MODIFICATION TO A WATER POLLUTION ABATEMENT PLAN

EDGEWOOD PHASE 1, SECTION 1 CR175 AND RR 2243 LEANDER, WILLIAMSON COUNTY, TEXAS

Prepared For:

M/I HOMES OF AUSTIN, LLC

7600 N. Capital of Texas Hwy.; Bldg. C, Suite 250 Austin, TX 78731 512-770-8503

Prepared By: KIMLEY-HORN AND ASSOCIATES, INC.

501 S Austin Ave #1310 Georgetown, TX 78626

Firm No. 928 KHA Project No. 067783129



October 2, 2023

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SECTION 1: EDWARDS AQUIFER APPLICATION COVER PAGE

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501 S. Austin Ave, Suite 1310, Georgetown, Texas 78626

512 520 0768

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 Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.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

Mid-Review Modifications

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

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

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

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.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

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application.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

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

1. Regulated Entity Name: Edgewood Phase 1, Section 1				2. Regulated Entity No.: RN 111343968					
3. Customer Name: M/I Homes of Austin, LLC			4. Customer No.: CN 604305250						
5. Project Type: (Please circle/check one)	New		Modification		Extension		Exception		
6. Plan Type: (Please circle/check one)	<u>WPAP</u>	CZP	SCS	UST	AS T	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	<u>Reside</u>	<u>ntial</u>	Non-residential		8. Site (acre		e (acres):	2.79 acres/52.61 acres	
9. Application Fee:	\$1,500		10. Permanent H		BMP(s	s):	Vegetative Filte Pond, Stormtro	er Strips, Batch Detention ooper (Wet Vault)	
11. SCS (Linear Ft.):	N/A		12. AST/UST (No			12. AST/UST (No. Tanks):		N/A	
13. County:	Williams	son	14. Watershed:					Brushy Creek	

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

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

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

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

Adam Davis, P.E.

Print Name of Customer/Authorized Agent

Adar

October 2, 2023

Signature of Customer/Authorized Agent

Date

FOR TCEQ INTERNAL USE ONLY				
Date(s)Reviewed:		Date Administratively Complete:		
Received From:		Correct N	umber of Copies:	
Received By:		Distributi	on 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):	

SECTION 2: GENERAL INFORMATION

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501 S. Austin Ave, Suite 1310, Georgetown, Texas 78626

512 520 0768

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: Adam Davis, P.E.

Date: October 2, 2023

Signature of Customer/Agent:



Project Information

- 1. Regulated Entity Name: Edgewood Phase 1, Section 1
- 2. County: Williamson
- 3. Stream Basin: Brushy Creek
- 4. Groundwater Conservation District (If applicable): N/A
- 5. Edwards Aquifer Zone:

Recharge Zone

6. Plan Type:

\boxtimes	WPAP
	SCS
\square	Modification

AST
UST
Exception Request

7. Customer (Applicant):

Contact Person: <u>William Peckman</u> Entity: <u>M/I Homes of Austin, LLC</u> Mailing Address: <u>7600 N. Capital of Texas Hwy.; Bldg. C, Suite 250</u> City, State: <u>Austin, TX</u> Zip: <u>78731</u> Telephone: <u>512-770-8503</u> Fax: <u>N/A</u> Email Address: <u>aevetts@mihomes.com</u>

8. Agent/Representative (If any):

Contact Person: <u>Adam Davis, P.E.</u>	
Entity: <u>Kimley-Horn</u>	
Mailing Address: 501 S Austin Ave #1310	
City, State: <u>Georgetown, Texas</u>	Zip: <u>78626</u>
Telephone: <u>512-618-8503</u>	Fax: <u>N/A</u>
Email Address: <u>adam.davis@kimley-horn.com</u>	

9. Project Location:

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

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

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

South of RR 2243 and East CR 175

- 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>3/8/2021</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

Revious 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)
\ge	Undeveloped (Undisturbed/Uncleared)
	Other:

Prohibited Activities

- 16. \square I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:
 - (1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
 - (2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
 - (3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;
 - (4) The use of sewage holding tanks as parts of organized collection systems; and
 - (5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).
 - (6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.
- 17. I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:
 - (1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

- (2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and
- (3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

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

- For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.

For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.

A request for an exception to any substantive portion of the regulations related to the protection of water quality.

- A request for an extension to a previously approved plan.
- 19. Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

] TCEQ cashier

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

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

Road Map



DIRECTIONS FROM TCEQ HEADQUARTERS TO PROJECT SITE

- 1. HEAD SOUTH ON PARK 35 CIRCLE, TURNING RIGHT ONTO S IH-35 FRONTAGE ROAD
- 2. MAKE A "U" TURN AT E. BRAKER LN, USE LEFT LANE TO TAKE RAMP ONTO IH-35
- CONTINUE NORTH ON IH-35
 TAKE EXIT 256 ONTO NIH-35 FRONTAGE ROAD TOWARDS CEDAR PARK
- STAY RIGHT TOWARDS UNIVERSITY BLVD AND TURN LEFT ONTO UNIVERSITY BLVD
 CONTINUE ONTO RANCH RD 1431 W
 TURN RIGHT ONTO CR 175 / SAM BASS RD

- 8. CONTINUE ON CR 175
- 9. SITE IS LOCATED ON THE RIGHT

SHEET	Scale:	1"=1000'
	Designed by:	DDL
	Drawn by:	DDL
EXA	Checked by:	AGD
	Date:	OCTOBER 2023
	Project No.	067783129

EDGEWOOD PH 1-1 LEANDER, TEXAS



TX 78759 , CIATES, INC.

Kimley *Whorn*

USGS/Edwards Recharge Zone Map



Introduction

The subject site is a largely undeveloped 2.79 acres/52.61 acres acre lot located on CR175 and RR 2243 and within the Full Purpose city limits of the City of Leander. The subject property is part of a larger development, Edgewood, which encompasses ± 140 acres and will comprise of residential single-family.

The site is not located in the Federal Emergency Management Agency's 100-year floodplain according to FIRM 48491C0460F. The site is located within the Edwards Aquifer Contributing and Recharge Zone according to TCEQ Edwards Aquifer Map.

Current Tract Conditions

Legal Description

The legal description is described as 52.6 acres of land out of the John T. Church Survey, Abstract No. 140 and the Milton Hicks Survey, Abstract No. 287 conveyed to Cannon 140 LP by deeds of record in document Nos. 2013049063 and 2013049270 of the Official Public Records of Williamson County, Texas.

Land Use

The lot is zoned for Single-Family Compact (SFC), Single-Family Suburban (SFS), and Single-Family Urban (SFU). The site resides within the Full Purpose city limits of the City of Leander in Williamson County, Texas.

Existing Drainage Conditions

Under existing conditions, the site has two ridges to the east and west sending flow to one point at the southern property boundary. This flow then travels within a creek and off the property, eventually discharging into Brushy Creek.

Proposed Development

The proposed Edgewood Phase 1-1 project includes the construction of 127 lots of single-family residential development. Water and wastewater lines will be designed according to City of Leander specifications and connect to City of Leander utility services. Access to the site will be through two proposed driveways along CR 175. The project proposes 18.44 acres (35%) of total impervious cover. Water will be treated according to TCEQ requirements through two (2) on site Batch Detention Ponds, vegetative filter strips, and Stromtrooper (Wet Vault). The flow will be discharged south of the site and then flow into Brushy Creek. Proposed flow conditions will not exceed existing conditions.

Drainage and Water Quality Analysis

Floodplain Information

According to the FEMA Flood Insurance Rate Map Panel No. 48491C0460F for Williamson County, effective December, 20, 2019, no portion of the development lies within the 100-yr floodplain (Zone A).

On-Site Drainage

The proposed site will convey runoff through an underground storm pipe system into two (2) on site Batch detention ponds. The detention ponds will release the runoff at or below existing condition flow rates onto rock riprap which will then be conveyed south via an existing creek. Drainage area maps and calculations are included in the construction set included in the Exhibits Section.

Off-Site Drainage

Under existing conditions, 24.33 acres of offsite water enters the site from the north. The off-site drainage from the north will be conveyed through a 10'X4' RCB culvert and into a proposed batch detention pond (Pond A-A).

In proposed conditions, once runoff is released from the detention ponds it will enter an existing channel that will eventually outfall into Brushy Creek.

Detention and Water Quality

Water Quality Best Management Practices (BMP) for Edgewood Phase 1-1 will address the water quality requirements for the ultimate area disturbed within this phase. WQP-A and WQP-B will be treated by batch detention ponds. VFS-1, VFS-2, VFS-3, and VFS-4 will be treated by vegetative filter strips. STORMTROOPER will be treated by a stormtrooper (wet vault). NT-1, NT-2, and NT-3 will have no development or impervious cover proposed and therefore no treatment will be provided for these areas. These drainage areas are to meet all water quality requirements per TCEQ requirements. See Permanent Stormwater Section – Attachment C for a breakdown on TSS calculations.

The detention pond requirements used for the purpose of this report are assumed to be based on the requirements outlined by the City of Austin Drainage Criteria Manual. To reduce the flow to predeveloped conditions, 2 detention ponds (A-A & A-C) will be constructed as a part of this development phase to reduce flows to existing conditions.

Erosion and Sedimentation Controls

Temporary erosion and sedimentation controls during construction are proposed on the Erosion Control Plan and include: silt fences, inlet protection, construction staging area, concrete washout, rock berm, and a stabilized construction entrance designed to City of Austin criteria. The land disturbed during construction, including the staging and stockpile areas, will drain into the proposed on-site storm sewer system where it will be conveyed to the proposed detention and water quality ponds located on-site. The detention ponds will discharge onto proposed rock rip rap into an existing drainage channel that cuts through the middle of the site.

SECTION 3: GEOLOGIC ASSESSMENT

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501 S. Austin Ave, Suite 1310, Georgetown, Texas 78626

512 520 0768



Environmental Services, Inc.

GEOLOGIC ASSESSMENT FOR THE APPROXIMATELY 140-ACRE CANNON TRACT PROJECT 731 COUNTY ROAD 175 LEANDER, WILLIAMSON COUNTY, TEXAS HJN 200183 GA

PREPARED FOR:

M/I HOMES OF AUSTIN AUSTIN, TEXAS

PREPARED BY:

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



MARCH 2021

200183-001 GA Report

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



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I. GEOLOGIC ASSESSMENT FORM (TCEQ-0585)

II. ATTACHMENTS:

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

Geologic Assessment

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Geologist: James Killian

Telephone: 512-328-2430

Date: 2 March 2021

Fax: <u>512-328-1804</u>

Representing: <u>Horizon Environmental Services, Inc. and TBPG Form Registration No. 50488</u> (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:



Regulated Entity Name: <u>140-acre Cannon Tract</u>, 731 County Road 175, Leander, Williamson County, Texas

Project Information

- 1. Date(s) Geologic Assessment was performed: <u>9, 12, 21, 22, and 23 December 2020; 22 and</u> <u>23 February 2021</u>
- 2. Type of Project:

3.

⊠ WPAP	AST
\boxtimes scs	🗌 UST
Location of Project:	
🔀 Recharge Zone	

Transition Zone

Contributing Zone within the Transition Zone

- 4. Attachment A Geologic Assessment Table. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.
- 5. Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Soil Name	Group*	Thickness(feet)
Eckrant cobbly clay, 1-8% slopes (EaD)	D	0-1.0
Eckrant extremely stony clay, 0- 3% slopes (EeB)	D	0-1.0
Fairlie clay, 1- 2% slopes (FaB)	D	0-3.8

Table 1 - Soil Units, InfiltrationCharacteristics and Thickness

Soil Name	Group*	Thickness(feet)
Georgetown stony clay loam, 1-3%		
slopes (GsB)	D	0-3.0

* Soil Group Definitions (Abbreviated)

- A. Soils having a high infiltration rate when thoroughly wetted.
- B. Soils having a moderate infiltration rate when thoroughly wetted.
- C. Soils having a slow infiltration rate when thoroughly wetted.
- D. Soils having a very slow infiltration rate when thoroughly wetted.
- 6. Attachment B Stratigraphic Column. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.
- 7. Attachment C Site Geology. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.
- 8. Attachment D Site Geologic Map(s). The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

Applicant's Site Plan Scale: 1" = <u>900</u>' Site Geologic Map Scale: 1" = <u>900</u>'

TCEQ-0585 (Rev.02-11-15)

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

9. Method of collecting positional data:

Global Positioning System (GPS) technology.

Other method(s). Please describe method of data collection: _____

- 10. The project site and boundaries are clearly shown and labeled on the Site Geologic Map.
- 11. Surface geologic units are shown and labeled on the Site Geologic Map.
- 12. Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.
 - Geologic or manmade features were not discovered on the project site during the field investigation.
- 13. The Recharge Zone boundary is shown and labeled, if appropriate.
- 14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.
 - There are _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
 - The wells are not in use and have been properly abandoned.
 - The wells are not in use and will be properly abandoned.
 - The wells are in use and comply with 16 TAC Chapter 76.
 - There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

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



ATTACHMENT A

GEOLOGIC ASSESSMENT TABLE

GEOL	LOGIC ASS	PROJECT NAME: Cannon Tract, 731 CR 175, Leander, Williamson County, TX																		
LOCATION					FEATURE CHARACTERISTICS								EVALUATION			PH	PHYSICAL SETTING			
1A	1B *	1C*	2A	2B	3		4		5	5A	6	7	8A	8B	9	1	10	1	1	12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIM	ENSIONS (FEET)		TREND (DEGREES)	DOM DE	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						х	Y	Z		10						<40	<u>>40</u>	<1.6	<u>>1.6</u>	
F-1	30.587195	-97.780976	SH	20	Ked	3	3	1					CFO	20	40		X	Х		Hillside
F-2	30.587473	-97.783476	SF	20	Ked	5	0.25	2.50					CFO	35	55		X	Х		Hillside
F-3	30.588734	-97.784373	SC	20	Ked	4	4	4					CFO	30	50		X	Х		Hillside
F-4	30.587926	-97.785806	SH	20	Ked	1.5	1.5	1					CFO	15	35	X		X		Hillside
F-5	30.584272	-97.787132	SH	20	Ked	1.5	1	1					CFO	20	40		X	Х		Hillside
F-6	30.58507	-97.78948	CD	5	Kc	8	4	0.5					CFO	10	15	X		Х		Hillside
F-7	30.587841	-97.789237	CD	5	Kc	5	3	0.5					CFO	15	20	X		Х		Hillside
F-8	30.586939	-97.790117	SC	20	Kc	1.25	0.6	1					N	15	35	X		Х		Cliff
* DATUN	/l:																			
2A TYPE TYPE 2B POINTS							8A INFILLING													
С	Cave				30		N None, exposed bedrock													
SC	Solution cavity				20		C Coarse - cobbles, breakdown, sand, gravel													
SF	Solution-enlarge	ed 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 colo									ors									
0	Other natural bedrock features 5						V	Vegeta	tion. Give deta	ils in	narrativ	ve descripti	on							
мв	Man-made feat	n-made feature in bedrock 30						Flowsto	one, cements,	cave	deposi	ts								
SW	V Swallow hole 30						х	Other r	naterials:											
SH	Sinkhole				20		r													
CD	Non-karst closed depression 5												12 TOF	POGRAPHY	/					
z	Zone, clustered or aligned features 30 Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed																			

JAMES P. KILLIAN GEOLOGY No. 10281

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 : 3 March 2021

James P. Hillen

Sheet <u>1</u> of <u>1</u>

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



ATTACHMENT B STRATIGRAPHIC COLUMN





ATTACHMENT C DESCRIPTION OF SITE GEOLOGY



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

A geologic assessment of approximately 140 acres located at 731 County Road 175 in Leander, Williamson County, Texas, was conducted pursuant to Texas rules for regulated activities in the Edwards Aquifer Recharge Zone (EARZ) (30 TAC 213). The subject site consists of undeveloped land and an occupied single-family residence. Assessment findings were used to develop recommendations for site construction measures intended to be protective of water resources at the subject site and adjacent areas.

Most of the subject site is located within the Edwards Aquifer Recharge Zone (EARZ) as defined by the Texas Commission on Environmental Quality (TCEQ). The EARZ occurs where surface water enters the subsurface through exposed limestone bedrock containing faults, fractures, sinkholes, and caves (TCEQ, 2005). Approximately 30% of the subject site is in the Edwards Aquifer Contributing Zone. The Contributing Zone of the Edwards Aquifer includes all the watersheds that feed runoff into the rivers and streams that flow over the Recharge Zone (TCEQ, 2004). TCEQ rules regulate activities in the portions of the Contributing Zone that are within the counties already regulated by the Edwards Aquifer Rules. These areas are generally north and west of the Recharge Zone.

The subject site is underlain by the Keys Valley Marl (Kkv), Comanche Peak Limestone (Kc), and the Edwards Limestone (Ked) (USGS, 2006).

Eight naturally occurring geologic features and no man-made features were identified at the subject site. The geologic features and their locations are presented in Attachment D. Further details regarding each feature, as well as site photographs, are presented in Attachments A, E, and G.



ATTACHMENT D SITE GEOLOGIC MAP



200183 - Cannon Tract\Graphics\200183-001GA_06A_SGM.mxd



ATTACHMENT E SUPPORTING INFORMATION



1.0 INTRODUCTION AND METHODOLOGY

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

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

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

2.0 ENVIRONMENTAL SETTING

2.1 LOCATION AND GENERAL DESCRIPTION

The subject site consists of approximately 140 acres of mostly undeveloped land located at 731 County Road 175, about 1 mile southeast of the intersection of County Road 175 and State Highway 2243 (Leander Road) in Williamson County, Texas (Appendix F, Figure 1). One single-family residence is located on the subject site, but no other previous use of the site was evident upon Horizon's site investigation.

2.2 LAND USE

The subject site comprised mostly vacant rangeland and woodlands at the time of Horizon's site reconnaissance. One single-family residence is located on the site. County Road 175 borders the site to the west and the rest of the site is bounded by rangeland and woodlands. Surrounding lands are generally used for rural residences, farming, and raising livestock.



vironmental Services, Inc.

2.3 TOPOGRAPHY AND SURFACE WATER

The subject site is situated on gently sloping terrain within the Turkey Creek-Brushy Creek watershed (TPWD, 2021) (Appendix F, Figures 2 and 3). Surface elevations on the subject site vary from a minimum of approximately 895 feet above mean sea level (amsl) near the southwestern site boundary along County Road 175 to a maximum of approximately 1000 feet amsl near the north-central boundary of the subject site (CAPCOG, 2007). Drainage on the site occurs primarily by overland surface flow from northeast to southwest. In addition, 3 ephemeral tributaries bisect the western, central, and eastern portions of the subject site and drain from north to south.

2.4 EDWARDS AQUIFER ZONE

The subject site is found within the Edwards Aguifer Recharge Zone and Edwards Aquifer Contributing Zone (TCEQ, 2021) (Attachment F, Figure 2).

The Recharge Zone is the area where the stratigraphic units constituting the Edwards Aguifer are exposed at the surface and where water may filter into the aguifer through permeable features such as cracks, fissures, caves, and other openings in these layers (TCEQ, 2005). The Recharge Zone includes other geologic formations in proximity to the Edwards Aquifer where such features may create a potential for recharge of surface waters into the Edwards Aguifer.

The Contributing Zone of the Edwards Aguifer includes all the watersheds that feed runoff into the rivers and streams that flow over the Recharge Zone (TCEQ, 2004). Contributing Zones are usually north and west of the Recharge Zone. TCEQ Edwards Aquifer Rules (30 TAC 213) regulate activities within the Recharge and Contributing Zone and areas draining toward it. The TCEQ (and/or local jurisdiction) will require an approved Geologic Assessment as part of a Water Pollution Abatement Plan prior to land disturbance.

2.5 SURFACE SOILS

Four soil units are mapped within the subject site (NRCS, 2021) (Appendix F, Figure 4). The soil units are described in further detail below.

Eckrant cobbly clay, 1 to 8% slopes (EaD) consists of cobbly clay in the upper portion and fractured indurated limestone underneath. This soil is calcareous and moderately alkaline. Eckrant cobbly clay is well-drained with rapid runoff and moderate permeability. Typically, this soil is used as rangeland and suited to urban development due to the firm underlying limestone. Some of the limitations of this soil include the stones and cobbles on the surface and its sticky and slippery surface when wet; additionally, maintaining grass cover can be difficult due to a shallow soil depth (Werchan and Coker, 1983).

Eckrant extremely stony clay, 0 to 3% slopes (EeB) consists of nearly level to gently sloping soils found on broad ridges or shallow valleys in uplands. The upper layer of the soil is typically a very stony clay approximately 11 inches thick. This upper layer is roughly 25% limestone fragments on the surface. Underlying this layer is Indurated limestone. This soil is well-



drained and has rapid surface runoff with moderately slow permeability. The main use of Eckrant extremely stony clay is for rangeland. The soil is suited for development purposes due to the hard underlying limestone which can act as a stable footing for foundations, but blasting and cutting will be needed for construction of underground utility lines, foundations, roads, and streets (Werchan and Coker, 1983).

Fairlie clay, 1 to 2% slopes (FaB) is a gently sloping soil found along broad flats and on the edges of drainageways on uplands. Weakly cemented limestone interbedded with limy material underlies this soil. This soil is calcareous and moderately alkaline. Fairlie clay is moderately well-drained with medium runoff. This soil is known to crack extensively when dry and seal the cracks when wet, which prevents water from entering the soil rapidly. The main uses of this soil are for crops and small portions of tame pasture. Fairlie clay is suitable for urban uses. However, due to its high shrink-swell potential, this soil can cause cracks in paved streets and foundations. Corrosivity of underground steel utility lines is also a hazard associated with this soil (Werchan and Coker, 1983).

Georgetown stony clay loam, 1 to 3% slopes (GsB) is a gently sloping soil typically found on higher parts of uplands. This soil has an upper layer of brown stony clay loam that grades into an underlying layer of subsoil and indurated fractured limestone. This soil is well-drained with medium surface runoff and slow permeability. Georgetown stony clay loam is used as rangeland and is typically desirable for homesites due to the native post oak and high position on the landscape. Some of the limitations associated with this soil include corrosivity of buried pipelines due to the clayey subsoil and construction; installation of foundations and underground utilities can be difficult and costly due to the rock substratum (Werchan and Coker, 1983).

2.6 WATER WELLS

A review of TCEQ and Texas Water Development Board (TWDB) records revealed no water wells on the subject site and 1 well within 0.5 miles of the subject site (TCEQ, 2021; TWDB, 2021). According to TWDB records, off-site well no. 5826301 is reportedly completed in the Trinity Aquifer at a total depth of approximately 400 feet below the surface.

The results of this assessment do not preclude the existence of undocumented/abandoned wells on the site. If a water well or casing is encountered during construction, work should be halted near the feature until the TCEQ is contacted.

2.7 GEOLOGY

Literature Review

The subject site is underlain by Keys Valley Marl (Kkv), Comanche Peak Limestone (Kc), and Edwards Limestone (Ked) (USGS, 2006).

Keys Valley Marl is only present on the western edge of the subject site. This member is predominantly composed of marl with some argillaceous limestone and limestone. Keys Valley is typically a soft white formation with marine megafossils like *Exogyra texana*, *Gryphaea*


mucronata, other pelecypods, ammonites, and gastropods. Keys Valley Marl is part of the Upper Walnut Formation, can be up to 50 feet thick, and begins to thin towards the south by the Williamson/Travis county line (Abbott, 1973; USGS, 2006).

Comanche Peak Limestone consists of both limestone and marl and conformably underlies the Edwards Formation. This formation is known to be nodular, fossiliferous, and thickens towards the north. The contact between the Edwards and the Comanche formations can be distinguished by the change from white nodular marly limestone to the massive carbonate beds of the Edwards. Comanche Peak Limestone is fine to very fine-grained with a light gray color that weathers white. This formation has been extensively burrowed. Large gastropods and pelecypods are common throughout the formation (Abbott, 1973; USGS, 2006).

Edwards Limestone consists of limestone, dolomite, and chert. Edwards Limestone is aphanitic to fine-grained, massive to thin-bedded, hard, brittle, and fossiliferous throughout. The limestone consists in part of rudistid biostromes and much miliod biosparite. This formation is also known to contain oysters and gastropods (Abbott, 1973). The dolomite within Edwards Limestone is fine to very fine-grained, porous, and medium gray to grayish-brown. The chert, with common nodules and plates, varies in amount from bed to bed, has some intervals free of chert, and is mostly white to light gray. In the zone of weathering, the Edwards Limestone is considerably recrystallized, "honeycombed," and cavernous, forming an aquifer; it forms flat areas and plateaus bordered by scarps.

The site Stratigraphic Column is provided as Attachment B, and the Site Geologic Map is Attachment D.

The subject site is located within the Balcones Fault Zone. According to mapping, no faults are present within the subject site boundaries. Available geologic reports indicate the nearest mapped fault outside of the subject site is located approximately 1 mile to the southeast trending northeast at N47E (USGS, 2006).

Field Assessment

Please see Attachment C for a narrative description of geology observed on the subject site. The Site Geologic Map is provided as Attachment D. Horizon observed no manmade features and 8 naturally occurring geologic features on the subject site that meet the TCEQ definition of a potential recharge feature. The Geologic Assessment Table (Attachment A) describes those features observed on the subject site that meet the TCEQ definition of a potential recharge feature.

Geologic features on the subject site are described as follows:

Geologic feature F-1 is an upland sinkhole located in the southeastern corner of the subject site with a diameter of approximately 3 feet and a depth of 1 foot. F-1 was noted during the site investigation to have no air flow with one small, rock-choked, semi-open portal. This feature has been filled with cobbles, gravel, clay, and loose soil. Water infiltration of this feature is intermediate and has an apparent surface runoff catchment of less than 0.4 acres.



Geologic feature F-2 is a previously excavated solution-enlarged fracture located in Edwards Limestone and trending N314W. F-2 measures approximately 5 feet long by 0.25 feet wide by 2.5 feet deep. Previous apparent hand excavation dug the feature down to approximately 6 feet below the natural surface. Moderate airflow was noted along the fracture at the time of Horizon's reconnaissance. On 22 and 23 February 2021, the feature was mechanically excavated using a backhoe with hoe ram attachment. The feature was enlarged and dug down 11 feet below the surface. A low bedding plane void was encountered 9 feet below the surface that extended laterally along the eastern and southern walls of the excavation. The eastern portion of the bedding plane extends approximately 16 feet laterally, trending N45E before encountering a bedrock wall, and the southern portion extended toward the southeast for another 8 feet before ending at another bedrock wall. The largest opening was along the southern wall of the excavation, where bedding plane void ceiling heights were approximately 2 feet and lowered to only 0.5 feet to 1 foot in height. The eastern portion of the bedding plane void was less than 0.5 feet high at the back wall. This feature was determined to be a sensitive recharge feature and did not have enough human-sized passageways to be classified as a cave. The water infiltration rate of the feature is intermediate and has an apparent surface runoff catchment of less than 0.4 acres.

Geologic feature F-3 is a previously excavated solution cavity located near the northern boundary of the middle portion of the subject site. This feature is found in Edwards Limestone and is approximately 4 feet long by 4 feet wide with a depth of 4 feet. Slight air was noted at the opening during Horizon's site reconnaissance. The solution cavity was filled with cobbles, clay, dirt, and loose soil. The feature was noted to have an intermediate water infiltration rate and deemed to be a sensitive recharge feature with an apparent surface runoff catchment of less than 0.4 acres.

Geologic feature F-4 is a very small upland sinkhole that has a diameter of approximately 1.5 feet with negative relief of 1 foot. This feature is located in Edwards Limestone close to the northern site boundary, approximately 500 feet west of F-3. The feature had a small portal with no air flow that could have possibly been burrowed out by an animal. The sinkhole was filled with dirt, clay, gravel, and other material. Based on the infill of material within the sink, lack of air flow from the open portal, and very low water infiltration rate, this feature was deemed to be non-sensitive for groundwater recharge capability and therefore would not require TCEQ protective setback buffers.

Geologic feature F-5 is a small upland sinkhole that measures approximately 1.5 feet long by 1 foot wide by 1 foot deep. A small portal was noted in the floor of the sink with no air flow. The portal was surrounded by cobbles and filled with clay, dirt, and soil. The water infiltration rate of the feature was noted to be low-intermediate. The feature was deemed to be sensitive for groundwater recharge capability and would require TCEQ protective setback buffers.

Geologic feature F-6 is a closed depression that measures approximately 8 feet long by 4 feet wide by 1 foot deep. No open drainage portals or voids were observed along the floor of this feature. The depression has a clay-lined floor, making infiltration very low.



Geologic feature F-7 is a closed depression that measures 5 feet long by 3 feet wide by 1 foot deep. No open drainage portals or voids were observed along the floor of this feature. The depression has a clay-lined floor, making infiltration very low.

Geologic feature F-8 is a solution cavity found within Comanche Peak Limestone. The feature measures approximately 1.25 feet long by 0.6 feet wide by 1 foot deep. The feature is found in the side wall of a small tributary and was noted to have no air flow. The feature has a low infiltration rate due to the clay lining within the solution cavity and has been deemed to be non-sensitive.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Four geologic features (F-1, F-2, F-3, and F-5) were identified at the subject site that would require protection or mitigation pursuant to TCEQ rules for protection of the Edwards Aquifer (30 TAC 213). A sensitive feature would require a TCEQ setback buffer. In general, a protective buffer encompassing a sensitive feature is recommended to meet the TCEQ guidance for a setback of at least 50 feet in all directions from the feature's areal extent (perimeter), plus its watershed catchment up to 200 feet from the perimeter of the feature.

Four geologic features (F-4, F-6, F-7, and F-8) have been evaluated as non-sensitive for groundwater recharge capability and would therefore not require TCEQ protective setback buffers. No further action is recommended for these non-sensitive features.

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

Because the subject site is located over the Edwards Aquifer Recharge Zone, it is possible that subsurface voids underlie the site. If any subsurface voids are encountered during site development, work should halt immediately so that a geologist may assess the potential for the void(s) to provide meaningful contribution to the Edwards Aquifer.

4.0 **REFERENCES**

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- (CAPCOG) Capital Area Council of Governments. 5-foot contours, CAPCOG Center for Regional Development, Austin, Texas. 2007.
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- _____. Stoeser, D.B., Shock, Nancy, Green, G.N., Dumonceaux, G.M., and heran, W.D. *Geologic map database of Texas,* NE quadrant, prepared in cooperation with the Texas Bureau of Economic Geology. 2006.
- Wechan L.E., and J. L. Coker. Soil survey of Williamson County, Texas. US Department of Agriculture, Natural Resources Conservation Service (formerly Soil Conservation Service), in cooperation with the Texas Agricultural Experiment Station. 1983.

ATTACHMENT F

ADDITIONAL SITE MAPS







200183 - Cannon Tract\Graphics\200183-001GA_03A_Topo.mxd



200183 - Cannon Tract\Graphics\200183-001GA_04A_Soil.mxd



ATTACHMENT G

SITE PHOTOGRAPHS





PHOTO 1 View of geologic feature F-1 (upland sinkhole), facing northwest



PHOTO 2 View of geologic feature F-2 (solution cavity/cave) with metal grate cover named Core Barrel Cave, facing south



PHOTO 3 View of geologic feature F-3 (solution cavity) with metal grate cover, facing east



PHOTO 4 View of manmade feature M-4 (observation water well), facing down





PHOTO 5 View of manmade feature M-2 (0.5-inch-diameter PVC pipe), facing down



PHOTO 6 Typical view of sanitary sewer manhole(s) (M-1, M-3, M-5, and M-6)

SECTION 4: MODIFICATION OF A WATER POLLUTION ABATEMENT PLAN

kimley-horn.com

501 S. Austin Ave, Suite 1310, Georgetown, Texas 78626

512 520 0768

Modification of a Previously Approved Plan

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Transition Zone and Relating to 30 TAC 213.4(j), 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 request for a **Modification of a Previously Approved Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Adam Davis, P.E.

Date: October 2, 2023

Signature of Customer/Agent:

Project Information

- 22. Current Regulated Entity Name: Edgewood Phase 1, Section 1 Original Regulated Entity Name: Edgewood Phase 1, Section 1 Regulated Entity Number(s) (RN): <u>111343968</u> Edwards Aquifer Protection Program ID Number(s): <u>11002698-11002714</u>
 - igsquire The applicant has not changed and the Customer Number (CN) is: 604305250
 - The applicant or Regulated Entity has changed. A new Core Data Form has been provided.
- 23. Attachment A: Original Approval Letter and Approved Modification Letters. A copy of the original approval letter and copies of any modification approval letters are attached.

24. A modification of a previously approved plan is requested for (check all that apply):

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;

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;

Development of land previously identified as undeveloped in the original water pollution abatement plan;

] Physical modification of the approved organized sewage collection system;

] Physical modification of the approved underground storage tank system;

Physical modification of the approved aboveground storage tank system.

25. Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

WPAP Modification	Approved Project	Proposed Modification
Summary		
Acres	<u>52.61</u>	<u>52.61</u>
Type of Development	Single Family and Parks	Single Family and Parks
Number of Residential	<u>127</u>	<u>127</u>
Lots		
Impervious Cover (acres)	<u>17.84</u>	<u>18.44</u>
Impervious Cover (%	<u>33</u>	<u>35</u>
Permanent BMPs	Vegetative Filter Strips, Batch Detention Ponds	Vegetative Filter Strips, Batch Detention Ponds, Stormtrooper (Wet Vault)
Other		
SCS Modification	Approved Project	Proposed Modification
Summary		
Linear Feet		
Pipe Diameter		
Other		

AST Modification	Approved Project	Proposed Modification
Summary		
Number of ASTs		
Volume of ASTs		
Other		
UST Modification	Approved Project	Proposed Modification
Summary		
Number of USTs		
Volume of USTs		
Other		

26. Attachment B: Narrative of Proposed Modification. A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved, including any previous modifications, and how this proposed modification will change the approved plan.
 27. Attachment C: Current Site Plan of the Approved Project. A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere. The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired. The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved. The approved construction has commenced and has been completed. Attachment C illustrates that the site was not constructed as approved. The approved construction has commenced and has been completed. Attachment C illustrates that the site was not constructed as approved. The approved construction has commenced and has not been completed. Attachment C illustrates that, thus far, the site was not constructed as approved.
 28. The acreage of the approved plan has increased. A Geologic Assessment has been provided for the new acreage. Acreage has not been added to or removed from the approved plan.
29. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

ORIGINAL APPROVAL LETTERS AND APPROVED MODIFICATION LETTERS

Jon Niermann, *Chairman* Emily Lindley, *Commissioner* Bobby Janecka, *Commissioner* Toby Baker, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 10, 2021

Mr. William Peckman M/I Homes of Austin, LLC 7600 N Capital of Texas Hwy, Bldg. C, Ste 250 Austin, Texas 78731

Re: Edwards Aquifer, Williamson County

NAME OF PROJECT: Edgewood Phase 1 Section 1; Located 0.8 miles southeast of CR 175 and RM 2243; Leander, Texas

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

Regulated Entity No. RN111343968; Additional ID No. 11002698-11002714

Dear Mr. Peckman:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP and SCS Applications for the above-referenced project submitted to the Austin Regional Office by Kimley-Horn and Associates, Inc. on behalf of M/I Homes of Austin, LLC on September 27, 2021, and October 8, 2021, respectively. Final review of the WPAP and SCS was completed after additional material was received on December 1, 2021 and December 8, 2021. As presented to the TCEO, the Temporary and Permanent Best Management Practices (BMPs) were selected, and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213 and Chapter 217. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.

PROJECT DESCRIPTION

The proposed residential project will have an area of approximately 52.61 acres with 0.03 acres of existing impervious cover. It will include the construction of 127 single-family residential homes, with associated roads, sidewalks, and utilities. The overall impervious cover will be 17.84 acres (33.91 percent), a 17.83-acre net increase.

TCEQ Region 11 · P.O. Box 13087 · Austin, Texas 78711-3087 · 512-339-2929 · Fax 512-339-3795

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The proposed sewage collection system within the Recharge Zone will consist of 4,847.75 linear feet of SDR 26 (ASTM D-3034, ASTM D-3212) gravity sewer pipe, manholes, and appropriate appurtenances for residential development. The specific piping will be 738.35 linear feet of 12-inch diameter pipe, 3,419.4 linear feet of 8-inch diameter pipe, and 690 linear feet of 6-inch diameter dual lateral piping. The system will be connected to an existing City of Leander wastewater line for conveyance to the Brushy Creek Regional Wastewater Treatment Plant for treatment and disposal. The project is located within the City of Leander and will conform to all applicable codes, ordinances, and requirements of the City of Leander.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, 2 batch detention basins and 2 engineered vegetative filter strips, designed using the TCEQ technical guidance document, <u>Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005)</u>, will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 15,502 pounds of TSS generated from the 17.81 acres of new impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

GEOLOGY

According to the geologic assessment included with the application for the overall 140-acre Cannon Tract, the tract is underlain by Keys Valley Marl, Comanche Peak Limestone, and the Edwards Limestone. Eight geologic features, four sensitive and four non-sensitive were identified by the project geologist. None of the sensitive features are located within the boundaries of the current 52.61-acre project site. Sensitive features F-4, F-6, F-7, and F-8 are located within the boundaries of future phases of the development. The site assessment conducted on November 19, 2021 revealed the site was generally as described in the geologic assessment.

SPECIAL CONDITIONS

- I. All permanent pollution abatement measures shall be operational prior to first occupancy of the homes within their respective drainage areas.
- II. All sediment and/or media removed from the water quality basins during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.
- III. By the responsible engineer's dated signature and seal on the Engineering Design Report attached to the submitted application, all information therein accurately reflects the information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer in accordance with the requirements of 30 TAC 213.5 (c) and Chapter 217.

STANDARD CONDITIONS

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

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

Prior to Commencement of Construction:

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

During Construction:

- 10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213 and Chapter 217. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity, upon which that person or entity shall assume responsibility for all provisions and conditions of this approval.
- 11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.

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

After Completion of Construction:

- 19. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the Austin Regional Office within 30 days of site completion.
- 20. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through Austin Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.
- 21. Certification by a Texas Licensed Professional Engineer of the testing of sewage collection systems required by 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office within 30 days of test completion and prior to the new sewage collection system being put into service. The certification should include the project name as it appeared on the approved application, the program ID number, and two copies of a site plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. The engineer must certify in writing that all wastewater lines have passed all required testing to the appropriate regional

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office within 30 days of test completion and prior to use of the new collection system. Should any test result fail to meet passing test criteria and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.

- 22. Every five years after the initial certification, the sewage collection system shall be retested. Any lines that fail the test must be repaired and retested. Certification that the system continues to meet the requirements of 30 TAC Chapter 213 and Chapter 217 shall be submitted to the Austin Regional Office. The certification should include the project name as it appeared on the approved application, the program ID number and two copies of a site plan sheet(s) indicating the wastewater lines and manholes that were tested and are being certified as complying with the appropriate regulations. Should any test result fail to meet passing test criteria, and then subsequently pass testing, the result(s) and an explanation of what repair, adjustment, or other means were taken to facilitate a subsequent passing result shall be provided.
- 23. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
- 24. An Edwards Aquifer protection plan approval or extension will expire, and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the Austin Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
- 25. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

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

Sincerely,

Lillian Butler

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

LIB/jv

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

cc: Mr. Alejandro E. Granados Rico, P.E. Kimley-Horn

NARRATIVE OF PROPOSED MODIFICATION

Edgewood Phase 1-1 is a portion of a larger single-family development, Edgewood, which encompasses approximately 140 acres. Edgewood Phase 1-1 encompasses approximately 52.61 acres of onsite single family residential development. The subject property is located south of the RR 2243 and East CR 175 intersection, in the City of Leander, Texas. The existing site is undeveloped. The scope of the project consist of building single family lots along with the associated civil improvements required (roadway, water, wastewater, and storm sewer). The site is located within the Edwards Aquifer Contributing and Recharge Zone and does not contain areas withing the 100year floodplain as defined by the Federal Emergency Management Agency Federal Insurance Rate Map #4849C0460F, dated December 20, 2019.

A Water Pollution Abatement Plan (11002698-11002714) was approved on December 10, 2021. The plan approved construction of roadway improvements and associated infrastructure to construct 127 single-family lots on the 52.61 acres with a total of 17.84 acres of impervious cover.

The proposed modification to the previously approved Water Pollution Abatement Plan is the addition of one amenity center. The lot is labeled as Lot 2 in Block G and has a total area of 2.79 acres. The lot was previously labeled as "HOA Amenity Lot" and will maintain the "HOA Amenity Lot" label. The additional impervious cover associated with this lot is 0.61 acres and will increase the overall impervious cover area to 18.44 acres of onsite impervious cover. This modification does not propose any additional offsite imperious cover.

CURRENT SITE PLAN OF THE APPROVED PROJECT

SECTION 5: TEMPORARY STORMWATER SECTION

kimley-horn.com

501 S. Austin Ave, Suite 1310, Georgetown, Texas 78626

512 520 0768

ENGINEER **Kimley**»Horn 501 S. AUSTIN AVENUE, SUITE 1310



Tel. No. (512) 520-0768 GEORGETOWN TEXAS 78626 **CERTIFICATE OF REGISTRATION #928** CONTACT: ADAM DAVIS, P.E

OWNER/DEVELOPER

M/I HOMES OF AUSTIN, LLC 7600 N. CAPITAL OF TEXAS HWY. BLDG, C, SUITE 250 AUSTIN, TX 78731 TEL: 512.770.8503 CONTACT: AUSTIN EVETTS

LEGAL DESCRIPTION

BEING LOT 2, BLOCK G OF THE EDGEWOOD PHASE 1 SEC 1 SUBDIVISION AS RECORDED IN WILLIAMSON COUNTY PUBLIC RECORDS DOCUMENT NO. 2022102710

WATERSHED STATUS

THIS SITE IS LOCATED IN THE SOUTH BRUSHY CREEK OF THE BRUSHY CREEK WATERSHED THIS SITE IS LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING AND RECHARGE ZONE.

FLOODPLAIN INFORMATION

A PORTION OF THIS TRACT IS WITHIN A FLOOD HAZARD AREA AS SHOWN ON THE FLOOD INSURANCE RATE MAP PANEL #48491C0460F FOR WILLIAMSON CO., EFFECTIVE DECEMBER 20, 2019

LAND USE SUMMARY

ZONING: SINGLE-FAMILY SUBURBAN (SFS) ACREAGE: 2.79 ACRES

TOTAL IMPERVIOUS COVER: 0.61 ACRES

BUILDING IMPERVIOUS COVER: 2128.36 SQ. FT. FUTURE LAND USE: NEIGHBORHOOD RESIDENTIAL

GENERAL NOTES

- 1. ALL PUBLIC IMPROVEMENTS INCLUDING WATER AND WASTEWATER WITHIN DEDICATED RIGHT OF WAY AND PUBLIC UTILITY EASEMENTS TO BE OWNED AND MAINTAINED BY THE CITY OF LEANDER.
- ALL WATER QUALITY IMPROVEMENTS, EXCLUDING THE BATCH DETENTION PONDS, ARE TO BE DEDICATED, OWNED, AND OPERATED BY THE HOA. HOA WILL MAINTAIN THE LANDSCAPING IN THE OPEN CHANNELS, DETENTION, AND WATER QUALITY AREAS.
- THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY, REGULATORY COMPLIANCE, AND ADEQUACY OF THESE PLANS AND/OR SPECIFICATIONS WHETHER OR NOT THE PLANS AND/OR SPECIFICATIONS WERE REVIEWED BY THE CITY ENGINEER(S).

REVISIONS			
REVISION #	DESCRIPTION		APPROVAL

EDGEWOOD ANENITY CENTER SITE DEVELOPMENT PLANS PROJECT #XX-XXX-XXX CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS



RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL, WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY CITY ENGINEERS.

VICINITY MAP SCALE: 1" = 2,000'

OCTOBER 2023

APPROVED BY:

ROBIN M. GRIFFIN, AICP, PLANNING DIRECTOR	DATE
EMILY TRUMAN, P.E., CITY ENGINEER	DATE
MARK TUMMONS, CPRP, DIRECTOR OF PARKS AND RECREATION	DATE
CHIEF JOSHUA DAVIS, FIRE MARSHAL	DATE

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SHEET NUMBER

BENCHMARKS

ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK. BM-101: "X" CUT IN CONCRETE ELEVATION: 915.04'

APPROVAL

CITY	
ENC	CONTACTS:
PLA	NNING DEPARTMENT: 512-528-2750
PUB	LIC WORKS MAIN LINE: 512-259-2640
STO	RMWATER INSPECTIONS: 512-285-0055
υτιι υτιι	ITIES MAIN LINE: 512-259-1142 ITIES ON-CALL: 512-690-4760
GEN 1.	ERAL: CONTRACTORS SHALL HAVE AN APPROVED SET OF PLANS WITH APPROVED REVISIONS
	SITE AT ALL TIMES. FAILURE TO HAVE APPROVED PLANS ON SITE MAY RESULT IN ISSUA
	OF WORK STOPPAGE.
2.	CONTACT 811 SYSTEM FOR EXISTING WATER AND WASTEWATER LOCATIONS 48 HOUR
a.	REFRESH ALL LOCATES BEFORE 14 DAYS – LOCATE REFRESH REQUESTS MUST INCLUDE A COPY OF YOUR 811 TICKET. TEXAS PIPELINE DAMAGE PREVENTION LAWS REQUIRE
b.	MARKERS ARE NO LONGER VISIBLE. REPORT PIPELINE DAMAGE IMMEDIATELY – IF YOU WITNESS OR EXPERIENCE PIPELINE
	EXCAVATION DAMAGE, PLEASE CONTACT THE CITY OF LEANDER BY PHONE AT 512-259 2640.
3.	THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR 48 HOURS BEFORE:
a. b.	ANY TESTING. CONTRACTOR SHALL PROVIDE OUALITY TESTING FOR ALL
•	INFRASTRUCTURES TO BE ACCEPTED AND MAINTAINED BY THE CITY OF LEANDER AFTE
	COMPLETION.
c.	PROOF ROLLING SUB-GRADE AND EVERY LIFT OF ROADWAY EMBANKMENT, IN-PLACE
	UEINSITY TESTING OF EVERY BASE COURSE, AND ASPHALT CORES. ALL OF THIS TESTING MUST BE WITNESSED BY A CITY OF LEANDER REPRESENTATIVE
d.	CONNECTING TO THE EXISTING WATER LINES.
e.	THE INSTALLATION OF ANY DRAINAGE FACILITY WITHIN A DRAINAGE EASEMENT OR
	STREET ROW. THE METHOD OF PLACEMENT AND COMPACTION OF BACKFILL IN THE
4.	ALL RESPONSIBILITILY FOR THE ACCURACY OF THESE PLANS REMAINS WITH THE ENGIN
	OF RECORD WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY MUST RELY
	THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
5.	EXCESS SOIL SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE. NOTIFY THE CITY
6.	LEANDER IF THE DISPOSAL SITE IS INSIDE THE CITY'S JURISDICTIONAL BOUNDARIES. BURNING IS PROHIBITED.
2. 7.	NO WORK IS TO BE PERFORMED BETWEEN THE HOURS OF 9:00 P.M. AND 7:00 A.M. OF
	WEEKENDS. THE CITY INSPECTOR RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR
0	UNCOVER ALL WORK PERFORMED WITHOUT INSPECTION.
о.	INSPECTIONS ON WEEKENDS OR CITY HOLIDAYS.
9.	NO BLASTING IS ALLOWED.
10.	ANY CHANGES OR REVISIONS TO THESE PLANS MUST FIRST BE SUBMITTED TO THE CITY
	THE DESIGN ENGINEER FOR REVIEW AND WRITTEN APPROVAL PRIOR TO CONSTRUCTION
	THE REVISION. ALL CHANGES AND REVISIONS SHALL USE REVISION CLOUDS TO HIGHLI
	ALL REVISIONS AND CHANGES WITH EACH SUBMITTAL. REVISION TRIANGLE MARKERS
	FROM PREVIOUS REVISIONS MUST BE REMOVED. REVISION INFORMATION SHALL BE
	UPDATED ON COVER SHEET AND AFFECTED PLAN SHEET TITLE BLOCK.
11.	THE CONTRACTOR AND ENGINEER SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCT THAT DEVIATES FROM THE PLANS. THE ENGINEER SHALL FURNISH THE CITY OF LEAND ACCURATE "RECORD DRAWINGS" FOLLOWING THE COMPLETION OF ALL CONSTRUCTION THESE "RECORD DRAWINGS" SHALL MEET THE SATISFACTION OF THE ENGINEERING DEPARTMENTS PRIOR TO FINAL ACCEPTANCE
12.	THE CONTRACTOR WILL REIMBURSE THE CITY FOR ALL REPAIR AND/OR COST INCURRE
	RESULT OF ANY DAMAGE TO ANY PUBLIC INFRASTRUCTURE WITHIN CITY EASEMENT O PUBLIC RIGHT-OF-WAY, REGARDLESS OF THESE PLANS.
13.	WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINE HIS WORK TO WITHIN THE PERMANENT AND TEMPORARY EASEMENT PRIOR TO ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AL
	I KASH AND DEBRIS WITHIN THE PERMANENT EASEMENTS. CLEANUP SHALL BE TO THE
14.	CONTRACTOR TO LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS.
	CONTROL POINTS AND PROJECT ENGINEERING REFERENCE POINTS. RE-ESTABLISH
	DISTURBED OR DESTROYED ITEMS BY REGISTERED PROFESSIONAL LAND SURVEYOR IN
1 -	STATE OF TEXAS, AT NO ADDITIONAL COST TO THE PROPERTY OWNER.
12.	ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFFTY AND HEATTH
	ADMINISTRATION (OSHA). OSHA STANDARDS MAY BE PURCHASED FROM THE GOVER
	PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURC
	FROM OSHA, 1033 LA POSADA DR. SUITE 375, AUSTIN, TEXAS 78752-3832.
16.	ALL MANHOLE FRAMES/COVERS AND WATER VALVE/METER BOXES MUST BE ADJUSTE
	HINISHED GRADE AT THE OWNER'S EXPENSE BY THE CONTRACTOR FOR CITY CONSTRUCT INSPECTOR INSPECTION. ALL LITILITY ADJUSTMENTS SHALL BE COMPLETED DRIVE TO B
	PAVING. CONTRACTOR SHALL BACKFILL AROUND MANHOLES AND VALVE BOXES WITH
	CLASS A CONCRETE.
17.	ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTI
	WHERE NOT SPECIFICALLY COVERED IN THE PROJECT SPECIFICATIONS SHALL CONFORM
18	ALL CITY OF LEANDER DETAILS AND CITY OF AUSTIN STANDARD SPECIFICATIONS.
10.	GOVERN OVER TECHNICAL SPECIFICATIONS.
19.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPR
	AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
20.	THE CONTRACTOR MUST OBTAIN A CONSTRUCTION WATER METER FOR ALL WATER U
	DURING CONSTRUCTION. A COPY OF THIS PERMIT MUST BE CARRIED AT ALL TIMES BY
21.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADS AND DRIVES ADJACEN
	AND NEAR THE SITE FREE FROM SOIL, SEDIMENT AND DEBRIS. CONTRACTOR WILL NO
	REMOVE SOIL, SEDIMENT OR DEBRIS FROM ANY AREA OR VEHICLE BY MEANS OF WAT
	ONET SHOVELING AND SWEEPING WILL BE ALLOWED. THE CONTRACTOR WILL BE
	RESPONSIBLE FOR DUST CONTROL FROM THE SITE. THE CONTRACTOR SHALL KEEP THE

CONSTRUCTION. [NOTE: PLEASE UPDATE AS PER THE PROJECT]

- 6. REQUEST FINAL WALKTHROUGH AND CONDUCT WALKTHROUGH WITH ENGINEER OF RECORD AND CITY DEPARTMENT.
- 7. ENGINEER OF RECORD IS RESPONSIBLE TO PREPARE AND SUBMIT CLOSEOUT DOCUMENTS FOR PROJECT CLOSEOUT.

EROSION CONTROL NOTES

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

WATER AND WASTEWATER NOTES

WATER AND WASTEWATER GENERAL NOTES

- 1. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 61 AND MUST BE CERTIFIED BY AND ORGANIZATION ACCREDITED BY ANSI.
- 2. ALL WATER SERVICE, WASTEWATER SERVICE AND VALVE LOCATIONS SHALL BE APPROPRIATELY STAMPED AS FOLLOWS:
 - WATER SERVICE "W" ON TOP OF CURB
 - WASTEWATER SERVICE "S" ON TOP OF CURB
- VALVE "V" ON TOP OF CURB 3. OPEN UTILITIES SHALL NOT BE PERMITTED ACROSS THE EXISTING PAVED SURFACES. WATER
- AND WASTEWATER LINES ACROSS THE EXISTING PAVED SURFACES SHALL BE BORED AND INSTALLED IN STEEL ENCASEMENT PIPES. BELL RESTRAINTS SHALL BE PROVIDED AT JOINTS. 4. INTERIOR SURFACES OF ALL DUCTILE IRON POTABLE OR RECLAIMED WATER PIPE SHALL BE
- CEMENT-MORTAR LINED AND SEAL COATED AS REQUIRED BY AWWA C104. 5. SAND, AS DESCRIBED IN AUSTIN SPECIFICATION ITEM 510 PIPE, SHALL NOT BE USED AS
- BEDDING FOR WATER AND WASTEWATER LINES. ACCEPTABLE BEDDING MATERIALS ARE PIPE BEDDING STONE, PEA GRAVEL AND IN LIEU OF SAND, A NATURALLY OCCURRING OR MANUFACTURED STONE MATERIAL CONFORMING TO ASTM C33 FOR STONE QUALITY AND MEETING THE E

/IEETIN	IG THE FOLLOWING	GRADATION SPECIFICATION:
	SIEVE SIZE	PERCENT RETAINED BY WEIGHT
	1/2"	0
	3/8"	0-2
	#4	40-85

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

WATER

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

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

SUBDIVISION (OR SITE) WILL NOT BE ACCEPTED (OR CERTIFICATE OF OCCUPANCY ISSUED)

22. TREES IN EXISTING ROW SHOULD BE PROTECTED OR NOTED IN THE PLANS TO BE REMOVED.

UNTIL THE SITE HAS BEEN CLEANED TO THE SATISIFACTION OF THE CITY.

- 1. REACH OUT TO THE CITY FOR PRE-CONSTRUCTION MEETING AND CONSTRUCTION PERMIT.
- 2. SET-UP E/S CONTROLS AND TREE PROTECTION AND REACH OUT TO CITY FOR INSPECTION. SET UP TEMPORARY TRAFFIC CONTROLS.
- 4. CONSTRUCT THE DRAINAGE PONDS AND STORM WATER FEATURES.
- 5. START UTILITY, ROAD, GRADING, FRANCHISE UTILITY AND ALL NECESSARY INFRASTRUCTURE
- 10. ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM 8-MIL POLYETHYLENE. 11. LINE FLUSHING OR ANY ACTIVITY USING A LARGE QUANTITY OF WATER MUST BE COORDINATED WITH THE PUBLIC WORKS DEPARTMENT.
- 12. ALL WATER METER BOXES SHALL BE:
- a. SINGLE, 1" METER AND BELOW DFW37F-12-1CA, OR EQUAL
- b. DUAL, 1" METERS AND BELOW DFW39F-12-1CA, OR EQUAL
- c. 1.5" SINGLE METER DFW65C-14-1CA, OR EQUAL

- d. 2" SINGLE METER DFW1730F-12-1CA, OR EQUAL
- 13. ALL WATER VALVE COVERS ARE TO BE PAINTED BLUE.

WASTEWATER

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

STREET AND DRAINAGE NOTES

THERMOPLASTIC.

