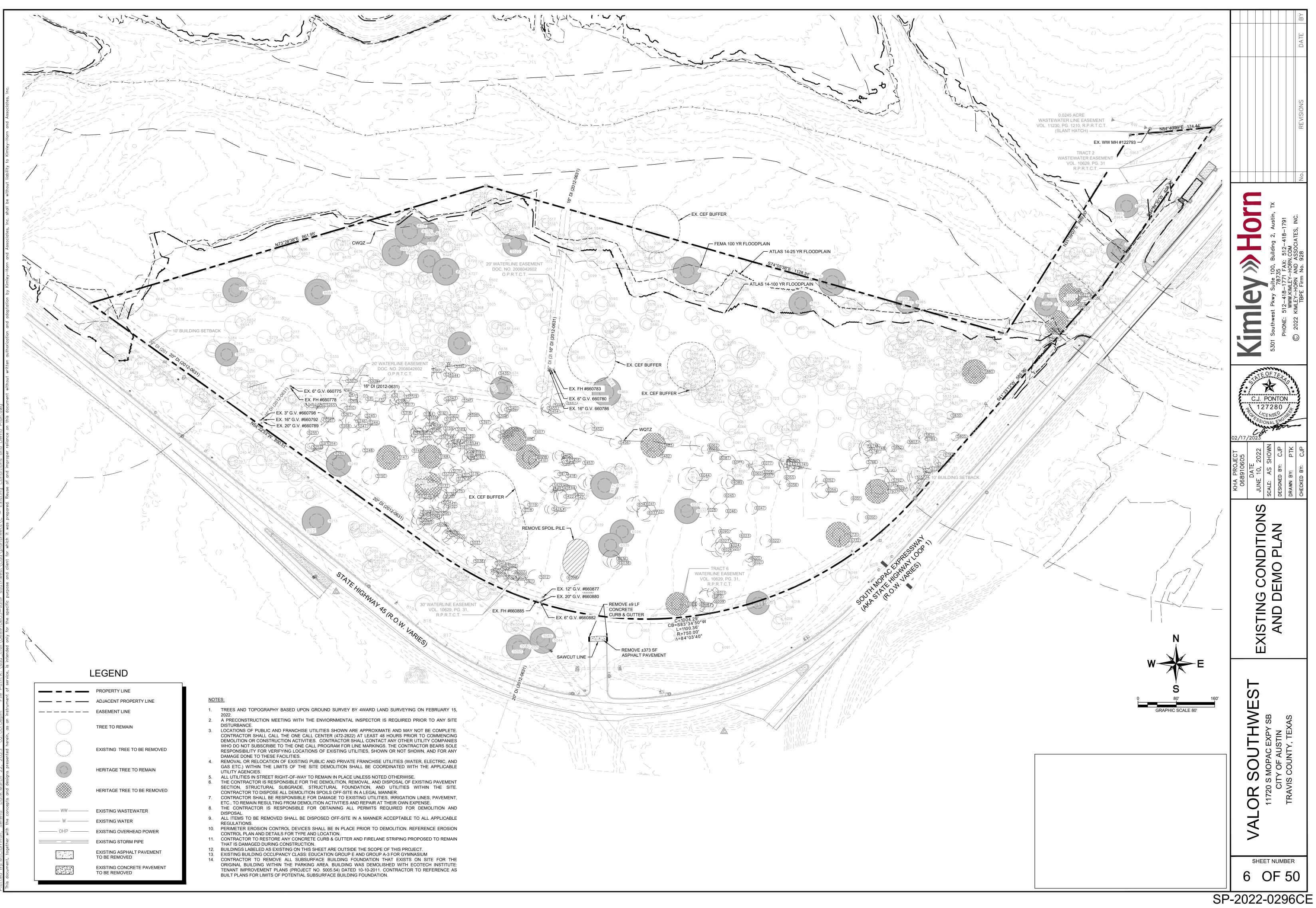
5. NO OTHER UTILITY SERVICE/APPURTENANCES SHALL BE PLACED NEAR THE PROPERTY LINE, OR OTHER ASSIGNED LOCATION DESIGNATED FOR WATER AND WASTEWATER UTILITY SERVICE THAT WOULD INTERFERE WITH THE WATER AND WASTEWATER SERVICES. 6. MINIMUM TRENCH SAFETY MEASURES SHALL BE PROVIDED, AS REQUIRED BY OSHA, CITY SPECIFICATION 509S, AND CITY/COUNTY CONSTRUCTION INSPECTORS. ALL MATERIALS TESTS ORDERED BY THE OWNER FOR QUALITY ASSURANCE PURPOSES, SHALL BE CONDUCTED BY AN INDEPENDENT LABORATORY AND FUNDED BY

AUSTIN WATER DISPATCH AND THE AFFECTED CUSTOMERS A MINIMUM OF FORTY-EIGHT (48) HOURS IN ADVANCE. 13. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTOR SO THAT HE CAN NOTIFY THE AUSTIN WATER AT 972-0000 AT A MINIMUM OF 72 HOURS PRIOR TO RELOCATING ANY DOMESTIC OR FIRE DEMAND WATER METERS. THE CONTRACTOR SHALL CAREFULLY REMOVE ALL METERS AND METERS BOXES THAT ARE INDICATED TO BE RELOCATED OR SALVAGED. THE CONTRACTOR SHALL INSTALL THE REMOVED METER OR CITY PROVIDED METER AT THE NEW LOCATION INDICATED ON THE

14. THE CONTRACTOR SHALL VERIFY ALL VERTICAL AND HORIZONTAL LOCATIONS OF EXISTING UTILITIES, BELOW GROUND AND OVERHEAD, PRIOR TO STARTING ONSITE



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1006         TR. 28 LO         28         Saved         H - ROW         5138         TH           1104         TR. 25.5 CDR         25.5         Saved         H - ROW         5139         TR. 25.3	R. 12 CDR         12         Saved           22 CDR 18-8         22         Saved	5275         TR. 16 LO           5276         TR. 9 LO	16Saved9Saved	5412         TR. 10 LO           5413         TR. 8 LO	10Removed8Removed	5546         TR. 14 CDR           5547         TR. 23 CDR         2	Saved     14   Saved     3.5   Saved	5682         TR. 14 LO           5683         TR. 12 LO	14Saved12Saved	5819         TR. 8 LO         8           5820         TR. 9 LO         9	Saved Saved	5956 5957	TR. 18.5 CDR TR. 15 CDR 8-5-5-4	18.5 15
5001         TR. 9 LO         9         Removed         5141         Tf           5002         TR. 11 LO         11         Removed         5142         Tf	TR. 9 CDR         9         Saved           R. 14 CDR         14         Saved           R. 14 CDR         14         Saved           R. 12 CDR         12         Saved	5277         TR. 13 LO           5278         TR. 9 CDR MULTI           5279         TR. 15 LO           5280         TR. 13 CDR	9 Saved 15 Saved	5414         TR. 9 LO           5415         TR. 9 LO           5416         TR. 12 LO           5417         TR. 8 LO	9     Removed       9     Removed       12     Removed	5550 TR. 15 LO	Saved           13         Saved           15         Saved           10         Saved	5684         TR. 8 CE           5685         TR. 8 LO           5686         TR. 10 CE           5687         TR. 9 CE	8     Saved       8     Saved       10     Saved       9     Saved	5821         TR. 10 LO         10           5822         TR. 8 LO         8           5823         TR. 23 CE 11-10-8-5         23           5824         TR. 16 CDR 11-10         16	Saved Saved	5958 5959 5960	TR. 16 LO TR. 15 LO TR. 13 LO	16 15 13
Solution	III         III         Saved           IR. 13 CDR         13         Saved           IR. 12 CDR         12         Removed           IR. 12 CDR         12         Removed	5280         TR. 10 LO           5281         TR. 10 LO           5282         TR. 8 LO           5283         TR. 8 CDR	10   Saved     8   Saved	5417         TR. 8 LO           5418         TR. 9 LO           5419         TR. 8 LO           5420         TR. 21 LO	8 Removed 9 Removed 8 Removed 21 Removed	5552 TR. 17 LO	Saved           17         Saved           18         Saved           12         Saved	5687         TR. 9 CE           5688         TR. 10 LO           5689         TR. 8 CE           5690         TR. 10 CE	Jo     Saved       10     Saved       8     Saved       10     Saved	5824         FR. 10 CDK 11-10         10           5825         TR. 12 LO         12           5826         TR. 14 LO         14           5827         TR. 17 CDR         17	2 Saved 4 Saved	5963	TR. 16 LO 11-9 TR. 15 CDR 10-6-4 TR. 8 CDR MULTI . 20 CDR 8-8-5-5-5 MULTI	16 15 8 11 20
Solution	III         III         IIII         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	5284         TR. 17 LO 11-11           5285         TR. 14 LO           5286         TR. 17 CDR 13-7	17Saved14Saved	5420         TR. 21 LO           5421         TR. 22 LO           5422         TR. 14 CE           5423         TR. 11 LO	21   Removed     22   Removed     14   Removed     11   Removed	5555         TR. 12 CL NO2           5555         TR. 15 CE 10-9           5556         TR. 19 LO           5557         TR. 13 LO	Saved           15         Saved           19         Saved           13         Saved	5650         TR. 16 CL           5691         TR. 11 CE           5692         TR. 20 CE 11-9-8           5693         TR. 13 LO	10     Saved       11     Saved       20     Saved       13     Saved	5827         TR. 17 CDR         17           5828         TR. 14 LO         14           5829         TR. 22 LO         22           5830         TR. 8 CDR         8	1 Saved		TR. 14 CDR 8-6-5 MULTI TR. 8 CDR TR. 15 LO 12-6	14 14 8 15
5010         TR. 8 LO         8         Removed         5150         5151         T           5         5011         TR. 10 LO         10         Removed         5151         T	TR. 9 LO         9         Removed           TR. 12 LO         12         Removed           R. 11 CDR         11         Removed	5287         TR. 13 CDR NOZ           5288         TR. 25 CDR           5289         TR. 10 LO	13Saved25Saved12Saved	5424         TR. 11 LO           5425         TR. 8 LO           5426         TR. 8 LO	11     Removed       11     Removed       8     Removed       8     Removed	5557         TR. 15 L0           5558         TR. 17 L0 14-6           5559         TR. 13 L0           5560         TR. 17 CDR	17     Saved       13     Saved       17     Saved	5695         TR. 13 LO           5694         TR. 13 LO           5695         TR. 13 CDR           5696         TR. 21 CDR 16-9	13     Saved       13     Saved       13     Saved       21     Saved	5830         TR. 9 CDR         9           5831         TR. 9 CDR         9           5832         TR. 8 CDR         8           5833         TR. 9 CDR         9	Saved Saved	5968 5969 5970	TR. 12 CDR TR. 12 CDR TR. 12 CDR TR. 9 CE	12 12 9
5013         TR. 11 CE         11         Saved         5153         T           E         5014         TR. 21 LO         21         Saved         5154         TF	TR. 14 LO         14         Removed           IR. 13 CDR         13         Removed           TR. 23 LO         23         Removed	5290         TR. 16 CDR           5291         TR. 20 CDR 16-7           5292         TR. 14 CDR 11-6	16Saved20Saved14Saved	5427         TR. 8 LO           5428         TR. 11 LO 8-5           5429         TR. 17 LO 13-8	8 Removed 11 Removed 17 Removed		Saved       12     Saved       21     Saved       13     Saved	5697         TR. 17 CDR           5698         TR. 12 CDR           5699         TR. 11 CDR	17     Saved       12     Saved       11     Saved	5835         TR. 9 CDR         9           5834         TR. 8 CDR         8           5835         TR. 14 LO         14           5836         TR. 8 CDR         8	Saved	5971 5972 5973	TR. 18 CDR TR. 14 LO TR. 8 CE	18 14 8
♀         5016         TR. 9 LO         9         Saved         5156         T           5017         TR. 10 LO         10         Saved         5157         TF	TR. 19 LO         19         Removed           R. 11 CDR         11         Removed           R. 10 CDR         10         Removed	5293         TR. 10 LO           5294         TR. 8 CDR           5295         TR. 11 CDR 8-6	10     Saved       8     Saved       11     Saved	5430         TR. 13 LO           5431         TR. 22.5 CE           5432         TR. 11 LO	13Saved22.5Saved11Saved	5564         TR. 17 LO 12-9           5565         TR. 12 LO	17   Saved     12   Saved     14   Saved	5700         TR. 11 CDR           5701         TR. 17 CDR NOZ           5702         TR. 13 CDR MULTI	11Saved17Saved13Saved	5837         TR. 10 CDR AD         10           5838         TR. 9 CDR         9           5839         TR. 12 CDR         12	Saved	5974 5975 5976	TR. 15 CE TR. 17 CDR TR. 12 CDR	15 17 12
	CDR 12-9-MULTI         17         Removed           TR. 23 LO         23         Removed           'R. 11 CDR         11         Removed	5296         TR. 8 CDR           5297         TR. 15 LO 11-7           5298         TR. 8 CDR           5290         TR. 8 CDR	15   Saved     8   Saved	5433         TR. 17 CE 9-9-7           5434         TR. 21 LO           5435         TR. 22 CDR 10-9-9-6	17Saved21Saved22Removed	5567         TR. 8 CDR           5568         TR. 9 LO           5569         TR. 29 LO 17-12-12	8 Saved 9 Saved 29 Saved H	5703         TR. 9 CE           5704         TR. 14 LO           5705         TR. 12 CE	9Saved14Saved12Saved	5840         TR. 11 LO         11           5841         TR. 10 LO         10           5842         TR. 10 LO         10	) Saved	5977 5978 5979	TR. 11 CE TR. 13 CE AD TR. 12 CDR	11 13 12
5022         TR. 11 LO         11         Saved         5163         TR. 2           5023         TR. 8 LO         8         Saved         5163         TR. 2           5024         TR. 11 LO         11         Saved         5164         The saved	R. 11 CDR         11         Removed           16 CDR 12-8         16         Removed           7R. 16 CDR         16         Removed	5299         TR. 8 CDR MULTI AD           5300         TR. 14 CDR           5301         TR. 11 CDR 8-6           5302         TR. 15 CDR 11-7	14 Saved	5436         TR. 9 LO           5437         TR. 17 LO           5438         TR. 13 LO	9Saved17Saved13Saved	5571 11115 6011	12Saved19Saved10Saved	5706         TR. 10 CE           5707         TR. 9 CDR           5708         TR. 14 CDR	10Saved9Saved14Saved	5843         TR. 13 CDR         13           5844         TR. 11 CDR         11           5845         TR. 10 CDR         10	L Saved	5980 5981 5982	TR. 9 CE AD TR. 8 CDR TR. 11 LO AD	9 8 11
Sold         Sold <th< td=""><td>R. 16 CDR         16         Removed           TR. 16 CE         16         Removed           18 CDR 10-9-6         18         Removed           4 CDR 12-9-8-7         24         Removed</td><td>5303         TR. 15 CDR           5304         TR. 14 LO 10-8           5305         TR. 17 LO</td><td>15 Saved ROW</td><td>5439         TR. 8 LO           5440         TR. 17 LO           5441         TR. 13 LO</td><td>8     Saved       17     Saved       13     Saved</td><td>5574         TR. 11 LO           5575         TR. 13 LO</td><td>Saved       11     Saved       13     Saved</td><td>5709         TR. 11 CE           5710         TR. 10 CE           5711         TR. 11 CE</td><td>11     Saved       10     Saved       11     Saved</td><td>5846         TR. 13 CDR         13           5847         TR. 14 CDR         14           5848         TR. 8 CDR         8</td><td>A Saved Saved</td><td>5983           5984           5985</td><td>TR. 11 LO AD TR. 14 CDR TR. 23.5 LO</td><td>11 14 23.5</td></th<>	R. 16 CDR         16         Removed           TR. 16 CE         16         Removed           18 CDR 10-9-6         18         Removed           4 CDR 12-9-8-7         24         Removed	5303         TR. 15 CDR           5304         TR. 14 LO 10-8           5305         TR. 17 LO	15 Saved ROW	5439         TR. 8 LO           5440         TR. 17 LO           5441         TR. 13 LO	8     Saved       17     Saved       13     Saved	5574         TR. 11 LO           5575         TR. 13 LO	Saved       11     Saved       13     Saved	5709         TR. 11 CE           5710         TR. 10 CE           5711         TR. 11 CE	11     Saved       10     Saved       11     Saved	5846         TR. 13 CDR         13           5847         TR. 14 CDR         14           5848         TR. 8 CDR         8	A Saved Saved	5983           5984           5985	TR. 11 LO AD TR. 14 CDR TR. 23.5 LO	11 14 23.5
Sold         TR. 12 LO         T2         Saved         Store           5029         TR. 8 LO         8         Saved         5169         TH           5030         TR. 11 LO         11         Saved         5170         TH           5170         TH         5171         TH         5171         TH	R. 30 CDR         30         Saved         H           'R. 16 CDR         16         Removed         H           17 CDR 14-6         17         Removed         H	5306         TR. 19 CDR 15-8 AD           5307         TR. 10 CDR AD           5308         TR. 12 CDR	19Removed10Removed12Removed	5442         TR. 10 LO           5443         TR. 10 LO           5444         TR. 12 LO           5444         TR. 12 CO	10     Saved       10     Saved       12     Saved	5578 TR. 14 CE 10-8	20 Saved 10 Saved 14 Saved	5712         TR. 9 CE           5713         TR. 25 LO 19-12           5714         TR. 11 CDR	9     Saved       25     Saved       11     Saved	5849         TR. 12 CDR         12           H         5850         TR. 8 CDR         8           5851         TR. 13 LO         13	Saved Saved	5986 5987 5988	TR. 12 LO TR. 12 LO TR. 18 LO 12-12	12 12 18
5031         TR. 9 LO         9         Saved         5172         TH           5         5032         TR. 11 LO         11         Saved         5172         TH           5         5033         TR. 9 LO         9         Saved         5173         5173	IN COR         IN         INCOMPCT           R. 18 CDR         18         Removed           TR. 8 LO         8         Removed           . 14 LO 11-5         14         Removed	5309         TR. 17 CDR 14-6           5310         TR. 9 LO           5311         TR. 9 CDR 13-11	17Removed9Removed9Removed	5445         TR. 12 CDR           5446         TR. 16 LO           5447         TR. 20 CE 14-11           5448         TR. 12 CDR 12 11 MULT	12         Saved           16         Removed           20         Saved           1         18         Saved	5579         TR. 13 CE 9-8           5580         TR. 10 CE           5581         TR. 15 CE	13         Saved           10         Saved           15         Saved	5715         TR. 28 RO NOZ           5716         TR. 9 CE           5717         TR. 20 CE 11-10-8 NO           5718         TR. 9 LO		H         5852         TR. 12 LO         12           5853         TR. 12 LO         12           5854         TR. 8 LO         8	Saved	5989 5990 5991	TR. 15 LO TR. 18 LO TR. 10 LO	15 18 10
5034         11.8 LO         3         Saved         5175         Tf           5         5035         TR. 11 LO         11         Saved         5175         Tf           E         5036         TR. 17 CDR         17         Saved         5176         T	It of the second seco	5312         TR. 10 LO           5313         TR. 20 CDR 14-12           5314         TR. 13 LO	10Removed20Removed13Removed	5448         TR. 18 CDR 12-11-MULT           5449         TR. 10 LO           5450         TR. 11 LO           5451         TR. 13 LO	1     18     Saved       10     Saved       11     Saved       13     Saved	5583 TR. 14 LO 5584 TR. 9 LO	10 Saved 14 Saved 9 Saved 22 Saved	5718         TR. 8 LO           5719         TR. 13 LO           5720         TR. 11 CE 8-5           5721         TR. 20 CE 10-7-6-6	8     Saved       13     Saved       11     Saved       20     Saved	5855         TR. 8 LO         8           5856         TR. 10 LO         10           5857         TR. 8 CDR MULTI         8           5858         TR. 14 CDR 9-9         14	Saved	5992 5993 5994 5995	TR. 11 LO TR. 12 LO 8-7 TR. 12 LO TR. 14 CDR	11 12 12 14
S037         TR. 11 CDK         11         Removed         5178         T           5038         TR. 11 LO         11         Removed         5178         T           5         5039         TR. 11 LO         11         Saved         5179         5179	TR. 10 LO         10         Removed           TR. 8 LO         8         Removed           R. 10 CDR         10         Removed	5315         TR. 20 CDR           5316         TR. 10 CDR           5317         TR. 12 CDR           5318         TR 17 CDR 12-6-4	20     Removed       10     Removed       12     Removed	5451         TR. 13 LO           5452         TR. 12 CDR           5453         TR. 13 LO           5454         TR. 11 LO	13Saved12Removed13Removed11Removed	5585         TR. 22 LO           5586         TR. 10 LO           5587         TR. 8 CDR           5588         TR. 18 CE 10-9-6	Saved           10         Saved           8         Saved           18         Saved	5721         TR. 20 CE 10-7-6-6           5722         TR. 13 CE           5723         TR. 19 LO           5724         TR. 13 LO	20     Saved       13     Saved       19     Saved       13     Saved	5858         TR. 14 CDR 9-9         12           5859         TR. 9 CDR         9           5860         TR. 19 CDR 13-11         19           5861         TR. 8 CDR         8	Saved	5995 5996 5997 5998	TR. 14 CDR TR. 13 LO TR. 13 CE TR. 11 CE AD	14 13 13 11
G         5041         TR. 14 LO         14         Removed         5181         5181           5042         TR. 10 CE         10         Saved         ROW         5182         5182         5183           2         5043         TR. 10 CE         10         Saved         ROW         5183         5183	TR. 8 LO8RemovedTR. 9 LO9RemovedTR. 9 LO9Removed	5318         TR. 17 CDR 12-6-4           5319         TR. 18 CDR 13-9           5320         TR. 16 CDR 11-10           5321         TR. 8 LO	17   Removed     18   Removed     16   Removed	5455         TR. 10 LO           5456         TR. 13 LO           5457         TR. 8 CE	11Removed10Removed13Removed8Removed	5388         TR. 18 CE 10-9-6           5589         TR. 12 LO           5590         TR. 20 LO 11-9-8           5591         TR. 10 LO	Saved       12     Saved       20     Saved       10     Saved	5724         TR. 13 LO           5725         TR. 13 LO           5726         TR. 14 LO           5727         TR. 14 LO	13Saved13Saved14Saved14Saved	5861         TR. 8 CDR         38           5862         TR. 16 CDR 11-10         16           5863         TR. 13 CDR         13           5864         TR. 8 CDR         8	5 Saved	5999 6000 6001	TR. 11 CE AD TR. 12 CE TR. 10 LO TR. 10 LO	11 12 10 10
O         5044         TR. 27.5 CE         27.5         Saved         H-ROW         5184         TH           5045         TR. 15 CE         15         Saved         ROW         5185         T           5046         TR. 14 CE         14         Saved         ROW         5186         TR.	R. 13 CDR         13         Removed           TR. 11 LO         11         Removed           19 LO 13-11         19         Removed	5321         TR. 13 CDR MULTI AD           5322         TR. 13 CDR MULTI AD           5323         TR. 11 CDR 8-6 AD           5324         TR. 15 CDR	13 Saved	5458         TR. 11 CE           5459         TR. 13 LO           5460         TR. 14 LO	11Removed13Saved14Saved	5551         TM 16 L0           5592         TR. 13 L0           5593         TR. 17 L0           5594         TR. 14 L0	Saved       13     Saved       17     Saved       14     Saved	5728         TR. 13 LO           5729         TR. 17 LO 11-11           5730         TR. 12 LO	13Saved17Saved12Saved	5865         TR. 11 CDR         11           5866         TR. 11 CDR         11           5866         TR. 12 CDR         11           5867         TR. 12 CDR         11	L Saved L Saved	6002 6003 6004	TR. 15 LO TR. 17 CDR 14-6 TR. 14 CDR	15 15 17 14
5047         TR. 11 CE         11         Saved         ROW         5187         TH           5048         TR. 18 CE         18         Saved         ROW         5188         T           5049         TR. 16 LO         16         Saved         ROW         5189         T	R. 15 CDR         15         Removed           TR. 13 LO         13         Removed           TR. 18 LO         18         Removed           TR. 32 5         32 5         Removed	5325         TR. 9 LO           5326         TR. 9 LO           5327         TR. 15 LO	9 Saved	5461         TR. 9 LO           5462         TR. 12 LO           5463         TR. 14 CDR 10-8	9Saved12Saved14Saved	5595         TR. 22 LO 16-11           5596         TR. 9 CDR MULTI           5597         TR. 13 LO	22 Saved 9 Saved 13 Saved	5731         TR. 11 LO           5732         TR. 23 LO           5733         TR. 10 LO	11Saved23Saved10Saved	5868         TR. 17 CDR 12-10         17           5869         TR. 12 CDR         12           5870         TR. 13 CDR         13	2 Saved	6005 6006 6007	TR. 23.5 CE TR. 14 LO TR. 10 LO	23.5 14 10
5050         TR. 9 LO         9         Saved         ROW         5191         5191           5051         TR. 25 LO         25         Saved         H - ROW         5191         5192         5192         5192         5193	TR. 32.5         32.5         Removed         H           TR. 8 LO         8         Saved         ROW           TR. 9 LO         9         Saved         ROW           TR. 14 LO         14         Saved         ROW	5328         TR. 21 LO 16-9           5329         TR. 9 CDR           5330         TR. 16 CDR	16 Saved	5464         TR. 13 CE           5465         TR. 11 LO           5466         TR. 17 CE 13-8           5467         TR. 12 CE 0	13Removed11Removed17Removed	5598         TR. 12 LO           5599         TR. 9 CDR           5600         TR. 14 LO	Saved     9   Saved     14   Saved	5734         TR. 10 LO           5735         TR. 11 LO           5736         TR. 10 LO	10     Removed       11     Removed       10     Removed	5871         TR. 21 CDR 16-9         21           5872         TR. 10 CDR         10           5873         TR. 22 CDR 18-7         22	2 Saved	6008 6009 6010	TR. 10 LO AD TR. 23 CE 19-7 TR. 17 LO	10 23 17
5053         IR. 14 LO         14         Saved         ROW           5054         TR. 12 LO         12         Saved         ROW         5194         TR. 1           5055         TR. 14 LO         14         Saved         ROW         5194         TR. 1           5055         TR. 14 LO         14         Saved         ROW         5195         5195	Image: Second	5331         TR. 10 CDR MULTI           5332         TR. 15 LO 10-10           5333         TR. 8 CDR           5334         TR. 8 CDR	15   Saved     8   Saved	5467         TR. 13 CE 9-8           5468         TR. 15 CDR 10-9           5469         TR. 30 LO           5470         TR 10-0	13         Saved           15         Saved           30         Saved	5602         TR. 13 LO           H         5603         TR. 9 CE	Saved       13     Saved       9     Saved	5737         TR. 12 LO 9-5           5738         TR. 9 LO           5739         TR. 12 LO	12     Removed       9     Removed       12     Removed	5874         TR. 8 CDR         8           5875         TR. 8 CDR         8           5876         TR. 9 CDR         9           5877         TR. 9 CDR         9	Saved Saved Saved	6011           6012           6013	TR. 12 LO TR. 14 CE TR. 24.5 PEC	12 14 24.5
S         5057         IR. 12 LO         12         Saved         ROW           5058         TR. 22 CDR         22         Saved         ROW         5198         5199	TR. 8 LO8SavedROWTR. 8 LO8SavedROWTR. 9 LO9SavedROW	5334         TR. 8 CDR           5335         TR. 9 LO           5336         TR. 8 LO           5337         TR. 9 LO	9     Saved       8     Saved	5470         TR. 10 LO           5471         TR. 9 LO           5472         TR. 14 LO 10-7           5473         TR. 11 LO	10Saved9Saved14Saved11Saved	5604         TR. 11 CDR 8-6           5605         TR. 8 CDR           5606         TR. 16 CE           5607         TR. 11 CF	Saved           8         Saved           16         Saved           11         Saved	5740         TR. 10 LO           5741         TR. 15 LO           5742         TR. 19 LO           5743         TR. 14 LO	10     Removed       15     Removed       19     Saved       14     Saved	5877         TR. 8 CDR         8           5878         TR. 13 CDR         13           5879         TR. 17 CDR 12-10         17           5880         TR. 17 CDR         17	7 Saved	6014 6015 6016 6017	TR. 20 PEC TR. 10 LO TR. 11 LO	20 10 11
5060         TR. 10 CDR         10         Saved         ROW         5200         T           5061         TR. 11 LO         11         Saved         ROW         5201         TR.           5062         TB 10 LO         10         Saved         ROW         5202         5202	TR. 10 LO         10         Saved         ROW           . 16 LO 11-9         16         Saved         ROW           TR. 9 LO         9         Saved         ROW	5338         TR. 12 CDR AD           5339         TR. 14 CDR           5340         TR. 15 CDR AD	12   Removed     14   Removed	5473         TR. 11 L0           5474         TR. 13 L0           5475         TR. 13 CE           5476         TR. 10 CE	11     Saved       13     Saved       13     Saved       10     Saved	5607         TR. 11 CE           5608         TR. 9 CE           5609         TR. 9 CE           5610         TR. 12 CE	Saved       9     Saved       9     Saved       9     Saved       12     Saved	5743         TR. 14 LO           5744         TR. 18 LO           5745         TR. 12 LO           5746         TR. 11 LO	14     Saved       18     Saved       12     Removed       11     Removed	5880         TR. 17 CDR         17           5881         TR. 14 CDR         14           5882         TR. 13 CE         13           5883         TR. 9 CE         9	1 Saved	6017 6018 6019 6020	TR. 13 LO TR. 20 BJO TR. 12 LO TR. 9 LO	13 20 12
O         O         Sold         TR. 8 LO         8         Saved         ROW         Sold	TR. 10 LO10SavedROWTR. 9 LO9SavedROWTR. 11 LO11SavedROW	5341         TR. 14 CDR           5342         TR. 11 CE           5343         TR. 15 LO	14   Removed     11   Removed	5477         TR. 9 LO           5478         TR. 13 LO           5479         TR. 15 LO	9     Saved       13     Saved       15     Saved	3610         TR. 12 CE           5611         TR. 10 CE           5612         TR. 23 LO 16-14           5613         TR. 9 LO	Saved           10         Saved           23         Saved           9         Saved	5740         TR. 11 L0           5747         TR. 14 CE           5748         TR. 16 CDR           5749         TR. 9 L0	11     Removed       14     Removed       16     Removed       9     Saved	5885         TR. 3 CL         5           5884         TR. 17 CDR         17           5885         TR. 15 CDR         15           5886         TR. 10 CDR         10	Z     Saved       5     Saved	6020 6021 6022 6023	TR. 9 LO TR. 13 LO TR. 15 CE	9 13 15
Solution	TR. 11 LO11SavedROWTR. 9 LO9SavedROWTR. 9 LO9SavedROWTR. 9 LO9SavedROW	5344         TR. 21 LO           5345         TR. 11 CDR           5347         TR. 19 CDR 16-6	11 Removed	5480         TR. 14 LO           5481         TR. 11 LO           5482         TR. 18 LO	14Saved11Saved18Removed	5613         TR. 9 L0           5614         TR. 14 CE           5615         TR. 8 CE           5616         TR. 9 L0	14     Saved       8     Saved       9     Saved	5750         TR. 18 LO           5751         TR. 8 LO           5752         TR. 10 LO	18Saved8Saved10Saved	5887         TR. 10 CDR         10           5888         TR. 9 CDR         9           5889         TR. 9 CDR         9	) Saved Saved	6025 6025 6026	TR. 19 CE TR. 18 CE 12-11 TR. 15 CE	19 19 18 15
5069         TR. 10 LO         10         Saved         ROW         5210         T           5         5070         TR. 18 LO 13-10         18         Saved         ROW         5210         T           5         5071         TR. 21 LO         21         Saved         ROW         5211         5211	TR. 8 LO8SavedROWTR. 10 LO10SavedROWTR. 8 LO8SavedROWTR. 10 LO10SavedROW	5348         TR. 13 CDR MULTI           5349         TR. 10 CDR           5350         TR. 11 LO	10   Saved     11   Saved	5483         TR. 25.5 LO           5484         TR. 16 LO           5485         TR. 11 LO	25.5Removed16Saved11Saved	H         5617         TR. 11 LO           5618         TR. 14 CE 11-6           5619         TR. 13 LO	Saved14Saved13Saved	5753         TR. 9 LO           5754         TR. 11 LO           5755         TR. 10 LO	9Saved11Saved10Saved	5890         TR. 10 CDR         10           5891         TR. 21 CE 15-11         21           5892         TR. 14 CDR         14	L Saved	6027 6028 6029	TR. 22 CE 15-14 TR. 16 LO 11-9 TR. 8 LO	22 16 8
22         5072         TR. 8 LO         8         Saved         ROW         5213         TR. 1           5073         TR. 10 LO         10         Saved         ROW         5214         5214         5215 <td< td=""><td>InterferenceInterferenceInterference30 LO 22-1530SavedH-ROWTR. 9 LO9SavedROWTR. 8 LO8SavedROW</td><td>5351         TR. 15 CDR 10-9           5352         TR. 11 CDR           5353         TR. 8 LO MULTI           5354         TR. 13 CDR</td><td>11   Saved     8   Saved     12   Saved</td><td>5486         TR. 12 LO           5487         TR. 14 LO           5488         TR. 21 LO 15-11</td><td>12Saved14Saved21Saved</td><td>5620         TR. 15 CE 12-6           5621         TR. 15 CE           5622         TR. 16 PO</td><td>Saved15Saved16Saved</td><td>5756         TR. 18 CDR 12-11           5757         TR. 17 CDR           5758         TR. 13 CDR</td><td>18Saved17Saved13Saved</td><td>5893         TR. 13 CDR         13           5894         TR. 9 CDR         9           5895         TR. 8 CDR         8</td><td>Saved Saved</td><td>6030 6031 6032</td><td>TR. 25.5 LO TR. 16 LO TR. 20 LO 15-9</td><td>25.5 16 20</td></td<>	InterferenceInterferenceInterference30 LO 22-1530SavedH-ROWTR. 9 LO9SavedROWTR. 8 LO8SavedROW	5351         TR. 15 CDR 10-9           5352         TR. 11 CDR           5353         TR. 8 LO MULTI           5354         TR. 13 CDR	11   Saved     8   Saved     12   Saved	5486         TR. 12 LO           5487         TR. 14 LO           5488         TR. 21 LO 15-11	12Saved14Saved21Saved	5620         TR. 15 CE 12-6           5621         TR. 15 CE           5622         TR. 16 PO	Saved15Saved16Saved	5756         TR. 18 CDR 12-11           5757         TR. 17 CDR           5758         TR. 13 CDR	18Saved17Saved13Saved	5893         TR. 13 CDR         13           5894         TR. 9 CDR         9           5895         TR. 8 CDR         8	Saved Saved	6030 6031 6032	TR. 25.5 LO TR. 16 LO TR. 20 LO 15-9	25.5 16 20
000000000000000000000000000000000000	TR. 11 LO         11         Saved         ROW           X. 14 LO 9-9         14         Saved         ROW           TR. 10 LO         10         Saved         ROW	5355         TR. 10 LO           5356         TR. 8 CDR MULTI           5357         TR. 11 CDR	10     Saved       8     Saved       11     Saved	5489         TR. 13 LO           5490         TR. 22 CDR 12-11-8           5491         TR. 8 CDR           5492         TR. 11 CDR	13     Saved       22     Saved       8     Saved       11     Saved	5623         TR. 9 LO           5624         TR. 14 LO           5625         TR. 8 CE	9     Saved       14     Saved       8     Saved	5759         TR. 15 LO           5760         TR. 12 CDR 9-5           5761         TR. 11 CE	15     Saved       12     Saved       11     Saved	5896         TR. 12 CDR         12           5897         TR. 13 HB         13           5898         TR. 16 HB         16	3 Saved 5 Saved	6033           6034           6035	TR. 14 LO TR. 24 LO TR. 23.5 LO	14 24 23.5
5079         TR. 11 LO         11         Saved         ROW         5220         TR. 1           5         5080         TR. 13 LO 10-5         13         Saved         ROW         5220         TR. 1	. 15 LO 11-7         15         Saved         ROW           17 CDR 9-8-7         17         Saved         ROW           13 CDR 10-6         13         Saved         ROW	5358         TR. 13 CDR 9-7           5359         TR. 13 LO           5360         TR. 9 LO	13 Saved	5492         TR. 11 CDR           5493         TR. 8 LO           5494         TR. 9 LO           5495         TR. 11 CDR 8-6	11     Saved       8     Saved       9     Saved       11     Saved	5626         TR. 13 LO           5627         TR. 8 CE           5628         TR. 15 LO	Saved           8         Saved           15         Saved	5762         TR. 21 LO           5763         TR. 8 CDR           5764         TR. 9 LO           5765         TR. 10 LO	21     Saved       8     Saved       9     Saved       10     Saved	5899         TR. 9 HB         9           5900         TR. 12 HB         12           5901         TR. 15 CDR         15           5902         TR. 8 CDR         8		6036 6037 6038 6038	TR. 18 CE 12-11 TR. 14 CE 10-8 TR. 13 CE	18 14 13
5082         TR. 15 LO 11-8         15         Saved         ROW         5222         11           5083         TR. 12 LO         12         Saved         ROW         5223         T           5         5083         TR. 12 LO         12         Saved         ROW         5224         T           5         5084         TP. 210         2         Saved         ROW         5224         T	R. 15 CDR         15         Saved         ROW           TR. 12 LO         12         Saved         ROW           R. 11 CDR         11         Saved         ROW	5361         TR. 9 CDR MULTI           5362         TR. 9 CDR MULTI           5363         TR. 16 CDR 11-10	16 Saved	5496         TR. 17 CDR 9-9-6           5497         TR. 13 CDR 9-8           5498         TR. 11 LO	17Saved13Saved11Saved	5629         TR. 18 LO           5630         TR. 17 LO           5631         TR. 22 LO           5632         TR. 16 LO	18 Saved 17 Saved 22 Saved 16 Saved	5765         TR. 19 CDR           5766         TR. 19 LO           5767         TR. 10 LO           5768         TR. 11 LO 9-4	10     Saved       19     Removed       10     Removed       11     Removed	5903         TR. 10 CDR         10           5904         TR. 9 LO         9           5905         TR. 11 CDR         11	) Saved Saved	6040 6041 6042	TR. 18 LO TR. 15 LO TR. 17 LO TR. 23 LO 17-11	18 15 17 23
5085         TR. 9 LO         9         Saved         ROW         5225         5226         T           5086         TR. 10 LO         10         Saved         ROW         5226         T           5086         TR. 10 LO         10         Saved         ROW         5227         5227	TR. 10 LO         10         Saved         ROW           TR. 10 LO         10         Saved         ROW           TR. 8 LO         8         Saved         ROW           CDR 10-10-MULTI         15         Saved         ROW	5364         TR. 19 CDR           5365         TR. 9 CDR MULTI           5366         TR. 8 CDR MULTI AD           5367         TR. 8 CE	19     Saved       9     Saved       8     Saved       8     Saved	5499         TR. 15 CDR 8-8-6           5500         TR. 12 CDR 9-6           5501         TR. 11 LO	15Saved12Saved11Saved	5632         TR. 10 LO           5633         TR. 19 LO           5634         TR. 13 LO           5635         TR. 17 LO	19 Saved 13 Saved 17 Saved	5769         TR. 10 LO           5770         TR. 11 LO           5771         TR. 8 LO	10     Saved       11     Removed       8     Saved	5906         TR. 12 CDR         12           5907         TR. 11 CE         11           5908         TR. 10 CE         10	2 Saved L Saved	6042 6043 6044 6045	TR. 13 LO TR. 16 PO TR. 18 LO	13 16 18
5088         TR. 13 CDR         13         Removed         5229         TR. 1           5089         TR. 10 LO         10         Removed         5230         T	10         10         Saved         NOW           16 CDR 11-10         16         Saved         ROW           TR. 10 LO         10         Saved         ROW           19 LO 13-12         19         Saved         ROW	5369         TR. 3 LO           5368         TR. 13 LO           5369         TR. 20 CDR 13-13           5370         TR. 8 CDR AD	13 Saved	5502         TR. 11 CDR           5503         TR. 14 LO           5504         TR. 10 LO	11Saved14Saved10Saved	5636         TR. 14 LO           5637         TR. 17 LO           5638         TR. 12 CE 8-7 NOZ	Saved14Saved17Saved12Saved	5772         TR. 10 LO           5773         TR. 12 LO           5774         TR. 14 LO	10Saved12Removed14Removed	5909         TR. 8 CDR         8           5910         TR. 15 CE         15           5911         TR. 8 CDR         8	Saved Saved Saved	6046 6047 6048	TR. 23 CE TR. 13 LO TR. 21 CDR 12-9-8	23 13 21
Mode         5091         TR. 10 LO         10         Removed         5232         TH           5092         TR. 13 CDR         13         Removed         5233         TR. 12           5093         TR. 12 CDR         12         Removed         5234         TR. 12	R. 10 CDR         10         Saved         ROW           16 CDR 13-6         16         Saved         ROW           . 16 LO 11-9         16         Saved         ROW	5371         TR. 11 CDR           5372         TR. 12 LO           5373         TR. 12 CDR MULTI	11Saved12Saved12Saved	5505         TR. 18 LO           5506         TR. 12 LO           5507         TR. 12 LO	18Saved12Saved12Saved	5639         TR. 14 LO           5640         TR. 11 LO           5641         TR. 12 LO	Saved11Saved12Saved	5775         TR. 14 LO 10-8           5776         TR. 10 LO           5777         TR. 9 CDR	14     Removed       10     Removed       9     Removed	5912         TR. 9 CDR         9           5913         TR. 12 LO         12           5914         TR. 14 LO         14	Saved 2 Removed 4 Removed	6049 6050 6051	TR. 17 LO TR. 12 CDR TR. 15 CDR	17 12 15
>         5095         TR. 13 CDR         13         Removed         5236         TR           5         5096         TR. 19 CDR 13-12         19         Removed         5237         T           7         5097         TR         18 CDR 14         7         18         Removed         5237         T	18 CDR 11-7-6         18         Saved         ROW           R. 12 LO 8-7         12         Saved         ROW           TR. 13 LO         13         Saved         ROW	5374         TR. 10 LO           5375         TR. 9 CDR           5376         TR. 11 CDR MULTI AD	10Saved9Saved11Saved	5508         TR. 13 LO           5509         TR. 11 LO           5510         TR. 8 CDR           5511         TR. 9 CDR	13Saved11Saved8Saved9Saved	5642         TR. 15 LO           5643         TR. 10 LO           5644         TR. 9 CDR	15 Saved 10 Saved 9 Saved	5778         TR. 18 LO           5779         TR. 11 CDR           5780         TR. 13 LO           5781         TR 14 LO	18     Removed       11     Saved       13     Saved       14     Saved	5915         TR. 14 HB         14           5916         TR. 23 CDR         23           5917         TR. 21 CDR         23           5918         TR 12 CDR         11	L Removed	6052 6053 6054	TR. 12 CDR TR. 15 CDR TR. 19 CDR	12 15 19
5098         TR. 19 CDR 13-11         19         Removed         5239           5099         TR. 8 CDR         8         Removed         5240         TR. 12	TR. 11 LO11SavedROWTR. 8 LO8SavedROWL9 CDR MULTI19SavedROWTR. 11 LO11SavedROW	5377         TR. 9 CDR           5378         TR. 14 CDR 10-8           5379         TR. 9 CDR           5380         TR. 10 CDR	9         Saved           14         Saved           9         Saved           10         Saved	SSI1         TR. 9 CDK           5512         TR. 10 CDR MULTI           5513         TR. 8 CDR MULTI           5514         TR. 9 CDR	9     Saved       10     Saved       8     Saved       9     Saved	5645         TR. 15 LO 11-8           5646         TR. 10 LO           5647         TR. 9 LO           5648         TR 9 LO	15 Saved 10 Saved 9 Saved 9 Saved	5781         TR. 14 LO           5782         TR. 9 LO           5783         TR. 19 CDR           5784         TR. 10 LO	14     Saved       9     Removed       19     Saved       10     Removed	5918         TR. 12 CDR         12           5919         TR. 9 CE         9           5920         TR. 16 CE 11-10         16           5921         TR. 16 CE         16		6055           6056           ROW         6057           ROW         6057	TR. 15 CDR AD TR. 12 CDR TR. 8 LO	15 12 8 14
5101         TR. 18 CDR         18         Saved         5242         T           5102         TR. 9 CDR         9         Saved         5243         T	TR. 11 LO         11         Saved         ROW           TR. 12 LO         12         Saved         ROW           R. 13 CDR         13         Removed         CDR 13-9-MULTI         18         Removed	5380         TR. 10 CDR           5381         TR. 12 CDR 8-7           5382         TR. 11 LO           5383         TR. 11 CDR	10         Saved           12         Saved           11         Saved           11         Saved	5515         TR. 10 CDR           5516         TR. 12 LO           5517         TR. 8 CDR MULTI	10     Saved       12     Saved       8     Saved	5648         TR. 9 LO           5649         TR. 13 CDR 10-6           5650         TR. 9 LO           5651         TR. 14 CDR	9 Saved 13 Saved 9 Saved 14 Saved	5784         TR. 10 LO           5785         TR. 10 LO           5786         TR. 10 LO           5787         TR. 8 LO	10     Removed       10     Saved       10     Saved       8     Saved	5921         TR. 18 CE         16           5922         TR. 9 CDR         9           5923         TR. 8 HB         8           5924         TR. 13 CDR         13	Saved F Saved F	ROW         6058           ROW         6059           ROW         6060           6061	TR. 14 LO TR. 15 CE TR. 14 CDR AD TR. 11 CE	14 15 14 11
5         5104         TR. 14 CDR 10-7         14         Saved         5245         TF           5         5105         TR. 11 LO         11         Saved         5245         TF           5         5105         TR. 11 LO         11         Saved         5246         TF	ISCOR 13-9-MOLTI         18         Removed           R. 10 CDR         10         Removed           R. 14 CDR         14         Removed           13 CDR 10-6         13         Removed	5385         TR. 16 CDR 9-9-5           5384         TR. 16 CDR 9-9-5           5385         TR. 12 CE 8-7           5386         TR. 21.5 CDR	16Saved12Saved21.5Saved	5518         TR. 13 CE           5519         TR. 9 LO           5520         TR. 15 LO	13Saved9Saved15Saved	3631         IR. 14 CDR           5652         TR. 16 LO           5653         TR. 17 LO           5654         TR. 16 LO	Saved       16     Saved       17     Saved       16     Saved	5767         TR. 8 L0           5788         TR. 8 L0           5789         TR. 8 L0           5790         TR. 8 CDR	8     Saved       8     Saved       8     Saved       8     Saved	5925         TR. 13 LO         13           5926         TR. 14 LO         14           5927         TR. 21.5 CDR         21	Removed Removed	6061 6062 6063 6064	TR. 11 CE TR. 22 LO TR. 10 CDR TR. 19 LO	11 22 10 19
5107         TR. 8 CDR         8         Saved         5248         T           5108         TR. 9 CDR         9         Saved         5249         T	TR. 15 LO         15         Removed           TR. 25 CDR         25         Saved         H           TR. 12 CDR         12         Removed         H	5387         TR. 9 CE           5388         TR. 10 CE           5389         TR. 9 CE	9Saved10Saved	5521         TR. 21.5 CDR           5522         TR. 12 LO           5523         TR. 8 CDR MULTI	21.5Saved12Saved8Saved	5655         TR. 18 L0           5655         TR. 13 L0           5656         TR. 18 L0 13-10           5657         TR. 11 L0	Saved       13     Saved       18     Saved       11     Saved	5791         TR. 9 LO           5792         TR. 11 LO 8-6           5793         TR. 30.5 CE	9Saved11Removed30.5Removed	5928         TR. 16 CDR         16           5929         TR. 11 CDR         11           H         5930         TR. 24.5 CDR         24.	5 Saved L Saved	6065           6066           H           6067	TR. 8 CDR TR. 17 CE TR. 21 CDR 17-7	8 17 21
O         5111         TR. 13 LO         13         Saved         5252         TH           Signature         5112         TR. 9 LO         9         Saved         5253         TR. 3	TR. 9 CDR         9         Removed           'R. 10 CDR         10         Removed           15 CDR 10-9         15         Removed	5390         TR. 9 CE           5391         TR. 8 LO           5392         TR. 11 LO           5392         TR. 12 LO 0 8		5524         TR. 9 CDR           5525         TR. 12 LO           5526         TR. 8 CDR           5527         TR. 17 LO	9     Saved       12     Saved       8     Saved       17     Saved	5658         TR. 12 LO           5659         TR. 9 LO           5660         TR. 15 LO 11-8	Saved     9   Saved     15   Saved	5794 TR. 27 CE 5795 TR. 14 LO 10-8 5796 TR. 8 LO	27Removed14Removed8Saved	H         5931         TR. 10 CDR         10           5932         TR. 20 CDR 14-11         20           5933         TR. 10 LO         10	Saved       Saved       Saved	6068           6069           6070	TR. 14 LO TR. 17 LO TR. 10 LO	14 17 10
5114         TR. 10 LO         10         Saved         5255         T           5115         TR. 9 LO         9         Saved         5256         T	R. 16 CDR         16         Removed           TR. 11 LO         11         Removed           R. 14 CDR         14         Removed	5393         TR. 13 LO 9-8           5394         TR. 8 LO           5395         TR. 13 CDR           5396         TR. 15 LO	8   Saved     13   Saved	5527         IR. 17 LO           5528         TR. 8 CDR           5529         TR. 13 LO           5530         TR. 13 LO	17Saved8Saved13Saved13Saved	5661         TR. 8 LO           5662         TR. 9 LO           5663         TR. 8 LO	8 Saved 9 Saved 8 Saved	5797         TR. 9 LO           5798         TR. 9 LO           5799         TR. 8 LO           5800         TR. 8 LO	9     Saved       9     Saved       8     Saved	5934         TR. 8 LO         8           5935         TR. 10 CDR         10           5936         TR. 18 CDR 13-9         18           5937         TR 12 CDR         11	Saved     3   Saved	6071 6072 6073	TR. 16 LO TR. 12 LO TR. 13 LO	16 12 13
5         5117         TR. 11 LO 8-5         11         Saved         5258         Tf           2         5118         TR. 12 LO 8-7         12         Removed         5259         T	16 LO 9-8-5         16         Removed           'R. 11 CDR         11         Removed           TR. 16 LO         16         Removed           TR. 13 LO         13         Removed	5390         TR. 15 LO           5397         TR. 18 CE           5398         TR. 10 CDR MULTI           5399         TR. 17 CE 9-8-8	18Removed10Removed	5550         TR. 13 LO           5531         TR. 13 LO           5532         TR. 8 LO           5533         TR. 9 CDR MULTI	13     Saved       13     Saved       8     Saved       9     Saved	5664         TR. 9 LO           5665         TR. 8 LO           5666         TR. 10 LO           5667         TR. 9 LO	9 Saved 8 Saved 10 Saved 9 Saved	5800         TR. 8 LO           5801         TR. 14 CDR           5802         TR. 11 LO           5803         TR. 15 LO 11-8	8     Saved       14     Saved       11     Removed       15     Removed	5937         TR. 12 CDR         12           5938         TR. 12 CDR         12           5939         TR. 12 CDR         12           5939         TR. 12 CDR         12           5940         TR. 8 CE         8	2 Saved	6074 6075 6076 6077	TR. 9 LO TR. 14 LO TR. 13 LO	9 14 13 13
5120 TR. 12 CDR 8-8 12 Saved 5261 T	TR. 13 LO         13         Removed           R. 10 CDR         10         Removed	5400         TR. 11 CE           5401         TR. 11 LO           5402         TR. 17 CDR 12-10	11 Removed	5553         TR. 9 CDR MOLTI           5534         TR. 14 CDR MULTI           5535         TR. 12 LO           5536         TR. 9 LO	14Saved12Saved9Saved	5667         TR. 9 LO           5668         TR. 15 LO           5669         TR. 15 LO           5670         TR. 13 LO	9         Saved           15         Saved           15         Saved           13         Saved	5803         TR. 15 L0 11-8           5804         TR. 10 L0           5805         TR. 9 CDR           5806         TR. 11 CDR	15     Removed       10     Saved       9     Removed       11     Saved	5940         TR. 8 CE         8           5941         TR. 12 CDR 8-8         12           5942         TR. 15 CDR         15           5943         TR. 13 CDR         15	2 Saved 5 Saved	6077 6078 6079 6080	TR. 13 LO TR. 12 LO TR. 10 LO TR. 9 LO	13 12 10 9
5123         TR. 18 CDR 11-7-7         18         Saved         5264         TR. 18           5124         TR. 9 CDR         9         Saved         5265         TR. 1		5403         TR. 13 LO           5404         TR. 15 CDR           5405         TR. 13 CDR	15Removed13Removed	5537         TR. 10 LO           5538         TR. 16 LO 13-6           5539         TR. 9 CDR	10Saved16Saved9Saved	5671         TR. 12 LO           5672         TR. 9 LO	I3     Saved       12     Saved       9     Saved       13     Saved	5880         TR. 11 CDR           5807         TR. 19 PO NO Z           5808         TR. 9 LO           5809         TR. 12 CDR	11Saved19Saved9Saved12Saved		Saved Saved	6080 6081 6082 6083	TR. 910 TR. 910 TR. 1410 TR. 11 CE	9 9 14 11
5126         TR. 9 LO         9         Saved         5267         Tf           5127         TR. 10 CDR         10         Saved         5268         TR.	R. 13 CDR         13         Removed           17 LO 12-10         17         Removed           . 16 LO 11-9         16         Saved	5406         TR.23.5           5407         TR. 14 CDR           5408         TR. 25.5 LO           5409         TR. 14 LO	14Removed25.5Removed14Removed	5540         TR. 10 CE           5541         TR. 10 LO           5542         TR. 9 LO	10Saved10Saved9Saved	5674         TR. 10 LO           5675         TR. 9 LO	Saved       10     Saved       9     Saved       10     Saved	5810         TR. 20 CDR           5811         TR. 15 CDR 11-8           5812         TR. 8 LO	20Saved15Saved8Saved	5947         TR. 19 LO         15           5948         TR. 18 CDR 11-8-5         18           5949         TR. 23 CDR 15-8-8         23	Saved     3   Saved	6083           6084           6085           6086	TR. 12 LO TR. 15 LO TR. 21 LO	11 12 15 21
5130         TR. 12 LO         12         Saved         5271           5131         TR. 10 CDR         10         Saved         5272	TR. 9 LO9SavedTR. 9 LO9SavedTR. 9 LO9Saved	5409         TR. 14 LO           5410         TR. 12 LO		5543         TR. 19 CDR 15-8           5544         TR. 15 LO 10-10	19Saved15Saved	5677 TR. 8 LO 5678 TR. 11 CE 5679 TR. 8 CE	8 Saved 11 Saved 8 Saved	5813         TR. 9 LO NO Z           5814         TR. 8 LO NO Z           5815         TR. 9 LO	9Saved8Saved9Saved	5950         TR. 10 CE         10           5951         TR. 12 LO 9-6         12           5952         TR. 8 LO         8	2 Saved Saved	6087           6088           6089	TR. 12 LO TR. 17 LO TR. 10 LO	12 17 10
5132 TR. 12 CDR 12 Removed 5273 TF	R. 12 CDR 12 Saved					5680 TR. 10 LO	10 Saved	5816 TR. 8 LO	8 Saved	5953 TR. 21 CDR 21		6090	TR. 10 LO	10
5133       TR. 18 CDR 10-8-7       18       Removed         5134       TR. 15 CDR 11-7       15       Removed         5135       TR. 13 CDR       13       Removed								5817 TR. 8 LO	8 Saved	[5954] TR. 15 LO 15	5 Saved			