- 1. THE CITY OF LEANDER HAS NOT REVIEWED THESE PLANS FOR COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA). IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE COMPLIANCE WITH ALL LEGISTATION RELATED TO ACCESSIBLITY WITHIN THE LIMITS OF CONSTRUCTION SHOWN IN THESE PLANS. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARS (TAS).
- 2. BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95% MAXIMUM DENSITY TO WITHIN 6" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN THE GREATEST DIMENSION. THE REMAINING 6" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND SUITABLE FOR SUSTAINING PLANT LIFE.
- 3. A MINIMUM OF 6" OF TOPSOIL SHALL BE PLACED BETWEEN THE CURB AND RIGHT-OF-WAY AND IN ALL DRAINAGE CHANNELS EXCEPT CHANNELS CUT IN STABLE ROCK.
- 4. DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT, INCLUDING GAS, ELECTRIC TELEPHONE, CABLE TV, ETC., SHALL BE A MINIMUM OF 36" BELOW SUBGRADE.
- 5. STREET RIGHT-OF-WAY SHALL BE GRADED AT A SLOPE OF ¼" PER FOOT TOWARD THE CURB LINIESS OTHERWISE INDICATED
- 6. ALL DRAINAGE PIPE IN PUBLIC RIGHT OF WAY OR EASEMENTS SHALL BE REINFORCED CONCRETE PIPE MINIMUM CLASS III OF TONGUE AND GROOVE OR O-RING JOINT DESIGN. CORRUGATED METAL PIPE IS NOT ALLOWED IN PUBLIC RIGHT OR WAY OR EASEMENTS.
- 7. THE CONTRACTOR MUST PROVIDE A PNEUMATIC TRUCK PER TXDOT SPEC FOR PROOF ROLLING. 8. ALL STRIPING, WITH THE EXCEPTION OF STOP BARS, CROSS WALKS, WORDS AND ARROWS, IS TO BE TYPE II (WATER BASED). STOP BARS, CROSS WALKS, WORDS AND ARROWS REQUIRE TYPE I
- 9. MANHOLE FRAMES, COVERS, VALVES, CLEAN-OUTS, ETC. SHALL BE RAISED TO GRADE PRIOR TO FINAL PAVEMENT CONSTRUCTION.
- 10. A STOP BAR SHALL BE PLACED AT ALL STOP SIGN LOCATIONS.
- 11. THE GEOTECHNICAL ENGINEER SHALL INSPECT THE SUBGRADE FOR COMPLIANCE WITH THE DESIGN ASSUMPTIONS MADE DURING PREPARATION OF THE SOILS REPORT. ANY ADJUSTMENTS THAT ARE REQUIRED SHALL BE MADE THROUGH REVISIONS OF THE APPROVED CONSTRUCTION PLANS.
- 12. GEOTECHNICAL INVESTIGATION INFORMATION AND PAVEMENT RECOMMENDATIONS WERE PROVIDED BY MLA GEOTECHNICAL, REPORT 23106100.113, DATED AUGUST 1, 2023.
- 13. A TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CITY OF AUSTIN TRANSPORATION CRITERIA MANUAL, CITY OF LEANDER STANDARD DETAILS AND TEXAS DEPARTMENT OF TRANSPORTATION CRITERIA, SHALL BE SUBMITTED TO THE CITY OF LEANDER FOR REVIEW AND APPROVAL PRIOR TO ANY PARTIAL OR COMPLETE ROADWAY CLOSURES. TRAFFIC CONTROL PLANS MUST BE SITE SPECIFIC AND SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
- 14. ALL LANE CLOSURES SHALL OCCUR ONLY BETWEEN THE HOURS OF 9 AM AND 4 PM UNLESS OTHERWISE NOTED ON THE PLANS. ANY NIGHT TIME LANE CLOSURES REQUIRE APPROVAL OF THE CITY ENGINEER AND SHALL OCCUR BETWEEN THE HOURS OF 8 PM AND 6 AM. LANE CLOSURES OBSERVED BY THE CITY DURING PEAK HOURS OF 6 AM TO 9 AM OR 4 PM TO 8 PM WILL BE SUBJECT TO A FINE AND/OR SUBSEQUENT ISSUANCE OF WORK STOPPAGE.
- 15. TEMPORARY ROCK CRUSHING IS NOT ALLOWED. ALL SOURCES OF FLEXIBLE BASE MATERIAL ARE REQUIRED TO BE APPROVED BY THE CITY. PRIOR TO BASE PLACEMENT ALL CURRENT TRIAXIAL TEST REPORTS FOR PROPOSED STOCK PILES ARE TO BE SUBMITTED TO THE CITY CONSTRUCTION INSPECTOR FOR REVIEW AND APPROVAL
- 16. AT ROAD INTERSECTIONS THAT HAVE A VALLEY GUTTER, THE CROWN TO THE INTERSECTING ROAD WILL BE CULMINATED AT A DISTANCE OF 40 FEET FROM THE INTERSECTING CURB LINE UNLESS OTHERWISE NOTED.
- 17. NO PONDING OF WATER SHALL BE ALLOWED TO COLLECT ON OR NEAR THE INTERSECTION OF PRIVATE DRIVEWAYS AND PUBLIC STREETS. RECONSTRUCTION OF THE DRIVEWAY APPROACH SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 18. ALL DRIVEWAY APPROACHES SHALL HAVE A UNIFORM TWO PERCENT SLOPE WITHIN THE PUBLIC RIGHT OF WAY UNLESS APPROVED IN WRITING BY THE ENGINEERING DEPARTMENT.
- 19. IMPROVEMENTS THAT INCLUDE RECONSTRUCTION OF AN EXISTING TYPE II DRIVEWAY SHALL BE DONE IN A MANNER WHICH RETAINS OPERATIONS OF NOT LESS THAN HALF OF THE DRVIEWAY TO REMAIN OPEN AT ALL TIMES. FULL CLOSURE OF SUCH DRIVEWAY CAN BE CONSIDERED WITH WRITTEN AUTHORIZATION OBTAINED BY THE CONTRACTOR FROM ALL PROPERTY OWNERS AND ACCESS EASEMENT RIGHT HOLDERS ALLOWING THE FULL CLOSURE OF THE DRIVEWAY.
- 20. CONTRACTOR MUST CLEAR FIVE (5) FEET BEYOND ALL PUBLIC RIGHT OF WAY TO PREVENT FUTURE VEGETATIVE GROWTH INTO THE SIDEWALK AREAS.
- 21. SLOPE OF NATURAL GROUND ADJACENT TO THE PUBLIC RIGHT OF WAY SHALL NOT EXCEED 3:1 SLOPE. IF A 3:1 SLOPE IS NOT POSSIBLE, SLOPE PROTECTION OR RETAINING WALL MUST BE
- SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE. 22. THERE SHALL BE NO WATER, WASTEWATER OR DRAINAGE APPURTENANCES, INCLUDING BUT NOT LIMITED TO VALVES, FITTINGS, METERS, CLEAN-OUTS, MANHOLES, OR VAULTS IN ANY DRIVEWAY, SIDEWALK, TRAFFIC OR PEDESTRIAN AREA.
- 23. PUBLIC SIDEWALKS SHALL NOT USE CURB INLETS AS PARTIAL WALKING SURFACE. SIDEWALKS SHALL NOT USE TRAFFIC CONTROL BOXES, METERS, CHECK VALVE VAULTS, COMMUNICATION VAULTS, OR OTHER BURIED OR PARTIALLY BURIED INFRASTRUCTURE AS A VEHICULAR OR PEDESTRIAN SURFACE.
- 24. ALL WET UTILITIES SHALL BE INSTALLED AND ALL DENSITIES MUST HAVE PASSED INSPECTION(S) PRIOR TO THE INSTALLATION OF DRY UTILITIES.
- 25. DRY UTILITIES SHALL BE INSTALLED AFTER SUBGRADE IS CUT AND BEFORE THE FIRST COURSE OF BASE. NO TRENCHING COMPACTED BASE. IF NECESSARY DRY UTILITIES INSTALLED AFTER FIRST COURSE BASE SHALL BE BORED ACROSS THE FULL WIDTH OF THE PUBLIC RIGHT-OF-WAY. 26. A MINIMUM OF SEVEN (7) DAYS OF CURE TIME IS REQUIRED FOR HMAC PRIOR TO THE
- INTRODUCTION OF VEHICULAR TRAFFIC TO ALL STREETS.

TRENCH SAFETY NOTES

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

GRADING NOTES

- 1. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF
- 2. THE CONTRACTOR SHALL CONSTRUCT EARTHEN EMBANKMENTS WITH SLOPES NO STEEPER THAN 3:1 AND COMPACT SOIL TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CITY

OF AUSTIN STANDARD SPECIFICATIONS.

3. AREAS OF SOIL DISTURBANCE ARE LIMITED TO GRADING AND IMPROVEMENTS SHOWN. ALL OTHER AREAS WILL NOT BE DISTURBED.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

- WRITTEN CONSTRUCTION NOTIFICATION SHOULD BE PROVIDED TO THE APPROPRIATE TCEQ REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY INFORMATION SHOULD INCLUDE THE DATE ON WHICH THE REGULATED ACTIVITY WILL COMMENCE, THE NAME OF THE APPROVED PLAN FOR THE REGULATED ACTIVITY, AND THE NAME OF THE PRIME CONTRACTOR WITH THE NAME AND TELEPHONE NUMBER OF THE CONTACT PERSON.
- 2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.
- 3. NO TEMPORARY ABOVEGROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEM MAY BE INSTALLED WITHIN 150 FEET IF A DOMESTIC, INDUSTRIAL, IRRIGATION, OR PUBLIC WATER SUPPLY WELL
- 4. PRIOR TO COMMENCING CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND GOOD ENGINEERING PRACTICES. CONTROLS SPECIFIED IN THE SWPPP SECTION OF THE APPROVED EDWARDS AQUIFER CONTRIBUTING ZONE PLAN ARE REQUIRED DURING CONSTRUCTION. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED.
- 5. 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).
- 6. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS NOT LATER THAN WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50%. A PERMANENT STAKE MUST BE PROVIDED THAT CAN INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME.
- 7. 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). 8. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE AND STORED ON-SITE MUST
- HAVE PROPER E&S CONTROLS INSTALLED. 9. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND CONSTRUCTION ACTIVITIES WILL NOT RESUME WITHIN 21 DAYS. WHEN THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY IS PRECLUDED BY WEATHER CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.
- 10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST: THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR; THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
- 11. THE HOLDER OF ANY APPROVED CONTRIBUTING ZONE 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 BEST MANAGEMENT PRACTICES OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES:
- B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED; C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE
- EDWARDS AQUIFER AND HYDROLOGICALLY CONNECTED SURFACE WATER; OR D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED IN A CONTRIBUTING ZONE PLAN AS

UNDEVELOPED. AUSTIN REGIONAL OFFICE 2800 S. IH 35, SUITE 100 AUSTIN, TEXAS 78704-5712 PHONE(512) 339-2929 FAX (512) 339-3795 SAN ANTONIO REGIONAL OFFICE

14250 JUDSON ROAD SAN ANTONIO, TEXAS 78233-4480 PHONE(210) 490-3096 FAX (210) 545-4329

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

THE CITY OF LEANDER STANDARD CONSTRUCTION NOTES SHALL APPLY AND TAKE PRECEDENCE. FOR INSTANCES WHERE THEY CONFLICT WITH KIMLEY-HORN GENERAL NOTES OR APPLICABLE TCEQ REQUIREMENTS, THEN THE MORE RESTRICTIVE SHALL APPLY.

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SHEET NUMBER

BENCHMARKS

ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK. BM-101: "X" CUT IN CONCRETE ELEVATION: 915.04'

APPROVAL



28.EXISTING TREE LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE. CONTRACTOR SHALL REPORT ANY DISCREPANCIES FOUND IN THE FIELD THAT AFFECT THE GRADING PLAN TO THE CIVIL ENGINEER. 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 PRESERVATION PLAN BY THE LANDSCAPE ARCHITECT PRIOR TO COMMENCING THE WORK.

EFFECTIVELY CONTROL EROSION AND PREVENT SEDIMENTATION FROM WASHING OFF THE SITE, THEN THE CONTRACTOR SHALL

11 OFF-SITE SOIL BORROW, SPOIL, AND STORAGE AREAS (IF APPLICABLE) ARE CONSIDERED AS PART OF THE PROJECT SITE AND MUST ALSO COMPLY WITH THE EROSION CONTROL REQUIREMENTS FOR THIS PROJECT. THIS INCLUDES THE INSTALLATION OF BMP'S TO CONTROL EROSION AND SEDIMENTATION AND THE ESTABLISHMENT OF PERMANENT GROUND COVER ON DISTURBED AREAS PRIOR TO FINAL APPROVAL OF THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR MODIFYING THE SWPPP AND EROSION CONTROL PLAN TO INCLUDE BMPS FOR ANY OFF-SITE THAT ARE NOT ANTICIPATED OR SHOWN ON THE EROSION CONTROL PLAN. 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

13. CONTRACTORS SHALL INSPECT ALL EROSION CONTROL DEVICES, BMPS, DISTURBED AREAS, AND VEHICLE ENTRY AND EXIT AREAS WEEKLY AND WITHIN 24 HOURS OF ALL RAINFALL EVENTS OF 0.5 INCHES OR GREATER, AND KEEP A RECORD OF THIS INSPECTION IN THE SWPPP BOOKI ET IF APPLICABLE. TO VERIEV 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 WITH CITY SPECIFICATIONS. CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION TRAFFIC USES THE STABILIZED ENTRANCE AT

15. SITE ENTRY AND EXITS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING AND FLOWING OF SEDIMENT AND 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

RESULT OF THE CONSTRUCTION, AS REQUESTED BY OWNER AND CITY. AT A MINIMUM, THIS SHOULD OCCUR ONCE PER DAY FOR THE

STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP BMP 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 20. WHEN SEDIMENT OR DIRT HAS CLOGGED THE CONSTRUCTION ENTRANCE VOID SPACES BETWEEN STONES OR DIRT IS BEING TRACKED 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. 21. TEMPORARY SEEDING OR OTHER APPROVED STABILIZATION SHALL BE INITIATED WITHIN 14 DAYS OF THE LAST DISTURBANCE OF ANY 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

ALL CONTRACTORS AND SUBCONTRACTORS PROVIDING SERVICES RELATED TO THE SWPPP SHALL SIGN THE REQUIRED CONTRACTOR CERTIFICATION STATEMENT ACKNOWLEDGING THEIR RESPONSIBILITIES AS SPECIFIED IN THE SWPPP. 6. A COPY OF THE SWPPP, INCLUDING NOI, SITE NOTICE, CONTRACTOR CERTIFICATIONS, AND ANY REVISIONS, SHALL BE SUBMITTED TO 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 SOL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND A UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED ON ALL UNPAVED AREAS AND AREAS NOT COVERED BY STRUCTURES, A TRANSFER OF OPERATIONAL CONTROL HAS OCCURRED, OR THE OPERATOR HAS OBTAINED ALTERNATIVE AUTHORIZATION UNDER A DIFFERENT PERMIT. A COPY OF THE NOT SHALL BE PROVIDED TO THE OPERATOR OF ANY MS4 RECEIVING DISCHARGE FROM THE SITE.

. KH IS NOT RESPONSIBLE FOR THE MEANS AND METHODS EMPLOYED BY THE CONTRACTOR TO IMPLEMENT THIS DEMOLITION PLAN. THIS PRELIMINARY DEMOLITION PLAN SIMPLY INDICATES THE KNOWN OBJECTS ON THE SUBJECT TRACT THAT ARE TO BE DEMOLISHED

2. KH DOES NOT WARRANT OR REPRESENT THAT THE PLAN, WHICH WAS PREPARED BASED ON SURVEY AND UTILITY INFORMATION PROVIDED BY OTHERS, SHOWS ALL IMPROVEMENTS AND UTILITIES, THAT THE IMPROVEMENTS AND UTILITIES ARE SHOWN ACCURATELY, OR THAT THE UTILITIES SHOWN CAN BE REMOVED. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ITS OWN SITE RECONNAISSANCE TO SCOPE ITS WORK AND TO CONFIRM WITH THE OWNERS OF IMPROVEMENTS AND UTILITIES THE ABILITY AND 3. THIS PLAN IS INTENDED TO GIVE A GENERAL GUIDE TO THE CONTRACTOR, NOTHING MORE. THE GOAL OF THE DEMOLITION IS TO LEAVE THE SITE IN A STATE SUITABLE FOR THE CONSTRUCTION OF THE PROPOSED DEVELOPMENT. REMOVAL OR PRESERVATION OF IMPROVEMENTS, UTILITIES, ETC. TO ACCOMPLISH THIS GOAL ARE THE RESPONSIBILITY OF THE CONTRACTOR. 4. CONTRACTOR IS STRONGLY CAUTIONED TO REVIEW THE FOLLOWING REPORTS DESCRIBING SITE CONDITIONS PRIOR TO BIDDING AND

b. ASBESTOS BUILDING INSPECTION REPORT(S) PROVIDED BY THE OWNER,

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 SHOWING ALL ITEMS THAT WILL NEED TO BE DEMOLISHED AND REMOVED. 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 3. ALL FINISHED GRADES SHALL TRANSITION UNIFORMLY BETWEEN THE FINISHED ELEVATIONS SHOWN

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

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.

17. TEMPORARY CULVERTS MAY BE REQUIRED IN SOME LOCATIONS TO CONVEY RUN-OFF. 18. REFER TO DIMENSION CONTROL PLAN, AND PLAT FOR HORIZONTAL DIMENSIONS. 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 CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS. 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 FLATWORK ADJACENT TO THE BUILDING. IF NONE IS CURRENTLY EXISTING.

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

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 REGARDING EXISTING TREES TO BE REMOVED AND PRESERVED

- 32.NO TREE SHALL BE REMOVED UNLESS A TREE REMOVAL PERMIT HAS BEEN ISSUED BY THE CITY, OR CITY HAS OTHERWISE COL IN WRITING THAT ONE IS NOT NEEDED FOR THE TREE(S). 33 NO TREE SHALL BE REMOVED OR DAMAGED WITHOUT PRIOR AUTHORIZATION OF THE OWNER OR OWNER'S REPRESENTATIVE 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 PAVE AREAS FOR EVIDENCE OF PONDING AND INADEQUATE SLOPE FOR DRAINAGE. ALL AREAS SHALL ADEQUATELY DRAIN TOWARI INTENDED STRUCTURE TO CONVEY STORMWATER RUNOFF. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER AND ENGINEER AREAS OF POOR DRAINAGE ARE DISCOVERED
- 35. CONTRACTOR FIELD ADJUSTMENT OF PROPOSED SPOT GRADES IS ALLOWED, IF THE APPROVAL OF THE CIVIL ENGINEER IS OB **RETAINING WALLS:**
- . RETAINING WALLS SHOWN ARE FOR SITE GRADING PURPOSES ONLY, AND INCLUDE ONLY LOCATION AND SURFACE SPOT ELEV AT THE TOP AND BOTTOM OF THE WALL 2. RETAINING WALL TYPE OR SYSTEM SHALL BE SELECTED BY THE OWNER.
- STRUCTURAL DESIGN AND PERMITTING OF RETAINING WALLS, RAILINGS, AND OTHER WALL SAFETY DEVICES SHALL BE PERFO A LICENSED ENGINEER AND ARE NOT PART OF THIS PLAN SET. 4. RETAINING WALL DESIGN SHALL MEET THE INTENT OF THE GRADING PLAN AND SHALL ACCOUNT FOR ANY INFLUENCE ON ADJA
- 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 AN 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 CONFLICT 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 (O EDITION), INCLUDING ALL ADDENDA
- 3. ALL FIRELANE PAVING AND PAVING SUBGRADE SHALL COMPLY WITH CITY STANDARDS AND DETAILS. IF THESE ARE DIFFERENT 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 SPECIFICATI
- 5. CONTRACTOR IS RESPONSIBLE FOR ALL PAVING AND PAVING SUBGRADE TESTING AND CERTIFICATION, UNLESS SPECIFIED OT BY OWNER. ALL PAVING AND PAVING SUBGRADE TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOF TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING PAVING AND SUBGRADE. OWNER SH 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 P
- 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 GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PRO BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC
- 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 STAN 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 STANDAR SHALL HAVE A DETECTABLE WARNING SURFACE THAT IS FULL WIDTH AND FULL DEPTH OF THE CURB RAMP, NOT INCLUDING F 10. ALL ACCESSIBLE RAMPS, CURB RAMPS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA AND TAS STANDARDS. EDITION.
- 11. ANY COMPONENTS OF THE PROJECT SUBJECT TO RESIDENTIAL USE SHALL ALSO CONFORM TO THE FAIR HOUSING ACT, AND (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. CONNECT 13. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS FOR FIRE LANES, PARKING STALLS, HANDICAPPED PAR SYMBOLS, AND MISCELLANEOUS STRIPING WITHIN PARKING LOT AND AROUND BUILDING AS SHOWN ON THE PLANS. ALL PAINT
- PAVEMENT MARKINGS SHALL ADHERE TO CITY AND OWNER STANDARDS. 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
- 16. ALL REINFORCING STEEL SHALL CONFORM TO THE GEOTECHNICAL REPORT, CITY STANDARDS, AND ASTM A-615, GRADE 60, AI BE SUPPORTED BY BAR CHAIRS. CONTRACTOR SHALL USE THE MORE STRINGENT OF THE CITY AND GEOTECHNICAL STANDAR 17. ALL JOINTS SHALL EXTEND THROUGH THE CURB. 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 WOR 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.
- 22. UNLESS THE PLANS SPECIFICALLY DICTATE TO THE CONTRARY, ON-SITE AND OTHER DIRECTIONAL SIGNS SHALL BE ORIENTED THEY ARE READILY VISIBLE TO THE ONCOMING TRAFFIC FOR WHICH THEY ARE INTENDED. 23.CONTRACTOR IS RESPONSIBLE FOR INSTALLING NECESSARY CONDUIT FOR LIGHTING, IRRIGATION, ETC. PRIOR TO PLACEMENT PAVEMENT. ALL CONSTRUCTION DOCUMENTS (CIVIL, MEP, LANDSCAPE, IRRIGATION, AND ARCHITECT) SHALL BE CONSULTED. 24.BEFORE PLACING PAVEMENT, CONTRACTOR SHALL VERIFY THAT SUITABLE ACCESSIBLE PEDESTRIAN ROUTES (PER ADA, TAS,
- FHA) EXIST TO AND FROM EVERY DOOR AND ALONG SIDEWALKS. ACCESSIBLE PARKING SPACES. ACCESS AISLES, AND ACCESS ROUTES. IN NO CASE SHALL AN ACCESSIBLE RAMP SLOPE EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWA CROSS SLOPE EXCEED 2.0 PERCENT. IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPE EXCEED 5.0 PERCENT. ACCESSIBLE SPACES AND ACCESS AISLES SHALL NOT EXCEED 2.0 PERCENT SLOPE IN ANY DIRECTION
- 25. CONTRACTOR SHALL TAKE FIELD SLOPE MEASUREMENTS ON FINISHED SUBGRADE AND FORM BOARDS PRIOR TO PLACING PAV TO VERIFY THAT ADA/TAS SLOPE REQUIREMENTS ARE PROVIDED. CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO PAVING EXCESSIVE SLOPES ARE ENCOUNTERED. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR ADA AND TAS SLOPE COMPLIANCE ISSUES.

- 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 INSTALLA THE STORM SEWER 3. THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, CONDITION, HORIZONTAL, AND VERTICAL LOCATIONS OF ALL EXISTING STOF SEWER FACILITIES THAT ARE TO BE CONNECTED TO PRIOR TO START OF CONSTRUCTION OF ANY STORM SEWER, AND SHALL
- THE ENGINEER OF ANY CONFLICTS DISCOVERED. 4 THE CONTRACTOR SHALL VERIEV AND COORDINATE ALL DIMENSIONS SHOWN INCLUDING THE HORIZONTAL AND VERTICAL LC
- 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 GRADIN
- AND FIELD CONDITIONS PRIOR TO THEIR INSTALLATION. 6. ALL PUBLIC STORM SEWER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO CITY PUBLIC WORKS STAND 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 PLUMBI 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 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 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 MATE 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 PROFESSION ENGINEER IN THE STATE OF TEXAS. TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENC 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
- POND LINER SPECIFICATIONS 3. A GEOTECHNICAL ENGINEER SHALL REVIEW AND APPROVE ALL POND LINER MATERIAL, PLACEMENT PROCEDURES, AND PROV
- 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 INSTA 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 ELIMINA AT LEAST 20-FEET FROM THE POND SO NO ROUTE FOR WATER TO LEAK THROUGH THE EMBEDMENT MATERIAL IS PROVIDED. 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
- 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 LC AS THIS MAY DRY-OUT THE POND LINER AND RISK ITS WATERTIGHT PROPERTIES. WATER AND WASTEWATER:
- . ALL WATER AND WASTEWATER MATERIALS AND CONSTRUCTION SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAIL SPECIFICATIONS 2. CONTRACTOR SHALL FIELD VERIFY THE SIZE, CONDITION, HORIZONTAL, AND VERTICAL LOCATIONS OF ALL EXISTING WATER AN
- WASTEWATER FACILITIES THAT ARE TO BE CONNECTED TO, PRIOR TO START OF CONSTRUCTION OF ANY WATER OR WASTEWA 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 ALL UTILITY SERVICES ENTERING THE BUILDING
- 4. THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATION OF ALL UTILITY CROSSINGS PRIOR TO THE INSTALLATION OF ANY PIPE 5. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLA THE WATER AND WASTEWATER IMPROVEMENTS. 6. ALL PUBLIC WATER AND WASTEWATER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO CITY PUBLIC WO
- 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 APPLICAE PLUMBING CODE. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS 8. FIRE SPRINKLER LINES SHALL BE DESIGNED AND INSTALLED BY A LICENSED FIRE SPRINKLER CONTRACTOR, AND COMPLY TO 1 APPLICABLE CODES AND INSPECTIONS REQUIRED. THESE PLANS WERE PREPARED WITHOUT THE BENEFIT OF THE FIRE SPRIN
- 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. 10. CONTRACTOR SHALL TAKE REQUIRED SANITARY PRECAUTIONS, FOLLOWING ANY CITY, TCEQ, AND AWWA STANDARDS, TO KEE 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 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 AM 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 SURRO
- PROPERTIES. 15. CONTRACTOR SHALL MAINTAIN WATER SERVICE AND WASTEWATER SERVICE TO ALL CUSTOMERS THROUGHOUT CONSTRUCT 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 CONTRACTOR IS RESPONSIBLE TO PROTECT ALL WATER AND WASTEWATER LINES CROSSING THE PROJECT. SHALL REPAIR ALL DAMAGED LINES IMMEDIATELY ALL REPAIRS OF EXISTING WATER MAINS WATER SERVICES. SEWER MAINS
- 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 PROPOS PAVEMENT
- 18. THE ENDS OF ALL EXISTING WATER MAINS THAT ARE CUT, BUT NOT REMOVED, SHALL BE PLUGGED AND ABANDONED IN PLACE WORK SHALL BE CONSIDERED AS A SUBSIDIARY COST TO THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE ALLO

NFIRMED	19. ALL FIR THRUST 20.CONTR/ JOINTS 21. ALL CRO MATERI	E HYDRANTS, VALVES, TEES, BENDS, WYES, REDUCERS, FITTINGS, AND ENDS SHALL BE MECHANICALLY RESTRAINED AND/OR I BLOCKED TO CITY STANDARDS. ACTOR SHALL INSTALL A FULL SEGMENT OF WATER OR WASTEWATER PIPE CENTERED AT ALL UTILITY CROSSINGS SO THAT THE ARE GREATER THAN 9-FEET FROM THE CROSSING. DSSINGS AND LOCATIONS WHERE WASTEWATER IS LESS THAN 9-FEET FROM WATER, WASTEWATER CONSTRUCTION AND ALS SHALL COMPLY WITH TCEQ CHAPTER 217.53.	DATE BY
MENT DS THE	22.ALL CRO SHALL O 23.ALL WA	DSSING AND LOCATIONS WHERE WATER IS LESS THAN 9-FEET FROM WASTEWATER, WATER CONSTRUCTION AND MATERIALS COMPLY WITH TCEQ CHAPTER 290.44. TER AND WASTEWATER SHALL BE TESTED IN ACCORDANCE WITH THE CITY, AWWA, AND TCEQ STANDARDS AND	
R IF ANY BTAINED.	SPECIFI a. ALL WA SHALL (ICATIONS. AT A MINIMUM, THIS SHALL CONSIST OF THE FOLLOWING: TERLINES SHALL BE HYDROSTATICALLY TESTED AND CHLORINATED BEFORE BEING PLACED INTO SERVICE. CONTRACTOR COORDINATE WITH THE CITY FOR THEIR REQUIRED PROCEDURES AND SHALL ALSO COMPLY WITH TCEQ REGULATIONS.	
ATIONS	b. WASTEN REQUIR	WATER LINES AND MANHOLES SHALL BE PRESSURE TESTED. CONTRACTOR SHALL COORDINATE WITH THE CITY FOR THEIR ED PROCEDURES AND SHALL ALSO COMPLY WITH TCEQ REGULATIONS. AFTER COMPLETION OF THESE TESTS, A TELEVISION TION SHALL BE PERFORMED AND PROVIDED TO THE CITY AND OWNER ON A DVD	
	24.CONTRA MARKEF	ACTOR SHALL DETECTABLE WIRING OR MARKING TAPE A MINIMUM OF 12" ABOVE WATER AND WASTEWATER LINES. R DECALS SHALL BE LABELED "CAUTION - WATER LINE", OR "CAUTION - SEWER LINE". DETECTABLE WIRING AND MARKING TAPE	ស្
RMED BY	SHALL C 25.DUCTILE SINGLE	EXAMPLY WITH CITY STANDARDS, AND SHALL BE INCLUDED IN THE COST OF THE WATER AND WASTEWATER PIPE. E IRON PIPE SHALL BE PROTECTED FROM CORROSION BY A LOW-DENSITY POLYETHYLENE LINER WRAP THAT IS AT LEAST A LAYER OF 8-MIL. ALL DUCTILE IRON JOINTS SHALL BE BONDED.	ISION
ACENT	26.WATER	LINES SHALL BE INSTALLED AT NO LESS THAN THE MINIMUM COVER REQUIRED BY THE CITY. ACTOR SHALL PROVIDE CLEAN-OUTS FOR PRIVATE SANITARY SEWER LINES AT ALL CHANGES IN DIRECTION AND 100-FOOT ALS, OR AS REQUIRED BY THE APPLICABLE PLUMBING CODE. CLEAN-OUTS REQUIRED IN PAVEMENT OR SIDEWALKS SHALL	REV
	HAVE C	AST IRON COVERS FLUSH WITH FINISHED GRADE. ACTOR SHALL PROVIDE BACKWATER VALVES FOR PLUMBING FIXTURES AS REQUIRED BY THE APPLICABLE PLUMBING CODE (E.G.	
ND I TING	FLOOR PUBLIC 29.THE CO	ELEVATION OF FIXTURE UNIT IS BELOW THE ELEVATION OF THE MANHOLE COVER OF THE NEXT UPSTREAM MANHOLE IN THE SEWER). CONTRACTOR SHALL REVIEW BOTH MEP AND CIVIL PLANS TO CONFIRM WHERE THESE ARE REQUIRED. NTRACTOR IS RESPONSIBLE FOR OBTAINING AND SUBMITTING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL	
R LATEST	ENGINE SAFETY	ER IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRENCH REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENCHES. NO	
T THAN	30.THE CO	NTRACTOR SHALL KEEP TRENCHES FREE FROM WATER.	
UNS. THERWISE R.	ABBREVIA	TIONS AND DEFINITIONS:	_
	A ADA AWWA	AREA AMERICANS WITH DISABILITIES ACT AMERICAN WATER WORKS ASSOCIATION	8626
то	B-B BC	BACK TO BACK BEGIN CURVE	INC. 17 7 1791
DPOSED C TO	BC BCR BMP	BACK OF CURB BEGIN CURB RETURN BEST MANAGEMENT PRACTICE	TES, 00WN, 418
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ACTOR	INCLUDIN REPORT 1	G ALL REVISIONS AND ADDENDA TO THIS THAT MAY HAVE BEEN RELEASED AFTER	
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	HT 2023 KIM	LEY-HORN AND ASSOCIATES, INC., ALL RIGHTS RESERVED	3



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FILING DATE: MARCH 1, 2022





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LOT 23 HOA E:3096376.38 LOT 600 NAIL
CALLED 13.96 ACRES GLENN A GEORGE DOC. 2004056622 OPRWC
1/2" IREC "ILLEGIBLE" LOT 18 LOT 10 LOT 22 LOT 14
N46°16'57"E 97.93' 10" IRF MATCHLINE SEE PAGE 3 OF 6
NORTH
GRAPHIC SCALE IN FEET 100 0 50 100 200 1" = 100' @ 18X24 LEGEND
HOA LOT AREAS HOA LOT AREAS LOT NO. ACRES SQ. FT. LOT 1, BLOCK A 0.260 LOT 1, BLOCK B 0.099 LOT 1, BLOCK C 0.207 9,024 LOT 1, BLOCK G 6.250 LOT 1, BLOCK G 6.250
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APPROVAL



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ADIUS	LENGTH	CHORD BEARING	CHORD	NO.	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD	NO	. 1	DELTA	RADIU	LENG	TH	CHORD BEARIN	G CHORI)	
20,00'	31.41'	S06*05'56''W	28.28'	C41	43°57'24"	660.00'	506.34'	S07°02'37'W	494.02'	C81	8	I°14'13"	275.00	39.53'		S26°05'31"E	39.50'		
5.00'	23.56'	N83*54'39"W	21.21'	C42	6°59'59"	300.00'	36.65'	S32°31'18"W	36.63'	C82	5	0°59'43"	325.00	289.26'		S03*31'27"W	279.81	<u> </u>	
75.00'	78.68'	N30°42'53"W	78.41'	C43	3°12'46"	385.00'	21,59'	S16°32'27"E	21.58'	C83	6	2°09'48"	275.00	298.36'		S60°06'13"W	283.94		
25.00'	175.83'	N38°01'03"W	173.69'	C44	95°22'31"	15.00'	24.97	S27°28'06''W	22.18'	C84	2	°26'01"	325.00	13.80'		N89°58'06"E	13,80'		
75.00'	70.10	N46°12'49"W	69.91'	C45	4°16'07"	442.00'	32.93'	S77°17'25''W	32.92'	C85	18	8°21'56"	325.00	104.18'		\$79°34'07''W	103.73	'	
5.00'	23.56'	N06*05'21"E	21.21'	C46	17°42'07"	200.50'	61.95'	S88°16'32"W	61.70'	C86	8	86"04'29" 1		22.53'		N66°34'36"W	20.47'		
0.00'	31.42'	S83*54'04"E	28.29'	C47	5°58'08"	199.50'	20.78'	N85*51'29"W	20.77'	C87	2	28"32'03" 325.0		161.85'		N37°48'23"W	160.19	'	
5.00'	23.56'	N06"05'21"E	21.21'	C48	10°40'01"	434.00'	80.80'	N83°30'33"W	80.68'	C88	4	41*34'40" 325.0		235.84'		N72°51'45"W	230.70	1	
5.00'	23.56'	S83°54'39"E	21.21	C49	33°14'13"	506.00'	293.53'	S85°12'21"W	289.43'	C89	1	14°24'47" 325.(81.76'		S79°08'32"W	81.54		
25.00'	82.85'	S46°12'49"E	82.62'	C50	17°24'55"	199.50'	60.64'	S59*52'47"W	60.41'	C90	8	83°14'37" 15.(21,79'		N66°26'33"W	19.93'		
75.00'	148.78	S38*01'03"E	146.97'	C51	17°24'55"	199.50'	60.64'	\$59*52'47"W	60.41'	C91	1	16°28'58"		115.07'		S59°19'50"W	114.68	114,68'	
25.00'	92.98'	\$30*42'53"E	92.67'	C52	7°32'47"	200.50'	26.41'	S54°56'43"W	26.39'	C92	1	6°23'32"	300.00	85.83'		N30°42'53"W	85.54		
5.00'	23,56'	S06*05'21"W	21.21'	C53	5°15'27"	498.00'	45.70'	S56°05'23"W	45.68'	C93	3	30°59'52" 3(162.30'		N38°01'03"W	160.33		
75.00'	107.88'	S59°19'50''W	107.51'	C54	16"39'23"	782.00'	227.33'	S06°36'24"E	226.53'	C94	1	14°36'20" 300		76.47'		N46°12'49"W	76.27		
5.00'	21.79'	N70°48'22"W	19.93'	C55	89*58'47"	20.00'	31.41'	S06*05'57"W	28.28'	C95	7	72°30'31" 300		379.65'		N02°39'23"W	354.82		
25.00'	55.17'	N34*02'51"W	55.11'	C56	50°44'07"	434.00'	384.31'	S76°27'24'W	371,87	C96	5	50°44'07" 47(416.18'		S76°27'24"W	402.72		
5.00'	21.79'	S16°48'04"W	19,93'	C57	33°47'52"	506.00'	298.48'	S84°55'32"W	294.17	C97	3	33°47'52" 470.0		277.24		S84°55'32"W	273.24	7	
25.00'	140.82'	S46°00'38"W	139.72'	C58	90°00'00"	15.00'	23.56'	N66°58'24"W	21.21'	C98	5	52°45'03" 30		276.20'		N59°58'24"E	266.55	7	
25.00'	279.47'	S08"57'47"W	270.94'	C59	8"14'13"	325.00'	46.72'	N26"05'31"W	46,68'	C99	7	70*06'43" 300.		367.1	0'	S58"35'43"E	344.63	7	
5.00'	21.79'	S25*57'00'W	19.93'	C60	90°00'00"	15.00'	23,56'	N23"01'36"E	21.21	C10	0 6	62*09'48" 300.00		325.4	19'	S60°06'13"W	309.76	7	
25.00'	122.26'	S59*19'50'W	121.84'	C61	91°45'15"	15.00'	24.02'	S66°05'47"E	21.54	C10	1 5	50*59'43" 350.00		311.	51'	S03"31'27"W	301.33	-	
0.00'	15.88'	S60°11'12"W	15.81'	C62	5°17'04"	335.00'	30.90'	S17°34'37"E	30.89'	C10	2 8	8°14'13" 300.00		43.1	3'	S26°05'31"E	43.09		
0.00'	15.88'	S60°11'12'W	15.81'	C63	43°57'24"	610.00'	467.98'	S07*02'37"W	456,59'	C10	3 4	43"57"24" 635.00		487.	6'	S07*02'37"W	475.30	7	
0.00'	31,42'	N83*54'04''W	28.29'	C64	6°59'59"	275.00'	33.60'	S32*31'18'W	33.58'	C10	4 5	5°17'04" 360.00		33.20'		\$17°34'37"E	33.19'		
5.00'	22.94'	N82°43'30"W	20.77	C65	91°54'18"	15.00'	24.06'	S81°58'26''W	21.56'	C10	5 2	20°41'35" 325.00		117.38'		S40°33'25"E	116.74	7	
75.00'	348.02'	N02°39'23"W	325.25'	C66	28°32'03"	275.00'	136.95'	N37°48'23"W	135.54'	C10	7 0	0°36'13" 49		5.19'		S28°43'12"W	5.19'		
5.00'	23.56'	N78°35'52"E	21.21'	C67	80°23'46"	15.00'	21.05'	N16°39'31"E	19.36'	Г		1.15.17			L IKIE TADLE			 	
5.00'	18,72'	S20°39′08"E	17.53'	C68	27*50'05"	325.00'	157.89'	N42°56'21"E	156.34'	1	Verena	LINE	IABLE	=			E		LI
1.00'	48,18'	N31°18'30"E	46,94'	C69	50°59'43"	375.00'	333.76'	N03°31'27"E	322.86'	1	NO.	BEARI	NG L	ENGTH	NO.	BEARING	LENGTH	NO.	B
5.00'	11.17	N77°44'06"W	10.91'	C70	5°05'59"	492.50'	43.84'	S12°23'06"E	43.82'		L1	N38°54"	39"W	20.97	L14	S51°05'21"W	52.33'	L28	S2
5.00'	23.56'	N11°24'08"W	21.21'	C71	3°26'26"	492.50'	29,57	S08°06'53"E	29.57'	╡╽	L2	N38°54'	39"W	12.90'	L15	S51°05'21"W	167.56'	L29	<u>S1</u>
5.00'	23.56'	N78"35'52"E	21.21'	C72	3"38'13"	492,50'	31,26'	S04"34'33"E	31.26'		L3	N38°54'	39"W	60.00'	L16	N38°53'28"W	8.55'	L30	N2 [•]
5.00	14.16'	S29"21'13"E	13.64'	C73	5°03'58"	492.50'	43,55'	S00°13'28"E	43.53'		L4	N25°26'	41"W	51.41'	L17	N33°35'52"E	52.65'	L31	S5
1.00'	188 48'	N30*05'39"W	121 96'	C74	2°00'42"	492.50'	17.29'	S03*18'52"W	17.29'		L5	N29°26'	17"W	50.69'	L19	S14*56'05"E	52.89'	L32	S68
5.00'	13.77'	S87'41'09'W	13 29'	C75	6°41'30"	492 50'	57.52'	S07*39'58''W	57.49'		L6	N36°19'	38"W	55.06'	L20	S20°13'09"E	9.11'	L33	N57
5.00'	23.56	N11*24'08"M	21.21	C76	0°23'10"	492.50'	3.32'	S11°12'18'W	3.32		L7	N43°28'	32"W	54,67'	L21	S23°28'08"E	47.44'	L34	N32
75.001	253.10	N50*52'24"E	204 34	677	7*04'40"	402.50	60.84	S14*56*12***	60.80'		L8	N50°21'(W"90	51.01'	L22	S23"28'08"E	17.26'	L35	S66
75.00	112.00	SR1*ACIACIE	112 15	070	1º1/100	402.50	10.65	S10°05'42"M	10.65	1 [L9	S38°54'	39"E	50.00'	L23	S23"28'08"E	25.73'	L36	S 5
F.00	97 70		22.05	070	5°E0140	402.00	50.40	S22*22/02/04	50.10	$\left\{ \right. \right\}$	L10	S38°54'	39"E	12.90'	L24	N59°09'43"W	38.45'	L37	N24
3.00	21.13	010 00 30 E	20.00	019	0100 0 0954/60#	400 501	24.621	922 30 03 W	24.60		L11	S38°54'	39"E	25.97	L25	S44°22'07"E	51.12'	L38	N52
20:00	39.70	002 01 10 14	99.00		2 31 33	-152,30	24.0Z	020 0303 W	24.02	1 [L12	S51°05'2	21"W	52.33'	L26	N21°58'24"W	21.40'	L39	N4
			· .							ſ	L13	S24°49'	14"E	39.86'	L27	S52"29'54"E	14.62'	1. 1. 1. 1.	



ENGINEER'S CERTIFICATION: STATE OF TEXAS COUNTY OF WILLIAMSON THAT I, ALEJANDRO E, GRANADOS, P.E., AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF ENGINEERING, AND DO HEREBY STATE THAT THIS PLAT CONFORMS WITH THE APPLICABLE ORDINANCES OF THE CITY OF LEANDER, TEXAS. ENGINEERED BY: Alight Ship ALEJANDRO E. GRANADOS, P.E. **REGISTERED PROFESSIONAL ENGINEER No. 130084** KIMLEY-HORN AND ASSOCIATES, INC. 10814 JOLLYVILLE ROAD, BUILDING 4, SUITE 200 **AUSTIN, TX 78759** THIS TRACT IS NOT WITHIN AN IDENTIFIED SPECIAL FLOOD HAZARD AREA INUNDATED BY 100-YEAR FLOOD AS IDENTIFIED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) FOR WILLIAMSON COUNTY, TEXAS, MAP 48491C0460F, DATED DECEMBER 20, 2019 ALEJANDRO E. GRANADOS, P.E. **REGISTERED PROFESSIONAL ENGINEER No. 130084** KIMLEY-HORN AND ASSOCIATES, INC. 10814 JOLLYVILLE ROAD, BUILDING 4, SUITE 200, AUSTIN, TX 78759 LEWERD & GRANDOS NIL 130084 **CITY OF LEANDER CERTIFICATION:** APPROVED THIS THE 25 DAY OF And 202 A.D. AT A PUBLIC MEETING OF THE PLANNING AND ZONING COMMISSION OF THE CITY OF LEANDER, TEXAS AND AUTHORIZED TO BE FILED FOR RECORD BY THE COUNTY **CLERK OF WILLIAMSON COUNTY** LLEN COUFAL, SECRETAR PLANNING AND ZONING COMMISSIO PLANNING AND ZONING COMMISSION FOR CORPORATE ENTITY - IF THERE ARE NO LIEN HOLDERS STATE OF TEXAS COUNTY OF WILLIAMSON DOES HEREBY CERTIFY THAT THERE ARE NO LIEN HOLDERS AND DEDICATES TO THE PUBLIC FOREVER USE OF ALL ADDITIONAL ROW, STREETS, ALLEYS, EASEMENTS, PARKS, AND ALL OTHER LANDS INTENDED FOR PUBLIC DEDICATION, OR WHEN THE SUBDIVIDER HAS MADE PROVISION FOR PERPETUAL MAINTENANCE THEREOF. TO THE INHABITANTS OF THE SUBDIVISION AS SHOWN HEREON TO BE KNOW AS EDGEWOOD PHASE 1, SECTION 1. NAME OF AUTHORIZED OFFICER: WILLIAM 6. PEGEMAN TITLE OF OFFICER: MARA PRACO STATE OF TEXAS COUNTY OF WILLIAMSON BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE. ON THIS THE _____ DAY OF _____ 20 ____ PERSONALLY APPEARED, _____ OF A CONTRACT ON BEHALF OF SAID ______ A DULY AUTHORIZED AGENT WITH AUTHORITY TO SIGN SAID DOCUMENT, PERSONALLY KNOWN TO ME (AND PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT (S)HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED. GIVEN UNDER MY HAND AND SEAL OF OFFICE ON THIS THE 1 DAY OF 15 20 22-Ant ling NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS AUSTRI EVE TIS PRINTED NAME: AND THE STATE MY COMMISSION EXPIRES ON: 04-11-2023 Copyright © 2021 nley-Horn and Associates, Inc. All rights reserved

SURVEYOR'S NOTES

- 1. THE BEARINGS, DISTANCES, AREAS AND COORDINATES SHOWN HEREON ARE BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM GRID, CENTRAL ZONE (FIPS 4203) (NAD'83), AS DETERMINED BY THE GLOBAL POSITIONING SYSTEM (GPS). ALL DISTANCES AND COORDINATES SHOWN HEREON ARE ON THE SURFACE. THE SURFACE
- TO GRID SCALE FACTOR IS 0.9998800144. THE UNIT OF LINEAR MEASUREMENT IS U.S. SURVEY FEET ALL PROPERTY CORNERS OF THE LOTS IN THIS SUBDIVISION WILL BE MONUMENTED PRIOR
- TO LOTS SALES AND AFTER ROAD CONSTRUCTION WITH A 1/2-INCH IRON ROD WITH RED PLASTIC CAP STAMPED "KHA", UNLESS OTHERWISE NOTED.

SURVEYOR'S CERTIFICATION:

STATE OF TEXAS COUNTY OF WILLIAMSON

THAT I, JOHN G, MOSIER, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF LAND SURVEYING AND HEREBY STATE THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE ON-THE-GROUND SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION, IN ACCORDANCE WITH ALL CITY OF LEANDER ORDINANCE AND CODES, AND THAT ALL EXISTING EASEMENTS OF RECORD AS FOUND ON THE TITLE POLICY PROVIDED BY TITLE RESOURCES GUARANTY COMPANY, 2146981-COM (ISSUE DATE: AUGUST 9, 2021) HAVE BEEN SHOWN OR NOTED HERON.

WITNESS MY HAND THIS THE 9 DAY OF AUGUST, 2022

An & Praise

JOHN G. MOSIER REGISTERED PROFESSIONAL LAND SURVEYOR NO. 6330 10101 REUNION PLACE, SUITE 400 SAN ANTONIO, TEXAS 78216 PH. 210-541-9166 greg.mosier@kimley-horn.com

A METES AND BOUNDS DESCRIPTION OF A

52.610 ACRE TRACT OF LAND

BEING a 52,610 acre (2,291,683 square feet) of land situated in the Milton Hicks Survey Abstract No. 287 and the John T Church Survey Abstract No. 140, Williamson County, Texas; and being all of that certain 52.610 acre tract described in instrument to Cannon 140 LP in Document No. 2021125997 of the Official Public Records of Williamson County; and being more particularly described as follows:

JOHN G. MOSIER

6330

BEGINNING at a 1/2 inch iron rod (with plastic cap stamped "Haynie") found marking the south corner of a called 13.96 acre tract described in instrument to Glenn A. George in Document No. 2004056622 of the Official Public Records of Williamson County and the western-most corner of the herein described tract on the northeasterly right-of-way line of County Road 175 (variable width right-of-way)

- THENCE, along the southeasterly boundary of said 13.96 acre tract, the following seven (7) courses and distances: 1. North 65°07'16" East, 155.72 feet to a 1/2 inch iron rod (with illegible plastic cap) found for corner;
- North 11°00'19" West 64 49 feet to a 1/2 inch iron rod found for corner:
- North 3°04'47" East, 88.31 feet to a 60D nail found for corner; North 27°04'40" East, 451.33 feet to a 1/2 inch iron rod found for corner;
- North 46°16'57" East, 97.93 feet to a 1/2 inch iron rod (with plastic cap stamped "Haynie") found for corner,
- t to a 1/2 inch iron rod (with illegible plastic cap) round for co North 37°02'45" East, 351.67 feet to a 60D nail found marking the southwesterly corner of a called 173.8 acre tract described in instrument to CSM-Mason Family LP in Document No. 2011086909 of the Official Public Records of Williamson County;
- THENCE, along the southerly boundary of said 173.8 acre tract, the following four (4) courses and distances
- North 85°30'49" East, 531, 19 feet to a 1/2 inch iron rod found for corner; North 87°36'46" East, 404.39 feet to a 1/2 inch iron rod found for corner;
- South 89°19'51" East, 194.84 feet to a 1/2 inch iron rod found for corner;
- South 72°49'10" East, 34.92 feet to a 60D nail found for corner on the westerly boundary line of a called 8.35 acre tract described in instrument to Brian K. and Lisa S. Flachs in Document No. 2005033065 of the Official Public Records of Williamson County;

THENCE, along the westerly and southerly boundary of said 8.35 acre tract, the following two (2) courses and distances: 1. South 29°29'44" East, 180.49 feet to a 60D nail found for corner; 2. South 57*13'44" East, 47.94 feet to a point for corner,

- THENCE, crossing aforesaid 120.2385 acre tract and 20.1937 acre tract the following eighteen (18) courses and distances:
- South 68°01'36" West, 18.37 feet to a point for corner; North 57°13'44" West, 41.04 feet to a point for corner;
- North 32°38'54" West, 8.29 feet to a point for corner;
- South 66°27'38" West, 39.13 feet to a point for corner; South 23°32'22" East, 158.76 feet to a point of for corner
- in a northeasterly direction, along a non-tangent curve to the right, a central angle of 2°26'01", a radius of 325.00 feet, a chord bearing and distance of North 89°58'06" East, 13.80 feet, and a total arc length of 13.80 feet to a point for corner;
- South 1°11'07" West, 50.00 feet to a point for corner; South 4°32'49" East, 157.23 feet to a point for corner;
- South 70°18'57" West, 154.21 feet to a point for corner;
- South 33°31'36" West, 120.37 feet to a point for corner; South 20°27'33" West, 54.04 feet to a point for corner;
- South 6°17'08" West, 53.73 feet to a point for corner; South 9"40'10" East, 53.64 feet to a point for corner;
- South 21°55'04" East, 57.90 feet to a point for corner;
- South 29°02'43" East, 115.66 feet to a point for corner
- South 59°47'23" West, 187.83 feet to a point of for corner;
- 17. in a northeasterly direction, along a non-tangent curve to the left, a central angle of 20°41'35", a radius of 325.00 feet, a chord bearing and distance of South 40°33'25" East, 116.74 feet, and a total arc length of 117.38 feet to a point for corner; South 10°53'34" West, 312.48 feet to a point for corner on the northeasterly boundary of a 83.693 acre tract two described in instrument to CSM-Mason Family LP in Document No. 2011086909 of the Official Public Records of Williamson County;

THENCE along the northeasterly and northwesterly boundary of said 83.693 acre tract the following seven (7) courses and distances:

North 70°27'18" West, 490.77 feet to a 1/2 inch iron rod (with plastic cap stamped "Haynie") found for corner;

South 13°53'07" West, 523.62 feet to a 1/2 inch iron rod (with plastic cap stamped "Haynie") found for corner;

South 2*47'12" West, 64.32 feet to a 1/2 inch iron rod (with plastic cap stamped "Haynie") found for corner;

Notary Public, State of Texas Comm. Expires 04 11-2023 Notary 10 131969609

South 42°20'53" West. 97.51 feet to a 1/2 inch iron rod found for corner on the northeasterly right-of-way line of aforesaid County Road 175 marking the southwest corner of the herein described tract; THENCE, along the northeasterly right-of-way of said County Road 175, the following three (3) courses and distances: North 52°53'24" West, 15.02 feet to a cotton spindle found for corner; North 41°22'30" West, 69.16 feet to a 1/2 inch iron rod (with plastic cap stamped "Haynie") found for corner; North 38°53'28" West, 998.54 feet to the POINT OF BEGINNING and containing 52.610 acres of land in Williamson County, Texas. The basis of bearing for this description is the Texas State Plane Coordinate System Grid, Central Zone (FIPS 4203) (NAD'83). All distances are on the Surface and shown in U.S. Survey Feet. The Surface to Grid scale factor is 0.9998800144. This

document was prepared in the office of Kimley-Horn and Associates, Inc. in San Antonio, Texas.

North 71°58'33" West, 361.48 feet to a 1/2 inch iron rod found for corner;

South 16°08'00" East, 59.35 feet to a 1/2 inch iron rod found for corner;

South 30°14'04" West, 74.69 feet to a 1/2 inch iron rod found for corner.

ZONING COMMISSION ON 08/05/2021

INTERSECTING ARTERIAL STREET. 2.

CONSTRUCTED.

GENERAL PLAT NOTES:

WORKS DEPARTMENT.

(SEE ASSIGNMENT EXHIBIT)

DECEMBER 20, 2019.

1

5.

7

9.

- BLOCK H, LOT 1; BLOCK K, LOT 1. THE HOA BY LAWS ARE RECORDED IN THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON 3.
- THE OPEN CHANNELS, DETENTION AND WATER QUALITY AREAS.
- BE CONTAINED IN A DRAINAGE EASEMENT).

STATE OF TEXAS COUNTY OF WILLIAMSON

I, NANCY RISTER, CLERK OF THE COUNTY COURT OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT IN WRITING, WITH ITS CERTIFICATE WAS FILED FOR RECORD IN MY OFFICE ON THE DAY OF AMAINT, 2022, A.D., AT O'CLOCK, M., AND DULY RECORDED THIS THE DAY OF AMANA . 20 22 A.D., AT OCLOCK M., IN THE PLAT RECORDS OF SAID COUNTY, IN INSTRUMENT NO. 2022 02.40

LANDSCAPE LOT IS REQUIRED TO BE MAINTAINED BY A PRIVATE ASSOCIATION.