## tree list

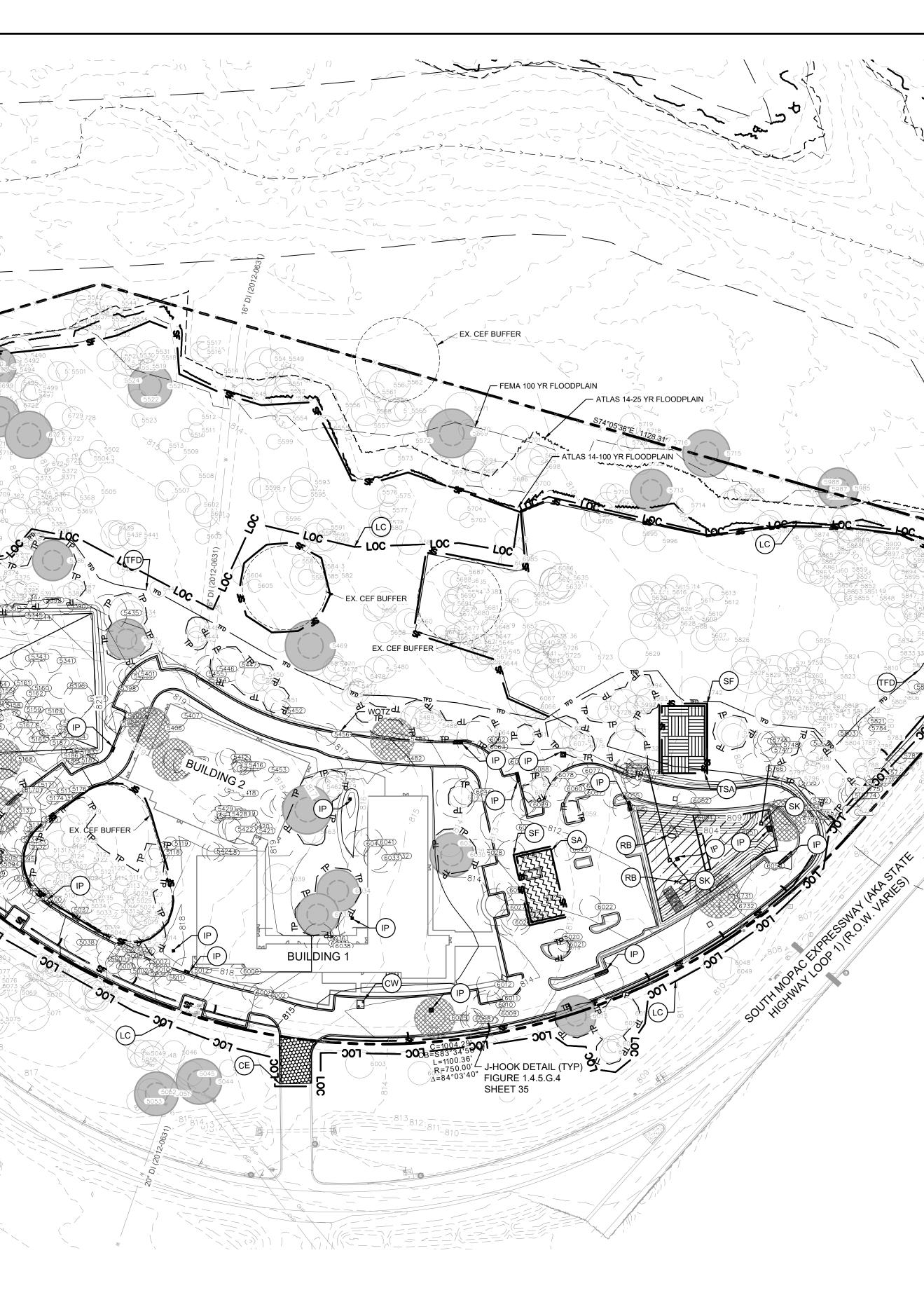
	n) Saved/Removed Type Saved	Tag         Description         Size (in)         Saved/Removed         Type           6091         TR. 10 CDR AD         10         Saved         ROW           6600         TR. 12 LO         12         Saved         6666         TR. 12 CDR         12         Saved           6601         TR. 12 LO         12         Saved         6667         TR. 8 LO         8         Saved           6602         TR. 8 LO         8         Saved         6668         TR. 9 LO         9         Saved         6667           6603         TR. 9 LO         9         Saved         6667         TR. 8 LO         8         Saved         6667           6604         TR. 9 CDR         9         Saved         6670         TR. 14 LO 9-9         14         Saved         6671         TR. 8 CDR         8         Saved         6672         TR. 11 CDR         11         Saved         6673         TR. 12 CDR         12         Saved         6673         TR. 10 CD         10         Saved         6674         TR. 12 CDR         12         Saved         6675         TR. 10 LO         10         Saved         6674         TR. 810         8         Saved         6675         TR. 10 LO         10	No. REVISIONS DATE
	SavedRemoved	6622       TR. 12 L0       12       Saved       ROW       6689       TR. 12 CDR 9-8       12       Saved       Saved         6623       TR. 11 L0       11       Saved       ROW       6690       TR. 20 CDR 15-10       20       Saved       Saved         6624       TR. 13 LO       13       Saved       ROW       6691       TR. 20 CDR 15.10       20       Saved       Saved       6691       TR. 20 CDR 15.10       20       Saved       6691       TR. 3 CDR       13       Saved       6691       TR. 3 CDR       8       Saved       6692       TR. 3 CDR       13       Saved       6693       TR. 11 CDR       11       Saved       6693       TR. 11 CDR       11       Saved       6693       TR. 10 CDR       10       Saved       6695       TR. 20 CDR 9-6       12       Saved       6693       TR. 10 CDR       10       Saved       6695       TR. 10 CDR       10       Saved       6696       TR. 10 CDR       10       Saved       6697       TR. 23.5 CDR       23.5       Saved       6693       TR. 10 CDR       13       Saved       6699       TR. 10 CDR       13       Saved       6693       TR. 10 CDR       13       Saved       6700       TR. 11 L0       11 </td <td>Southwest Pkwy Suite 100, Building 2, A RHONE: 512–418–1771 FAX: 512–418– WWW.KIMLEY–HORN.COM WWW.KIMLEY–HORN AND ASSOCIATES. TBPE Firm No. 928</td>	Southwest Pkwy Suite 100, Building 2, A RHONE: 512–418–1771 FAX: 512–418– WWW.KIMLEY–HORN.COM WWW.KIMLEY–HORN AND ASSOCIATES. TBPE Firm No. 928
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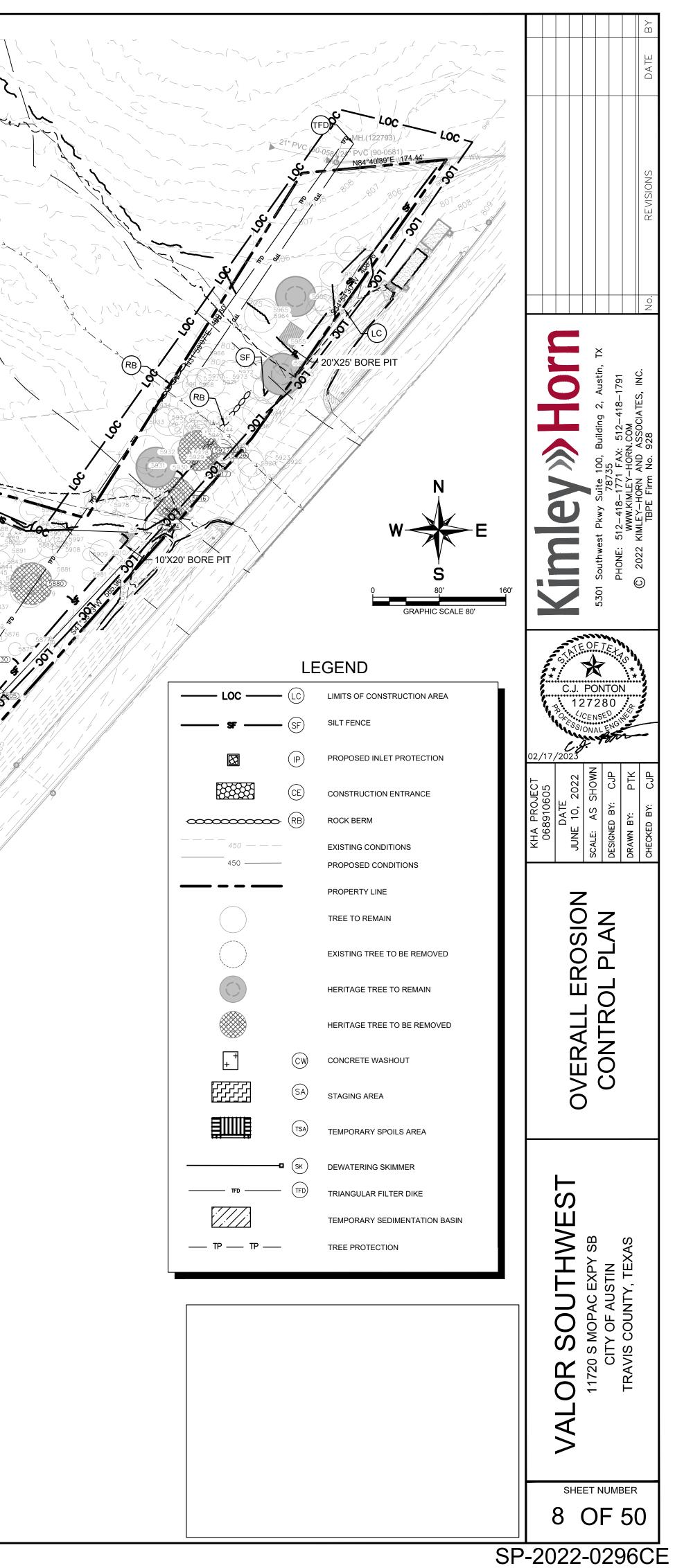
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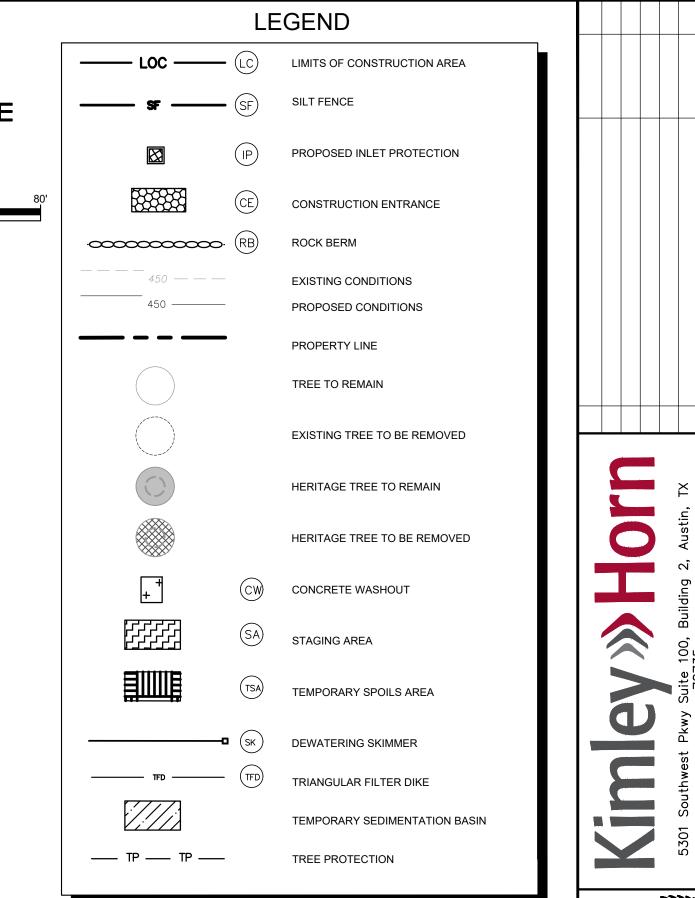
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ENTATION POND VOLUME							
QUIRED VOLUME (CF)	PROVIDED VOLUME (CF)	AVERAGE SLOPE					
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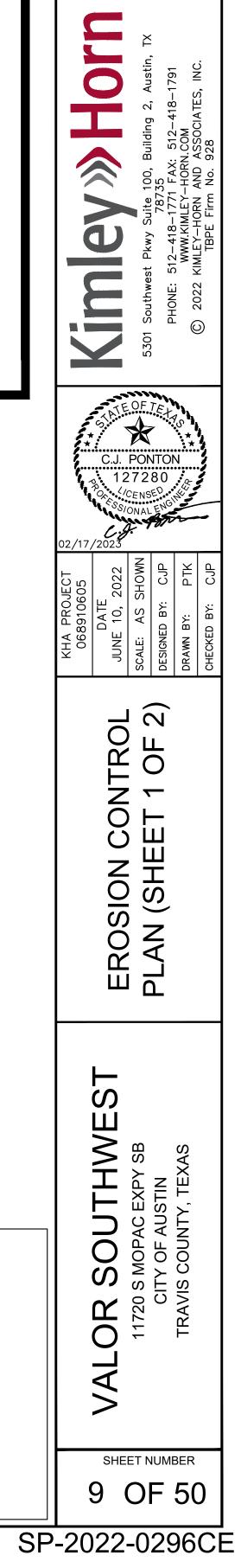
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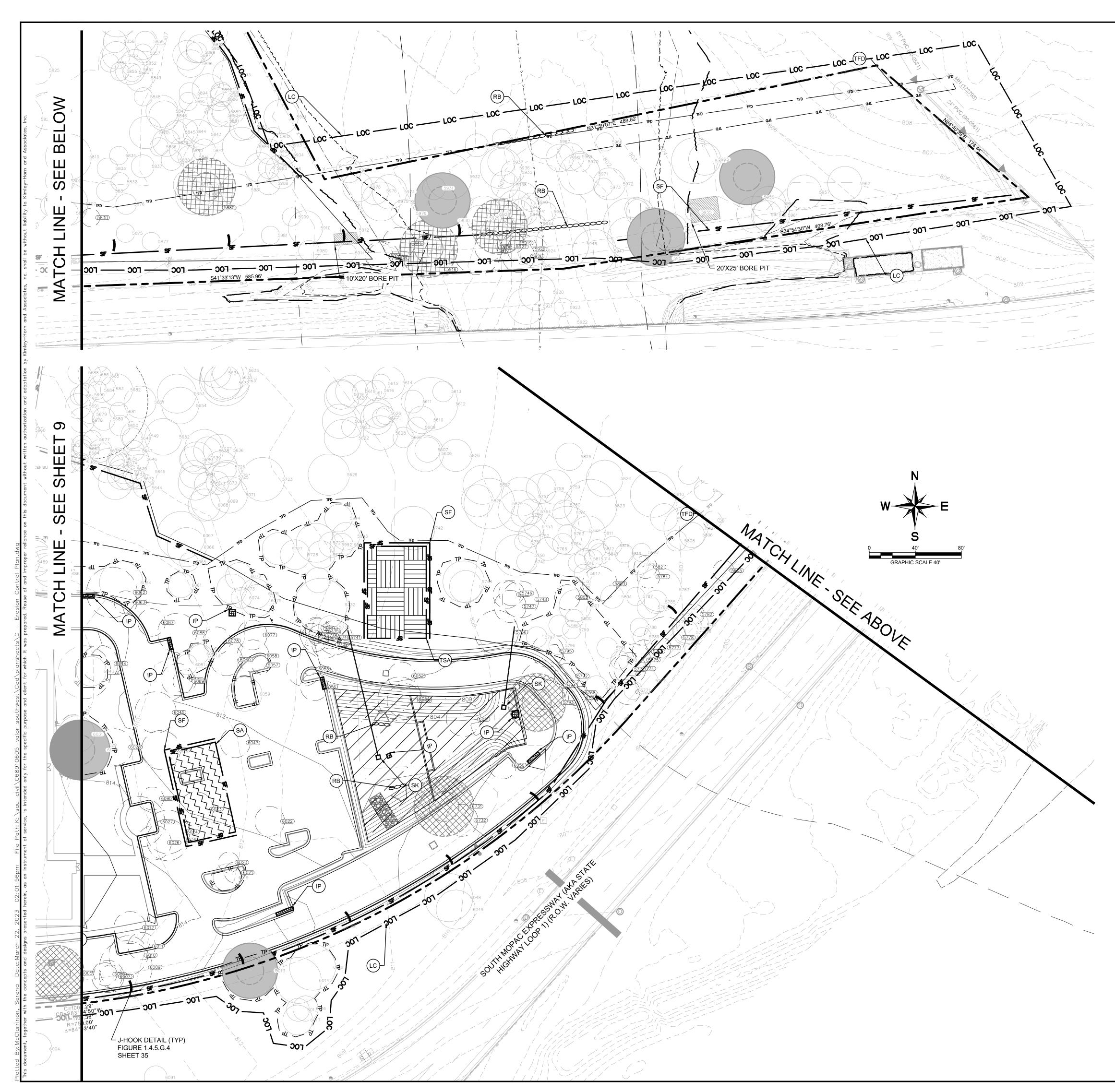
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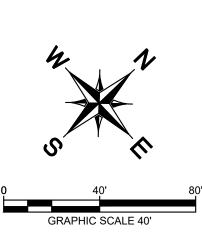
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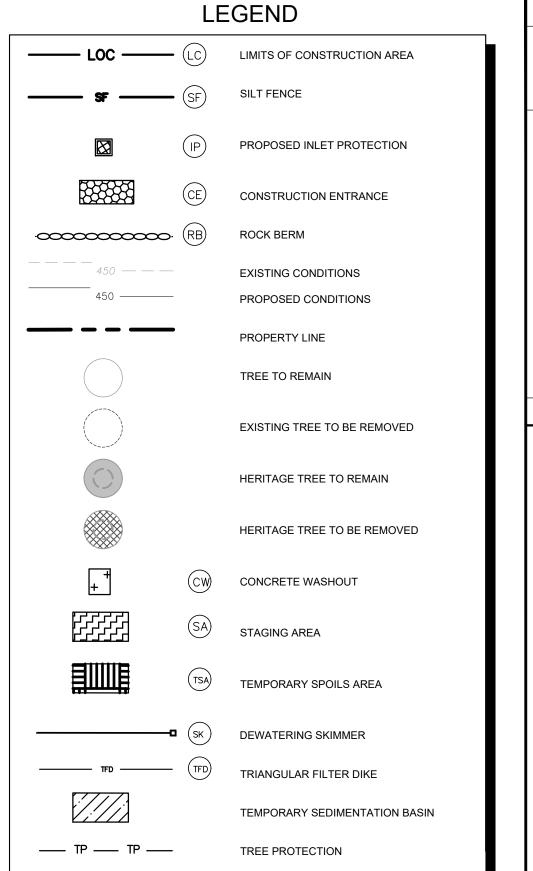
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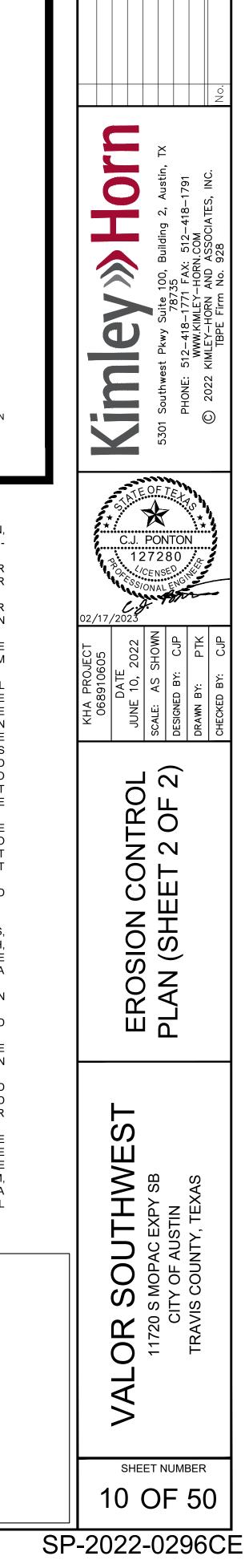