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

NANCY RISTER, CLERK, COUNTY COURT OF WILLIAMSON COUNTY, TEXAS

BY:

EDGEWOOD PHASE 1, SECTION 1

52.610 ACRES MILTON HICKS SURVEY, ABSTRACT NO. 287 J.T. CHURCH SURVEY, ABSTRACT NO. 140 CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS

10101 Reunion Place, Suite 400 San Antonio, Texas 78216 FIRM # 10193973 Drawn by Scale JAB

2022 023 0

THIS SUBDIVISION IS WHOLLY CONTAINED WITHIN THE CURRENT CORPORATE LIMITS OF THE CITY OF LEANDER, TEXAS. NO LOT IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO THE CITY OF

LEANDER WATER DISTRIBUTION AND WASTEWATER COLLECTION FACILITIES. A BUILDING PERMIT IS REQUIRED FROM THE CITY OF LEANDER PRIOR TO CONSTRUCTION OF ANY BUILDING OR SITE IMPROVEMENTS ON ANY LOT IN THIS SUBDIVISION. NO BUILDINGS, FENCES, LANDSCAPING OR OTHER STRUCTURES ARE PERMITTED WITHIN DRAINAGE EASEMENTS SHOWN EXCEPT AS APPROVED BY THE CITY OF LEANDER PUBLIC

PROPERTY OWNER SHALL PROVIDE FOR ACCESS TO DRAINAGE EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY THE CITY OF LEANDER. ALL EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY **DWNER OR HIS OR HER ASSIGNS.**

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

NO PORTION OF THIS TRACT IS WITHIN A FLOOD HAZARD AREA AS SHOWN ON THE FLOOD INSURANCE RATE MAP PANEL # 48491C0460F FOR WILLIAMSON CO., EFFECTIVE

BUILDING SETBACKS NOT SHOWN HEREON SHALL COMPLY WITH THE MOST CURRENT COMPOSITE ZONING ORDINANCE OF THE CITY OF LEANDER . ADDITIONAL RESIDENTIAL GARAGE SETBACKS MAY BE REQUIRED AS LISTED IN THE CURRENT ZONING ORDINANCE. 10. SIDEWALKS SHALL BE INSTALLED ON BOTH SIDES OF CARTHAGE STREET, SANGER LANE ARGYLE ROAD, PROSPER ROAD, CELINA COVE, COPPELL COURT, MARIETTA STREET, FULTON DRIVE, GAINESVILLE ROAD AND WAXAHACHIE ROAD, THOSE SIDEWALKS NOT ABUTTING A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL LOT (INCLUDING SIDEWALKS ALONG STREET FRONTAGES OF LOTS PROPOSED FOR SCHOOLS, CHURCHES, PARK LOTS, DETENTION LOTS, DRAINAGE LOTS, LANDSCAPE LOTS, OR SIMILAR LOTS), SIDEWALKS ON ARTERIAL STREETS TO WHICH ACCESS IS PROHIBITED. SIDEWALKS ON DOUBLE FRONTAGE LOTS ON THE SIDE TO WHICH ACCESS IS PROHIBITED, AND ALL SIDEWALKS ON SAFE SCHOOL ROUTES SHALL BE INSTALLED WHEN THE ADJOINING STREET IS

11. ALL UTILITY LINES MUST BE LOCATED UNDERGROUND. THIS PLAT CONFORMS TO THE PRELIMINARY PLAT APPROVED BY THE PLANNING &

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

SINGLE-FAMILY & TWO FAMILY PLAT NOTES:

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

THE HOA WILL OWN AND MAINTAIN THE FOLLOWING LOTS: BLOCK A, LOT 1; BLOCK B, LOT 1; BLOCK C, LOT 1 AND 23; BLOCK D, LOT 1 AND 2; BLOCK F, LOT 8; BLOCK G, LOT 1 AND 2;

COUNTY, TEXAS UNDER DOCUMENT NUMBER 2022100341 THE HOMEOWNERS ASSOCIATION IS REQUIRED TO MOW AND MAINTAIN LANDSCAPING IN

THE CITY ACCEPTS AND MAINTAINS DRAINAGE AND WATER QUALITY IMPROVEMENTS CONTAINED IN OPEN CHANNELS, DETENTION AND WATER QUALITY AREAS. (WHICH SHOULD

FOR EVERY SIX HUNDRED (600) SQUARE FEET OF AREA IN THE LANDSCAPE LOT 1. BLOCK A: TWO (2) SHADE TREES (TWO-INCH CALIPER OR LARGER) AND FOUR (4) SHRUBS (FIVE GALLON CONTAINER SIZE OR LARGER) SHALL BE PLANTED AND MAINTAINED. TWO ORNAMENTAL TREES PER SHADE TREE MAY BY SUBSTITUTED FOR UP TO FIFTY PERCENT OF THE SHADE TREES IF DESIRED. A SIX-FOOT PRIVACY FENCE, BUT NO HIGHER THAN THREE FEET WITHIN TWENTY FIVE FEET OF AN INTERSECTING STREET, SHALL BE CONSTRUCTED OF ONE OR MORE OF THE FOLLOWING MATERIALS: BRICK, STONE, CAST UNIT, OR OTHER SIMILAR MATERIAL APPROVED BY THE DIRECTOR OF PLANNING. IN ADDITION TO THE MATERIALS LISTED ABOVE, TEXTURED PRE-CAST CONCRETE (E.G. WOODCRETE) IS ALSO PERMITTED WHEN THE PRIVACT FENCE IS ADJACENT TO COLLECTORS, ALL COLUMNS ARE REQUIRED TO HAVE CONCRETE FOOTINGS, THE

KNOW ALL MEN BY THESE PRESENTS





APPROVAL


	EROSION CON	ITROL LEGEND				
		PROPERTY LINE				
	632	- PROPOSED CONTOUR				
	—632——	EXISTING CONTOUR				
(SF)	— SF —	- SILT FENCE				
CE		STABALIZED CONSTRUCTION ENTRANCE/EXIT				
IP		INLET PROTECTION				
RB	8	ROCK BERM				
	—LOC ———	LIMITS OF CONSTRUCTION				
(TP)	TP TP	- TREE PROTECTION				
\lor	· · · · · · · · · · · · · · · · · · ·	LIMITS OF REVEGETATION				
CX	* * * * *	CURLEX MATTING				



NOTES:

EDGEWOOD PHASE 1-2 #21-PICP-035

> CALLED 83.693 ACRES TRACT TWO CSM-MASON FAMILY LP. DOC. No. 2011086909

- 1. CONTRACTOR IS SOLELY RESPONSIBLE FOR IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL SWPPP CONTROLS -CONTROLS SHOWN ON THIS SITE MAP ARE SUGGESTED CONTROLS ONLY.
- CONTRACTOR SHALL RECORD INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL DATES FOR EACH BMP EMPLOYED (WHETHER CALLED OUT ON ORIGINAL SWPPP OR NOT) DIRECTLY ON THE SITE MAP.
- THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF LEANDER RULES AND REGULATIONS.
- 4. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURE DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(D) OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
- TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL AND LANDSCAPE PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING, THE BUILDING(S), AND SITE PAVING.
- 6. BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE: SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF.
- ADDITIONAL EROSION AND SEDIMENTATION CONTROLS MAY BE REQUIRED BY THE CITY DURING CONSTRUCTION.
- 8. REFERENCE EROSION CONTROL NOTES AND DETAILS ON SHEET 30.
- 9. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING [ECM 1.4.4.B.3, SECTION 5, I.]. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY [ECM 1.4.4.D.4].
- 10. ALL DISTURBED AREAS TO BE RE-VEGETATED PER CITY OF LEANDER STANDARDS.
- 11. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROLS ON SITE

THROUGHOUT THE DURATION OF THE PROJECT. BENCHMARKS

ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK. BM-101: "X" CUT IN CONCRETE ELEVATION: 915.04'

APPROVAL

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SHEET NUMBER





EXIS

POA-EX-Q2 16.67

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			SHA		CHANNEL FLOW								TOTAL Tc**						
IN		Grass	Surface			Paved Surface				Channel Flow				Channel Flow 2					(min)
Tt(min)	L (ft)	V (fps)	S (ft/ft)	Tt(min)	L	V (fps)	S	Tt(min)	L (ft)	V (fps)	n	S (ft/ft)	Tt(min)	L (ft)	V (fps)	n	S (ft/ft)	Tt(min)	
12.77	2485	3.35	0.043	12.38	0	0.00	0.000	0.00	369	3.9	0.040	0.019	1.58		-	0.035		0.00	26.73
8.85	1837	3.64	0.051	8.40	0	0.00	0.000	0.00	182	3.9	0.040	0.019	0.78	-	-	0.035	-	0.00	18.04
8.68	1869	2.50	0.024	12.46	0	0.00	0.000	0.00	1997	5.1	0.035	0.025	6.53		-	0.035	-	0.00	27.67
8.31	1089	2.60	0.026	6.98	0	0.00	0.000	0.00	465	5.5	0.035	0.021	1.41		-	0.035	-	0.00	16.69



EXISTING CONTOUR

Edgewood Amenity DETENTION RESULTS - SCS METHOD

TINC	CONDITIONS	
TING	CONDITIONS	

t of Analysis	Total Drainage Area (Acres)	Total Impervious Cover Area (acres)	Impervious Area (%)	Storm Event	Existing Runoff (cfs)
A	106.01	0.54	0.51%	2 10 25 100	186.69 363.84 486.35 700.12
A1	67.32	0.03	0.05%	2 10 25 100	121.36 232.48 310.03 442.45
в	119.82	0.53	0.45%	2 10 25 100	208.04 402.63 535.94 770.89

-A7				
2	EX-Q10	EX-Q25	EX-Q100	- 0
CFS	32.17 CFS	42.58 CFS	60.47 CFS	







			SHA					1	CHANNE	L FLOW					TOTAL Tc**				
	Grass Surface Paved Surface						10 	Channel Flow Pipe Flow					v		(min)				
Tt(min)	L (ft)	V (fps)	S (ft/ft)	Tt(min)	L	V (fps)	S	Tt(min)	L (ft)	V (fps)	n 🎴	S (ft/ft)	Tt(min)	L (ft)	V (fps)	n 💙	S (ft/ft)	Tt(min)	
12.77	1530	2.98	0.034	8.57		-		0.00	576	5.0	0.035	0.036	1.92	0	8.0	0.013	0.010	0.00	23.26
7.53	352	2.60	0.026	2.26	-	150	-	0.00	-	8 - .	-	-	0.00	1352	8.0	0.013	0.010	2.82	12.60
5.36	376	3.23	0.040	1.94	-	-	-	0.00	-	-	-	((#)	0.00	-	-	-	-	0.00	7.31
6.29	-	-		0.00	-	-		0.00	2	-	1	1	0.00	1542	8.0	0.013	0.010	3.21	9.50
9.93	1217	3.95	0.060	5.13	(=)			0.00	-	6775	- 7//)) 2 5	0.00	0	8.0	0.013	0.010	0.00	15.06
7.63	-	-	-	0.00	138	1.93	0.009	1.19	708	5.1	0.035	0.010	2.31	137	8.0	0.013	0.010	0.29	11.42
6.78	471	4.89	0.092	1.60	-	-	-	0.00		-	-	-	0.00	+	-	-	-	0.00	8.38
8.68	1869	2.50	0.024	12.46	-	-	•	0.00	1997	5.5	0.035	0.021	6.05	+	-		-	0.00	27.20
6.71	187	2.10	0.017	1.48	1.00		-	0.00	116	6.0	0.016	0.027	0.32	711	8.0	0.013	0.010	1.48	9.99
9.67	941	2.75	0.029	5.71	-	-	-	0.00	465	5.5	0.035	0.021	1.41	-	-	-		-	16.78





	2	208.04
0.459/	10	402.63
0.45%	25	535.94
	100	770.89
Imponious Area		Developed Runoff
	Storm Event	(With Detention)
(70)		(cfs)
	2	162.83
20 489/	10	316.91
20.40%	25	420.17
	100	585.03
	2	115.99
17.070/	10	210.14
17.27%	25	272.17
	100	363.04
	2	182.37
4 910/	10	369.75
4.01%	25	503.49
	100	741.40

Storm Event

25

100

25

100

mpervious Area

(%)

0.51%

0.05%

(acres)

0.54

0.03

0.53

20.89

13.11

5.97

Existing Runoff

(cfs)

186.69

363.84

486.35

700.12

121.36

232.48

310.03

442.45

	8		
xisting Runoff (cfs)	Developed Runoff (cfs)	Runoff Difference at Point of Analysis (cfs)	ls Developed ≤Existing?
186.69	162.83	(23.86)	YES
363.84	316.91	(46.93)	YES
486.35	420.17	(66.18)	YES
700.12	585.03	(115.09)	YES
121.36	115.99	(5.37)	YES
232.48	210.14	(22.34)	YES
310.03	272.17	(37.86)	YES
442.45	363.04	(79.41)	YES
208.04	182.37	(25.67)	YES
402.63	369.75	(32.88)	YES
535.94	503.49	(32.45)	YES
770.89	741.40	(29.49)	YES

Note: All detention runoff calculations were analyzed using the Soil Conservation Services Method as documented in the Technical Release 55. Pond Pack V8i was used to calculate the runoff and design the



PROPOSED





AREA DESIGNATOR AREA IN ACRES PROPERTY LINE PROPOSED FLOW DIRECTION DRAINAGE DIVIDE LINE	
DRAINAGE DIVIDE LINE EXISTING CONTOUR TIME OF CONCENTRATION FLOW PATH PR-Q10 PR-Q25 PR-Q10 15.14 CFS 19.74 CFS 27.54 CFS	© 2023 KIMLEY-HORN AND ASSOCIATES, INC. © 2023 KIMLEY-HORN AND ASSOCIATES, INC. 501 S. AUSTIN AVENUE, SUITE 1310, GEORGETOWN, TX 78626 PHONE: 512-520-0768 FAX: 512-418-1791 WWW KIMLEY-HORN COM
	KHA PROJECT 067783129 067783129 067783129 DATE 067783129 07783129 07783120 07783129 07783120 07783129 07783120 07783120 07783120 07783120 07783120 07783120 0778778 078778 0787778 078778 0778778 0778778 07787778 0778777778 077877777777
	PROPOSED DRAINAGE AREA MAP
BERCHRARKS LEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCED SYSTMS (CORS) NETWORK. BT101 "X" CUT IN CONCRETE LEVATION: 915.04 "Dependent"	EDGEWOOD MENITY CENTER CITY OF LEANDER

SHEET NUMBER 14

LEGEND



POA-A7			
PR-Q2	PR-Q10	PR-Q25	PR-Q100
8.43 CFS	15.14 CFS	19.74 CFS	27.54 CFS



tion - Ratio	onal Metho	bd		RUN	IOFF COE	FFICIENT		RA	AINFALL IN	ľ		
Area (Feet)	المجمع المorry ious Area Cover (SQ. Impervious t) (Acres) Feet) Feet)				C 2-Year	C 10-Year	C 25-Year	C 100-Year	Tc (min)	l 2-Year	l 10-Year	
20388	0.47	11645	0.27	57%	0.54	0.60	0.65	0.73	5.00	6.48	8.64	1
55515	1.27	23443	0.54	42%	0.46	0.52	0.57	0.65	5.00	6.48	8.64	_
	tion - Ratio Area (Feet) 20388 55515	tion - Rational MethoArea (Feet)Area (Acres)203880.47555151.27	tion - Rational MethodArea (Feet)Impervious Cover (SQ. Feet)203880.4711645555151.2723443	tion - Rational MethodArea (Feet)Area (Acres)Impervious Cover (SQ. Feet)Impervious Cover (Acres)203880.47116450.27555151.27234430.54	tion - Rational MethodArea (Feet)Area (Acres)Impervious Cover (SQ. Feet)Impervious Cover (Acres)% I.C.203880.47116450.2757%555151.27234430.5442%	tion - Rational Method RUN Area (Feet) Area (Acres) Impervious Cover (SQ. Feet) Impervious Cover (Acres) % I.C. C 2.Year 20388 0.47 11645 0.27 57% 0.54 55515 1.27 23443 0.54 42% 0.46	Impervious (Feet) Impervious (Acres) Impervious Cover (SQ. Feet) Impervious Cover (Acres) % I.C. C C C 20388 0.47 11645 0.27 57% 0.54 0.60 55515 1.27 23443 0.54 42% 0.46 0.52	RUNOFF COEFFICIENT Area (Feet) Area (Acres) Impervious Cover (SQ. Feet) Impervious Cover (Acres) % I.C. C <td>RUNOFF COEFFICIENT (C) Area (Feet) Impervious (Acres) Impervious Cover (SQ. Feet) Impervious Cover (Acres) % I.C. C</td> <td>RUNOFF COEFFICIENT (C) Area (Feet) Impervious (Acres) Impervious Cover (SQ. Feet) Impervious Cover (Acres) % I.C. C</td> <td>RUNOFF COEFFICIENT (C) RA Area (Feet) Impervious Cover (SQ. Feet) Impervious Cover (Acres) % I.C. C <th< td=""><td>RUNOFF COEFFICIENT (C) RAINFALL IN Area (Feet) Impervious Cover (SQ. Feet) Impervious Cover (Acres) Mpervious P(I) Mpervious Mpe</td></th<></td>	RUNOFF COEFFICIENT (C) Area (Feet) Impervious (Acres) Impervious Cover (SQ. Feet) Impervious Cover (Acres) % I.C. C	RUNOFF COEFFICIENT (C) Area (Feet) Impervious (Acres) Impervious Cover (SQ. Feet) Impervious Cover (Acres) % I.C. C	RUNOFF COEFFICIENT (C) RA Area (Feet) Impervious Cover (SQ. Feet) Impervious Cover (Acres) % I.C. C <th< td=""><td>RUNOFF COEFFICIENT (C) RAINFALL IN Area (Feet) Impervious Cover (SQ. Feet) Impervious Cover (Acres) Mpervious P(I) Mpervious Mpe</td></th<>	RUNOFF COEFFICIENT (C) RAINFALL IN Area (Feet) Impervious Cover (SQ. Feet) Impervious Cover (Acres) Mpervious P(I) Mpervious Mpe

	Grate Inlet Calculation Table										
ir (Uı	' (Unsubmerged) Q = 3.0h1.5L Clogging Factor = 10% (Grate inlets in Sump)										
00	Required Q to Pass	I	NL	ET	Available Weir	Required Min. 'h'	Provided 'h'	Provided Capacity			
is)	s) (w/ 50 % clogging factor) (ft.) Length (ft.) (ft.) (ft.) (cfs)										
06	6 8.12 2.0 X 2.0 8.00' 0.49' 0.63' 10.7 cfs										
meas	neasured from weir elevation; if required min, 'h' greater than 0.42 ft (5 in) check using orifice equation below										

			Ar	ea	Inlet	Са
Equations	: Weir (U	Insubmerged) Q = 3.0h1.5L				Clo
Inlet # or Area #	Q100 (cfs)	Required Q to Pass (w/ 10 % clogging factor)		INL (ft	ET .)	Av I
В	9.79	10.88	3.0	Х	3.0	
	'h' mea	sured from weir elevation: if re	quire	d m	iin. 'h'	grea

5	Clogging Factor	· = 50% (Grate Inlet	s in Sump)		Equations	: Orifice (Submerç
	Available Area	Required Min. 'h'	Provided 'h'	Provided Capacity	Inlet # or	Q100	Requ
	(sq. ft.)	(ft.)	(ft.)	(cfs)	Area #	(cfs)	(w/ 10 '
0	4.00	0.14'	0.63'	8.5 cfs	В	9.79	

quations: Orifice (Submerged) Q = 4.82An^0.5			Clogging Factor = 10% (Area Inlets in Sump)				
nlet # or	Q100	Required Q to Pass	INLET	Available Area	Required Min. 'h'	Provided 'h'	Provided Capacity
Area #	(cfs)	(w/ 10 % clogging factor)	(ft.)	(sq. ft.)	(ft.)	(ft.)	(cfs)
В	9.79	10.88	3.0 X 3.0	6.60	0.20'	0.55'	21.2 cfs

й | 🗄 | Ъ INLET DRAINAGE AREA MAP Ŷ Ш S FZ EXA O AMENIT C WILLI*F* SHEET NUMBER 15







2.

		2	D	DATE BY
		150' GRAPHIC SCALE 150	300'	REVISIONS
		LEGEI AREA II AREA II PROPE EXISTIN PROPO PROPO	ND DESIGNATOR N ACRES RTY LINE IG STORM DRAIN LINE SED DRAINAGE DIVIDE SED FLOW DIRECTION ATIVE FILTER STRIP	OCIATES, INC. COCIATES, INC. RGETOWN, TX 78626 512–418–1791 MM FIRM F–928 No.
				D ASSO 0, GEOF DAX: 5 DRN.CO
	ERALL Water Quality Drainage Basins			N ANE 68 F 1310 68 F HC NGINE
Proposed Area (AC) Proposed impervious C 24.78 10.28 16.88 7.16 0.30 0.06 0.42 0.22 0.17 0.10 0.15 0.02 1.15 0.47 8.74 0.13 52.61 18.44 30.82 0.00 0.58 0.00 31.40 0.00	20% 41% 42% 20% 52% 59% 13% 41% 1% 35% 0% 0% 0% 0%	B 185 REMOVAL 8948 6206 52 191 87 17 409 113 16024 0 0 0 0 0 0 0	9200 6350 52 191 87 17 409 0 16307 0 0 0 0 0 0 0 0	© 2023 KIMLEY-HORI 501 S. AUSTIN AVENUE, SUIT PHONE: 512-520-07 WWW.KIMLE TEXAS REGISTERED E
84.01 18.44	22%	16024	16307	LE OF TEXAS
6' SHARED USE PATH	3.1' VFS	UNIFOF	RM AND EVEN < 20%	KHA PROJECT 067783129 067783129 DATE DATE 0CTOBER 2023 Scale: AS SHOWN DESIGNED BY: AGD DRAWN BY: DDL CHECKED BY: AGD
S: ENGINEERED VEGETATIVE FILTER STRI RG-348, SECTION 3.4.6. VFS TO BE SEEDED PER LEANDER GEN EROSION AND SEDIMENTATION CONTR ENGINEEREI	PS TO COMPLY WITH TCEQ PERAL NOTE 11 FOR TEMPORARY OLS. D VEGETATIVE FILTER S NTS	STRIPS	. MIN OF 6 IN	OVERALL WATER QUALITY PLAN
	ELE AME DAT STA BM- ELE	BENC VATIONS HEREON ARE RICAM DATUM 1988 A SYSTMS CONTINUA TION (CORS) NETWORE 101: "X" CUT IN CONCRE VATION: 915.04" APP	HMARKS REFERENCED TO THE NORTH (NAVD) UTILIZING WESTERN LLY OPERATING REFERENCE (TE	EDGEWOOD AMENITY CENTER CITY OF LEANDER WILLIAMSON COUNTY, TEXAS
				SHEET NUMBER

s, Inc.	Texas Commission on Environmental Quality					Texas
ssociate	TSS Removal Calculations 04-20-2009			Project Name: Edgewood Ph 1-1		TSS R
and As				Date Prepared: 9/1/202	.3	
mley-Horn	Additional information is provided for cells with a red triang Text shown in blue indicate location of instructions in the Technica Characters shown in red are data entry fields. Characters shown in black (Bold) are calculated fields. Cha	al Guidanc	e Manual - R	corner. Place the cursor over the cell G-348. will remove the equations used in the	spreadsheet	Addition Text sh Charao Charao
to Ki	1 The Required Load Reduction for the total project	Calculation	s from RG-348	Pages 3-27 to 3-30	oproduction	1 The F
iability			s nom no-0+0	1 ages 5-27 to 5-50		<u>1. 1110 1</u>
nout l	Page 3-29 Equation 3.3: $L_M =$	27.2(A _N X F	')			
be wit	where: L _{M TOTAL PROJECT} = A _N =	Net increas	e in impervious	area for the project	Icreased load	
shall	P=	Average an	nual precipitatio	on, inches		-
s, Inc.	Site Data: Determine Required Load Removal Based on the Entire Project County =	ct Williamso	on T	P_{0}		Site
ociates	Predevelopment impervious area within the limits of the plan * = Total post-development impervious area within the limits of the plan * =	84.01 0.03	acres acres	Boundary (52.61)+ OS (31.40)		-
d Asso	Total post-development impervious cover fraction * =	0.22	inches			
rn ane	· · · · · · · · · · · · · · · · · · ·	40024				
ley-Hc	 The values entered in these fields should be for the total project area 	10024	IDS.			* The v
oy Kim	Number of drainage basins / outfalls areas leaving the plan area =	10	٦			
ation b						
adapt	2. Drainage Basin Parameters (This information should be provided for	each basir	<u>ı):</u> _			<u>2. Drain</u>
and	Drainage Basin/Outfall Area No. =	WQP-A-				
izatior	= Total drainage basin/outfall area = Predevelopment impervious area within drainage basin/outfall area	24.78 0.00	acres acres			_
author	Post-development impervious area within drainage basin/outfall area = Post-development impervious fraction within drainage basin/outfall area =	10.28 0.41				F Pos
ritten .	L _{M THIS BASIN} =	8948	IDS.			• • ·
out wr	S. mulcate the proposed BNP Code for this basin.	Batch Evt	anded Detentio	on		<u>3. Indica</u>
t with	Removal efficiency = 4. Calculate Maximum TSS Load Removed (L _P) for this Drainage Basin	91 by the sele	percent	الع الع		4 Calcu
cumen	RG-348 Page 3-33 Equation 3.7: Lp =	(BMP effici	encv) x P x (A ₁	x 34 6 + A _P x 0.54)		<u>4. 00100</u>
his do	where: $A_c =$	Total On-Si	te drainage are	a in the BMP catchment area		
on th	$A_{\rm C} = A_{\rm I} = 0$	Impervious	area proposed	in the BMP catchment area		
eliance	A _P = L _R =	Pervious an TSS Load r	ea remaining in removed from th	the BMP catchment area is catchment area by the proposed BMP		
oper r	A _C =	24.78	acres			
impr	$A_1 = A_P$	10.28 14.50	acres acres			
of and	L _R =	10586	lbs			
Reuse						
ared. F	5. Calculate Fraction of Annual Runoff to Treat the drainage basin / out	tfall area	•			<u>5. Calcu</u>
3 prep(Desired L _{M THIS BASIN} =	9200	lbs.			
it was	F =	0.87	٦			
which	6. Calculate Capture Volume required by the BMP Type for this drainage	ge basin / o	utfall area.	Calculations from RG-348	Pages 3-34 to 3-36	<u>6. Calcu</u>
nt for	Rainfall Depth =	1.44	inches			
nd clie.	On-site Water Quality Volume =	40679	cubic feet			
ose ar		Calculation	s from RG-348	Pages 3-36 to 3-37		
c purp	Off-site area draining to BMP =	30.82	acres			
specific	Off-site Impervious cover draining to BMP = Impervious fraction of off-site area =	0.00 0.00	acres			
, the	Off-site Runoff Coefficient = Off-site Water Quality Volume =	0.02 3222	cubic feet			
inly foi	Storage for Sediment =	8780	- : - · ·			
nded c	The following sections are used to calculate the required water quality The values for BMP Types not selected in cell C45 will show NA	52681 volume(s)	for the selecte	ed BMP.		To The follo
s inter						
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s Commission on Environmental Quality		Texas Commission on Environmental Quality	B
emoval Calculations 04-20-2009	Project Name: Edgewood Ph 1-1 Date Prepared: 9/1/2023	TSS Removal Calculations 04-20-2009 Project Name: Edgewood Ph 1-1 Date Prepared: 9/1/2023	DATE
onal information is provided for cells with a red triangle in the upper nown in blue indicate location of instructions in the Technical Guidance Mar cters shown in red are data entry fields. cters shown in black (Bold) are calculated fields. Changes to these	r right corner. Place the cursor over the cell. nual - RG-348. a fields will remove the equations used in the spreadsheet.	Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348. Characters shown in red are data entry fields. Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.	
Required Load Reduction for the total project: Calculations from	RG-348 Pages 3-27 to 3-30	1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30	SN
Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$	noval resulting from the proposed development = 80% of increased load	Page 3-29 Equation 3.3: L _M = 27.2(A _N x P)	EVISIO
$A_N = $ Net increase in im P = Average annual pr	npervious area for the project recipitation, inches	where: $L_{M \text{ TOTAL PROJECT}}$ = Required TSS removal resulting from the proposed development = 80% of increased load A_N = Net increase in impervious area for the project P = Average annual precipitation inches	
e Data: Determine Required Load Removal Based on the Entire Project County = Williamson [\] Total project area included in plan * = 84.01 ac	cres Boundary (52.61)+ OS (31.40)	Site Data: Determine Required Load Removal Based on the Entire Project	
Predevelopment impervious area within the limits of the plan * = 0.03 ac Total post-development impervious area within the limits of the plan* = 18.44 ac Total post-development impervious cover fraction * = 0.22 P = 32 inc	ches	County = Williamson ' Total project area included in plan * = 84.01 acres Boundary (52.61)+ OS (31.40) Predevelopment impervious area within the limits of the plan * = 0.03 acres Total post-development impervious area within the limits of the plan * = 18.44 acres Total post-development impervious cover fraction * = 0.22 0.22	o z
L _{M TOTAL PROJECT} = 16024 Ibs	S.	P = 32 inches	8626
Values entered in these fields should be for the total project area.		L _{M TOTAL PROJECT} = 16024 Ibs. * The values entered in these fields should be for the total project area.	5, INC. 4, TX 7 5–1791 5–928
		Number of drainage basins / outfalls areas leaving the plan area = 10	OCIATES OCIATES RGETOWN 312-418 MM FIRM F
nage Basin Parameters (This information should be provided for each basin):		2. Drainage Basin Parameters (This information should be provided for each basin):	D ASS(0, GEOF AX: 5 DRN.CC EERING
Total drainage basin/outfall area = 16.88 ac	cres	Drainage Basin/Outfall Area No. = VFS-1	IN ANI TE 131 768 F 768 F EY-HO ENGINE
Predevelopment impervious area within drainage basin/outfall area = 0.03 ac Post-development impervious area within drainage basin/outfall area = 7.16 ac	ores	Total drainage basin/outfall area = 0.30 acres Predevelopment impervious area within drainage basin/outfall area = 0.00 acres	Y-HOR E, SUI 220-07 V.KIML
st-development impervious fraction within drainage basin/outfail area = 0.42 $L_{M THIS BASIN} = 6206$ Ibs	S.	Post-development impervious area within drainage basin/outfall area = 0.06 acres Post-development impervious fraction within drainage basin/outfall area = 0.20	AVENU AVENU 512-55 WWV EGISTE
ate the proposed BMP Code for this basin.		$L_{M \text{ THIS BASIN}} = 52 \text{ Ibs.}$	O23 H JSTIN JSTIN JSTIN JSTIN AS RE
Proposed BMP = Batch Extended Removal efficiency = 91 pe	Detention ercent	Proposed BMP = Vegetated Filter Strips	© 2 S. AL PHC TEX
ulate Maximum TSS Load Removed (L _R) for this Drainage Basin by the selected I	BMP Type.	Removal efficiency = 85 percent <u>4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.</u>	201
RG-348 Page 3-33 Equation 3.7: $L_R = (BMP \text{ efficiency})$	$x P x (A_1 x 34.6 + A_P x 0.54)$	RG-348 Page 3-33 Equation 3.7: L _R = (BMP efficiency) x P x (A ₁ x 34.6 + A _P x 0.54)	min
where: $A_{\rm C}$ = Total On-Site drain $A_{\rm I}$ = Impervious area p	proposed in the BMP catchment area	where: A _c = Total On-Site drainage area in the BMP catchment area	OF TEXAS
A _P = Pervious area rem L _R = TSS Load remove	naining in the BMP catchment area ed from this catchment area by the proposed BMP	A_1 = Impervious area proposed in the BMP catchment area A_P = Pervious area remaining in the BMP catchment area	GRECORY DAVIS
A _C = 16.88 ac	cres	L_R = TSS Load removed from this catchment area by the proposed BMP	AGIGI DCENSE
$A_1 = 7.16$ ac $A_P = 9.72$ ac	ores	$A_{\rm C} = 0.30 \text{acres}$ $A_{\rm I} = 0.06 \text{acres}$	SSIONAL STANK
L _R = 7367 Ibs	S	$A_{P} = 0.24$ acres $L_{R} = 60$ Ibs	
ulate Fraction of Annual Runoff to Treat the drainage basin / outfall area		JECT JECT 2223	AGD AGD
Desired L _{M THIS BASIN} = 6350 Ibs	S.	5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area	AS AS AS
F = 0.86		Desired $L_{M THIS BASIN} = 52$ lbs.	ALE: SIGNE AMN
ulate Capture Volume required by the BMP Type for this drainage basin / outfall a	area. Calculations from RG-348 Pages 3-34 to 3-36	F = 0.87	
Rainfall Depth = 1.38 inc	ches	There are no calculations required for determining the load or size of vegetative filter strips.	È I
On-site Water Quality Volume = 26939 cu	ubic feet	The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.	Щ
Calculations from	RG-348 Pages 3-36 to 3-37	If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.	L S
Off-site area draining to BMP = 0.58 ac Off-site Impervious cover draining to BMP = 0.00 ac	cres cres	A	$\widetilde{\mathbb{S}}$
Impervious fraction of off-site area = 0.00 Off-site Runoff Coefficient = 0.02		b l	N N
Storage for Sediment = 5399			E e
otal Capture Volume (required water quality volume(s) x 1.20) = 32396 cu lowing sections are used to calculate the required water quality volume(s) for the	ubic feet e selected BMP.		`<
ues for BMP Types not selected in cell C45 will show NA.		A A A A A A A A A A A A A A A A A A A	
			A
			<u> </u>
		BENCHMARKS	\sim
		ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM DATUM UTILIZING WESTERN DATA SYSTERS CONTINUENCE CONTINUENCE OF A SYSTERS OF THE AUTOMATING REFERENCE	
		BM-101: "X" CUT IN CONCRETE ELEVATION: 915.04'	
		O O	
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		APPROVAL Q	
			$\overline{\mathbf{A}}$
		SHEE	IT NUMBER
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es, Inc	Texas Commission on Environmental Quality	Texas Commission on Environ
Associate	TSS Removal Calculations 04-20-2009Project Name: Edgewood Ph 1-1Date Prepared:9/1/2023	TSS Removal Calculations 04-20-2
Kimley-Horn and	Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348. Characters shown in red are data entry fields. Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.	Additional information is provided Text shown in blue indicate location o Characters shown in red are data Characters shown in black (Bold) Changes to these fields will remov
bility to	1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30	<u>1. The Required Load Reduction for the t</u>
out lid	Page 3-29 Equation 3.3: L _M = 27.2(A _N x P)	
nall be with	where: L _{M TOTAL PROJECT} = Required TSS removal resulting from the proposed development = 80% of increased A _N = Net increase in impervious area for the project P = Average annual precipitation, inches	load where:
Inc. sł	Site Data: Determine Required Load Removal Based on the Entire Project	Site Data: Determine Required Load Re
id Associates,	Total project area included in plan * = 84.01 acres Boundary (52.61)+ OS (31.40) Predevelopment impervious area within the limits of the plan * = 0.03 acres Total post-development impervious area within the limits of the plan* = 18.44 acres Total post-development impervious cover fraction * = 0.22 inches	Total Predevelopment impervious are Total post-development impervious ar Total post-developm
-Horn an	$L_{\rm M \ TOTAL \ PROJECT} = 16024 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	
Kimley–	* The values entered in these fields should be for the total project area.	* The values entered in these fields shou
ition by	Number of drainage basins / outfalls areas leaving the plan area = 10	Number of drainage basins / outf
adapta	2. Drainage Basin Parameters (This information should be provided for each basin):	2. Drainage Basin Parameters (This infor
n and	Drainage Basin/Outfall Area No. = VFS-2	Drai
orizatio	Predevelopment impervious area within drainage basin/outfall area = 0.00 acres Post-development impervious area within drainage basin/outfall area = 0.22 acres	Predevelopment impervious area w Post-development impervious area w
en auth	Post-development impervious fraction within drainage basin/outfall area = 0.52 L _{M THIS BASIN} = 191 Ibs.	Post-development impervious fraction w
it writte	3. Indicate the proposed BMP Code for this basin.	3. Indicate the proposed BMP Code for the
withou	Proposed BMP = Vegetated Filter Strips Removal efficiency = 85 percent A Calculate Maximum TSS Load Removed (L_) for this Drainage Basin by the selected BMP Type	4 Calculate Maximum TSS Load Remov
cument	RG-348 Page 3-33 Equation 3.7: $L_R = (BMP efficiency) \times P \times (A_1 \times 34.6 + A_P \times 0.54)$	4. Calculate Maximum 133 Load Keniov
liance on this do	where: A_{C} = Total On-Site drainage area in the BMP catchment area A_{I} = Impervious area proposed in the BMP catchment area A_{P} = Pervious area remaining in the BMP catchment area L_{R} = TSS Load removed from this catchment area by the proposed BMP	where:
oper re	$A_{\rm C} = 0.42 \text{acres}$ $A_{\rm I} = 0.22 \text{acres}$	
nd impr	$A_P = 0.20$ acres $L_R = 210$ lbs	
se of a		
d. Reu:	5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area	5. Calculate Fraction of Annual Runoff to
orepare	Desired L _{M THIS BASIN} = 191 Ibs.	
wds	F = 0.91	16 Vagatatad Eilter Strips
for which it	There are no calculations required for determining the load or size of vegetative filter strips. The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or	There are no calculations required for de The 80% removal is provided when the c the sheet flow leaving the impervious co
d clien	If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.	a cross 50 feet of natural vegetation with
ose and		
c purpo		
specifi		
or the		
only f		
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	Texas Commission on Environmental Quality	Texas Commission on Environmental Quality	B
Edgewood Ph 1-1 9/1/2023	TSS Removal Calculations 04-20-2009Project Name: Edgewood Ph 1-1Date Prepared:9/1/2023	TSS Removal Calculations 04-20-2009Project Name: Edgewood Ph 1-1Date Prepared:9/1/2023)ATE
e cursor over the cell.	Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348. Characters shown in red are data entry fields. Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.	Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348. Characters shown in red are data entry fields. Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.	
Pages 3-27 to 3-30	1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30 Pages 3-29 Equation 3-3: L = 27 2(A × P)	1. The Required Load Reduction for the total project:Calculations from RG-348Pages 3-27 to 3-30Pages 3-29 Equation 3.3: $L_{12} = 27.2(A_1 \times P)$	SIONS
ed development = 80% of increased load	where: $L_{M TOTAL PROJECT} = Required TSS removal resulting from the proposed development = 80% of increased load A_N = Net increase in impervious area for the projectP = Average$ annual precipitation, inches	where: $L_{M TOTAL PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load A_N = Net increase in impervious area for the project P = Average annual precipitation, inches	RE
DS (31.40)	Site Data: Determine Required Load Removal Based on the Entire Project County = Williamson Total project area included in plan * = 84.01 acres Predevelopment impervious area within the limits of the plan * = 0.03 acres Total post-development impervious cover fraction * = 0.22 P = 32 inches	Site Data: Determine Required Load Removal Based on the Entire Project County = Williamson Total project area included in plan * = 84.01 acres Predevelopment impervious area within the limits of the plan * = 0.03 acres Total post-development impervious area within the limits of the plan * = 18.44 acres Total post-development impervious cover fraction * = 0.22 P = 32 inches	o Z
	L _{M TOTAL PROJECT} = 16024 Ibs. * The values entered in these fields should be for the total project area.	L _{M TOTAL PROJECT} = 16024 ¹ Ibs. * The values entered in these fields should be for the total project area.	S, INC. 5, INC. 8–1791 1–928
	Number of drainage basins / outfalls areas leaving the plan area = 10	2 Drainage Basin Parameters (This information should be provided for each basin):	SOCIATES ORGETOWN 512-418 COM G FIRM F
	Z. Drainage Basin Parameters (This Information should be provided for each basin): Drainage Basin/Outfall Area No. = VFS-3 Total drainage basin/outfall area = 0.17 acres Predevelopment impervious area within drainage basin/outfall area = 0.00 acres Post-development impervious area within drainage basin/outfall area = 0.10 acres Post-development impervious fraction within drainage basin/outfall area = 0.59 L LM THIS BASIN = 87 Ibs.	Z. Drainage Basin Parameters (mis monitation should be provided for each basin). Drainage Basin/Outfall Area No. = VFS-4 Total drainage basin/outfall area = 0.15 acres Predevelopment impervious area within drainage basin/outfall area = 0.00 acres Post-development impervious area within drainage basin/outfall area = 0.02 acres Post-development impervious fraction within drainage basin/outfall area = 0.13 L _{M THIS BASIN} = 17 Ibs.	KIMLEY-HORN AND AS AVENUE, SUITE 1310, GE 512-520-0768 FAX: WWW.KIMLEY-HORN.C
	<u>3. Indicate the proposed BMP Code for this basin.</u> Proposed BMP = Vegetated Filter Strips Removal efficiency = 85 percent <u>4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.</u>	3. Indicate the proposed BMP Code for this basin. Proposed BMP = Vegetated Filter Strips Removal efficiency = 85 percent 4. Calculate Maximum TSS Load Removed (L _R) for this Drainage Basin by the selected BMP Type.	601 S. AUSTIN PHONE: TEXAS F
ent area	RG-348 Page 3-33 Equation 3.7: $L_R = (BMP \text{ efficiency}) \times P \times (A_1 \times 34.6 + A_P \times 0.54)$	RG-348 Page 3-33 Equation 3.7: $L_R = (BMP \text{ efficiency}) \times P \times (A_1 \times 34.6 + A_P \times 0.54)$ where: $A_C = \text{Total On-Site drainage area in the BMP catchment area}$	
t area area the proposed BMP	$A_{\rm C}$ = rotal On-Site drainage area in the BMP catchment area $A_{\rm I}$ = Impervious area proposed in the BMP catchment area $A_{\rm P}$ = Pervious area remaining in the BMP catchment area $L_{\rm R}$ = TSS Load removed from this catchment area by the proposed BMP	$A_{\rm P}$ = Impervious area proposed in the BMP catchment area $A_{\rm P}$ = Pervious area remaining in the BMP catchment area $L_{\rm R}$ = TSS Load removed from this catchment area by the proposed BMP	STATE OF TEXAS
	$\begin{array}{llllllllllllllllllllllllllllllllllll$	$A_C =$ 0.15acres $A_I =$ 0.02acres $A_P =$ 0.13acres $L_R =$ 21Ibs	ADAM GALAGIOI
	5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area	5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
	Desired $L_{M THIS BASIN} = 87$ Ibs.	Desired L _{M THIS BASIN} = 17 Ibs. F = 0.82	A PROJE 5778312 DATE OBER 2 OBER 2 OBER 2 LED BY: LED BY: LED BY:
Pages 3-55 to 3-57	16. Vegetated Filter Strips Designed as Required in RG-348 Pages 3-55 to 3-57	<u>16. Vegetated Filter Strips</u> Designed as Required in RG-348 Pages 3-55 to 3-57	KH/ 06 SCALE DESIGN DRAWN
e of 20% or ope exceeds 20%.	There are no calculations required for determining the load or size of vegetative filter strips. The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.	There are no calculations required for determining the load or size of vegetative filter strips. The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.	ET 2
of RG-348.	If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.	If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.	WATER QUALITY CALCULATIONS (SHE OF 3)
		BENCHMARKS LEvations Hereon are referenced to the north American Joint Concrete Elevation: y15.04 APPROVAL	EDGEWOOD AMENITY CENTER CITY OF LEANDER WILLIAMSON COUNTY, TEXAS
			SHEET NUMBER

-	Texas Commission on Environmental Quality		Texas Commission on Environmental Quality	
	TSS Removal Calculations 04-20-2009	Project Name: Edgewood Ph 1-1 Date Prepared: 9/1/2023	TSS Removal Calculations 04-20-2009	Project Name: Edgewood Ph Date Prepared: 9/1/2023
	Additional information is provided for cells with a red triangle in the upper right correction of instructions in the Technical Guidance Manual - RG-3 Characters shown in red are data entry fields. Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.	ner. Place the cursor over the cell. 348.	Additional information is provided for cells with a red to Text shown in blue indicate location of instructions in the Tec Characters shown in red are data entry fields. Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used	riangle in the upper right corner. Place the cursor over the hnical Guidance Manual - RG-348. d in the spreadsheet.
т. т. т. н.	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Pages 3-27 to 3-30	1. The Required Load Reduction for the total project:	Calculations from RG-348 Pages 3-27 to 3-30
1	Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$		Page 3-29 Equation 3.3:	$L_{\rm M} = 27.2(A_{\rm N} \times P)$
	where: L _{M TOTAL PROJECT} = Required TSS removal resultin A _N = Net increase in impervious are P = Average annual precipitation, i	g from the proposed development = 80% of increased load a for the project nches	where: L _{M TOTAL PRO}	_{JECT} = Required TSS removal resulting from the proposed development = 80 A _N = Net increase in impervious area for the project P = Average annual precipitation, inches
-	Site Data: Determine Required Load Removal Based on the Entire Project		Site Data: Determine Required Load Removal Based on the Entire	Project
	County = Williamson * Total project area included in plan * = 84.01 acres Bc Predevelopment impervious area within the limits of the plan * = 0.03 acres Total post-development impervious area within the limits of the plan * = 18.44 acres Total post-development impervious cover fraction * = 0.22 acres P = 32 inches	oundary (52.61)+ OS (31.40)	Total project area included in pla Predevelopment impervious area within the limits of the pl Total post-development impervious area within the limits of the p Total post-development impervious cover fracti	unty = Williamson * an * = 84.01 acres an * = 0.03 acres alan* = 18.44 acres on * = 0.22 P = 32
	$L_{M \text{ TOTAL PROJECT}} = 16024$ Ibs. * The values entered in these fields should be for the total project area.		L _{M TOTAL PRO} * The values entered in these fields should be for the total project	J _{JECT} = 16024 [■] Ibs. It area.
-	Number of drainage basins / outfalls areas leaving the plan area = 10^{-5}		Number of drainage basins / outfalls areas leaving the plan a	area = 10
4	2. Drainage Basin Parameters (This information should be provided for each basin):		2. Drainage Basin Parameters (This information should be provide	ed for each basin):
-	Drainage Basin/Outfall Area No. = Stormtroope		Drainage Basin/Outfall Area	No. = NT
	Total drainage basin/outfall area = 1.15 acres Predevelopment impervious area within drainage basin/outfall area = 0.00 acres		Total drainage basin/outfall a Predevelopment impervious area within drainage basin/outfall a	area = 8.74 acres area = 0.00 acres
-	Post-development impervious area within drainage basin/outfall area =0.47acresPost-development impervious fraction within drainage basin/outfall area =0.41		Post-development impervious area within drainage basin/outfall a Post-development impervious fraction within drainage basin/outfall a	area = 0.13 acres area = 0.01
	$L_{\rm M THIS BASIN} = 409$ Ibs.		$L_{M THIS B}$	$A_{SIN} = 113$ Ibs.
	3. Indicate the proposed BMP Code for this basin. Proposed BMP = Wet Vault Removal efficiency = 78 percent 4. Coloulate Maximum TSS Load Removed (L.) for this Drainage Rasin by the colouted RMP Type		Proposed E Proposed E Removal efficie 4. Calculate Maximum TSS Load Removed (L _p) for this Drainage	BMP = Vegetated Filter Strips ency = 0 percent Basin by the selected BMP Type.
-	$\frac{4. \text{ Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.}{RG-348 Page 3-33 Equation 3.7: L_P = (BMP efficiency) x P x (A_1 x 3)$	4.6 + A _P x 0.54)	RG-348 Page 3-33 Equation 3.7:	$L_{R} = (BMP \text{ efficiency}) \times P \times (A_{I} \times 34.6 + A_{P} \times 0.54)$
-	$A_{\rm C}$ = Total On-Site drainage area in	the BMP catchment area	where:	$A_{\rm C}$ = Total On-Site drainage area in the BMP catchment area
-	$A_1 = $ Impervious area proposed in the $A_2 = $ Pervious area remaining in the	e BMP catchment area BMP catchment area		A _I = Impervious area proposed in the BMP catchment area A _P = Pervious area remaining in the BMP catchment area
g »b	$L_{\rm R}$ = TSS Load removed from this c	atchment area by the proposed BMP		$\rm L_{\rm R}$ = TSS Load removed from this catchment area by the proposed BMP
Plan.	$A_{\rm C} = 1.15 \text{ acres}$			$A_{\rm C} =$ 8.74 acres $A_{\rm I} =$ 0.13 acres
uality	$A_{\rm P} = 0.68 \text{ acres}$			$A_P =$ 8.61 acres $L_R =$ 0 lbs
iter Q				
C-Wo	5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area		5. Calculate Fraction of Annual Runoff to Treat the drainage basin	n / outfall area
leets	Desired L _{M THIS BASIN} = 409 Ibs.		Desired L _{M THIS B}	$A_{ASIN} = 0$ Ibs.
JanSh	بة ج ج F = 0.98			F = #DIV/0!
Cad	[™] [™] - <u>16. Vegetated Filter Strips</u> Designed as Required in RG-3	48 Pages 3-55 to 3-57	16. Vegetated Filter Strips	Designed as Required in RG-348 Pages 3-55 to 3-57
y Center	There are no calculations required for determining the load or size of vegetative filter strips. The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade	on of flow) and n maximum slope of 20% or as long as no slope exceeds 20%.	There are no calculations required for determining the load or siz The 80% removal is provided when the contributing drainage are the sheet flow leaving the impervious cover is directed across 15 across 50 feet of natural vegetation with a maximum slope of 10%	ze of vegetative filter strips. a does not exceed 72 feet (direction of flow) and feet of engineered filter strips with maximum slope of 20% or ۵. There can be a break in grade as long as no slope exceeds 20%.
Amenit	If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as describe	ed on Page 3-56 of RG-348.	If vegetative filter strips are proposed for an interim permanent B	MP, they may be sized as described on Page 3-56 of RG-348.
mes∖∕				
oh IM – C	Texas Commission on Environmental Quality			6 Storm
Cannon 14	Project Name: Edgewood Phase 1, Section 1 Project Location: Williamson County, TX Date Prepared: 9/28/2023 Prepared For: Adam Davis			Edwards Aquifer Design
783129 -	Im = 27.2(AN x P) Im = 27.2(AN x P) Im = Required TSS removal Im = Net increase in impervious area	for site		
,il∖067	Site Data:	nes		STORM INLET
IS_Civ	5 County = Williamson Stormwater Quality Structure = Wet Vault			
, ∖AL	Pre-development impervious area = 0.00 acres Post-development impervious area = 0.47 acres			
-ile Path:	Post-development impervious fraction = 0.41 P = 32 inches	equired Removal		
Ę	Σ Pra_Day Δ for Pupoff Comp	site Equired	By- Fraction I oad	
)7: 37c	Basin Outfall Area Cover Area Cover Area (C) (C) Coef.	off Area Intensity (I) Flow (Q) Pollutant Model Area (C) Removal Area	ass intensity of Flow F/0.9 Overflow Removal Actual Reduction wrat Treated Treated F/0.9 Rate (ft/s) Effeciency Effeciency (L _R)	
10:0	[ID] [ac] [ac] [ac] [ac]	[ac] [in/hr] [cfs] L _m in [lbs] # (sf) (d	cfs) [in/hr] Figure 3-11] [Figure 3-10] (lbs)	(A)
2023	ה ן דו אועזובואוויד ז.זיס 41% 0.47 0.00 0.47 0.9 0.68 0.03 0.38 ס פ	9 0.44 1.1 0.49 409 25 369 3	Total TSS Removed by BMP's Annually = 417	
- 03,	۵ ۵ ۵		Total Required Reduction (Lm) = 409 Solids Removed By Other Means = 0	
ctober		STORMTROOPER	Sufficient Removal = YES	
ate: 00	E Mod	E.A. E.A. E.A. E.A. E.A. E.A. E.A. Imp. x 0.9 + Perv. Perv.	x 0.03) reated/Single Unit	
id Di	ة الم الم الم الم الم الم الم الم	149 600 0.14 - 0.20 0.22 Acres 248 1000 0.21 - 0.33 0.37 Acres		
°, Dav	25 50 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	369 1440 0.34 - 0.50 0.56 Acres 588 2250 0.51 - 0.79 0.88 Acres 730 2720 0.80 - 0.98 1.09 Acres		
y: Lee		913 4000 0.99 - 1.23 1.37 Acres		

exas Commission on Environmental Quality			
SS Removal Calculations 04-20-2009		Project Name: Edgewood Ph 1-1 Date Prepared: 9/1/2023	
dditional information is provided for cells with a red	triangle in the uppe	er right corner. Place the cursor over the cell	AREA AMI
ext shown in blue indicate location of instructions in the Te haracters shown in red are data entry fields.	echnical Guidance Ma	anual - RG-348.	STEP ONE: Required TSS Re
haracters shown in black (Bold) are calculated field	S.		EQUATION 3.3
hanges to these fields will remove the equations us	ed in the spreadshe	eet.	$L_m = 27.2(A_n \times P)$
The Device different Design for the total provident	Colouisticus from		L _m = Required TSS Removal (por
Page 3-29 Equation 3	$3^{\circ} I_{11} = 27.2(A_{11} \times P)$	Trages 3-27 10 3-50	A _n = Net Increase in Impervius A P = Average Annual Precipitatior
	$\mathbf{U}_{\mathrm{M}} = \mathbf{U}_{\mathrm{M}} \mathbf{U}_{\mathrm{M}} \mathbf{U}_{\mathrm{M}} \mathbf{U}_{\mathrm{M}} \mathbf{U}_{\mathrm{M}}$		Drainage Basin = 1.15
where: L _{M TOTAL PF}	ROJECT = Required TSS re	emoval resulting from the proposed development = 80% of increased load	Pre-Dev. Imp. Area = 0.00
	$A_N = Net increase in i$	impervious area for the project	Post-Dev. Imp. Area = 0.47
		precipitation, menes	Permous Area = 0.68 P = 32
Site Data: Determine Required Load Removal Based on the Enti	re Project		$L_{m} = 409$
C Total project area included in r	ounty = williamson [•] blan * = 84.01 a	acres Boundary (52.61)+ OS (31.40)	-111 - 12
Predevelopment impervious area within the limits of the	plan * = 0.03 a	acres	STEP TWO: Select an Approp
Total post-development impervious area within the limits of the Total post-development impervious cover frac	plan* = 18.44 a	acres	Effective
	P = 32 ii	nches	StormTrooper S
			Unit Surface
L _{M TOTAL PP}	ROJECT = 16024 II	bs.	$\frac{\text{EQUATION 3.4}}{\text{O} = \text{CiA} \text{ where:}}$
The values entered in these fields should be for the total projection	ect area.		C = 0.39
Number of drainage basins / outfalls areas leaving the pla	n area = 10		i = 1.10
б			A = 1.15
			EQUATION 3.5
Drainage Basin Parameters (This information should be provi	ded for each basin):		$V_{OR} = Q/A$, where:
Drainage Basin/Outfall Are	a No. = NT 🎙		Q = 0.49
Tatal drainage basin/outfa	ll aroa = 9.74 a		A = 369
Predevelopment impervious area within drainage basin/outfa	ll area = 0.00 a	acres	BMP Effeciency = 81%
Post-development impervious area within drainage basin/outfa	ll area = 0.13 a	acres	,
	11 area = 0.01	bs.	STEP THREE: Calculate Fract
Indicate the proposed BMP Code for this basin.			Unit By-Pass Flowrate = 3.21
Dranaged		an Othing	Annual Volume Treated = 87%
Removal effic	siency = 0 p	percent	Treatment Reduction = 0.97
Calculate Maximum TSS Load Removed (L _R) for this Drainag	e Basin by the selected	BMP Type.	Actual BMP Effeciency = 78%
RG-348 Page 3-33 Equation 3.	7: L _R = (BMP efficiency)) x P x (A ₁ x 34.6 + A _P x 0.54)	STEP FOUR: Calculate TSS L
where:	A _c = Total On-Site dra	ainage area in the BMP catchment area	EQUATION 3.8
	A ₁ = Impervious area	proposed in the BMP catchment area	$L_r = (BMP Efficiency) \times P \times (A_i \times A_i)$
	A _P = Pervious area re	maining in the BMP catchment area	L_r = Load Removed by BMP
	L _R = TSS Load remov	ved from this catchment area by the proposed BMP	BMP Efficiency = TSS Removal A = Impervious Tributary Area to
	A _c = 8.74 a	acres	A_p = Pervious Tributary Area to t
	A ₁ = 0.13 a	acres	
	A _P = 8.61 a	acres	$A_i = 0.47$ $A_i = 0.68$
	$L_R = 0$	bs	
			L r - - 1
Calculate Fraction of Annual Runoff to Treat the drainage bas	sin / outfall area		
Desired L _{M THIS}	BASIN = 0	bs.	
	F = #DIV/0!		
i. Vegetated Filter Strips	Designed as Re	quired in RG-348 Pages 3-55 to 3-57	



Fraction of Flow Treated (F)	F/0.9	Overflow Rate (ft/s)	Removal Effeciency	Actual Effeciency	Load Reduction (L _R)
Figure 3-11]		Figure 3-10		(lbs)
0.87	0.97	1.32E-03	81%	78%	417
tal TSS F To Solid	Remo otal Re Is Rer	ved by E equired noved B Suff	BMP's An Reductio By Other I ficient Re	nually = n (Lm) = Means = emoval =	417 409 0 YES

TSS Rer	noval Calculations	DATE
IT) DRAINAGE BASIN	1 TOTAL SITE DETAILS Project Name: Edgewood Phase 1, Section 1	
val	Project Location: Williamson County, TX Date Prepared: 9/28/2023	
	Prepared By: Adam Davis Total Project Area to be Treated = 1.15	
s) (acres)	Pre-Development Impervious Area = 0.00 Post-Development Impervious Area = 0.47	NS NO
Acres	Composite Run-Off Coefficient = 0.41 Required TSS Removal L_m = 409 County = Williamson	EVISIC
Acres		<u>د</u>
Acres Inches	STORMTROOPER	
Lbs	Model E.A. @ 80% 5 < 0.13 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.14 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20	
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Q_ 25 a = 369	40 0.51 - 0.79 70 0.80 - 0.98	
Composite Run-Off Coefficient Stormwater Quality Intensity Drainage Basin Acreage Required Treatment Flow Required Treatment Flow Unit Surface Area	110 0.99 - 1.23	AND ASSOCIATES, INC. 1310, GEORGETOWN, TX 786 5 FAX: 512-418-1791 -HORN.COM SINEERING FIRM F-928
3 Overflow Rate		HORN SUITE D-0768
of Annual Runoff to be Treated		IMLEY- VENUE, WWW.F
cfs in/hr Volume of Run-Off Entering Unit BMP Effeciency Reduction Facto	or	501 S. AUSTIN A PHONE: 51 TEXAS REC
I Kemoved by BINFS	-	OF TEV
$6 + A_p \times 0.54$		STREET ILAAS
aency ∋ BMP (ac) 3MP (ac)		ADAM GREGORY DANIS
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lbs		10/3/2023
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4 BOOTS 2 PVC GALV. STEEL FRAME & COVER, RATED FOR TRAFFIC		
LOADING (CAST IN OR LOOSE) W/ SAFETY NET 1 20" CAST IRON RING AND COVER		OF OF
1 GALV. STEEL TRASH SCREEN 1 WATER QUALITY ORIFICE 1 BITUMASTIC EXTERIOR COATING 1 CONTROL BAFFLF		E L L
1 MONOLITHIC BAFFLE 1 COALESCING MEDIA PACK 1 EFFLUENT BAFFLE W/ ANTI-SIPHON		NA UI
NAMEPLATE MFG: PARKUSA 1 888-611-PARK 1 WWW.PARKUSA.COM MODEL: SWAQ-BP-XX		
DATE MANUFACTURED		CP
	BENCHMARKS	
	ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN	Ŕ
	DATA SYSTMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK. BM-101: "X" CUT IN CONCRETE	×As H U
-0" 4'-0" 7'-0" 4'-0"	ELEVATION: 915.04	
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10" 4'-0" 16'-0" 4'-0" 10" 4'-0" 16'-0" 4'-0"		
© PorkUSA. ALL RIGHTS RESERVED.	APPROVAL	
*: . PROJ # . . LOCATION: .		
		4
STORMWATER INTERCEPTOR SWAQ WITH BYPASS		SHEET NUMBER
DWG. NO. REV.		10







CALLED 83.693 ACRES TRACT TWO CSM-MASON FAMILY LP. DOC. No. 2011086909 OPRWC

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APPROVAL

ME

SHEET NUMBER

21

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	PROPERTY LINE
	PHASE LINE
	LOT DRAINAGE FLOW DIRECTION
\rightarrow	STREET DRAINAGE FLOW DIRECTION
	PROPOSED RETAINING WALL
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555	PROPOSED CONTOUR
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	STORM INLET AREA INLET STORM MANHOLE
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Image: Constraint of the second se	STORM INLET AREA INLET STORM MANHOLE JUNCTION BOX WATER MAIN WASTEWATER MAIN EXISTING WATER LINE
Image: Constraint of the second se	STORM INLET AREA INLET STORM MANHOLE JUNCTION BOX WATER MAIN WASTEWATER MAIN EXISTING WATER LINE EXISTING WASTEWATER LINE
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)'	96.54'	S85*22'42"E	96.29'	14 ° 24'19"	48.53'
)'	122.93'	S84 ° 30'34"E	122.68'	12•40'03"	61.71'
,	12.36'	N82*04'28"E	12.33'	14 ° 09'52"	6.21'
,	18.07'	N54 ° 17'24"E	17.68'	41 ° 24'17"	9.45'
,	14.46'	N19 ° 46'47"E	14.32'	27 ° 36'58"	7.37'
)'	10.30'	N8 ʻ 17'54"E	10.30'	4 • 39'12"	5.15'
,	24.51'	N54 ° 34'00"E	22.17'	87 * 53'00"	15.40'
,	27.99'	N74 ° 17'58"E	27.16'	48 ° 25'06"	14.89'



BENCHMARKS

ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK. BM-101: "X" CUT IN CONCRETE ELEVATION: 915.04' APPROVAL







BENCHMARKS ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK. BM-101: "X" CUT IN CONCRETE ELEVATION: 915.04'

APPROVAL



25

SHEET NUMBER





MATCH LINE SHEET 27

	LEGEND
	PROPERTY LINE
	PHASE LINE
>	LOT DRAINAGE FLOW DIRECTION
\rightarrow	STREET DRAINAGE FLOW DIRECTION
	PROPOSED RETAINING WALL
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555	PROPOSED CONTOUR
555	EXISTING CONTOUR
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10/3/2023

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NOTES:

- 1. ALL DIMENSIONS ARE TO CENTERLINE OF PIPE UNLESS NOTED OTHERWISE.
- 2. CONTRACTOR TO FIELD VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTACT ENGINEER IF FIELD CONDITIONS VARY.
- 3. CONTRACTOR TO PROVIDE CL IV RCP AT ALL LOCATIONS WITH LESS THAN 2.0' OF COVERAGE.







I	LEGEND	_		
	PROPERTY LINE			
	PHASE LINE			
	LOT DRAINAGE FLOW DIRECTION		 	
	STREET DRAINAGE FLOW DIRECTION			
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555	PROPOSED CONTOUR			
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=======	EXISTING STORM SEWER LINE			

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NOTES:

- 1. ALL DIMENSIONS ARE TO CENTERLINE OF PIPE UNLESS NOTED OTHERWISE.
- 2. CONTRACTOR TO FIELD VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTACT ENGINEER IF FIELD CONDITIONS VARY.
- 3. CONTRACTOR TO PROVIDE CL IV RCP AT ALL LOCATIONS WITH LESS THAN 2.0' OF COVERAGE.











- MINIMUM OF 6 INCHES OF TOPSOIL AND COMPOST BLEND. TOPSOIL ON SING
- TRAFFIC IS EXITING THE PROJECT ONTO EXISTING PAVEMENT. LINEAR CONS

SANDBAG	SILT FENC C STANDARD SYMBOL FOR SILT FENCE (SF)	FABRIC TOE-IN TRENCH (BACKFILLED)	WOOD FENCE POSTS (8) SPACING 2" x 4" WELDED WIRE BACKING SUPPORT FOR FABRIC (12.5 GA. WIRE) 600 mm (24") 150 mm (5") MIN 150 mm (6") MIN 150 mm (6") MIN				REVISIONS DATE B
SECURELY* OUND ETER WITH	1. STEEL OR WOOD POS TOWARD THE ANTICIPA INCHES), IF WOOD POS 2. THE TOE OF THE SILT THAT THE DOWNSLOPE 3. THE TRENCH MUST B FOR THE SILT FENCE F/ MATERIAL.	STS WHICH SUPPORT THE SILT FEN ITED RUNOFF SOURCE, POST MUST TS CANNOT ACHIEVE 300 mm (12 Inc TFENCE SHALL BE TRENCHED IN WI FACE OF THE TRENCH IS FLAT AND SEA MINIMUM OF 160 mm (6 Inches) D ABRIC TO BE LAID IN THE GROUND A	CE SHALL BE INSTALLED ON T BE EMBEDDED A MINIMUM hee) DEPTH, USE STEEL PO ITH A SPADE OR MECHANIC D PERPENDICULAR TO THE DEEP AND 160 mm (6 Inches) AND BACKFILLED WITH COM	N A SLIGHT ANGLE I OF 300 mm (12) ISTS. AL TRENCHER, SO LINE OF FLOW. WIDE TO ALLOW IPACTED			o N
3B CALE	4. SILT FENCE FABRIC S TO WOVEN WIRE, WHIC	SHOULD BE SECURELY FASTENED T CHIS IN TURN ATTACHED TO THE ST MADE WEEKLY, OR AFTER FACH RA	O EACH STEEL OR WOOD S TEEL OR WOOD FENCE POS	SUPPORT POST OR			с. 78626 91 28
LAYOUT NED IN FIELD	REPLACEMENT SHALL I 8. SILT FENCE SHALL BE IMPEDE STORM FLOW (7. ACCUMULATED SILT SHALL BE DISPOSED OF TO ADDITIONAL SILTAT	BE MADE PROMPTY AS NEEDED. REMOVED WHEN THE SITE IS COMPLI OR DRAINAGE. SHALL BE REMOVED WHEN IT REAC F ON AN APPROVED SITE AND IN SU ION.	ETELY STABILIZED SO AS NO HES A DEPTH OF 150 mm (6 ICH A MANNER THAT WILL N	OT TO BLOCK OR Inches), THE BILT IOT CONTRIBUTE			, concertained, tx , ceorgetown, tx , ax: 512-418-17 , ar, com , ering firm F-92 , ering firm F-92
ander, Texas	CITY OF A WATERCHED PROTECTI		SILT FENCE				или лип 1310 768 F ЕY-НС ENGINE
E WASHOUT	/mp.h.		ANDARD.	642S-1			ELLENC UE, SU 520-0 MW.KIMI TERED
IT	5	SILT F	ENCE				512- S12- W REGIS
RY PLAT FOR DRARILY STORED AND AGE PLAN AND SHALL ANCE OF ANY FINAL TORAGE PLAN.	TREE PROTECTION NOTES: 1. ALL TREES AND NATUR DURING CONSTRUCTIO 2. PROTECTIVE FENCES S TREE PROTECTION. 3. PROTECTIVE FENCES S	AL AREAS SHOWN ON PLAN TO N WITH TEMPORARY FENCING SHALL BE ERECTED ACCORDIN SHALL BE INSTALLED PRIOR TO	O BE PRESERVED SHA 3. IG TO CITY OF LEANDE D THE START OF ANY S	LL BE PROTECTED R STANDARDS FOR ITE PREPARATION			501 S. AUSTI PHONE: TEXAS
THE LAND WITHIN THE BE SUITABLE FOR USE ERIAL MAY NOT	 WORK (CLEARING, GRU PHASES OF THE CONST 4. EROSION AND SEDIMEN MANNER WHICH DOES I 	JBBING, OR GRADING), AND SH IRUCTION PROJECTS. NTATION CONTROL BARRIERS NOT RESULT IN SOIL BUILD UP	IALL BE MAINTAINED TH SHALL BE INSTALLED (WITHIN TREE DRIP LIN	HROUGHOUT ALL OR MAINTAINED IN A NES.		ADAM GREGO	AAS ACCESSION ANIS ANIS
ATION AND EROSION	 PROTECTIVE FENCES S AT THE OUTERMOST LII FENCES SHALL FOLLOW FOLLOWING: 	SHALL SURROUND THE TREES MITS OF BRANCHES (DRIP LINI V THE LIMIT OF CONSTRUCTIO	OR GROUP OF TREES, E), FOR NATURAL AREA IN LINE, IN ORDER TO F	AND WILL BE LOCAT AS, PROTECTIVE PREVENT THE	ED	SPORT CPICEN	NSE UN NAL LING
IS STABLE, WITH THE REAS THAT MAY EXIST TON SO AS NOT TO PR IMPEDE DRAINAGE	 A. SOIL COMPACTION STORAGE OF EQUID B. ROOT ZONE DISTUFFILL), OR TRENCHINC. C. WOUNDS TO EXPOSED. D. OTHER ACTIVITIES 	IN THE ROOT ZONE AREA RES PMENT OF MATERIALS; RBANCES DUE TO GRADE CHA NG NOT REVIEWED AND AUTHO SED ROOTS, TRUNK OR LIMBS DETRIMENTAL TO TREES SUC	SULTING FROM VEHICU ANGES (GREATER THAN ORIZED BY THE CITY A BY MECHANICAL EQU CH AS CHEMICAL STOR/	JLAR TRAFFIC OR N 6 INCHES CUT OR RBORIST; IPMENT; AGE, CEMENT TRUCK		2023 2023 2023 2023 2023 2023 2023 2023	AGD AGD
IPROVEMENTS FOR FINED IN ORDINANCE 1, 2018, THAT CREATED EMENT FOR THE CTION 28 OF THE CITY'S	6. EXCEPTIONS TO INSTAL CASE: A. WHERE THERE IS T	RES. LLING FENCES AT TREE DRIP L TO BE AN APPROVED GRADE C	LINES MAY BE PERMITT CHANGE, IMPERMEABLE	TED IN THE FOLLOWIN	1G	KHA PRO 0677831 DATE 0CTOBER CALE: AS	ESIGNED BY: RAWN BY: HECKED BY:
SPREAD THE FILL DE AND TO FILED WITH THE CITY. ACH OF THE APPROVED BY THE	TREE WELL, OR OT FEET BEYOND THE B. WHERE PERMEABL FENCE AT THE OUT THAT THIS AREA IS DAMAGE);	HER SUCH SITE DEVELOPMEN AREA DISTURBED; E PAVING IS TO BE INSTALLED FER LIMITS OF THE PERMEABL GRADED SEPARATELY PRIOR	NT, ERECT THE FENCE A D WITHIN A TREE'S DRIF E PAVING AREA (PRIOF R TO PAVING INSTALLAT	APPROXIMATELY 2 TO P LINE, ERECT THE R TO SITE GRADING S TION TO MINIMIZE RO	о 4 ю от	, j	
VELOPED, THE THE FILL MATERIAL MED BY THE CITY DIVISION ACCEPTANCE	C. WHERE TREES ARE FEET OF WORK SP/ D. WHERE THERE ARE REQUIREMENTS, C SPECIAL NOTE: FOI FENCES AT THE LIN	E CLOSE TO PROPOSED BUILD ACE BETWEEN THE FENCE AN E SEVERE SPACE CONSTRAIN ONTACT THE CITY ARBORIST R THE PROTECTION OF NATUF MIT OF CONSTRUCTION LINE W	DINGS, ERECT THE FEN D THE BUILDING; TS DUE TO TRACT SIZE AT 974-1876 TO DISCUS RAL AREAS, NO EXCEP VILL BE PERMITTED.	CE TO ALLOW 6 TO 10 E, OR OTHER SPECIAL SS ALTERNATIVES. TIONS TO INSTALLING) - -		AILS
AND AS A CONDITION , THE HEIGHT OF THE CEED TEN (10) FEET IN	7. WHERE ANY OF THE AB TREE TRUNK, PROTECT THE LIMITS OF LOWER I	BOVE EXCEPTIONS RESULT IN THE TRUNK WITH STRAPPED BRANCHING) IN ADDITION TO	A FENCE BEING CLOSE -ON PLANKING TO A HE THE REDUCED FENCING	ER THAN 4 FEET TO A EIGHT OF 8 FT (OR TC G PROVIDED.		NO)ET
CATIONS AFTER THE D THAT AT THE TIME	8. TREES APPROVED FOR TREES TO BE SAVED.	REMOVAL SHALL BE REMOVE	ED IN A MANNER WHICH	H DOES NOT IMPACT			
MAY BE R FUTURE PLACEMENT T PERMIT FOR SUCH	 ANY ROOTS EXPOSED IN BACKFILL ROOT AREAS AREAS ARE NOT BACKFINATION BACKFINATION 	BY CONSTRUCTION ACTIVITY S WITH GOOD QUALITY TOP SO FILLED WITHIN 2 DAYS, COVER CES SOIL TEMPERATURE AND	SHALL BE PRUNED FLU NL AS SOON AS POSSIE THEM WITH ORGANIC MINIMIZES WATER LOS	ISH WITH THE SOIL. BLE. IF EXPOSED ROC MATERIAL IN A SS DUE TO	т	ERO	ITRC
RMINATE THE EARLIER THE EVENT THERE HAS PERIOD OF TWO (2)	10. ANY TRENCHING REQU PLACED AS FAR FROM I	IRED FOR THE INSTALLATION EXISTING TREE TRUNKS AS PO	OF LANDSCAPE IRRIGA	ATION SHALL BE	-		Ő
AND REVEGETATED D, AS APPLICABLE, THE EGETATE OR	 ING LANDSCAPE TOPSO DRIP LINE OF TREES. N PRUNING TO PROVIDE (IO SOIL IS PERMITTED ON THE	ROOT FLARE OF ANY	TREE.	-		U
	13. ALL FINISHED PRUNING	FORE DAMAGE OCCURS (RIPP S SHALL BE DONE ACCORDING	ING OF BRANCHES, ET	C). ROVED STANDARDS	OF		
ND TREE PROTECTIVE CONTACT CONSTRUCTION.	 14. DEVIATIONS FROM THE SUBSTANTIAL NONCOM 	ENCE THE NATIONAL ARBORS LE ON REQUEST FROM THE CL ABOVE NOTES MAY BE CONS IPLIANCE OR IF A TREE SUSTA	ITASSOCIATION PRON ITY ARBORIST). IDERED ORDINANCE VI NINS DAMAGE AS A RES	ING STANDARDS FOR IOLATIONS IF THERE SULT.	IS	Ľ	,
HEY ARE CE OF CONTROLS AND D AREAS. SILT CHES SIX (6) INCHES.							ER ′, TEXAS
CE UNLESS XCEED 10 FEET IN ANY						S S	
ESTORED WITH A NGLE FAMILY LOTS MAY BLEND SHALL CONSIST						GE√ ITÝ	TY OF LE ISON CO
ISTIN GROW GREEN ES (SPEC 164WC001 SHALL NOT BE USED. RE CONSTRUCTION NSTRUCTION MAIN CLEAR OF SILT ENTRANCES WHERF A				<u>APPROVA</u>		AMEN	CI
SITUATION, THE						SHEET NI	UMBER
TIME AS THE						30)



















MIN. TOP OF ROCK ELEVATION ON

CHANNEL SLOPES

Le = 10D

TOE TRENCH

La = 10D

*EXTEND ROCK RIPRAP ON CHANNEL SLOPES TO THE TOP OF THE PIPE BOFFIT ELEVATION OR TOP OF CHANNEL BANK

SECTION VIEW

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ITEM 510,

\_\_\_\_\_

NTER\_PIPE

EARTH

TRENCH

| APPROVAL |
|----------|
|          |









APPROVAL





WASTEWATER LINE ONE JOINT (SIZE VARIES) OF PRESSURE RATED AT 150 PSI, CENTERED BELOW POINT OF WATER CROSSING:

ITILITY CROSSING DETAIL NOT TO SCALE



| SHALL HAVE RECLAIMED WATER     | CASTINIO              | I HEW.                                                                                    |                                    |
|--------------------------------|-----------------------|-------------------------------------------------------------------------------------------|------------------------------------|
| CITY OF AUSTIN<br>AUSTIN WATER |                       | AIR RELEASE AND AIR/VA                                                                    | CUUM VALVE                         |
| Kathi L. Flowers               | 05/18/2016<br>ADOPTED | THE ARCHITECT/ENGINEER ASSUMES<br>RESPONSIBILITY FOR APPROPRIATE<br>USE OF THIS STANDARD. | STANDARD NO<br>511-AW-04<br>1 OF 3 |

2 OF 2



### NOTES

AIR RELEASE AND AIR/VACUUM VALVE

RESPONSIBILITY FOR APPROPRIATE 511-AW-04

2 OF 3

THE ARCHITECT/ENGINEER ASSUMES

USE OF THIS STANDARD.

AUSTIN WATER

05/18/2016

Kathi L. Flowers

- . ON 10" AND LARGER TWO PIECE COMBINATION AIR VALVES, THE OUTLET PIPING OF THE SMALL VALVE SHALL BE VENTED WITHIN THE VAULT INTO THE LARGER VENT PIPE
- AIR VENT PIPE 6" AND LARGER SHALL BE DI (CLASS 350 MIN.) PIPE FLANGE FITTINGS AND EXTERIOR SURFACES OF ALL EXPOSED PIPE SHALL BE PAINTED PER SPL WW-3C. POTABLE WATER PIPE SHALL BE PAINTED SAFETY BLUE. SURFACE PREPARATION SHALL BE PER PAINT MANUFACTURER'S REQUIREMENTS.
- ENTIRE AIR VENT ASSEMBLY SHALL BE LOCATED WITHIN EASEMENT OR R.O.W.
- 4. CONCRETE PIPE PENETRATIONS SHALL BE CORE BIT DRILLED. VOID SHALL BE SEALED w/LINKSEAL LS 300 OR APPROVED EQUAL.
- CROSS SECTIONAL AREA OF OPENING TO BE EQUAL TO OR GREATER THAN CROSS SECTIONAL AREA OF AIR VENT PIPE.
- AIR/VACUUM VALVE SHALL BE INSTALLED IN A MANNER WHICH WILL ALLOW REMOVAL OF ASSEMBLY WITHOUT REMOVAL OF PRECAST CONCRETE LID.
- IN UNDEVELOPED AREAS, THE AIR VENT PIPE SHALL BE 4' MIN. IN HEIGHT SUPPORTED BY A 4" DIA. DI PIPE WHICH HAS BEEN FILLED WITH CONCRETE (SUPPORT PIPE SHALL BE 6' LONG, BURIED IN CLASS A CONCRETE OR CLSM 3' BELOW FINAL GRADE AND EXTENDING 3' ABOVE FINAL GRADE). INSTALL ONE DELINEATOR STAKE WITHIN 3' OF THE VAULT ON THE VEHICULAR ACCESS SIDE OF VAULT OR AS DIRECTED BY AUSTIN WATER. DELINEATOR SHALL BE BLUE FOR POTABLE WATER AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE IN COLOR, TYPE I REFLECTIVE TAPE MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES. IN DEVELOPED AREAS, THE AIR VENT PIPE SHALL BE LOCATED NOT TO CONFLICT WITH SIDEWALK, DRIVEWAY, OR OTHER PEDESTRIAN TRAFFIC
- GATE VALVE, PIPE, AND FITTINGS FROM MAIN TO ARV SHALL BE OF EQUAL DIAMETER AS THE AIR VALVE EXCEPT 3" ARV SHALL HAVE 4" FITTINGS AND A 4"x3" REDUCER AT THE ARV, AND ALL PIPE AND FITTINGS ON THE OUTLET SIDE OF THE ARV SHALL BE EQUAL TO THE SIZE OF THE OUTLE" OF THE ARV. VAULTS SHALL BE 5' DIAMETER FOR 3" VALVE; 6' DIAMETER FOR 4", 6", AND 8" VALVES; AND 7' DIAMETER FOR 10" AND 12" VALVES.
- FOR 24" AND LARGER MAINS, AN 18" OUTLET WITH BLIND FLANGE SHALL BE INSTALLED AT CONNECTION OF ARV.

### 3" OR LARGER AIR/VACUUM VALVE INSTALLATION - TYPE II

RECLAIMED WATER: ALL RECLAIMED PVC PIPE SHALL BE MANUFACTURED PURPLE PIPE. HDPE PIPE SHALL BE MANUFACTURED WITH PURPLE STRIPES. ALL OTHER PIPE AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL PIPE AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

| CITY OF AUSTIN<br>AUSTIN WATER |            | AIR RELEASE AND AIR/VA                                                                    | CUUM VALVE                          |
|--------------------------------|------------|-------------------------------------------------------------------------------------------|-------------------------------------|
| Kathi L. Flowers               | 05/18/2016 | THE ARCHITECT/ENGINEER ASSUMES<br>RESPONSIBILITY FOR APPROPRIATE<br>USE OF THIS STANDARD. | STANDARD NO.<br>511-AW-04<br>3 OF 3 |



APPROVAL

# **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: Adam Davis, P.E.

Date: <u>October 2, 2023</u>

Signature of Customer/Agent:

Regulated Entity Name: Edgewood Phase 1, Section 1

### **Project Information**

### Potential Sources of Contamination

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

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

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

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

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

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

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

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

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

### Sequence of Construction

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

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

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

6.  $\square$  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>N/A</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.

| ig > | 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.

# **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.

### Cleanup

- Clean up leaks and spills immediately.
- 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.

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.

# **Potential Sources of Contamination**

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

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

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 prior to start of construction including the stabilized construction entrance to prevent tracking onto adjoining streets.

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.

# **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.

### **Intended Schedule or Sequence of Major Activities:**

- 1. Construct Access (<u>0.04/0.09</u> Acres)
- 2. Installation of Temporary BMPs (<u>2.79 acres/52.61 acres</u> Acres)
- 3. Initiate Grubbing and Topsoil Stripping of Site (<u>2.79 acres/52.61 acres</u> Acres)
- 4. Rough Subgrade Preparation (earthwork, grading, street and drainage excavation and embankment) (<u>2.79 acres/52.61 acres</u> Acres)
- 5. Wet and Dry Utility Construction (<u>6</u> Acres)
- 6. Final Subgrade Preparation (<u>0.3 acres/5.2</u> Acres)
- 7. Installation of Base Materials (<u>0.3 acres/5.2</u> Acres)
- 8. Concrete (foundations, curbs, flatwork) (<u>0.3 acres/9.8</u> Acres)
- 9. Building Construction (<u>0.04 acres/9.2</u> Acres)
- 10. Paving Activities (<u>0.3 acres/5.2</u> Acres)
- 11. Topsoil, Irrigation and Landscaping (<u>2.79 acres/52.61 acres</u> Acres)
- 12. Site cleanup and Removal of Temporary BMPs (<u>2.79 acres/52.61 acres</u> Acres)

Maximum total construction time is not expected to exceed 36 months.

# **Temporary Best Management Practices and Measures**

- A. No storm water originates up gradient that impacts 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.

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.

- **C.** There are no sensitive features or 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 were no sensitive features 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.

# **Request To Temporarily Seal a Feature**

Naturally-occurring features will not be sealed on the site.

# **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 8.

### **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.

Inspection and Maintenance Guidelines:

(1)The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.

(2) All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.

(3) When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-ofway.

(4) When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.

(5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

### 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.

Inspection and Maintenance Guidelines:

(1) Inspect all fencing weekly, and after any rainfall.

(2) Remove sediment when buildup reaches 6 inches.

(3) Replace any torn fabric or install a second line of fencing parallel to the torn section.

(4) Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.

(5) When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

### **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.

Inspection and Maintenance Guidelines:

(1) Inspection should be made weekly and after each rainfall by the responsible party. For installations in streambeds, additional daily inspections should be made.

(2) Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.

(3) Repair any loose wire sheathing.

(4) The berm should be reshaped as needed during inspection.

(5) The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.

(6) The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.

### **Inlet Protection**

Storm sewers that are made operational prior to stabilization of the associated drainage areas can convey large amounts of sediment to natural drainage ways. In case of extreme sediment loading, the storm sewer itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the system at the inlets. The following guidelines for inlet protection are based primarily on recommendations by the Virginia Dept. of Conservation and Recreation (1992) and the North Central Texas Council of Governments (NCTCOG, 1993b).

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.

Care should be taken when choosing a specific type of inlet protection. Field experience has shown that inlet protection that causes excessive ponding in an area of high construction activity may become so inconvenient that it is removed or bypassed, thus transmitting sediment-laden flows unchecked. In such situations, a structure with an adequate overflow mechanism should be utilized.

It should also be noted that inlet protection devices are designed to be installed on construction sites and not on streets and roads open to the public. When used on public streets these devices will cause ponding of runoff, which can cause minor flooding and can present a traffic hazard. An example of appropriate siting would be a new subdivision where the storm drain system is installed before the area is stabilized and the streets open to the general public. When construction occurs adjacent to active streets, the sediment should be controlled on site and not on public thoroughfares. Occasionally, roadwork or utility installation will occur on public roads. In these cases, inlet protection is an appropriate temporary BMP.

The following inlet protection devices are for drainage areas of one acre or less. Runoff from larger disturbed areas should be routed to a temporary sediment trap or basin.

Filter barrier protection using silt fence is appropriate when the drainage area is less than one acre and the basin slope is less than five percent. This type of protection is not applicable in paved areas.

Block and gravel protection is used when flows exceed 0.5 cubic feet per second and it is necessary to allow for overtopping to prevent flooding. This form of protection is also useful for curb type inlets as it works well in paved areas.

Wire mesh and gravel protection is used when flows exceed 0.5 cubic feet per second and construction traffic may occur over the inlet. This form of protection may be used with both curb and drop inlets.

Excavated impoundment protection around a drop inlet may be used for protection against sediment entering a storm drain inlet. With this method, it is necessary to install weep holes to allow the impoundment to drain completely. If this measure is implemented, the impoundment should be sized such that the volume of excavation is 3,600 cubic feet per acre (equivalent to 1 inch of runoff) of disturbed area entering the inlet.

Inspection and Maintenance Guidelines:

(1) Inspection should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.

(2) Remove sediment when buildup reaches a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.

(3) Check placement of device to prevent gaps between device and curb.

(4) Inspect filter fabric and patch or replace if torn or missing.

(5) Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized.
### **Drainage Area Map**

There are three areas greater than 10 acres within a common drainage area that will be disturbed at one time. An existing and proposed drainage area map is provided at the end of this report in Section 8 to support the aforementioned requirement.

# Temporary Sediment Pond(s) Plans and Calculations

A sedimentation basin is required, where feasible, for a common drainage location that serves an area with ten (10) or more acres disturbed at one time.

A sedimentation basin may be temporary or permanent and must provide sufficient storage to contain a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone permanent stabilization, if these flows are diverted around both the disturbed areas of the site and the sediment basin.

Where rainfall data is not available or a calculation cannot be performed, the sedimentation basin must provide at least 3,600 cubic feet of storage per acre drained until final stabilization of the site.

If a sedimentation basin is not feasible, then the permittee shall provide equivalent control measures until final stabilization of the site. In determining whether installing a sediment basin is feasible, the permittee may consider factors such as site soils, slope, available area, public safety, precipitation patterns, site geometry, site vegetation, infiltration capacity, geotechnical factors, depth to groundwater, and other similar considerations. The permittee shall document the reason that the sediment basins are not feasible, and shall utilize equivalent control measures, which may include a series of smaller sediment basins.

#### Sites With Drainage Areas Less than Ten Acres

Sediment traps and sediment basins may be used to control solids in storm water runoff for drainage locations serving less than ten (10) acres.

Alternatively, a sediment basin that provides storage for a calculated volume of runoff from a 2-year, 24hour storm from each disturbed acre drained may be utilized. Where rainfall data is not available or a calculation cannot be performed, a temporary or permanent sediment basin providing 3,600 cubic feet of storage per acre drained may be provided.

#### **Proposed Sedimentation Basin Calculations**

For Edgewood Phase 1, Section 1, the proposed onsite batch detention ponds will serve as a storage for onsite and off-site drainage. The basins will be designed to contain the 3,600 cubic feet per acre of disturbed area draining to the pond.

#### **Temporary Sedimentation:**

The batch detention ponds will serve as storage for on-site and off-site drainage for Edgewood Phase 1, Section 1 (as shown on sheets 62-63 of the construction drawings) during the construction phase. The total drainage area includes 72.48 acres and generates a volume of 260,928 ft<sup>3</sup>. The proposed detention ponds will contain a volume of 591,120 ft<sup>3</sup>, thus the constructed detention ponds will be adequality sized required for sedimentation purposes. Batch Detention Pond A-A will be able to store a volume of 278,253 ft<sup>3</sup>. Batch Detention Pond A-C will be able to store a volume of 312,867 ft<sup>3</sup>.

### **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 Schedule**

The primary operator is required to choose one of the two inspections listed below.

**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.

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.

#### 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 to 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:<br>Qualifications (Check as appropriate and provide description):<br>Training Course<br>Supervised Experience<br>Other |
|----------------------------------------------------------------------------------------------------------------------------------------|
| Inspector Name:<br>Qualifications (Check as appropriate and provide description):<br>Training Course<br>Supervised Experience<br>Other |
| Inspector Name:<br>Qualifications (Check as appropriate and provide description):<br>Training Course<br>Supervised Experience<br>Other |
| Inspector Name:<br>Qualifications (Check as appropriate and provide description):<br>Training Course<br>Supervised Experience<br>Other |
| Inspector Name:<br>Qualifications (Check as appropriate and provide description):<br>Training Course<br>Supervised Experience<br>Other |
| Inspector Name:<br>Qualifications (Check as appropriate and provide description):<br>Training Course<br>Supervised Experience<br>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.

| No. | Description of the Amendment | Date of<br>Amendment | Amendment Prepared by<br>[Name(s) and Title] |
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### Amendment Log

#### Construction Activity Sequence Log

| Name of Operator | Projected dates<br>Month/year | Activity Disturbing Soil clearing, excavation, etc. | Location on-site<br>where activity will be<br>conducted | Acreage<br>being<br>disturbed |
|------------------|-------------------------------|-----------------------------------------------------|---------------------------------------------------------|-------------------------------|
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\*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<br>Date | Removal<br>Date |
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#### Stabilization Activities Log

| Date Activity<br>Initiated | Description of Activity | Description of Stabilization Measure and<br>Location | Date Activity Ceased<br>(Indicate Temporary<br>or Permanent) | Date When<br>Stabilization<br>Measures<br>Initiated |
|----------------------------|-------------------------|------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------|
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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.

| inspection inequency Log |
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| Date | Frequency Schedule and Reason for Change |
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### Rain Gauge Log

| Date | Location of Rain Gauge | Gauge Reading |
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| General Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                |  |              |                 |  |  |  |  |
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| Name of Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                |  | Tracking No. | Inspection Date |  |  |  |  |
| Inspector Name, T<br>Contact Informatio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Inspector Name, Title &<br>Contact Information                                                                                 |  |              |                 |  |  |  |  |
| Present Phase of Construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                |  |              |                 |  |  |  |  |
| <b>Inspection Location</b><br>inspections are require<br>location where this inspection where the second | Inspection Location (if multiple<br>inspections are required, specify<br>location where this inspection is<br>being conducted) |  |              |                 |  |  |  |  |
| Inspection Frequency         Standard Frequency:       Weekly       Every 14 days and within 24 hours of a 0.25" rain         Increased Frequency:       Every 7 days and within 24 hours of a 0.25" rain         Reduced Frequency:       Once per month (for stabilized areas)         Once per month and within 24 hours of a 0.25" rain (for arid, semi-arid, or drought-stricken areas during seasonally dry periods or during drought)         Once per month (for frozen conditions where earth-disturbing activities are being conducted)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                |  |              |                 |  |  |  |  |
| 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):       Image: Specify weather station source:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                |  |              |                 |  |  |  |  |
| Unsafe Conditions for Inspection<br>Did you determine that any portion of your site was unsafe for inspection? ☐ Yes ☐ No<br>If "yes", complete the following:<br>- Describe the conditions that prevented you from conducting the inspection in this location:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                |  |              |                 |  |  |  |  |
| - Location(                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | - Location(s) where conditions were found:                                                                                     |  |              |                 |  |  |  |  |

| Condition and Effectiveness of Erosion and Sediment (E&S) Controls |                                               |                                   |                                                                              |       |  |  |  |
|--------------------------------------------------------------------|-----------------------------------------------|-----------------------------------|------------------------------------------------------------------------------|-------|--|--|--|
| Type/Location of E&S<br>Control                                    | Repairs or<br>Other<br>Maintenance<br>Needed? | Corrective<br>Action<br>Required? | Date on Which<br>Maintenance or<br>Corrective<br>Action First<br>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<br>Practices                                   | Repairs or<br>Other<br>Maintenance<br>Needed? | Corrective<br>Action<br>Required? | Identification<br>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<br>If yes, provide date:                                                                                                                                                                                                                                                                                                                                                                            |                                                   |                  |  |  |
| 2.                                                                     | ☐ YES ☐ NO<br>If yes, provide date:                                                                                                                                                                                                                                                                                                                                                                            |                                                   |                  |  |  |
| 3.                                                                     | ☐ YES ☐ NO<br>If yes, provide date:                                                                                                                                                                                                                                                                                                                                                                            |                                                   |                  |  |  |
| 4.                                                                     | ☐ YES ☐ NO<br>If yes, provide date:                                                                                                                                                                                                                                                                                                                                                                            |                                                   |                  |  |  |
| 5.                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                | ☐ YES ☐ NO<br>If yes, provide date:               |                  |  |  |
|                                                                        | Description of                                                                                                                                                                                                                                                                                                                                                                                                 | Discharges                                        |                  |  |  |
| Was a stormwater discharge or oth<br>If "yes", provide the following i | er discharge occurring from any par<br>nformation for each point of dischar                                                                                                                                                                                                                                                                                                                                    | rt of your site at the time of the inspec<br>rge: | tion? 🗌 Yes 🗌 No |  |  |
| 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?<br>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:                                                                                                                                                                                                                                                                                                                                                                                        |                                                   |                  |  |  |
|                                                                        | 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?<br>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:                                                                                                                                                                                                                                                                                                                                                                                        |                                                   |                  |  |  |
|                                                                        | 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?<br>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: |                                                   |                  |  |  |

#### **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 A – Initial Report<br>(Complete this section within 24 hours of discovering the condition that triggered corrective action)                                                                                                                                                                                                                                                                                                                                               |                                                         |                                                               |                                           |                                                |                                                   |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------|------------------------------------------------|---------------------------------------------------|--|
| Name of Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ,                                                       | Tracking No.                                                  |                                           |                                                | Today's Date                                      |  |
| Date Problem First Discovered                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                         | Time Problem First Discovered                                 |                                           |                                                |                                                   |  |
| Name and Contact Information of Individual Completing this<br>Form                                                                                                                                                                                                                                                                                                                                                                                                                |                                                         |                                                               |                                           |                                                |                                                   |  |
| <ul> <li>What site conditions triggered the requirement to conduct corrective action:</li> <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:                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                         |                                                               |                                           |                                                |                                                   |  |
| Deadline for completing corrective action (Enter date that is either: (1) no more than 7 calendar days after the date you discovered the problem, or (2) if it is infeasible to complete work within the first 7 days, enter the date that is as soon as practicable following the 7th day):                                                                                                                                                                                      |                                                         |                                                               |                                           |                                                |                                                   |  |
| 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:                                                                                                                                                                                   |                                                         |                                                               |                                           |                                                |                                                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | (Complete this section <u>no la</u>                     | Section I<br>ter than 7 calend                                | <b>B – Correc</b><br><u>dar days</u> afte | ctive Action Progr<br>er discovering the condi | <b>ess</b> tion that triggered corrective action) |  |
| Section B.1 – Why the                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Problem Occurred                                        |                                                               |                                           |                                                |                                                   |  |
| Cause(s) of Problem (Add an additional sheet if necessary)                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                         | How This Was Determined and the Date You Determined the Cause |                                           |                                                |                                                   |  |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                         | 1.                                                            |                                           |                                                |                                                   |  |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                         | 2.                                                            |                                           |                                                |                                                   |  |
| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                         | 3.                                                            |                                           |                                                |                                                   |  |
| Section B.2 – Stormwater Control Modifications to be Implemented to Correct the Problem                                                                                                                                                                                                                                                                                                                                                                                           |                                                         |                                                               |                                           |                                                |                                                   |  |
| List of Stormwater Contro<br>Problem (Add an addition                                                                                                                                                                                                                                                                                                                                                                                                                             | ol Modification(s) Needed to<br>nal sheet if necessary) | Correct Co<br>Da                                              | ompletion<br>ate                          | SWPPP Update Necessary?                        | Notes                                             |  |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                         |                                                               |                                           | □Yes □No<br>Date:                              |                                                   |  |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                         |                                                               |                                           | ☐Yes ☐No<br>Date:                              |                                                   |  |
| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                         |                                                               |                                           | □Yes □No<br>Date:                              |                                                   |  |

| Section A – Initial Report<br>(Complete this section <u>within 24 hours</u> of discovering the condition that triggered corrective action)                                                                                                                                                                                                                                                                                                                               |                                                                 |                    |                                                               |              |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------|---------------------------------------------------------------|--------------|--|
| Name of Project                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Tracking No.                                                    |                    |                                                               | Today's Date |  |
| Date Problem First Discovered                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                 | Time Problem Firs  | t Discovered                                                  |              |  |
| Name and Contact Information of Individual Completing this<br>Form                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                 |                    |                                                               |              |  |
| 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:                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                 |                    |                                                               |              |  |
| Deadline for completing corrective action (Enter date that is either: (1) no more than 7 calendar days after the date you discovered the problem, or (2) if it is infeasible to complete work within the first 7 days, enter the date that is as soon as practicable following the 7th day):                                                                                                                                                                             |                                                                 |                    |                                                               |              |  |
| 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:                                                                                                                                                                          |                                                                 |                    |                                                               |              |  |
| <b>Section B – Corrective Action Progress</b><br>(Complete this section no later than 7 calendar days after discovering the condition that triggered corrective action)                                                                                                                                                                                                                                                                                                  |                                                                 |                    |                                                               |              |  |
| Section B.1 – Why the                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Problem Occurred                                                |                    |                                                               |              |  |
| Cause(s) of Problem (Add an additional sheet if necessary)                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                 |                    | How This Was Determined and the Date You Determined the Cause |              |  |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                 | 1.                 |                                                               |              |  |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                 | 2.                 |                                                               |              |  |
| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                 | 3.                 |                                                               |              |  |
| Section B.2 – Stormwater Control Modifications to be Implemented to Correct the Problem                                                                                                                                                                                                                                                                                                                                                                                  |                                                                 |                    |                                                               |              |  |
| List of Stormwater Contro<br>Problem (Add an addition                                                                                                                                                                                                                                                                                                                                                                                                                    | ol Modification(s) Needed to Correct<br>aal sheet if necessary) | Completion<br>Date | SWPPP Update Necessary?                                       | Notes        |  |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                 |                    | ☐Yes ☐No<br>Date:                                             |              |  |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                 |                    | ☐Yes ☐No<br>Date:                                             |              |  |
| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                 |                    | ☐Yes ☐No<br>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<br>"Duly Authorized Representative": | Date: |
|----------------------------------------------------------------|-------|
| Printed Name and Affiliation:                                  |       |

Date:

# SECTION 6: PERMANENT STORMWATER

kimley-horn.com

501 S. Austin Ave, Suite 1310, Georgetown, Texas 78626

512 520 0768

### **Permanent Stormwater Section**

**Texas Commission on Environmental Quality** 

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

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

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

### Signature

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

Print Name of Customer/Agent: Adam Davis, P.E.

Date: <u>October 2, 2023</u>

Signature of Customer/Agent

Regulated Entity Name: Edgewood Phase 1, Section 1

### Permanent Best Management Practices (BMPs)

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

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



2. These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 85% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

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

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

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

N/A

- 4. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.
  - The site will be used for low density single-family residential development and has 20% or less impervious cover.
  - The site will be used for low density single-family residential development but has more than 20% impervious cover.
    - The site will not be used for low density single-family residential development.
- 5. The executive director may waive the requirement for other permanent BMPs for multifamily residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.
  - Attachment A 20% or Less Impervious Cover Waiver. The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
  - The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
  - The site will not be used for multi-family residential developments, schools, or small business sites.
- 6. Attachment B BMPs for Upgradient Stormwater.

|     | <ul> <li>A description of the BMPs and measures that will be used to preverse surface water, groundwater, or stormwater that originates upgrade and flows across the site is attached.</li> <li>No surface water, groundwater or stormwater originates upgradie and flows across the site, and an explanation is attached.</li> <li>Permanent BMPs or measures are not required to prevent pollutio water, groundwater, or stormwater that originates upgradient from flows across the site, and an explanation is attached.</li> </ul> | ent pollution of<br>lient from the site<br>ent from the site<br>on of surface<br>m the site and              |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 7.  | Attachment C - BMPs for On-site Stormwater.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                              |
|     | <ul> <li>A description of the BMPs and measures that will be used to prevesurface water or groundwater that originates on-site or flows off to pollution caused by contaminated stormwater runoff from the site</li> <li>Permanent BMPs or measures are not required to prevent pollution or groundwater that originates on-site or flows off the site, includ caused by contaminated stormwater runoff, and an explanation is</li> </ul>                                                                                               | ent pollution of<br>the site, including<br>is attached.<br>on of surface water<br>ing pollution<br>attached. |
| 8.  | Attachment D - BMPs for Surface Streams. A description of the BMPs that prevent pollutants from entering surface streams, sensitive feature is attached. Each feature identified in the Geologic Assessment as sen addressed.                                                                                                                                                                                                                                                                                                           | and measures<br>res, or the aquifer<br>sitive has been                                                       |
|     | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                              |
| 9.  | The applicant understands that to the extent practicable, BMPs and m<br>maintain flow to naturally occurring sensitive features identified in eit<br>assessment, executive director review, or during excavation, blasting,                                                                                                                                                                                                                                                                                                             | leasures must<br>her the geologic<br>or construction.                                                        |
|     | <ul> <li>The permanent sealing of or diversion of flow from a naturally-occord feature that accepts recharge to the Edwards Aquifer as a permanabatement measure has not been proposed.</li> <li>Attachment E - Request to Seal Features. A request to seal a natural sensitive feature, that includes, for each feature, a justification as reasonable and practicable alternative exists, is attached.</li> </ul>                                                                                                                     | urring sensitive<br>ent pollution<br>arally-occurring<br>to why no                                           |
| 10. | Attachment F - Construction Plans. All construction plans and design<br>the proposed permanent BMP(s) and measures have been prepared b<br>direct supervision of a Texas Licensed Professional Engineer, and are s<br>dated. The plans are attached and, if applicable include:                                                                                                                                                                                                                                                         | calculations for<br>by or under the<br>signed, sealed, and                                                   |
|     | <ul> <li>Design calculations (TSS removal calculations)</li> <li>TCEQ construction notes</li> <li>All geologic features</li> <li>All proposed structural BMP(s) plans and specifications</li> </ul>                                                                                                                                                                                                                                                                                                                                     |                                                                                                              |

N/A

| 11. 🔀       | Attachment G - Inspection, Maintenance, Repair and Retrofit Plan. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:                                                                                                               |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | Prepared and certified by the engineer designing the permanent BMPs and<br>measures                                                                                                                                                                                                                                                                  |
|             | <ul> <li>Signed by the owner or responsible party</li> <li>Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit</li> </ul>                                                                                                                                                                                       |
|             | A discussion of record keeping procedures                                                                                                                                                                                                                                                                                                            |
|             | N/A                                                                                                                                                                                                                                                                                                                                                  |
| 12.         | Attachment H - Pilot-Scale Field Testing Plan. Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.                                                                                                                                      |
| $\boxtimes$ | N/A                                                                                                                                                                                                                                                                                                                                                  |
| 13.         | <b>Attachment I -Measures for Minimizing Surface Stream Contamination</b> . A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the |

creation of stronger flows and in-stream velocities, and other in-stream effects caused

🖂 N/A

degradation.

### Responsibility for Maintenance of Permanent BMP(s)

by the regulated activity, which increase erosion that results in water quality

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

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

🗌 N/A

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

N/A

EDGEWOOD PHASE 1, SECTION 1 WATER POLLUTION ABATEMENT PLAN

#### 20% or Less Impervious Cover Waiver

The site has more than 20% impervious cover. Therefore, a waiver will not be submitted for this project.

### **BMPs for UP-GRADIENT STORMWATER**

Up-gradient storm water exists north of the site based on current topography maps and field observations. This runoff will be passed through the site through a 10'X4' box culvert. No BMPs are therefore proposed for this up-gradient stormwater. Please refer to the Existing and Proposed Drainage Area Maps that are provided at the end of this report in Section 8.

### BMPs for On-Site Stormwater

Edgewood Phase 1, Section 1 has a total of 10 onsite basins and 2 off-site basins. The overall required removal for this phase of development is Lm = 16,024 LBS. The system has been designed to provide 16,307 LBS of TSS removal. The basins have been broken out and are shown on the construction drawings (Water Quality Drainage Area Map, Sheet 16). Water quality drainage area WQP-A will overland flow to drainage inlets then pipe flow to Batch Detention Pond A-A. Batch Detention Pond A-A will provide 9,200 LBS of TSS removal. Water quality drainage area WQP-B will overland flow to drainage inlets then pipe flow to Batch Detention Pond A-A. Batch Detention Pond A-A will provide 9,200 LBS of TSS removal. Water quality drainage area WQP-B will overland flow to drainage inlets then pipe flow to Batch Detention Pond A-A will provide 6350 LBS of TSS removal. VFS-1, VFS-2, VFS-3, and VFS-4 will all overland flow over vegetative filter strips. The VFS will provide a total of 348 LBS of TSS removal. STORMTROOPER will be treated by a Stormtrooper. The Stormtrooper will provide a total of 409 LBS of TSS removal. NT-1, NT-2, and NT-3 will not be treated. All TSS calculations are shown on the construction drawings sheets 17-19. The impervious breakdown is shown under the project narrative.

After construction, all disturbed areas on the site will be re-vegetated and runoff from the proposed improvements will be captured by the proposed storm system and conveyed through the proposed BMP's.

Construction plans, calculations and specifications are provided in Section 8 which is located at the end of this report.

### **BMPs for Surface Streams**

There are no existing surface streams or sensitive features on site. All permanent BMP's have been designed to remove 85% of the increase in Total Suspended Solids as per current TCEQ and City of Leander requirements.

### Request To Seal a Feature

The permanent sealing of or diversion of flow from a naturally-occurring "sensitive" or "possibly sensitive" feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed for any naturally-occurring "sensitive" or "possibly sensitive" features on this site.

### **Construction Plans**

Calculations for the load removal requirements for the project and the load removal provided by the permanent BMP's are provided as an exhibit in section 8 which have been preliminary approved by a professional engineer licensed in the state of Texas. The load removal requirements are derived from the equations from the technical guidance manual based upon project area and increase in impervious cover. All stormwater runoff from impervious areas will be treated by the proposed permanent BMP's to provide the overall required removal of 85% of the increase in Total Suspended Solids. Provided within the calculations is a summary of the amount of pollutant load required to be removed from the drainage areas and the amount of removal provided by the permanent BMP's.

Construction plans, details, specifications, calculations, and construction notes are provided in section 8 which is attached at the end of this report.

#### Inspection, Maintenance, Repair and Retrofit Plan

The inspection and maintenance plan outlines the procedures necessary to maintain the performance of the Permanent Best Management Practices for this project. It should be noted that the plan provides guidelines that may have to be adjusted dependent on site specific and weather related conditions.

It is the responsibility of the owner to provide the inspections and maintenance as outlined in the plan for the duration of the project. The owner will maintain this responsibility until it is assumed or transferred to another entity in writing. If the property is leased or sold, the responsibility for the maintenance will be required to be transferred through the lease agreement, binding covenants, closing documents, or other binding legal instrument.

Disposal of accumulated silt shall be accomplished following Texas Commission on Environmental Ouality guidelines and specifications.

Maintenance records shall be kept on the installation, maintenance, or removal of items necessary for the proper operation of the facilities. All inspections shall be documented.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.

| Responsible Party: | M/I Homes of Austin, LLC                                 |                   |  |  |
|--------------------|----------------------------------------------------------|-------------------|--|--|
| Mailing Address:   | <u>7600 N. Capital of Texas Hwy.; Bldg. C, Suite 250</u> |                   |  |  |
|                    |                                                          |                   |  |  |
| City, State:       | Austin, TX                                               | Zip: <u>78731</u> |  |  |
| Telephone:         | _512-770-8503                                            | _Fax: <u>N/A</u>  |  |  |

I, the owner, have read and understand the requirements of the attached Inspection and Maintenance Plan for the proposed Permanent Best Management Practices for my project. I acknowledge that I will maintain responsibility for the implementation and execution of the plan until the responsibility is transferred to or assumed by another party in writing through a binding legal instrument.

Signature of Responsible Party \_ William G. Pickman \_\_\_\_\_ Date \_ 9/13/2023 A50592042524445

This Maintenance Plan is based on TCEO Maintenance Guidelines.

By:

Adam Davis, P.E.

Date 10/02/2023

### **INSPECTION AND MAINTENANCE FOR BMPS**

**Batch Detention Basin** 

- 1. Inspections: Basins should be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. When possible, inspections should be conducted during wet weather to determine if the pond is meeting the target detention times. In particular, the extended detention control device should be regularly inspected for evidence of clogging, or conversely, for too rapid a release. If the design drawdown times are exceeded by more than 24 hours, then repairs should be scheduled immediately. The upper stage pilot channel, if any, and its flow path to the lower stage should be checked for erosion problems. During each inspection, erosion areas inside and downstream of the BMP should be identified and repaired or revegetated immediately.
- 2. Mowing. The upper stage, side slopes, embankment, and emergency spillway of an extended detention basin must be mowed regularly to discourage woody growth and control weeds. Grass areas in and around basins should be mowed at least twice annually to limit vegetation height to 18 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. When mowing of grass is performed, a mulching mower should be used, or grass clippings should be caught and removed.
- Debris and Litter Removal. Debris and litter will accumulate near the extended detention control device and should be removed during regular mowing operations and inspections. Particular attention should be paid to floating debris that can eventually clog the control device or riser.
- 4. Erosion Control. The pond side slopes, emergency spillway, and embankment all may periodically suffer from slumping and erosion, although this should not occur often if the soils are properly compacted during construction. Regrading and revegetation may be required to correct the problems. Similarly, the channel connecting an upper stage with a lower stage may periodically need to be replaced or repaired. g: Grass areas in and around sand filters must be mowed at least twice annually to limit vegetation height to 18 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscape areas. Vegetation on the pond embankments should be mowed as appropriate to prevent the establishment of woody vegetation
- 5. Structural Repairs and Replacement. With each inspection, any damage to the structural elements of the system (pipes, concrete drainage structures, retaining walls, etc.) should be identified and repaired immediately. These repairs should include patching of cracked concrete, sealing of voids, and removal of vegetation from cracks and joints. The various inlet/outlet and riser works in a basin will eventually deteriorate and must be replaced. Public works experts have estimated that corrugated metal pipe (CMP) has a useful life of about 25 yr, whereas reinforced concrete barrels and risers may last from 50 to 75 yr.
- 6. Nuisance Control. Standing water (not desired in a extended detention basin) or soggy conditions within the lower stage of the basin can create nuisance conditions for nearby residents. Odors, mosquitoes, weeds, and litter are all occasionally perceived to be problems. Most of these problems are generally a sign that regular inspections and maintenance are not being performed (e.g., mowing, debris removal, clearing the outlet control device).

#### EDGEWOOD PHASE 1, SECTION 1 WATER POLLUTION ABATEMENT PLAN

7. Sediment Removal. When properly designed, dry extended detention basins will accumulate quantities of sediment over time. Sediment accumulation is a serious maintenance concern in extended detention dry ponds for several reasons. First, the sediment gradually reduces available stormwater management storage capacity within the basin. Second, unlike wet extended detention basins (which have a permanent pool to conceal deposited sediments), sediment accumulation can make dry extended detention basins very unsightly. Third, and perhaps most importantly, sediment tends to accumulate around the control device. Sediment deposition increases the risk that the orifice will become clogged, and gradually reduces storage capacity reserved for pollutant removal. Sediment can also be resuspended if allowed to accumulate over time and escape through the hydraulic control to downstream channels and streams. For these reasons, accumulated sediment needs to be removed from the lower stage when sediment buildup fills 20% of the volume of the basin or at least every 10 years.

#### **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 on a daily basis.

2. 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.

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.

5. When all upstream areas are stabilized and the accumulated silt has been removed, the rock berm should be removed and disposed of.

#### **VEGETATIVE FILTER STRIPS**

*First Two Months*: The first two months are the most important for vegetative filter strips, or until they are well established. The following guidelines should be followed most closely during this time period. After the vegetative filter strips have been well established, little additional maintenance is necessary.

**Pest Management**: An Integrated Pest Management (IPM) Plan should be developed for vegetated areas. This plan should specify how problem insects and weeds will be controlled with minimal or no use of insecticides and herbicides.

*Seasonal Mowing and Lawn Care*: If the filter strip is made up of turf grass, it should be mowed as needed to limit vegetation height to 18 inches, using a mulching mower (or removal of clippings). If native grasses are used, the filter may require less frequent mowing, but a minimum of twice annually. Grass clippings and brush debris should not be deposited on vegetated filter strip area Regular mowing should also include weed control practices, however herbicide use should be kept to a minimum (Urbonas et al., 1992). Healthy grass can be maintained without using fertilizers

#### EDGEWOOD PHASE 1, SECTION 1 WATER POLLUTION ABATEMENT PLAN

because runoff usually contains sufficient nutrients. Irrigation of the site can help assure a dense and healthy vegetative cover.

*Inspection*: Inspect filter strips at least twice annually for erosion or damage to vegetation; however, additional inspection after periods of heavy runoff is most desirable. The strip should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. More frequent inspections of the grass cover during the first few years after establishment will help to determine if any problems are developing, and to plan for long-term restorative maintenance needs. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Construction of a level spreader device may be necessary to reestablish shallow overland flow.

**Debris and Litter Removal**: Trash tends to accumulate in vegetated areas, particularly along highways. Any filter strip structures (i.e. level spreaders) should be kept free of obstructions to reduce floatables being flushed downstream, and for aesthetic reasons. The need for this practice is determined through periodic inspection, but should be performed no less than 4 times per year. *Sediment Removal*: Sediment removal is not normally required in filter strips, since the vegetation normally grows through it and binds it to the soil. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand or with flat-bottomed shovels.

*Grass Reseeding and Mulching*: A healthy dense grass should be maintained on the filter strip. If areas are eroded, they should be filled, compacted, and reseeded so that the final grade is level. Grass damaged during the sediment removal process should be promptly replaced using the same seed mix used during filter strip establishment. If possible, flow should be diverted from the damaged areas until the grass is firmly established. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Corrective maintenance such as weeding or replanting should be done more frequently in the first two to three years after installation to ensure stabilization. Dense vegetation may require irrigation immediately after planting, and during particularly dry periods, particularly as the vegetation is initially established.

#### Pilot-Scale Field Testing Plan

The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site; therefore pilot-scale field testing is not required.
#### Measures for Minimizing Surface Stream Contamination

Surface streams do not exist on site. Therefore, a description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is not provided at the end of this form. All disturbed areas will be revegetated as soon as practical.

# Kimley »Horn

# SECTION 7: Additional Forms

kimley-horn.com

501 S. Austin Ave, Suite 1310, Georgetown, Texas 78626

512 520 0768

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

| William Peckman |                               |     |  |  |  |  |
|-----------------|-------------------------------|-----|--|--|--|--|
|                 | Print Name                    |     |  |  |  |  |
|                 | Area President                | .,, |  |  |  |  |
|                 | Title - Owner/President/Other |     |  |  |  |  |
| of              | M/I HOMES OF AUSTIN           | ,   |  |  |  |  |
| have authorized | Adam Davis, P.E.              |     |  |  |  |  |
|                 | Print Name of Agent/Engineer  |     |  |  |  |  |
| of              | Kimley-Horn and Associates    |     |  |  |  |  |
|                 | Print Name of Firm            |     |  |  |  |  |

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

- 1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to \$10,000 per day per violation.
- 2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.
- 3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.
- 4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.
- 5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicants Signature

9/13/2023

Date

THE STATE OF \_\_\_\_\_\_ §

County of <u>Travis</u> §

BEFORE ME, the undersigned authority, on this day personally appeared <u>William G.</u> <u>Peckman</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 <u>13</u> day of <u>September, 2023</u>.

ALISON MCMANN Notary Public, State of Texas Comm. Expires 09-29-2024 Notary ID 130842098

Alison McMann Typed or Printed Name of Notary

.,,,

MY COMMISSION EXPIRES: 09.29.2024

## **Application Fee Form**

| <b>Texas Commission on Environme</b><br>Name of Proposed Regulated Enti<br>Regulated Entity Location: <u>CR175</u><br>Name of Customer: <u>M/I Homes of</u><br>Contact Person: <u>William Peckman</u><br>Customer Reference Number (if is<br>Regulated Entity Reference Numb | ntal Quality<br>ty: <u>Edgewood Phase 1, S</u><br>and RR 2243<br>Austin, LLC<br>Phone<br>ssued): 604305250<br>per (if issued):RN 111343                                                                      | <u>ection 1</u><br>:: <u>512-770-8503</u><br>968      |                                                      |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------|--|--|
| Austin Regional Office (3373)                                                                                                                                                                                                                                                |                                                                                                                                                                                                              |                                                       |                                                      |  |  |
| Hays<br>San Antonio Regional Office (336                                                                                                                                                                                                                                     | Travis                                                                                                                                                                                                       | 🔀 Will                                                | liamson                                              |  |  |
| Bexar<br>Comal<br>Application fees must be paid by o<br>Commission on Environmental Q                                                                                                                                                                                        | Medina Medina Kinney check, certified check, or uality. Your canceled ch                                                                                                                                     | Uva<br>money order, payable<br>eck will serve as your | lde<br>e to the <b>Texas</b><br>receipt. <b>This</b> |  |  |
| form must be submitted with you                                                                                                                                                                                                                                              | ur fee payment. This pay                                                                                                                                                                                     | yment is being submit                                 | ted to:                                              |  |  |
| <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 App</li> </ul>                                             | <ul> <li>San Antonio Regional Office</li> <li>Overnight Delivery to: TCEQ - Cashier</li> <li>12100 Park 35 Circle</li> <li>Building A, 3rd Floor</li> <li>Austin, TX 78753</li> <li>(512)239-0357</li> </ul> |                                                       |                                                      |  |  |
| Recharge Zone                                                                                                                                                                                                                                                                | Contributing Zone                                                                                                                                                                                            | Transiti                                              | ion Zone                                             |  |  |
| Type of Pla                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                              | Size                                                  | Fee Due                                              |  |  |
| Water Pollution Abatement Plan<br>Plan: One Single Family Resident                                                                                                                                                                                                           | , Contributing Zone<br>ial Dwelling                                                                                                                                                                          | Acres                                                 | \$                                                   |  |  |
| Water Pollution Abatement Plan<br>Plan: Multiple Single Family Resi                                                                                                                                                                                                          | , Contributing Zone<br>dential and Parks                                                                                                                                                                     | 2.79 Acres                                            | \$ 1,500                                             |  |  |
| Water Pollution Abatement Plan<br>Plan: Non-residential                                                                                                                                                                                                                      | , Contributing Zone                                                                                                                                                                                          | Acres                                                 | \$                                                   |  |  |
| Sewage Collection System                                                                                                                                                                                                                                                     | L.F.                                                                                                                                                                                                         | \$                                                    |                                                      |  |  |
| Lift Stations without sewer lines                                                                                                                                                                                                                                            | Acres                                                                                                                                                                                                        | \$                                                    |                                                      |  |  |
| Underground or Aboveground St                                                                                                                                                                                                                                                | torage Tank Facility                                                                                                                                                                                         | Tanks                                                 | \$                                                   |  |  |
| Piping System(s)(only)                                                                                                                                                                                                                                                       |                                                                                                                                                                                                              | Each                                                  | \$                                                   |  |  |
| Exception                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                              | Each                                                  | \$                                                   |  |  |
| Extension of Time                                                                                                                                                                                                                                                            |                                                                                                                                                                                                              | Each                                                  | \$                                                   |  |  |
|                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                              | I                                                     | 1                                                    |  |  |

Signature: \_\_\_\_

William G. Pickmain \_\_\_\_

Date: September 13, 2023

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

DecuSigned by:

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

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

| Project                   | Cost per Linear<br>Foot | Minimum Fee-<br>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<br>Piping System | Minimum Fee-<br>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 |  |  |

# Kimley »Horn

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

# Kimley »Horn

Core Data Form



# TCEQ Core Data Form

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

#### SECTION I: General Information

| 1. Reason for Submission (If other is checked please describe in space provided.)                                                                          |  |  |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|
| New Permit, Registration or Authorization ( <i>Core Data Form should be submitted with the program application.</i> )                                      |  |  |  |  |  |  |  |
| Renewal (Core Data Form should be submitted with the renewal form)       Image: Core Data Form should be submitted with the renewal form)                  |  |  |  |  |  |  |  |
| 2. Customer Reference Number <i>(if issued)</i> Eollow this link to search for CN or PN numbers in 3. Regulated Entity Reference Number <i>(if issued)</i> |  |  |  |  |  |  |  |
| CN 604305250 Central Registry** RN 111343968                                                                                                               |  |  |  |  |  |  |  |

#### SECTION II: Customer Information

| 4. General Customer Information                                                                                                                                                                                  | 5. Effective Date for Customer Information Updates (mm/dd/yyyy)       8/11/2023 |                     |                                 |           |                           | 8/11/2023         |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------|---------------------------------|-----------|---------------------------|-------------------|--|
| 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<br>(SOS) or Texas Comptroller of Public Acco                                                                                                                                | be updated automatically based<br>unts (CPA).                                   | l on what is curr   | rent and active                 | with th   | he Texas Secre            | etary of State    |  |
| 6. Customer Legal Name (If an individual, pr                                                                                                                                                                     | int last name first: eg: Doe, John)                                             | <u>li</u>           | lf new Customer, e              | enter pro | evious Custome            | er below:         |  |
| M/I Homes of Austin, LLC                                                                                                                                                                                         |                                                                                 |                     |                                 |           |                           |                   |  |
| 7. TX SOS/CPA Filing Number<br>0801672376                                                                                                                                                                        | 8. TX State Tax ID (11 digits)<br>32049298139                                   | 9<br>('             | 9. Federal Tax I[<br>(9 digits) | )         | 10. DUNS N<br>applicable) | lumber <i>(if</i> |  |
| 11. Type of Customer: 🛛 Corpora                                                                                                                                                                                  | tion                                                                            | Individua           | al                              | Partne    | ership: 🗌 Gene            | eral 🗌 Limited    |  |
| Government: 🗌 City 🗋 County 🗋 Federal 🗍                                                                                                                                                                          | Local 🗌 State 🗌 Other                                                           | Sole Prop           | prietorship                     | 🗌 Otl     | her:                      |                   |  |
| 12. Number of Employees                                                                                                                                                                                          |                                                                                 | 1                   | 13. Independen                  | tly Ow    | ned and Oper              | rated?            |  |
| 0-20 21-100 101-250 251                                                                                                                                                                                          | 500 🔲 501 and higher                                                            | C                   | Yes 2                           | 🛛 No      |                           |                   |  |
| 14. Customer Role (Proposed or Actual) – as                                                                                                                                                                      | it relates to the Regulated Entity liste                                        | d on this form. Ple | ease check one of               | the follo | owing                     |                   |  |
| Owner     Operator       Occupational Licensee     Responsible Pa                                                                                                                                                | Owner & Operator  rty VCP/BSA Applicant                                         |                     | C Other:                        |           |                           |                   |  |
| 7600 N. Capital of Texas Hwy.;<br>15. Mailing                                                                                                                                                                    | Bldg. C, Suite 250                                                              |                     |                                 |           |                           |                   |  |
| Address:                                                                                                                                                                                                         | Ctata TV                                                                        | 710 7               | 70721                           |           | 71D + 4                   |                   |  |
| City Austin State IX ZIP /8/31 ZIP 4                                                                                                                                                                             |                                                                                 |                     |                                 |           |                           |                   |  |
| 16. Country Mailing Information (if outside USA)       17. E-Mail Address (if applicable)                                                                                                                        |                                                                                 |                     |                                 |           |                           |                   |  |
|                                                                                                                                                                                                                  |                                                                                 |                     |                                 |           |                           |                   |  |
| 18. Telephone Number19. Extension or Code20. Fax Number (if applicable)                                                                                                                                          |                                                                                 |                     |                                 |           |                           |                   |  |

| (  | 512 | ) 770-8503                              | 3 |
|----|-----|-----------------------------------------|---|
| ١. | 012 | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | , |

( ) -

#### SECTION III: Regulated Entity Information

| 21. General Regulated Entity Information (If 'New Regulated Entity" is selected, a new permit application is also required.) |                            |                                 |                                          |                      |                |          |           |                  |            |                  |
|------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------|------------------------------------------|----------------------|----------------|----------|-----------|------------------|------------|------------------|
| New Regulated Entity Dpdate to Regulated Entity Name Update to Regulated Entity Information                                  |                            |                                 |                                          |                      |                |          |           |                  |            |                  |
| The Regulated Entity Nar<br>as Inc, LP, or LLC).                                                                             | me submitte                | ed may be upda                  | ted, in order to me                      | et TCEQ (            | Core Da        | nta Stai | ndards (i | removal of or    | rganizatio | nal endings such |
| 22. Regulated Entity Nam                                                                                                     | ne (Enter nam              | ne of the site wher             | e the regulated actio                    | n is taking          | place.)        |          |           |                  |            |                  |
| Edgewood Phase 1, Section 1                                                                                                  |                            |                                 |                                          |                      |                |          |           |                  |            |                  |
| 23. Street Address of the Regulated Entity:                                                                                  | CR 175 and                 | RR 2243                         |                                          |                      |                |          |           |                  |            |                  |
| <u>(No PO Boxes)</u>                                                                                                         | City                       | Leander                         | State                                    | ТХ                   | ZIP            | )        | 78660     |                  | ZIP + 4    |                  |
| 24. County                                                                                                                   | Williamson                 | 1                               |                                          |                      |                |          | 1         |                  |            |                  |
|                                                                                                                              | 1                          | If no Stree                     | et Address is provid                     | ded, field           | s 25-28        | are ree  | quired.   |                  |            |                  |
| 25. Description to                                                                                                           | Courth a cost o            |                                 | of DD 2242 and CD 17                     |                      |                |          |           |                  |            |                  |
| Physical Location:                                                                                                           | Southeast o                | I the intersection              | OFREZZAS and CR T                        | 5                    |                |          |           |                  |            |                  |
| 26. Nearest City                                                                                                             |                            |                                 |                                          |                      |                |          | State     |                  | Nea        | rest ZIP Code    |
| Leander                                                                                                                      |                            |                                 |                                          |                      |                |          | ТХ        |                  | 7866       | 0                |
| Latitude/Longitude are re<br>used to supply coordinate                                                                       | equired and<br>es where no | may be added/<br>ne have been p | /updated to meet `<br>rovided or to gain | TCEQ Cor<br>accuracy | e Data S<br>). | Standa   | ards. (Ge | ocoding of th    | e Physical | Address may be   |
| 27. Latitude (N) In Decim                                                                                                    | al:                        | 30.585828                       |                                          | 28                   | . Longit       | ude (N   | V) In Dec | imal:            | -97.7910   | 70               |
| Degrees                                                                                                                      | Minutes                    |                                 | Seconds                                  | De                   | grees          |          |           | Minutes          |            | Seconds          |
| 30                                                                                                                           |                            | 35                              | 8.98                                     |                      | -              | 97       |           | 47               |            | 27.85            |
| 29. Primary SIC Code                                                                                                         | 30.                        | Secondary SIC (                 | Code                                     | 31. Prin             | nary NA        | AICS Co  | de        | 32. Secor        | ndary NAI  | CS Code          |
| (4 digits)                                                                                                                   | (4 d                       | igits)                          |                                          | (5 or 6 d            | igits)         |          |           | (5 or 6 dig      | its)       |                  |
| 6552                                                                                                                         |                            |                                 |                                          | 237210               |                |          |           |                  |            |                  |
| 33. What is the Primary E                                                                                                    | Business of t              | his entity? (Do                 | o not repeat the SIC o                   | r NAICS de           | scription      | n.)      |           |                  |            |                  |
| Single Family Homes                                                                                                          |                            |                                 |                                          |                      |                |          |           |                  |            |                  |
| 34 Mailing                                                                                                                   | 7600 N. Ca                 | pital of Texas Hw               | y., Bldg. C, Suite 250                   |                      |                |          |           |                  |            |                  |
| Addross:                                                                                                                     |                            |                                 |                                          |                      |                |          |           |                  |            |                  |
| Addi ess.                                                                                                                    | City                       | Austin                          | State                                    | ТХ                   |                | ZIP      | 78731     |                  | ZIP + 4    |                  |
| 35. E-Mail Address:                                                                                                          | aev                        | etts@mihomes.co                 | om                                       |                      |                |          |           |                  |            | 1                |
| 36. Telephone Number                                                                                                         |                            |                                 | 37. Extension or                         | Code                 |                | 38. Fa   | ax Numl   | oer (if applicab | le)        |                  |
| (512)770-8503 ( ) -                                                                                                          |                            |                                 |                                          |                      |                |          |           |                  |            |                  |

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

| Dam Safety            | Districts   | 🔀 Edwards Aquifer      | Emissions Inventory Air | 🗌 Industrial Hazardous Waste |
|-----------------------|-------------|------------------------|-------------------------|------------------------------|
|                       |             |                        |                         |                              |
|                       |             | Recharge               |                         |                              |
|                       |             |                        |                         |                              |
|                       | New Source  |                        |                         |                              |
| Municipal Solid Waste | Review Air  |                        | Petroleum Storage Tank  | L] PWS                       |
|                       |             |                        |                         |                              |
|                       |             |                        |                         |                              |
|                       |             |                        |                         |                              |
| Sludge                | Storm Water | Title V Air            |                         | Used Oil                     |
|                       |             |                        |                         |                              |
|                       |             |                        |                         |                              |
|                       |             |                        |                         |                              |
| Voluntary Cleanup     | Wastewater  | Wastewater Agriculture | Water Rights            | Other:                       |
|                       |             |                        | -                       |                              |
|                       |             |                        |                         |                              |
|                       |             |                        |                         |                              |

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

| 40. Name:            | Adam Davis, P. | Ε.                           |       | 41. Title:   | Project Manager    |  |  |
|----------------------|----------------|------------------------------|-------|--------------|--------------------|--|--|
| 42. Telephone Number |                | 43. Ext./Code 44. Fax Number |       | 45. E-Mail / | 45. E-Mail Address |  |  |
| ( 512 ) 618-8503     |                |                              | ( ) - | adam.davis@  | Økimley-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:         | M/I Homes of Austin, LLC             | Job Title: | Area President |                          |  |
|------------------|--------------------------------------|------------|----------------|--------------------------|--|
| Name (In Print): | William G. Peckman                   |            | Phone:         | ( 512 ) 770- <b>8500</b> |  |
| Signature:       | Decusioned by:<br>William C. Pedeman |            | Date:          | 9/13/2023                |  |

# Kimley *Whorn*

# SECTION 8: EXHIBITS

ENGINEER **Kimley**»Horn 501 S. AUSTIN AVENUE, SUITE 1310



Tel. No. (512) 520-0768 GEORGETOWN TEXAS 78626 **CERTIFICATE OF REGISTRATION #928** CONTACT: ADAM DAVIS, P.E

# **OWNER/DEVELOPER**

M/I HOMES OF AUSTIN, LLC 7600 N. CAPITAL OF TEXAS HWY. BLDG, C, SUITE 250 AUSTIN, TX 78731 TEL: 512.770.8503 CONTACT: AUSTIN EVETTS

LEGAL DESCRIPTION

BEING LOT 2, BLOCK G OF THE EDGEWOOD PHASE 1 SEC 1 SUBDIVISION AS RECORDED IN WILLIAMSON COUNTY PUBLIC RECORDS DOCUMENT NO. 2022102710

#### WATERSHED STATUS

THIS SITE IS LOCATED IN THE SOUTH BRUSHY CREEK OF THE BRUSHY CREEK WATERSHED THIS SITE IS LOCATED IN THE EDWARDS AQUIFER CONTRIBUTING AND RECHARGE ZONE.