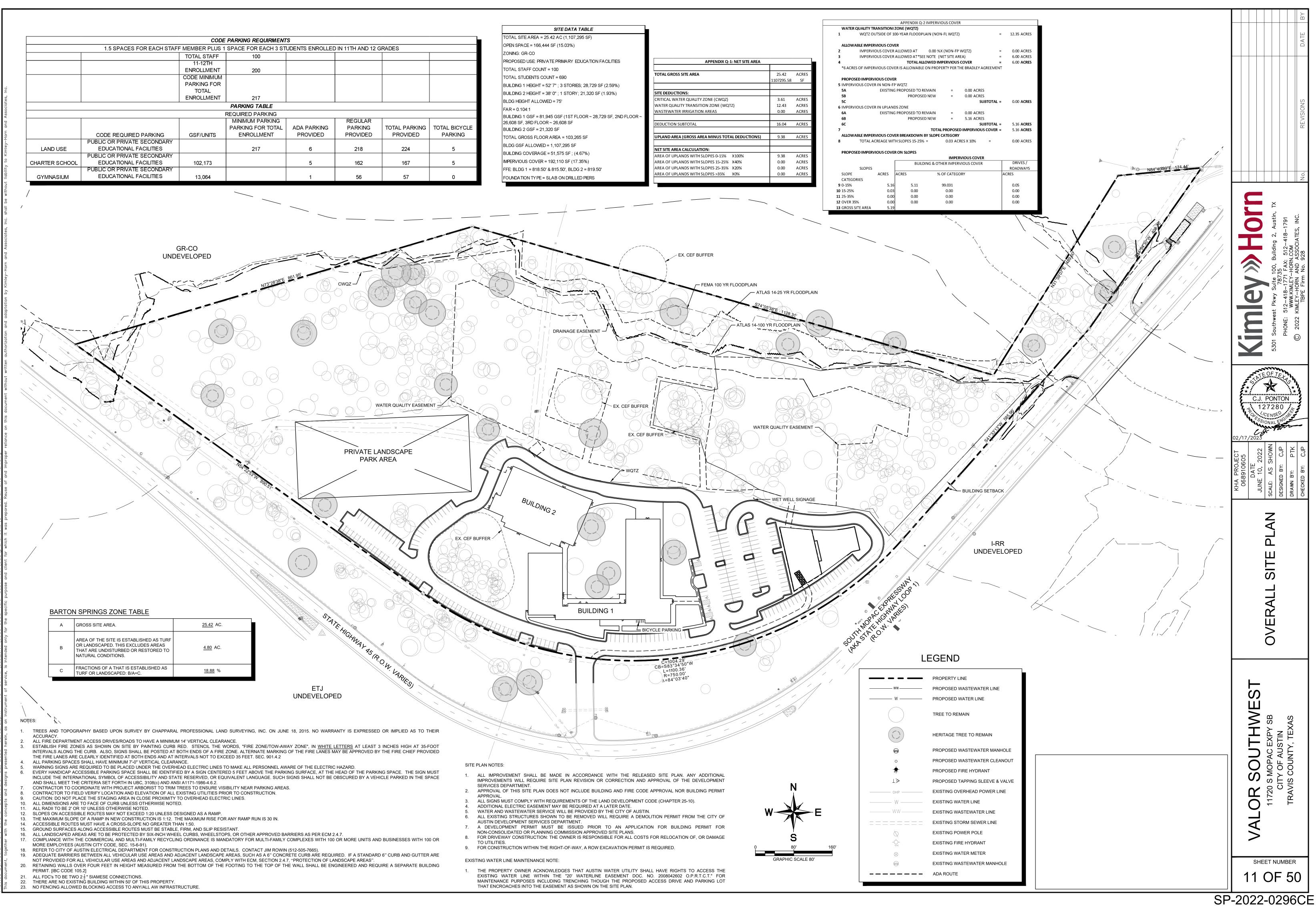


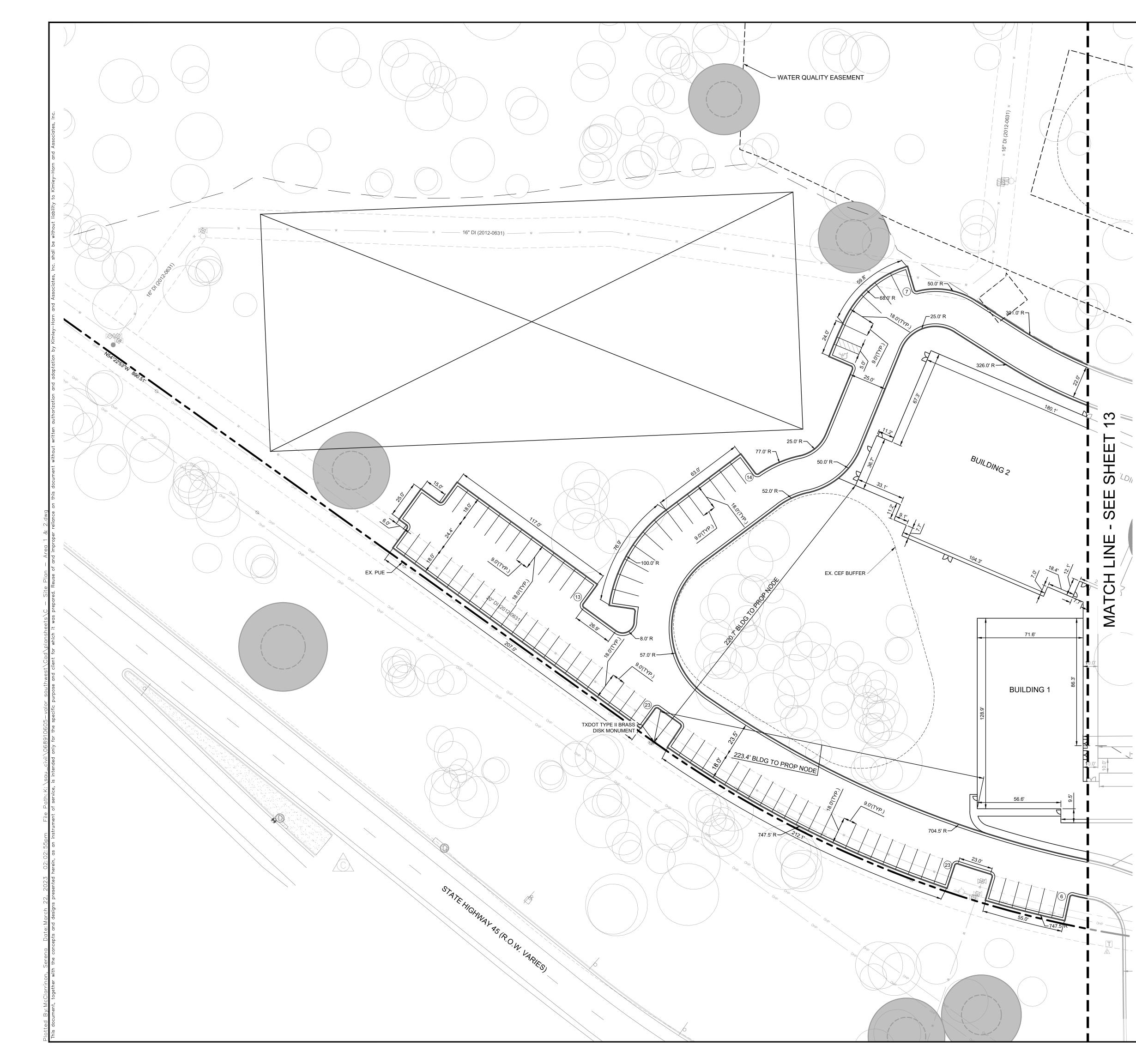


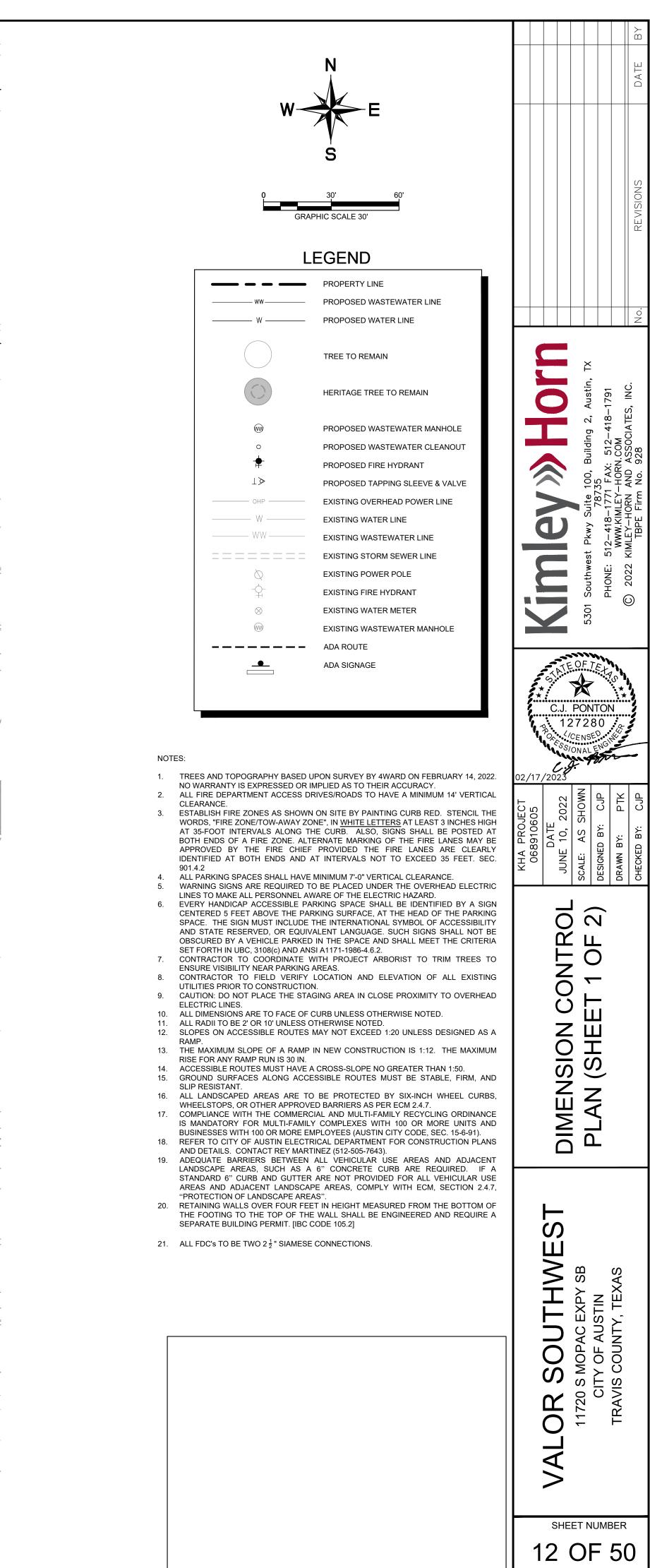
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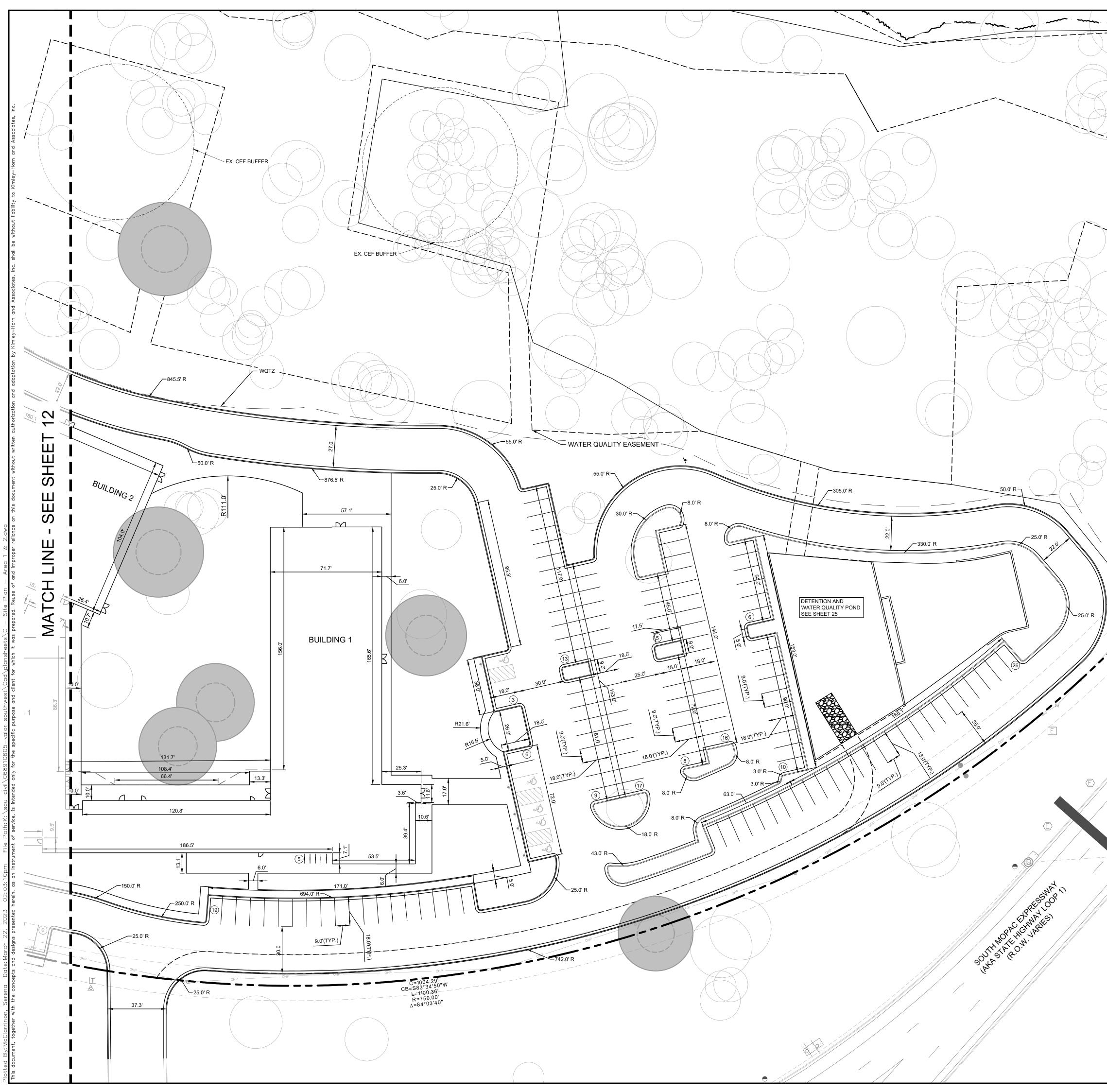
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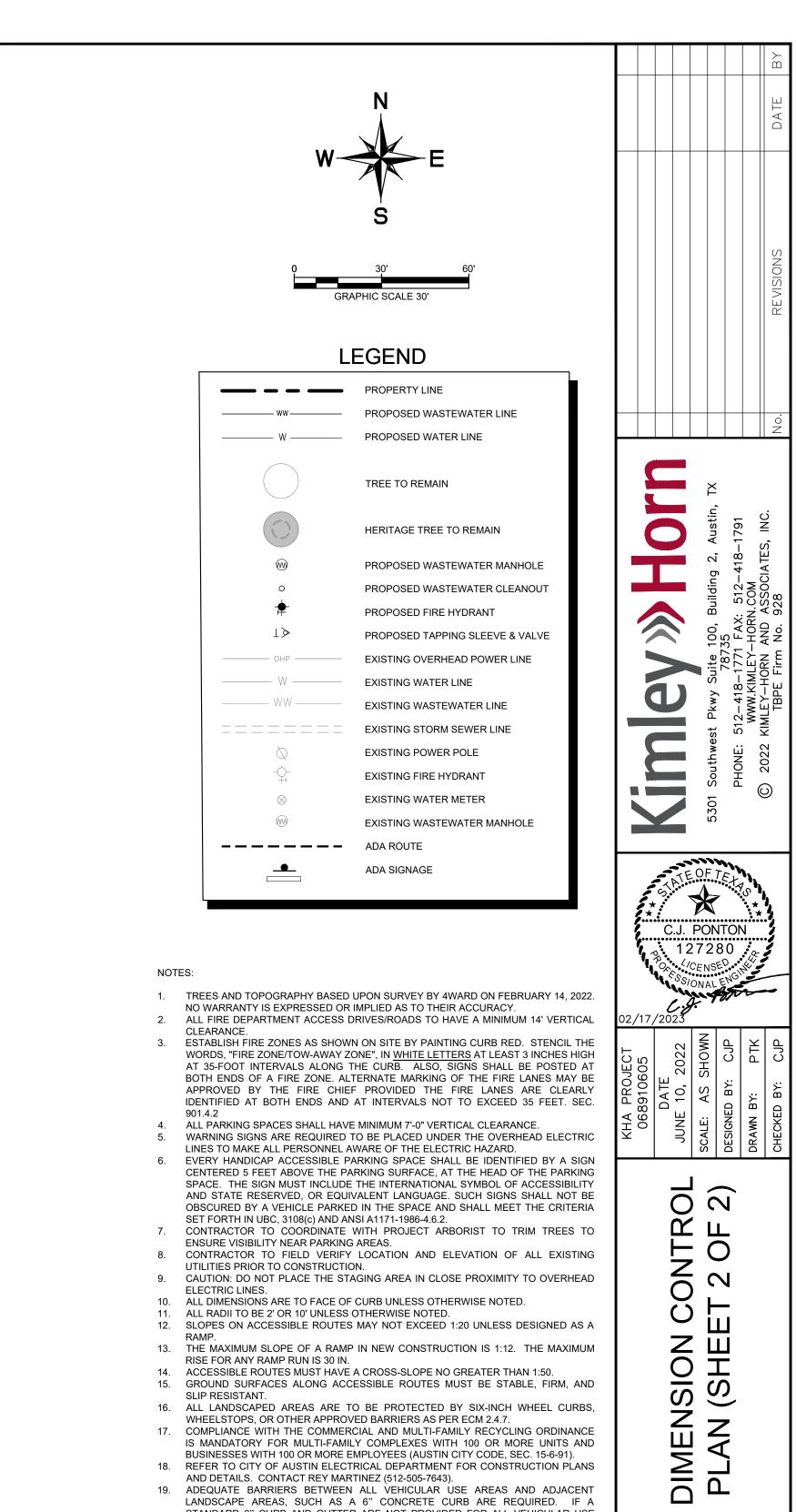












- AND DETAILS. CONTACT REY MARTINEZ (512-505-7643).
- 18. REFER TO CITY OF AUSTIN ELECTRICAL DEPARTMENT FOR CONSTRUCTION PLANS

- 19. ADEQUATE BARRIERS BETWEEN ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, SUCH AS A 6" CONCRETE CURB ARE REQUIRED. IF A
- STANDARD 6" CURB AND GUTTER ARE NOT PROVIDED FOR ALL VEHICULAR USE AREAS AND ADJACENT LANDSCAPE AREAS, COMPLY WITH ECM, SECTION 2.4.7,

- and addacent eandscape areas.
  "PROTECTION OF LANDSCAPE AREAS".
  RETAINING WALLS OVER FOUR FEET IN HEIGHT MEASURED FROM THE BOTTOM OF THE FOOTING TO THE TOP OF THE WALL SHALL BE ENGINEERED AND REQUIRE A

SEPARATE BUILDING PERMIT. [IBC CODE 105.2]

21. ALL FDC's TO BE TWO  $2\frac{1}{2}$ " SIAMESE CONNECTIONS.

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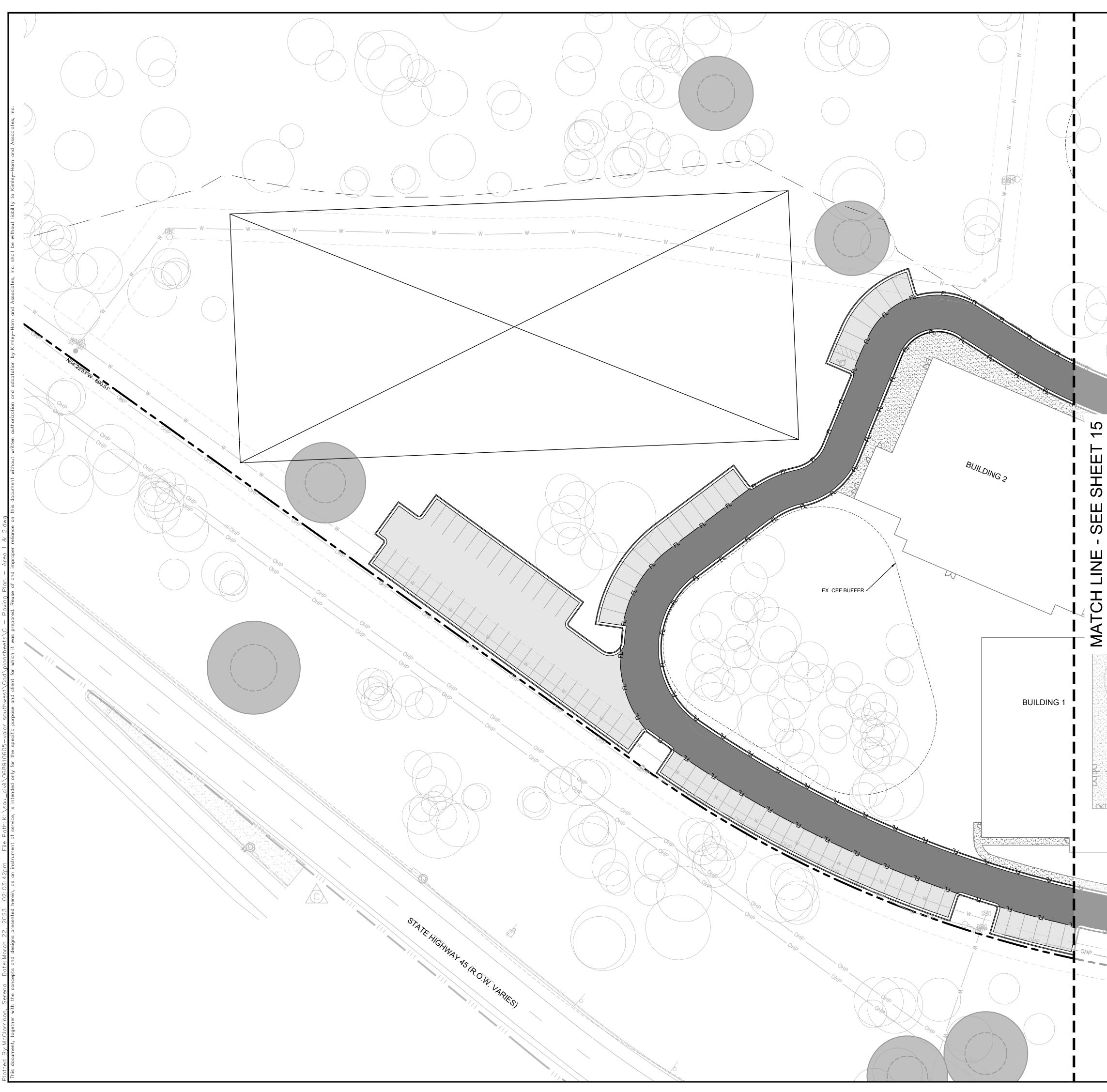
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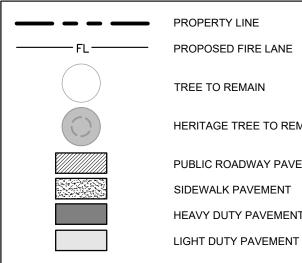
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		5301 Southwest Pkwy Suite 100, Building 2, Austin, TX	78735 PHONE: 512—418—1771 FAX: 512—418—1791	© 2000 KWW KIMLEY-HORN.COM	U ZUZZ KIMLET-HUKN ANU ASSUCIATES, INC. TBPE Firm No. 928	
02/17,	C.J. C.J. C.J. C.J. C.J. C.J. C.J. C.J. C.J. C.J. C.J. C.J. C.J. C.J. C.J.	PON PON 72 CENS		S * *	1 minutes	
KHA PROJECT 068910605	DATE JUNE 10, 2022	SCALE: AS SHOWN	DESIGNED BY: CJP	DRAWN BY: PTK	снескер ву: СЈР	
	PAVING PLAN					
	VALOR SOUTHWEST	11720 S MOPAC EXPY SB	CITY OF AUSTIN	TRAVIS COUNTY, TEXAS		
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# W GRAPHIC SCALE 3

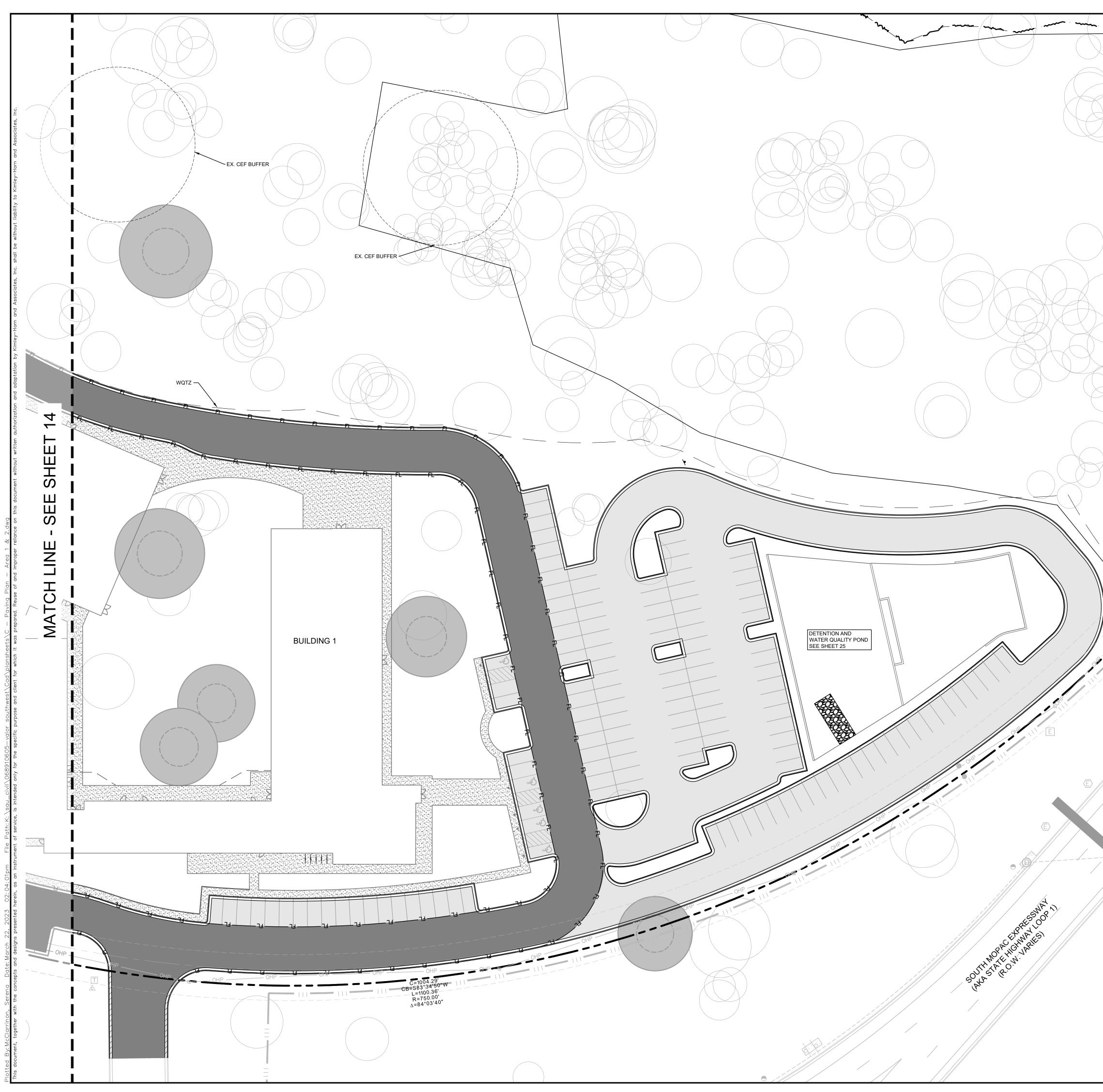
## LEGEND



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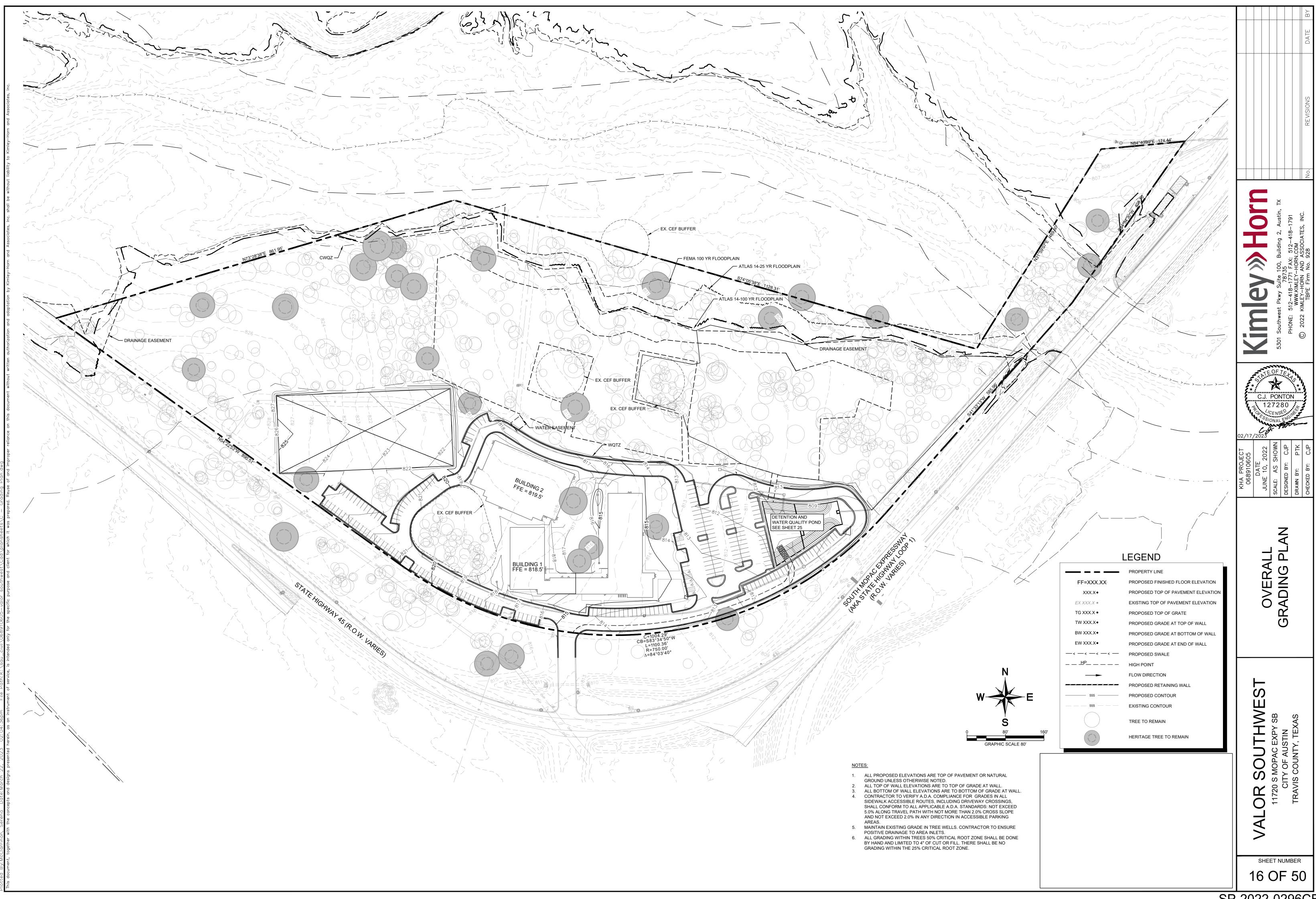
PUBLIC ROADWAY PAVEMENT SIDEWALK PAVEMENT

HEAVY DUTY PAVEMENT LIGHT DUTY PAVEMENT

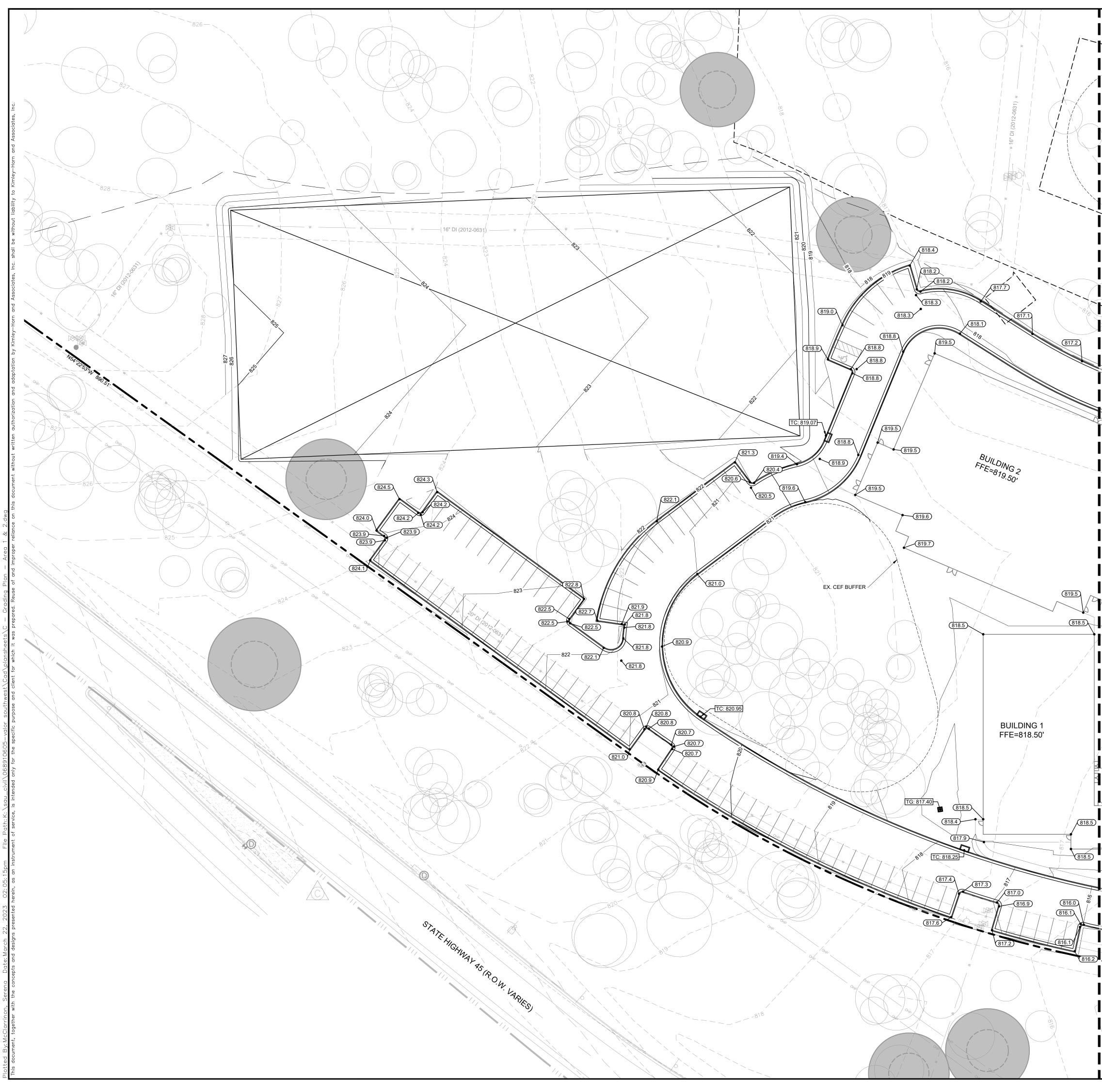


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<ul> <li>PROPERTY LINE</li> <li>PROPOSED FIRE LANE</li> <li>TREE TO REMAIN</li> <li>HERITAGE TREE TO REMAIN</li> <li>PUBLIC ROADWAY PAVEMENT</li> </ul>	μ μ μ μ μ μ μ μ μ
SIDEWALK PAVEMENT HEAVY DUTY PAVEMENT LIGHT DUTY PAVEMENT	<b>Kimley Morth Address Press Process Process Press Process Press Press Press Process Pr</b>
	KHA PROJECT KHA PROJECT 068910605 068910605 C.J. DATE JUNE 10, 2022 Scale: AS SHOWN DESIGNED BY: CJP DRAWN BY: PTK CHECKED BY: CJP
	PAVING PLAN (SHEET 2 OF 2)
	VALOR SOUTHWEST 11720 S MOPAC EXPY SB CITY OF AUSTIN TRAVIS COUNTY, TEXAS
	SHEET NUMBER 15 OF 50