**FLOODPLAIN INFORMATION** 

A PORTION OF THIS TRACT IS WITHIN A FLOOD HAZARD AREA AS SHOWN ON THE FLOOD INSURANCE RATE MAP PANEL #48491C0460F FOR WILLIAMSON CO., EFFECTIVE DECEMBER 20, 2019

#### LAND USE SUMMARY

ZONING: SINGLE-FAMILY SUBURBAN (SFS) ACREAGE: 2.79 ACRES

TOTAL IMPERVIOUS COVER: 0.61 ACRES

BUILDING IMPERVIOUS COVER: 2128.36 SQ. FT. FUTURE LAND USE: NEIGHBORHOOD RESIDENTIAL

GENERAL NOTES

- 1. ALL PUBLIC IMPROVEMENTS INCLUDING WATER AND WASTEWATER WITHIN DEDICATED RIGHT OF WAY AND PUBLIC UTILITY EASEMENTS TO BE OWNED AND MAINTAINED BY THE CITY OF LEANDER.
- ALL WATER QUALITY IMPROVEMENTS, EXCLUDING THE BATCH DETENTION PONDS, ARE TO BE DEDICATED, OWNED, AND OPERATED BY THE HOA. HOA WILL MAINTAIN THE LANDSCAPING IN THE OPEN CHANNELS, DETENTION, AND WATER QUALITY AREAS.
- THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY, REGULATORY COMPLIANCE, AND ADEQUACY OF THESE PLANS AND/OR SPECIFICATIONS WHETHER OR NOT THE PLANS AND/OR SPECIFICATIONS WERE REVIEWED BY THE CITY ENGINEER(S).

|                   | REVIS       | SIONS |          |
|-------------------|-------------|-------|----------|
| <b>REVISION #</b> | DESCRIPTION |       | APPROVAL |
|                   |             |       |          |
|                   |             |       |          |
|                   |             |       |          |
|                   |             |       |          |
|                   |             |       |          |
|                   |             |       |          |

# EDGEWOOD ANENITY CENTER SITE DEVELOPMENT PLANS PROJECT #XX-XXX-XXX CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS



RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL, WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY CITY ENGINEERS.

VICINITY MAP SCALE: 1" = 2,000'

# **OCTOBER 2023**

APPROVED BY:

| ROBIN M. GRIFFIN, AICP, PLANNING DIRECTOR            | DATE |
|------------------------------------------------------|------|
| EMILY TRUMAN, P.E., CITY ENGINEER                    | DATE |
| MARK TUMMONS, CPRP, DIRECTOR OF PARKS AND RECREATION | DATE |
| CHIEF JOSHUA DAVIS, FIRE MARSHAL                     | DATE |

# **SHEET INDEX**

| SHEET NO. | DESCRIPTION                               |
|-----------|-------------------------------------------|
| 1         | COVER SHEET                               |
| 2         | CITY OF LEANDER GENERAL NOTES             |
| 3         | KIMLEY-HORN GENERAL NOTES                 |
| 4         | FINAL PLAT (SHEET 1 OF 6)                 |
| 5         | FINAL PLAT (SHEET 2 OF 6)                 |
| 6         | FINAL PLAT (SHEET 3 OF 6)                 |
| 7         | FINAL PLAT (SHEET 4 OF 6)                 |
| 8         | FINAL PLAT (SHEET 5 OF 6)                 |
| 9         | FINAL PLAT (SHEET 6 OF 6)                 |
| 10        | EXISTING CONDITIONS & DEMOLITION PLAN     |
| 11        | EROSION CONTROL PLAN                      |
| 12        | GRADING PLAN                              |
| 13        | EXISTING DRAINAGE AREA MAP                |
| 14        | PROPOSED DRAINAGE AREA MAP                |
| 15        | INLET DRAINAGE AREA MAP                   |
| 16        | OVERALL WATER QUALITY PLAN                |
| 17        | WATER QUALITY CALCULATIONS (SHEET 1 OF 3) |
| 18        | WATER QUALITY CALCULATIONS (SHEET 2 OF 3) |
| 19        | WATER QUALITY CALCULATIONS (SHEET 3 OF 3) |
| 20        | OVERALL SITE PLAN                         |
| 21        | DIMENSION CONTROL PLAN                    |
| 22        | ADDRESS PLAN                              |
| 23        | PAVING PLAN                               |
| 24        | CHANNEL PLAN & PROFILE (SHEET 1 OF 2)     |
| 25        | CHANNEL PLAN & PROFILE (SHEET 2 OF 2)     |
| 26        | STORM PLAN & PROFILE (SHEET 1 OF 2)       |
| 27        | STORM PLAN & PROFILE (SHEET 2 OF 2)       |
| 28        | OVERALL UTILITY PLAN                      |
| 29        | FIRE PROTECTION PLAN                      |
| 30        | EROSION CONTROL DETAILS                   |
| 31        | PAVING DETAILS                            |
| 32        | STORM DRAIN DETAILS                       |
| 33        | UTILITY DETAILS (SHEET 1 OF 2)            |
| 34        | UTILITY DETAILS (SHEET 2 OF 2)            |
| 35        | CONSTRUCTION NOTES                        |
| 36        | PLANTING NOTES                            |
| 37        | PLANTING PLAN                             |
| 38        | PLANTING DETAILS                          |



SHEET NUMBER

## **BENCHMARKS**

ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK. BM-101: "X" CUT IN CONCRETE ELEVATION: 915.04'

APPROVAL

| CITY         |                                                                                                                                                                                                                                                                                                                                                      |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ENC          | CONTACTS:                                                                                                                                                                                                                                                                                                                                            |
| PLA          | NNING DEPARTMENT: 512-528-2750                                                                                                                                                                                                                                                                                                                       |
| PUB          | LIC WORKS MAIN LINE: 512-259-2640                                                                                                                                                                                                                                                                                                                    |
| STO          | RMWATER INSPECTIONS: 512-285-0055                                                                                                                                                                                                                                                                                                                    |
| υτιι<br>υτιι | ITIES MAIN LINE: 512-259-1142<br>ITIES ON-CALL: 512-690-4760                                                                                                                                                                                                                                                                                         |
|              |                                                                                                                                                                                                                                                                                                                                                      |
| GEN<br>1.    | ERAL:<br>CONTRACTORS SHALL HAVE AN APPROVED SET OF PLANS WITH APPROVED REVISIONS                                                                                                                                                                                                                                                                     |
|              | SITE AT ALL TIMES. FAILURE TO HAVE APPROVED PLANS ON SITE MAY RESULT IN ISSUA                                                                                                                                                                                                                                                                        |
|              | OF WORK STOPPAGE.                                                                                                                                                                                                                                                                                                                                    |
| 2.           | CONTACT 811 SYSTEM FOR EXISTING WATER AND WASTEWATER LOCATIONS 48 HOUR                                                                                                                                                                                                                                                                               |
| a.           | REFRESH ALL LOCATES BEFORE 14 DAYS – LOCATE REFRESH REQUESTS MUST INCLUDE<br>A COPY OF YOUR 811 TICKET. TEXAS PIPELINE DAMAGE PREVENTION LAWS REQUIRE                                                                                                                                                                                                |
| b.           | MARKERS ARE NO LONGER VISIBLE.<br>REPORT PIPELINE DAMAGE IMMEDIATELY – IF YOU WITNESS OR EXPERIENCE PIPELINE                                                                                                                                                                                                                                         |
|              | EXCAVATION DAMAGE, PLEASE CONTACT THE CITY OF LEANDER BY PHONE AT 512-259 2640.                                                                                                                                                                                                                                                                      |
| 3.           | THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR 48 HOURS BEFORE:                                                                                                                                                                                                                                                                                     |
| a.<br>b.     | ANY TESTING. CONTRACTOR SHALL PROVIDE OUALITY TESTING FOR ALL                                                                                                                                                                                                                                                                                        |
| •            | INFRASTRUCTURES TO BE ACCEPTED AND MAINTAINED BY THE CITY OF LEANDER AFTE                                                                                                                                                                                                                                                                            |
|              | COMPLETION.                                                                                                                                                                                                                                                                                                                                          |
| c.           | PROOF ROLLING SUB-GRADE AND EVERY LIFT OF ROADWAY EMBANKMENT, IN-PLACE                                                                                                                                                                                                                                                                               |
|              | UEINSITY TESTING OF EVERY BASE COURSE, AND ASPHALT CORES. ALL OF THIS TESTING<br>MUST BE WITNESSED BY A CITY OF LEANDER REPRESENTATIVE                                                                                                                                                                                                               |
| d.           | CONNECTING TO THE EXISTING WATER LINES.                                                                                                                                                                                                                                                                                                              |
| e.           | THE INSTALLATION OF ANY DRAINAGE FACILITY WITHIN A DRAINAGE EASEMENT OR                                                                                                                                                                                                                                                                              |
|              | STREET ROW. THE METHOD OF PLACEMENT AND COMPACTION OF BACKFILL IN THE                                                                                                                                                                                                                                                                                |
| 4.           | ALL RESPONSIBILITILY FOR THE ACCURACY OF THESE PLANS REMAINS WITH THE ENGIN                                                                                                                                                                                                                                                                          |
|              | OF RECORD WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY MUST RELY                                                                                                                                                                                                                                                                            |
|              | THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.                                                                                                                                                                                                                                                                                                  |
| 5.           | EXCESS SOIL SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE. NOTIFY THE CITY                                                                                                                                                                                                                                                                            |
| 6.           | LEANDER IF THE DISPOSAL SITE IS INSIDE THE CITY'S JURISDICTIONAL BOUNDARIES.<br>BURNING IS PROHIBITED.                                                                                                                                                                                                                                               |
| 2.<br>7.     | NO WORK IS TO BE PERFORMED BETWEEN THE HOURS OF 9:00 P.M. AND 7:00 A.M. OF                                                                                                                                                                                                                                                                           |
|              | WEEKENDS. THE CITY INSPECTOR RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR                                                                                                                                                                                                                                                                            |
| 0            | UNCOVER ALL WORK PERFORMED WITHOUT INSPECTION.                                                                                                                                                                                                                                                                                                       |
| о.           | INSPECTIONS ON WEEKENDS OR CITY HOLIDAYS.                                                                                                                                                                                                                                                                                                            |
| 9.           | NO BLASTING IS ALLOWED.                                                                                                                                                                                                                                                                                                                              |
| 10.          | ANY CHANGES OR REVISIONS TO THESE PLANS MUST FIRST BE SUBMITTED TO THE CITY                                                                                                                                                                                                                                                                          |
|              | THE DESIGN ENGINEER FOR REVIEW AND WRITTEN APPROVAL PRIOR TO CONSTRUCTION                                                                                                                                                                                                                                                                            |
|              | THE REVISION. ALL CHANGES AND REVISIONS SHALL USE REVISION CLOUDS TO HIGHLI                                                                                                                                                                                                                                                                          |
|              | ALL REVISIONS AND CHANGES WITH EACH SUBMITTAL. REVISION TRIANGLE MARKERS                                                                                                                                                                                                                                                                             |
|              | FROM PREVIOUS REVISIONS MUST BE REMOVED. REVISION INFORMATION SHALL BE                                                                                                                                                                                                                                                                               |
|              | UPDATED ON COVER SHEET AND AFFECTED PLAN SHEET TITLE BLOCK.                                                                                                                                                                                                                                                                                          |
| 11.          | THE CONTRACTOR AND ENGINEER SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCT<br>THAT DEVIATES FROM THE PLANS. THE ENGINEER SHALL FURNISH THE CITY OF LEAND<br>ACCURATE "RECORD DRAWINGS" FOLLOWING THE COMPLETION OF ALL CONSTRUCTION<br>THESE "RECORD DRAWINGS" SHALL MEET THE SATISFACTION OF THE ENGINEERING<br>DEPARTMENTS PRIOR TO FINAL ACCEPTANCE |
| 12.          | THE CONTRACTOR WILL REIMBURSE THE CITY FOR ALL REPAIR AND/OR COST INCURRE                                                                                                                                                                                                                                                                            |
|              | RESULT OF ANY DAMAGE TO ANY PUBLIC INFRASTRUCTURE WITHIN CITY EASEMENT O<br>PUBLIC RIGHT-OF-WAY, REGARDLESS OF THESE PLANS.                                                                                                                                                                                                                          |
| 13.          | WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR<br>SHALL CONFINE HIS WORK TO WITHIN THE PERMANENT AND TEMPORARY EASEMENT<br>PRIOR TO ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AL                                                                                                                         |
|              | I KASH AND DEBRIS WITHIN THE PERMANENT EASEMENTS. CLEANUP SHALL BE TO THE                                                                                                                                                                                                                                                                            |
| 14.          | CONTRACTOR TO LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS.                                                                                                                                                                                                                                                                                   |
|              | CONTROL POINTS AND PROJECT ENGINEERING REFERENCE POINTS. RE-ESTABLISH                                                                                                                                                                                                                                                                                |
|              | DISTURBED OR DESTROYED ITEMS BY REGISTERED PROFESSIONAL LAND SURVEYOR IN                                                                                                                                                                                                                                                                             |
| 1 -          | STATE OF TEXAS, AT NO ADDITIONAL COST TO THE PROPERTY OWNER.                                                                                                                                                                                                                                                                                         |
| 12.          | ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH<br>APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFFTY AND HEATTH                                                                                                                                                                                                            |
|              | ADMINISTRATION (OSHA). OSHA STANDARDS MAY BE PURCHASED FROM THE GOVER                                                                                                                                                                                                                                                                                |
|              | PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURC                                                                                                                                                                                                                                                                             |
|              | FROM OSHA, 1033 LA POSADA DR. SUITE 375, AUSTIN, TEXAS 78752-3832.                                                                                                                                                                                                                                                                                   |
| 16.          | ALL MANHOLE FRAMES/COVERS AND WATER VALVE/METER BOXES MUST BE ADJUSTE                                                                                                                                                                                                                                                                                |
|              | HINISHED GRADE AT THE OWNER'S EXPENSE BY THE CONTRACTOR FOR CITY CONSTRUCT<br>INSPECTOR INSPECTION. ALL LITILITY ADJUSTMENTS SHALL BE COMPLETED DRIVE TO B                                                                                                                                                                                           |
|              | PAVING. CONTRACTOR SHALL BACKFILL AROUND MANHOLES AND VALVE BOXES WITH                                                                                                                                                                                                                                                                               |
|              | CLASS A CONCRETE.                                                                                                                                                                                                                                                                                                                                    |
| 17.          | ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTI                                                                                                                                                                                                                                                                             |
|              | WHERE NOT SPECIFICALLY COVERED IN THE PROJECT SPECIFICATIONS SHALL CONFORM                                                                                                                                                                                                                                                                           |
| 18           | ALL CITY OF LEANDER DETAILS AND CITY OF AUSTIN STANDARD SPECIFICATIONS.                                                                                                                                                                                                                                                                              |
| 10.          | GOVERN OVER TECHNICAL SPECIFICATIONS.                                                                                                                                                                                                                                                                                                                |
| 19.          | THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPR                                                                                                                                                                                                                                                                           |
|              | AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.                                                                                                                                                                                                                                                                                   |
| 20.          | THE CONTRACTOR MUST OBTAIN A CONSTRUCTION WATER METER FOR ALL WATER U                                                                                                                                                                                                                                                                                |
|              | DURING CONSTRUCTION. A COPY OF THIS PERMIT MUST BE CARRIED AT ALL TIMES BY                                                                                                                                                                                                                                                                           |
| 21.          | THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADS AND DRIVES ADJACEN                                                                                                                                                                                                                                                                             |
|              | AND NEAR THE SITE FREE FROM SOIL, SEDIMENT AND DEBRIS. CONTRACTOR WILL NO                                                                                                                                                                                                                                                                            |
|              | REMOVE SOIL, SEDIMENT OR DEBRIS FROM ANY AREA OR VEHICLE BY MEANS OF WAT                                                                                                                                                                                                                                                                             |
|              |                                                                                                                                                                                                                                                                                                                                                      |
|              | ONET SHOVELING AND SWEEPING WILL BE ALLOWED. THE CONTRACTOR WILL BE                                                                                                                                                                                                                                                                                  |
|              | RESPONSIBLE FOR DUST CONTROL FROM THE SITE. THE CONTRACTOR SHALL KEEP THE                                                                                                                                                                                                                                                                            |

CONSTRUCTION. [NOTE: PLEASE UPDATE AS PER THE PROJECT]

- 6. REQUEST FINAL WALKTHROUGH AND CONDUCT WALKTHROUGH WITH ENGINEER OF RECORD AND CITY DEPARTMENT.
- 7. ENGINEER OF RECORD IS RESPONSIBLE TO PREPARE AND SUBMIT CLOSEOUT DOCUMENTS FOR PROJECT CLOSEOUT.

#### EROSION CONTROL NOTES

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

#### WATER AND WASTEWATER NOTES

WATER AND WASTEWATER GENERAL NOTES

- 1. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 61 AND MUST BE CERTIFIED BY AND ORGANIZATION ACCREDITED BY ANSI.
- 2. ALL WATER SERVICE, WASTEWATER SERVICE AND VALVE LOCATIONS SHALL BE APPROPRIATELY STAMPED AS FOLLOWS:
  - WATER SERVICE "W" ON TOP OF CURB
  - WASTEWATER SERVICE "S" ON TOP OF CURB
- VALVE "V" ON TOP OF CURB 3. OPEN UTILITIES SHALL NOT BE PERMITTED ACROSS THE EXISTING PAVED SURFACES. WATER
- AND WASTEWATER LINES ACROSS THE EXISTING PAVED SURFACES SHALL BE BORED AND INSTALLED IN STEEL ENCASEMENT PIPES. BELL RESTRAINTS SHALL BE PROVIDED AT JOINTS. 4. INTERIOR SURFACES OF ALL DUCTILE IRON POTABLE OR RECLAIMED WATER PIPE SHALL BE
- CEMENT-MORTAR LINED AND SEAL COATED AS REQUIRED BY AWWA C104. 5. SAND, AS DESCRIBED IN AUSTIN SPECIFICATION ITEM 510 PIPE, SHALL NOT BE USED AS
- BEDDING FOR WATER AND WASTEWATER LINES. ACCEPTABLE BEDDING MATERIALS ARE PIPE BEDDING STONE, PEA GRAVEL AND IN LIEU OF SAND, A NATURALLY OCCURRING OR MANUFACTURED STONE MATERIAL CONFORMING TO ASTM C33 FOR STONE QUALITY AND MEETING THE E

| /IEETIN | IG THE FOLLOWING | GRADATION SPECIFICATION:   |
|---------|------------------|----------------------------|
|         | SIEVE SIZE       | PERCENT RETAINED BY WEIGHT |
|         | 1/2"             | 0                          |
|         | 3/8"             | 0-2                        |
|         | #4               | 40-85                      |
|         |                  |                            |

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

#### WATER

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

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

SUBDIVISION (OR SITE) WILL NOT BE ACCEPTED (OR CERTIFICATE OF OCCUPANCY ISSUED)

22. TREES IN EXISTING ROW SHOULD BE PROTECTED OR NOTED IN THE PLANS TO BE REMOVED.

UNTIL THE SITE HAS BEEN CLEANED TO THE SATISIFACTION OF THE CITY.

- 1. REACH OUT TO THE CITY FOR PRE-CONSTRUCTION MEETING AND CONSTRUCTION PERMIT.
- 2. SET-UP E/S CONTROLS AND TREE PROTECTION AND REACH OUT TO CITY FOR INSPECTION. SET UP TEMPORARY TRAFFIC CONTROLS.
- 4. CONSTRUCT THE DRAINAGE PONDS AND STORM WATER FEATURES.
- 5. START UTILITY, ROAD, GRADING, FRANCHISE UTILITY AND ALL NECESSARY INFRASTRUCTURE
- 10. ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM 8-MIL POLYETHYLENE. 11. LINE FLUSHING OR ANY ACTIVITY USING A LARGE QUANTITY OF WATER MUST BE COORDINATED WITH THE PUBLIC WORKS DEPARTMENT.
- 12. ALL WATER METER BOXES SHALL BE:
- a. SINGLE, 1" METER AND BELOW DFW37F-12-1CA, OR EQUAL
- b. DUAL, 1" METERS AND BELOW DFW39F-12-1CA, OR EQUAL
- c. 1.5" SINGLE METER DFW65C-14-1CA, OR EQUAL

- d. 2" SINGLE METER DFW1730F-12-1CA, OR EQUAL
- 13. ALL WATER VALVE COVERS ARE TO BE PAINTED BLUE.

#### WASTEWATER

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

#### STREET AND DRAINAGE NOTES

THERMOPLASTIC.

- 1. THE CITY OF LEANDER HAS NOT REVIEWED THESE PLANS FOR COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA). IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE COMPLIANCE WITH ALL LEGISTATION RELATED TO ACCESSIBLITY WITHIN THE LIMITS OF CONSTRUCTION SHOWN IN THESE PLANS. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARS (TAS).
- 2. BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95% MAXIMUM DENSITY TO WITHIN 6" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN THE GREATEST DIMENSION. THE REMAINING 6" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND SUITABLE FOR SUSTAINING PLANT LIFE.
- 3. A MINIMUM OF 6" OF TOPSOIL SHALL BE PLACED BETWEEN THE CURB AND RIGHT-OF-WAY AND IN ALL DRAINAGE CHANNELS EXCEPT CHANNELS CUT IN STABLE ROCK.
- 4. DEPTH OF COVER FOR ALL CROSSINGS UNDER PAVEMENT, INCLUDING GAS, ELECTRIC TELEPHONE, CABLE TV, ETC., SHALL BE A MINIMUM OF 36" BELOW SUBGRADE.
- 5. STREET RIGHT-OF-WAY SHALL BE GRADED AT A SLOPE OF ¼" PER FOOT TOWARD THE CURB LINIESS OTHERWISE INDICATED
- 6. ALL DRAINAGE PIPE IN PUBLIC RIGHT OF WAY OR EASEMENTS SHALL BE REINFORCED CONCRETE PIPE MINIMUM CLASS III OF TONGUE AND GROOVE OR O-RING JOINT DESIGN. CORRUGATED METAL PIPE IS NOT ALLOWED IN PUBLIC RIGHT OR WAY OR EASEMENTS.
- 7. THE CONTRACTOR MUST PROVIDE A PNEUMATIC TRUCK PER TXDOT SPEC FOR PROOF ROLLING. 8. ALL STRIPING, WITH THE EXCEPTION OF STOP BARS, CROSS WALKS, WORDS AND ARROWS, IS TO BE TYPE II (WATER BASED). STOP BARS, CROSS WALKS, WORDS AND ARROWS REQUIRE TYPE I
- 9. MANHOLE FRAMES, COVERS, VALVES, CLEAN-OUTS, ETC. SHALL BE RAISED TO GRADE PRIOR TO FINAL PAVEMENT CONSTRUCTION.
- 10. A STOP BAR SHALL BE PLACED AT ALL STOP SIGN LOCATIONS.
- 11. THE GEOTECHNICAL ENGINEER SHALL INSPECT THE SUBGRADE FOR COMPLIANCE WITH THE DESIGN ASSUMPTIONS MADE DURING PREPARATION OF THE SOILS REPORT. ANY ADJUSTMENTS THAT ARE REQUIRED SHALL BE MADE THROUGH REVISIONS OF THE APPROVED CONSTRUCTION PLANS.
- 12. GEOTECHNICAL INVESTIGATION INFORMATION AND PAVEMENT RECOMMENDATIONS WERE PROVIDED BY MLA GEOTECHNICAL, REPORT 23106100.113, DATED AUGUST 1, 2023.
- 13. A TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CITY OF AUSTIN TRANSPORATION CRITERIA MANUAL, CITY OF LEANDER STANDARD DETAILS AND TEXAS DEPARTMENT OF TRANSPORTATION CRITERIA, SHALL BE SUBMITTED TO THE CITY OF LEANDER FOR REVIEW AND APPROVAL PRIOR TO ANY PARTIAL OR COMPLETE ROADWAY CLOSURES. TRAFFIC CONTROL PLANS MUST BE SITE SPECIFIC AND SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
- 14. ALL LANE CLOSURES SHALL OCCUR ONLY BETWEEN THE HOURS OF 9 AM AND 4 PM UNLESS OTHERWISE NOTED ON THE PLANS. ANY NIGHT TIME LANE CLOSURES REQUIRE APPROVAL OF THE CITY ENGINEER AND SHALL OCCUR BETWEEN THE HOURS OF 8 PM AND 6 AM. LANE CLOSURES OBSERVED BY THE CITY DURING PEAK HOURS OF 6 AM TO 9 AM OR 4 PM TO 8 PM WILL BE SUBJECT TO A FINE AND/OR SUBSEQUENT ISSUANCE OF WORK STOPPAGE.
- 15. TEMPORARY ROCK CRUSHING IS NOT ALLOWED. ALL SOURCES OF FLEXIBLE BASE MATERIAL ARE REQUIRED TO BE APPROVED BY THE CITY. PRIOR TO BASE PLACEMENT ALL CURRENT TRIAXIAL TEST REPORTS FOR PROPOSED STOCK PILES ARE TO BE SUBMITTED TO THE CITY CONSTRUCTION INSPECTOR FOR REVIEW AND APPROVAL
- 16. AT ROAD INTERSECTIONS THAT HAVE A VALLEY GUTTER, THE CROWN TO THE INTERSECTING ROAD WILL BE CULMINATED AT A DISTANCE OF 40 FEET FROM THE INTERSECTING CURB LINE UNLESS OTHERWISE NOTED.
- 17. NO PONDING OF WATER SHALL BE ALLOWED TO COLLECT ON OR NEAR THE INTERSECTION OF PRIVATE DRIVEWAYS AND PUBLIC STREETS. RECONSTRUCTION OF THE DRIVEWAY APPROACH SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 18. ALL DRIVEWAY APPROACHES SHALL HAVE A UNIFORM TWO PERCENT SLOPE WITHIN THE PUBLIC RIGHT OF WAY UNLESS APPROVED IN WRITING BY THE ENGINEERING DEPARTMENT.
- 19. IMPROVEMENTS THAT INCLUDE RECONSTRUCTION OF AN EXISTING TYPE II DRIVEWAY SHALL BE DONE IN A MANNER WHICH RETAINS OPERATIONS OF NOT LESS THAN HALF OF THE DRVIEWAY TO REMAIN OPEN AT ALL TIMES. FULL CLOSURE OF SUCH DRIVEWAY CAN BE CONSIDERED WITH WRITTEN AUTHORIZATION OBTAINED BY THE CONTRACTOR FROM ALL PROPERTY OWNERS AND ACCESS EASEMENT RIGHT HOLDERS ALLOWING THE FULL CLOSURE OF THE DRIVEWAY.
- 20. CONTRACTOR MUST CLEAR FIVE (5) FEET BEYOND ALL PUBLIC RIGHT OF WAY TO PREVENT FUTURE VEGETATIVE GROWTH INTO THE SIDEWALK AREAS.
- 21. SLOPE OF NATURAL GROUND ADJACENT TO THE PUBLIC RIGHT OF WAY SHALL NOT EXCEED 3:1 SLOPE. IF A 3:1 SLOPE IS NOT POSSIBLE, SLOPE PROTECTION OR RETAINING WALL MUST BE
- SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE. 22. THERE SHALL BE NO WATER, WASTEWATER OR DRAINAGE APPURTENANCES, INCLUDING BUT NOT LIMITED TO VALVES, FITTINGS, METERS, CLEAN-OUTS, MANHOLES, OR VAULTS IN ANY DRIVEWAY, SIDEWALK, TRAFFIC OR PEDESTRIAN AREA.
- 23. PUBLIC SIDEWALKS SHALL NOT USE CURB INLETS AS PARTIAL WALKING SURFACE. SIDEWALKS SHALL NOT USE TRAFFIC CONTROL BOXES, METERS, CHECK VALVE VAULTS, COMMUNICATION VAULTS, OR OTHER BURIED OR PARTIALLY BURIED INFRASTRUCTURE AS A VEHICULAR OR PEDESTRIAN SURFACE.
- 24. ALL WET UTILITIES SHALL BE INSTALLED AND ALL DENSITIES MUST HAVE PASSED INSPECTION(S) PRIOR TO THE INSTALLATION OF DRY UTILITIES.
- 25. DRY UTILITIES SHALL BE INSTALLED AFTER SUBGRADE IS CUT AND BEFORE THE FIRST COURSE OF BASE. NO TRENCHING COMPACTED BASE. IF NECESSARY DRY UTILITIES INSTALLED AFTER FIRST COURSE BASE SHALL BE BORED ACROSS THE FULL WIDTH OF THE PUBLIC RIGHT-OF-WAY. 26. A MINIMUM OF SEVEN (7) DAYS OF CURE TIME IS REQUIRED FOR HMAC PRIOR TO THE
- INTRODUCTION OF VEHICULAR TRAFFIC TO ALL STREETS.

#### TRENCH SAFETY NOTES

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

#### GRADING NOTES

- 1. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF
- 2. THE CONTRACTOR SHALL CONSTRUCT EARTHEN EMBANKMENTS WITH SLOPES NO STEEPER THAN 3:1 AND COMPACT SOIL TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CITY

OF AUSTIN STANDARD SPECIFICATIONS.

3. AREAS OF SOIL DISTURBANCE ARE LIMITED TO GRADING AND IMPROVEMENTS SHOWN. ALL OTHER AREAS WILL NOT BE DISTURBED.

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

- WRITTEN CONSTRUCTION NOTIFICATION SHOULD BE PROVIDED TO THE APPROPRIATE TCEQ REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY INFORMATION SHOULD INCLUDE THE DATE ON WHICH THE REGULATED ACTIVITY WILL COMMENCE, THE NAME OF THE APPROVED PLAN FOR THE REGULATED ACTIVITY, AND THE NAME OF THE PRIME CONTRACTOR WITH THE NAME AND TELEPHONE NUMBER OF THE CONTACT PERSON.
- 2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.
- 3. NO TEMPORARY ABOVEGROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEM MAY BE INSTALLED WITHIN 150 FEET IF A DOMESTIC, INDUSTRIAL, IRRIGATION, OR PUBLIC WATER SUPPLY WELL
- 4. PRIOR TO COMMENCING CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND GOOD ENGINEERING PRACTICES. CONTROLS SPECIFIED IN THE SWPPP SECTION OF THE APPROVED EDWARDS AQUIFER CONTRIBUTING ZONE PLAN ARE REQUIRED DURING CONSTRUCTION. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED.
- 5. 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).
- 6. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS NOT LATER THAN WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50%. A PERMANENT STAKE MUST BE PROVIDED THAT CAN INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME.
- 7. 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). 8. ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE AND STORED ON-SITE MUST
- HAVE PROPER E&S CONTROLS INSTALLED. 9. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND CONSTRUCTION ACTIVITIES WILL NOT RESUME WITHIN 21 DAYS. WHEN THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY IS PRECLUDED BY WEATHER CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.
- 10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST: THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR; THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
- 11. THE HOLDER OF ANY APPROVED CONTRIBUTING ZONE 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 BEST MANAGEMENT PRACTICES OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERMS, SILT FENCES, AND DIVERSIONARY STRUCTURES:
- B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED; C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE
- EDWARDS AQUIFER AND HYDROLOGICALLY CONNECTED SURFACE WATER; OR D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED IN A CONTRIBUTING ZONE PLAN AS

UNDEVELOPED. AUSTIN REGIONAL OFFICE 2800 S. IH 35, SUITE 100 AUSTIN, TEXAS 78704-5712 PHONE(512) 339-2929 FAX (512) 339-3795 SAN ANTONIO REGIONAL OFFICE

14250 JUDSON ROAD SAN ANTONIO, TEXAS 78233-4480 PHONE(210) 490-3096 FAX (210) 545-4329

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

THE CITY OF LEANDER STANDARD CONSTRUCTION NOTES SHALL APPLY AND TAKE PRECEDENCE. FOR INSTANCES WHERE THEY CONFLICT WITH KIMLEY-HORN GENERAL NOTES OR APPLICABLE TCEQ REQUIREMENTS, THEN THE MORE RESTRICTIVE SHALL APPLY.

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### BENCHMARKS

ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK. BM-101: "X" CUT IN CONCRETE ELEVATION: 915.04'

APPROVAL



28.EXISTING TREE LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE. CONTRACTOR SHALL REPORT ANY DISCREPANCIES FOUND IN THE FIELD THAT AFFECT THE GRADING PLAN TO THE CIVIL ENGINEER. 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 PRESERVATION PLAN BY THE LANDSCAPE ARCHITECT PRIOR TO COMMENCING THE WORK.

#### EFFECTIVELY CONTROL EROSION AND PREVENT SEDIMENTATION FROM WASHING OFF THE SITE, THEN THE CONTRACTOR SHALL

#### 11 OFF-SITE SOIL BORROW, SPOIL, AND STORAGE AREAS (IF APPLICABLE) ARE CONSIDERED AS PART OF THE PROJECT SITE AND MUST ALSO COMPLY WITH THE EROSION CONTROL REQUIREMENTS FOR THIS PROJECT. THIS INCLUDES THE INSTALLATION OF BMP'S TO CONTROL EROSION AND SEDIMENTATION AND THE ESTABLISHMENT OF PERMANENT GROUND COVER ON DISTURBED AREAS PRIOR TO FINAL APPROVAL OF THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR MODIFYING THE SWPPP AND EROSION CONTROL PLAN TO INCLUDE BMPS FOR ANY OFF-SITE THAT ARE NOT ANTICIPATED OR SHOWN ON THE EROSION CONTROL PLAN. 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

13. CONTRACTORS SHALL INSPECT ALL EROSION CONTROL DEVICES, BMPS, DISTURBED AREAS, AND VEHICLE ENTRY AND EXIT AREAS WEEKLY AND WITHIN 24 HOURS OF ALL RAINFALL EVENTS OF 0.5 INCHES OR GREATER, AND KEEP A RECORD OF THIS INSPECTION IN THE SWPPP BOOKI ET IF APPLICABLE. TO VERIEV 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 WITH CITY SPECIFICATIONS. CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION TRAFFIC USES THE STABILIZED ENTRANCE AT

15. SITE ENTRY AND EXITS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING AND FLOWING OF SEDIMENT AND 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

RESULT OF THE CONSTRUCTION, AS REQUESTED BY OWNER AND CITY. AT A MINIMUM, THIS SHOULD OCCUR ONCE PER DAY FOR THE

STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP BMP 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 20. WHEN SEDIMENT OR DIRT HAS CLOGGED THE CONSTRUCTION ENTRANCE VOID SPACES BETWEEN STONES OR DIRT IS BEING TRACKED 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. 21. TEMPORARY SEEDING OR OTHER APPROVED STABILIZATION SHALL BE INITIATED WITHIN 14 DAYS OF THE LAST DISTURBANCE OF ANY 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

ALL CONTRACTORS AND SUBCONTRACTORS PROVIDING SERVICES RELATED TO THE SWPPP SHALL SIGN THE REQUIRED CONTRACTOR CERTIFICATION STATEMENT ACKNOWLEDGING THEIR RESPONSIBILITIES AS SPECIFIED IN THE SWPPP. 6. A COPY OF THE SWPPP, INCLUDING NOI, SITE NOTICE, CONTRACTOR CERTIFICATIONS, AND ANY REVISIONS, SHALL BE SUBMITTED TO 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 SOL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND A UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED ON ALL UNPAVED AREAS AND AREAS NOT COVERED BY STRUCTURES, A TRANSFER OF OPERATIONAL CONTROL HAS OCCURRED, OR THE OPERATOR HAS OBTAINED ALTERNATIVE AUTHORIZATION UNDER A DIFFERENT PERMIT. A COPY OF THE NOT SHALL BE PROVIDED TO THE OPERATOR OF ANY MS4 RECEIVING DISCHARGE FROM THE SITE.

. KH IS NOT RESPONSIBLE FOR THE MEANS AND METHODS EMPLOYED BY THE CONTRACTOR TO IMPLEMENT THIS DEMOLITION PLAN. THIS PRELIMINARY DEMOLITION PLAN SIMPLY INDICATES THE KNOWN OBJECTS ON THE SUBJECT TRACT THAT ARE TO BE DEMOLISHED

2. KH DOES NOT WARRANT OR REPRESENT THAT THE PLAN, WHICH WAS PREPARED BASED ON SURVEY AND UTILITY INFORMATION PROVIDED BY OTHERS, SHOWS ALL IMPROVEMENTS AND UTILITIES, THAT THE IMPROVEMENTS AND UTILITIES ARE SHOWN ACCURATELY, OR THAT THE UTILITIES SHOWN CAN BE REMOVED. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ITS OWN SITE RECONNAISSANCE TO SCOPE ITS WORK AND TO CONFIRM WITH THE OWNERS OF IMPROVEMENTS AND UTILITIES THE ABILITY AND 3. THIS PLAN IS INTENDED TO GIVE A GENERAL GUIDE TO THE CONTRACTOR, NOTHING MORE. THE GOAL OF THE DEMOLITION IS TO LEAVE THE SITE IN A STATE SUITABLE FOR THE CONSTRUCTION OF THE PROPOSED DEVELOPMENT. REMOVAL OR PRESERVATION OF IMPROVEMENTS, UTILITIES, ETC. TO ACCOMPLISH THIS GOAL ARE THE RESPONSIBILITY OF THE CONTRACTOR. 4. CONTRACTOR IS STRONGLY CAUTIONED TO REVIEW THE FOLLOWING REPORTS DESCRIBING SITE CONDITIONS PRIOR TO BIDDING AND

#### b. ASBESTOS BUILDING INSPECTION REPORT(S) PROVIDED BY THE OWNER,

#### 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 SHOWING ALL ITEMS THAT WILL NEED TO BE DEMOLISHED AND REMOVED. 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 3. ALL FINISHED GRADES SHALL TRANSITION UNIFORMLY BETWEEN THE FINISHED ELEVATIONS SHOWN

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

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.

17. TEMPORARY CULVERTS MAY BE REQUIRED IN SOME LOCATIONS TO CONVEY RUN-OFF. 18. REFER TO DIMENSION CONTROL PLAN, AND PLAT FOR HORIZONTAL DIMENSIONS. 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 CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS. 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 FLATWORK ADJACENT TO THE BUILDING. IF NONE IS CURRENTLY EXISTING.

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

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 REGARDING EXISTING TREES TO BE REMOVED AND PRESERVED

- 32.NO TREE SHALL BE REMOVED UNLESS A TREE REMOVAL PERMIT HAS BEEN ISSUED BY THE CITY, OR CITY HAS OTHERWISE COL IN WRITING THAT ONE IS NOT NEEDED FOR THE TREE(S). 33 NO TREE SHALL BE REMOVED OR DAMAGED WITHOUT PRIOR AUTHORIZATION OF THE OWNER OR OWNER'S REPRESENTATIVE 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 PAVE AREAS FOR EVIDENCE OF PONDING AND INADEQUATE SLOPE FOR DRAINAGE. ALL AREAS SHALL ADEQUATELY DRAIN TOWARI INTENDED STRUCTURE TO CONVEY STORMWATER RUNOFF. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER AND ENGINEER AREAS OF POOR DRAINAGE ARE DISCOVERED
- 35. CONTRACTOR FIELD ADJUSTMENT OF PROPOSED SPOT GRADES IS ALLOWED, IF THE APPROVAL OF THE CIVIL ENGINEER IS OB **RETAINING WALLS:**
- . RETAINING WALLS SHOWN ARE FOR SITE GRADING PURPOSES ONLY, AND INCLUDE ONLY LOCATION AND SURFACE SPOT ELEV AT THE TOP AND BOTTOM OF THE WALL 2. RETAINING WALL TYPE OR SYSTEM SHALL BE SELECTED BY THE OWNER.
- STRUCTURAL DESIGN AND PERMITTING OF RETAINING WALLS, RAILINGS, AND OTHER WALL SAFETY DEVICES SHALL BE PERFO A LICENSED ENGINEER AND ARE NOT PART OF THIS PLAN SET. 4. RETAINING WALL DESIGN SHALL MEET THE INTENT OF THE GRADING PLAN AND SHALL ACCOUNT FOR ANY INFLUENCE ON ADJA
- 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 AN 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 CONFLICT 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 (O EDITION), INCLUDING ALL ADDENDA
- 3. ALL FIRELANE PAVING AND PAVING SUBGRADE SHALL COMPLY WITH CITY STANDARDS AND DETAILS. IF THESE ARE DIFFERENT 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 SPECIFICATI
- 5. CONTRACTOR IS RESPONSIBLE FOR ALL PAVING AND PAVING SUBGRADE TESTING AND CERTIFICATION, UNLESS SPECIFIED OT BY OWNER. ALL PAVING AND PAVING SUBGRADE TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOF TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING PAVING AND SUBGRADE. OWNER SH 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 P
- 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 GEOTECHNICAL REPORT'S RECOMMENDATION FOR SUBGRADE PREPARATION SPECIFIC TO FLATWORK ADJACENT TO THE PRO BUILDING. THE OWNER AND CONTRACTOR ARE ADVISED TO OBTAIN A GEOTECHNICAL ENGINEER RECOMMENDATION SPECIFIC
- 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 STAN 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 STANDAR SHALL HAVE A DETECTABLE WARNING SURFACE THAT IS FULL WIDTH AND FULL DEPTH OF THE CURB RAMP, NOT INCLUDING F 10. ALL ACCESSIBLE RAMPS, CURB RAMPS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA AND TAS STANDARDS. EDITION.
- 11. ANY COMPONENTS OF THE PROJECT SUBJECT TO RESIDENTIAL USE SHALL ALSO CONFORM TO THE FAIR HOUSING ACT, AND ( 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. CONNECT 13. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS FOR FIRE LANES, PARKING STALLS, HANDICAPPED PAR SYMBOLS, AND MISCELLANEOUS STRIPING WITHIN PARKING LOT AND AROUND BUILDING AS SHOWN ON THE PLANS. ALL PAINT
- PAVEMENT MARKINGS SHALL ADHERE TO CITY AND OWNER STANDARDS. 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
- 16. ALL REINFORCING STEEL SHALL CONFORM TO THE GEOTECHNICAL REPORT, CITY STANDARDS, AND ASTM A-615, GRADE 60, AI BE SUPPORTED BY BAR CHAIRS. CONTRACTOR SHALL USE THE MORE STRINGENT OF THE CITY AND GEOTECHNICAL STANDAR 17. ALL JOINTS SHALL EXTEND THROUGH THE CURB. 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 WOR 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.
- 22. UNLESS THE PLANS SPECIFICALLY DICTATE TO THE CONTRARY, ON-SITE AND OTHER DIRECTIONAL SIGNS SHALL BE ORIENTED THEY ARE READILY VISIBLE TO THE ONCOMING TRAFFIC FOR WHICH THEY ARE INTENDED. 23.CONTRACTOR IS RESPONSIBLE FOR INSTALLING NECESSARY CONDUIT FOR LIGHTING, IRRIGATION, ETC. PRIOR TO PLACEMENT PAVEMENT. ALL CONSTRUCTION DOCUMENTS (CIVIL, MEP, LANDSCAPE, IRRIGATION, AND ARCHITECT) SHALL BE CONSULTED. 24.BEFORE PLACING PAVEMENT, CONTRACTOR SHALL VERIFY THAT SUITABLE ACCESSIBLE PEDESTRIAN ROUTES (PER ADA, TAS,
- FHA) EXIST TO AND FROM EVERY DOOR AND ALONG SIDEWALKS. ACCESSIBLE PARKING SPACES. ACCESS AISLES, AND ACCESS ROUTES. IN NO CASE SHALL AN ACCESSIBLE RAMP SLOPE EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWA CROSS SLOPE EXCEED 2.0 PERCENT. IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPE EXCEED 5.0 PERCENT. ACCESSIBLE SPACES AND ACCESS AISLES SHALL NOT EXCEED 2.0 PERCENT SLOPE IN ANY DIRECTION
- 25. CONTRACTOR SHALL TAKE FIELD SLOPE MEASUREMENTS ON FINISHED SUBGRADE AND FORM BOARDS PRIOR TO PLACING PAV TO VERIFY THAT ADA/TAS SLOPE REQUIREMENTS ARE PROVIDED. CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO PAVING EXCESSIVE SLOPES ARE ENCOUNTERED. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR ADA AND TAS SLOPE COMPLIANCE ISSUES.