SP-2022-0296CE

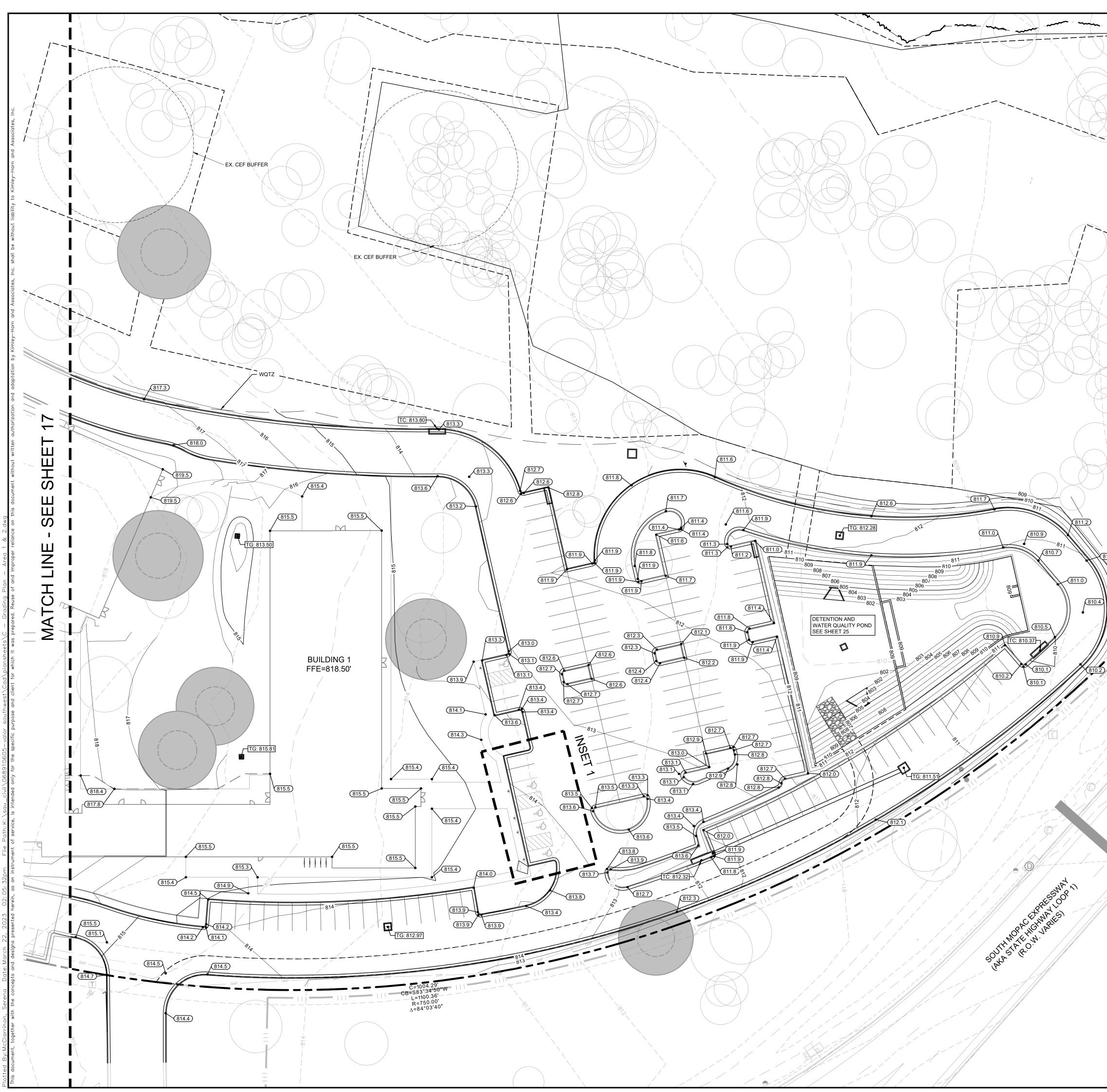


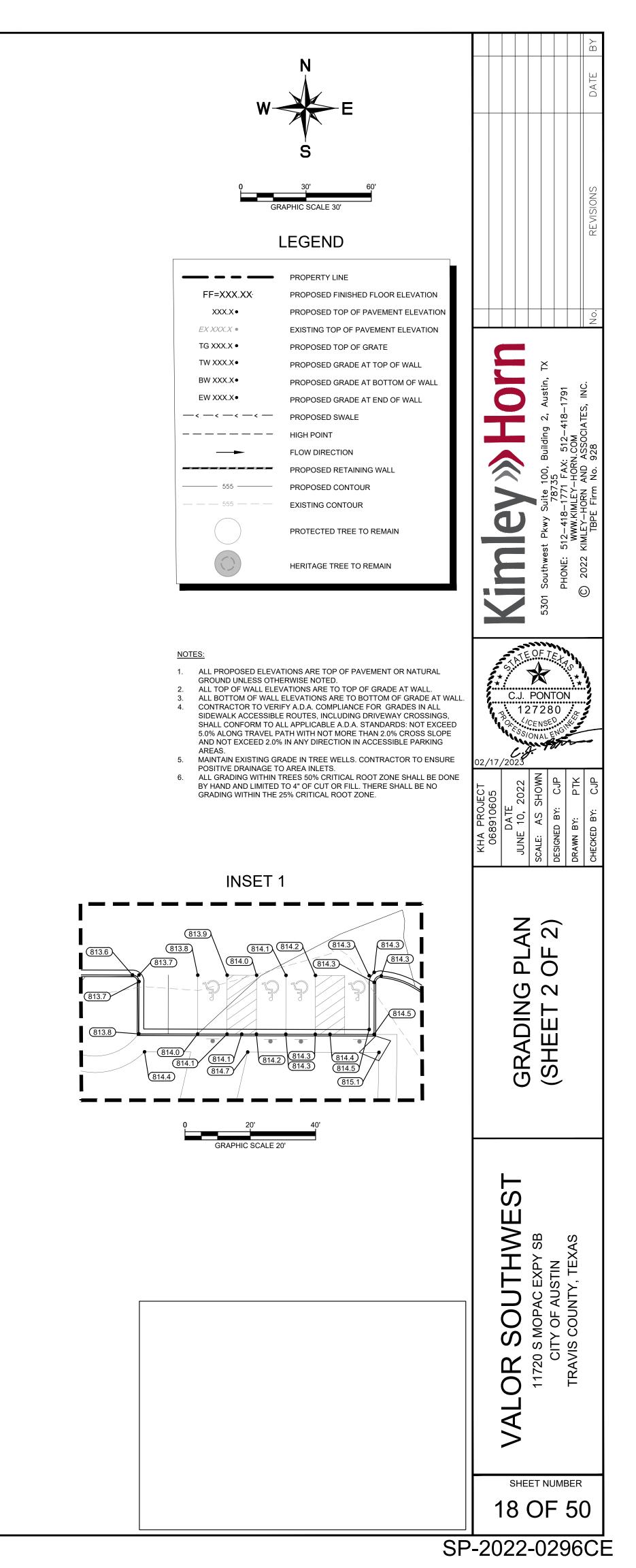
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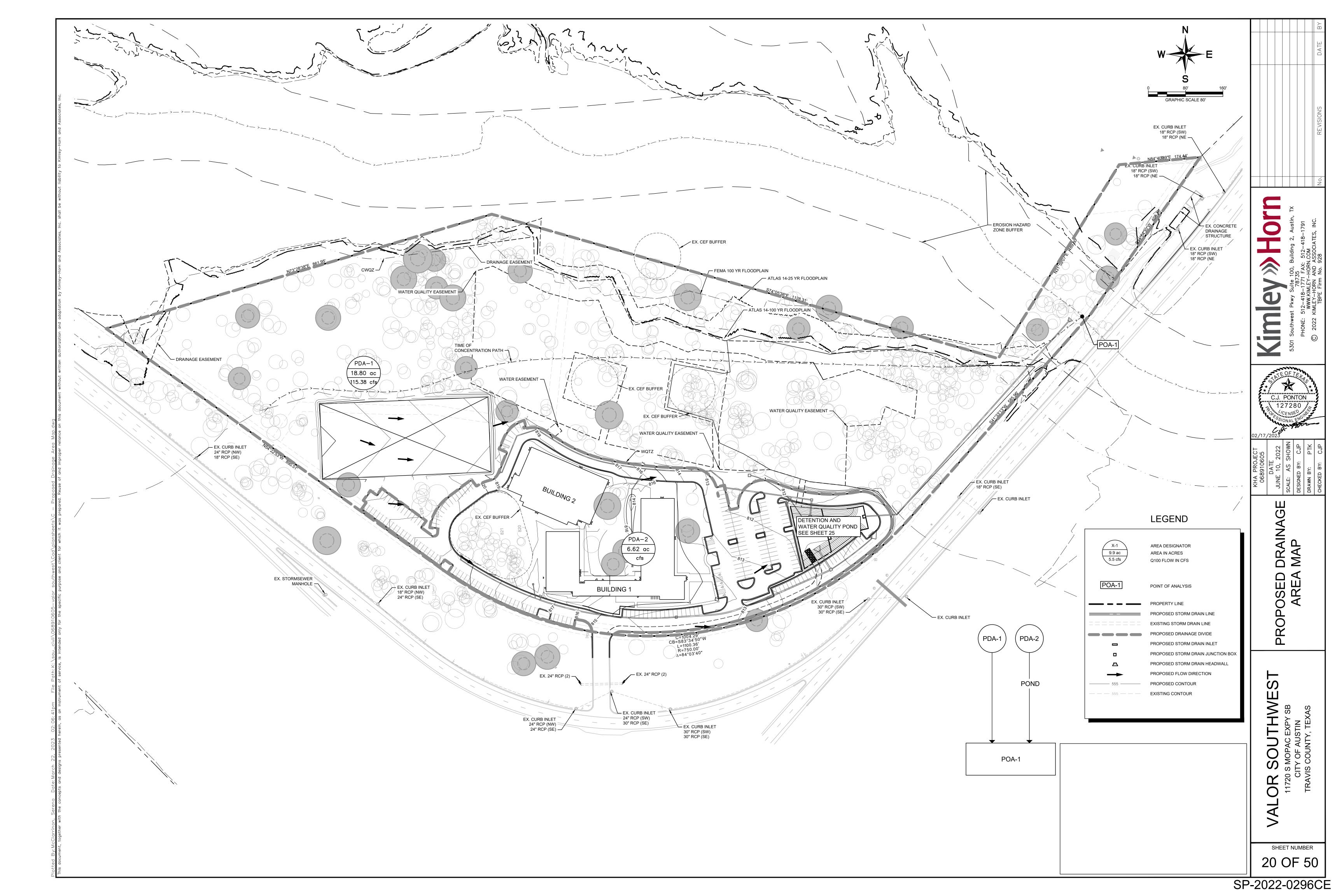
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PROPERTY LINEFF=XXX.XX:PROPOSED FINISHED FLOOR ELEVATIONXXX.X:PROPOSED TOP OF PAVEMENT ELEVATIONEX XXX.X:PROPOSED TOP OF PAVEMENT ELEVATIONTG XXX.X:PROPOSED TOP OF GRATETW XXX.X:PROPOSED GRADE AT TOP OF WALLBW XXX.X:PROPOSED GRADE AT BOTTOM OF WALLEW XXXX:PROPOSED GRADE AT END OF WALLEW XXXX:PROPOSED GRADE AT END OF WALLEW XXXX:PROPOSED SWALE	Finance       Finance       Finance       Finance         5301 Southwest Pkwy Suite 100, Building 2, Austin, TX       78735       Fustin, TX         5301 Southwest Pkwy Suite 100, Building 2, Austin, TX       78735       Fustin, TX         78735       PHONE: 512–418–1791       WWW.KIMLEY-HORN.COM         © 2022 KIMLEY-HORN AND ASSOCIATES, INC.       No. 928
<ol> <li>ALL PROPOSED ELEVATIONS ARE TOP OF PAVEMENT OR NATURAL GROUND UNLESS OTHERWISE NOTED.</li> <li>ALL TOP OF WALL ELEVATIONS ARE TO TOP OF GRADE AT WALL.</li> <li>ALL BOTTOM OF WALL ELEVATIONS ARE TO BOTTOM OF GRADE AT WALL.</li> <li>CONTRACTOR TO VERIFY A.D.A. COMPLIANCE FOR GRADES IN ALL SIDEWALK ACCESSIBLE ROUTES, INCLUDING DRIVEWAY CROSSINGS, SHALL CONFORM TO ALL APPLICABLE A.D.A. STANDARDS: NOT EXCEED 5.0% ALONG TRAVEL PATH WITH NOT MORE THAN 2.0% CROSS SLOPE AND NOT EXCEED 2.0% IN ANY DIRECTION IN ACCESSIBLE PARKING AREAS.</li> <li>MAINTAIN EXISTING GRADE IN TREE WELLS. CONTRACTOR TO ENSURE POSITIVE DRAINAGE TO AREA INLETS.</li> <li>ALL GRADING WITHIN TREES 50% CRITICAL ROOT ZONE SHALL BE DONE BY HAND AND LIMITED TO 4" OF CUT OR FILL. THERE SHALL BE NO GRADING WITHIN THE 25% CRITICAL ROOT ZONE.</li> </ol>	KHA PROJECT KHA PROJECT 068910605 C T EOL DATE JUNE 10, 2023 Scale: AS SHOWN PESIGNED BY: CJP DESIGNED BY: CJP DRAWN BY: PTK CHECKED BY: CJP
	GRADING PLAN (SHEET 1 OF 2)
	VALOR SOUTHWEST 11720 S MOPAC EXPY SB CITY OF AUSTIN TRAVIS COUNTY, TEXAS
	SHEET NUMBER 17 OF 50 P-2022-0296CE

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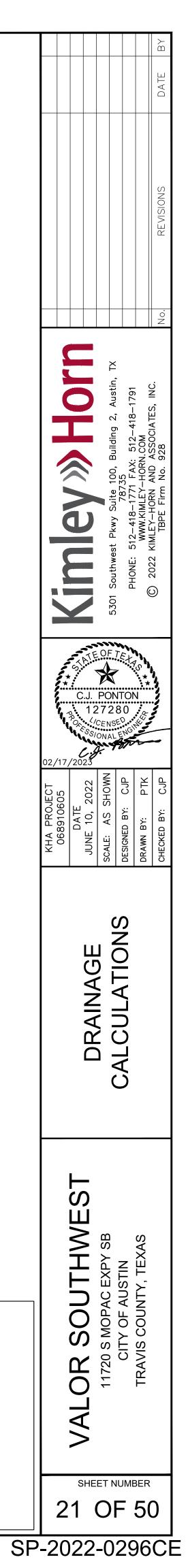


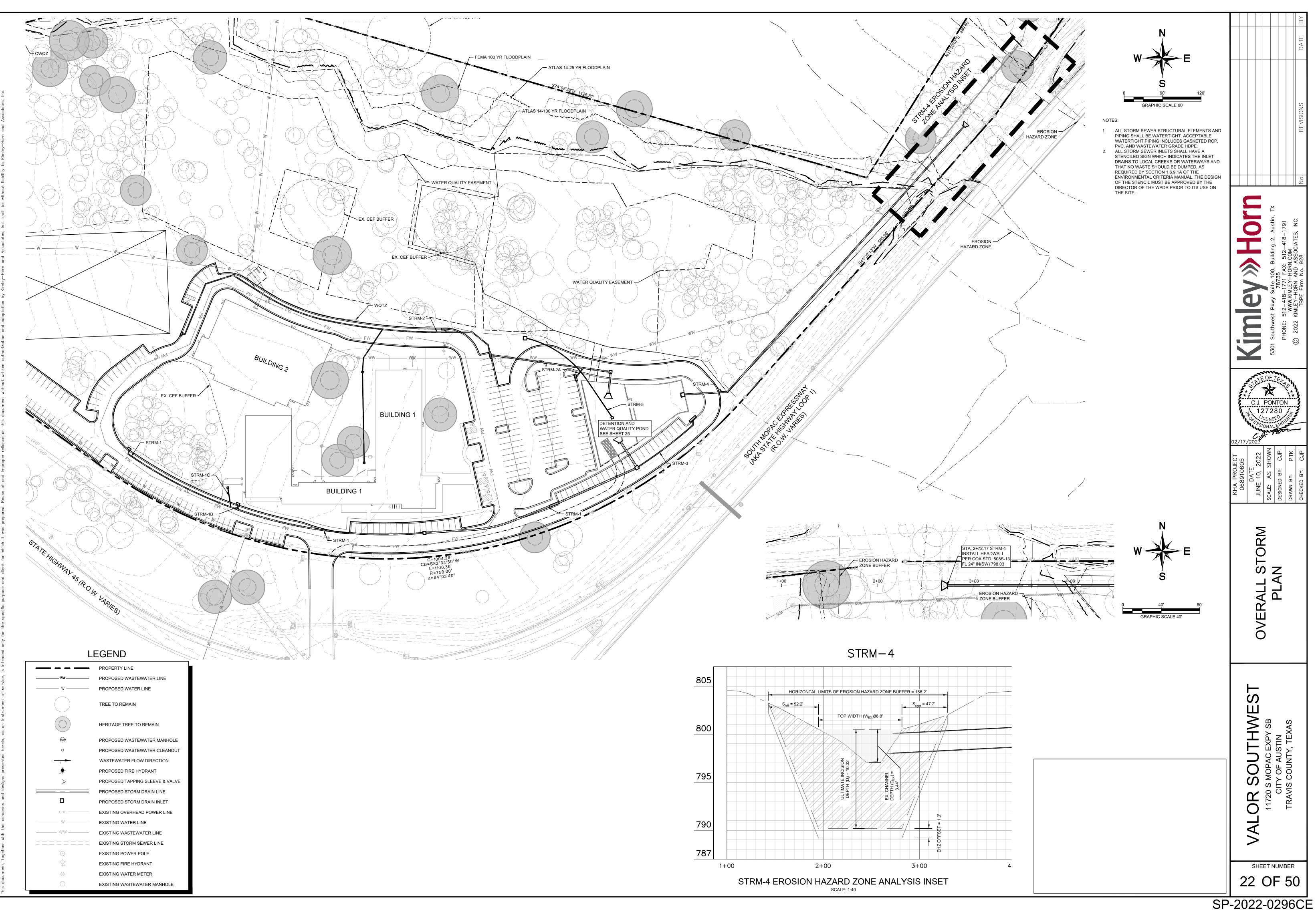


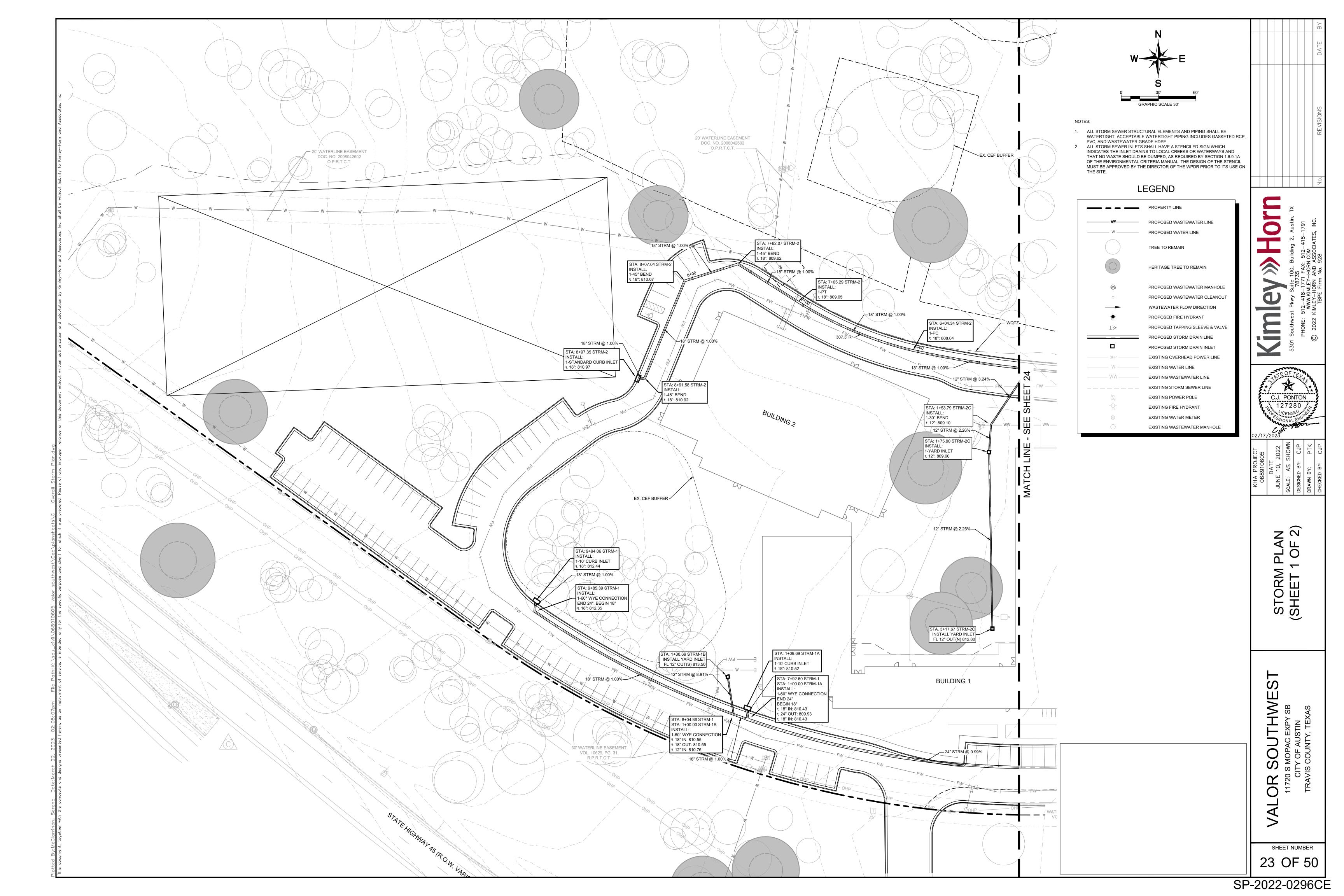


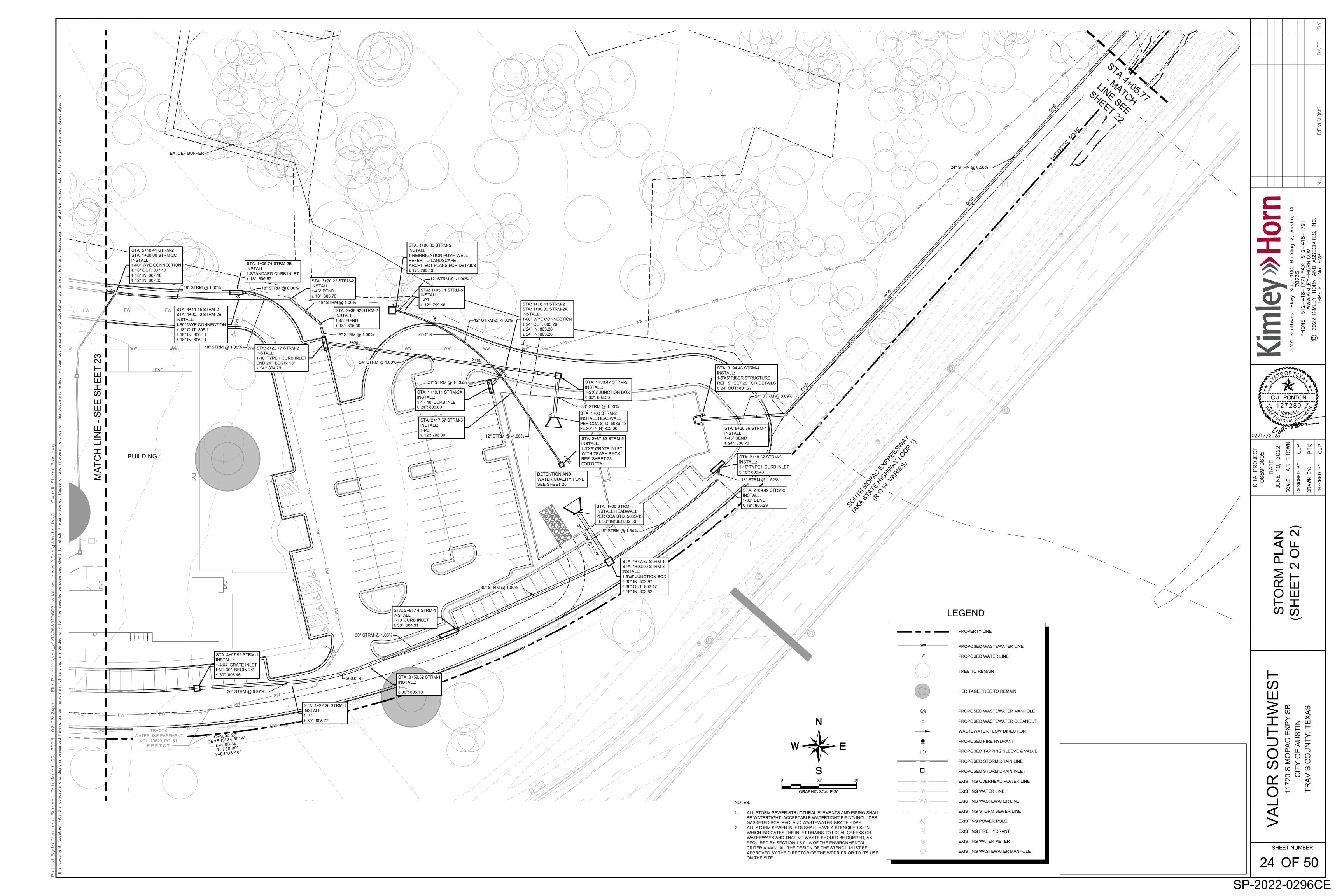
		AREA	AREA			ERVIOUS	PERVIOUS IN	MPERVIOUS	WEIGHTEI	D	SHE	ET FLOW				SHALLOW C	ONCENTRA	TED FLOW				Channe	l Flow		TOTAL Tc**				
DRAN		(sf)	(Ac.)	COV (Ac		OVER %	CURVE NO. Cn*	CURVE NO. Cn*	CURVE NO Cn*	D.	P-2yr24 N L (ft)	hr 4.14 S (ft/ft)		L (ft)	Grass Su V (fps)		(min) L	Paveo V (fps)	d Surface ) S	Tt(min) L (	(ft) V(fps	s) a (ft^2) Pw (ft)	r n	S (ft/ft) Tt(min)	(min)				
ED. PD		,107,295 818,928	25.42 18.80	0.0	0	0.00	80.00 80.00	98.00 98.00	80.00 80.00		.130 100 .150 100	0.007	11.69 13.11	1721	2.09	0.017 1	3.72 - 3.35 -	-		0.00 -				- 0.00 - 0.00	25.41 26.46				
PD		288,367	6.62	4.3		65.86	80.00	98.00	91.85		.150 75		10.41	-	-		). <b>00</b> 28		0.030			3.14 6.28		0.02 1.31	13.39				
								CITY OF	AUSTIN ATLAS	14-ZON	E 1 DESIGN RAII	NFALL TIME SEF	IES			-						Valor South	west						
Time (n			10-YR pth (in)	25-YR Depth (in)	100-YR Depth (in)	Time (mi	2-YR n) Depth (in) De		Periode Contraction Contraction	LOO-YR oth (in)	Time (min)	2-YR Depth (in) D	10-YR epth (in) D	25-YR Depth (in)	100-YR Depth (in)	Time (min)	2-YR Depth (in)	10-YR Depth (in)	25-YR Depth (in)	100-YR Depth (in)		Drainage Calculat				Time of			1
0 5		0.003	0 0.004	0.006	0 0 5 0.008	465 470	0.371	0.619 0.63	0.801	1.12		3.704 3.712	6.11 6.123	7.952 7.969	11.40 11.48	6 <b>1,395</b> 6 <b>1,400</b>	4.115 4.118			12.73 12.738		Existing Drainage Areas	Total Drainage Area (Acres)	Total Impervious Cover Area (acres)		Concentration (min)	Storm Event	Existing Runoff (cfs)	
10 15		0.005	0.009	0.01			0.384	0.642 0.654	0.831	1.16 1.19	8 <b>940</b>	3.72 3.727	6.136 6.149	7.986 8.003	11.51 11.53	1 <b>1,405</b>	4.121	6.809	8.86								2	48.99	1
20		0.011	0.018	0.023	3 0.031	485	0.398	0.666	0.863	1.21	4 950	3.734	6.161	8.02	11.50	6 <b>1,415</b>	4.126	6.818	8.872	12.762		EDA-1	25.42	0.00	0.00%	25.41	10 25	94.65 125.59	
25 30		0.014	0.022	0.028	4 0.046		0.405	0.678 0.691	0.879 0.896	1.23	3 960	3.741 3.748	6.173 6.186	8.036 8.052	11.584 11.608	8 <b>1,425</b>	4.129 4.132	6.827	8.883	12.769 12.777							100	175.86	]
35 40		0.019 0.022	0.031 0.036	0.04 0.04			0.42	0.703 0.716	0.913 0.93	1.28 1.31		3.755 3.762	6.198 6.209	8.068 8.083	11.63 11.65	1 1,430 4 1,435	4.135 4.137			12.785 12.792		Proposed	Total Drainage	Total Impervious		Time of Concentration	Storm Event	Developed Runoff	
45 50		0.025 0.028	0.04 0.045	0.052			0.435 0.443	0.73 0.743	0.947 0.965	1.33 1.36		3.769 3.775	6.221 6.232	8.099 8.114	11.67 11.69	7 <b>1,440</b> 9	4.14	6.84	l <u>8</u> .9	12.8		Drainage Areas	Area (Acres)	Cover Area (acres)	) (%)	(min)	2	(cfs) 35.29	after Detention (cfs)
55 60		0.03	0.05 0.054	0.06		520 525	0.451	0.757 0.771	0.983	1.39 1.41		3.782 3.788	6.243 6.254	8.128 8.143	11.72 11.74	1						PDA-1	18.80	0.00	0.00%	26.46	10	68.42	-
65 70		0.036	0.059	0.07		530 535	0.468	0.785	1.02 1.04	1.44 1.47		3.795 3.801	6.265 6.276	8.157 8.172	11.764	4											25 100	90.91 127.47	_
75		0.042	0.069	0.088	3 <u>0</u> .119	540	0.485	0.815	1.059	1.50	4 <b>1,005</b>	3.807	6.287	8.186	11.80	5						PDA-2	6.62	4.36	65.86%	13.39	2 10	24.46 39.44	14.46 34.52
85		0.048	0.078	0.094	0.136	550	0.506	0.853	1.115	1.54	4 <b>1,015</b>	3.813 3.819	6.297 6.307	8.199 8.213		6							0.02		00.007/	10.00	25 100	49.21 64.91	46.93 63.00
90 95		0.051 0.054	0.083 0.088	0.10	3 <u>0</u> .153	560	0.516	0.874 0.894	1.143 1.173	1.64 1.68	8 <b>1,025</b>	3.825 3.831	6.317 6.327	8.226 8.24		5										Runoff Difference		1	
100 105		0.057 0.06	0.093 0.098	0.119	5 0.17	570	0.539	0.915 0.937	1.203 1.233	1.73 1.78	6 <b>1,035</b>	3.836 3.842	6.337 6.347	8.253 8.265	11.92	3						Point of Analysis	Storm Event	Existing Runoff (cfs)	Developed Runoff (cfs)	at Point of Analysis (cfs)	ls Developed ≤ Existing?		
110 115		0.063 0.066	0.103 0.108	0.132			0.562	0.959 0.981	1.264 1.296	1.83 1.88		3.848 3.853	6.357 6.366	8.278 8.291	11.942 11.962	2 1							2	48.99	48.95	0.04	YES	1	
120 125		0.069	0.113 0.118	0.14 0.15			0.587	1.005 1.028	1.329 1.363	1.94 1.99		3.859 3.864	6.376 6.385	8.303 8.315	11.979 11.997	9 7						POA-1	10 25	94.65 125.59	91.41 113.89	3.24 11.70	YES YES		
130 135		0.075	0.123 0.128	0.15			0.613	1.053 1.078	1.398 1.434	2.05 2.1		3.869 3.875	6.394 6.403	8.328 8.34	12.01 12.03	5						Note: All detention	100 runoff calculations	175.86 were analyzed using	150.46 g the Soil Conservat	25.40 ion Services Method	YES as documented	1	
140	).	0.081	0.134 0.139	0.17	0.232	605	0.641	1.104 1.131	1.47 1.508	2.16	9 <b>1,070</b>	3.88 3.885	6.412 6.421	8.351 8.363	12.05	5													
150		0.088	0.144	0.18	4 0.251	615	0.67	1.159	1.547	2.29	2 <b>1,080</b>	3.89	6.43 6.437	8.375 8.385	12.08	5													
160		0.094	0.155	0.198	3 0.269	625	0.702	1.188	1.63	2.42	4 1,090	3.899	6.445	8.394	12.112	2						DRAINAGE CALC	CULATION NOTE	S					
165 170		0.098 0.101	0.16 0.166	0.209	2 0.288	635	0.719	1.249 1.288	1.674 1.729	2.49 2.58	7 <b>1,100</b>	3.904 3.908	6.453 6.46	8.404 8.413	12.12	8						INCREMENTS) F	ROM APPENDIX	RATION FREQUEN	F AUSTIN'S DRAIN	IAGE CRITERIA			
175 180		0.104 0.108	0.171 0.177	0.219		NO ADDA	0.762	1.328 1.37	1.786 1.846	2.684 2.784		3.913 3.917	6.467 6.475	8.423 8.432	12.15 12.163	5								LATE EXISTING AN 25 AND 100 YR RE		ORMWATER			
185 190		0.111 0.115	0.182 0.188	0.23		650 655	0.808 0.833	1.414 1.46	1.909 1.974	2.889 2.998		3.922 3.926	6.482 6.489	8.441 8.45	12.170 12.188	6 8													
195 200		0.118 0.121	0.193 0.199	0.24			0.859	1.508 1.566	2.043 2.124	3.11 3.24		3.93 3.934	6.496 6.503	8.459 8.468	12.20 12.21	1 3													
205 210		0.125 0.128	0.205	0.26			0.924	1.627 1.692	2.209	3.37 3.51		3.939 3.943	6.51 6.517	8.477 8.486	12.22	5													
215	in l	0.132	0.216	0.27	7 0.376	680	0.999	1.762	2.397	3.67 3.83	1 <b>1,145</b>	3.947 3.951	6.523 6.53	8.495 8.503	12.249	-													
225	in .	0.139	0.228	0.29	0.397	690	1.088	1.922	2.616	4.00	9 <b>1,155</b>	3.955	6.537	8.512	12.272	-													
230 235		0.143	0.234			700	1.154 1.229	2.024	2.882	4.17	8 <b>1,165</b>	3.959 3.963	6.543 6.55	8.52 8.528		5													
240 245		0.15 0.154	0.246 0.252	0.31	0.439	710	1.316 1.453	2.274 2.485	3.046 3.305	4.57 4.91	3 <b>1,175</b>	3.967 3.971	6.556 6.563	8.537 8.545	12.31	7													
250 255		0.158 0.161	0.258 0.265	0.33			1.638 2.038	2.768 3.372	3.651 4.391	5.363 6.323		3.975 3.979	6.569 6.575	8.553 8.561															
260 265		0.165 0.169	0.271 0.277	0.34			2.481 2.677	4.04 4.339	5.21 5.575	7.38 <sup>-</sup> 7.8		3.982 3.986	6.581 6.588	8.569 8.577	12.3														
270 275		0.173 0.177	0.284 0.29	0.36			2.817	4.555 4.691	5.839 6.006	8.20 8.42		3.99 3.994	6.594 6.6	8.585 8.593		-													
280 285		0.181 0.185	0.297 0.303	0.38 0.38			2.981 3.048	4.808 4.912	6.149 6.276	8.61 8.77		3.997 4.001	6.606 6.612	8.6 8.608															
290 295	)	0.189 0.193	0.31 0.316	0.39	0.54	755	3.095 3.138	4.996 5.072	6.391 6.496	8.95 9.11	6 <b>1,220</b>	4.004 4.008	6.618 6.624	8.616 8.623	12.413	3													
300	)	0.197	0.323	0.414	4 0.563	765	3.177	5.143	6.685	9.27	2 <b>1,230</b>	4.012	6.629 6.635	8.63 8.638	12.434	4													
310	)	0.206	0.337	0.43	0.587	775	3.214 3.247 2.279	5.27	6.771	9.41	2 <b>1,240</b>	4.019	6.641	8.645	12.454	4													
315 320		0.21	0.344	0.44	0.612	785	3.279 3.306	5.328 5.377	6.853 6.922	9.68 9.79	6 <b>1,250</b>	4.022	6.647 6.652	8.652 8.66	12.474	4													
325 330		0.218 0.223	0.358 0.365	0.458	3 0.637	795	3.331 3.354	5.423 5.468	6.987 7.05	9.90 10.0	1 <b>1,260</b>	4.029 4.032	6.658 6.663	8.667 8.674	12.493	3													
335 340		0.227 0.232	0.372 0.38	0.47			3.377 3.399	5.51 5.55	7.11 7.168	10.11 10.20		4.036 4.039	6.669 6.674	8.681 8.688															
345 350		0.236 0.241	0.387 0.395	0.49			3.419 3.436	5.589 5.62	7.223 7.267	10.30 10.37		4.042 4.046	6.68 6.685	8.695 8.702															
355 360	in .	0.245	0.402 0.41	0.51	5 <u>0.701</u>	820	3.453 3.469	5.65 5.679	7.309 7.35	10.4 10.50	4 <b>1,285</b>	4.049 4.052	6.691 6.696	8.709 8.716	12.54	4													
365	in .	0.255	0.419	0.53	5 0.732	830	3.484	5.707	7.389	10.56	7 <b>1,295</b>	4.055	6.701 6.706	8.722	12.55	9													
375	in .	0.265	0.436	0.56	6 <b>0.767</b>	840	3.513	5.76	7.464	10.68	7 <b>1,305</b>	4.062	6.712	8.736	12.57	7													
380		0.271	0.446		4 0.802	850	3.526	5.785	7.535	10.74	1 1,315	4.065	6.717 6.722	8.742 8.749	12.59	5													
390 395		0.281	0.464	0.59	0.839	860	3.552	5.834 5.857	7.569 7.602	10.85	9 <b>1,325</b>	4.071 4.074	6.727 6.732	8.755 8.762	12.613	3													
400 405		0.292 0.298	0.483 0.492	0.62 0.63	1 <u>0.876</u>	870	3.577 3.589	5.88 5.902	7.634 7.665	10.96 11.01	1 1,335	4.077 4.08	6.737 6.742	8.768 8.775	12.63	3													
410 415		0.303 0.309	0.502 0.512	0.64			3.601 3.612	5.924 5.945	7.696 7.726	11.06 11.1		4.083 4.086	6.747 6.752	8.781 8.787		-													
420 425		0.315	0.522	0.673	3 0.934	885	3.623 3.634	5.965 5.985	7.755 7.784	11.15 11.20	7 <b>1,350</b>	4.089 4.092	6.757 6.762	8.794 8.8	12.650	6													
430		0.327	0.542		7 0.974	895	3.644	6.005 6.024	7.812	11.24	9 <b>1,360</b>	4.095	6.767 6.771	8.806 8.812	12.673	3													
440		0.339	0.563	0.728	3 1.015	905	3.663	6.039	7.859	11.32	3 <b>1,370</b>	4.101	6.776	8.818	12.689	9													
445	)	0.345	0.574	0.742	5 1.057	915	3.672 3.68	6.054 6.068	7.878	11.35 11.3	8 <b>1,380</b>	4.104 4.107	6.781 6.786	8.824 8.83	12.70	6													
455 460		0.358 0.364	0.596 0.607	0.77:		920 925	3.688 3.696	6.082 6.096	7.916 7.934	11.40 11.43	-	4.11 4.113	6.79 6.795	8.836 8.842		-													

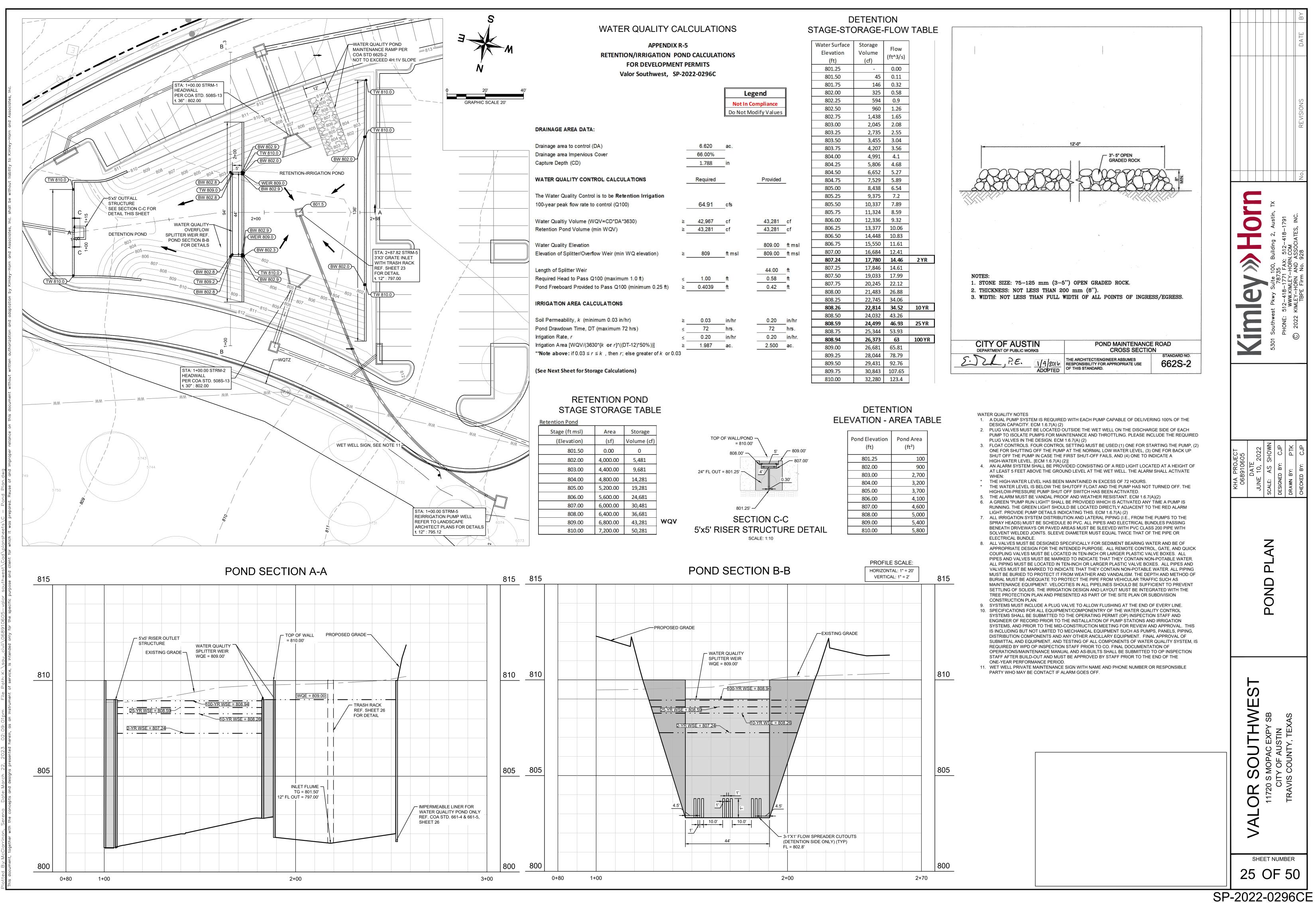
Valor Southwest











Stage (ft msl)	Area	Storage	
(Elevation)	(sf)	Volume (cf)	
801.50	0.00	0	8
802.00	4,000.00	5,481	
803.00	4,400.00	9,681	
804.00	4,800.00	14,281	
805.00	5,200.00	19,281	
806.00	5,600.00	24,681	
807.00	6,000.00	30,481	
808.00	6,400.00	36,681	
809.00	6,800.00	43,281	۱
810.00	7,200.00	50,281	

Pond Elevation (ft)	Pono (1
801.25	
802.00	
803.00	
804.00	
805.00	
806.00	
807.00	
808.00	
809.00	
810.00	

MAJOR MAINTENANCE REQUIREMENTS

1. THE FOLLOWING MAINTENANCE ACTIVITIES SHALL BE PERFORMED ON ALL SCMS, IN ADDITION TO THE REQUIREMENTS LISTED FOR THE INDIVIDUAL SCM TYPES, TO ENSURE PROPER FUNCTION:

A) ACCUMULATED PAPER, TRASH AND DEBRIS SHALL BE REMOVED EVERY SIX (6) MONTHS OR AS NECESSARY TO MAINTAIN PROPER OPERATION.

B) STRUCTURAL INTEGRITY SHALL BE MAINTAINED AT ALL TIMES. BASINS AND ALL APPURTENANCES SHALL BE INSPECTED ANNUALLY, OR MORE FREQUENTLY IF SPECIFIED, AND REPAIRS SHALL BE MADE IF NECESSARY. WHEN MAINTENANCE OR REPAIRS ARE PERFORMED, THE SCM SHALL BE RESTORED TO THE ORIGINAL LINES AND GRADES.

C) CORRECTIVE MAINTENANCE SHALL OCCUR: I. ANY TIME DRAWDOWN OF THE WATER QUALITY VOLUME DOES NOT OCCUR WITHIN NINETY-SIX (96) HOURS (I.E., NO STANDING WATER IS ALLOWED), UNLESS A GREATER MAXIMUM DRAWDOWN TIME IS SPECIFIED IN THE PLANS. II. FOR DETENTION PONDS ONLY, ANY TIME DRAWDOWN DOES NOT OCCUR WITHIN TWENTY-FOUR (24) HOURS.

D) THE INLET AND OUTLET OF SCMS SHALL BE MAINTAINED UNIMPEDED IN ORDER TO CONVEY FLOW AT ALL TIMES. OBSERVED BLOCKAGES TO THE INLET AND OUTLET, DUE TO VEGETATION, SEDIMENT, DEBRIS, OR ANY OTHER CAUSE, SHALL BE REMOVED.

E) NO UNVEGETATED AREA SHALL EXCEED TEN (10) SQUARE FEET. THIS PERFORMANCE REQUIREMENT APPLIES TO THE ENTIRE POND INCLUDING THE POND BOTTOM, SIDE SLOPES, AND AREAS ADJACENT TO THE POND, AND IS INTENDED TO LIMIT EROSION .

F) INTEGRATED PEST MANAGEMENT SHALL BE PERFORMED AND SHALL ADHERE TO SECTION 1.6.2.F, INTEGRATED PEST MANAGEMENT GUIDELINES.

G) THE MINIMUM VEGETATION HEIGHT SHALL BE FOUR (4) INCHES IN THE SCM AND ALL APPURTENANCES, INCLUDING THE TOE OF THE BERM OR WALL OUTSIDE THE SCM, WHERE APPLICABLE.

- H) SEDIMENT BUILD-UP SHALL BE REMOVED:
   I. WHEN THE ACCUMULATION EXCEEDS SIX (6) INCHES IN SPLITTER BOXES, WET WELLS AND BASINS.
- II. WHEN SEDIMENT TRAPS ARE FULL.
   III. WHEN SEDIMENT, OF ANY AMOUNT, CAUSES STANDING WATER CONDITIONS OR REDUCES BASIN STORAGE BY MORE THAN 10%.

I) WHEN SEDIMENT IS REMOVED, THE FOLLOWING REQUIREMENTS APPLY:

- I. IRRIGATION SHALL BE PROVIDED, AS NEEDED, UNTIL VEGETATION IS ESTABLISHED (WELL ROOTED). SEE SECTION 1.6.3.D, IRRIGATION GUIDELINES.
- II. THE DESIGN DEPTH OF THE FILTRATION MEDIA SHALL BE VERIFIED. SEE
- SECTION 1.6.3.B.5. III. TILLING OF THE FILTRATION MEDIUM IS NOT ALLOWED.

RETENTION-IRRIGATION SYSTEMS (SECTION 1.6.7.A).

A) BASINS. STRUCTURAL INTEGRITY OF BASINS SHALL BE MAINTAINED AT ALL TIMES. WOODY VEGETATION SHOULD BE CONTROLLED/REMOVED TO PREVENT BASIN LEAKAGE. THE ABILITY OF THE BASIN TO RETAIN THE WATER QUALITY VOLUME SHALL BE EVALUATED BY THE COA.

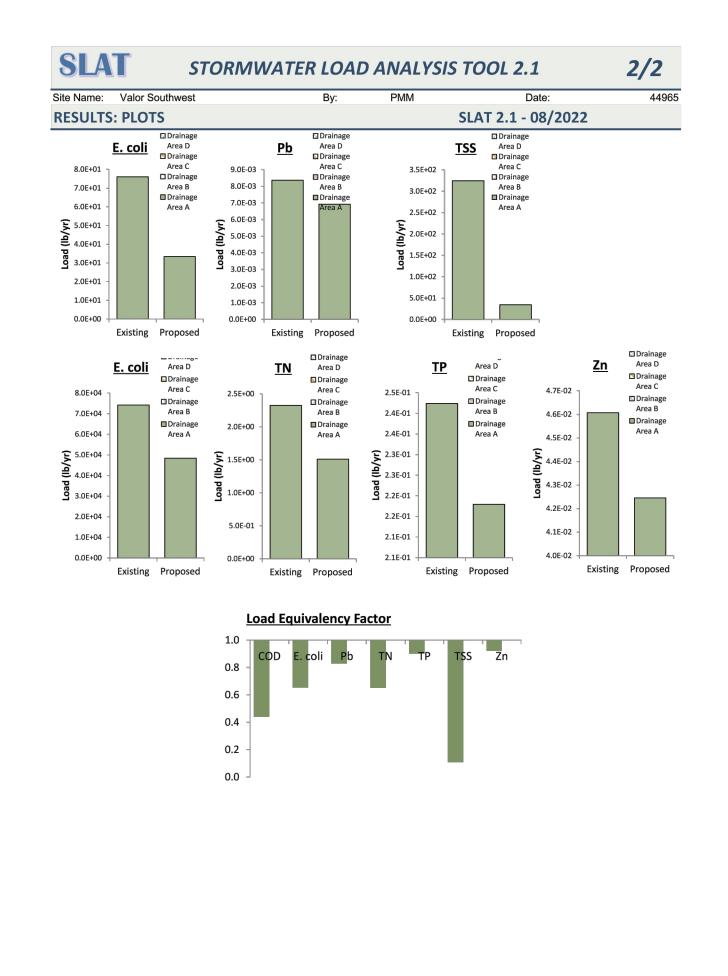
B) IRRIGATION AREAS. TO THE GREATEST EXTENT PRACTICABLE, IRRIGATION AREAS ARE TO REMAIN IN THEIR NATURAL STATE. HOWEVER, VEGETATION MUST BE MAINTAINED IN THE IRRIGATION AREA SUCH THAT IT DOES NOT IMPEDE THE SPRAY OF WATER FROM THE IRRIGATION HEADS. TREE AND SHRUB TRIMMINGS AND OTHER LARGE DEBRIS MUST BE REMOVED FROM THE IRRIGATION AREA. SEE REQUIREMENTS IN SECTION 1.6.7.A.3.(G) AND (H) REGARDING REQUIREMENTS FOR SOIL AND VEGETATION IN IRRIGATION AREAS.

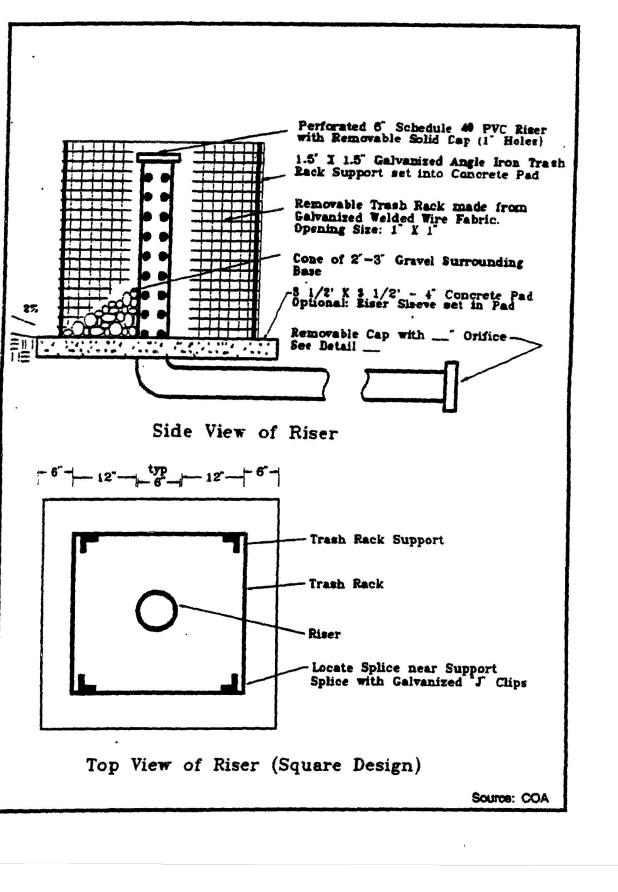
C) PUMPS AND IRRIGATION SYSTEM. THE PUMPS AND IRRIGATION SYSTEM MUST BE INSPECTED OR TESTED A MINIMUM OF SIX (6) TIMES PER YEAR TO SHOW ALL COMPONENTS ARE OPERATING AS INTENDED. TWO (2) OF THESE SIX (6) INSPECTIONS SHOULD BE AFTER RAIN EVENTS TO ENSURE THAT THE IRRIGATION SYSTEM AND ALL OF ITS COMPONENTS PERFORM AS DESIGNED. THIS INCLUDES CONTROLS SUCH AS WEATHER STATIONS OR RAIN SENSORS, DELAYS, VALVES, ALARM SYSTEM, DISTRIBUTION LINES, OR OTHER COMPONENTS AS SPECIFIED IN THE SYSTEM DESIGN. SPRINKLER HEADS MUST BE CHECKED TO DETERMINE IF ANY ARE BROKEN, CLOGGED, OR NOT SPRAYING PROPERLY. ALL INSPECTION AND TESTING REPORTS MUST BE KEPT ON SITE AND ACCESSIBLE TO THE CITY OF AUSTIN.

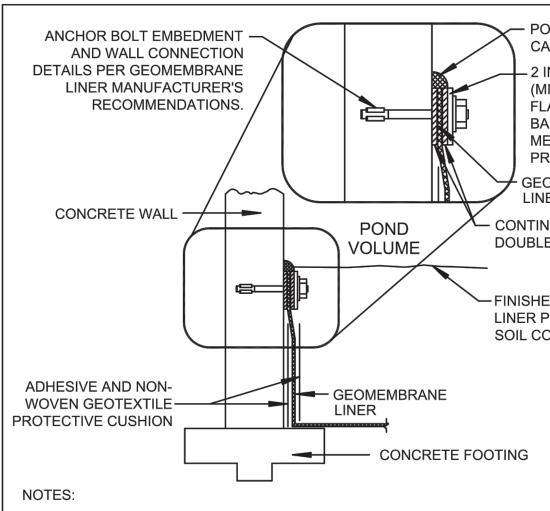
D) THE OVERALL SYSTEM SHALL BE INSPECTED FOR THE ABILITY TO RETAIN THE WATER QUALITY VOLUME ON SITE PER ECM SECTION 1.6.7.A.

Site Name:	Valor Southwe	est		By:	PMM		Date:	4496	5
RESULTS: (	COMPLIANCE	TABLE					SLAT 2.1	- 08/2022	
POLL	UTANT	C	DEVELOPED	LOAD, WIT	H CONTROL		EXISTING	LOAD EQUIV.	COMPLIES?
FOLLOTANT		Drainage Area A	Drainage Area B	Drainage Area C	Drainage Area D	TOTAL LOAD,	LOAD	FACTOR, LEF	
COD	lbs/yr	3.34E+01	0.00E+00	0.00E+00	0.00E+00	3.34E+01	7.60E+01	0.44	YES
E. coli	10^6 MPN/y	4.84E+04	0.00E+00	0.00E+00	0.00E+00	4.84E+04	7.42E+04	0.65	YES
Pb	lbs/yr	6.93E-03	0.00E+00	0.00E+00	0.00E+00	6.93E-03	8.37E-03	0.83	YES
TN	lbs/yr	1.51E+00	0.00E+00	0.00E+00	0.00E+00	1.51E+00	2.33E+00	0.65	YES
ТР	lbs/yr	2.18E-01	0.00E+00	0.00E+00	0.00E+00	2.18E-01	2.42E-01	0.90	YES
TSS	lbs/yr	3.45E+01	0.00E+00	0.00E+00	0.00E+00	3.45E+01	3.25E+02	0.11	YES
Zn	lbs/yr	4.25E-02	0.00E+00	0.00E+00	0.00E+00	4.25E-02	4.61E-02	0.92	YES
approval b	t to review and by COA Develop- ces Department.		ECK PASSED				hange nputs	Jump	Results to Loads ved Table

Site Location	Within Barton	Springs Zone	- Compare to E	xisting Loads	
	Drainage Area A	Drainage Area B	Drainage Area C	Drainage Area D	TOTALS
Drainage Area, An (Ac)	6.62	N/A	N/A	N/A	6.62
Developed IC, IC <sub>D</sub> (%)	66.0	N/A	N/A	N/A	66%
SCM 1	Retention Basin	N/A	N/A	N/A	-
Water Qual. Vol, WQV (in)	1.80	N/A	N/A	N/A	-
Actual Volume (ft3)	43281	N/A	N/A	N/A	43281
Drawdown Time, DDT (hrs)	60	N/A	N/A	N/A	-
Flowrate (gpm)	89.93	N/A	N/A	N/A	-
SCM 2	Infiltration Field	N/A	N/A	N/A	-
Infiltration Rate (in/hr)	0.20	N/A	N/A	N/A	-
Appx. Min. Infilt. Field Area (Ac)	2.13	N/A	N/A	N/A	2.13
Irrigation Rate (gpm)	96.3	N/A	N/A	N/A	-
Error with Input Values?	NO	NO	NO	NO	

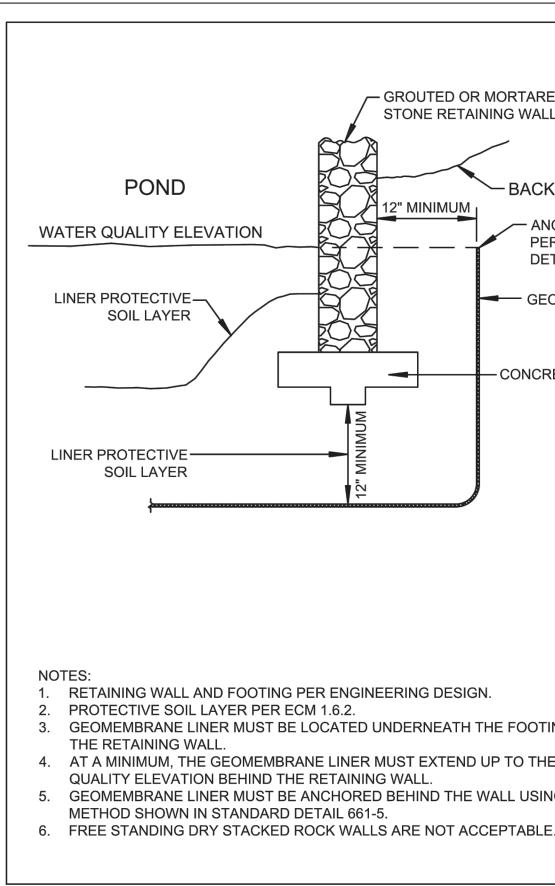






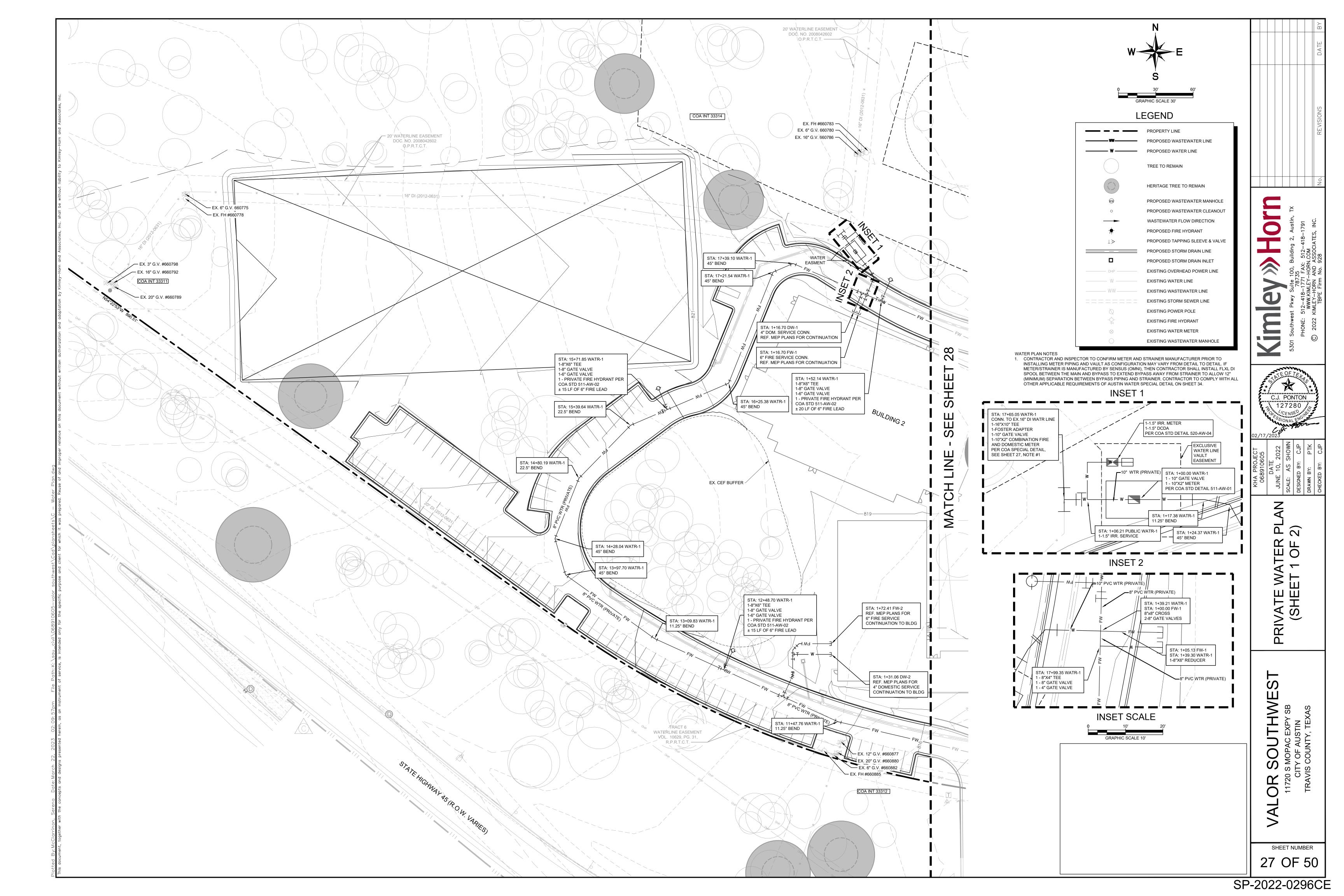
- 1. THIS SPECIFICATION IS FOR SUBMERGED GEOMEMBRANE LINER TERM CONCRETE WALLS ONLY.
- 2. ALL TERMINATION BATTENS AND FASTENERS MUST BE STAINLESS STE TERMINATION BAR MUST HAVE A MINIMUM THICKNESS OF 1/4" (ONE QU MINIMUM WIDTH OF 2" (TWO INCHES). EXTRUDED METAL BARS ARE PR
- 3. GEOMEMBRANE LINERS MUST MEET THE MINIMUM GUIDELINES OF EC INSTALLED PER THOSE GUIDELINES UNDER THE SUPERVISION OF A LI-GEOTECHNICAL ENGINEER.
- 4. ALL GASKETS, SEALANTS, CONCRETE WALL PREPARATION, AND ANCH INSTALLED PER SPECIFICATIONS BY A CERTIFIED TECHNICIAN FOR TH MANUFACTURER.
- CONCRETE RETAINING WALLS MUST BE WATER-TIGHT AND PROVIDE V STANDARD SPECIFICATION 414S.
- 8. DEVIATIONS FROM THIS DETAIL MAY BE PERMITTED PER MANUFACTU APPROVED BY THE CITY INSPECTOR AND A LICENSED GEOTECHNICAL

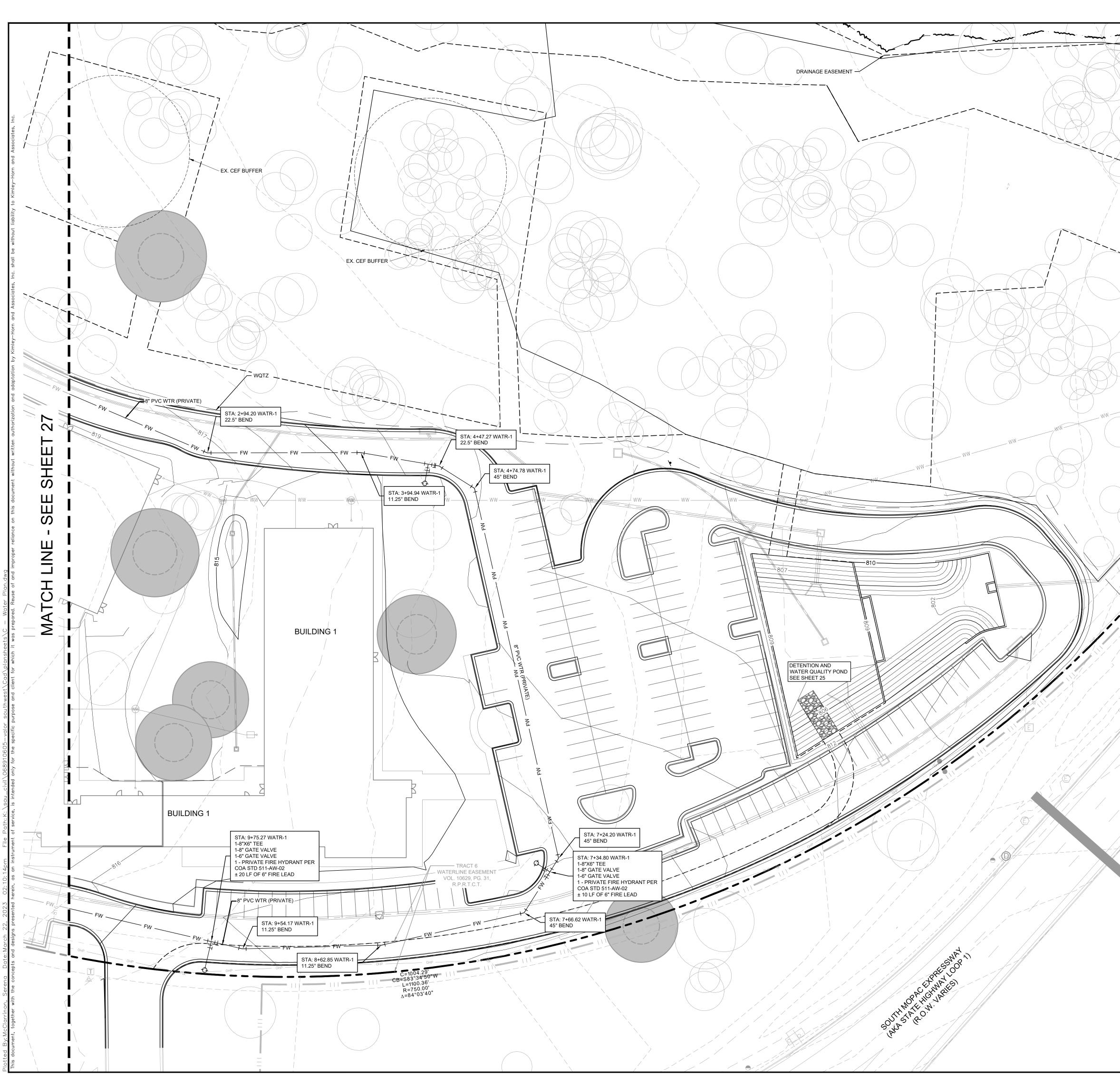
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lack_	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE				
	OF THIS STANDARD.				



CITY OF AUSTIN WATERSHED PROTECTION DEPART	GROUTED OR MORTARED ST WALL GEOMEMBRAN			
Lack_	12/27/22	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE		
	OF THIS STANDARD.			

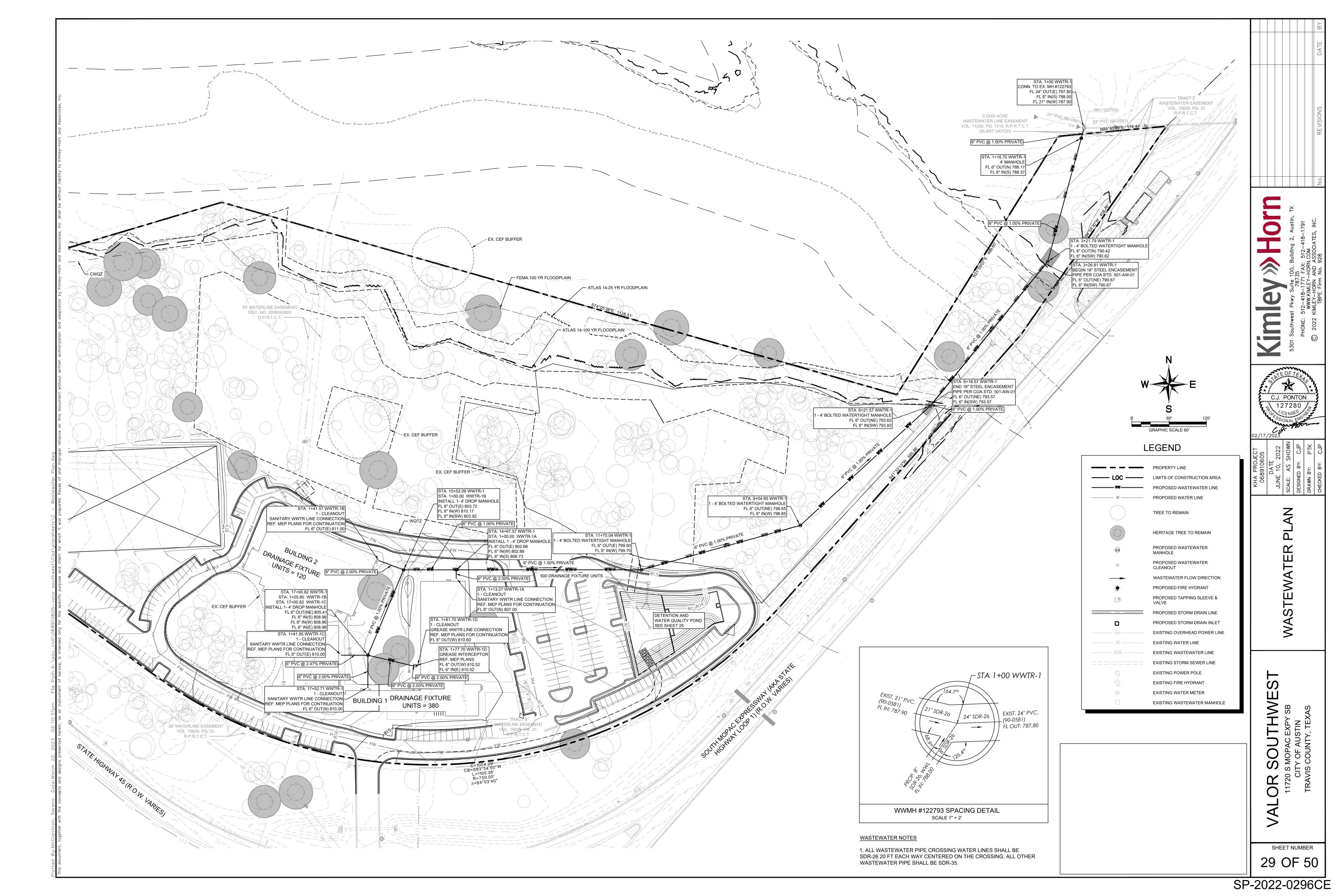
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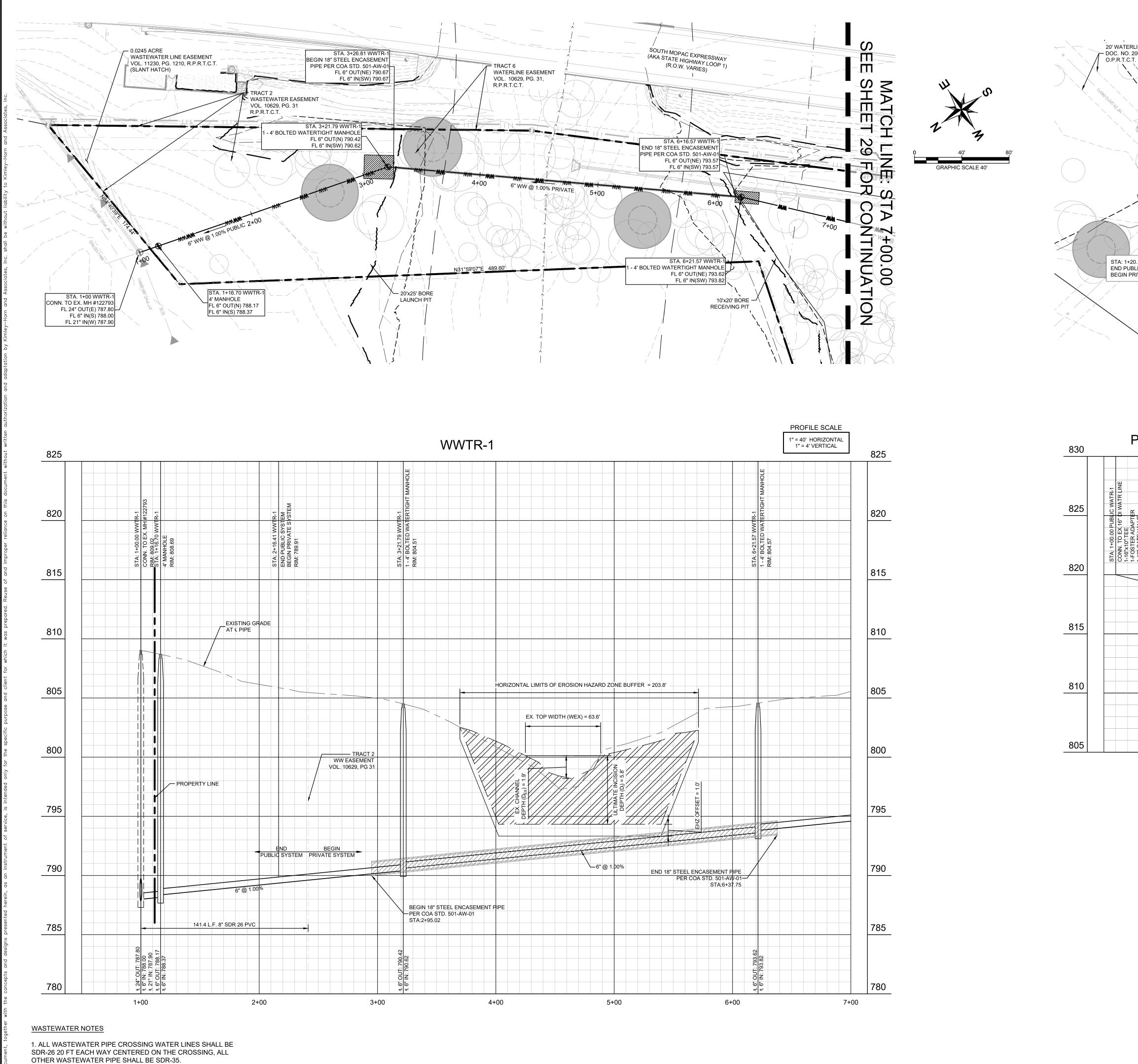