- 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 INSTALLA THE STORM SEWER 3. THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, CONDITION, HORIZONTAL, AND VERTICAL LOCATIONS OF ALL EXISTING STOF SEWER FACILITIES THAT ARE TO BE CONNECTED TO PRIOR TO START OF CONSTRUCTION OF ANY STORM SEWER, AND SHALL
- THE ENGINEER OF ANY CONFLICTS DISCOVERED. 4 THE CONTRACTOR SHALL VERIEV AND COORDINATE ALL DIMENSIONS SHOWN INCLUDING THE HORIZONTAL AND VERTICAL LC
- 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 GRADIN
- AND FIELD CONDITIONS PRIOR TO THEIR INSTALLATION. 6. ALL PUBLIC STORM SEWER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO CITY PUBLIC WORKS STAND 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 PLUMBI 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 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 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 MATE 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 PROFESSION ENGINEER IN THE STATE OF TEXAS. TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENC 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
- POND LINER SPECIFICATIONS 3. A GEOTECHNICAL ENGINEER SHALL REVIEW AND APPROVE ALL POND LINER MATERIAL, PLACEMENT PROCEDURES, AND PROV
- 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 INSTA 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 ELIMINA AT LEAST 20-FEET FROM THE POND SO NO ROUTE FOR WATER TO LEAK THROUGH THE EMBEDMENT MATERIAL IS PROVIDED. 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
- 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 LC AS THIS MAY DRY-OUT THE POND LINER AND RISK ITS WATERTIGHT PROPERTIES. WATER AND WASTEWATER:
- . ALL WATER AND WASTEWATER MATERIALS AND CONSTRUCTION SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAIL SPECIFICATIONS 2. CONTRACTOR SHALL FIELD VERIFY THE SIZE, CONDITION, HORIZONTAL, AND VERTICAL LOCATIONS OF ALL EXISTING WATER AN
- WASTEWATER FACILITIES THAT ARE TO BE CONNECTED TO, PRIOR TO START OF CONSTRUCTION OF ANY WATER OR WASTEWA 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 ALL UTILITY SERVICES ENTERING THE BUILDING
- 4. THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATION OF ALL UTILITY CROSSINGS PRIOR TO THE INSTALLATION OF ANY PIPE 5. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLA THE WATER AND WASTEWATER IMPROVEMENTS. 6. ALL PUBLIC WATER AND WASTEWATER CONSTRUCTION, PIPE, STRUCTURES, AND FITTINGS SHALL ADHERE TO CITY PUBLIC WO
- 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 APPLICAE PLUMBING CODE. CONTRACTOR SHALL ARRANGE FOR REQUIRED CITY INSPECTIONS 8. FIRE SPRINKLER LINES SHALL BE DESIGNED AND INSTALLED BY A LICENSED FIRE SPRINKLER CONTRACTOR, AND COMPLY TO 1 APPLICABLE CODES AND INSPECTIONS REQUIRED. THESE PLANS WERE PREPARED WITHOUT THE BENEFIT OF THE FIRE SPRIN
- 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. 10. CONTRACTOR SHALL TAKE REQUIRED SANITARY PRECAUTIONS, FOLLOWING ANY CITY, TCEQ, AND AWWA STANDARDS, TO KEE 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 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 AM 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 SURRO
- PROPERTIES. 15. CONTRACTOR SHALL MAINTAIN WATER SERVICE AND WASTEWATER SERVICE TO ALL CUSTOMERS THROUGHOUT CONSTRUCT 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 CONTRACTOR IS RESPONSIBLE TO PROTECT ALL WATER AND WASTEWATER LINES CROSSING THE PROJECT. SHALL REPAIR ALL DAMAGED LINES IMMEDIATELY ALL REPAIRS OF EXISTING WATER MAINS WATER SERVICES. SEWER MAINS
- 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 PROPOS PAVEMENT
- 18. THE ENDS OF ALL EXISTING WATER MAINS THAT ARE CUT, BUT NOT REMOVED, SHALL BE PLUGGED AND ABANDONED IN PLACE WORK SHALL BE CONSIDERED AS A SUBSIDIARY COST TO THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE ALLO

| NFIRMED                | 19. ALL FIR<br>THRUST<br>20.CONTR/<br>JOINTS<br>21. ALL CRO<br>MATERI | E HYDRANTS, VALVES, TEES, BENDS, WYES, REDUCERS, FITTINGS, AND ENDS SHALL BE MECHANICALLY RESTRAINED AND/OR<br>I BLOCKED TO CITY STANDARDS.<br>ACTOR SHALL INSTALL A FULL SEGMENT OF WATER OR WASTEWATER PIPE CENTERED AT ALL UTILITY CROSSINGS SO THAT THE<br>ARE GREATER THAN 9-FEET FROM THE CROSSING.<br>DSSINGS AND LOCATIONS WHERE WASTEWATER IS LESS THAN 9-FEET FROM WATER, WASTEWATER CONSTRUCTION AND<br>ALS SHALL COMPLY WITH TCEQ CHAPTER 217.53. | DATE BY                                            |
|------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| MENT<br>DS THE         | 22.ALL CRO<br>SHALL O<br>23.ALL WA                                    | DSSING AND LOCATIONS WHERE WATER IS LESS THAN 9-FEET FROM WASTEWATER, WATER CONSTRUCTION AND MATERIALS<br>COMPLY WITH TCEQ CHAPTER 290.44.<br>TER AND WASTEWATER SHALL BE TESTED IN ACCORDANCE WITH THE CITY, AWWA, AND TCEQ STANDARDS AND                                                                                                                                                                                                                    |                                                    |
| R IF ANY<br>BTAINED.   | SPECIFI<br>a. ALL WA<br>SHALL (                                       | ICATIONS. AT A MINIMUM, THIS SHALL CONSIST OF THE FOLLOWING:<br>TERLINES SHALL BE HYDROSTATICALLY TESTED AND CHLORINATED BEFORE BEING PLACED INTO SERVICE. CONTRACTOR<br>COORDINATE WITH THE CITY FOR THEIR REQUIRED PROCEDURES AND SHALL ALSO COMPLY WITH TCEQ REGULATIONS.                                                                                                                                                                                  |                                                    |
| ATIONS                 | b. WASTEN<br>REQUIR                                                   | WATER LINES AND MANHOLES SHALL BE PRESSURE TESTED. CONTRACTOR SHALL COORDINATE WITH THE CITY FOR THEIR<br>ED PROCEDURES AND SHALL ALSO COMPLY WITH TCEQ REGULATIONS. AFTER COMPLETION OF THESE TESTS, A TELEVISION<br>TION SHALL BE PERFORMED AND PROVIDED TO THE CITY AND OWNER ON A DVD                                                                                                                                                                     |                                                    |
|                        | 24.CONTRA<br>MARKEF                                                   | ACTOR SHALL DETECTABLE WIRING OR MARKING TAPE A MINIMUM OF 12" ABOVE WATER AND WASTEWATER LINES.<br>R DECALS SHALL BE LABELED "CAUTION - WATER LINE", OR "CAUTION - SEWER LINE". DETECTABLE WIRING AND MARKING TAPE                                                                                                                                                                                                                                           | ស្                                                 |
| RMED BY                | SHALL C<br>25.DUCTILE<br>SINGLE                                       | EXAMPLY WITH CITY STANDARDS, AND SHALL BE INCLUDED IN THE COST OF THE WATER AND WASTEWATER PIPE.<br>E IRON PIPE SHALL BE PROTECTED FROM CORROSION BY A LOW-DENSITY POLYETHYLENE LINER WRAP THAT IS AT LEAST A<br>LAYER OF 8-MIL. ALL DUCTILE IRON JOINTS SHALL BE BONDED.                                                                                                                                                                                     | ISION                                              |
| ACENT                  | 26.WATER                                                              | LINES SHALL BE INSTALLED AT NO LESS THAN THE MINIMUM COVER REQUIRED BY THE CITY.<br>ACTOR SHALL PROVIDE CLEAN-OUTS FOR PRIVATE SANITARY SEWER LINES AT ALL CHANGES IN DIRECTION AND 100-FOOT<br>ALS, OR AS REQUIRED BY THE APPLICABLE PLUMBING CODE. CLEAN-OUTS REQUIRED IN PAVEMENT OR SIDEWALKS SHALL                                                                                                                                                       | REV                                                |
|                        | HAVE C                                                                | AST IRON COVERS FLUSH WITH FINISHED GRADE.<br>ACTOR SHALL PROVIDE BACKWATER VALVES FOR PLUMBING FIXTURES AS REQUIRED BY THE APPLICABLE PLUMBING CODE (E.G.                                                                                                                                                                                                                                                                                                    |                                                    |
| ND<br>I<br>TING        | FLOOR<br>PUBLIC<br>29.THE CO                                          | ELEVATION OF FIXTURE UNIT IS BELOW THE ELEVATION OF THE MANHOLE COVER OF THE NEXT UPSTREAM MANHOLE IN THE<br>SEWER). CONTRACTOR SHALL REVIEW BOTH MEP AND CIVIL PLANS TO CONFIRM WHERE THESE ARE REQUIRED.<br>NTRACTOR IS RESPONSIBLE FOR OBTAINING AND SUBMITTING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL                                                                                                                                           |                                                    |
| R LATEST               | ENGINE<br>SAFETY                                                      | ER IN THE STATE OF TEXAS, TO THE CITY PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRENCH<br>REQUIREMENTS IN ACCORDANCE WITH CITY, STATE, AND FEDERAL REQUIREMENTS, INCLUDING OSHA FOR ALL TRENCHES. NO                                                                                                                                                                                                                                   |                                                    |
| T THAN                 | 30.THE CO                                                             | NTRACTOR SHALL KEEP TRENCHES FREE FROM WATER.                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                    |
| UNS.<br>THERWISE<br>R. | ABBREVIA                                                              | TIONS AND DEFINITIONS:                                                                                                                                                                                                                                                                                                                                                                                                                                        | _                                                  |
|                        | A<br>ADA<br>AWWA                                                      | AREA<br>AMERICANS WITH DISABILITIES ACT<br>AMERICAN WATER WORKS ASSOCIATION                                                                                                                                                                                                                                                                                                                                                                                   | 8626                                               |
| то                     | B-B<br>BC                                                             | BACK TO BACK<br>BEGIN CURVE                                                                                                                                                                                                                                                                                                                                                                                                                                   | INC.<br>17 7<br>1791                               |
| DPOSED<br>C TO         | BC<br>BCR<br>BMP                                                      | BACK OF CURB<br>BEGIN CURB RETURN<br>BEST MANAGEMENT PRACTICE                                                                                                                                                                                                                                                                                                                                                                                                 | TES,<br>00WN,<br>418                               |
|                        | BOC<br>BVCE                                                           | BACK OF CURB<br>BEGIN VERTICAL CURVE ELEVATION                                                                                                                                                                                                                                                                                                                                                                                                                | SOCIA<br>SOCIA<br>512-<br>COM<br>G FIR             |
| LARES.<br>LATEST       | BVCS<br>BW                                                            | BEGIN VERTICAL CURVE STATION<br>BOTTOM OF WALL                                                                                                                                                                                                                                                                                                                                                                                                                | D, GEC<br>D, GEC<br>D, GEC<br>DRN.C                |
| COMPLY                 | CITY<br>C/L                                                           | CITY, TOWN, OR OTHER APPLICABLE LOCAL GOVERNMENT JURISDICTION<br>CENTERLINE                                                                                                                                                                                                                                                                                                                                                                                   | ANI<br>E 131<br>68 F<br>S7-HG                      |
| ION.<br>KING           | CL<br>CONC                                                            | CENTERLINE<br>CONCRETE                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                    |
| IAND                   | CY<br>DEMO<br>DG                                                      | CUBIC YARD<br>DEMOLITION<br>DECOMPOSED GRANITE                                                                                                                                                                                                                                                                                                                                                                                                                | LLEY-<br>ENUE,<br>WWW.<br>ISTER                    |
|                        | DTL<br>EA                                                             | DETAIL<br>EACH                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3 KIN<br>IN AV<br>11 AV<br>REG                     |
|                        | EC<br>ECR                                                             | END CURVE<br>END CURB RETURN                                                                                                                                                                                                                                                                                                                                                                                                                                  | 202 aust<br>Aust<br>Hone<br>Exas                   |
| ₹K.                    | EL<br>ELEC                                                            | ELECTRICAL / ELECTRICITY                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0<br>                                              |
| ) SO                   | ELEV<br>EPA                                                           | ELEVATION<br>UNITED STATES ENVIRONMENTAL PROTECTION AGENCY                                                                                                                                                                                                                                                                                                                                                                                                    |                                                    |
| AND                    | EVCE<br>EVCS                                                          | EASEMENT<br>END VERTICAL CURVE ELEVATION<br>END VERTICAL CURVE STATION                                                                                                                                                                                                                                                                                                                                                                                        |                                                    |
| LK<br>PARKING          | EX.<br>F-F                                                            | EXISTING<br>FACE TO FACE                                                                                                                                                                                                                                                                                                                                                                                                                                      | STATE                                              |
| VEMENT<br>G IF ANY     | FG<br>FH<br>FL                                                        | FINISHED GROUND<br>FIRE HYDRANT<br>FLOW LINE                                                                                                                                                                                                                                                                                                                                                                                                                  | CRECORY DAVIS                                      |
|                        | FOC<br>FT                                                             | FACE OF CURB<br>FEET                                                                                                                                                                                                                                                                                                                                                                                                                                          | ADAM A6161                                         |
|                        | HGL<br>KH<br>KHA                                                      | HYDRAULIC GRADE LINE<br>KIMLEY-HORN AND ASSOCIATES, INC.<br>KIMLEY-HORN AND ASSOCIATES, INC.                                                                                                                                                                                                                                                                                                                                                                  | SSIONAL AND                                        |
| TION OF                | LAT<br>LF                                                             | LATERAL<br>LINEAR FEET                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10/3/2023                                          |
| RM<br>NOTIFY           | LT<br>MAX<br>ME                                                       | LEFT<br>MAXIMUM<br>MATCH EXISTING ELEVATION                                                                                                                                                                                                                                                                                                                                                                                                                   | 9<br>9<br>23<br>23<br>23<br>4GD<br>AGD<br>AGD      |
| CATION                 | MH<br>MIN                                                             | MANHOLE<br>MINUTE / MINIMUM                                                                                                                                                                                                                                                                                                                                                                                                                                   | 80JE(<br>833128<br>83128<br>83128<br>83128<br>7: 4 |
| NG PLAN<br>DARD        | NO<br>NOI<br>NOT                                                      | NUMBER<br>NOTICE OF INTENT, REF. TCEQ GENERAL PERMIT<br>NOTICE OF TERMINATION REF. TCEQ GENERAL PERMIT                                                                                                                                                                                                                                                                                                                                                        | A PF<br>6778<br>DA<br>DA<br>TOBE<br>:: AS          |
| IG CODE.               | NTS<br>OC                                                             | NOT TO SCALE<br>ON CENTER                                                                                                                                                                                                                                                                                                                                                                                                                                     | KH<br>C C C<br>SCALE<br>DESIG<br>DRAW<br>CHECI     |
| . HAVE A               | OFF<br>OSHA<br>PC                                                     | OFFSET<br>OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION<br>POINT OF CURVATURE                                                                                                                                                                                                                                                                                                                                                                                 |                                                    |
| SHALL BE               | PCC<br>PGL                                                            | PORTLAND CEMENT CONCRETE / POINT OF COMPOUND CURVATURE<br>PROPOSED GRADE LINE                                                                                                                                                                                                                                                                                                                                                                                 |                                                    |
| ERIAL.                 | PI<br>PROP<br>PRC                                                     | POINT OF INFLECTION<br>PROPOSED<br>POINT OF REVERSE CURVATURE                                                                                                                                                                                                                                                                                                                                                                                                 | Ś                                                  |
| 2                      | PSI<br>PT                                                             | POUNDS PER SQUARE INCH<br>POINT OF TANGENCY                                                                                                                                                                                                                                                                                                                                                                                                                   | ΖŰ                                                 |
| AL                     | PVC<br>PVI<br>DVMT                                                    | POLYVINYL CHLORIDE<br>POINT OF VERTICAL INFLECTION                                                                                                                                                                                                                                                                                                                                                                                                            | N N N                                              |
| G TRENCH<br>CHES. NO   | RCP<br>ROW                                                            | REINFORCED CONCRETE PIPE<br>RIGHT OF WAY                                                                                                                                                                                                                                                                                                                                                                                                                      | Η Ϋ́Ξ                                              |
|                        | RT<br>SF                                                              | RIGHT<br>SQUARE FEET                                                                                                                                                                                                                                                                                                                                                                                                                                          | <u></u>                                            |
| FOR                    | SSMH<br>STA                                                           | SANTARY SEWER MANHOLE<br>STATION                                                                                                                                                                                                                                                                                                                                                                                                                              | ШЧД                                                |
| IDE                    | STD<br>SY                                                             | STANDARD<br>SQUARE YARD                                                                                                                                                                                                                                                                                                                                                                                                                                       | IJ<br>IJ<br>IJ<br>IJ<br>IJ<br>IJ                   |
| LLED<br>ATED FOR       | TC<br>TCEQ                                                            | TOP OF CURB<br>TEXAS COMMISSION OF ENVIRONMENTAL QUALITY                                                                                                                                                                                                                                                                                                                                                                                                      | Т Ц                                                |
| BACKFILL               | TEMP<br>TXDOT                                                         | TEMPORARY<br>TEXAS DEPARTMENT OF TRANSPORTATION                                                                                                                                                                                                                                                                                                                                                                                                               | Ú                                                  |
| E                      | TXMUTCD<br>TW<br>TYP                                                  | TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES<br>TOP OF WALL<br>TYPICAL                                                                                                                                                                                                                                                                                                                                                                                     |                                                    |
| OWERED,                | VC<br>WTR                                                             | VERTICAL CURVE<br>WATER                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                    |
|                        | WW                                                                    | BENCHMARKS                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                    |
|                        |                                                                       | ELEVATIONS HEREON ARE REFERENCED TO THE NORTH                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                    |
|                        |                                                                       | AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN<br>DATA SYSTMS CONTINUALLY OPERATING REFERENCE<br>STATION (CORS) NETWORK.                                                                                                                                                                                                                                                                                                                                        | ு ய                                                |
|                        |                                                                       | BM-101: "X" CUT IN CONCRETE<br>ELEVATION: 915.04'                                                                                                                                                                                                                                                                                                                                                                                                             |                                                    |
| ORKS                   |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                    |
| BLE                    |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                    |
| THE<br>NKLER           |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                    |
| ΞP                     |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                    |
|                        | THESE PI                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                    |
|                        | GEOTECH<br>(FIRM)                                                     | INICAL ENGINEERING REPORT<br>MLA GEOTECHNICAL                                                                                                                                                                                                                                                                                                                                                                                                                 | │ ╦ ╓ ┊│                                           |
| ION (IF                | (PROJ./RE<br>(DATE)                                                   | EPORT #)<br>AUGUST 1, 2023                                                                                                                                                                                                                                                                                                                                                                                                                                    | Z ≥                                                |
| ACTOR                  | INCLUDIN<br>REPORT 1                                                  | G ALL REVISIONS AND ADDENDA TO THIS<br>THAT MAY HAVE BEEN RELEASED AFTER                                                                                                                                                                                                                                                                                                                                                                                      |                                                    |
| s, and<br>ED           | THE NOTE                                                              | ED DATE.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                    |
| E. THIS<br>WED.        |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                    |
|                        | HT 2023 KIM                                                           | LEY-HORN AND ASSOCIATES, INC., ALL RIGHTS RESERVED                                                                                                                                                                                                                                                                                                                                                                                                            | 3                                                  |



# SHEET NO. DESCRIPTION

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| 1                                                                                                              | COVER                                                                                                           | SHEET                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2                                                                                                              | OVERAL                                                                                                          | L VIEW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 3                                                                                                              | FINAL P                                                                                                         | LAT (SHEE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4                                                                                                              | FINAL P                                                                                                         | LAT (SHEE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5                                                                                                              | LINE AN                                                                                                         | D CURVE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6                                                                                                              | PLAT NO                                                                                                         | DTES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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|                                                                                                                | STREE                                                                                                           | <b>TABLE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| STREET                                                                                                         | NAME                                                                                                            | LI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| CARTHAGE                                                                                                       | STREET                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| SANGER                                                                                                         | RLANE                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ARGYLE                                                                                                         | ROAD                                                                                                            | C.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| PROSPE                                                                                                         | RROAD                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| CELINA                                                                                                         | COVE                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| CORDELL                                                                                                        | COURT                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| COPPELL                                                                                                        |                                                                                                                 | and the second se |
| MARIETTA                                                                                                       | STREET                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| MARIETTA<br>WAXAHACI                                                                                           | STREET<br>HE ROAD                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| MARIETTA<br>WAXAHACI<br>FULTON                                                                                 | STREET<br>HE ROAD<br>DRIVE                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

FILING DATE: MARCH 1, 2022





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|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               | CALLED 4                                                                                                           | 39               |                                                        |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | F                                                                                                             | AGRES<br>OGER W P<br>DOC# 9914                                                                                     | YLE              |                                                        |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               | OPRWC                                                                                                              |                  |                                                        |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    |                  |                                                        |                 |
|           | <b></b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | • •••••••• •                                                                                                  | $ \rightarrow -$                                                                                                   |                  |                                                        | 7               |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    | ACRE             |                                                        |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | L                                                                                                             | TRAC<br>ARRY J O                                                                                                   | r 2<br>Le AND    |                                                        |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 8                                                                                                             | DORIS M<br>EVOCABLI                                                                                                | PYLE<br>E LIVING |                                                        |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               | DOC# 98<br>OPRV                                                                                                    | 17109<br>/C /    |                                                        |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               | (REMAIN                                                                                                            | DER)             |                                                        |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    | / •              | ALLED 13.96 A                                          | CF              |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    |                  | GLENN A. GEO<br>DOC. 2004050<br>OPRWC                  | )RC<br>362      |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               | /                                                                                                                  | /                | UP ALLO                                                |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    |                  |                                                        |                 |
| à         |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    |                  |                                                        |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | /                                                                                                             |                                                                                                                    |                  |                                                        |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    |                  |                                                        | 012             |
|           | $\mathbf{X}$ | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                               |                                                                                                                    |                  |                                                        | 1               |
|           | $\backslash$ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | r                                                                                                             |                                                                                                                    | 60D N<br>FOU     | AIL NO                                                 |                 |
|           | $\mathbf{X}$ | $\backslash$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                               |                                                                                                                    |                  |                                                        | L(<br>(2)       |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | /2" IRFC<br>RPLS 2218"                                                                                        | IN:                                                                                                                | 88.31'           | L 10.2                                                 | X               |
|           |              | Xase /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 4                                                                                                             | LANDSCAP                                                                                                           |                  |                                                        | 1<br>11.<br>4.6 |
|           |              | 188-183                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Ń                                                                                                             | N11°00'1<br>64                                                                                                     | 9"W              | 2" IRFC                                                | 6               |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | A A                                                                                                           |                                                                                                                    |                  | 55.72                                                  | L.M.            |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1956                                                                                                          |                                                                                                                    | 07/16"E          | C GESS AN                                              | 80<br>80        |
|           |              | N36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | °02'40''W-                                                                                                    | 5 CLIE                                                                                                             | Type of          | A A A A A A A A A A A A A A A A A A A                  | 5<br>1          |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | S63°20'5                                                                                                      |                                                                                                                    | A CALL           | 17.30                                                  |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7                                                                                                             | .30' '                                                                                                             |                  |                                                        |                 |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    | 2                | 1 Star                                                 | F               |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    | \$3<br>\$        |                                                        | Rox N           |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    | × 1/2"-          |                                                        | 100.00          |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    | IRF              | 10 5007                                                | No              |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    | IRF              | 10 FOOT<br>SIDEWALK                                    | No.             |
|           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                               |                                                                                                                    | AB.              | 10 FOOT<br>SIDEWALK                                    | No.             |
|           | E            | <b>See Sugligeneessig</b> (Jones in Section Sec |                                                                                                               |                                                                                                                    |                  | 10 FOOT<br>SIDEWALK                                    | 100             |
|           |              | HOA LOT AREA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | S                                                                                                             |                                                                                                                    |                  | 10.FOOT<br>SIDEWALK                                    |                 |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | S<br>ACRES<br>0,260                                                                                           | SQ. FT.<br>11,314                                                                                                  |                  | 10 FOOT<br>SIDEWALK                                    |                 |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | S<br>ACRES<br>0.260<br>0.099                                                                                  | SQ. FT.<br>11,314<br>4,323                                                                                         |                  | 10 FOOT<br>SIDEWALK                                    |                 |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | S<br>ACRES<br>0.260<br>0.099<br>0.207                                                                         | SQ. FT.<br>11,314<br>4,323<br>9,024                                                                                |                  | 10.FOOT<br>SIDEWALK                                    |                 |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | S<br>ACRES<br>0.260<br>0.099<br>0.207<br>7.943                                                                | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345,984                                                                     |                  | 10.FOOT<br>SIDEWALK                                    |                 |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK D<br>LOT 1, BLOCK G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | S<br>ACRES<br>0.260<br>0.099<br>0.207<br>7.943<br>6.250                                                       | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345,984<br>272,247<br>3,976                                                 |                  | 10.FOOT<br>SIDEWALK                                    |                 |
| •         |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK G<br>LOT 1, BLOCK H<br>LOT 1, BLOCK H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | S<br>ACRES<br>0.260<br>0.099<br>0.207<br>7.943<br>6.250<br>0.091<br>0.731                                     | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345,984<br>272,247<br>3,976<br>31,825                                       |                  | 10 FOOT<br>SIDEWALK                                    |                 |
| •         |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK G<br>LOT 1, BLOCK H<br>LOT 1, BLOCK K<br>LOT 2, BLOCK D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | S<br>ACRES<br>0.260<br>0.099<br>0.207<br>7.943<br>6.250<br>0.091<br>0.731<br>0.105                            | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345,984<br>272,247<br>3,976<br>31,825<br>4,576                              |                  | 10 FOOT<br>SIDEWALK                                    |                 |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK C<br>LOT 1, BLOCK G<br>LOT 1, BLOCK H<br>LOT 1, BLOCK K<br>LOT 2, BLOCK D<br>LOT 2, BLOCK G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | S<br>ACRES<br>0,260<br>0,099<br>0,207<br>7,943<br>6,250<br>0,091<br>0,731<br>0,105<br>2,787                   | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345,984<br>272,247<br>3,976<br>31,825<br>4,576<br>121,421                   |                  | 10 FOOT<br>SIDEWALK                                    |                 |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK C<br>LOT 1, BLOCK G<br>LOT 1, BLOCK H<br>LOT 1, BLOCK K<br>LOT 2, BLOCK G<br>LOT 2, BLOCK F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | S<br>ACRES<br>0.260<br>0.099<br>0.207<br>7.943<br>6.250<br>0.091<br>0.731<br>0.105<br>2.787<br>0.094          | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345,984<br>272,247<br>3,976<br>31,825<br>4,576<br>121,421<br>4,098          |                  | 10.FOOT<br>SIDEWALK                                    |                 |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK G<br>LOT 1, BLOCK H<br>LOT 2, BLOCK C<br>LOT 2, BLOCK F<br>LOT 23, BLOCK C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | S<br>ACRES<br>0.260<br>0.099<br>0.207<br>7.943<br>6.250<br>0.091<br>0.731<br>0.105<br>2.787<br>0.094<br>0.115 | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345,984<br>272,247<br>3,976<br>31,825<br>4,576<br>121,421<br>4,098<br>5,031 |                  | 10.FOOT<br>SIDEWALK                                    |                 |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK G<br>LOT 1, BLOCK H<br>LOT 1, BLOCK H<br>LOT 2, BLOCK C<br>LOT 2, BLOCK C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | S<br>ACRES<br>0.260<br>0.099<br>0.207<br>7.943<br>6.250<br>0.091<br>0.731<br>0.105<br>2.787<br>0.094<br>0.115 | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345,984<br>272,247<br>3,976<br>31,825<br>4,576<br>121,421<br>4,098<br>5,031 |                  | CALLED<br>JESSE 1                                      |                 |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK C<br>LOT 1, BLOCK G<br>LOT 1, BLOCK H<br>LOT 1, BLOCK K<br>LOT 2, BLOCK C<br>LOT 2, BLOCK C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | S<br>ACRES<br>0.260<br>0.099<br>0.207<br>7.943<br>6.250<br>0.091<br>0.731<br>0.105<br>2.787<br>0.094<br>0.115 | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345,984<br>272,247<br>3,976<br>31,825<br>4,576<br>121,421<br>4,098<br>5,031 |                  | CALLED<br>JESSE V<br>DOC# 20151                        | 74 S            |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK C<br>LOT 1, BLOCK G<br>LOT 1, BLOCK H<br>LOT 2, BLOCK C<br>LOT 2, BLOCK C<br>LOT 23, BLOCK C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | S<br>ACRES<br>0.260<br>0.099<br>0.207<br>7.943<br>6.250<br>0.091<br>0.731<br>0.105<br>2.787<br>0.094<br>0.115 | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345,984<br>272,247<br>3,976<br>31,825<br>4,576<br>121,421<br>4,098<br>5,031 |                  | CALLED<br>JESSE V<br>DOC# 20151                        | 74 8            |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK D<br>LOT 1, BLOCK G<br>LOT 1, BLOCK K<br>LOT 2, BLOCK C<br>LOT 2, BLOCK C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | S<br>ACRES<br>0,260<br>0,099<br>0,207<br>7,943<br>6,250<br>0,091<br>0,731<br>0,105<br>2,787<br>0,094<br>0,115 | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345;984<br>272,247<br>3,976<br>31,825<br>4,576<br>121,421<br>4,098<br>5,031 |                  | LO FOOT<br>SIDEWALK<br>CALLED<br>JESSE V<br>DOC# 20151 | 74 SO13         |
|           |              | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK G<br>LOT 1, BLOCK H<br>LOT 1, BLOCK H<br>LOT 2, BLOCK C<br>LOT 2, BLOCK C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | S<br>ACRES<br>0.260<br>0.099<br>0.207<br>7.943<br>6.250<br>0.091<br>0.731<br>0.105<br>2.787<br>0.094<br>0.115 | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345,984<br>272,247<br>3,976<br>31,825<br>4,576<br>121,421<br>4,098<br>5,031 |                  | CALLED<br>JESSE V<br>DOC# 20151                        | 74 S            |
| Convrient | ht © 2021    | HOA LOT AREA<br>LOT NO.<br>LOT 1, BLOCK A<br>LOT 1, BLOCK B<br>LOT 1, BLOCK C<br>LOT 1, BLOCK G<br>LOT 1, BLOCK H<br>LOT 1, BLOCK H<br>LOT 2, BLOCK G<br>LOT 2, BLOCK C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | S<br>ACRES<br>0.260<br>0.099<br>0.207<br>7.943<br>6.250<br>0.091<br>0.731<br>0.105<br>2.787<br>0.094<br>0.115 | SQ. FT.<br>11,314<br>4,323<br>9,024<br>345,984<br>272,247<br>3,976<br>31,825<br>4,576<br>121,421<br>4,098<br>5,031 |                  | CALLED<br>JESSE V<br>DOC# 20151                        | 74 9 13         |



| LOT 23<br>HOA<br>E:3096376.38<br>LOT<br>600 NAIL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CALLED 13.96 ACRES<br>GLENN A GEORGE<br>DOC. 2004056622<br>OPRWC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1/2" IREC<br>"ILLEGIBLE"<br>LOT 18<br>LOT 10<br>LOT 22<br>LOT 14 |
| N46°16'57"E<br>97.93'<br>10"<br>IRF<br>MATCHLINE SEE PAGE 3 OF 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| NORTH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| GRAPHIC SCALE IN FEET<br>100 0 50 100 200<br>1" = 100' @ 18X24<br>LEGEND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| HOA LOT AREAS         HOA LOT AREAS         LOT NO.       ACRES         SQ. FT.         LOT 1, BLOCK A       0.260         LOT 1, BLOCK B       0.099         LOT 1, BLOCK C       0.207         9,024         LOT 1, BLOCK G       6.250         LOT 1, BLOCK G       6.250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| LOT 1, BLOCK H 0.091 3,976<br>LOT 1, BLOCK K 0.731 31,825<br>LOT 2, BLOCK D 0.105 4,576<br>LOT 2, BLOCK G 2.787 121,421<br>LOT 8, BLOCK F 0.094 4,098<br>LOT 23, BLOCK C 0.115 5,031<br>10° P.U.E. 10° P.U.E.<br>R.O.W.<br>TYPICAL P.U.E.<br>ASSIGNMENT EXHIBIT<br>NOT TO SCALE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |





APPROVAL



|               |         | ·             |         | CUF | RVE TABL           | Ē       |         | an i su |         | CU                         | IRVE     | TABLE    |         |        |             |               |         |                         |            |
|---------------|---------|---------------|---------|-----|--------------------|---------|---------|---------------------------------------------|---------|----------------------------|----------|----------|---------|--------|-------------|---------------|---------|-------------------------|------------|
| ADIUS         | LENGTH  | CHORD BEARING | CHORD   | NO. | DELTA              | RADIUS  | LENGTH  | CHORD BEARING                               | CHORD   | NO                         | . 1      | DELTA    | RADIUS  | LENG   | TH          | CHORD BEARING | G CHORI | ٥                       |            |
| 0.00'         | 31.41'  | S06*05'56''W  | 28.28'  | C41 | 43°57'24"          | 660.00' | 506.34' | S07°02'37"W                                 | 494.02' | C81                        | 8        | I°14'13" | 275.00' | 39.5   | 3'          | S26°05'31"E   | 39.50'  |                         |            |
| 5.00'         | 23.56'  | N83*54'39"W   | 21.21'  | C42 | 6°59'59"           | 300.00' | 36.65'  | S32°31'18"W                                 | 36.63'  | C82                        | 5        | 0°59'43" | 325.00  | 289.2  | 26'         | S03*31'27"W   | 279.81  | <u>·</u>                |            |
| 75.00'        | 78.68'  | N30°42'53"W   | 78.41'  | C43 | 3°12'46"           | 385.00' | 21.59'  | S16°32'27"E                                 | 21.58'  | C83                        | 6        | 2°09'48" | 275.00  | 298.3  | 6'          | S60°06'13"W   | 283.94  | 6                       |            |
| 25.00'        | 175.83' | N38°01'03"W   | 173.69' | C44 | 95°22'31"          | 15.00'  | 24.97   | S27*28'06"W                                 | 22.18'  | C84                        | 2        | *26'01"  | 325.00' | 13.8   | 0'          | N89°58'06"E   | 13,80'  |                         |            |
| 75.00'        | 70.10   | N46°12'49"W   | 69.91'  | C45 | 4°16'07"           | 442.00' | 32.93'  | \$77°17'25"W                                | 32.92'  | C85                        | 1        | 8°21'56" | 325.00' | 104.1  | 8'          | \$79°34'07"W  | 103.73  | 1                       |            |
| 5.00'         | 23.56'  | N06°05'21"E   | 21.21'  | C46 | 17°42'07"          | 200.50' | 61.95'  | S88°16'32"W                                 | 61.70'  | C86                        | 8        | 6°04'29" | 15.00'  | 22.5   | 3'          | N66°34'36"W   | 20.47'  |                         |            |
| 0.00'         | 31.42'  | S83°54'04"E   | 28.29'  | C47 | 5°58'08"           | 199.50' | 20.78'  | N85*51'29"W                                 | 20.77   | C87                        | 2        | 8°32'03" | 325.00  | 161.8  | 5'          | N37°48'23"W   | 160.19  | ,                       |            |
| 5.00'         | 23.56'  | N06*05'21"E   | 21.21'  | C48 | 10°40'01"          | 434.00' | 80,80'  | N83°30'33"W                                 | 80.68'  | C88                        | 4        | 1°34'40" | 325.00' | 235.8  | <b>)4'</b>  | N72°51'45"W   | 230.70  | 0                       |            |
| 5.00'         | 23.56'  | S83°54'39"E   | 21.21   | C49 | 33°14'13"          | 506.00' | 293.53' | S85°12'21"W                                 | 289.43' | C89                        | 1,       | 4°24'47" | 325.00' | 81.7   | 6'          | S79°08'32"W   | 81.54   |                         |            |
| 25.00'        | 82.85'  | S46°12'49"E   | 82.62'  | C50 | 17°24'55"          | 199.50' | 60.64'  | S59°52'47"W                                 | 60.41'  | C90                        | 8        | 3°14'37" | 15.00'  | 21.7   | 9'          | N66°26'33"W   | 19.93'  |                         |            |
| 75.00'        | 148.78' | S38*01'03"E   | 146.97' | C51 | 17*24'55"          | 199.50' | 60.64'  | S59°52'47"W                                 | 60.41'  | C91                        | 1        | 6°28'58" | 400.00  | 115.0  | 17'         | S59°19'50"W   | 114.68  | 7                       |            |
| 25.00'        | 92.98'  | \$30°42'53"E  | 92.67'  | C52 | 7°32'47"           | 200.50' | 26.41'  | S54°56'43"W                                 | 26.39'  | C92                        | 1        | 6°23'32" | 300.00' | 85.8   | 3'          | N30°42'53"W   | 85.54   |                         |            |
| 5.00'         | 23,56'  | S06*05'21"W   | 21.21'  | C53 | 5°15'27"           | 498.00' | 45.70'  | S56°05'23"W                                 | 45.68'  | C93                        | 3        | 0°59'52" | 300.00  | 162.3  | 10'         | N38°01'03"W   | 160.33  | 7                       |            |
| 75.00'        | 107.88' | S59"19'50'W   | 107.51' | C54 | 16°39'23"          | 782.00' | 227.33' | S06°36'24"E                                 | 226.53' | C94                        | 1        | 4°36'20" | 300.00' | 76.4   | 7           | N46°12'49"W   | 76.27   |                         |            |
| 5.00'         | 21.79'  | N70°48'22"W   | 19.93'  | C55 | 89°58'47"          | 20.00   | 31.41'  | S06*05'57'W                                 | 28.28   | C95                        | 7        | 2°30'31" | 300.00' | 379.6  | 5'          | N02°39'23''W  | 354.82  | 7                       |            |
| 25.00'        | 55.17'  | N34°02'51"W   | 55.11'  | C56 | 50°44'07"          | 434.00' | 384.31' | S76°27'24'W                                 | 371.87' | C96                        | 5        | 0°44'07" | 470.00  | 416.1  | 8'          | S76°27'24"W   | 402.72  | 7                       |            |
| 5.00'         | 21.79'  | S16°48'04"W   | 19.93'  | C57 | 33°47'52"          | 506.00' | 298,48' | S84*55'32"W                                 | 294.17  | C97                        | 3        | 3°47'52" | 470.00' | 277.2  | 4'          | S84°55'32"W   | 273.24  | 7                       |            |
| 25.00'        | 140.82  | S46°00'38"W   | 139.72' | C58 | 90°00'00"          | 15.00'  | 23.56'  | N66°58'24"W                                 | 21.21'  | C98                        | 5        | 2°45'03" | 300.00' | 276.2  | 20'         | N59°58'24"E   | 266.55  | 7                       |            |
| 25.00'        | 279.47  | S08°57'47"W   | 270.94' | C59 | 8"14'13"           | 325.00' | 46.72   | N26*05'31"W                                 | 46.68'  | C99                        | 7        | 0°06'43" | 300.00' | 367.1  | 0.          | S58"35'43"E   | 344.63  | 7                       |            |
| 5.00'         | 21.79   | S25*57'00'W   | 19.93'  | C60 | 90°00'00"          | 15.00'  | 23.56'  | N23°01'36"E                                 | 21.21'  | C10                        | 0 6      | 2°09'48" | 300.00' | 325.4  | 9'          | S60°06'13"W   | 309.76  |                         |            |
| 25.00'        | 122.26' | S59°19'50"W   | 121.84' | C61 | 91°45'15"          | 15.00'  | 24.02'  | S66°05'47"E                                 | 21.54'  | C10                        | 1 5      | 0°59'43" | 350.00' | 311.5  | i <b>1'</b> | S03°31'27"W   | 301.33  | -                       |            |
| 0.00'         | 15.88'  | S60°11'12"W   | 15.81'  | C62 | 5°17'04"           | 335.00' | 30.90'  | S17°34'37"E                                 | 30,89'  | C10                        | 2 8      | °14'13"  | 300.00' | 43.1   | 3'          | S26°05'31"E   | 43.09'  |                         |            |
| 0.00'         | 15.88'  | S60°11'12"W   | 15.81'  | C63 | 43°57'24"          | 610.00' | 467.98' | S07*02'37"W                                 | 456.59' | C10                        | 3 4      | 3°57'24" | 635.00' | 487.1  | 6'          | S07"02'37"W   | 475.30  | ,                       |            |
| 0.00'         | 31.42   | N83*54'04''W  | 28.29   | C64 | 6*59'59"           | 275.00' | 33.60'  | \$32°31'18'W                                | 33.58'  | C10                        | 4 5      | °17'04"  | 360.00' | 33.2   | 0'          | S17°34'37"E   | 33,19'  | 1                       |            |
| 5.00          | 22.94   | N82*43'30"\M  | 20.77   | C65 | 91*54'18"          | 15.00'  | 24.06'  | S81°58'26''W                                | 21 56'  | G10                        | 5 2      | 0°41'35" | 325.00  | 1173   | 8'          | S40°33'25"E   | 116.74  | -                       |            |
| 75.00         | 249.02  | N02*30'22"M   | 305 35' | CEE | 20292202           | 275.00  | 126.05' | N37°48'23"M                                 | 135.54  | C10                        | 7 0      | 2613     | 492.50  | 5.10   | <u>,</u>    | S28°43'12"W   | 5 19'   | -                       |            |
| 5.00          | 090.02  | NI70*2EVE0#E  | 94.94   | C67 | 20 02 00           | 15.00   | 21.05   | N16°30'31"E                                 | 10.36   |                            | <u> </u> | <u></u>  |         | 1 0.11 |             |               | 1       |                         |            |
| 5.00          | 40.70   | N10 0002 E    | 47.69   | 007 | 07250105           | 225.00  | 457.00  | N40%56/04%5                                 | 156.34  | łL                         |          | LINE     | TABLE   |        |             | LINE TABL     | E       |                         | L          |
| 4.00          | 40.40   | 520 39 00 E   | 40.04   | 000 | E0%E0142*          | 375.00  | 222.76  | N02*24/27"E                                 | 322.96  |                            | NO.      | BEARI    | NG L    | ENGTH  | NO.         | BEARING       | LENGTH  | NO.                     | B          |
| F.00          | 40.10   | N31 1030 E    | 40.34   | 009 | 50 5545<br>6005608 | 402.50  | 43.94   | 64080000                                    | 42.00   | $\left\{ \right. \right\}$ | L1       | N38°54'3 | 9"W     | 20.97' | L14         | S51*05'21"W   | 52.33'  | L28                     | <b>S</b> 2 |
| 5.00          | FL.17   | N// 44 00 VV  | 10.91   | 074 | 3 03 39            | 492.00  | 40.04   | 512 2300 E                                  | 43:02   |                            | L2       | N38°54'3 | 39"W    | 12.90' | L15         | S51°05'21'W   | 167,56' | L29                     | <b>S1</b>  |
| 0.UU<br>5.001 | 23:30   |               | 21.21   | 070 | 3/20/408           | 492.50  | 23,37   | 004924/22/E                                 | 23,31   |                            | L3       | N38°54'3 | 39"W    | 60.00' | L16         | N38°53'28"W   | 8.55'   | L30                     | N21        |
| 5.00          | 23.56   | N/8 35 52 E   | 21.21   | 072 | 3 30 13            | 492.00  | 40.55   | 504 34 33 E                                 | 31.20   | I                          | L4       | N25°26'4 | 41"W    | 51.41' | L17         | N33°35'52"E   | 52.65'  | L31                     | <b>S</b> 5 |
| 5.00          | 14.16   | S29721113"E   | 13.64   | 673 | 5"03'58"           | 492.50  | 43.55   | SUU 13 28 E                                 | 43.53   | [                          | L5       | N29°26'  | 17"W    | 50.69' | L19         | S14*56'05"E   | 52.89'  | L32                     | S68        |
| 1.00          | 188,48  | N30°05'39"W   | 121.96  | C/4 | 2*00'42"           | 492.50  | 17.29   | S03 18'52'W                                 | 17.29   | [                          | L6       | N36°19'3 | 38"W    | 55.06' | L20         | S20°13'09"E   | 9.11'   | L33                     | N57        |
| 5.00'         | 13.77   | S87°41'09"W   | 13.29'  | C75 | 6*41'30"           | 492.50  | 57.52'  | S07*39'58"W                                 | 57,49   | ļΓ                         | L7       | N43°28'3 | 32"W    | 54,67' | L21         | S23°28'08"E   | 47.44'  | L34                     | N32        |
| 5.00'         | 23.56'  | N11°24'08"W   | 21,21'  | C76 | 0°23'10"           | 492.50' | 3.32'   | S11°12'18"W                                 | 3.32'   |                            | L8       | N50°21'( | W"9(    | 51.01' | L22         | S23°28'08"E   | 17.26'  | L35                     | S66        |
| 75.00'        | 253.19' | N59°58'24"E   | 244.34' | C77 | 7°04'40"           | 492.50' | 60.84'  | S14°56'13"W                                 | 60.80'  |                            | L9       | S38*54'  | 39"E    | 50.00' | L23         | S23*28'08"E   | 25.73'  | L36                     | <b>S5</b>  |
| 75.00'        | 113.96' | S81*46'46"E   | 113.15  | C78 | 1°14'22"           | 492,50' | 10.65'  | S19°05'43'W                                 | 10.65'  |                            | L10      | S38°54'  | 39"E    | 12.90' | L24         | N59°09'43"W   | 38.45'  | L37                     | N24        |
| 5.00'         | 27.73'  | S16*56'35"E   | 23.95'  | C79 | 5°50'18"           | 492.50' | 50.19'  | S22*38'03"W                                 | 50.16'  |                            | L11      | S38°54'  | 39"E    | 25.97  | L25         | S44°22'07"E   | 51.12'  | L38                     | N52        |
| 25.00'        | 39.70'  | \$32°31'18"W  | 39.68'  | C80 | 2°51′53"           | 492.50' | 24.62'  | S26°59'09"W                                 | 24.62'  | ]                          | L12      | S51°05'2 | 21"W    | 52.33' | L26         | N21°58'24"W   | 21.40'  | L39                     | N41        |
|               |         |               |         |     |                    | •       |         |                                             |         | ŀ                          | 1.42     | 0049405  | ANE     | 199.96 | 1.97        | SEO*OO/FAIRE  | 44.001  | l'and the second second |            |



ENGINEER'S CERTIFICATION: STATE OF TEXAS COUNTY OF WILLIAMSON THAT I, ALEJANDRO E, GRANADOS, P.E., AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF ENGINEERING, AND DO HEREBY STATE THAT THIS PLAT CONFORMS WITH THE APPLICABLE ORDINANCES OF THE CITY OF LEANDER, TEXAS. ENGINEERED BY: Alight Ship ALEJANDRO E. GRANADOS, P.E. **REGISTERED PROFESSIONAL ENGINEER No. 130084** KIMLEY-HORN AND ASSOCIATES, INC. 10814 JOLLYVILLE ROAD, BUILDING 4, SUITE 200 **AUSTIN, TX 78759** THIS TRACT IS NOT WITHIN AN IDENTIFIED SPECIAL FLOOD HAZARD AREA INUNDATED BY 100-YEAR FLOOD AS IDENTIFIED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) FOR WILLIAMSON COUNTY, TEXAS, MAP 48491C0460F, DATED DECEMBER 20, 2019 ALEJANDRO E. GRANADOS, P.E. **REGISTERED PROFESSIONAL ENGINEER No. 130084** KIMLEY-HORN AND ASSOCIATES, INC. 10814 JOLLYVILLE ROAD, BUILDING 4, SUITE 200, AUSTIN, TX 78759 LEWERD & GRANDOS NIL 130084 **CITY OF LEANDER CERTIFICATION:** APPROVED THIS THE 25 DAY OF And 2022 A.D. AT A PUBLIC MEETING OF THE PLANNING AND ZONING COMMISSION OF THE CITY OF LEANDER, TEXAS AND AUTHORIZED TO BE FILED FOR RECORD BY THE COUNTY **CLERK OF WILLIAMSON COUNTY** LLEN COUFAL, SECRETAR PLANNING AND ZONING COMMISSIO PLANNING AND ZONING COMMISSION FOR CORPORATE ENTITY - IF THERE ARE NO LIEN HOLDERS STATE OF TEXAS COUNTY OF WILLIAMSON DOES HEREBY CERTIFY THAT THERE ARE NO LIEN HOLDERS AND DEDICATES TO THE PUBLIC FOREVER USE OF ALL ADDITIONAL ROW, STREETS, ALLEYS, EASEMENTS, PARKS, AND ALL OTHER LANDS INTENDED FOR PUBLIC DEDICATION, OR WHEN THE SUBDIVIDER HAS MADE PROVISION FOR PERPETUAL MAINTENANCE THEREOF. TO THE INHABITANTS OF THE SUBDIVISION AS SHOWN HEREON TO BE KNOW AS EDGEWOOD PHASE 1, SECTION 1. NAME OF AUTHORIZED OFFICER: WILLIAM 6. PEGEMAN TITLE OF OFFICER: MARA PRACO STATE OF TEXAS COUNTY OF WILLIAMSON BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_\_ 20 \_\_\_\_ PERSONALLY APPEARED, \_\_\_\_\_\_ ON BEHALF OF SAID \_\_\_\_\_\_ A DULY AUTHORIZED AGENT WITH AUTHORITY TO SIGN SAID DOCUMENT, PERSONALLY KNOWN TO ME (AND PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT (S)HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED. GIVEN UNDER MY HAND AND SEAL OF OFFICE ON THIS THE 1 DAY OF 15 20 22-Ant 25 NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS PRINTED NAME: AND THE STATE Notary Public, State of Texas MY COMMISSION EXPIRES ON: 04-11-2023 Copyright © 2021 nley-Horn and Associates, Inc. All rights reserved

#### SURVEYOR'S NOTES

- 1. THE BEARINGS, DISTANCES, AREAS AND COORDINATES SHOWN HEREON ARE BASED UPON THE TEXAS STATE PLANE COORDINATE SYSTEM GRID, CENTRAL ZONE (FIPS 4203) (NAD'83), AS DETERMINED BY THE GLOBAL POSITIONING SYSTEM (GPS). ALL DISTANCES AND COORDINATES SHOWN HEREON ARE ON THE SURFACE. THE SURFACE
- TO GRID SCALE FACTOR IS 0.9998800144. THE UNIT OF LINEAR MEASUREMENT IS U.S. SURVEY FEET ALL PROPERTY CORNERS OF THE LOTS IN THIS SUBDIVISION WILL BE MONUMENTED PRIOR
- TO LOTS SALES AND AFTER ROAD CONSTRUCTION WITH A 1/2-INCH IRON ROD WITH RED PLASTIC CAP STAMPED "KHA", UNLESS OTHERWISE NOTED.

SURVEYOR'S CERTIFICATION:

#### STATE OF TEXAS COUNTY OF WILLIAMSON

THAT I, JOHN G, MOSIER, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF LAND SURVEYING AND HEREBY STATE THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE ON-THE-GROUND SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION, IN ACCORDANCE WITH ALL CITY OF LEANDER ORDINANCE AND CODES, AND THAT ALL EXISTING EASEMENTS OF RECORD AS FOUND ON THE TITLE POLICY PROVIDED BY TITLE RESOURCES GUARANTY COMPANY, 2146981-COM (ISSUE DATE: AUGUST 9, 2021) HAVE BEEN SHOWN OR NOTED HERON.

WITNESS MY HAND THIS THE 9 DAY OF AUGUST, 2022

An & Praise

JOHN G. MOSIER REGISTERED PROFESSIONAL LAND SURVEYOR NO. 6330 10101 REUNION PLACE, SUITE 400 SAN ANTONIO, TEXAS 78216 PH. 210-541-9166 greg.mosier@kimley-horn.com

A METES AND BOUNDS DESCRIPTION OF A

52.610 ACRE TRACT OF LAND

BEING a 52,610 acre (2,291,683 square feet) of land situated in the Milton Hicks Survey Abstract No. 287 and the John T Church Survey Abstract No. 140, Williamson County, Texas; and being all of that certain 52.610 acre tract described in instrument to Cannon 140 LP in Document No. 2021125997 of the Official Public Records of Williamson County; and being more particularly described as follows:

BEGINNING at a 1/2 inch iron rod (with plastic cap stamped "Haynie") found marking the south corner of a called 13.96 acre tract described in instrument to Glenn A. George in Document No. 2004056622 of the Official Public Records of Williamson County and the western-most corner of the herein described tract on the northeasterly right-of-way line of County Road 175 (variable width right-of-way)

- THENCE, along the southeasterly boundary of said 13.96 acre tract, the following seven (7) courses and distances: 1. North 65°07'16" East, 155.72 feet to a 1/2 inch iron rod (with illegible plastic cap) found for corner;
- North 11°00'19" West 64 49 feet to a 1/2 inch iron rod found for corner:
- North 3°04'47" East, 88.31 feet to a 60D nail found for corner; North 27°04'40" East, 451.33 feet to a 1/2 inch iron rod found for corner;
- North 46°16'57" East, 97.93 feet to a 1/2 inch iron rod (with plastic cap stamped "Haynie") found for corner,
- it to a 1/2 inch iron rod (with illegible plastic cap) round for co North 37°02'45" East, 351.67 feet to a 60D nail found marking the southwesterly corner of a called 173.8 acre tract described in instrument to CSM-Mason Family LP in Document No. 2011086909 of the Official Public Records of Williamson County;
- THENCE, along the southerly boundary of said 173.8 acre tract, the following four (4) courses and distances North 85°30'49" East, 531, 19 feet to a 1/2 inch iron rod found for corner;
- North 87°36'46" East, 404.39 feet to a 1/2 inch iron rod found for corner;
- South 89°19'51" East, 194.84 feet to a 1/2 inch iron rod found for corner; South 72°49'10" East, 34.92 feet to a 60D nail found for corner on the westerly boundary line of a called 8.35 acre tract described in instrument to Brian K. and Lisa S. Flachs in Document No. 2005033065 of the Official Public Records of Williamson County;

THENCE, along the westerly and southerly boundary of said 8.35 acre tract, the following two (2) courses and distances: 1. South 29°29'44" East, 180.49 feet to a 60D nail found for corner; 2. South 57\*13'44" East, 47.94 feet to a point for corner;

North 71°58'33" West, 361.48 feet to a 1/2 inch iron rod found for corner;

South 16°08'00" East, 59.35 feet to a 1/2 inch iron rod found for corner;

South 30°14'04" West, 74.69 feet to a 1/2 inch iron rod found for corner.

Road 175 marking the southwest corner of the herein described tract;

- THENCE, crossing aforesaid 120.2385 acre tract and 20.1937 acre tract the following eighteen (18) courses and distances:
- South 68°01'36" West, 18.37 feet to a point for corner; North 57°13'44" West, 41.04 feet to a point for corner;
- North 32°38'54" West, 8.29 feet to a point for corner;
- South 66°27'38" West, 39.13 feet to a point for corner; South 23°32'22" East, 158.76 feet to a point of for corner
- in a northeasterly direction, along a non-tangent curve to the right, a central angle of 2°26'01", a radius of 325.00 feet, a chord bearing and distance of North 89°58'06" East, 13.80 feet, and a total arc length of 13.80 feet to a point for corner; South 1°11'07" West, 50.00 feet to a point for corner;
- South 4°32'49" East, 157.23 feet to a point for corner;
- South 70°18'57" West, 154.21 feet to a point for corner; South 33°31'36" West, 120.37 feet to a point for corner;
- South 20°27'33" West, 54.04 feet to a point for corner;
- South 6°17'08" West, 53.73 feet to a point for corner; South 9"40'10" East, 53.64 feet to a point for corner;
- South 21°55'04" East, 57.90 feet to a point for corner;
- South 29°02'43" East, 115.66 feet to a point for corner South 59°47'23" West, 187.83 feet to a point of for corner;
- 17. in a northeasterly direction, along a non-tangent curve to the left, a central angle of 20°41'35", a radius of 325.00 feet, a chord bearing and distance of South 40°33'25" East, 116.74 feet, and a total arc length of 117.38 feet to a point for corner; South 10°53'34" West, 312.48 feet to a point for corner on the northeasterly boundary of a 83.693 acre tract two described in instrument to CSM-Mason Family LP in Document No. 2011086909 of the Official Public Records of Williamson County;

North 70°27'18" West, 490.77 feet to a 1/2 inch iron rod (with plastic cap stamped "Haynie") found for corner;

South 13°53'07" West, 523.62 feet to a 1/2 inch iron rod (with plastic cap stamped "Haynie") found for corner;

South 2\*47'12" West, 64.32 feet to a 1/2 inch iron rod (with plastic cap stamped "Haynie") found for corner;

THENCE along the northeasterly and northwesterly boundary of said 83.693 acre tract the following seven (7) courses and distances:

South 42°20'53" West. 97.51 feet to a 1/2 inch iron rod found for corner on the northeasterly right-of-way line of aforesaid County

AUSTIN EVENS

Comm. Expires 04 11-2023 Notary 10 131969609

THENCE, along the northeasterly right-of-way of said County Road 175, the following three (3) courses and distances: 1. North 52°53'24" West, 15.02 feet to a cotton spindle found for corner; North 41°22'30" West, 69.16 feet to a 1/2 inch iron rod (with plastic cap stamped "Haynie") found for corner; North 38°53'28" West, 998.54 feet to the POINT OF BEGINNING and containing 52.610 acres of land in Williamson County, Texas. The basis of bearing for this description is the Texas State Plane Coordinate System Grid, Central Zone (FIPS 4203) (NAD'83). All distances are on the Surface and shown in U.S. Survey Feet. The Surface to Grid scale factor is 0.9998800144. This document was prepared in the office of Kimley-Horn and Associates, Inc. in San Antonio, Texas.

CONSTRUCTED. 11. ALL UTILITY LINES MUST BE LOCATED UNDERGROUND.

GENERAL PLAT NOTES:

WORKS DEPARTMENT.

(SEE ASSIGNMENT EXHIBIT)

DECEMBER 20, 2019.

1

5.

7

ZONING COMMISSION ON 08/05/2021 OR WAIVERS TO ORDINANCE REQUIREMENTS. SINGLE-FAMILY & TWO FAMILY PLAT NOTES:

NO DRIVEWAY SHALL BE CONSTRUCTED CLOSER THAN 50' OR 60% OF PARCEL FRONTAGE, WHICHEVER IS LESS, TO THE ROW OF AN INTERSECTING LOCAL OR COLLECTOR STREET OR 100' OR 60% OF PARCEL FRONTAGE, WHICHEVER IS LESS, TO THE ROW OF AN INTERSECTING ARTERIAL STREET. THE HOA WILL OWN AND MAINTAIN THE FOLLOWING LOTS: BLOCK A, LOT 1; BLOCK B, LOT 1; 2.

- BLOCK H, LOT 1; BLOCK K, LOT 1. THE HOA BY LAWS ARE RECORDED IN THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON 3.
- THE OPEN CHANNELS, DETENTION AND WATER QUALITY AREAS.
- BE CONTAINED IN A DRAINAGE EASEMENT).

FOR EVERY SIX HUNDRED (600) SQUARE FEET OF AREA IN THE LANDSCAPE LOT 1. BLOCK A: TWO (2) SHADE TREES (TWO-INCH CALIPER OR LARGER) AND FOUR (4) SHRUBS (FIVE GALLON CONTAINER SIZE OR LARGER) SHALL BE PLANTED AND MAINTAINED. TWO ORNAMENTAL TREES PER SHADE TREE MAY BY SUBSTITUTED FOR UP TO FIFTY PERCENT OF THE SHADE TREES IF DESIRED. A SIX-FOOT PRIVACY FENCE, BUT NO HIGHER THAN THREE FEET WITHIN TWENTY FIVE FEET OF AN INTERSECTING STREET, SHALL BE CONSTRUCTED OF ONE OR MORE OF THE FOLLOWING MATERIALS: BRICK, STONE, CAST UNIT, OR OTHER SIMILAR MATERIAL APPROVED BY THE DIRECTOR OF PLANNING. IN ADDITION TO THE MATERIALS LISTED ABOVE, TEXTURED PRE-CAST CONCRETE (E.G. WOODCRETE) IS ALSO PERMITTED WHEN THE PRIVACT FENCE IS ADJACENT TO

COLLECTORS, ALL COLUMNS ARE REQUIRED TO HAVE CONCRETE FOOTINGS, THE

#### STATE OF TEXAS COUNTY OF WILLIAMSON

I, NANCY RISTER, CLERK OF THE COUNTY COURT OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT IN WRITING, WITH ITS CERTIFICATE WAS FILED FOR RECORD IN MY OFFICE ON THE DAY OF AMAINT, 2022, A.D., AT O'CLOCK, M., AND DULY RECORDED THIS THE DAY OF AMANA . 20 22 A.D., AT OCLOCK M.,

LANDSCAPE LOT IS REQUIRED TO BE MAINTAINED BY A PRIVATE ASSOCIATION.