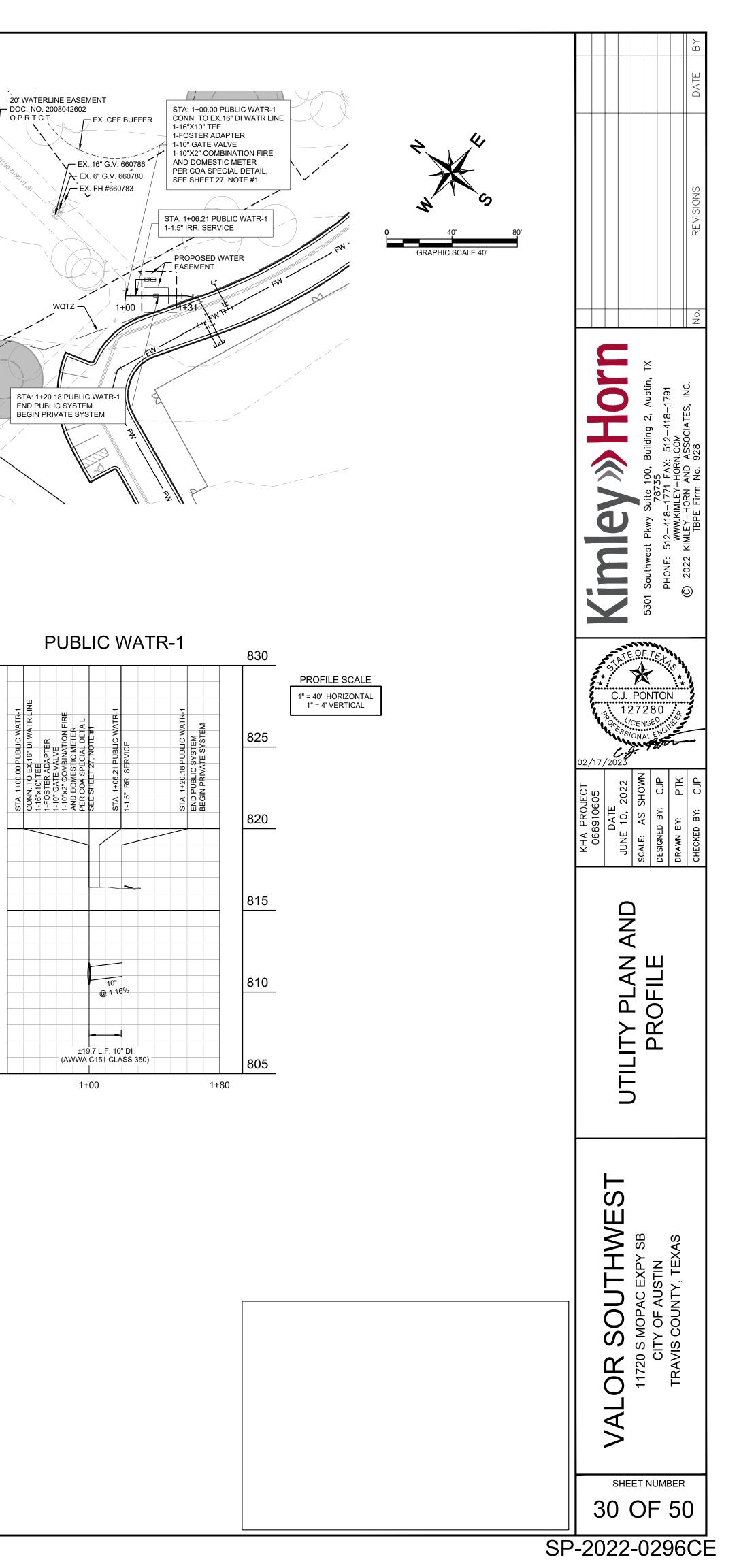


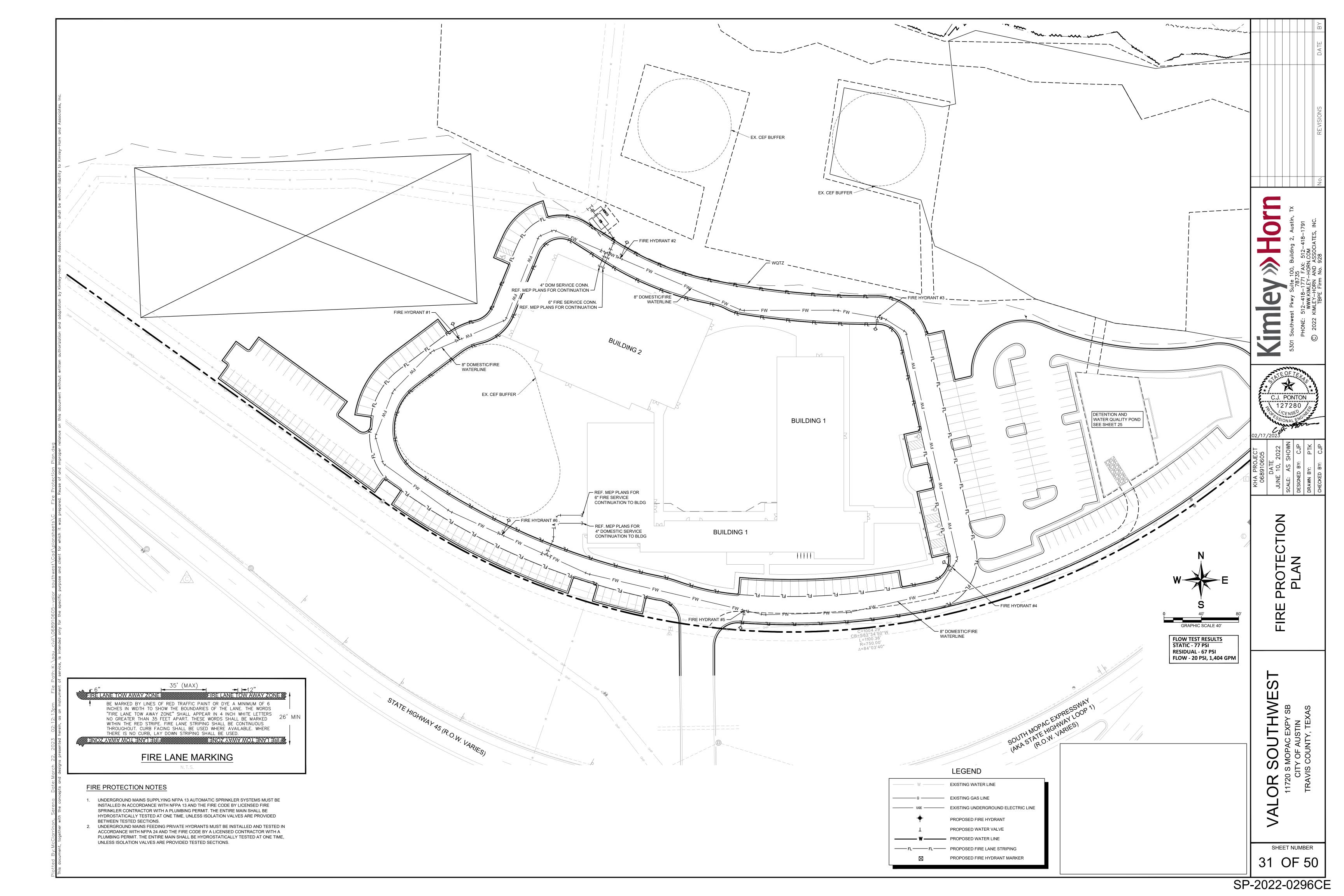
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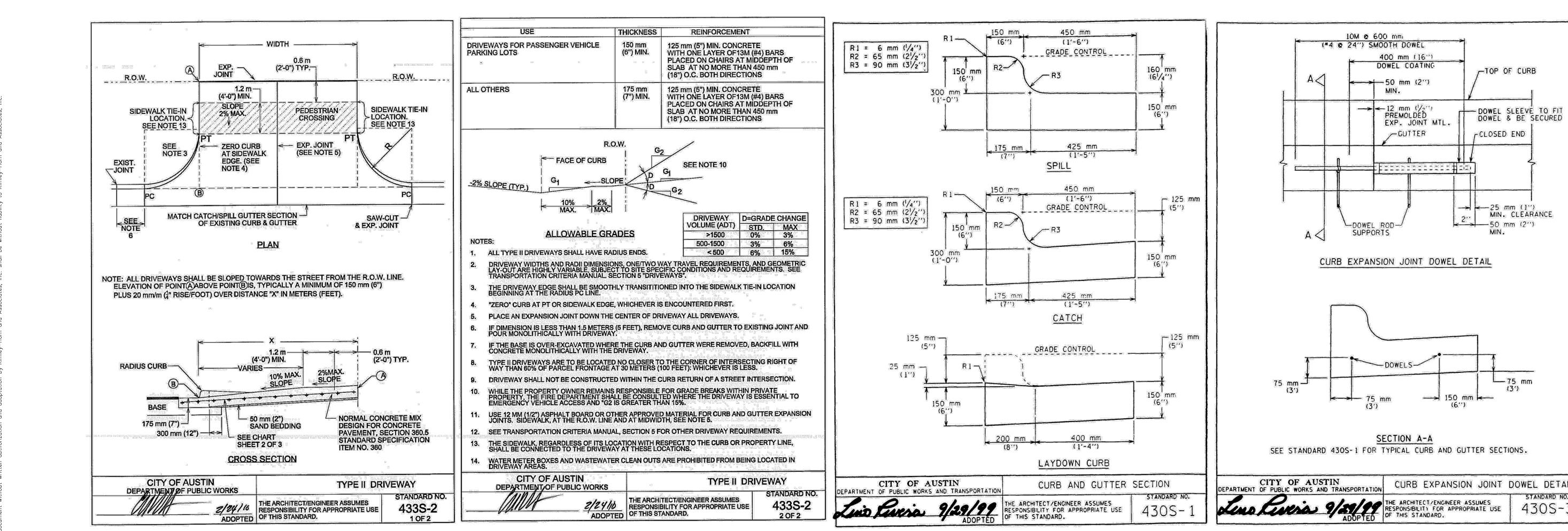
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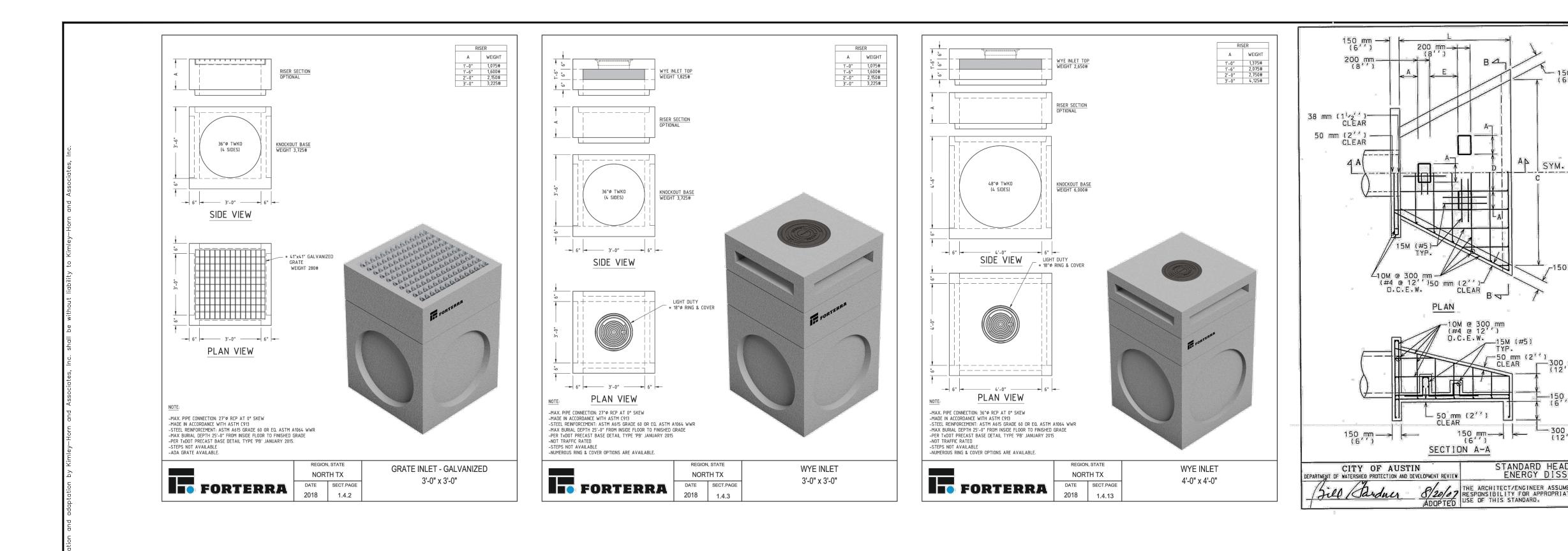






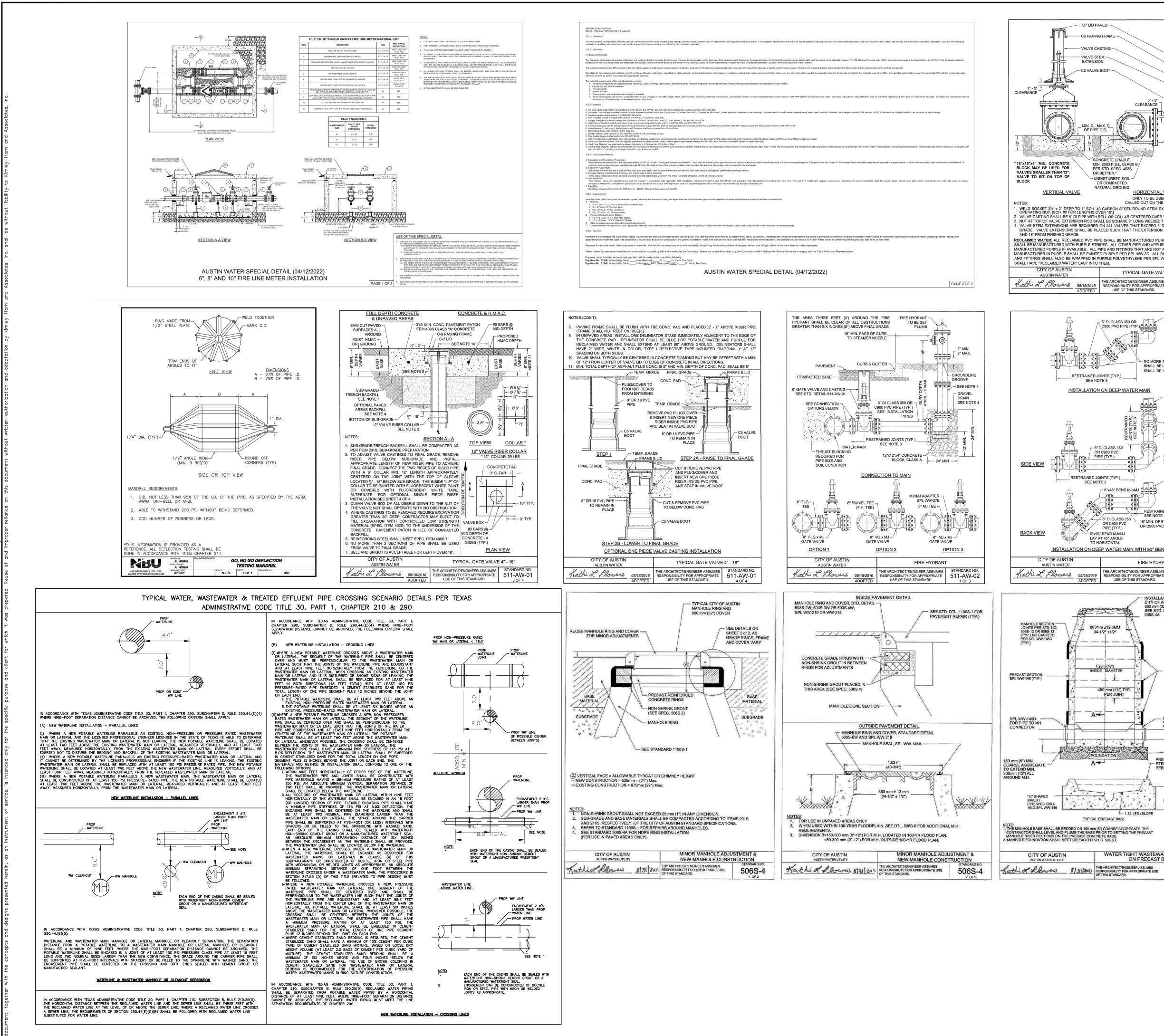


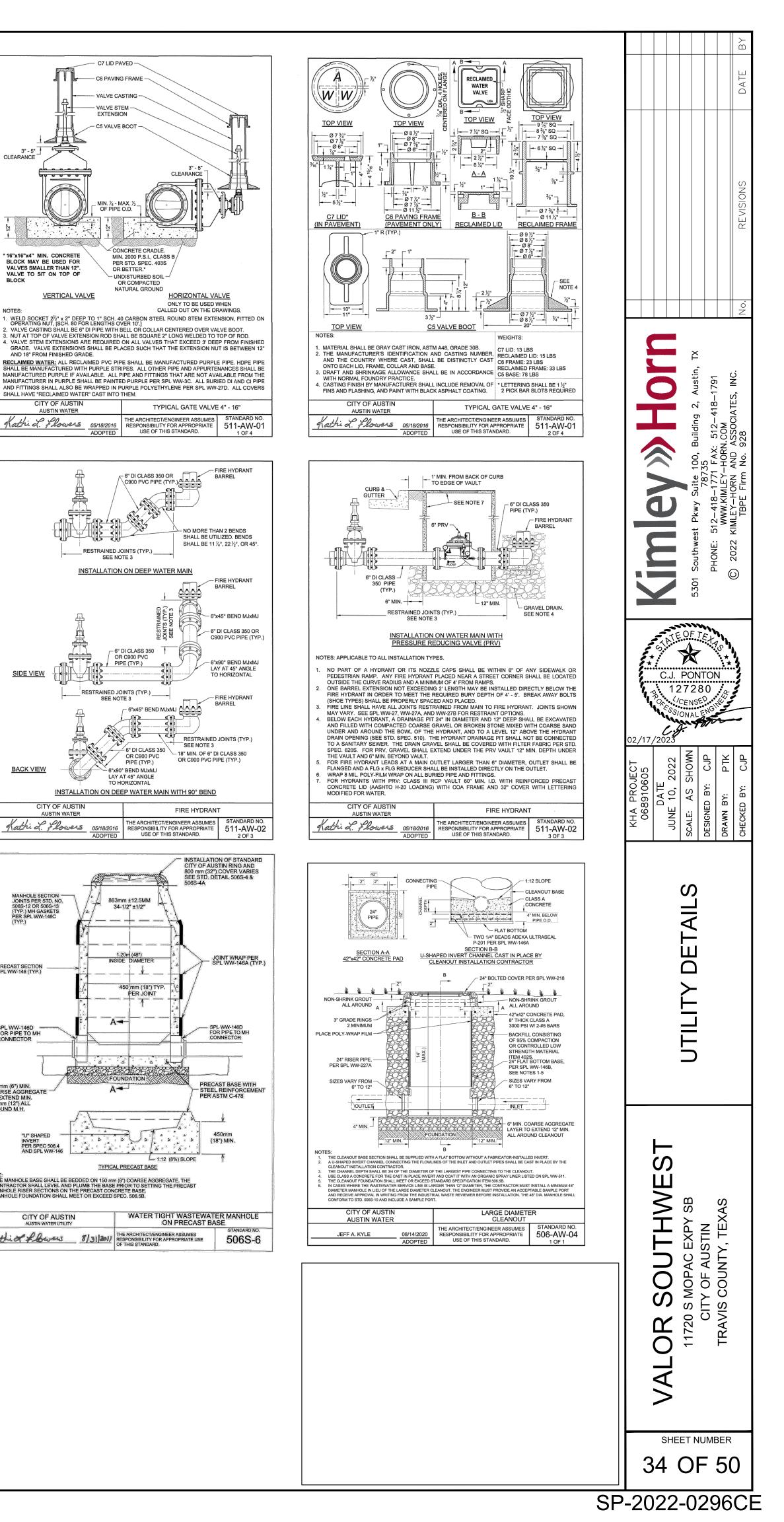
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ATION CURB EXPANSION JOINT DOWEL DETAIL THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. 4305-3	KHA PROJECT 668910605 0689910605 DATE DATE DATE DATE DATE DATE JUNE 10, 2022 SCALE: AS SHOWN FOR AN BY: PRAWN BY: CJP DESIGNED BY: CJP DESIGNED
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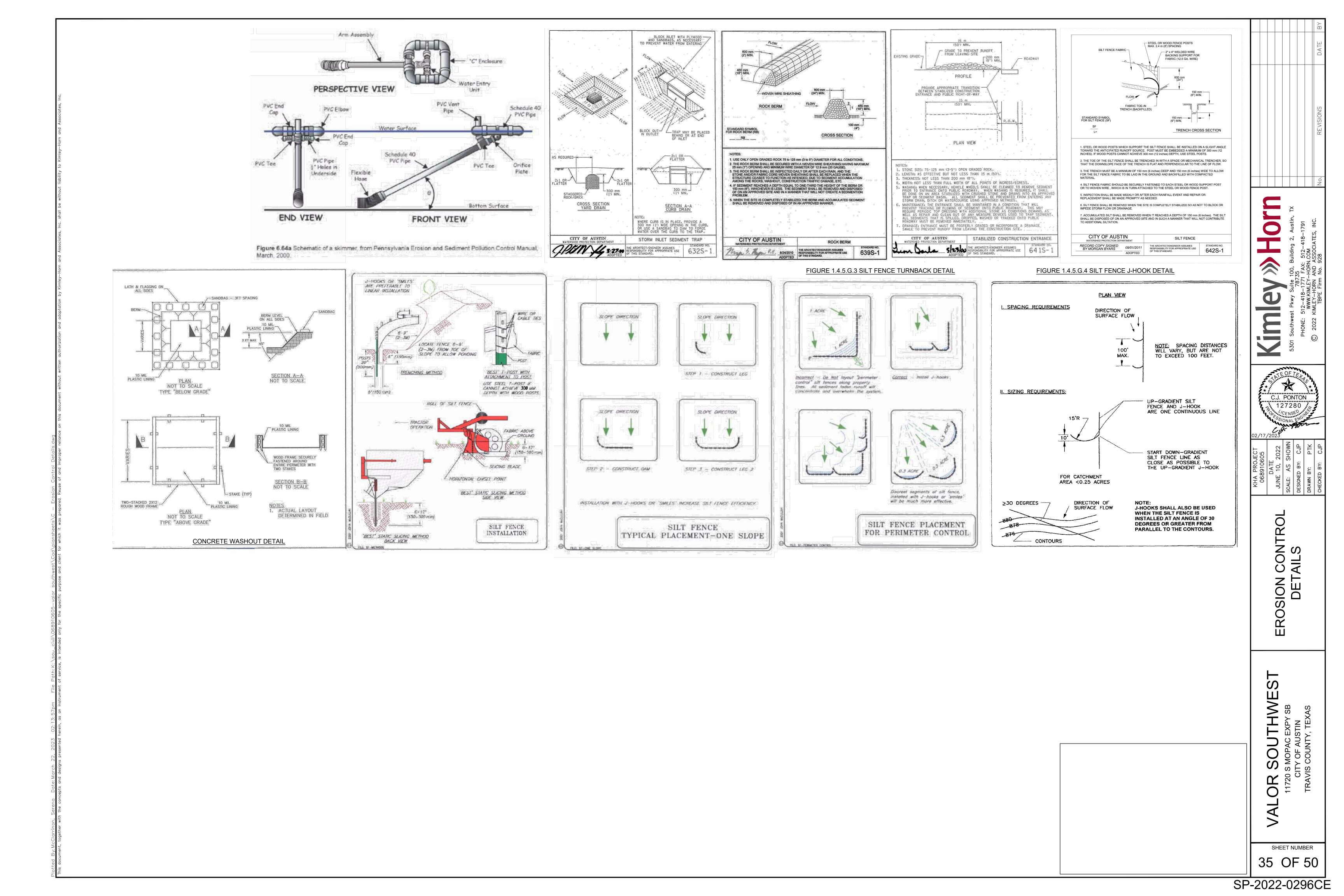


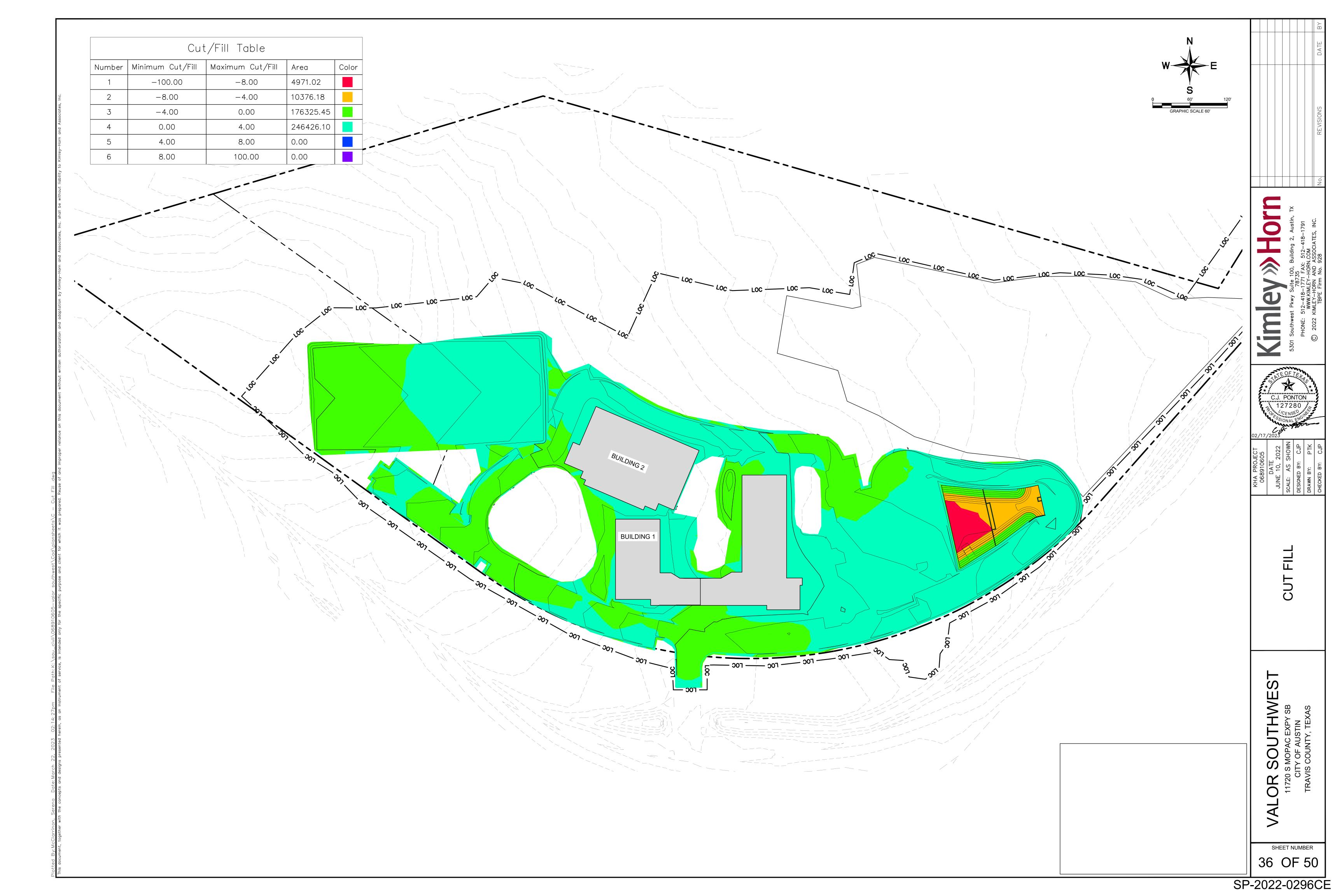


EXTENSION

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GENERAL CONSTRUCTION NOTES

1.	These drawings and documents are submitted to the Owner of the project for review and approval prior to any release for bidding or construction. Contractors shall receive all bid information, instructions, bid forms, general terms and conditions, and all other required clarification from the Owner's Authorized Representative administering this project. Unless otherwise indicated, the Owner's Representative for this project shall be a specifically designated Landscape Architect from SEC Planning. The contractor will also be required to coordinate and correspond with the Landscape Architect from SEC Planning and key consultants	1.	
	for the Owner.	2.	

- These drawings supplement other contractual information which includes Bid Instructions and Project Specifications. Anything mentioned in the Project Specifications and not in the drawings, or vice-versa, shall be of like effect as if shown on or mentioned in both. In case of a discrepancy between Drawings or Project Specifications, the matter shall be immediately submitted to the Owners Representative; without his decision said discrepancy shall not be adjusted by the Contractor, save only at his own risk and expense. The contractor shall not take advantage of any apparent error or omission on the Drawings or in the Specifications. In the event the Contractor discovers such error or omission, they shall immediately notify the Owner's Representative. The Owner's Representative will then make such clarification and interpretations as may be deemed necessary for the Contractor to fulfill the intent of the Contract.
- The intent of these drawings, details and associated specifications is for the Contractor to provide the Owner with a complete, accurate, functionally and technically sound project as generally described in these documents. In most cases, unless explicitly noted otherwise, drawing symbols are used to represent complete-in-place systems to be provided as part of the base bid. All elements shown or implied by the drawings, if not specifically detailed or specified, shall be installed per building codes, manufacturer's recommendations, state highway department standards, city standards and specifications and standard industry practices.
- 4. All plan quantities provided are approximate only. The Contractor is responsible for their own plan take-off's and accuracy of their bid based on actual site conditions. The contractor shall not take advantage of any apparent error or omission on the Drawings or in the Specifications. In the event the Contractor discovers such error or omission, they shall immediately notify the Owner's Representative. The Owner's Representative will then make such clarification and interpretations as may be deemed necessary for the Contractor to fulfill the intent of the Contract.
- 5. All work within this project shall conform to current local codes, ordinances, as well as all other applicable governing regulations in effect.
- All range points, ties, benchmarks or other survey control points which may be encountered during construction, must be preserved or modified/recorded by a registered surveyor at the Contractor's expense. Immediately upon discovery, the Contractor shall notify the Owner's Representative of any survey control points found and obtain direction prior to proceeding with construction.
- The Contractor shall coordinate and obtain all permits which are necessary to perform the proposed work. Owner is to pay for all construction permits unless otherwise indicated in the Contract Documents. Contractor shall obtain, at his expense, all specialty permits needed for specific items included with the work, unless otherwise indicated in the Contract Documents. Should the Contractor commence work, prior to obtaining the required permits or jurisdictional approvals, the Contractor shall be responsible corrections, modifications, replacement or removal of the non-permitted work.
- 8. It is the Contractor's responsibility to be aware of and comply with all notifications and inspection requirements of the Jurisdiction.
- 9. Unless specifically noted otherwise in the Contract Documents, the Contractor shall obtain and coordinate all technical tests and reports by a certified independent laboratory or agency as outlined in the Specifications or these Drawings. The Owner may, at the Owner's sole discretion, provide separate testing and/or inspection service and the Contractor is required to fully coordinate with those consultants/contractors. Owner is to pay for all soils and materials testing.
- 10. An Existing Condition Survey may have been provided to the Owner by registered surveyors under separate contracts for the basis of design. It is not to be considered as part of these Contract Documents. If provided, these survey plans may have been reformatted and included in these documents. The Contractor is required to visit the site to verify information. Without exception, any deviations or omissions found between these plans and existing site conditions shall immediately be brought to the attention of the Owner's Representative, but will not be considered as basis for additional payment except as allowed in change order process per General Conditions and Supplementary Conditions under the "Owner-Contractor Agreements/Contracts. For official survey information, Contractor may wish to contact the Owner, or Owner's surveyor at the Contractors expense.
- 11. Existing utility information and utility information for proposed work by others that is shown in these documents is approximate and for general information only. It is not intended to depict exact locations of all utilities. The Contractor shall notify all utility companies to stake and field verify the locations including depths of all utilities (existing, proposed by others, or currently under construction), prior to commencing any related operations. Contractor shall maintain utility locations/structures during all remaining phases of work. The Contractor shall report to the Owner's Representative any utilities that may conflict with proposed work. This Contractor shall explore, understand, and coordinate (with subcontractors and others) all utilities impacts prior to submitting bid and shall be responsible for any modifications or damages to utility lines, structures or injuries therefrom. For existing utility information contact Texas 811. A minimum notice of 3 business days in advance of locational needs is required.
- 12. These drawings do not specify safety materials, staffing, equipment, methods or sequencing to protect persons and property. It shall be the Contractor's sole responsibility to direct and implement safety operations, staffing, procedures to protect the Owner and his representatives, new improvements, property, other contractors, the public and others.
- 13. The Contractor shall meet periodically with the Owner's Representative to determine marshalling areas, on-site storage, and contractor staff parking and to coordinate security issues, construction sequencing/phasing, scheduling, and maintaining public, emergency, handicapped or operations access before starting the related work. The Contractor shall meet any "Construction Criteria" or requirements shown on any Contract Documents, phasing plans or any imposed plan by the Owner as a part of the Base Bid.
- 14. Some work in this Contract may occur concurrent with work by others. Phasing, sequencing and coordination, with work by others, and on-going facility operations in and around the site area, is a part of the scope of work for this project. Notice to proceed with work in any general area shall be obtained from the Owner.
- 15. The Contractor will be required to complete all the work of this project according to these proposed drawings or subsequent clarification. A strict period of 6. This Contractor shall verify all existing grades to remain and all adjacent new construction grades for compliance with those shown, prior to bid and construction. performance, including dates of substantial completion (for all and/or portions) and liquidation damages may be an integral element of the Contract.
- 16. Any site improvements requiring removal under this contract shall be properly and legally disposed off-site or, at the Owner's option, surrendered/stockpiled in an approved on-site location per the direction of the Owner or Owner's Representative.
- 17. The Contractor is required to maintain a complete and "up-to-date" set of all Contract Documents, including clarifications, change orders, etc., in good condition, at the construction site at all times. This set of documents will be made immediately available for review by the Owner's Representative and/or authorized Consultants upon request. Complete "As-Built" drawings and document submittals are also a requirement of this contract.
- 18. Maintenance, warranties and performance guarantees may be a requirement of this contract see specifications.
- 19. Notes and details on specific drawings shall take precedence over general notes and typical details. The Contractor shall refer to all other Division Notes, Sheets Notes, Drawings and Project Contract Documents for additional information.

20. Contractor shall refer to other related drawings for all other related improvements that will impact this project and require coordination. Drawings may be made available to the Contractors at request

TREE PROTECTION NOTE

1. All existing trees shall be protected from construction activities within construction zone. During which time, the use of a silt or chain link fence is required around each singular or group of protected trees. Parking of construction vehicles, equipment, and stockpiles within tree root zones is strictly prohibited. Contractor shall be responsible for any damage incurred to existing trees, including replacement, fees, fines or reimbursement to owner for said damages and, or to the City or Jurisdiction with governing authority per the Tree Ordinance.

### OAK WILT PREVENTION NOTE

1. If Oak Wilt is found on site within work zone, owner must be notified and the following procedures must be followed in accordance with USDA standards, (http://www.na.fs.fed.us) including disinfecting construction removal devices, tree removal and treatment to prevent development of spore mats. These treatments include debarking, chipping and drying the wood, covering dead wood with plastic, burying the edges for six months and air drying for a similar amount of time to kill fungus and associated insects off site at state designated facility.

#### SIDEWALK NOTES:

- Layout of concrete walkways shall be staked in the field and review by the Owner or Owner's Representative prior to construction. At that time walk may be adjusted as needed, using the Hardscape Plan as a guide. All grades and layout shall be confirmed prior to construction. Notify Owner and Owner's Representative of any conflicts or deviations to the issued plans.
- 2. All pedestrian paths shall be in compliance with all current Texas Accessibility Standards (T.A.S.) and ADA standards.
- 3. All walkway grades shall have a running slope of no greater than 4.7% (1:21) and a cross-slope that is not greater than 1.5% (1:66).
- 4. Slopes at or between 5.0% (1:20) and 8.3% (1:12) must have hand rails on both sides with ADA compliant level landings, and cross-slopes shall not exceed 1.5% (1:66).

growth

LIGHTING

HARDSCAPE LAYOUT AND INSTALLATION

All work shown shall be field staked and subject to field verification, review and approval by the Owner or Owner's Representative prior to any constructions or demolition. Field staking of all proposed work and adjacent construction (even if future work by others) may be required by the Owner's Representative prior to approval of all improvements and adequate stakes shall be provided by Contractor's surveyor.

To expedite, the layout of the site layout coordinates and/or grids may have been established in the Drawings. These points shall be field staked by the Contractor's surveyor as a part of this contract. The establishment of these points shall be approved by the Owner's Representative prior to any construction in those areas and will assist the Contractor in the layout of all site improvements as shown on drawing or otherwise.

The construction tolerances for this project are minimal and the dimensions shown are to be strictly adhered to.

Computed dimensions shall take precedence over scaled dimensions. Large scale drawings shall take precedence over small scale drawings. Dimensions shown with (+/-) shall be the only layout information allowed to vary, and may only vary to the tolerances given.

The Contractor is responsible to provide complete-in-place systems, and a complete project. Any intermittent or periodic approvals received for portions of work, stakes, grades, or forms (by the Owner or Owner's Representative, Architects, Engineers, or others) shall not waive the Contractor's requirements to comply with the intent of any and all portions of this contract.

6. All locations for walks, roads, swales, walls, curbs, structures etc. shall be staked by the Contractor. All layout information is based on ground coordinates and the Contractor shall meet with the owner's surveyors and engineers to clarify all datum, benchmark and control point requirements. Specific layout information will be provided to the Contractor by the Owner's Representative in AutoCAD (.dwg) format when requested.

7. It is the intent and requirement of this contract to provide curvilinear walks, walls and curbs with smooth transitions and arcs (both horizontal and vertical). Straight segments and abrupt transitions will not be accepted unless shown as such on the plans. Wood curving forms may be required to obtain the proper effects.

8. Hardscape improvements that are to be constructed per the drawings, shall be coordinated on site with the Owner's Representative, and be field staked or painted for approval of layout by the Owner's Representative prior to installation. Notify the Owner's Representative a minimum of 24 hours in advance for review. Improvements installed without field approval by Owner's Representative may be rejected and will be replaced at Contractors expense. At the time of staking, the Contractor shall confirm the quantity of the improvements match the approved contract. In the event the Contractor discovers such a discrepancy, he shall immediately notify the Owner's or Owner's Representative for direction on how to proceed, prior to commencing work.

All lot fencing or lot screen walls shall be placed on the property line or property boundary. Contractor shall confirm final location by field staking, to be reviewed by the Owner or Owner's Representative prior to construction.

10. Rock gravel, rock mulch, synthetic mulch should be installed over weed barrier fabric. Weed barrier fabric should overlap edges a minimum of 6".

#### GRADING NOTES

1. The Contractor shall obtain and review the Summary Report and Recommendations prepared by the geotechnical engineers and fully understand the existing soil conditions encountered prior to submitting bid. The Contractor shall comply with all recommendations made by the geotechnical engineers, civil engineers, structural engineers and Owner's Representative, as designated in the soil report, on these drawings, specified, or as directed during field observations and inspections.

All earthwork operations will be subject to full inspection and regular testing by a qualified soils and materials engineer and this Contractor shall be responsible to coordinate scheduling, notification and procuring test results and documentation as required. The Contractor shall notify the Owner's Representative of any subsoil conditions encountered, which vary from those found during previous soil investigations and/or that may not have been known during design. Any failed tests which must be retested will be a Contractor's expense.

3. All earthwork operations shall be conducted in strict compliance with the project specifications including but not limited to:

a. Full locating, investigating and protection of ALL existing utilities to remain.

b. Removal of any organic materials or debris.

c. Stripping and stockpiling of all topsoil in approved location(s). d. Removal of all unstable fill materials encountered.

e. Scarification and re-compaction to the minimum depth as specified and/or directed within all areas to receive fill, pavements or structures.

f. All classifications of "excavation" as required to meet proposed lines, grades, typical cross sections and improvement elevations.

g. Placement, shaping, and structural compaction of all classifications of "fill" or "embankment" as required to meet proposed lines, grades, typical cross sections and improvement elevations.

h. Providing dewatering, optimum moisture control, climate protection, dust control, erosion control and all other specified treatments. i. Replacement of topsoil after grading changes have been accomplished.

4. See, and comply with, all specifications for depth of moisture density treatments, controls and compaction requirements.

5. These grading plans are intended to show vertical control of the site and are based upon the benchmarks, existing elevations and topography as provided by the Owner's surveyor. However, the Contractor, upon submittal of bid, agrees to accept the site grades and make all adjustments required to accomplish the work as proposed. Additionally proposed design elevations for adjacent construction projects may have to be incorporated if necessary. (Construction drawings for work by others, if applicable, are available upon request). Staking of future adjacent improvements, by this contract phase or by others, may be required if directed by the Owner's Representative to ensure proper coordination and requested staking is to be provided as part of this Base Bid.

All deviations or conflicts with proposed work shall be reported immediately (with follow-up written) notice within 24 hours to the Owner's Representative for direction to proceed, but will not be considered as basis for additional payment except as allowed in change order process per General Conditions and Supplementary Conditions under the existing "Owner-Contractor Agreements/Contracts".

7. The plans may call for specific temporary benchmarks to be transferred to the site by a certified surveyor and accurately established on site as a part of this contract. Contractor shall verify all benchmarks and information used in design and compare to existing conditions.

8. It is this Contractor's responsibility to provide proper positive drainage throughout this contract area. Field conditions shall be verified in conjunction with the proposed elevations to ensure that adequate drainage is provided. Report deviations or conflicts to Owner's Representative. Unless otherwise indicated, minimum slope for paved surfaces shall be 1% and minimum slope for non-paved areas shall be 2%. Slope away from all structures shall be 3% minimum, for a distance of 5' minimum. Maximum ground slopes to be 4' horizontal to 1' vertical, unless otherwise approved in advance.

9. All design elevations shown are "finished grades" unless otherwise indicated. Contractors shall refer to drawings, details and specifications regarding depth of sub-grade materials required to construct project improvements.

10. All topsoil and/or drainage way muck excavation shall be saved and stockpiled in approved locations for future use.

Landscape lighting system is to be installed by a licensed electrician with documented experience in installing lighting systems of similar scope within the last two years. The Contractor is to supply a complete lighting system including all associated equipment such as conduit, weather proof and/or water proof junction boxes, ballasts, connectors, harnesses, time clocks, photocells, etc.

2. The Contractor shall review proposed layout of lighting system and all related equipment locations with the Owner or Owner's Representative prior to commencing installation.

After installation the Contractor will be required to adjust light fixtures until the Owner's Representative is satisfied with the desired effect. This will require the Contractor and/or the Contractor's electrician to meet with the Owner and Owner's Representative after sunset. This adjustment is to be included in the base Bid amount

4. The Contractor shall provide a two year warranty on all equipment including lamps, ballasts and installation.

Independent ballasts, if required, shall be "ganged" in an inconspicuous, accessible location in a horizontal, weatherproof box or tray near ground level. Mounting of ballast in trees will not be allowed without written authorization from the Owner's Representative.

6. All exposed boxes, trays, conduit, etc. shall be painted by the contractor to blend in with surrounding landscape elements.

7. All equipment shall be U.L. listed and installation shall comply with N.E.C. and all other applicable codes.

8. All lights are to be controlled by a photocell on and timer off system unless specified otherwise on the drawings.

All wire run underground must be in rigid conduit.

10. Plan layout of underground wiring to minimize disturbance to the roots of existing trees. If underground wiring must pass through the critical root zone of protected trees, trenching and related work must be preformed by hand. No mechanical trenching is permitted within the Critical Root Zone.

## 11. Tree lighting (if applicable):

a) Install Karlock (or equal) flexible conduit from base of tree to a minimum eight foot height above ground. At the end of the conduit install a waterproof hub (for single cable) or W-P bell box for multiple cables. Paint conduit and box to match tree trunk. Use SJTO electrical cord from conduit to light fixture. Attach cord to tree using long galvanized cord staples or other approved method. Provide a 36" loop of extra cord at the light fixture to allow for light adjustment and tree

b) Attach light fixtures to trees utilizing galvanized mounting plates drilled for hub connection with a minimum of two mounting screws. Mounting screws are to be ¼-20 threads x 5" length (one end wood screw threads and the other end bolt threads). Install at least two inches of thread into tree and install with at least two inches between tree and mounting plate.

c) All tree downlights are to be mounted in the top third of the tree canopy.

d) All fixtures are to be located, adjusted as needed and shielded to prevent glare, light trespass on to adjacent properties or Rights-of-way.

IF ESTABLISHING VEGETATION DURING ANY STAGE OF A DROUGHT, SECTION 6-4-30 MAY REQUIRE A VARIANCE. CONTRACT AUSTIN WATER CONSERVATION STAFF AT WATERUSECOMPVAR@AUSTINTEXAS.GOV OR CALL (512) 974-2199. ALL LANDSCAPE AREAS ARE TO BE

PROTECTED BY 6-INCH WHEEL CURBS, WHEELSTOPS OR OTHER APPROVED BARRIERS AS PER ECM 2.4.7

SEC Planning, LLC         Austin, Texas         LAND PLANNING         LAND PLANNING         LANDSCAPE ARCHITECTURE         COMMUNITY BRANDING         4201 W. Parmer Lane Bldg A Suite 220         Austin, Tx 78727         T 512.246.7003         Www.secplanning.com         Email : info@secplanning.com
Valor Public Schools 220 Foremost Dr. Austin, Texas 78745
2/16/2023
VALOR SOUTHWEST CAMPUS LANDSCAPE IMPROVEMENTS 11720 S MOPAC EXPY SB TRAVIS COUNTY, TEXAS
Drawing File Name I:\210086-HACO\Cadfiles\LA\Sheets\LN-1.dwg
Issued:       1. REVIEW BID SET       5/06/2022         2. COMMENT RESPONSE U0       10/24/2022         3. COMMENT RESPONSE U1       2/16/2023         4.
3 4 5 Issue Date:2/16/2023
Drawn By: ES Reviewed By: BD
Project No. 210086-HACO
CONSTRUCTION/ PLANTING NOTES
Sheet No. LN-1
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ND HOLIDAYS. ALL BEFORE YOU DIG, WAIT THE REQUIRED AMOUNT OF TIME, RESPECT HE MARKS, AND DIG WITH CARE! THE LOCATION OF EXISTING UNDERGROUND JTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL TERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING NORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL MAGES WHICH MAY OCCUR BY A FAILURE TO EXACTLY LOCATE AND PRESERVE AN ND ALL UNDERGROUND UTILITIES.

TEXAS LAW REQUIRES 48 HOURS OF NOTICE PRIOR TO DIGGING, EXCLUDING WEEKENDS

## P-1- CITY OF AUSTIN EROSION CONTROL NOTES

- 1. The contractor shall install erosion/sedimentation controls, tree/natural area protective fencing, and conduct "Pre-Construction" tree fertilization (if applicable) prior to any site preparation work (clearing, grubbing or excavation).
- 2. The placement of erosion/sedimentation controls shall be in accordance with the Environmental Criteria Manual and the approved Erosion and Sedimentation Control Plan. The COA ESC Plan shall be consulted and used as the basis for a TPDES required SWPPP. If a SWPPP is required, it shall be available for review by the City of Austin Environmental Inspector at all times during construction, including at the Pre-Construction meeting. The checklist below contains the basic elements that shall be reviewed for permit approval by COA EV Plan Reviewers as well as COA EV Inspectors.
- 3. The Placement of tree/natural area protective fencing shall be in accordance with the City of Austin standard Notes for Tree and Natural Area Protection and the approved Grading/Tree and Natural Area Plan.
- 4. A pre-construction conference shall be held on-site with the contractor, design Engineer/permit applicant and Environmental Inspector after installation of the erosion/sedimentation controls, tree/natural area protection measures and "Pre-Construction" tree fertilization (if applicable) prior to beginning any site preparation work. The owner or owner's representative shall notify the Development Services Department, 512-974-2278 or by email at environmental.inspections@austintexas.gov, at least three days prior to the meeting date. COA approved ESC Plan and TPDES SWPPP (if required) should be reviewed by COA EV Inspector at this time.
- 5. Any major variation in materials or locations of controls or fences from those shown on the approved plans will require a revision and must be approved by the reviewing Engineer, Environmental Specialist or City Arborist as appropriate. Major revisions must be approved by authorized COA staff. Minor changes to be made as field revisions to the Erosion and Sedimentation Control Plan may be required by the Environmental Inspector during the course of construction to correct control inadequacies.
- 6. The contractor is required to provide a certified inspector that is either a licensed engineer (or person directly supervised by the licensed engineer) or Certified Professional in Erosion and Sediment Control (CPESC or CPESC - IT), Certified Erosion, Sediment and Stormwater - Inspector (CESSWI or CESSWI - IT) or Certified Inspector of Sedimentation and Erosion Controls (CISEC or CISEC - IT) certification to inspect the controls and fences at weekly or bi-weekly intervals and after one-half (½) inch or greater rainfall events to insure that they are functioning properly. The person(s) responsible for maintenance of controls and fences shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six (6) inches or one-third (<sup>1</sup>/<sub>3</sub>) of the installed height of the control whichever is less.
- 7. Prior to final acceptance by the City, haul roads and waterway crossings constructed for temporary contractor access must be removed, accumulated sediment removed from the waterway and the area restored to the original grade and revegetated. All land clearing debris shall be disposed of in approved spoil disposal sites.
- 8. All work must stop if a void in the rock substrate is discovered which is; one square foot in total area; blows air from within the substrate and/or consistently receives water during any rain event. At this time it is the responsibility of the Project Manager to immediately contact a City of Austin Environmental Inspector for further investigation.
- 9. Temporary and Permanent Erosion Control: All disturbed areas shall be restored as noted below:
- A. All disturbed areas to be revegetated are required to place a minimum of six (6) inches of topsoil [see Standard Specification Item No. 601S.3(A)]. Do not add topsoil within the critical root zone of existing trees.

## CITY OF AUSTIN 3.6.2 Standard Plan Note

The following plan note summarizes the contents of the Environmental Criteria Manual as it relates to tree protection on sites with active permits:

### **BEFORE CONSTRUCTION:**

- 1. All Trees and natural areas shown on plan to be preserved shall be protected per ECM 3.6.1.
- 2. Tree protection shall be installed prior to the start of any site work, including demolition or site preparation. Refer to ECM 3.6.1.A.
- 3. Fencing for tree protection shall be chain-link mesh with a minimum height of 5 feet and shall be installed around or beyond the Critical Root Zone except as allowed in ECM 3.6.1.B.4.
- 4. Unfenced sections of the Critical Root Zone shall be covered with mulch at a minimum depth of 8 inches and a maximum depth of 12 inches per ECM 3.6.1.C.
- 5. Where fencing is located 5 feet or less from the trunk of a preserved tree, trunk wrapping shall be installed per ECM 3.6.1.D.
- 6. Erosion and sedimentation controls shall be installed and maintained so as not to cause impacts that exceed preservation criteria listed in ECM 3.5.3.D.

## DURING CONSTRUCTION

- 1. Trees approved for removal shall be removed in a manner that does not exceed preservation criteria for the trees to remain. Refer to ECM 3.5.2 A.
- 2. Fencing may not be temporarily moved or removed during development without prior authorization. The fenced Critical Root Zone shall not be used
- for tool or material storage of any kind and shall be kept free of litter. Refer to ECM 3.6.1.B.3. 3. Pruning shall be in compliance with the current ANSI A300 standard for tree care.

## AFTER CONSTRUCTION

- 1. Tree protection shall be removed at the end of the project after all construction and final grading is complete, but before final inspection. Refer to ECM 3.6.1.A.
- 2. Landscape installation within the CRZ of preserved trees, including irrigation, soil and plantings, shall not exceed preservation criteria listed in ECM 3.5.2.
- 3. Documentation of tree work performed must be provided to inspector per ECM Appendix P-6

#### THIS LIST IS NOT EXHAUSTIVE. REFER TO APPROPRIATE ECM SECTIONS FOR FULL REQUIREMENTS.

# 0-1 - CITY OF AUSTIN SITE DEVELOPMENT PERMIT - IRRIGATION NOTES

- 1. Automatic irrigation systems shall comply with TCEQ Chapter 344, as well as the following requirements:
  - a. These requirements shall be noted on the Site Development Permit and shall be implemented as part of the landscape inspection: the system must provide a moisture level adequate to sustain growth of the plant materials;
  - b. The system does not include spray irrigation on areas less than ten (10) feet wide (such as medians, buffer strips, and parking
  - lot islands);
  - c. Circuit remote control valves have adjustable flow controls;
  - d. Serviceable in-head check valves area adjacent to paved areas where elevation differences may cause low head drainage;
  - e. A master valve installed on the discharge side of the backflow preventer;
  - f. Above-ground irrigation emission devices are set back at least six (6) inches from impervious surfaces;
- g. An automatic rain shut-off device shuts off the irrigation system automatically after more than a one-half inch (½") rainfall; and h. Newly planted trees shall have permanent irrigation consisting of drip or bubblers.

2. The irrigation installer shall develop and provide an as-built design plan to the City at the time the final irrigation inspection is

- performed; a. Unless fiscal security is provided to the City for the installation of the system, it must be operational at the time of the final landscape inspection.
- 3. The irrigation installer shall also provide exhibits to be permanently installed inside or attached to the irrigation controller, including: a. A laminated copy of the water budget containing zone numbers, precipitation rate, gallons per minute and the location of the isolation valve; and an as built plan.
- 4. The irrigation installer shall provide a report to the City on a form provided by Austin Water certifying compliance with Subsection 1. When the final plumbing inspection is performed by the City.

UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY OR FINAL INSPECTIONRELEASE BY THE CITY, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DRAINAGE AND DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.

Valor Southwest			
Tree Saved/Removed Mitigation Summary			
2/17/2023			
SP-2022-0296CE - Subject to the 1993 LDC and	Bradley Agreement		
Total Surveyed	15,964.0		
Total Survey within ROW	2,001.0		
Total Appendix F trees inches Surveyed 8"-18	.9" 11,585.0		
Total Appendix F trees inches Surveyed 19"+	2,378.0		
Total Non-Appendix F tree inches surveyed	0.0		
Total Invasive tree inches surveyed	0.0		
Total Appendix F trees inches Saved 8"-18.9"	8,361.5		
Total Appendix F trees inches Removed 8"-18	3,074.0		
Total Appendix F trees inches Saved 19"+	1,458.0		
Total Appendix F trees inches Removed 19"+	703.0		
Total Non-Appendix F Saved	0.0		
Total Non-Appendix F Removed	0.0		
Total Invasive saved	0.0		
Total Invasive removed	0.0		
DDI Appendix F inches removed	366.5		
DDI Non-Appendix F inches removed	0.0		
DDI Invasive inches removed	0.0		
Required Mitigation Rates (Per 1993 LDC)	Inches Removed		Inches to be Mitigated
19"+ DBH, tree located in Appendix F	703.0	50%	351.
8-18.9" DBH, tree located in Appendix F	3074.0	25%	768.
19"+ DBH, tree other species	0.0	0%	0.
8"-18.9" DBH, tree other species	0.0	0%	0.
Total replacement ROW inches	0.0	0%	0.
Invasive Species	0.0	0%	0.
Total Removed Inches	3777.0		1,120.
Provided Mitigation		QTY	Inches Provided
Mitigation Inches Provided On-Site House Bill 7 / Calculated 40% Credit for Mitiga	ation	79	237. 94.
Total Inches Provided			331.
Tree Mitigation Inches Remaining			788.
Tree Mitigation Fee In Lieu ( \$75/inch)			\$59,115.0
*ALL PROPOSED TREES ON SITE ARE SOLELY USED FOR VALOR SOU MITIGATION REPLACEMENT	TH - LANDSCAPE CALCULATIO	NS	
INCHES Streetyard La	ndscaping		
Total Streetya	rd Area		343,022 SF
	ndscape Area Required (20% of To	otal)	68,604 SF
Streetvard La	adscape Area Provided		200 101 SE

			CONTROL PLANT BEI
Streetyard Landscaping	242.022	6F	TREES
Total Streetyard Area	343,022		SOD/TUR
Streetyard Landscape Area Required (20% of Total)	68,604	SF	
Streetyard Landscape Area Provided	200,101	SF	
Shade Trees Required	97		Туре
Existing Tree Credit	186		
Proposed Shade Trees Provided	13		
Total Trees Provided	199		Mix**
Parking Calculations			Grass Seed Mix**
Total Parking Within Streetyard	127		Gras
Required SF of Landscape Area	952.5	SF	
Provided SF of Landscape Area	6,789	SF	
Total Remaining Parking	97		
Required SF of Landscape Area	485	SF	
Provided SF of Landscape Area	3,476	SF	Forb Seed Mix**
Total Parking On Site	224		orb See
Total SF of landscape Area Within Parking	10,265	SF	ш. Д
Innovative Water Management			
Required Landscape Area (2.4.9.1) = 68,604 + 485 + 952.5	70,042	SF	Total
50 Percent of Required Landscaped Area	35,021	SF	Total recomme
Provided through Stormwater Re-Irrigation Field			<ul> <li>Comparison of the second s</li></ul>
<u>Required:</u>	Provided:		Gras
Undisturbed Natural Areas 35,021 SF	186,219	SF	ol Season Cover Grasses
<u></u>	<b><u>DTAL:</u></b> 186,219	SF	ol Seaso

## 

TREES	QTY	BOTANICAL / COMMON NAME	CONTAINER	CA
FRPE	7	Fraxinus pennsylvanica / Green Ash	Container Grown	3'C
QULA	7	Quercus laceyi / Lacey Oak	Container Grown	3'C
QUMU	8	Quercus muehlenbergil / Chinkapin Oak	Container Grown	3'C
QUSH	6	Quercus shumardii / Shumard Red Oak	Container Grown	3'C
ULCR	7	Ulmus crassifolia / Cedar Elm	Container Grown	3'C
CONIFERS	QTY	BOTANICAL / COMMON NAME	CONTAINER	CA
JUVI	12	Juniperus virginiana / Eastern Red Cedar	45 gal. cont. grwn.	יי (
	•		·	·
SHRUBS	QTY	BOTANICAL / COMMON NAME	CONTAINER	cc
COGL	236	Cotoneaster glaucophyllus / Grey Leaf Cotoneaster	Container Grown	5 (
0001		Dhaphiolopia Indian / Indian Hawthern	Container Grown	5 (
RHIN	242	Rhaphiolepis indica / Indian Hawthorn		• ,

NOTES:

IF ESTABLISHING VEGETATION DURING ANY STAGE OF A DROUGHT, SECTION 6-4-30 MAY REQUIRE A VARIANCE. CONTRACT AUSTIN WATER CONSERVATION STAFF AT

WATERUSECOMPVAR@AUSTINTEXAS.GOV OR CALL (512) 974-2199. ALL LANDSCAPE AREAS ARE TO BE PROTECTED BY 6-INCH WHEEL CURBS. WHEELSTOPS OR OTHER APPROVED BARRIERS AS PER ECM 2.4.7

# VALOR SOUTH - BUFFERING POINTS

	<u>Required</u>	<u>:</u>	<u>Provided:</u>
	1039	pts.	1,215
	<u>Size</u>	<u>Quantity</u>	<u>Prefered</u>
Large Trees	NA	0	0
Small Trees	NA	0	0
Large Shrubs	5 gal	108	108
Medium Shrubs	5 gal	297	297
Small Shrubs	NA	0	0

TURF GRASS/ PLANT BEDS	
NAME	TOTAL
Plant Bed	14,429
	267
	134
Cynodon dactylon `Tif 419` / Bermuda Grass	48,780
	5,420
	602
Cynodon dactylon / Bermuda Seed Hydromulch	44,053
	4,895
	272
MISCELANEOUS	
NAME	TOTAL
Native Mulch	71
Steel Edging	2,663
Playground Surfacing	463
Decomposed Granite	49
Gravel	6

#### IRRIGATION SYMB QTY DLLER 1 14,429 EDS 47 48,780

Туре	Common Name	Botanical Name	Recommended Application rate lbs/ac (kg/ha)	Rooted Plants Species, Diversity, Quantity & Size
	Buffalograss	Buchloe dactyloides	24.0 (27.0)	
	Blue Grama	Bouteloua gracilis	10.0 (11.2)	
ix**	Green Sprangletop	Leptochloa dubia	2.0 (2.2)	
M bi	Sand Dropseed	Sporobolus cryptandrus	1.0 (1.1)	
Sec	Galleta	Pleuraphis jamesii	10.0 (11.2)	
Grass Seed Mix**	Canada Wild Rye	Elymus canadensis	10.0 (11.2)	
0	Purple Threeawn	Aristida purpurea	4.0 (4.5)	
	Sideoats Grama	Bouteloua curtipendula	7.0 (7.8)	
	Bluebonnet	Lupinus texensis	20.0 (22.4)	
	Purple Prairie Clover	Dalea purpurea	4.0 (4.5)	_
	Plains Coreopsis	Coreopsis tinctoria	2.0 (2.2)	
	Partridge Pea	Chamaecrista fasciculata	20.0 (22.4)	
×**	Greenthread	Thelesperma filifolium	6.0 (6.7)	
°orb Seed Mix**	Indian Blanket	Gaillardia pulchella	10.0 (11.2)	
See	Lemon Mint	Monarda citriodora	3.0 (3.4)	
-orp	Mexican Hat	Ratibida columnaris	2.0 (2.2)	
_	Pink Evening Primrose	Oenethera speciosa	1.0 (1.1)	
	Sunflower (Common)	Helianthus annuus	5.0 (5.6)	
	Milkweed (Antelope Horn or Green milkweed)	Asclepias asperula or Asclepias viridis	0.1 (0.04)	_
Total Total recom	mended seed mix application rat	e is 35 lbs/ac (23.5 lbs/ac gras	ss, 11.5 lbs/ac forbs).	Ś.
Grasses	Cereal rye grain*	Secale cereale	34.0 (38.1)	Add at least one of the cool season grasses to the war September 15 and March 1.
on Cover	Oats*	Avena sativa	4.0 (4.5)	
Cool Season Cover Grasses	Western Wheatgrass*	Pascopyrum smithii	5.6 (6.3)	

pts.		
<u>Other</u>	<u>Provided</u>	
0	0	pts.
0	0	pts.
0	324	pts.
0	891	pts.
0	0	pts.
<u>TOTAL:</u>	1215	pts.

UNITS	DESCRIPTION	
sf		
су	Planting mix	6" depth (Pro-Gro Soil Mix by Whittlesey Landscape Supply or approved equal)
су	Mulch	3" Depth (Native Hardwood Mulch)
sf		Cynodon dactylon "TIFWAY 419"
sy	Turf Sod	Bermuda T419
су	Top Soil	4" Depth (75% Chocolate Loam / 25% Compost)
sf		Cynodon dactylon
sy	Turf Seed	Common Bermuda
су	Top Soil	2" Depth (Chocolate Loam)

- DESCRIPTION UNITS cy 3" Depth Shredded Hardwood Mulch 3/16" thick; Brown lf 13" Depth Engineered Wood Fiber су
- cy 4" Depth / 1/4" Size
- cy 4" Depth / 1-2" Size Santa Fe Gravel

UNITS	DESCRIPTION	COMMENTS
ea	Rainbird, Hunter, or Approved Equal	
sf	Drip/Spray	
ea	Drip/Bubbler	
sf	Drip/Spray/Bubbler	

COMMENTS

kg/ha)	
	-
	-
	-
	-
	_
	-
rbs).	
	Add at least one of the cool season grasses to the warm-season mix between
	September 15 and March 1.
	-

HT/SPD	HT/SPD WATER USE NOTES			
12-15 H X 8 Spd	м			
12-15 H X 8 Spd	L			
12-15 H X 8 Spd	м			
12-15 H X 8 Spd	м			
12-15 H X 8 Spd	Must be from a Single Root Stock			
	·	· ·		
HT/SPD	WATER USE	NOTES		
12-15 H X 8 Spd	L			
	•	·		
NOTES	WATER USE			
Full to Ground	L-M			
Full Canopy, Shrub Form	м			
Full to Ground	L			
	12-15 H X 8 Spd         V         HT/SPD         12-15 H X 8 Spd         Full Canopy, Shrub Form	12-15 H X 8 Spd       M         12-15 H X 8 Spd       L         12-15 H X 8 Spd       M         12-15 H X 8 Spd       L         HT/SPD       WATER USE         12-15 H X 8 Spd       L         NOTES       WATER USE         Full to Ground       L-M         Full Canopy, Shrub Form       M		



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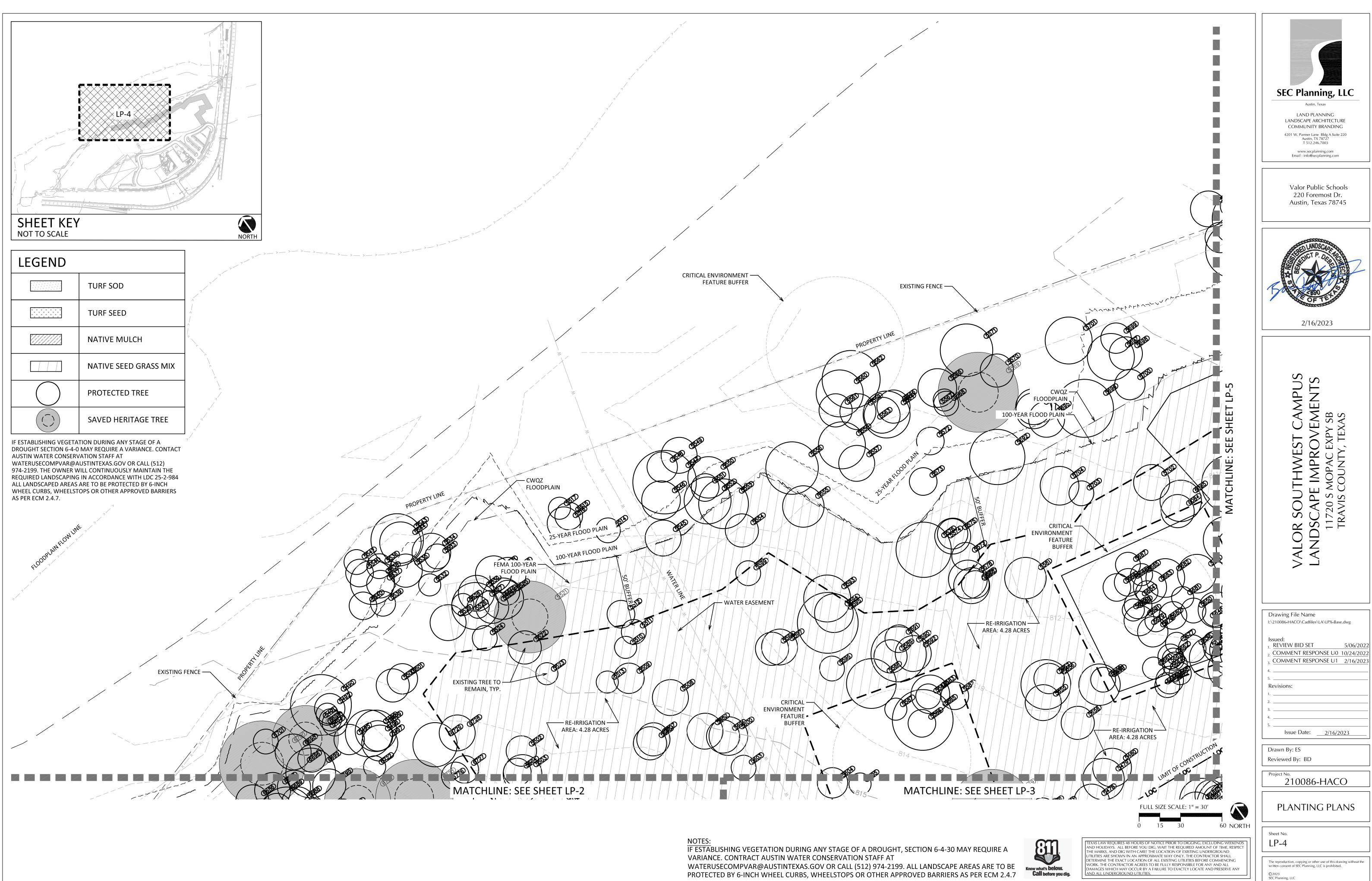
<section-header></section-header>
Valor Public Schools 220 Foremost Dr. Austin, Texas 78745
2/16/2023
VALOR SOUTHWEST CAMPUS LANDSCAPE IMPROVEMENTS 11720 S MOPAC EXPY SB TRAVIS COUNTY, TEXAS
Drawing File Name
I:\210086-HACO\Cadfiles\LA\Sheets\LN-2.dwg         Issued:         1. REVIEW BID SET       5/06/2022         2. COMMENT RESPONSE U0       10/24/2022         3. COMMENT RESPONSE U1       2/16/2023         4.
3 4 5 Issue Date:2/16/2023
Drawn By: ES Reviewed By: BD
Project No. 210086-HACO
CONSTRUCTION
Sheet No.
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	Austin, Texas SEC Planning, LLCC Austin, Texas LAND PLANNING LANDSCAPE ARCHITECTURE COMMUNITY BRANDING A201 W. Parmer Lane Bldg A Suite 220 Austin, TX 78727 T512.246.7003
	Valor Public Schools 220 Foremost Dr. Austin, Texas 78745
	2/16/2023
	VALOR SOUTHWEST CAMPUS LANDSCAPE IMPROVEMENTS 11720 S MOPAC EXPY SB TRAVIS COUNTY, TEXAS
<text><figure><text></text></figure></text>	Drawing File Name         I:\210086-HACO\Cadfiles\LA\LPX-Base.dwg         Issued:         1. REVIEW BID SET       5/06/2022         2. COMMENT RESPONSE U0 10/24/2022         3. COMMENT RESPONSE U1 2/16/2023         4.         5.         Revisions:         1.         2.         3.         4.         5.         Issue Date:         2/16/2023    Drawn By: ES Reviewed By: BD Project No. 210086-HACO          OVERALL SHEET         Sheet No.         LP-1    The reproduction, copying or other use of this drawing without the wither or SEC Planning, LLC is prohibited.
	DROUGHT SECTION 6-4-0 MAY REQUIRE A VARIANCE. CONTACT AUSTIN WATER CONSERVATION STAFF AT WATERUSECOMPVAR@AUSTINTEXAS.GOV OR CALL (512) 974-2199. THE OWNER WILL CONTINUOUSLY MAINTAIN THE REQUIRED LANDSCAPING IN ACCORDANCE WITH LDC 25-2-984 ALL LANDSCAPED AREAS ARE TO BE PROTECTED BY 6-INCH WHEEL CURBS, WHEELSTOPS OR OTHER APPROVED BARRIERS AS PER ECM 2.4.7. FULL SIZE SCALE: 1" = 100'

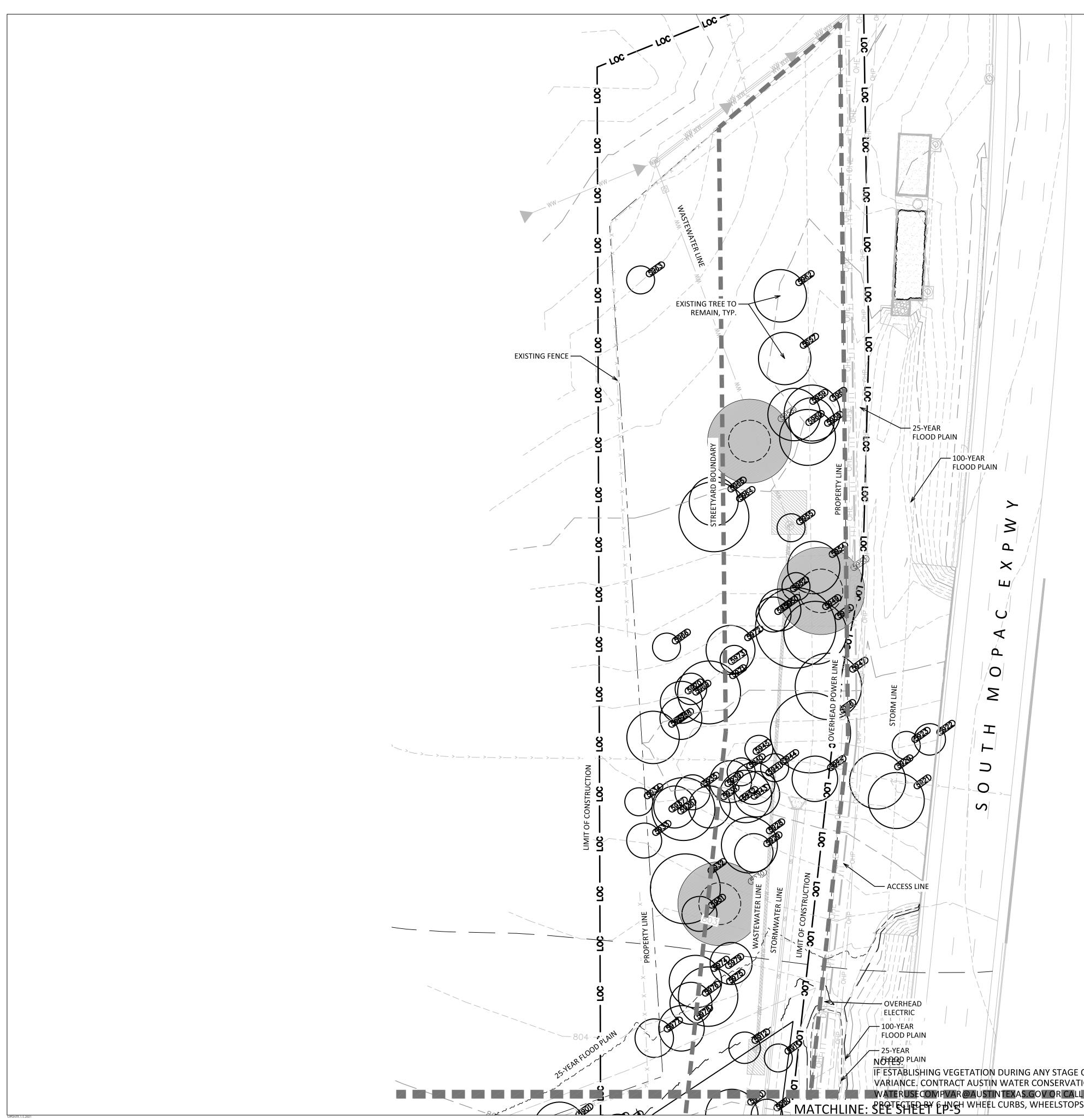






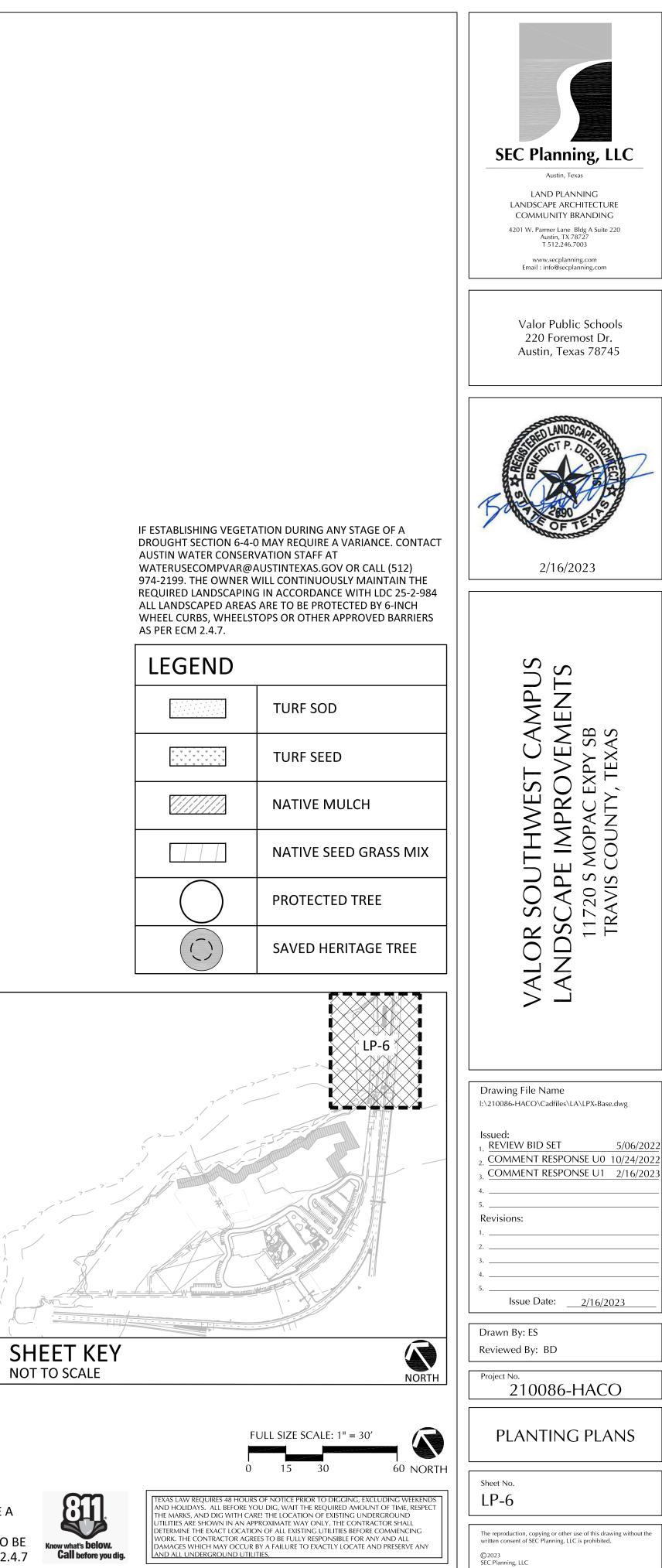
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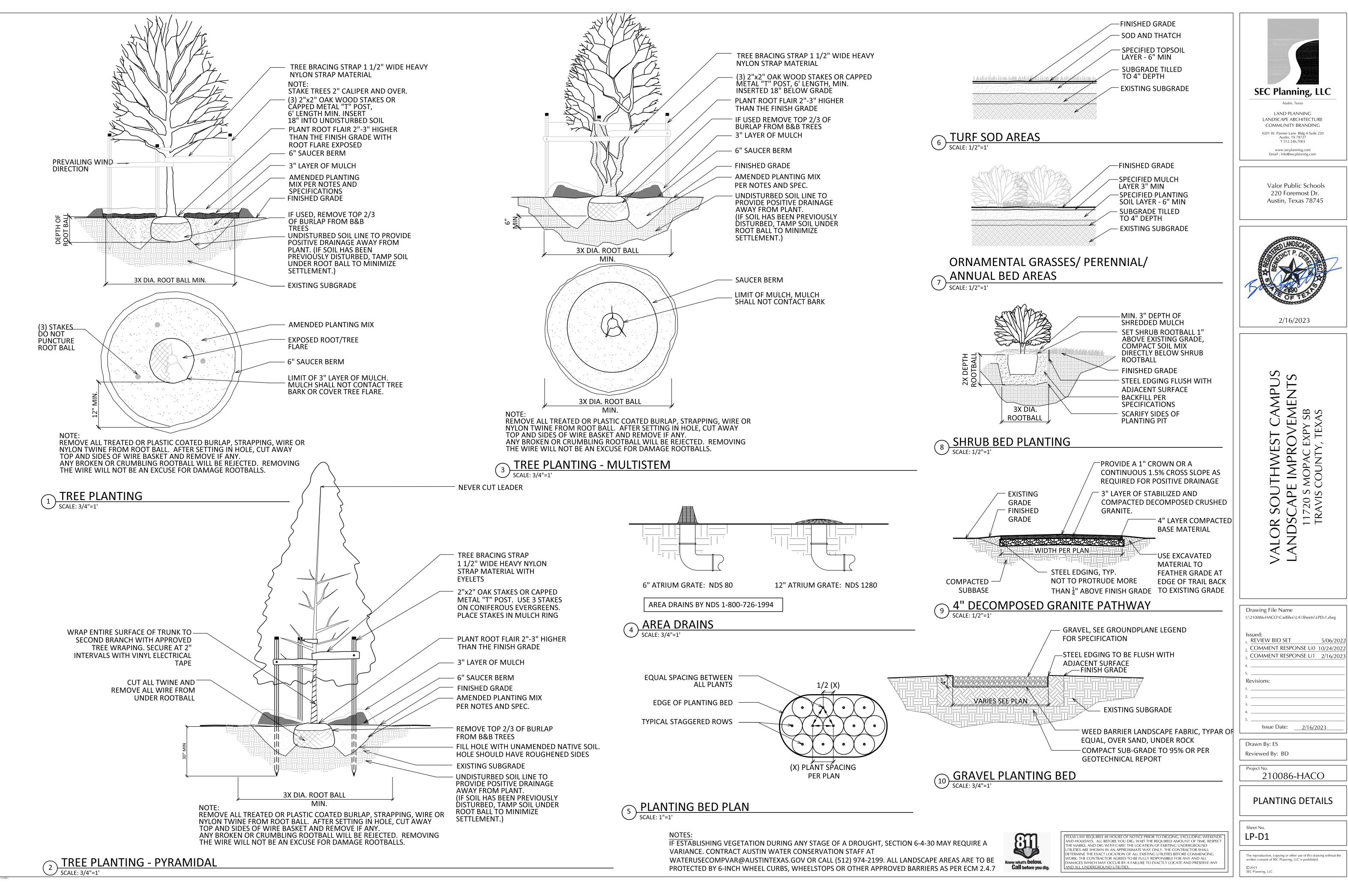