IN THE PLAT RECORDS OF SAID COUNTY, IN INSTRUMENT NO. 2022 02.40 TO CERTIFY WHICH, WITNESS MY HAND AND SEAL AT THE COUNTY COURT OF SAID COUNTY, AT MY

NANCY RISTER, CLERK, COUNTY COURT OF WILLIAMSON COUNTY, TEXAS

BY:

52.610 ACRES MILTON HICKS SURVEY, ABSTRACT NO. 287 J.T. CHURCH SURVEY, ABSTRACT NO. 140 CITY OF LEANDER,

WILLIAMSON COUNTY, TEXAS



JOHN G. MOSIER 6330

# 2022 023 0

THIS SUBDIVISION IS WHOLLY CONTAINED WITHIN THE CURRENT CORPORATE LIMITS OF THE CITY OF LEANDER, TEXAS. NO LOT IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO THE CITY OF

LEANDER WATER DISTRIBUTION AND WASTEWATER COLLECTION FACILITIES. A BUILDING PERMIT IS REQUIRED FROM THE CITY OF LEANDER PRIOR TO CONSTRUCTION OF ANY BUILDING OR SITE IMPROVEMENTS ON ANY LOT IN THIS SUBDIVISION. NO BUILDINGS, FENCES, LANDSCAPING OR OTHER STRUCTURES ARE PERMITTED WITHIN DRAINAGE EASEMENTS SHOWN EXCEPT AS APPROVED BY THE CITY OF LEANDER PUBLIC

PROPERTY OWNER SHALL PROVIDE FOR ACCESS TO DRAINAGE EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY THE CITY OF LEANDER. ALL EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY **DWNER OR HIS OR HER ASSIGNS.** 

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

NO PORTION OF THIS TRACT IS WITHIN A FLOOD HAZARD AREA AS SHOWN ON THE FLOOD INSURANCE RATE MAP PANEL # 48491C0460F FOR WILLIAMSON CO., EFFECTIVE

BUILDING SETBACKS NOT SHOWN HEREON SHALL COMPLY WITH THE MOST CURRENT COMPOSITE ZONING ORDINANCE OF THE CITY OF LEANDER . ADDITIONAL RESIDENTIAL GARAGE SETBACKS MAY BE REQUIRED AS LISTED IN THE CURRENT ZONING ORDINANCE. 10. SIDEWALKS SHALL BE INSTALLED ON BOTH SIDES OF CARTHAGE STREET, SANGER LANE ARGYLE ROAD, PROSPER ROAD, CELINA COVE, COPPELL COURT, MARIETTA STREET, FULTON DRIVE, GAINESVILLE ROAD AND WAXAHACHIE ROAD, THOSE SIDEWALKS NOT ABUTTING A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL LOT (INCLUDING SIDEWALKS ALONG STREET FRONTAGES OF LOTS PROPOSED FOR SCHOOLS, CHURCHES, PARK LOTS, DETENTION LOTS, DRAINAGE LOTS, LANDSCAPE LOTS, OR SIMILAR LOTS), SIDEWALKS ON ARTERIAL STREETS TO WHICH ACCESS IS PROHIBITED. SIDEWALKS ON DOUBLE FRONTAGE LOTS ON THE SIDE TO WHICH ACCESS IS PROHIBITED, AND ALL SIDEWALKS ON SAFE SCHOOL ROUTES SHALL BE INSTALLED WHEN THE ADJOINING STREET IS

THIS PLAT CONFORMS TO THE PRELIMINARY PLAT APPROVED BY THE PLANNING &

13. APPROVAL OF THIS FINAL PLAT DOES NOT CONSTITUTE THE APPROVAL OF VARIANCES

BLOCK C, LOT 1 AND 23; BLOCK D, LOT 1 AND 2; BLOCK F, LOT 8; BLOCK G, LOT 1 AND 2;

COUNTY, TEXAS UNDER DOCUMENT NUMBER 2022100341 THE HOMEOWNERS ASSOCIATION IS REQUIRED TO MOW AND MAINTAIN LANDSCAPING IN

THE CITY ACCEPTS AND MAINTAINS DRAINAGE AND WATER QUALITY IMPROVEMENTS CONTAINED IN OPEN CHANNELS, DETENTION AND WATER QUALITY AREAS. (WHICH SHOULD

KNOW ALL MEN BY THESE PRESENTS

OFFICE IN GEORGETOWN, TEXAS, THE DATE LAST SHOWN ABOVE WRITTEN





APPROVAL



| LEGEND                                                             |                                                                                        |  |  |  |  |  |  |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------|--|--|--|--|--|--|
|                                                                    | PROPERTY LINE                                                                          |  |  |  |  |  |  |
| 632 —                                                              | EXISTING CONTOUR                                                                       |  |  |  |  |  |  |
| OHP                                                                | EXISTING OVERHEAD POWER LINE                                                           |  |  |  |  |  |  |
| W                                                                  | EXISTING WATER LINE                                                                    |  |  |  |  |  |  |
| WW                                                                 | EXISTING WASTEWATER LINE                                                               |  |  |  |  |  |  |
| <br>======                                                         | EXISTING STORM LINE                                                                    |  |  |  |  |  |  |
| $\Diamond$                                                         | EXISTING POWER POLE                                                                    |  |  |  |  |  |  |
| -\$                                                                | EXISTING FIRE HYDRANT                                                                  |  |  |  |  |  |  |
| $\otimes$                                                          | EXISTING WATER METER                                                                   |  |  |  |  |  |  |
| @                                                                  | EXISTING WASTEWATER MANHOLE                                                            |  |  |  |  |  |  |
| $\nabla$ $\nabla$ $\nabla$ $\nabla$                                | EXISTING SIDEWALK                                                                      |  |  |  |  |  |  |
|                                                                    | 20' 40'<br>GRAPHIC SCALE 20'                                                           |  |  |  |  |  |  |
| SUPPLEMENTARY ANA<br>TREES WITHIN THE LIM<br>MANN ON APRIL 6TH, 20 | LYSIS OF THE SIGNIFICANT AND HERITAGE<br>ITS OF CLEARING WAS COMPLETED BY TREE<br>021. |  |  |  |  |  |  |

<u>NOTE:</u> IN THE EVENT OF A CONFLICT WITH TREE REMOVAL/PRESERVATION CALL OUTS ON PLAN SHEET(S) VERSUS TREE REMOVAL/PRESERVATION LIST, THE TREE LIST AND MITIGATION TABLE WILL APPLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY WITH CITY STAFF SHOULD ANY INCONSISTENCY EXIST WITHIN AN APPROVED PLAN SET. NO IN-FIELD CHANGES ARE MADE TO APPROVED PLANS, NO EXCEPTIONS.

| \      |                    |       |                         |  |  |  |  |  |
|--------|--------------------|-------|-------------------------|--|--|--|--|--|
|        |                    |       |                         |  |  |  |  |  |
|        |                    |       |                         |  |  |  |  |  |
| TREE # | TYPE               | DIA   | REASON REMOVED<br>SAVED |  |  |  |  |  |
| 1518   | CEDAR ELM          | 16.0" | SAVED                   |  |  |  |  |  |
| 1519   | LIVE (PLATEAU) OAK | 18.0" | SAVED                   |  |  |  |  |  |
| 1520   | CEDAR ELM          | 15.0" | SAVED                   |  |  |  |  |  |
| 1521   | TEXAS RED OAK      | 13.0" | SAVED                   |  |  |  |  |  |
| 1522   | TEXAS RED OAK      | 15.0" | SAVED                   |  |  |  |  |  |
| 1523   | POST OAK           | 14.0" | SAVED                   |  |  |  |  |  |
| 1524   | LIVE (PLATEAU) OAK | 17.0" | SAVED                   |  |  |  |  |  |
| 1525   | POST OAK           | 20.0" | SAVED                   |  |  |  |  |  |
| 1526   | LIVE (PLATEAU) OAK | 13.0" | SAVED                   |  |  |  |  |  |
| 1527   | LIVE (PLATEAU) OAK | 18.5" | DEAD                    |  |  |  |  |  |
| 1528   | LIVE (PLATEAU) OAK | 18.5" | DEAD                    |  |  |  |  |  |
| 1551   | POST OAK           | 14.0" | SAVED                   |  |  |  |  |  |
| 1552   | CEDAR ELM          | 12.0" | SAVED                   |  |  |  |  |  |
| 1553   | CEDAR ELM          | 11.0" | SAVED                   |  |  |  |  |  |
| 1554   | LIVE (PLATEAU) OAK | 9.0"  | SAVED                   |  |  |  |  |  |
| 1555   | LIVE (PLATEAU) OAK | 9.0"  | SAVED                   |  |  |  |  |  |
| 1556   | LIVE (PLATEAU) OAK | 14.0" | SAVED                   |  |  |  |  |  |
| 1557   | LIVE (PLATEAU) OAK | 11.0" | SAVED                   |  |  |  |  |  |
| 1558   | LIVE (PLATEAU) OAK | 11.0" | SAVED                   |  |  |  |  |  |
| 1559   | LIVE (PLATEAU) OAK | 9.0"  | SAVED                   |  |  |  |  |  |
| 1560   | CEDAR ELM          | 9.0"  | SAVED                   |  |  |  |  |  |
| 1561   | LIVE (PLATEAU) OAK | 25.0" | SAVED                   |  |  |  |  |  |
| 1562   | CEDAR ELM          | 9.0"  | SAVED                   |  |  |  |  |  |
| 1563   | LIVE (PLATEAU) OAK | 13.0" | SAVED                   |  |  |  |  |  |
| 1564   | LIVE (PLATEAU) OAK | 10.0" | SAVED                   |  |  |  |  |  |
| 1565   | LIVE (PLATEAU) OAK | 18.0" | SAVED                   |  |  |  |  |  |
| 1566   | LIVE (PLATEAU) OAK | 13.0" | SAVED                   |  |  |  |  |  |
| 1567   | LIVE (PLATEAU) OAK | 29.0" | SAVED                   |  |  |  |  |  |
| 1568   | POST OAK           | 16.0" | SAVED                   |  |  |  |  |  |
| 1570   | LIVE (PLATEAU) OAK | 17.0" | SAVED                   |  |  |  |  |  |
| 1571   | LIVE (PLATEAU) OAK | 18.0" | SAVED                   |  |  |  |  |  |
| 1572   | LIVE (PLATEAU) OAK | 12.0" | SAVED                   |  |  |  |  |  |
| 1573   | CEDAR FLM          | 10.0" | SAVED                   |  |  |  |  |  |
| 1574   | POST OAK           | 17.0" | SAVED                   |  |  |  |  |  |
| 1575   | POST OAK           | 24.0" | SAVED                   |  |  |  |  |  |
| 1576   | CEDAR ELM          | 11.0" | SAVED                   |  |  |  |  |  |
| 1577   | CEDAR ELM          | 10.0" | SAVED                   |  |  |  |  |  |
| 2760   | LIVE (PLATEAU) OAK | 23.0" | SAVED                   |  |  |  |  |  |
| 2761   | LIVE (PLATEAU) OAK | 18.0" | SAVED                   |  |  |  |  |  |
| 2762   | LIVE (PLATEAU) OAK | 29.0" | SAVED                   |  |  |  |  |  |
| 2763   | LIVE (PLATEAU) OAK | 30.0" | SAVED                   |  |  |  |  |  |
| 2764   |                    | 13.0" | SAVED                   |  |  |  |  |  |
| 3005   | POST OAK           | 12 0" | SAVED                   |  |  |  |  |  |
| 3006   | POST OAK           | 13.0" | SAVED                   |  |  |  |  |  |
| 3007   |                    | 22.0" | SAVED                   |  |  |  |  |  |
| 3015   |                    | 11.0" |                         |  |  |  |  |  |
| 3015   |                    | 12.0" |                         |  |  |  |  |  |
| 3017   |                    | 15.0  | SAVED                   |  |  |  |  |  |
| 3017   | LIVE (FLATEAU) UAK | 15.0" | SAVED                   |  |  |  |  |  |
| 3018   | PUSTUAK            | 17.0" | SAVED                   |  |  |  |  |  |

CALLED 83.693 ACRES TRACT TWO CSM-MASON FAMILY LP. DOC. No. 2011086909 OPRWC

EDGEWOOD PHASE 1-2 #21-PICP-035

# Σ < Ω E 2023 AUSTIN HONE: °. d 10/3/2023 50 50 | X | H | K | Š EXISTING CONDITIONS DEMOLITION PLAN BENCHMARKS NTER ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK. BM-101: "X" CUT IN CONCRETE ELEVATION: 915.04' S R TEXA WOOD EDGE/ AMENITY C 0 CITY WILLIAMSC APPROVAL SHEET NUMBER 10

![](_page_166_Figure_0.jpeg)

| EROSION CONTROL LEGEND |                                       |                                          |  |  |  |  |  |
|------------------------|---------------------------------------|------------------------------------------|--|--|--|--|--|
|                        |                                       | PROPERTY LINE                            |  |  |  |  |  |
|                        | —632———                               | - PROPOSED CONTOUR                       |  |  |  |  |  |
|                        | —632——                                | EXISTING CONTOUR                         |  |  |  |  |  |
| SF                     | <b>—</b> SF <b>—</b>                  | - SILT FENCE                             |  |  |  |  |  |
| CE                     |                                       | STABALIZED CONSTRUCTION<br>ENTRANCE/EXIT |  |  |  |  |  |
| IP                     |                                       | INLET PROTECTION                         |  |  |  |  |  |
| RB                     | 8                                     | ROCK BERM                                |  |  |  |  |  |
|                        | —LOC ———                              | LIMITS OF<br>CONSTRUCTION                |  |  |  |  |  |
| (TP)                   | TP TP                                 | - TREE PROTECTION                        |  |  |  |  |  |
| $\lor$                 | · · · · · · · · · · · · · · · · · · · | LIMITS OF REVEGETATION                   |  |  |  |  |  |
| CX                     | * * * * *                             | CURLEX MATTING                           |  |  |  |  |  |
|                        |                                       |                                          |  |  |  |  |  |

![](_page_166_Picture_2.jpeg)

#### NOTES:

EDGEWOOD PHASE 1-2 #21-PICP-035

> CALLED 83.693 ACRES TRACT TWO CSM-MASON FAMILY LP. DOC. No. 2011086909

- 1. CONTRACTOR IS SOLELY RESPONSIBLE FOR IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL SWPPP CONTROLS -CONTROLS SHOWN ON THIS SITE MAP ARE SUGGESTED CONTROLS ONLY.
- CONTRACTOR SHALL RECORD INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL DATES FOR EACH BMP EMPLOYED (WHETHER CALLED OUT ON ORIGINAL SWPPP OR NOT) DIRECTLY ON THE SITE MAP.
- THE ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF LEANDER RULES AND REGULATIONS.
- 4. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURE DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(D) OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
- TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL AND LANDSCAPE PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING, THE BUILDING(S), AND SITE PAVING.
- 6. BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE: SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF.
- ADDITIONAL EROSION AND SEDIMENTATION CONTROLS MAY BE REQUIRED BY THE CITY DURING CONSTRUCTION.
- 8. REFERENCE EROSION CONTROL NOTES AND DETAILS ON SHEET 30.
- 9. IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING [ECM 1.4.4.B.3, SECTION 5, I.]. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY [ECM 1.4.4.D.4].
- 10. ALL DISTURBED AREAS TO BE RE-VEGETATED PER CITY OF LEANDER STANDARDS.
- 11. THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENT CONTROLS ON SITE

#### THROUGHOUT THE DURATION OF THE PROJECT. BENCHMARKS

ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK. BM-101: "X" CUT IN CONCRETE ELEVATION: 915.04'

APPROVAL

 $\widehat{\ }$ ى <sup>©</sup> 10/3/2023 | X | X | Y | AN Ц CONTROL EROSION R ഗ FZ БXА Ш  $\geq$ Ш D C E E O E C **WILLI** ШМ ш 

SHEET NUMBER

![](_page_167_Figure_0.jpeg)

![](_page_168_Figure_0.jpeg)

EXIS

POA-EX-Q2 16.67

|         |        |         |           |         |          |         |         |         |        |         |          |           |         |        |         |          |           |         | 0          |
|---------|--------|---------|-----------|---------|----------|---------|---------|---------|--------|---------|----------|-----------|---------|--------|---------|----------|-----------|---------|------------|
|         |        |         | SHA       | LLOW CO | NCENTRAT | ED FLOW |         |         |        |         |          | 9         | CHANNEL | FLOW   |         |          |           |         | TOTAL Tc** |
| IN      |        | Grass   | Surface   |         |          | Paved S | Surface |         |        | Cha     | nnel Flo | W         |         |        | Cha     | nnel Flo | w 2       |         | (min)      |
| Tt(min) | L (ft) | V (fps) | S (ft/ft) | Tt(min) | L        | V (fps) | S       | Tt(min) | L (ft) | V (fps) | n        | S (ft/ft) | Tt(min) | L (ft) | V (fps) | n        | S (ft/ft) | Tt(min) |            |
| 12.77   | 2485   | 3.35    | 0.043     | 12.38   | 0        | 0.00    | 0.000   | 0.00    | 369    | 3.9     | 0.040    | 0.019     | 1.58    |        | -       | 0.035    |           | 0.00    | 26.73      |
| 8.85    | 1837   | 3.64    | 0.051     | 8.40    | 0        | 0.00    | 0.000   | 0.00    | 182    | 3.9     | 0.040    | 0.019     | 0.78    | -      | -       | 0.035    | -         | 0.00    | 18.04      |
| 8.68    | 1869   | 2.50    | 0.024     | 12.46   | 0        | 0.00    | 0.000   | 0.00    | 1997   | 5.1     | 0.035    | 0.025     | 6.53    |        | -       | 0.035    | -         | 0.00    | 27.67      |
| 8.31    | 1089   | 2.60    | 0.026     | 6.98    | 0        | 0.00    | 0.000   | 0.00    | 465    | 5.5     | 0.035    | 0.021     | 1.41    |        | -       | 0.035    | -         | 0.00    | 16.69      |

![](_page_168_Figure_6.jpeg)

EXISTING CONTOUR

Edgewood Amenity DETENTION RESULTS - SCS METHOD

| TINC | CONDITIONS |  |
|------|------------|--|
| TING | CONDITIONS |  |

| t of Analysis | Total Drainage<br>Area (Acres) | Total Impervious<br>Cover Area<br>(acres) | Impervious Area<br>(%) | Storm Event          | Existing Runoff<br>(cfs)             |
|---------------|--------------------------------|-------------------------------------------|------------------------|----------------------|--------------------------------------|
| A             | 106.01                         | 0.54                                      | 0.51%                  | 2<br>10<br>25<br>100 | 186.69<br>363.84<br>486.35<br>700.12 |
| A1            | 67.32                          | 0.03                                      | 0.05%                  | 2<br>10<br>25<br>100 | 121.36<br>232.48<br>310.03<br>442.45 |
| в             | 119.82                         | 0.53                                      | 0.45%                  | 2<br>10<br>25<br>100 | 208.04<br>402.63<br>535.94<br>770.89 |

| -A7 |           |           |           |     |
|-----|-----------|-----------|-----------|-----|
| 2   | EX-Q10    | EX-Q25    | EX-Q100   | - 0 |
| CFS | 32.17 CFS | 42.58 CFS | 60.47 CFS |     |

![](_page_168_Figure_11.jpeg)

![](_page_168_Figure_12.jpeg)

![](_page_169_Figure_0.jpeg)

|         | SHALLOW CONCENTRATED FLOW |         |           |         |      |         |         |         | CHANNEL FLOW |              |               |                   |         |        |         | TOTAL Tc** |           |         |       |
|---------|---------------------------|---------|-----------|---------|------|---------|---------|---------|--------------|--------------|---------------|-------------------|---------|--------|---------|------------|-----------|---------|-------|
|         | 5-                        | Grass   | Surface   |         | 5    | Paved   | Surface |         | 10<br>       | Cha          | nnel Flo      | w                 |         | 2      | P       | ipe Flow   | v         |         | (min) |
| Tt(min) | L (ft)                    | V (fps) | S (ft/ft) | Tt(min) | L    | V (fps) | S       | Tt(min) | L (ft)       | V (fps)      | n 🎴           | S (ft/ft)         | Tt(min) | L (ft) | V (fps) | n 💙        | S (ft/ft) | Tt(min) |       |
| 12.77   | 1530                      | 2.98    | 0.034     | 8.57    |      | -       |         | 0.00    | 576          | 5.0          | 0.035         | 0.036             | 1.92    | 0      | 8.0     | 0.013      | 0.010     | 0.00    | 23.26 |
| 7.53    | 352                       | 2.60    | 0.026     | 2.26    | ·=:  | 150     | -       | 0.00    | -            | 8 <b>-</b> . | -             | -                 | 0.00    | 1352   | 8.0     | 0.013      | 0.010     | 2.82    | 12.60 |
| 5.36    | 376                       | 3.23    | 0.040     | 1.94    | -    | -       | -       | 0.00    | -            | -            | -             | (( <del>#</del> ) | 0.00    | -      | -       | -          | -         | 0.00    | 7.31  |
| 6.29    | -                         | -       |           | 0.00    | -    | -       |         | 0.00    | 2            | -            | 1             | 1                 | 0.00    | 1542   | 8.0     | 0.013      | 0.010     | 3.21    | 9.50  |
| 9.93    | 1217                      | 3.95    | 0.060     | 5.13    | (=)  |         |         | 0.00    | -            | 6775         | - <b></b> 7// | )) <del>2</del> 5 | 0.00    | 0      | 8.0     | 0.013      | 0.010     | 0.00    | 15.06 |
| 7.63    | -                         | -       | -         | 0.00    | 138  | 1.93    | 0.009   | 1.19    | 708          | 5.1          | 0.035         | 0.010             | 2.31    | 137    | 8.0     | 0.013      | 0.010     | 0.29    | 11.42 |
| 6.78    | 471                       | 4.89    | 0.092     | 1.60    | -    | -       | -       | 0.00    |              | -            | -             | -                 | 0.00    | +      | -       | -          | -         | 0.00    | 8.38  |
| 8.68    | 1869                      | 2.50    | 0.024     | 12.46   | -    | -       | •       | 0.00    | 1997         | 5.5          | 0.035         | 0.021             | 6.05    | +      | -       |            | -         | 0.00    | 27.20 |
| 6.71    | 187                       | 2.10    | 0.017     | 1.48    | 1.00 |         | -       | 0.00    | 116          | 6.0          | 0.016         | 0.027             | 0.32    | 711    | 8.0     | 0.013      | 0.010     | 1.48    | 9.99  |
| 9.67    | 941                       | 2.75    | 0.029     | 5.71    | -    | -       | -       | 0.00    | 465          | 5.5          | 0.035         | 0.021             | 1.41    | -      | -       | -          |           | -       | 16.78 |

![](_page_169_Figure_3.jpeg)

![](_page_169_Figure_4.jpeg)

|                | 2           | 208.04           |
|----------------|-------------|------------------|
| 0.459/         | 10          | 402.63           |
| 0.45%          | 25          | 535.94           |
|                | 100         | 770.89           |
|                |             |                  |
| Imponious Area |             | Developed Runoff |
|                | Storm Event | (With Detention) |
| (70)           |             | (cfs)            |
|                | 2           | 162.83           |
| 20 489/        | 10          | 316.91           |
| 20.40%         | 25          | 420.17           |
|                | 100         | 585.03           |
|                | 2           | 115.99           |
| 17.070/        | 10          | 210.14           |
| 17.27%         | 25          | 272.17           |
|                | 100         | 363.04           |
|                | 2           | 182.37           |
| 4 910/         | 10          | 369.75           |
| 4.01%          | 25          | 503.49           |
|                | 100         | 741.40           |

Storm Event

25

100

25

100

mpervious Area

(%)

0.51%

0.05%

(acres)

0.54

0.03

0.53

20.89

13.11

5.97

Existing Runoff

(cfs)

186.69

363.84

486.35

700.12

121.36

232.48

310.03

442.45

|                         | 8                         |                                                    |                            |
|-------------------------|---------------------------|----------------------------------------------------|----------------------------|
| xisting Runoff<br>(cfs) | Developed Runoff<br>(cfs) | Runoff Difference<br>at Point of<br>Analysis (cfs) | ls Developed<br>≤Existing? |
| 186.69                  | 162.83                    | (23.86)                                            | YES                        |
| 363.84                  | 316.91                    | (46.93)                                            | YES                        |
| 486.35                  | 420.17                    | (66.18)                                            | YES                        |
| 700.12                  | 585.03                    | (115.09)                                           | YES                        |
| 121.36                  | 115.99                    | (5.37)                                             | YES                        |
| 232.48                  | 210.14                    | (22.34)                                            | YES                        |
| 310.03                  | 272.17                    | (37.86)                                            | YES                        |
| 442.45                  | 363.04                    | (79.41)                                            | YES                        |
| 208.04                  | 182.37                    | (25.67)                                            | YES                        |
| 402.63                  | 369.75                    | (32.88)                                            | YES                        |
| 535.94                  | 503.49                    | (32.45)                                            | YES                        |
| 770.89                  | 741.40                    | (29.49)                                            | YES                        |

Note: All detention runoff calculations were analyzed using the Soil Conservation Services Method as documented in the Technical Release 55. Pond Pack V8i was used to calculate the runoff and design the

![](_page_169_Figure_8.jpeg)

PROPOSED

![](_page_169_Figure_10.jpeg)

![](_page_169_Figure_11.jpeg)

| AREA DESIGNATOR<br>AREA IN ACRES<br>PROPERTY LINE<br>PROPOSED FLOW DIRECTION<br>DRAINAGE DIVIDE LINE                                                                                                                                                                |                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DRAINAGE DIVIDE LINE         EXISTING CONTOUR         TIME OF CONCENTRATION FLOW PATH         PR-Q10       PR-Q25         PR-Q10       15.14 CFS         19.74 CFS       27.54 CFS                                                                                  | © 2023 KIMLEY-HORN AND ASSOCIATES, INC.<br>© 2023 KIMLEY-HORN AND ASSOCIATES, INC.<br>501 S. AUSTIN AVENUE, SUITE 1310, GEORGETOWN, TX 78626<br>PHONE: 512-520-0768 FAX: 512-418-1791<br>WWW KIMLEY-HORN COM |
|                                                                                                                                                                                                                                                                     | KHA PROJECT<br>067783129<br>067783129<br>067783129<br>DATE<br>0CTOBER 2023<br>SCALE: AS SHOWN<br>DESIGNED BY: AGD<br>DESIGNED BY: AGD<br>DRAWN BY: DDL                                                       |
|                                                                                                                                                                                                                                                                     | PROPOSED DRAINAGE<br>AREA MAP                                                                                                                                                                                |
| BERCHRARKS         LEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCED SYSTMS (CORS) NETWORK.         BT101       "X" CUT IN CONCRETE         LEVATION: 915.04       "Dependent" | EDGEWOOD<br>MENITY CENTER<br>CITY OF LEANDER                                                                                                                                                                 |

SHEET NUMBER 14

# LEGEND

![](_page_169_Figure_15.jpeg)

| POA-A7   |           |           |           |
|----------|-----------|-----------|-----------|
| PR-Q2    | PR-Q10    | PR-Q25    | PR-Q100   |
| 8.43 CFS | 15.14 CFS | 19.74 CFS | 27.54 CFS |

![](_page_170_Figure_0.jpeg)

| Peak Flow Calculation - Rational Method |                                                  |                                                                      |                                                                                                   |                                                                                                                                                     | RUNOFF COEFFICIENT (C)                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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        | RAINFALL IN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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|-----------------------------------------|--------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------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| Area<br>(Feet)                          | Area<br>(Acres)                                  | Impervious<br>Cover (SQ.<br>Feet)                                    | Impervious<br>Cover (Acres)                                                                       | % I.C.                                                                                                                                              | C<br>2-Year                                                                                                                                                     | C<br>10-Year                                                                                                                                                                                                                                                                                                                                                           | C<br>25-Year                                                                                                                                                                                                                                                                                                                                                              | C<br>100-Year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Tc (min)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | l<br>2-Year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | l<br>10-Year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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                                                                                                                                                                                                                                                                       |
| 20388                                   | 0.47                                             | 11645                                                                | 0.27                                                                                              | 57%                                                                                                                                                 | 0.54                                                                                                                                                            | 0.60                                                                                                                                                                                                                                                                                                                                                                   | 0.65                                                                                                                                                                                                                                                                                                                                                                      | 0.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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                                                                                                                                                                                                                                                                       |
| 55515                                   | 1.27                                             | 23443                                                                | 0.54                                                                                              | 42%                                                                                                                                                 | 0.46                                                                                                                                                            | 0.52                                                                                                                                                                                                                                                                                                                                                                   | 0.57                                                                                                                                                                                                                                                                                                                                                                      | 0.65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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        | 6.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 8.64                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                         | tion - Ratio<br>Area<br>(Feet)<br>20388<br>55515 | tion - Rational MethoArea<br>(Feet)Area<br>(Acres)203880.47555151.27 | tion - Rational MethodArea<br>(Feet)Impervious<br>Cover (SQ.<br>Feet)203880.4711645555151.2723443 | tion - Rational MethodArea<br>(Feet)Area<br>(Acres)Impervious<br>Cover (SQ.<br>Feet)Impervious<br>Cover (Acres)203880.47116450.27555151.27234430.54 | tion - Rational MethodArea<br>(Feet)Area<br>(Acres)Impervious<br>Cover (SQ.<br>Feet)Impervious<br>Cover (Acres)% I.C.203880.47116450.2757%555151.27234430.5442% | tion - Rational Method         RUN           Area<br>(Feet)         Area<br>(Acres)         Impervious<br>Cover (SQ.<br>Feet)         Impervious<br>Cover (Acres)         % I.C.         C<br>2.Year           20388         0.47         11645         0.27         57%         0.54           55515         1.27         23443         0.54         42%         0.46 | Impervious<br>(Feet)         Impervious<br>(Acres)         Impervious<br>Cover (SQ.<br>Feet)         Impervious<br>Cover (Acres)         % I.C.         C         C         C           20388         0.47         11645         0.27         57%         0.54         0.60           55515         1.27         23443         0.54         42%         0.46         0.52 | RUNOFF COEFFICIENT         Area<br>(Feet)       Area<br>(Acres)       Impervious<br>Cover (SQ.<br>Feet)       Impervious<br>Cover (Acres)       % I.C.       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C <td>RUNOFF COEFFICIENT (C)         Area<br/>(Feet)       Impervious<br/>(Acres)       Impervious<br/>Cover (SQ.<br/>Feet)       Impervious<br/>Cover (Acres)       % I.C.       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C</td> <td>RUNOFF COEFFICIENT ( C )         Area<br/>(Feet)       Impervious<br/>(Acres)       Impervious<br/>Cover (SQ.<br/>Feet)       Impervious<br/>Cover (Acres)       % I.C.       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C</td> <td>RUNOFF COEFFICIENT (C)       RA         Area<br/>(Feet)       Impervious<br/>Cover (SQ.<br/>Feet)       Impervious<br/>Cover (Acres)       % I.C.       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       <th< td=""><td>RUNOFF COEFFICIENT ( C )       RAINFALL IN         Area<br/>(Feet)       Impervious<br/>Cover (SQ.<br/>Feet)       Impervious<br/>Cover (Acres)       Mpervious<br/>P( I)       Mpervious       Mpe</td></th<></td> | RUNOFF COEFFICIENT (C)         Area<br>(Feet)       Impervious<br>(Acres)       Impervious<br>Cover (SQ.<br>Feet)       Impervious<br>Cover (Acres)       % I.C.       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C | RUNOFF COEFFICIENT ( C )         Area<br>(Feet)       Impervious<br>(Acres)       Impervious<br>Cover (SQ.<br>Feet)       Impervious<br>Cover (Acres)       % I.C.       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C | RUNOFF COEFFICIENT (C)       RA         Area<br>(Feet)       Impervious<br>Cover (SQ.<br>Feet)       Impervious<br>Cover (Acres)       % I.C.       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C <th< td=""><td>RUNOFF COEFFICIENT ( C )       RAINFALL IN         Area<br/>(Feet)       Impervious<br/>Cover (SQ.<br/>Feet)       Impervious<br/>Cover (Acres)       Mpervious<br/>P( I)       Mpervious       Mpe</td></th<> | RUNOFF COEFFICIENT ( C )       RAINFALL IN         Area<br>(Feet)       Impervious<br>Cover (SQ.<br>Feet)       Impervious<br>Cover (Acres)       Mpervious<br>P( I)       Mpervious       Mpe |

|        | Grate Inlet Calculation Table                                                                                    |   |     |    |                |                   |              |                          |
|--------|------------------------------------------------------------------------------------------------------------------|---|-----|----|----------------|-------------------|--------------|--------------------------|
| ir (Uı | r (Unsubmerged) Q = 3.0h1.5L Clogging Factor = 10% (Grate inlets in Sump)                                        |   |     |    |                |                   |              |                          |
| 00     | Required Q to Pass                                                                                               | I | NL  | ET | Available Weir | Required Min. 'h' | Provided 'h' | <b>Provided Capacity</b> |
| is)    | (w/ 50 % clogging factor)                                                                                        |   | (ft | .) | Length (ft.)   | (ft.)             | (ft.)        | (cfs)                    |
| 06     | 6 8.12 2.0 X 2.0 8.00' 0.49' 0.63' 10.7 cfs                                                                      |   |     |    |                |                   |              |                          |
| meas   | easured from weir elevation, if required min, 'h' greater than 0.42 ft (5 in) check using orifice equation below |   |     |    |                |                   |              |                          |

|                      |               |                                                  | Ar    | ea         | Inlet    | Са      |
|----------------------|---------------|--------------------------------------------------|-------|------------|----------|---------|
| Equations            | : Weir (U     | Insubmerged) Q = 3.0h1.5L                        |       |            |          | Clo     |
| Inlet # or<br>Area # | Q100<br>(cfs) | Required Q to Pass<br>( w/ 10 % clogging factor) |       | INL<br>(ft | ET<br>.) | Av<br>I |
| В                    | 9.79          | 10.88                                            | 3.0   | Х          | 3.0      |         |
|                      | 'h' mea       | sured from weir elevation: if re                 | quire | d m        | iin. 'h' | grea    |

| 5 | <b>Clogging Factor</b> | Equations         | : Orifice (  | Submerç                  |            |       |           |
|---|------------------------|-------------------|--------------|--------------------------|------------|-------|-----------|
|   | Available Area         | Required Min. 'h' | Provided 'h' | <b>Provided Capacity</b> | Inlet # or | Q100  | Requ      |
|   | (sq. ft.)              | (ft.)             | (ft.)        | (cfs)                    | Area #     | (cfs) | ( w/ 10 ' |
| 0 | 4.00                   | 0.14'             | 0.63'        | 8.5 cfs                  | В          | 9.79  |           |
|   |                        |                   |              |                          |            |       |           |

| quations  | : Orifice ( | Submerged) $Q = 4.82An^{-0}$ . | 5         | Clogging Factor = 10% (Area inlets in Sump) |                   |              |                          |  |
|-----------|-------------|--------------------------------|-----------|---------------------------------------------|-------------------|--------------|--------------------------|--|
| nlet # or | Q100        | Required Q to Pass             | INLET     | Available Area                              | Required Min. 'h' | Provided 'h' | <b>Provided Capacity</b> |  |
| Area #    | (cfs)       | (w/ 10 % clogging factor)      | (ft.)     | (sq. ft.)                                   | (ft.)             | (ft.)        | (cfs)                    |  |
| В         | 9.79        | 10.88                          | 3.0 X 3.0 | 6.60                                        | 0.20'             | 0.55'        | 21.2 cfs                 |  |
|           |             |                                |           |                                             |                   |              |                          |  |

й | 🗄 | Ъ INLET DRAINAGE AREA MAP Ŷ Ш S FZ EXA O AMENIT C WILLI*F* SHEET NUMBER 15

![](_page_171_Figure_0.jpeg)

![](_page_171_Picture_2.jpeg)

![](_page_171_Picture_3.jpeg)

2.

|                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                     | 2                                                                                                                                                                | D                                                                                                                                 | DATE BY                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                     | 150'<br>GRAPHIC SCALE 150                                                                                                                                        | 300'                                                                                                                              | REVISIONS                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                     | LEGEI<br>AREA II<br>AREA II<br>PROPE<br>EXISTIN<br>PROPO<br>PROPO                                                                                                | ND<br>DESIGNATOR<br>N ACRES<br>RTY LINE<br>IG STORM DRAIN LINE<br>SED DRAINAGE DIVIDE<br>SED FLOW DIRECTION<br>ATIVE FILTER STRIP | OCIATES, INC.<br>COCIATES, INC.<br>RGETOWN, TX 78626<br>512–418–1791<br>MM<br>FIRM F–928<br>No.                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                     |                                                                                                                                                                  |                                                                                                                                   | D ASSO<br>0, GEOF<br>DAX: 5<br>DRN.CO                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                    | ERALL Water Quality Drainage Basins                                                                                                                                                                 |                                                                                                                                                                  |                                                                                                                                   | N ANE<br>68 F<br>68 F<br>NGINE                                                                                                                   |
| Proposed Area (AC)         Proposed impervious C           24.78         10.28           16.88         7.16           0.30         0.06           0.42         0.22           0.17         0.10           0.15         0.02           1.15         0.47           8.74         0.13 <b>52.61 18.44</b> 30.82         0.00           0.58         0.00           31.40         0.00 | Action       % impervious cover       REQUIRE         41%       42%         20%       52%         559%       13%         41%       41%         1%       35%         0%       0%         0%       0% | B 185 REMOVAL       8948       6206       52       191       87       17       409       113       16024       0       0       0       0       0       0       0 | 9200<br>6350<br>52<br>191<br>87<br>17<br>409<br>0<br>16307<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0                           | © 2023 KIMLEY-HORI<br>501 S. AUSTIN AVENUE, SUIT<br>PHONE: 512-520-07<br>WWW.KIMLE<br>TEXAS REGISTERED E                                         |
| 84.01 18.44                                                                                                                                                                                                                                                                                                                                                                        | 22%                                                                                                                                                                                                 | 16024                                                                                                                                                            | 16307                                                                                                                             | LE OF TEXAS                                                                                                                                      |
| 6' SHARED USE PATH                                                                                                                                                                                                                                                                                                                                                                 | 3.1' VFS                                                                                                                                                                                            | UNIFOF                                                                                                                                                           | RM AND EVEN<br>< 20%                                                                                                              | KHA PROJECT<br>067783129<br>067783129<br>DATE<br>DATE<br>0CTOBER 2023<br>Scale: AS SHOWN<br>DESIGNED BY: AGD<br>DRAWN BY: DDL<br>CHECKED BY: AGD |
| S:<br>ENGINEERED VEGETATIVE FILTER STRI<br>RG-348, SECTION 3.4.6.<br>VFS TO BE SEEDED PER LEANDER GEN<br>EROSION AND SEDIMENTATION CONTR<br>ENGINEEREI                                                                                                                                                                                                                             | PS TO COMPLY WITH TCEQ<br>PERAL NOTE 11 FOR TEMPORARY<br>OLS.<br>D VEGETATIVE FILTER S<br>NTS                                                                                                       | STRIPS                                                                                                                                                           | . MIN OF 6 IN                                                                                                                     | OVERALL WATER<br>QUALITY PLAN                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                    | ELE<br>AME<br>DAT<br>STA<br>BM-<br>ELE                                                                                                                                                              | BENC<br>VATIONS HEREON ARE<br>RICAM DATUM 1988<br>A SYSTMS CONTINUA<br>TION (CORS) NETWORE<br>101: "X" CUT IN CONCRE<br>VATION: 915.04"<br>APP                   | HMARKS<br>REFERENCED TO THE NORTH<br>(NAVD) UTILIZING WESTERN<br>LLY OPERATING REFERENCE<br>(<br>TE                               | EDGEWOOD<br>AMENITY CENTER<br>CITY OF LEANDER<br>WILLIAMSON COUNTY, TEXAS                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                     |                                                                                                                                                                  |                                                                                                                                   | SHEET NUMBER                                                                                                                                     |

| s, Inc.   | Texas Commission on Environmental Quality                                                                                                                                                                                                               |                           |                                    |                                                                                           |                    | Texas                                   |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------|-------------------------------------------------------------------------------------------|--------------------|-----------------------------------------|
| ssociate  | TSS Removal Calculations 04-20-2009                                                                                                                                                                                                                     |                           |                                    | Project Name: Edgewood Ph 1-1                                                             |                    | TSS R                                   |
| and As    |                                                                                                                                                                                                                                                         |                           |                                    | Date Prepared: 9/1/202                                                                    | .3                 |                                         |
| mley-Horn | Additional information is provided for cells with a red triang<br>Text shown in blue indicate location of instructions in the Technica<br>Characters shown in red are data entry fields.<br>Characters shown in black (Bold) are calculated fields. Cha | al Guidanc                | e Manual - R                       | corner. Place the cursor over the cell<br>G-348.<br>will remove the equations used in the | spreadsheet        | Addition<br>Text sh<br>Charao<br>Charao |
| to Ki     | 1 The Required Load Reduction for the total project                                                                                                                                                                                                     | Calculation               | s from RG-348                      | Pages 3-27 to 3-30                                                                        | oproduction        | 1 The F                                 |
| iability  |                                                                                                                                                                                                                                                         |                           | s nom no-0+0                       | 1 ages 5-27 to 5-50                                                                       |                    | <u>1. 1110 1</u>                        |
| nout l    | Page 3-29 Equation 3.3: $L_M =$                                                                                                                                                                                                                         | 27.2(A <sub>N</sub> X F   | <b>'</b> )                         |                                                                                           |                    |                                         |
| be wit    | where: L <sub>M TOTAL PROJECT</sub> = A <sub>N</sub> =                                                                                                                                                                                                  | Net increas               | e in impervious                    | area for the project                                                                      | Icreased load      |                                         |
| shall     | P=                                                                                                                                                                                                                                                      | Average an                | nual precipitatio                  | on, inches                                                                                |                    | -                                       |
| s, Inc.   | Site Data: Determine Required Load Removal Based on the Entire Project<br>County =                                                                                                                                                                      | ct<br>Williamso           | on <b>T</b>                        | $P_{0}$                                                                                   |                    | Site                                    |
| ociates   | Predevelopment impervious area within the limits of the plan * = Total post-development impervious area within the limits of the plan * =                                                                                                               | 0.03                      | acres<br>acres                     | Boundary (52.61)+ OS (31.40)                                                              |                    | -                                       |
| d Asso    | Total post-development impervious cover fraction * =                                                                                                                                                                                                    | 0.22                      | inches                             |                                                                                           |                    |                                         |
| rn ane    | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                   | 40024                     |                                    |                                                                                           |                    |                                         |
| ley-Hc    | <ul> <li>The values entered in these fields should be for the total project area</li> </ul>                                                                                                                                                             | 10024                     | IDS.                               |                                                                                           |                    | * The v                                 |
| oy Kim    | Number of drainage basins / outfalls areas leaving the plan area =                                                                                                                                                                                      | 10                        | ٦                                  |                                                                                           |                    |                                         |
| ation b   |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| adapt     | 2. Drainage Basin Parameters (This information should be provided for                                                                                                                                                                                   | each basir                | <u>ı):</u><br>_                    |                                                                                           |                    | <u>2. Drain</u>                         |
| and       | Drainage Basin/Outfall Area No. =                                                                                                                                                                                                                       | WQP-A-                    | A 1                                |                                                                                           |                    |                                         |
| izatior   | = Total drainage basin/outfall area<br>= Predevelopment impervious area within drainage basin/outfall area                                                                                                                                              | 24.78<br>0.00             | acres<br>acres                     |                                                                                           |                    | _                                       |
| author    | Post-development impervious area within drainage basin/outfall area =<br>Post-development impervious fraction within drainage basin/outfall area =                                                                                                      | 10.28<br>0.41             |                                    |                                                                                           |                    | F<br>Pos                                |
| ritten .  | L <sub>M THIS BASIN</sub> =                                                                                                                                                                                                                             | 8948                      | IDS.                               |                                                                                           |                    | • • <del>·</del>                        |
| out wr    | S. mulcate the proposed BNP Code for this basin.                                                                                                                                                                                                        | Batch Evt                 | anded Detentio                     | on                                                                                        |                    | <u>3. Indica</u>                        |
| t with    | Removal efficiency =<br>4. Calculate Maximum TSS Load Removed (L <sub>P</sub> ) for this Drainage Basin                                                                                                                                                 | 91<br>by the sele         | percent                            | الع<br>الع                                                                                |                    | 4 Calcu                                 |
| cumen     | RG-348 Page 3-33 Equation 3.7: Lp =                                                                                                                                                                                                                     | (BMP effici               | encv) x P x (A <sub>1</sub>        | x 34 6 + A <sub>P</sub> x 0.54)                                                           |                    | <u>4. 00100</u>                         |
| his do    | where: $A_c =$                                                                                                                                                                                                                                          | Total On-Si               | te drainage are                    | a in the BMP catchment area                                                               |                    |                                         |
| on th     | $A_{\rm C} = A_{\rm I} = 0$                                                                                                                                                                                                                             | Impervious                | area proposed                      | in the BMP catchment area                                                                 |                    |                                         |
| eliance   | A <sub>P</sub> =<br>L <sub>R</sub> =                                                                                                                                                                                                                    | Pervious an<br>TSS Load r | ea remaining in<br>removed from th | the BMP catchment area<br>is catchment area by the proposed BMP                           |                    |                                         |
| oper r    | A <sub>C</sub> =                                                                                                                                                                                                                                        | 24.78                     | acres                              |                                                                                           |                    |                                         |
| impr      | $A_1 = A_P$                                                                                                                                                                                                                                             | 10.28<br>14.50            | acres<br>acres                     |                                                                                           |                    |                                         |
| of and    | L <sub>R</sub> =                                                                                                                                                                                                                                        | 10586                     | lbs                                |                                                                                           |                    |                                         |
| Reuse     |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| ared. F   | 5. Calculate Fraction of Annual Runoff to Treat the drainage basin / out                                                                                                                                                                                | tfall area                | •                                  |                                                                                           |                    | <u>5. Calcu</u>                         |
| 3 prep(   | Desired L <sub>M THIS BASIN</sub> =                                                                                                                                                                                                                     | 9200                      | lbs.                               |                                                                                           |                    |                                         |
| it was    | F =                                                                                                                                                                                                                                                     | 0.87                      | ٦                                  |                                                                                           |                    |                                         |
| which     | 6. Calculate Capture Volume required by the BMP Type for this drainage                                                                                                                                                                                  | ge basin / o              | utfall area.                       | Calculations from RG-348                                                                  | Pages 3-34 to 3-36 | <u>6. Calcu</u>                         |
| nt for    | Rainfall Depth =                                                                                                                                                                                                                                        | 1.44                      | inches                             |                                                                                           |                    |                                         |
| nd clie.  | On-site Water Quality Volume =                                                                                                                                                                                                                          | 40679                     | cubic feet                         |                                                                                           |                    |                                         |
| ose ar    |                                                                                                                                                                                                                                                         | Calculation               | s from RG-348                      | Pages 3-36 to 3-37                                                                        |                    |                                         |
| c purp    | Off-site area draining to BMP =                                                                                                                                                                                                                         | 30.82                     | acres                              |                                                                                           |                    |                                         |
| specific  | Off-site Impervious cover draining to BMP =<br>Impervious fraction of off-site area =                                                                                                                                                                   | 0.00<br>0.00              | acres                              |                                                                                           |                    |                                         |
| , the     | Off-site Runoff Coefficient =<br>Off-site Water Quality Volume =                                                                                                                                                                                        | 0.02<br>3222              | cubic feet                         |                                                                                           |                    |                                         |
| inly foi  | Storage for Sediment =                                                                                                                                                                                                                                  | 8780                      | - : - · ·                          |                                                                                           |                    |                                         |
| nded c    | The following sections are used to calculate the required water quality<br>The values for BMP Types not selected in cell C45 will show NA                                                                                                               | 52681<br>volume(s)        | for the selecte                    | ed BMP.                                                                                   |                    | To<br>The follo                         |
| s inter   |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| vice, i   |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| of ser    |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| ment      |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| instru    |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| as an     |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| erein,    |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| ited h.   |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| presen    |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| signs     |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| ind de    |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| epts a    |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| conce     |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| th the    |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| ner wit   |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| toget     |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| ment,     |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |
| docur     |                                                                                                                                                                                                                                                         |                           |                                    |                                                                                           |                    |                                         |

| s Commission on Environmental Quality                                                                                                                                                                                                                                       |                                                                                                                                  | Texas Commission on Environmental Quality                                                                                                                                                                                                                                                                                                                                                                                      | B                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| emoval Calculations 04-20-2009                                                                                                                                                                                                                                              | Project Name: Edgewood Ph 1-1<br>Date Prepared: 9/1/2023                                                                         | TSS Removal Calculations 04-20-2009       Project Name: Edgewood Ph 1-1         Date Prepared:       9/1/2023                                                                                                                                                                                                                                                                                                                  | DATE                                                     |
| onal information is provided for cells with a red triangle in the upper<br>nown in blue indicate location of instructions in the Technical Guidance Mar<br>cters shown in red are data entry fields.<br>cters shown in black (Bold) are calculated fields. Changes to these | r right corner. Place the cursor over the cell.<br>nual - RG-348.<br>a fields will remove the equations used in the spreadsheet. | Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.<br>Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.<br>Characters shown in red are data entry fields.<br>Characters shown in black (Bold) are calculated fields.<br>Changes to these fields will remove the equations used in the spreadsheet.      |                                                          |
| Required Load Reduction for the total project: Calculations from                                                                                                                                                                                                            | RG-348 Pages 3-27 to 3-30                                                                                                        | 1. The Required Load Reduction for the total project:       Calculations from RG-348       Pages 3-27 to 3-30                                                                                                                                                                                                                                                                                                                  | SN                                                       |
| Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$                                                                                                                                                                                                                          | noval resulting from the proposed development = $80\%$ of increased load                                                         | Page 3-29 Equation 3.3: L <sub>M</sub> = 27.2(A <sub>N</sub> x P)                                                                                                                                                                                                                                                                                                                                                              | EVISIO                                                   |
| $A_N = $ Net increase in im<br>P = Average annual pr                                                                                                                                                                                                                        | npervious area for the project<br>recipitation, inches                                                                           | where: $L_{M \text{ TOTAL PROJECT}}$ = Required TSS removal resulting from the proposed development = 80% of increased load<br>$A_N$ = Net increase in impervious area for the project<br>P = Average annual precipitation inches                                                                                                                                                                                              |                                                          |
| e Data: Determine Required Load Removal Based on the Entire Project<br>County = Williamson<br>Total project area included in plan * = 84.01 ac                                                                                                                              | cres Boundary (52.61)+ OS (31.40)                                                                                                | Site Data: Determine Required Load Removal Based on the Entire Project                                                                                                                                                                                                                                                                                                                                                         |                                                          |
| Predevelopment impervious area within the limits of the plan * = 0.03 ac<br>Total post-development impervious area within the limits of the plan* = 18.44 ac<br>Total post-development impervious cover fraction * = 0.22<br>P = 32 inc                                     | ches                                                                                                                             | County = Williamson '         Total project area included in plan * =       84.01       acres         Boundary (52.61)+ OS (31.40)         Predevelopment impervious area within the limits of the plan * =       0.03       acres         Total post-development impervious area within the limits of the plan * =       18.44       acres         Total post-development impervious cover fraction * =       0.22       0.22 | o z                                                      |
| L <sub>M TOTAL PROJECT</sub> = 16024 Ibs                                                                                                                                                                                                                                    | S.                                                                                                                               | P = 32 inches                                                                                                                                                                                                                                                                                                                                                                                                                  | 8626                                                     |
| Values entered in these fields should be for the total project area.                                                                                                                                                                                                        |                                                                                                                                  | L <sub>M TOTAL PROJECT</sub> = 16024 Ibs.<br>* The values entered in these fields should be for the total project area.                                                                                                                                                                                                                                                                                                        | 5, INC.<br>4, TX 7<br>5–1791<br>5–928                    |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  | Number of drainage basins / outfalls areas leaving the plan area = 10                                                                                                                                                                                                                                                                                                                                                          | OCIATES<br>OCIATES<br>RGETOWN<br>312-418<br>MM<br>FIRM F |
| nage Basin Parameters (This information should be provided for each basin):                                                                                                                                                                                                 |                                                                                                                                  | 2. Drainage Basin Parameters (This information should be provided for each basin):                                                                                                                                                                                                                                                                                                                                             | D ASS(<br>0, GEOF<br>AX: 5<br>DRN.CC<br>EERING           |
| Total drainage basin/outfall area = 16.88 ac                                                                                                                                                                                                                                | cres                                                                                                                             | Drainage Basin/Outfall Area No. = VFS-1                                                                                                                                                                                                                                                                                                                                                                                        | IN ANI<br>TE 131<br>768 F<br>768 F<br>EY-HO<br>ENGINE    |
| Predevelopment impervious area within drainage basin/outfall area = 0.03 ac<br>Post-development impervious area within drainage basin/outfall area = 7.16 ac                                                                                                                | ores                                                                                                                             | Total drainage basin/outfall area =       0.30       acres         Predevelopment impervious area within drainage basin/outfall area =       0.00       acres                                                                                                                                                                                                                                                                  | Y-HOR<br>E, SUI<br>220-07<br>V.KIML                      |
| st-development impervious fraction within drainage basin/outfail area = $0.42$<br>$L_{M THIS BASIN} = 6206$ Ibs                                                                                                                                                             | S.                                                                                                                               | Post-development impervious area within drainage basin/outfall area = 0.06 acres<br>Post-development impervious fraction within drainage basin/outfall area = 0.20                                                                                                                                                                                                                                                             | AVENU<br>AVENU<br>512-55<br>WWV<br>EGISTE                |
| ate the proposed BMP Code for this basin.                                                                                                                                                                                                                                   |                                                                                                                                  | $L_{M \text{ THIS BASIN}} = 52 \text{ Ibs.}$                                                                                                                                                                                                                                                                                                                                                                                   | O23 H<br>JSTIN<br>JSTIN<br>JSTIN<br>JSTIN<br>AS RE       |
| Proposed BMP = <b>Batch Extended</b><br>Removal efficiency = <b>91</b> pe                                                                                                                                                                                                   | Detention<br>ercent                                                                                                              | Proposed BMP = Vegetated Filter Strips                                                                                                                                                                                                                                                                                                                                                                                         | © 2<br>S. AL<br>PHC<br>TEX                               |
| ulate Maximum TSS Load Removed (L <sub>R</sub> ) for this Drainage Basin by the selected I                                                                                                                                                                                  | BMP Type.                                                                                                                        | Removal efficiency = 85 percent<br><u>4. Calculate Maximum TSS Load Removed (L<sub>R</sub>) for this Drainage Basin by the selected BMP Type.</u>                                                                                                                                                                                                                                                                              | 201                                                      |
| RG-348 Page 3-33 Equation 3.7: $L_R = (BMP \text{ efficiency})$                                                                                                                                                                                                             | $x P x (A_1 x 34.6 + A_P x 0.54)$                                                                                                | RG-348 Page 3-33 Equation 3.7: L <sub>R</sub> = (BMP efficiency) x P x (A <sub>1</sub> x 34.6 + A <sub>P</sub> x 0.54)                                                                                                                                                                                                                                                                                                         | min                                                      |
| where: $A_{\rm C}$ = Total On-Site drain<br>$A_{\rm I}$ = Impervious area p                                                                                                                                                                                                 | proposed in the BMP catchment area                                                                                               | where: A <sub>c</sub> = Total On-Site drainage area in the BMP catchment area                                                                                                                                                                                                                                                                                                                                                  | OF TEXAS                                                 |
| A <sub>P</sub> = Pervious area rem<br>L <sub>R</sub> = TSS Load remove                                                                                                                                                                                                      | naining in the BMP catchment area<br>ed from this catchment area by the proposed BMP                                             | $A_1$ = Impervious area proposed in the BMP catchment area<br>$A_P$ = Pervious area remaining in the BMP catchment area                                                                                                                                                                                                                                                                                                        | GRECORY DAVIS                                            |
| A <sub>C</sub> = <b>16.88</b> ac                                                                                                                                                                                                                                            | cres                                                                                                                             | $L_R$ = TSS Load removed from this catchment area by the proposed BMP                                                                                                                                                                                                                                                                                                                                                          | AGIGI<br>DCENSE                                          |
| $A_1 = 7.16$ ac<br>$A_P = 9.72$ ac                                                                                                                                                                                                                                          | ores                                                                                                                             | $A_{\rm C} = 0.30  \text{acres}$ $A_{\rm I} = 0.06  \text{acres}$                                                                                                                                                                                                                                                                                                                                                              | SSIONAL STANK                                            |
| L <sub>R</sub> = <b>7367</b> Ibs                                                                                                                                                                                                                                            | S                                                                                                                                | $A_{P} = 0.24$ acres<br>$L_{R} = 60$ Ibs                                                                                                                                                                                                                                                                                                                                                                                       |                                                          |
| ulate Fraction of Annual Runoff to Treat the drainage basin / outfall area                                                                                                                                                                                                  |                                                                                                                                  | JECT JECT 2223                                                                                                                                                                                                                                                                                                                                                                                                                 | AGD<br>AGD                                               |
| Desired L <sub>M THIS BASIN</sub> = 6350 Ibs                                                                                                                                                                                                                                | S.                                                                                                                               | 5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area                                                                                                                                                                                                                                                                                                                                              | AS AS AS                                                 |
| F = 0.86                                                                                                                                                                                                                                                                    |                                                                                                                                  | Desired $L_{M THIS BASIN} = 52$ lbs.                                                                                                                                                                                                                                                                                                                                                                                           | ALE:<br>SIGNE<br>AMN                                     |
| ulate Capture Volume required by the BMP Type for this drainage basin / outfall a                                                                                                                                                                                           | area. Calculations from RG-348 Pages 3-34 to 3-36                                                                                | F = 0.87                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                          |
| Rainfall Depth = <b>1.38</b> inc                                                                                                                                                                                                                                            | ches                                                                                                                             | There are no calculations required for determining the load or size of vegetative filter strips.                                                                                                                                                                                                                                                                                                                               | È I                                                      |
| On-site Water Quality Volume = 26939 cu                                                                                                                                                                                                                                     | ubic feet                                                                                                                        | The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and<br>the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or<br>across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.                                         | Щ                                                        |
| Calculations from                                                                                                                                                                                                                                                           | RG-348 Pages 3-36 to 3-37                                                                                                        | If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.                                                                                                                                                                                                                                                                                                  | L<br>S                                                   |
| Off-site area draining to BMP = <b>0.58</b> ac<br>Off-site Impervious cover draining to BMP = <b>0.00</b> ac                                                                                                                                                                | cres<br>cres                                                                                                                     | A                                                                                                                                                                                                                                                                                                                                                                                                                              | $\widetilde{\mathbb{S}}$                                 |
| Impervious fraction of off-site area = 0.00<br>Off-site Runoff Coefficient = 0.02                                                                                                                                                                                           |                                                                                                                                  | b l                                                                                                                                                                                                                                                                                                                                                                                                                            | N N                                                      |
| Storage for Sediment = 5399                                                                                                                                                                                                                                                 |                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                | E e                                                      |
| otal Capture Volume (required water quality volume(s) x 1.20) = 32396 cu<br>lowing sections are used to calculate the required water quality volume(s) for the                                                                                                              | ubic feet<br>e selected BMP.                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                | `<                                                       |
| ues for BMP Types not selected in cell C45 will show NA.                                                                                                                                                                                                                    |                                                                                                                                  | A A A A A A A A A A A A A A A A A A A                                                                                                                                                                                                                                                                                                                                                                                          |                                                          |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                          |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                | A                                                        |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                | <u> </u>                                                 |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  | BENCHMARKS                                                                                                                                                                                                                                                                                                                                                                                                                     | $\sim$                                                   |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  | ELEVATIONS HEREON ARE REFERENCED TO THE NORTH<br>AMERICAM DATUM DATUM UTILIZING WESTERN<br>DATA SYSTERS CONTINUENCE<br>CONTINUENCE OF A SYSTERS OF THE AUTOMATING REFERENCE                                                                                                                                                                                                                                                    |                                                          |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  | BM-101: "X" CUT IN CONCRETE<br>ELEVATION: 915.04'                                                                                                                                                                                                                                                                                                                                                                              |                                                          |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  | O O                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                          |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                          |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                          |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  | Ū                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                          |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  | APPROVAL Q                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                          |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                          |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                | $\overline{\mathbf{A}}$                                  |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                          |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  | SHEE                                                                                                                                                                                                                                                                                                                                                                                                                           | IT NUMBER                                                |
|                                                                                                                                                                                                                                                                             |                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                | 1/                                                       |

| es, Inc           | Texas Commission on Environmental Quality                                                                                                                                                                                                                                                                                                                                                                                 | Texas Commission on Environ                                                                                                                                                                |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Associate         | TSS Removal Calculations 04-20-2009Project Name: Edgewood Ph 1-1Date Prepared:9/1/2023                                                                                                                                                                                                                                                                                                                                    | TSS Removal Calculations 04-20-2                                                                                                                                                           |
| Kimley-Horn and   | Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.<br>Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.<br>Characters shown in red are data entry fields.<br>Characters shown in black (Bold) are calculated fields.<br>Changes to these fields will remove the equations used in the spreadsheet. | Additional information is provided<br>Text shown in blue indicate location o<br>Characters shown in red are data<br>Characters shown in black (Bold)<br>Changes to these fields will remov |
| bility to         | 1. The Required Load Reduction for the total project:       Calculations from RG-348       Pages 3-27 to 3-30                                                                                                                                                                                                                                                                                                             | <u>1. The Required Load Reduction for the t</u>                                                                                                                                            |
| out lid           | Page 3-29 Equation 3.3: L <sub>M</sub> = 27.2(A <sub>N</sub> x P)                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                            |
| nall be with      | where:<br>L <sub>M TOTAL PROJECT</sub> = Required TSS removal resulting from the proposed development = 80% of increased<br>A <sub>N</sub> = Net increase in impervious area for the project<br>P = Average annual precipitation, inches                                                                                                                                                                                  | load where:                                                                                                                                                                                |
| Inc. sł           | Site Data: Determine Required Load Removal Based on the Entire Project                                                                                                                                                                                                                                                                                                                                                    | Site Data: Determine Required Load Re                                                                                                                                                      |
| id Associates,    | Total project area included in plan * = 84.01 acres Boundary (52.61)+ OS (31.40)<br>Predevelopment impervious area within the limits of the plan * = 0.03 acres<br>Total post-development impervious area within the limits of the plan* = 18.44 acres<br>Total post-development impervious cover fraction * = 0.22 inches                                                                                                | Total<br>Predevelopment impervious are<br>Total post-development impervious ar<br>Total post-developm                                                                                      |
| -Horn an          | $L_{\rm M \ TOTAL \ PROJECT} = 16024 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                            |
| Kimley–           | * The values entered in these fields should be for the total project area.                                                                                                                                                                                                                                                                                                                                                | * The values entered in these fields shou                                                                                                                                                  |
| ition by          | Number of drainage basins / outfalls areas leaving the plan area = 10                                                                                                                                                                                                                                                                                                                                                     | Number of drainage basins / outf                                                                                                                                                           |
| adapta            | 2. Drainage Basin Parameters (This information should be provided for each basin):                                                                                                                                                                                                                                                                                                                                        | 2. Drainage Basin Parameters (This infor                                                                                                                                                   |
| n and             | Drainage Basin/Outfall Area No. = VFS-2                                                                                                                                                                                                                                                                                                                                                                                   | Drai                                                                                                                                                                                       |
| orizatio          | Predevelopment impervious area within drainage basin/outfall area = 0.00 acres<br>Post-development impervious area within drainage basin/outfall area = 0.22 acres                                                                                                                                                                                                                                                        | Predevelopment impervious area w<br>Post-development impervious area w                                                                                                                     |
| en auth           | Post-development impervious fraction within drainage basin/outfall area = 0.52<br>L <sub>M THIS BASIN</sub> = 191 Ibs.                                                                                                                                                                                                                                                                                                    | Post-development impervious fraction w                                                                                                                                                     |
| it writte         | 3. Indicate the proposed BMP Code for this basin.                                                                                                                                                                                                                                                                                                                                                                         | 3. Indicate the proposed BMP Code for the                                                                                                                                                  |
| withou            | Proposed BMP = Vegetated Filter Strips<br>Removal efficiency = 85 percent<br>A Calculate Maximum TSS Load Removed (L_) for this Drainage Basin by the selected BMP Type                                                                                                                                                                                                                                                   | 4 Calculate Maximum TSS Load Remov                                                                                                                                                         |
| cument            | RG-348 Page 3-33 Equation 3.7: $L_R = (BMP efficiency) \times P \times (A_1 \times 34.6 + A_P \times 0.54)$                                                                                                                                                                                                                                                                                                               | 4. Calculate Maximum 133 Load Keniov                                                                                                                                                       |
| liance on this do | where:<br>$A_{C}$ = Total On-Site drainage area in the BMP catchment area<br>$A_{I}$ = Impervious area proposed in the BMP catchment area<br>$A_{P}$ = Pervious area remaining in the BMP catchment area<br>$L_{R}$ = TSS Load removed from this catchment area by the proposed BMP                                                                                                                                       | where:                                                                                                                                                                                     |
| oper re           | $A_{\rm C} = 0.42  \text{acres}$ $A_{\rm I} = 0.22  \text{acres}$                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                            |
| nd impr           | $A_P = 0.20$ acres<br>$L_R = 210$ lbs                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                            |
| se of a           |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| d. Reu:           | 5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area                                                                                                                                                                                                                                                                                                                                         | 5. Calculate Fraction of Annual Runoff to                                                                                                                                                  |
| orepare           | Desired L <sub>M THIS BASIN</sub> = <b>191</b> Ibs.                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                            |
| wds               | F = 0.91                                                                                                                                                                                                                                                                                                                                                                                                                  | 16 Vagatatad Eilter Strips                                                                                                                                                                 |
| for which it      | There are no calculations required for determining the load or size of vegetative filter strips.<br>The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and<br>the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or                                                                    | There are no calculations required for de<br>The 80% removal is provided when the c<br>the sheet flow leaving the impervious co                                                            |
| d clien           | If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.                                                                                                                                                                                                                                                                                             | a cross 50 feet of natural vegetation with                                                                                                                                                 |
| ose and           |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| c purpo           |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| specifi           |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| or the            |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| only f            |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| tended            |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| ce, is ir         |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| f servio          |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| nent o            |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| instrur           |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| as an             |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| herein,           |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| ented i           |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| ares pres         |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| desigr            |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |
| рц                |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |