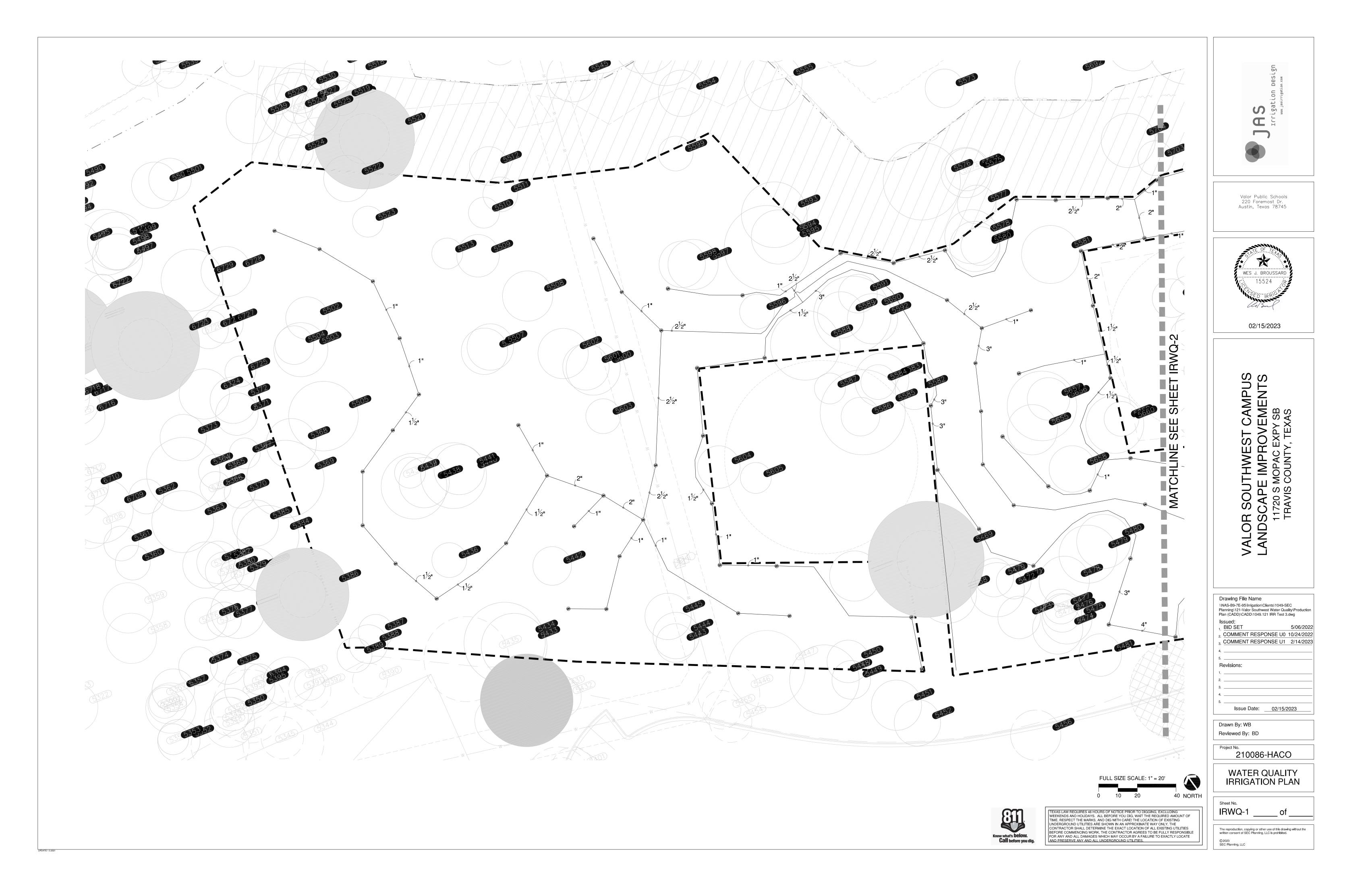


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MATCHLINE: SEE SHEET LP-5 MATCHLINE: SEE SHEET LP-5









	<b>JAS</b> Irrigation Design
5823 5823	Valor Public Schools 220 Foremost Dr. Austin, Texas 78745
5163 5163 5163 5163 5163 5163	WES J. BROUSSARD WES J. BROUSSARD 15524 VSED IR RIGH 02/15/2023
	VALOR SOUTHWEST CAMPUS LANDSCAPE IMPROVEMENTS 11720 S MOPAC EXPY SB TRAVIS COUNTY, TEXAS
	Drawing File Name           \\NAS-B9-7E-95\\rrigation\Clients\1049-SEC           Planning\121-Valor Southwest Water Quality\Production           Plan (CADD)\CADD\1049.121 IRR Test 3.dwg           Issued:           1. BID SET         5/06/2022           2. COMMENT RESPONSE U0 10/24/2022           3. COMMENT RESPONSE U1 2/14/2023           4.           5.           Revisions:           1.           2.           3.           4.           5.           Issue Date:           02/15/2023
FULL SIZE SCALE: 1" = 20'	Drawn By: WB Reviewed By: BD Project No. 210086-HACO WATER QUALITY IRRIGATION PLAN
0 10 20 40 NORTH TEXAS LAW REQUIRES 48 HOURS OF NOTICE PRIOR TO DIGGING, EXCLUDING WEEKENDS AND HOLIDAYS. ALL BEFORE YOU DIG, WAIT THE REQUIRED AMOUNT OF TIME, RESPECT THE MARKS, AND DIG WITH CARE! THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY A FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.	Sheet No. IRWQ-2 of The reproduction, copying or other use of this drawing without the written consent of SEC Planning, LLC is prohibited. ©2023 SEC Planning, LLC

## IRRIGATION GENERAL NOTES

1.THIS SYSTEM WILL UTILIZE A REIRRIGATION POND AS A WATER SOURCE TO SUPPLY WATER FOR THE REIRRIGATION DEFINED AREA. ALL COMPONENTS SHALL BE PURPLE IN COLOR. ALL IRRIGATION SHALL FOLLOW APPLICABLE LOCAL ORDINANCES, THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL AND TCEQ REGULATIONS FOR WATER QUALITY.

2. IF USED, DRIP IRRIGATION SHALL BE PLACED 2" - 4" FROM EDGE OF PLANTING BED OR AS PER MANUFACTURER RECOMMENDATIONS. EACH DRIP ZONE SHALL INCLUDE FILTERS BASED UPON MANUFACTURERS RECOMMENDATIONS. DRIP IRRIGATION SHALL BE EXTENDED TO PLANTS LOCATED OUTSIDE OF AND ADJACENT TO THE BED AREAS.

3. ANY QUANTITIES SHOWN ARE APPROXIMATE. VERIFY QUANTITIES AND PROVIDE ALL LABOR, MATERIALS, AND DEVICES NECESSARY TO COMPLETE THE IRRIGATION SYSTEM.

4. THE LAYOUT SHOWN IS DIAGRAMMATIC. DO NOT PLACE LINES OR DEVICES NEAR TREE ROOT SYSTEMS OR IN PAVEMENT AREAS, OR AREAS THAT CONFLICT WITH PROPER INSTALLATION AND FUNCTION OF THE SYSTEM.

- 5. TREES: a. THE CONTRACTOR SHALL NOT TRENCH IN THE CRITICAL ROOT ZONE OF TREES.
  - b. THE CONTRACTOR SHALL ONLY HAND TRENCH OR "AIR SPADE" TRENCHES WITHIN THE DRIP LINE OF EXISTING TREES.
    c. TRENCHES ADJACENT TO EXISTING TREES SHALL BE CLOSED WITHIN 24 HOURS; IF NOT POSSIBLE, THE TRENCH ADJACENT TO THE TREE SHALL BE KEPT SHADED WITH BURLAP.

## 6. PIPING AND VALVES:

- a. IRRIGATION LATERAL PIPING SHALL BE PURPLE SCH 40 PVC. PIPE SIZES 3" AND ABOVE SHALL BE BELL AND GASKETED AND UTILIZE LEEMCO LATERAL CONNECTIONS AND LEEMCO JOINT RESTRAINT FITTINGS.
- c. JOINT RESTRAINTS SHALL BE LH-SERIES FOR PIPE TO FITTING CONNECTIONS AND LB-SERIES FOR PIPE TO PIPE CONNECTIONS. CONTRACTOR SHALL CONFIRM CONNECTIONS WITH LEEMCO REPRESENTATIVE BEFORE ORDERING. CONTRACTOR
- SHALL CONTACT LEEMCO REPRESENTATIVE FOR INSTALLATION DEMONSTRATION. b. IRRIGATION MAIN LINE PIPING SHALL BE PURPLE SCHEDULE 40 PVC. PIPE SIZES 3" AND ABOVE TO 6" SHALL BE BELL AND GASKETED AND UTILIZE LEEMCO LATERAL CONNECTIONS AND LEEMCO JOINT RESTRAINT FITTINGS.
- c. ALL PIPES AND ELECTRICAL BUNDLES PASSING BENEATH DRIVEWAYS OR PAVED AREAS MUST BE SLEEVED WITH PVC SCH 40 PVC PIPE WITH SOLVENT WELDED JOINTS. SLEEVE DIAMETER MUST EQUAL TWICE THAT OF THE PIPE OR SIZED AS SHOWN ON
- PLANS. d. RAINBIRD MAXIPAW IMPACT ROTOR HEADS SHALL BE UTILIZED FOR THE REIRRIGATION AREA.

CONTRACTOR SHALL CONTACT LEEMCO FOR INSTALLATION DEMONSTRATION OF PIPE JOINT RESTRAINTS, IF NECESSARY.

## 7. IRRIGATION CONTROLLER:

- a. IRRIGATION CONTRACTOR SHALL BE A BASELINE 3200P DECODER CONTROLLER AND SHALL BE A INSTALLED PER MANUFACTURER INSTRUCTIONS FOR A 2-WIRE WIRE APPLICATION. NO SUBSTITUTIONS WILL BE ACCEPTED FOR THE IRRIGATION CONTROL I FR.
- b.THE CONTRACTOR SHALL ENSURE PROPER POWER IS AVAILABLE AT THE INSTALLATION LOCATION. THE BASELINE 3200P DECODER SHALL BE SETUP WITH CELLULAR MODEM FORM OF COMMUNICATION BY THE CONTRACTOR. CONSULT THE LANDSCAPED ARCHITECT FOR COORDINATION OF INTERNET CONNECTION.
- c. CONTRACTOR SHALL UTILIZE FLOW LEARNING FOR THE CONTROLLER TO LEARN THE FLOW OF ALL ZONES. d. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER OR OWNERS
- REPRESENTATIVE AND THE LANDSCAPE ARCHITECT TO ADD A CHOSEN CONTACT PERSON AND CONTACT NUMBER OR EMAIL FOR CONTROLLER ALARM NOTIFICATIONS. THIS IS IN ADDITION TO THE MAINTENANCE CONTACT PERSON, NUMBER AND/OR EMAIL.

### 8. SITE CONDITIONS:

- a. VERIFY AND MARK THE LOCATION OF ALL ON-SITE UTILITIES REQUIRED BY THE IRRIGATION SYSTEM.
  b. VERIFY AND MARK THE LOCATION OF ALL BURIED CABLES, CONDUITS, PIPING, ETC. PRIOR TO TRENCHING OR DIGGING. Call (800) DIG-TESS per Texas Utilities Code Title 5 Chapter 251 UNDERGROUND FACILITY DAMAGE PREVENTION AND
- SAFETY. c. ADJUST THE DESIGN AS NECESSARY, TOGETHER WITH THE LANDSCAPE ARCHITECT, LICENSED IRRIGATOR OR THEIR REPRESENTATIVE, TO SUIT SITE CONDITIONS,
- ELEVATIONS AND GRADES BEFORE PROCEEDING WITH WORK. d. PROTECT FROM DAMAGE AS NECESSARY, EXISTING PROPERTY, EXISTING LANDSCAPE FEATURES, PLANT MATERIAL, STRUCTURES, THIS WORK IN PROGRESS, AND THE WORK OF OTHER TRADES.

9. PROVIDE CHRISTY (OR EQUIVALENT) PROFESSIONAL GRADE PURPLE VALVE BOXES LARGE ENOUGH TO ACCOMMODATE VALVES AND OTHER DEVICES SHOWN IN THE DETAILS. BOX EXTENSIONS MAY BE REQUIRED. GROUND BOXES SHALL BE CONSTRUCTED OF MATERIALS SUFFICIENT IN STRENGTH TO ACCEPT LOADS (PEDESTRIAN OR VEHICULAR) REQUIRED BASED ON ACTUAL INSTALLATION LOCATION.

10. PRESSURE REGULATING COMPONENT(S) SHALL BE REQUIRED WHERE STATIC PRESSURE EXCEEDS MANUFACTURER'S RECOMMENDED OPERATING RANGE.

11. OBTAIN ALL PERMITS AND LICENSES APPLICABLE PRIOR TO THE START OF WORK.
 12. SEE DETAILS FOR OTHER REQUIRED MATERIALS AND DEVICES.

## CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL

## 3. Minimum Design Criteria for Wet Well and Pumps.

mps. (1)The retention basin must be emptied within 72-hours after a rain event ends. Emptying of the retention basin must not begin sooner than 12 hours after the end of the rainfall event. The flow rate of the pumps (gpm) shall be designed with either a 30 hour or 60 hour drawdown time (30 hrs for single zone irrigation systems and 60 hrs for multi-zone).

(2)Pumps must be capable of delivering the required volume of water at the necessary rate and pressure to the irrigation system in the designated time period. Pumps and wet well must be sized to minimize the number of on and off-cycles of the pumps. The rate (Q I) of inflow from the retention pond Intake Riser (see 1.6.7(A)(3)(c)) to the wet well must exceed the pump rate (Q P).

- (3)A dual pump system must be provided, with each pump capable of delivering 100 percent of the design capacity.
   (a)Plug valves must be located outside the wet well on the discharge side of each pump to isolate the pumps for maintenance and for throttling if necessary. Butterfly valves and gate valves must not be
- used. (b)Check valve(s) must be provided to prevent backflow from the irrigation system back into the pump well.
- (c)Pumps must be selected to operate within 20% of their best operating efficiency.
- (4)Pump Operation.
  (a)The pumps must alternate on start up. The control logic must allow the system to operate normally with only one pump in service.
  (b)A manual control must be provided so both pumps can be turned on
- If necessary. (c)A high/low-pressure pump shut off system (to detect line clogging or breaking) shall be installed in the pump discharge piping. As an alternative, an amp draw (overloads) or other equivalent monitoring
- (5)Float controls or submersible transducers must be provided to control
- operation of the pumps. Three control settings must be used: (1) one for starting the pump, (2) one for shutting off the pump at the normal low water level, and
- (3) one for back up shut off of the pump in case the first shut-off fails

(6)An alarm system shall be provided consisting of a red light located at a height of at least five feet above the ground level at the wet well. The alarm shall activate when:

- (a)The water level is below the primary shutoff float and the pump has not turned off.(b)The high/low-pressure pump shut off switch has been activated.
- (c)Any other pump failures or system shut down indicated by control panel.

The alarm must be vandal proof and weather resistant. If the system is to be privately maintained, a sign must be placed at the wet well clearly displaying the name and phone number of a responsible party that may be contacted if the alarm is activated.

(7)A green "pump run light" shall be provided which is activated any time a pump is running. The green light should be located directly adjacent to the red alarm light.

 b.Wet Well.
 (1)A separate wet well outside of the basin must be provided for the pumps. The wet well must be constructed of precast or cast in place concrete. Complete access to the pumps and other internal components of the wet well for maintenance must be provided through a lockable hatch cover. An isolation

plug valve to prevent flow from the retention basin to the wet well during maintenance activities must be provided. (2)Calculations must be provided with the design showing that the wet well will not float under saturated-soil conditions. The top elevation of the well must be higher than the water quality elevation. The wet well, lateral inflow pipe, and pump must be designed to completely evacuate the retention pond. A space of at least two feet must be available below the bottom of the pump intake. The

two-foot minimum space below the bottom of the pump may be waived if the applicant demonstrates that adequate filtration of the water quality volume is provided. (3)The pump installation in the wet well and access to the wet well must be designed to allow the pumps to be removed using truck-mounted hydraulic

- hoist equipment or a portable "A-frame." A system must be provided to allow pump removal without entering the wet well. If rails are used they must be stainless steel. c.Intake Riser.
- Prior to entering the wet well, stormwater must pass through an appropriate intake riser with a screen to reduce the potential for clogging of distribution pipes and sprinklers by larger debris (e.g. cups, cans, sticks). The intake riser and screen should be designed similarly to Figure 1-54 in the Appendices of this manual. Alternative designs will be considered.

4. Minimum Design Criteria for the Irrigation System or Infiltration Field.

a.Irrigation Timing. (1)The retention basin must be emptied within 72-hours after a rain event ends.

(2)Irrigation must be initiated no sooner than 12 hours after the rain event ceases.(3)The irrigation controller must be set to provide alternating, equivalent

irrigation and rest periods until the basin is emptied.
(4)The time of irrigation on any area must not exceed the rest time. Continuous application on any area must not exceed two hours.
(5)An adjustable rain sensor must be provided which will normally be set to temporarily halt irrigation during rainfalls exceeding one half inch. The rain sensor must be able to interrupt irrigation (stop pumps) in the event of subsequent rain events prior to emptying basin. The 12 hour pump delay may initiate after the rain sensor senses the rain event has terminated.
(6)Division of the irrigation area into two or more sections such that irrigation

occurs alternately in each section is an acceptable way to meet the

# b Irrigation Rate

The infiltration rate at which the soil can accept the irrigated storm water must be derived from the infiltration rate listed in the U.S. Department of Agriculture National Resources Conservation Service (NRCS) Soil Survey for the county, location, and soil type verified to be present at the irrigation site. If a range is given, the lower value of the range is to be used. The design irrigation rate is not to exceed 0.20 inches per hour even if the lower value of the range exceeds that rate. City of Austin field experience has shown that infiltration rates above 0.20 inches per hour do not function as designed and generate significant nuisance ponding and runoff issues. The application rate may not exceed the infiltration rate on any portion of the irrigation area.

c.Irrigation Area or Infiltration Field

requirement for a rest period.

Calculations must be provided which demonstrate that an adequate irrigation area or infiltration field will be provided based on the soil infiltration rate, water quality volume, and, for irrigation areas, the application rate and actual irrigation time. The irrigation area or infiltration field system must be included within the water quality easement.

d.Irrigation Area Slope. Irrigation must not occur on land with slopes greater than 10%.

# 4.Minimum Design Criteria for the Irrigation System or Infiltration Field. (CONT.) e.Piping and Valves.

(1)All irrigation system distribution and lateral piping (i.e. from the pumps to the spray heads) must be Schedule 40 purple PVC. All pipes and electrical bundles passing beneath driveways or paved areas must be sleeved with PVC Class 200 pipe with solvent welded joints. Sleeve diameter must equal twice that of the pipe or electrical bundle. Buried piping must be marked with detectable marking tape labeled "CAUTION: BURIED NON-POTABLE WATER LINE BELOW".

(2)Valves. All valves must be designed specifically for sediment bearing water, and be of appropriate design for the intended purpose. All remote control, gate, and quick coupling valves must be located in ten-inch or larger plastic valve boxes with purple caps. All pipes and valves must be marked to indicate that they contain non-potable water. All piping must be buried to protect it from weather and vandalism. The depth and method of burial must be adequate to protect the pipe from vehicular traffic such as maintenance equipment. Velocities in all pipelines should be sufficient to prevent settling of solids. The irrigation design and layout must be integrated with the tree protection plan and presented as part of the Site Plan or Subdivision Construction Plan. (3)Systems must include a plug valve to allow flushing at the end of every line.

f.Sprinklers. All sprinkler heads must have full or partial circle rotor pop-up heads and must be capable of delivering the required rate of irrigation over the designated area in a uniform manner. Sprinkler heads should have purple caps to indicate non-potable water. Irrigation must not occur beyond the limits of the designated irrigation area and sprinkler heads should be located at least twice the calculated spray radius from any residential lot. Partial circle sprinkler heads must be used as necessary to prevent irrigation beyond the designated limits. Sprinkler heads must be capable of passing solids that may pass through the intake. Sprinkler heads must be flush mounted and encased within a 2 feet × 2 feet concrete housing capable of protecting the head from mowing and service equipment (see Appendix V, Figure 1-59F for an example).

g.Vegetation. The irrigation area must have native vegetation or be restored or re-established with native vegetation, unless approved by the Director. These areas must not receive any fertilizers, pesticides, or herbicides. If landscaped areas are used for irrigation, fertilizers, pesticides, or herbicides must not be applied to those areas and this limitation must be outlined in the Integrated Pest Management (IPM) plan. For publicly maintained systems, fencing or signs must be installed to limit unauthorized use of the irrigation area. If signs are installed, they must include the phrase "Stormwater Irrigation Area - No Trespassing."

The irrigation area must contain a minimum of 12 inches of native or enhanced soil with the appropriate permeability rates. A soils report must be provided and must include at a minimum a soils map verifying soil types in the irrigation area, permeability rates, soil depths, percent of coarse fragments gravel size (2.0 mm diameter) and larger, found on the soil surface and in the subsurface soils, depth of roots, locations of borings or trenches, photographs of exposed soils, location and type of soil enhancement performed, soils testing results, etc. A site visit may be conducted by the city to confirm soil conditions, including when representative trenches have been opened or borings are being conducted. City staff must be given at least 72 hours notice of when borings or trenches are to be backfilled.

If soil is enhanced, topsoil or amended topsoil shall meet the requirements of Standard Specification 601S, Salvaging and Placing Topsoil. The condition, type, structure, and quality of the soil shall be conducive to infiltration and to plant growth. If alternative methods of amending soil can be demonstrated to increase the infiltration capacity by at least a factor of three, these methods may be used with approval from the Director of WPD.

i.Geological Features. The irrigation area must not contain any Critical Environmental Feature Buffer Zones.

## j.Irrigation Area Buffer.

h.Soil.

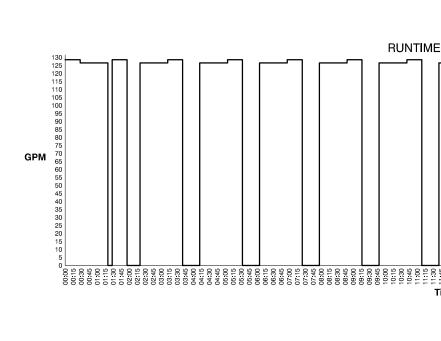
A buffer area of un-irrigated vegetation must be provided downstream of the irrigation area to treat any runoff that may occur from the irrigation area during heavy rainfall or from excessive irrigation. This area must be a minimum of 50 feet in length (in the direction of flow) and be adjacent to all downstream edges of the irrigation area. As an option, a diversion system (e.g. a swale or berm) may be provided to route any runoff to the retention basin. This diversion system must be designed to carry the runoff from the two-year storm. Alternatively, the irrigation area may be located upstream from the development such that any runoff will be routed to the retention pond.

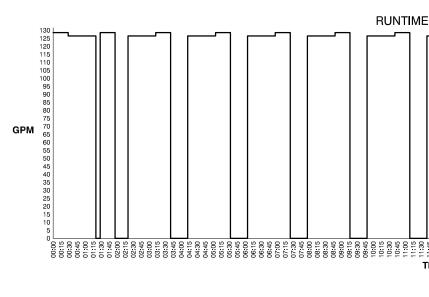
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P.O.C. NUMBER: 01 Water Source Information:	Water Quality Pump ≉
FLOW AVAILABLE	
Custom Max Flow:	140 GPM
Flow Available	140 GPM
PRESSURE AVAILABLE	
Static Pressure at POC:	55 PS
Pressure Available:	55 PSI
DESIGN ANALYSIS	
Maximum Station Flow:	126 GPM
Flow Available at POC:	140 GPM
Residual Flow Available:	14 GPM
Critical Station:	2
Design Pressure:	35 PS
Friction Loss:	6.13 PSI
Fittings Loss:	0.61 PSI
Elevation Loss:	0 PSI
Loss through Valve	8.34 PS
Pressure Req. at Critical Station:	50.1 PSI
Loss for Fittings:	0.05 PSI
Loss for Main Line	0.54 PS
Loss for POC to Valve Elevation:	0 PSI
Loss for Backflow:	0 PSI
Critical Station Pressure at POC:	50.7 PS
Pressure Available	55 PSI
Residual Pressure Available:	4.31 PS
P.O.C. NUMBER: 02 Water Source Information:	Water Quality Pump #
FLOW AVAILABLE	
Custom Max Flow:	140 GPM
Flow Available	140 GPM
PRESSURE AVAILABLE	
Static Pressure at POC:	55 PS
Pressure Available:	55 PSI
DESIGN ANALYSIS	
Maximum Station Flow:	
Flow Available at POC:	126 GPM
	126 GPM 140 GPM
Residual Flow Available	
	140 GPM
Residual Flow Available:	<u>140 GPM</u> 14 GPM
Residual Flow Available: Critical Station: Design Pressure:	140 GPM 14 GPM 2 35 PSI
Residual Flow Available: Critical Station: Design Pressure: Friction Loss:	140 GPM 14 GPM 2
Residual Flow Available: Critical Station: Design Pressure: Friction Loss: Fittings Loss:	140 GPM 14 GPM 2 35 PSI 6.13 PSI
Residual Flow Available: Critical Station: Design Pressure: Friction Loss: Fittings Loss: Elevation Loss:	140 GPM 14 GPM 2 35 PSI 6.13 PSI 0.61 PSI 0 PSI
Residual Flow Available: Critical Station: Design Pressure: Friction Loss: Fittings Loss: Elevation Loss: Loss through Valve:	140 GPM 14 GPM 2 35 PSI 6.13 PSI 0.61 PSI
Residual Flow Available: Critical Station: Design Pressure: Friction Loss: Fittings Loss: Elevation Loss: Loss through Valve: Pressure Req. at Critical Station:	140 GPM 14 GPM 2 35 PSI 6.13 PSI 0.61 PSI 0 PSI 8.34 PSI
Residual Flow Available: Critical Station: Design Pressure: Friction Loss: Fittings Loss: Elevation Loss: Loss through Valve: Pressure Req. at Critical Station: Loss for Fittings:	140 GPM 14 GPM 2 35 PSI 6.13 PSI 0.61 PSI 0 PSI 8.34 PSI 50.1 PSI 0.06 PSI
Residual Flow Available: Critical Station: Design Pressure: Friction Loss: Fittings Loss: Elevation Loss: Loss through Valve: Pressure Req. at Critical Station:	140 GPM 14 GPM 2 35 PSI 6.13 PSI 0.61 PSI 0 PSI 8.34 PSI 50.1 PSI
Residual Flow Available: Critical Station: Design Pressure: Friction Loss: Fittings Loss: Elevation Loss: Loss through Valve: Pressure Req. at Critical Station: Loss for Fittings: Loss for Fittings:	140 GPM 14 GPM 2 35 PSI 6.13 PSI 0.61 PSI 0 PSI 8.34 PSI 50.1 PSI 0.06 PSI 0.55 PSI
Residual Flow Available: Critical Station: Design Pressure: Friction Loss: Fittings Loss: Elevation Loss: Loss through Valve: Pressure Req. at Critical Station: Loss for Fittings: Loss for Main Line: Loss for POC to Valve Elevation:	140 GPM 14 GPM 2 35 PSI 6.13 PSI 0.61 PSI 0 PSI 8.34 PSI 50.1 PSI 0.65 PSI 0 PSI 0 PSI

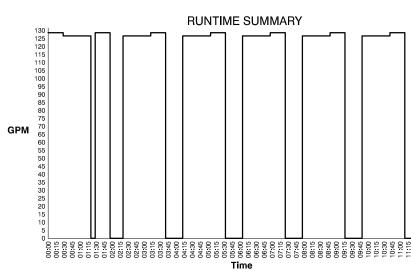
Residual Pressure Available: 4.3 PSI

**CRITICAL ANALYSIS** 

## WATERING SCH NUMBER MODEL TYPE CYCLE 1 Rain Bird PESB-PRS-D 360 Turf Impact Rotor 55 2 Rain Bird PESB-PRS-D 180 Turf Impact Rotor 25 TOTALS:







**IRRIGATION SCHEDULE** 

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI
6	Rain Bird 2045A-SAM-NP 06mm Turf Impact Rotor, Pop-Up Sprinkler, Open Case, Adjustable and Full Circle. With Precision Jet Tube, Seal-A-Matic Check Valve, and Non-Potable Purple Cover. Nozzles: 06=red; 07=black; 08=blue; 10=yellow; 12=beige.	35
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	
•	Rain Bird PESB-PRS-D 2" 1in., 1-1/2in., 2in. Plastic Industrial Valves. Low Flow Operating Capability, Globe Configuration. With Pressure Regulating Module, and Scrubber Technology for Reliable Performance in Dirty Water Irrigation Applications.	
$\oslash$	Flomatic 93LW Swing Check Valve 93LW - Swing check valve with outside lever and weight. Epoxy coated ductile iron body. Flanged connection ANSI B16.1, class 150. Stainless steel seat and shaft. Resilient seal is standard.	
С	Baseline BL-3200P Two-wire controller in 16-gauge stainless-steel pedestal enclosure, expandable up to 200 stations.	
FS	Baseline BL-PFS400 4" Baseline 4in. PVC Saddle-Style Flow Sensor with Integrated Flow Decoder, Flow Sensor is two-wire ready with a Flow biCoder built into the tee insert	
RS	BL-5407-KIT-PRO Tipping Rain Bucket Kit Pro. Includes Tipping Rain Bucket, Tipping Rain Bucket Decoder, BL-5311 Moisture Sensor, DBR/Y Wire-Connectors	
PU 또	Point of Connection Water Quality Pump #1	
<b>PU2</b> 廿	Point of Connection Water Quality Pump #2	
	Irrigation Lateral Line: PVC Schedule 40-NP 1"	
	Irrigation Lateral Line: PVC Schedule 40-NP 1 1/2"	
	Irrigation Lateral Line: PVC Schedule 40-NP 2"	
	Irrigation Lateral Line: PVC Schedule 40-NP 2 1/2"	
	Irrigation Lateral Line: PVC Schedule 40-NP 3"	
	Irrigation Lateral Line: PVC Schedule 40-NP 4"	
	Irrigation Mainline: PVC Schedule 40-NP	
	Irrigation Mainline: PVC Schedule 40-NP 3"	
	Irrigation Mainline: PVC Schedule 40-NP 4"	
· · · · · · · · · · · · · · · · · · ·	/alve Callout	
<b>*</b> •	Volve Number	
<b>#</b>	Valve Row	
	Valve Sze	

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SUMM	ARY				
, o o o o o				Program: 1st 24 HRS Total Time: 23:44 Total Water Use: 130,100 gallons Max Allowed GPM: 126	A
SUMM/		15.11 15.53 15.54 16.00 16.01 17.11 17.11 17.73 17.73	18:00 18:04 19:04 19:04 19:04 19:04 19:04 19:04 19:04 19:04 19:04 10:040	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
<b>we</b> 12:15 12:25 12:28 1	13:15 13:30 13:46 13:46 14:00 14:00 14:05 14:45 15:45	15:15 15:20 15:45 15:45 16:00 16:00 16:00 17:15 17:15 17:45 17:45 17:45	18:00 18:00 19:00 19:15 19:45 19:45 20:000	Program: 2nd 24 HRS Total Time: 23:44 Total Water Use: 130,100 gallons Max Allowed GPM: 126	
-					
Total Tin	: 3rd 12 HRS ne: 11:52 ter Use: 65,050 gallon wed GPM: 126	15			
<u>GPM R/</u> 2 37	ADIUS 7				
					Drawing File
					5 Revisions: 1 2 3 3 4 5 Issue
					Drawn By: V Reviewed B Project No. 21
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	Kr	now what's below. Call before you dig	WEEKEN TIME, RI UNDERC CONTRA	LAW REQUIRES 48 HOURS OF NOTICE PRIOR TO DIGGING, EXCLUDING NDS AND HOLIDAYS. ALL BEFORE YOU DIG, WAIT THE REQUIRED AMOUNT OF ESPECT THE MARKS, AND DIG WITH CARE! THE LOCATION OF EXISTING GROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE ACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES : COMMENCING WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE Y AND ALL DAMAGES WHICH MAY OCCUR BY A FAILURE TO EXACTLY LOCATE ESERVE ANY AND ALL UNDERGROUND UTILITIES.	Sheet No. IRWQ- The reproduction, c written consent of S ©2023 SEC Planning, LLC

<b>JAS</b> Irrigation Design
Valor Public Schools 220 Foremost Dr. Austin, Texas 78745
WES J. BROUSSARD 15524 USED IR RIGH 02/15/2023
VALOR SOUTHWEST CAMPUS LANDSCAPE IMPROVEMENTS 11720 S MOPAC EXPY SB TRAVIS COUNTY, TEXAS
Drawing File Name           \\NAS-B9-7E-95\\Irrigation\Clients\1049-SEC           Planning\121-Valor Southwest Water Quality\Production           Plan (CADD)\CADD\1049.121 IRR Test 3.dwg           Issued:           1. BID SET         5/06/2022           2. COMMENT RESPONSE U0 10/24/2022           3. COMMENT RESPONSE U1 2/14/2023           4.           5.           Revisions:           1.           2.           3.           4.           5.           1.           2.           3.           4.           5.           1.           2.           3.           4.           5.           Issue Date:           02/15/2023
Drawn By: WB Reviewed By: BD
Project No. 210086-HACO WATER QUALITY IRRIGATION CALCULATIONS
Sheet No. IRWQ-3 of
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