|                                        | Texas Commission on Environmental Quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Texas Commission on Environmental Quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | B                                                                                         |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Edgewood Ph 1-1<br>9/1/2023            | TSS Removal Calculations 04-20-2009Project Name: Edgewood Ph 1-1Date Prepared:9/1/2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | TSS Removal Calculations 04-20-2009Project Name: Edgewood Ph 1-1Date Prepared:9/1/2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | )ATE                                                                                      |
| e cursor over the cell.                | Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.<br>Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.<br>Characters shown in red are data entry fields.<br>Characters shown in black (Bold) are calculated fields.<br>Changes to these fields will remove the equations used in the spreadsheet.                                                                                                                                            | Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.<br>Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.<br>Characters shown in red are data entry fields.<br>Characters shown in black (Bold) are calculated fields.<br>Changes to these fields will remove the equations used in the spreadsheet.                                                                                                                                              |                                                                                           |
| Pages 3-27 to 3-30                     | 1. The Required Load Reduction for the total project:       Calculations from RG-348       Pages 3-27 to 3-30         Pages 3-29 Equation 3-3: L = 27 2(A × P)                                                                                                                                                                                                                                                                                                                                                                                                       | 1. The Required Load Reduction for the total project:Calculations from RG-348Pages 3-27 to 3-30Pages 3-29 Equation 3.3: $L_{12} = 27.2(A_1 \times P)$                                                                                                                                                                                                                                                                                                                                                                                                                  | SIONS                                                                                     |
| ed development = 80% of increased load | where:<br>$L_{M TOTAL PROJECT} = Required TSS removal resulting from the proposed development = 80% of increased load A_N = Net increase in impervious area for the projectP = Average$ annual precipitation, inches                                                                                                                                                                                                                                                                                                                                                 | where:<br>$L_{M TOTAL PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load<br>$A_N$ = Net increase in impervious area for the project<br>P = Average annual precipitation, inches                                                                                                                                                                                                                                                                                                                                          | RE                                                                                        |
| DS (31.40)                             | Site Data: Determine Required Load Removal Based on the Entire Project<br>County = Williamson<br>Total project area included in plan * = 84.01 acres<br>Predevelopment impervious area within the limits of the plan * = 0.03 acres<br>Total post-development impervious cover fraction * = 0.22<br>P = 32 inches                                                                                                                                                                                                                                                    | Site Data: Determine Required Load Removal Based on the Entire Project<br>County = Williamson<br>Total project area included in plan * = 84.01 acres<br>Predevelopment impervious area within the limits of the plan * = 0.03 acres<br>Total post-development impervious area within the limits of the plan * = 18.44 acres<br>Total post-development impervious cover fraction * = 0.22<br>P = 32 inches                                                                                                                                                              | o Z                                                                                       |
|                                        | L <sub>M TOTAL PROJECT</sub> = 16024 Ibs.<br>* The values entered in these fields should be for the total project area.                                                                                                                                                                                                                                                                                                                                                                                                                                              | L <sub>M TOTAL PROJECT</sub> = 16024 <sup>1</sup> Ibs.<br>* The values entered in these fields should be for the total project area.                                                                                                                                                                                                                                                                                                                                                                                                                                   | S, INC.<br>5, INC.<br>1791<br>928                                                         |
|                                        | Number of drainage basins / outfalls areas leaving the plan area = 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2 Drainage Basin Parameters (This information should be provided for each basin):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SOCIATES<br>ORGETOWN<br>512-418<br>COM<br>G FIRM F                                        |
|                                        | Z. Drainage Basin Parameters (This Information should be provided for each basin):         Drainage Basin/Outfall Area No. =       VFS-3         Total drainage basin/outfall area =       0.17       acres         Predevelopment impervious area within drainage basin/outfall area =       0.00       acres         Post-development impervious area within drainage basin/outfall area =       0.10       acres         Post-development impervious fraction within drainage basin/outfall area =       0.59       L         LM THIS BASIN =       87       Ibs. | Z. Drainage Basin Parameters (mis monitation should be provided for each basin).         Drainage Basin/Outfall Area No. =       VFS-4         Total drainage basin/outfall area =       0.15       acres         Predevelopment impervious area within drainage basin/outfall area =       0.00       acres         Post-development impervious area within drainage basin/outfall area =       0.02       acres         Post-development impervious fraction within drainage basin/outfall area =       0.13         L <sub>M THIS BASIN</sub> =       17       Ibs. | KIMLEY-HORN AND AS<br>AVENUE, SUITE 1310, GE<br>512-520-0768 FAX:<br>WWW.KIMLEY-HORN.C    |
|                                        | <u>3. Indicate the proposed BMP Code for this basin.</u><br>Proposed BMP = Vegetated Filter Strips<br>Removal efficiency = 85 percent<br><u>4. Calculate Maximum TSS Load Removed (L<sub>R</sub>) for this Drainage Basin by the selected BMP Type.</u>                                                                                                                                                                                                                                                                                                              | 3. Indicate the proposed BMP Code for this basin.<br>Proposed BMP = Vegetated Filter Strips<br>Removal efficiency = 85 percent<br>4. Calculate Maximum TSS Load Removed (L <sub>R</sub> ) for this Drainage Basin by the selected BMP Type.                                                                                                                                                                                                                                                                                                                            | 601 S. AUSTIN<br>PHONE:<br>TEXAS F                                                        |
| ent area                               | RG-348 Page 3-33 Equation 3.7: $L_R = (BMP \text{ efficiency}) \times P \times (A_1 \times 34.6 + A_P \times 0.54)$                                                                                                                                                                                                                                                                                                                                                                                                                                                  | RG-348 Page 3-33 Equation 3.7: $L_R = (BMP \text{ efficiency}) \times P \times (A_1 \times 34.6 + A_P \times 0.54)$<br>where:<br>$A_C = \text{Total On-Site drainage area in the BMP catchment area}$                                                                                                                                                                                                                                                                                                                                                                  |                                                                                           |
| t area<br>area<br>the proposed BMP     | $A_{\rm C}$ = rotal On-Site drainage area in the BMP catchment area<br>$A_{\rm I}$ = Impervious area proposed in the BMP catchment area<br>$A_{\rm P}$ = Pervious area remaining in the BMP catchment area<br>$L_{\rm R}$ = TSS Load removed from this catchment area by the proposed BMP                                                                                                                                                                                                                                                                            | $A_{\rm P}$ = Impervious area proposed in the BMP catchment area<br>$A_{\rm P}$ = Pervious area remaining in the BMP catchment area<br>$L_{\rm R}$ = TSS Load removed from this catchment area by the proposed BMP                                                                                                                                                                                                                                                                                                                                                     | STATE OF TEXAS                                                                            |
|                                        | $\begin{array}{llllllllllllllllllllllllllllllllllll$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | $A_C =$ 0.15acres $A_I =$ 0.02acres $A_P =$ 0.13acres $L_R =$ 21Ibs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ADAM GALAGIOI                                                                             |
|                                        | 5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9                                                     |
|                                        | Desired $L_{M THIS BASIN} = 87$ Ibs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Desired L <sub>M THIS BASIN</sub> = 17 Ibs.<br>F = 0.82                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | A PROJE<br>5778312<br>DATE<br>OBER 2<br>OBER 2<br>OBER 2<br>LED BY:<br>LED BY:<br>LED BY: |
| Pages 3-55 to 3-57                     | 16. Vegetated Filter Strips       Designed as Required in RG-348       Pages 3-55 to 3-57                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <u>16. Vegetated Filter Strips</u> Designed as Required in RG-348 Pages 3-55 to 3-57                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | KH/<br>06<br>SCALE<br>DESIGN<br>DRAWN                                                     |
| e of 20% or<br>ope exceeds 20%.        | There are no calculations required for determining the load or size of vegetative filter strips.<br>The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and<br>the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or<br>across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.                                                                           | There are no calculations required for determining the load or size of vegetative filter strips.<br>The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and<br>the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or<br>across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.                                                                             | ET 2                                                                                      |
| of RG-348.                             | If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.                                                                                                                                                                                                                                                                                                                                                                                                                                        | If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.                                                                                                                                                                                                                                                                                                                                                                                                                                          | WATER QUALITY<br>CALCULATIONS (SHE<br>OF 3)                                               |
|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | BENCHMARKS  LEvations Hereon are referenced to the north American Joint Concrete Elevation: y15.04  APPROVAL                                                                                                                                                                                                                                                                                                                                                                                                                                                           | EDGEWOOD<br>AMENITY CENTER<br>CITY OF LEANDER<br>WILLIAMSON COUNTY, TEXAS                 |
|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | SHEET NUMBER                                                                              |

| -          | Texas Commission on Environmental Quality                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                             | Texas Commission on Environmental Quality                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                            |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | TSS Removal Calculations 04-20-2009                                                                                                                                                                                                                                                                                                                                                                                                        | Project Name: Edgewood Ph 1-1<br>Date Prepared: 9/1/2023                                                                                                                                    | TSS Removal Calculations 04-20-2009                                                                                                                                                                                                                                                                  | Project Name: Edgewood Ph<br>Date Prepared: 9/1/2023                                                                                                                                                                       |
|            | Additional information is provided for cells with a red triangle in the upper right correction of instructions in the Technical Guidance Manual - RG-3<br>Characters shown in red are data entry fields.<br>Characters shown in black (Bold) are calculated fields.<br>Changes to these fields will remove the equations used in the spreadsheet.                                                                                          | ner. Place the cursor over the cell.<br>348.                                                                                                                                                | Additional information is provided for cells with a red to<br>Text shown in blue indicate location of instructions in the Tec<br>Characters shown in red are data entry fields.<br>Characters shown in black (Bold) are calculated fields.<br>Changes to these fields will remove the equations used | riangle in the upper right corner. Place the cursor over the<br>hnical Guidance Manual - RG-348.<br>d in the spreadsheet.                                                                                                  |
| - T        | 2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2                                                                                                                                                                                                                                                                                                                                                | Pages 3-27 to 3-30                                                                                                                                                                          | 1. The Required Load Reduction for the total project:                                                                                                                                                                                                                                                | Calculations from RG-348 Pages 3-27 to 3-30                                                                                                                                                                                |
| 1          | Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                             | Page 3-29 Equation 3.3:                                                                                                                                                                                                                                                                              | $L_{\rm M} = 27.2(A_{\rm N} \times P)$                                                                                                                                                                                     |
|            | where:<br>L <sub>M TOTAL PROJECT</sub> = Required TSS removal resultin<br>A <sub>N</sub> = Net increase in impervious are<br>P = Average annual precipitation, i                                                                                                                                                                                                                                                                           | g from the proposed development = 80% of increased load<br>a for the project<br>nches                                                                                                       | where: L <sub>M TOTAL PRO</sub>                                                                                                                                                                                                                                                                      | <sub>JECT</sub> = Required TSS removal resulting from the proposed development = 80<br>A <sub>N</sub> = Net increase in impervious area for the project<br>P = Average annual precipitation, inches                        |
| -          | Site Data: Determine Required Load Removal Based on the Entire Project                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                             | Site Data: Determine Required Load Removal Based on the Entire                                                                                                                                                                                                                                       | Project                                                                                                                                                                                                                    |
|            | County =       Williamson *         Total project area included in plan * =       84.01       acres       Bc         Predevelopment impervious area within the limits of the plan * =       0.03       acres         Total post-development impervious area within the limits of the plan* =       18.44       acres         Total post-development impervious cover fraction * =       0.22       acres         P =       32       inches | oundary (52.61)+ OS (31.40)                                                                                                                                                                 | Total project area included in pla<br>Predevelopment impervious area within the limits of the pl<br>Total post-development impervious area within the limits of the p<br>Total post-development impervious cover fracti                                                                              | unty =       Williamson *         an * =       84.01       acres         an * =       0.03       acres         alan* =       18.44       acres         on * =       0.22         P =       32                              |
|            | $L_{M TOTAL PROJECT} = 16024$ Ibs.<br>* The values entered in these fields should be for the total project area.                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                             | L <sub>M TOTAL PRO</sub> * The values entered in these fields should be for the total project                                                                                                                                                                                                        | J <sub>JECT</sub> = 16024 <sup>■</sup> Ibs.<br>Starea.                                                                                                                                                                     |
| -          | Number of drainage basins / outfalls areas leaving the plan area = $10^{-5}$                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                             | Number of drainage basins / outfalls areas leaving the plan a                                                                                                                                                                                                                                        | area = 10                                                                                                                                                                                                                  |
| 4          | 2. Drainage Basin Parameters (This information should be provided for each basin):                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                             | 2. Drainage Basin Parameters (This information should be provide                                                                                                                                                                                                                                     | ed for each basin):                                                                                                                                                                                                        |
| -          | Drainage Basin/Outfall Area No. = Stormtroope                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                             | Drainage Basin/Outfall Area                                                                                                                                                                                                                                                                          | No. = NT                                                                                                                                                                                                                   |
|            | Total drainage basin/outfall area = 1.15 acres<br>Predevelopment impervious area within drainage basin/outfall area = 0.00 acres                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                             | Total drainage basin/outfall a<br>Predevelopment impervious area within drainage basin/outfall a                                                                                                                                                                                                     | area = 8.74 acres<br>area = 0.00 acres                                                                                                                                                                                     |
| -          | Post-development impervious area within drainage basin/outfall area =0.47acresPost-development impervious fraction within drainage basin/outfall area =0.41                                                                                                                                                                                                                                                                                |                                                                                                                                                                                             | Post-development impervious area within drainage basin/outfall a Post-development impervious fraction within drainage basin/outfall a                                                                                                                                                                | area = 0.13 acres<br>area = 0.01                                                                                                                                                                                           |
|            | $L_{\rm M THIS BASIN} = 409$ Ibs.                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                             | $L_{M THIS B}$                                                                                                                                                                                                                                                                                       | $A_{SIN} = 113$ Ibs.                                                                                                                                                                                                       |
|            | 3. Indicate the proposed BMP Code for this basin.<br>Proposed BMP = Wet Vault<br>Removal efficiency = 78 percent<br>4. Coloulate Maximum TSS Load Removed (L.) for this Drainage Regin by the colouted RMP Type                                                                                                                                                                                                                            |                                                                                                                                                                                             | Proposed E<br>Proposed E<br>Removal efficie<br>4. Calculate Maximum TSS Load Removed (L <sub>p</sub> ) for this Drainage                                                                                                                                                                             | BMP = Vegetated Filter Strips<br>ency = 0 percent<br>Basin by the selected BMP Type.                                                                                                                                       |
| -          | 4. Calculate Maximum TSS Load Removed (L <sub>R</sub> ) for this Drainage Basin by the selected BMP Type.<br>RG-348 Page 3-33 Equation 3.7: L <sub>R</sub> = (BMP efficiency) x P x (A <sub>1</sub> x 3                                                                                                                                                                                                                                    | 4.6 + A <sub>P</sub> x 0.54)                                                                                                                                                                | RG-348 Page 3-33 Equation 3.7:                                                                                                                                                                                                                                                                       | $L_{R} = (BMP \text{ efficiency}) \times P \times (A_{I} \times 34.6 + A_{P} \times 0.54)$                                                                                                                                 |
| -          | $A_{\rm C}$ = Total On-Site drainage area in                                                                                                                                                                                                                                                                                                                                                                                               | the BMP catchment area                                                                                                                                                                      | where:                                                                                                                                                                                                                                                                                               | $A_{\rm C}$ = Total On-Site drainage area in the BMP catchment area                                                                                                                                                        |
| -          | $A_1 = $ Impervious area proposed in the<br>$A_2 = $ Pervious area remaining in the                                                                                                                                                                                                                                                                                                                                                        | e BMP catchment area<br>BMP catchment area                                                                                                                                                  |                                                                                                                                                                                                                                                                                                      | A <sub>I</sub> = Impervious area proposed in the BMP catchment area<br>A <sub>P</sub> = Pervious area remaining in the BMP catchment area                                                                                  |
| g »b       | $L_{\rm R}$ = TSS Load removed from this c                                                                                                                                                                                                                                                                                                                                                                                                 | atchment area by the proposed BMP                                                                                                                                                           |                                                                                                                                                                                                                                                                                                      | $\rm L_{\rm R}$ = TSS Load removed from this catchment area by the proposed BMP                                                                                                                                            |
| Plan.      | $A_{\rm C} = 1.15 \text{ acres}$                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                      | $A_{\rm C} =$ 8.74 acres<br>$A_{\rm I} =$ 0.13 acres                                                                                                                                                                       |
| uality     | $A_{\rm P} = 0.68 \text{ acres}$                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                      | $A_P =$ 8.61 acres<br>$L_R =$ 0 lbs                                                                                                                                                                                        |
| iter Q     |                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                            |
| C-Wo       | 5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                             | 5. Calculate Fraction of Annual Runoff to Treat the drainage basin                                                                                                                                                                                                                                   | n / outfall area                                                                                                                                                                                                           |
| leets      | Desired L <sub>M THIS BASIN</sub> = 409 Ibs.                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                             | Desired L <sub>M THIS B</sub>                                                                                                                                                                                                                                                                        | $A_{ASIN} = 0$ Ibs.                                                                                                                                                                                                        |
| JanSh      | بة<br>ج<br>ج<br>F = 0.98                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                      | F = #DIV/0!                                                                                                                                                                                                                |
| Cad        | <sup>™</sup><br><sup>™</sup> - <u>16. Vegetated Filter Strips</u> Designed as Required in RG-3                                                                                                                                                                                                                                                                                                                                             | 48 Pages 3-55 to 3-57                                                                                                                                                                       | 16. Vegetated Filter Strips                                                                                                                                                                                                                                                                          | Designed as Required in RG-348 Pages 3-55 to 3-57                                                                                                                                                                          |
| y Center   | There are no calculations required for determining the load or size of vegetative filter strips.<br>The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction<br>the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with<br>across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade                       | on of flow) and<br>n maximum slope of 20% or<br>as long as no slope exceeds 20%.                                                                                                            | There are no calculations required for determining the load or siz<br>The 80% removal is provided when the contributing drainage are<br>the sheet flow leaving the impervious cover is directed across 15<br>across 50 feet of natural vegetation with a maximum slope of 10%                        | ze of vegetative filter strips.<br>a does not exceed 72 feet (direction of flow) and<br>feet of engineered filter strips with maximum slope of 20% or<br>۵. There can be a break in grade as long as no slope exceeds 20%. |
| Amenit     | If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as describe                                                                                                                                                                                                                                                                                                                                       | ed on Page 3-56 of RG-348.                                                                                                                                                                  | If vegetative filter strips are proposed for an interim permanent B                                                                                                                                                                                                                                  | MP, they may be sized as described on Page 3-56 of RG-348.                                                                                                                                                                 |
| mes∖∕      |                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                            |
| oh IM – C  | Texas Commission on Environmental Quality                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                      | 6 Storm                                                                                                                                                                                                                    |
| Cannon 14  | Project Name: Edgewood Phase 1, Section 1<br>Project Location: Williamson County, TX<br>Date Prepared: 9/28/2023<br>Prepared For: Adam Davis                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                      | Edwards Aquifer Design                                                                                                                                                                                                     |
| 783129 -   | Im = 27.2(AN x P)         Im = 27.2(AN x P)         Im = Required TSS removal         Im = Net increase in impervious area                                                                                                                                                                                                                                                                                                                 | for site                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                            |
| ,il∖067    | Site Data:                                                                                                                                                                                                                                                                                                                                                                                                                                 | nes                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                      | STORM INLET                                                                                                                                                                                                                |
| IS_Civ     | 5 County = Williamson<br>Stormwater Quality Structure = Wet Vault                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                            |
| , ∖AL      | Pre-development impervious area = 0.00 acres<br>Post-development impervious area = 0.47 acres                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                            |
| -ile Path: | Post-development impervious fraction = 0.41<br>P = 32 inches                                                                                                                                                                                                                                                                                                                                                                               | equired Removal                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                            |
| Ę          | Σ<br>Pra_Day Δ for Pupoff Comp                                                                                                                                                                                                                                                                                                                                                                                                             | site Equired                                                                                                                                                                                | By- Fraction I oad                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                            |
| )7: 37c    | Basin Outfall Area Cover Area Cover Area (C) (C) Coef.                                                                                                                                                                                                                                                                                                                                                                                     | off Area Intensity (I) Flow (Q) Removal Model Area                                                                                                                                          | ass intensity of Flow F/0.9 Overflow Removal Actual Reduction<br>wrat Treated Treated F/0.9 Rate (ft/s) Effeciency Effeciency (L <sub>R</sub> )                                                                                                                                                      |                                                                                                                                                                                                                            |
| 10:0       | [ID]     [ac]     [ac]     [ac]     [ac]                                                                                                                                                                                                                                                                                                                                                                                                   | [ac] [in/hr] [cfs] L <sub>m</sub> in [lbs] # (sf) (d                                                                                                                                        | cfs) [in/hr] Figure 3-11] [Figure 3-10] (lbs)                                                                                                                                                                                                                                                        | (A                                                                                                                                                                                                                         |
| 2023       | ה ן דו אועזובואוו <b>ד ז.זיס 41%</b> 0.47 0.00 0.47 0.9 0.68 0.03 0.38<br>ס<br>פ                                                                                                                                                                                                                                                                                                                                                           | 9 0.44 1.1 0.49 409 <b>25</b> 369 3                                                                                                                                                         | Total TSS Removed by BMP's Annually = 417                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                            |
| - 03,      | ۵<br>۵<br>۵                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                             | Total Required Reduction (Lm) = 409<br>Solids Removed By Other Means = 0                                                                                                                                                                                                                             |                                                                                                                                                                                                                            |
| ctober     |                                                                                                                                                                                                                                                                                                                                                                                                                                            | STORMTROOPER                                                                                                                                                                                | Sufficient Removal = YES                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                            |
| ate: 00    | E Mod                                                                                                                                                                                                                                                                                                                                                                                                                                      | E.A. = (Imp. x 0.9 + Perv. >           el         S.A. By-Pass         E.A. @ 80%         100% Impervious Acres T           100         420         < 0.13                                  | x 0.03)<br>reated/Single Unit                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                            |
| id Di      | ة<br>الم<br>الم<br>الم<br>الم<br>الم<br>الم<br>الم<br>الم                                                                                                                                                                                                                                                                                                                                                                                  | 149         600         0.14 - 0.20         0.22 Acres           248         1000         0.21 - 0.33         0.37 Acres                                                                    |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                            |
| °, Dav     | 25<br>50<br>7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7                                                                                                                                                                                                                                                                                                                                                                                          | 369         1440         0.34 - 0.50         0.56 Acres           588         2250         0.51 - 0.79         0.88 Acres           730         2720         0.80 - 0.98         1.09 Acres |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                            |
| y: Lee     |                                                                                                                                                                                                                                                                                                                                                                                                                                            | 913         4000         0.99 - 1.23         1.37 Acres                                                                                                                                     |                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                            |

| exas Commission on Environmental Quality                                                                        |                                                                                                                                                     |                                                                        |                                                                                  |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| SS Removal Calculations 04-20-2009                                                                              |                                                                                                                                                     | Project Name: Edgewood Ph 1-1<br>Date Prepared: 9/1/2023               |                                                                                  |
| dditional information is provided for cells with a red                                                          | triangle in the uppe                                                                                                                                | er right corner. Place the cursor over the cell                        | AREAAMI                                                                          |
| ext shown in blue indicate location of instructions in the Te haracters shown in red are data entry fields.     | echnical Guidance Ma                                                                                                                                | anual - RG-348.                                                        | STEP ONE: Required TSS Re                                                        |
| haracters shown in black (Bold) are calculated field                                                            | S.                                                                                                                                                  |                                                                        | EQUATION 3.3                                                                     |
| hanges to these fields will remove the equations us                                                             | ed in the spreadshe                                                                                                                                 | eet.                                                                   | $L_m = 27.2(A_n \times P)$                                                       |
| The Device different Design for the total provident                                                             | Colouisticus from                                                                                                                                   |                                                                        | L <sub>m</sub> = Required TSS Removal (por                                       |
| Page 3-29 Equation 3                                                                                            | $3^{\circ} I_{11} = 27.2(A_{11} \times P)$                                                                                                          | Trages 3-27 10 3-50                                                    | A <sub>n</sub> = Net Increase in Impervius A<br>P = Average Annual Precipitatior |
|                                                                                                                 | $\mathbf{U}_{\mathrm{M}} = \mathbf{U}_{\mathrm{M}} \mathbf{U}_{\mathrm{M}} \mathbf{U}_{\mathrm{M}} \mathbf{U}_{\mathrm{M}} \mathbf{U}_{\mathrm{M}}$ |                                                                        | Drainage Basin = 1.15                                                            |
| where: L <sub>M TOTAL PF</sub>                                                                                  | ROJECT = Required TSS re                                                                                                                            | emoval resulting from the proposed development = 80% of increased load | Pre-Dev. Imp. Area = 0.00                                                        |
|                                                                                                                 | $A_N = Net increase in i$                                                                                                                           | impervious area for the project                                        | Post-Dev. Imp. Area = 0.47                                                       |
|                                                                                                                 |                                                                                                                                                     | precipitation, menes                                                   | Permous Area = $0.68$<br>P = $32$                                                |
| Site Data: Determine Required Load Removal Based on the Enti                                                    | re Project                                                                                                                                          |                                                                        | $L_{m} = 409$                                                                    |
| C<br>Total project area included in r                                                                           | ounty = williamson <sup>•</sup><br>blan * = <b>84.01</b> a                                                                                          | acres Boundary (52.61)+ OS (31.40)                                     | -111 - 12                                                                        |
| Predevelopment impervious area within the limits of the                                                         | plan * = 0.03 a                                                                                                                                     | acres                                                                  | STEP TWO: Select an Approp                                                       |
| Total post-development impervious area within the limits of the<br>Total post-development impervious cover frac | plan* = 18.44 a                                                                                                                                     | acres                                                                  | Effective                                                                        |
|                                                                                                                 | P = 32 ii                                                                                                                                           | nches                                                                  | StormTrooper S                                                                   |
|                                                                                                                 |                                                                                                                                                     |                                                                        | Unit Surface                                                                     |
| L <sub>M TOTAL PP</sub>                                                                                         | ROJECT = 16024 II                                                                                                                                   | bs.                                                                    | $\frac{\text{EQUATION 3.4}}{\text{O} = \text{CiA} \text{ where:}}$               |
| The values entered in these fields should be for the total projection                                           | ect area.                                                                                                                                           |                                                                        | C = 0.39                                                                         |
| Number of drainage basins / outfalls areas leaving the pla                                                      | n area = 10                                                                                                                                         |                                                                        | i = 1.10                                                                         |
| б                                                                                                               |                                                                                                                                                     |                                                                        | A = 1.15                                                                         |
|                                                                                                                 |                                                                                                                                                     |                                                                        | EQUATION 3.5                                                                     |
| Drainage Basin Parameters (This information should be provi                                                     | ded for each basin):                                                                                                                                |                                                                        | $V_{OR} = Q/A$ , where:                                                          |
| Drainage Basin/Outfall Are                                                                                      | a No. = NT 🎙                                                                                                                                        |                                                                        | Q = 0.49                                                                         |
| Tatal drainage basin/outfa                                                                                      | ll aroa = 9.74 a                                                                                                                                    |                                                                        | A = 369                                                                          |
| Predevelopment impervious area within drainage basin/outfa                                                      | ll area = 0.00 a                                                                                                                                    | acres                                                                  | BMP Effeciency = 81%                                                             |
| Post-development impervious area within drainage basin/outfa                                                    | ll area = 0.13 a                                                                                                                                    | acres                                                                  | ,                                                                                |
|                                                                                                                 | 11  area = 0.01                                                                                                                                     | bs.                                                                    | STEP THREE: Calculate Fract                                                      |
| Indicate the proposed BMP Code for this basin.                                                                  |                                                                                                                                                     |                                                                        | Unit By-Pass Flowrate = 3.21                                                     |
| Dranaged                                                                                                        |                                                                                                                                                     | an Othing                                                              | Annual Volume Treated = 87%                                                      |
| Removal effic                                                                                                   | siency = 0 p                                                                                                                                        | percent                                                                | Treatment Reduction = 0.97                                                       |
| Calculate Maximum TSS Load Removed (L <sub>R</sub> ) for this Drainag                                           | e Basin by the selected                                                                                                                             | BMP Type.                                                              | Actual BMP Effeciency = 78%                                                      |
| RG-348 Page 3-33 Equation 3.                                                                                    | 7: L <sub>R</sub> = (BMP efficiency)                                                                                                                | ) x P x (A <sub>1</sub> x 34.6 + A <sub>P</sub> x 0.54)                | STEP FOUR: Calculate TSS L                                                       |
| where:                                                                                                          | A <sub>c</sub> = Total On-Site dra                                                                                                                  | ainage area in the BMP catchment area                                  | EQUATION 3.8                                                                     |
|                                                                                                                 | A <sub>1</sub> = Impervious area                                                                                                                    | proposed in the BMP catchment area                                     | $L_r = (BMP Efficiency) \times P \times (A_i \times A_i)$                        |
|                                                                                                                 | A <sub>P</sub> = Pervious area re                                                                                                                   | maining in the BMP catchment area                                      | $L_r$ = Load Removed by BMP                                                      |
|                                                                                                                 | L <sub>R</sub> = TSS Load remov                                                                                                                     | ved from this catchment area by the proposed BMP                       | BMP Efficiency = TSS Removal<br>A = Impervious Tributary Area to                 |
|                                                                                                                 | A <sub>c</sub> = <b>8.74</b> a                                                                                                                      | acres                                                                  | $A_p$ = Pervious Tributary Area to t                                             |
|                                                                                                                 | A <sub>1</sub> = 0.13 a                                                                                                                             | acres                                                                  |                                                                                  |
|                                                                                                                 | A <sub>P</sub> = <b>8.61</b> a                                                                                                                      | acres                                                                  | $A_i = 0.47$<br>$A_i = 0.68$                                                     |
|                                                                                                                 | $L_R = 0$                                                                                                                                           | bs                                                                     |                                                                                  |
|                                                                                                                 |                                                                                                                                                     |                                                                        | <b>L</b> r <b>- - 1</b>                                                          |
| Calculate Fraction of Annual Runoff to Treat the drainage bas                                                   | sin / outfall area                                                                                                                                  |                                                                        |                                                                                  |
| Desired L <sub>M THIS</sub>                                                                                     | BASIN = 0                                                                                                                                           | bs.                                                                    |                                                                                  |
|                                                                                                                 | F = #DIV/0!                                                                                                                                         |                                                                        |                                                                                  |
|                                                                                                                 |                                                                                                                                                     |                                                                        |                                                                                  |
| i. Vegetated Filter Strips                                                                                      | Designed as Re                                                                                                                                      | quired in RG-348 Pages 3-55 to 3-57                                    |                                                                                  |

![](_page_174_Figure_4.jpeg)

| Fraction<br>of Flow<br>Treated<br>(F)                                                                                             | F/0.9 | Overflow<br>Rate (ft/s) | Removal<br>Effeciency | Actual<br>Effeciency | Load<br>Reduction<br>(L <sub>R</sub> ) |
|-----------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------|-----------------------|----------------------|----------------------------------------|
| Figure 3-11                                                                                                                       | ]     |                         | [Figure 3-10]         |                      |                                        |
| 0.87                                                                                                                              | 0.97  | 1.32E-03                | 81%                   | 78%                  | 417                                    |
| tal TSS Removed by BMP's Annually =<br>Total Required Reduction (Lm) =<br>Solids Removed By Other Means =<br>Sufficient Removal = |       |                         |                       |                      | 417<br>409<br>0<br>YES                 |

| TSS Rer                                                                                                                                                            | noval Calculations                                                                                             | DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IT) DRAINAGE BASIN                                                                                                                                                 | 1 TOTAL SITE DETAILS<br>Project Name: Edgewood Phase 1, Section 1                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| val                                                                                                                                                                | Project Location: Williamson County, TX<br>Date Prepared: 9/28/2023                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                    | Prepared By: Adam Davis<br>Total Project Area to be Treated = 1.15                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| s)<br>(acres)                                                                                                                                                      | Pre-Development Impervious Area = 0.00<br>Post-Development Impervious Area = 0.47                              | SNC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Acres                                                                                                                                                              | Composite Run-Off Coefficient = 0.41<br><b>Required TSS Removal L<sub>m</sub> = 409</b><br>County = Williamson | EVISIC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Acres                                                                                                                                                              |                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Acres<br>Inches                                                                                                                                                    | STORMTROOPER                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Lbs                                                                                                                                                                | Model         E.A. @ 80%           5         < 0.13                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <u>te ымр</u><br>а = 0.44 EA = (Ai x 0.9) +                                                                                                                        | 10     0.14 - 0.20       20     0.21 - 0.33       (Ap x 0.03)     25     0.34 - 0.50                           | Ö Z                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Q_</b> 25<br>a = 369                                                                                                                                            | 40         0.51 - 0.79           70         0.80 - 0.98                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Composite Run-Off Coefficient<br>Stormwater Quality Intensity<br>Drainage Basin Acreage<br>Required Treatment Flow<br>Required Treatment Flow<br>Unit Surface Area | 110 0.99 - 1.23                                                                                                | AND ASSOCIATES, INC.<br>1310, GEORGETOWN, TX 786<br>5 FAX: 512-418-1791<br>-HORN.COM<br>SINEERING FIRM F-928                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3 Overflow Rate                                                                                                                                                    |                                                                                                                | HORN<br>SUITE<br>D-0765                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| of Annual Runoff to be Treated                                                                                                                                     |                                                                                                                | IMLEY-<br>VENUE,<br>WWW.I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| cfs<br>in/hr<br>Volume of Run-Off Entering Unit<br>BMP Effeciency Reduction Facto                                                                                  | or                                                                                                             | 501 S. AUSTIN A<br>PHONE: 51<br>TEXAS REC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| I Kemoved by DIVIES                                                                                                                                                | -                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| $6 + A_p \times 0.54$                                                                                                                                              |                                                                                                                | STREET ILLAS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| aency<br>∋BMP (ac)<br>3MP (ac)                                                                                                                                     |                                                                                                                | ADAM GREGORY DANIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                    |                                                                                                                | RECEINST NO D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| lbs                                                                                                                                                                |                                                                                                                | 10/3/2023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                                                                                                                    |                                                                                                                | 9<br>9<br>D23<br>D23<br>AGD<br>AGD<br>DDL<br>AGD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                    |                                                                                                                | PR0JE<br>78312<br>78312<br>ATE<br>BY:<br>8<br>8<br>1<br>8<br>1<br>8<br>1<br>8<br>1<br>1<br>8<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                    |                                                                                                                | KHA F<br>067,<br>067,<br>0<br>0000<br>0000<br>0000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>31000<br>30000<br>30000<br>30000<br>30000<br>30000<br>30000<br>30000<br>30000<br>30000<br>30000<br>30000<br>3000000 |
|                                                                                                                                                                    |                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                    |                                                                                                                | Τ3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                    |                                                                                                                | Ш<br>Х Ш                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                                                                    |                                                                                                                | LT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| KEYED NOTES                                                                                                                                                        |                                                                                                                | AL<br>S (S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4 BOOTS<br>2 PVC<br>GALV. STEEL FRAME &<br>COVER, RATED FOR TRAFFIC                                                                                                |                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| LOADING (CAST IN OR LOOSE)<br>W/ SAFETY NET<br>1 20" CAST IRON RING AND<br>COVER                                                                                   |                                                                                                                | OF<br>OF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1 GALY. STEEL TRASH SCREEN<br>1 WATER QUALITY ORIFICE<br>1 BITUMASTIC EXTERIOR<br>COATING<br>1 CONTROL BAFFLF                                                      |                                                                                                                | E L L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1 MONOLITHIC BAFFLE<br>1 COALESCING MEDIA PACK<br>1 EFFLUENT BAFFLE W/<br>ANTI-SIPHON                                                                              |                                                                                                                | NA<br>UI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| NAMEPLATE<br>MFG: PARKUSA<br>888-611-PARK<br>WWW.PARKUSA.COM<br>MODEL: SWAQ-BP-XX                                                                                  |                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| DATE MANUFACTURED                                                                                                                                                  |                                                                                                                | CP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                    | BENCHMARKS                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                    | ELEVATIONS HEREON ARE REFERENCED TO THE NORTH<br>AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN                  | Ŕ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                    | DATA SYSTMS CONTINUALLY OPERATING REFERENCE<br>STATION (CORS) NETWORK.<br>BM-101: "X" CUT IN CONCRETE          | ×As H U                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| -0" 4'-0" 7'-0" 4'-0"                                                                                                                                              | ELEVATION: 915.04                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| $\begin{array}{cccccccccccccccccccccccccccccccccccc$                                                                                                               |                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 10" 4'-0" 16'-0" 4'-0"<br>10" 4'-0" 16'-0" 4'-0"                                                                                                                   |                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                    |                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| © PorkUSA. ALL RIGHTS RESERVED.                                                                                                                                    | APPROVAL                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| *: . PROJ # .<br>. LOCATION: .                                                                                                                                     |                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                    |                                                                                                                | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| STORMWATER INTERCEPTOR<br>SWAQ WITH BYPASS                                                                                                                         |                                                                                                                | SHEET NUMBFR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| DWG. NO. REV.                                                                                                                                                      |                                                                                                                | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

![](_page_175_Figure_0.jpeg)

![](_page_176_Figure_0.jpeg)

![](_page_176_Picture_1.jpeg)

CALLED 83.693 ACRES TRACT TWO CSM-MASON FAMILY LP. DOC. No. 2011086909 OPRWC

X

APPROVAL

ME

SHEET NUMBER

21

Ш

![](_page_177_Figure_0.jpeg)

![](_page_178_Figure_0.jpeg)

| Expected Traffic   | Average Daily<br>Truck Traffic | Flexible Pavement |     | Rigid Pavement |     |
|--------------------|--------------------------------|-------------------|-----|----------------|-----|
|                    |                                | HMAC              | CLB | JRPCC          | CLB |
| Passenger Vehicles | 1                              | 2.0               | 8   | 6              | -   |
| Heavy Duty Trucks* | Up to 10                       | 2.0               | 10  | 6              | -   |

![](_page_179_Figure_0.jpeg)

| LEGEND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                             |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | PROPERTY LINE                                                                                                                                                               |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | PHASE LINE                                                                                                                                                                  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | LOT DRAINAGE FLOW DIRECTION                                                                                                                                                 |  |  |
| $\rightarrow$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | STREET DRAINAGE FLOW DIRECTION                                                                                                                                              |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | PROPOSED RETAINING WALL                                                                                                                                                     |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EXPOSED FACE OF RETAINING WALL                                                                                                                                              |  |  |
| 555                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | PROPOSED CONTOUR                                                                                                                                                            |  |  |
| 555                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | EXISTING CONTOUR                                                                                                                                                            |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | STORM SEWER                                                                                                                                                                 |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                             |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | STORM INLET                                                                                                                                                                 |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | STORM INLET<br>AREA INLET                                                                                                                                                   |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | STORM INLET<br>AREA INLET<br>STORM MANHOLE                                                                                                                                  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | STORM INLET<br>AREA INLET<br>STORM MANHOLE<br>JUNCTION BOX                                                                                                                  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | STORM INLET<br>AREA INLET<br>STORM MANHOLE<br>JUNCTION BOX<br>WATER MAIN                                                                                                    |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | STORM INLET<br>AREA INLET<br>STORM MANHOLE<br>JUNCTION BOX<br>WATER MAIN<br>WASTEWATER MAIN                                                                                 |  |  |
| Image: Constraint of the second se | STORM INLET<br>AREA INLET<br>STORM MANHOLE<br>JUNCTION BOX<br>WATER MAIN<br>WASTEWATER MAIN<br>EXISTING WATER LINE                                                          |  |  |
| Image: Constraint of the second se | STORM INLET<br>AREA INLET<br>STORM MANHOLE<br>JUNCTION BOX<br>WATER MAIN<br>WASTEWATER MAIN<br>EXISTING WATER LINE<br>EXISTING WASTEWATER LINE                              |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | STORM INLET<br>AREA INLET<br>STORM MANHOLE<br>JUNCTION BOX<br>WATER MAIN<br>WASTEWATER MAIN<br>EXISTING WATER LINE<br>EXISTING WASTEWATER LINE<br>EXISTING STORM SEWER LINE |  |  |

![](_page_179_Figure_2.jpeg)

| 950 | SECTIO                                                             | N B-E             | 3<br>950 |
|-----|--------------------------------------------------------------------|-------------------|----------|
| 945 | EXIS                                                               | STING             | 945      |
| 940 | (2)<br>(2)<br>(2)<br>(2)<br>(2)<br>(2)<br>(2)<br>(2)<br>(2)<br>(2) |                   | 940      |
| 3+0 | 6.0'                                                               | - PROPOS<br>GRADE | ED       |
| 935 |                                                                    |                   | 935      |
|     | 0+00                                                               | 0+50              |          |

| CURVE TABLE |         |                      |                |                    |         |
|-------------|---------|----------------------|----------------|--------------------|---------|
| S           | LENGTH  | CHORD BEARING        | CHORD          | DELTA              | TANGENT |
| ,           | 11.04'  | N81°05'28"E          | 11.02'         | 12 <b>°</b> 39'22" | 5.54'   |
| )'          | 96.54'  | S85*22'42"E          | 96.29'         | 14 <b>°</b> 24'19" | 48.53'  |
| )'          | 122.93' | S84 <b>°</b> 30'34"E | 122.68'        | 12•40'03"          | 61.71'  |
| ,           | 12.36'  | N82*04'28"E          | 12.33'         | 14 <b>°</b> 09'52" | 6.21'   |
| ,           | 18.07'  | N54 <b>°</b> 17'24"E | 17.68'         | 41 <b>°</b> 24'17" | 9.45'   |
| ,           | 14.46'  | N19 <b>°</b> 46'47"E | 14.32'         | 27 <b>°</b> 36'58" | 7.37'   |
| )'          | 10.30'  | N8 <b>ʻ</b> 17'54"E  | 10.30'         | 4 <b>•</b> 39'12"  | 5.15'   |
| ,           | 24.51'  | N54°34'00"E          | 22.17 <b>'</b> | 87 <b>°</b> 53'00" | 15.40'  |
| ,           | 27.99'  | N74 <b>°</b> 17'58"E | 27.16'         | 48 <b>°</b> 25'06" | 14.89'  |

![](_page_179_Figure_5.jpeg)

# BENCHMARKS

ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK. BM-101: "X" CUT IN CONCRETE ELEVATION: 915.04' APPROVAL






BENCHMARKS ELEVATIONS HEREON ARE REFERENCED TO THE NORTH AMERICAM DATUM 1988 (NAVD) UTILIZING WESTERN DATA SYSTMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK. BM-101: "X" CUT IN CONCRETE ELEVATION: 915.04'

APPROVAL



25

SHEET NUMBER





MATCH LINE SHEET 27

|                                          | LEGEND                                                                                                                        |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
|                                          | PROPERTY LINE                                                                                                                 |
|                                          | PHASE LINE                                                                                                                    |
| <b>&gt;</b>                              | LOT DRAINAGE FLOW DIRECTION                                                                                                   |
| $\rightarrow$                            | STREET DRAINAGE FLOW DIRECTION                                                                                                |
|                                          | PROPOSED RETAINING WALL                                                                                                       |
|                                          | EXPOSED FACE OF RETAINING WALL                                                                                                |
| 555                                      | PROPOSED CONTOUR                                                                                                              |
| 555                                      | EXISTING CONTOUR                                                                                                              |
|                                          | STORM SEWER                                                                                                                   |
|                                          | STORM INLET                                                                                                                   |
|                                          | AREA INLET                                                                                                                    |
| 0                                        | STORM MANHOLE                                                                                                                 |
|                                          |                                                                                                                               |
|                                          | JUNCTION BOX                                                                                                                  |
| □<br>                                    | JUNCTION BOX<br>WATER MAIN                                                                                                    |
|                                          | JUNCTION BOX<br>WATER MAIN<br>WASTEWATER MAIN                                                                                 |
| W           WW           WW              | JUNCTION BOX<br>WATER MAIN<br>WASTEWATER MAIN<br>EXISTING WATER LINE                                                          |
| W           WW           WW           WW | JUNCTION BOX<br>WATER MAIN<br>WASTEWATER MAIN<br>EXISTING WATER LINE<br>EXISTING WASTEWATER LINE                              |
| W       WW       WW       WW       WW    | JUNCTION BOX<br>WATER MAIN<br>WASTEWATER MAIN<br>EXISTING WATER LINE<br>EXISTING WASTEWATER LINE<br>EXISTING STORM SEWER LINE |



10/3/2023

نه <sup>©</sup>

# NOTES:

- 1. ALL DIMENSIONS ARE TO CENTERLINE OF PIPE UNLESS NOTED OTHERWISE.
- 2. CONTRACTOR TO FIELD VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTACT ENGINEER IF FIELD CONDITIONS VARY.
- 3. CONTRACTOR TO PROVIDE CL IV RCP AT ALL LOCATIONS WITH LESS THAN 2.0' OF COVERAGE.







|               | LEGEND                         |  |   |  |
|---------------|--------------------------------|--|---|--|
|               | PROPERTY LINE                  |  |   |  |
|               | PHASE LINE                     |  |   |  |
|               | LOT DRAINAGE FLOW DIRECTION    |  |   |  |
| $\rightarrow$ | STREET DRAINAGE FLOW DIRECTION |  |   |  |
|               | PROPOSED RETAINING WALL        |  |   |  |
|               | EXPOSED FACE OF RETAINING WALL |  |   |  |
| 555           | PROPOSED CONTOUR               |  |   |  |
| 555           | EXISTING CONTOUR               |  |   |  |
|               | STORM SEWER                    |  |   |  |
|               | STORM INLET                    |  |   |  |
|               | AREA INLET                     |  |   |  |
| 0             | STORM MANHOLE                  |  |   |  |
|               | JUNCTION BOX                   |  |   |  |
| W             | WATER MAIN                     |  |   |  |
| WW            | WASTEWATER MAIN                |  |   |  |
| W             | EXISTING WATER LINE            |  |   |  |
| WW            | EXISTING WASTEWATER LINE       |  | C |  |
| =======       | EXISTING STORM SEWER LINE      |  |   |  |

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501



## NOTES:

- 1. ALL DIMENSIONS ARE TO CENTERLINE OF PIPE UNLESS NOTED OTHERWISE.
- 2. CONTRACTOR TO FIELD VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTACT ENGINEER IF FIELD CONDITIONS VARY.
- 3. CONTRACTOR TO PROVIDE CL IV RCP AT ALL LOCATIONS WITH LESS THAN 2.0' OF COVERAGE.













| 35' | (MAX) |  | • | <b>⊨</b> 12" |  |
|-----|-------|--|---|--------------|--|

OPRWC

FIRE LANE TOW AWAY ZONE BE MARKED BY LINES OF RED TRAFFIC PAINT OR DYE A MINIMUM OF 6 BE MARKED BY LINES OF RED TRAFFIC PAINT OR DYE A MINIMUM OF 6 INCHES IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE TOW AWAY ZONE" SHALL APPEAR IN 4 INCH WHITE LETTERS NO GREATER THAN 35 FEET APART. THESE WORDS SHALL BE MARKED WITHIN THE RED STRIPE. FIRE LANE STRIPING SHALL BE CONTINUOUS THROUGHOUT. CURB FACING SHALL BE USED WHERE AVAILABLE. WHERE THERE IS NO CURB, LAY DOWN STRIPING SHALL BE USED.

FIRE LANE MARKING

EDGEWOOD PHASE 1-2

#21-PICP-035



- MINIMUM OF 6 INCHES OF TOPSOIL AND COMPOST BLEND. TOPSOIL ON SING
- TRAFFIC IS EXITING THE PROJECT ONTO EXISTING PAVEMENT. LINEAR CONS

| SANDBAG                                                                                                                                 | SILT FENC                                                                                                                                                                                                             | FLOW<br>FLOW<br>FABRIC TOE-IN<br>TRENCH (BACKFILLED)                                                                                                                                                                            | OR WOOD FENCE POSTS<br>4 m (8) SPACING<br>2" x 4" WELDED WIRE<br>BACKING SUPPORT FOR<br>FABRIC (12.5 GA. WIRE)<br>600 mm<br>(24")<br>150 mm<br>(6") MIN<br>150 mm<br>(6") MIN<br>TRENCH CROSS                     |                                                                                                             |          |                                                      | REVISIONS DATE B                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|----------|------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| SECURELY*<br>OUND<br>ETER WITH                                                                                                          | 1. STEEL OR WOOD PO<br>TOWARD THE ANTICIP/<br>INCHES). IF WOOD POS<br>2. THE TOE OF THE SIL<br>THAT THE DOWNSLOP!<br>3. THE TRENCH MUST E<br>FOR THE SILT FENCE F<br>MATERIAL.                                        | STS WHICH SUPPORT THE SILT F<br>NTED RUNOFF SOURCE. POST M<br>TS CANNOT ACHIEVE 300 mm (12<br>T FENCE SHALL BE TRENCHED IN<br>E FACE OF THE TRENCH IS FLAT.<br>SE A MINIMUM OF 150 mm (6 Inche<br>ABRIC TO BE LAID IN THE GROUP | TENCE SHALL BE INSTALLED ON<br>UST BE EMBEDDED A MINIMUM<br>Inches) DEPTH, USE STEEL PO<br>N WITH A SPADE OR MECHANIC<br>AND PERPENDICULAR TO THE<br>IS) DEEP AND 150 mm (6 Inches)<br>ND AND BACKFILLED WITH COM | N A SLIGHT ANGLE<br>I OF 300 mm (12<br>STS.<br>AL TRENCHER, SO<br>LINE OF FLOW.<br>WIDE TO ALLOW<br>IPACTED |          |                                                      | N. N                                                        |
| 3B<br>CALE                                                                                                                              | 4. SILT FENCE FABRIC<br>TO WOVEN WIRE, WHI                                                                                                                                                                            | SHOULD BE SECURELY FASTENE<br>CH IS IN TURN ATTACHED TO THI                                                                                                                                                                     | D TO EACH STEEL OR WOOD S<br>E STEEL OR WOOD FENCE POS                                                                                                                                                            | OP                                                                                                          |          |                                                      | с.<br>78626<br>91<br>28                                                                         |
| LAYOUT<br>NED IN FIELD                                                                                                                  | REPLACEMENT SHALL<br>8. SILT FENCE SHALL BE<br>IMPEDE STORM FLOW<br>7. ACCUMULATED SILT<br>SHALL BE DISPOSED O<br>TO ADDITIONAL SILTAT                                                                                | BE MADE PROMPTY AS NEEDED.<br>REMOVED WHEN THE SITE IS CON<br>OR DRAINAGE.<br>SHALL BE REMOVED WHEN IT RE<br>F ON AN APPROVED SITE AND IN<br>TON.                                                                               | INDIAL EVENT AND NETAIN<br>INPLETELY STABILIZED SO AS IN<br>EACHES A DEPTH OF 150 mm (6<br>I SUCH A MANNER THAT WILL N                                                                                            | DT TO BLOCK OR<br>Inches), THE BILT<br>IOT CONTRIBUTE                                                       |          |                                                      | , concertain, tx<br>, ceorgetown, tx<br>Ax: 512-418-17<br>AX: COM<br>FRN.COM<br>ERING FIRM F-92 |
| ander; Texas                                                                                                                            | CITY OF A<br>WATERCHED PROTECT                                                                                                                                                                                        | USTIN<br>ION DEPARTMENT                                                                                                                                                                                                         | SILT FENCE                                                                                                                                                                                                        |                                                                                                             |          |                                                      | тки жи<br>ПТЕ 1310<br>768 F<br>768 F<br>-EY-HC<br>ENGINE                                        |
| E WASHOUT                                                                                                                               | /mph.                                                                                                                                                                                                                 | ADOPTED                                                                                                                                                                                                                         | RCHITECT/ENGINEER ASSOUNDED<br>DINSIBILITY FOR APPROPRIATE USE<br>IS STANDARD.                                                                                                                                    | 642S-1                                                                                                      |          |                                                      | ETTERED                                                                                         |
| JΤ                                                                                                                                      | 5                                                                                                                                                                                                                     | SILT                                                                                                                                                                                                                            | FENCE                                                                                                                                                                                                             |                                                                                                             |          |                                                      | 512-<br>512-<br>WW<br>REGIST                                                                    |
| RY PLAT FOR<br>DRARILY STORED AND<br>AGE PLAN AND SHALL<br>ANCE OF ANY FINAL                                                            | TREE PROTECTION NOTES:         1.       ALL TREES AND NATUR         DURING CONSTRUCTIO         2.       PROTECTIVE FENCES S         TREE PROTECTION.         3.       PROTECTIVE FENCES S         WODY (2) FADING ODE | CAL AREAS SHOWN ON PLAN<br>N WITH TEMPORARY FENC<br>SHALL BE ERECTED ACCOR<br>SHALL BE INSTALLED PRIOR                                                                                                                          | N TO BE PRESERVED SHAI<br>ING.<br>DING TO CITY OF LEANDE<br>R TO THE START OF ANY S                                                                                                                               | LL BE PROTECTED<br>R STANDARDS FOR<br>ITE PREPARATION                                                       |          |                                                      | 501 S. AUSTIV<br>501 S. AUSTIV<br>PHONE:<br>TEXAS                                               |
| THE LAND WITHIN THE<br>BE SUITABLE FOR USE<br>ERIAL MAY NOT<br>LUTION PREVENTION                                                        | 4. EROSION AND SEDIMEN<br>MANNER WHICH DOES                                                                                                                                                                           | NTATION CONTROL BARRIEI<br>NOT RESULT IN SOIL BUILD                                                                                                                                                                             | RS SHALL BE INSTALLED (<br>UP WITHIN TREE DRIP LIN                                                                                                                                                                | DR MAINTAINED IN A<br>IES.                                                                                  |          | ADAM GREE                                            | ANIS                                                                                            |
| ATION AND EROSION<br>7.                                                                                                                 | AT THE OUTERMOST LI<br>FENCES SHALL FOLLOW<br>FOLLOWING:                                                                                                                                                              | MITS OF BRANCHES (DRIP L<br>W THE LIMIT OF CONSTRUC                                                                                                                                                                             | LINE), FOR NATURAL AREA<br>TION LINE, IN ORDER TO F                                                                                                                                                               | AND WILL BE LOCATED<br>AS, PROTECTIVE<br>PREVENT THE                                                        |          | THOM STORE                                           | NSE NG                                                                                          |
| REAS THAT MAY EXIST<br>TON SO AS NOT TO<br>IN IMPEDE DRAINAGE                                                                           | <ul> <li>A. SOIL COMPACTION<br/>STORAGE OF EQUI</li> <li>B. ROOT ZONE DISTU<br/>FILL), OR TRENCHII</li> <li>C. WOUNDS TO EXPO</li> <li>D. OTHER ACTIVITIES</li> </ul>                                                 | I IN THE ROOT ZONE AREA F<br>PMENT OF MATERIALS;<br>RBANCES DUE TO GRADE C<br>NG NOT REVIEWED AND AU<br>SED ROOTS, TRUNK OR LIN<br>DETRIMENTAL TO TREES S                                                                       | RESULTING FROM VEHICU<br>CHANGES (GREATER THAN<br>THORIZED BY THE CITY AI<br>MBS BY MECHANICAL EQUI<br>SUCH AS CHEMICAL STOR/                                                                                     | ILAR TRAFFIC OR<br>I 6 INCHES CUT OR<br>RBORIST;<br>IPMENT;<br>AGE, CEMENT TRUCK                            |          | ECT<br>2023<br>29023<br>SHOWN                        | AGD<br>AGD                                                                                      |
| IPROVEMENTS FOR<br>FINED IN ORDINANCE<br>1, 2018, THAT CREATED<br>EMENT FOR THE<br>CTION 28 OF THE CITY'S                               | 6. EXCEPTIONS TO INSTA<br>CASE:<br>A. WHERE THERE IS 1                                                                                                                                                                | RES.<br>LLING FENCES AT TREE DR<br>TO BE AN APPROVED GRAD                                                                                                                                                                       | IP LINES MAY BE PERMITT<br>E CHANGE, IMPERMEABLE                                                                                                                                                                  | ED IN THE FOLLOWING                                                                                         |          | KHA PRO.<br>0677831<br>DATE<br>0CTOBER<br>CALE: AS S | ESIGNED BY:<br>RAWN BY:<br>HECKED BY:                                                           |
| SPREAD THE FILL<br>DE AND TO<br>FILED WITH THE CITY.<br>ACH OF THE<br>APPROVED BY THE                                                   | TREE WELL, OR OT<br>FEET BEYOND THE<br>B. WHERE PERMEABL<br>FENCE AT THE OUT<br>THAT THIS AREA IS<br>DAMAGE);                                                                                                         | THER SUCH SITE DEVELOPM<br>AREA DISTURBED;<br>LE PAVING IS TO BE INSTALI<br>FER LIMITS OF THE PERMEA<br>GRADED SEPARATELY PRI                                                                                                   | /ENT, ERECT THE FENCE /<br>LED WITHIN A TREE'S DRIF<br>ABLE PAVING AREA (PRIOF<br>IOR TO PAVING INSTALLAT                                                                                                         | APPROXIMATELY 2 TO 4<br>P LINE, ERECT THE<br>R TO SITE GRADING SO<br>FION TO MINIMIZE ROOT                  |          | <u> </u>                                             |                                                                                                 |
| VELOPED, THE<br>THE FILL MATERIAL<br>MED BY THE CITY<br>DIVISION ACCEPTANCE                                                             | C. WHERE TREES ARI<br>FEET OF WORK SP<br>D. WHERE THERE ARI<br>REQUIREMENTS, C<br>SPECIAL NOTE: FO<br>FENCES AT THE LIM                                                                                               | E CLOSE TO PROPOSED BU<br>ACE BETWEEN THE FENCE<br>E SEVERE SPACE CONSTRA<br>ONTACT THE CITY ARBORIS<br>R THE PROTECTION OF NAT<br>WIT OF CONSTRUCTION LINI                                                                     | IILDINGS, ERECT THE FEN<br>AND THE BUILDING;<br>AINTS DUE TO TRACT SIZE<br>ST AT 974-1876 TO DISCUS<br>TURAL AREAS, NO EXCEP<br>E WILL BE PERMITTED.                                                              | CE TO ALLOW 6 TO 10<br>, OR OTHER SPECIAL<br>S ALTERNATIVES.<br>TIONS TO INSTALLING                         |          |                                                      | AILS                                                                                            |
| AND AS A CONDITION<br>, THE HEIGHT OF THE<br>CEED TEN (10) FEET IN                                                                      | 7. WHERE ANY OF THE AE<br>TREE TRUNK, PROTECT<br>THE LIMITS OF LOWER                                                                                                                                                  | BOVE EXCEPTIONS RESULT<br>THE TRUNK WITH STRAPP<br>BRANCHING) IN ADDITION T                                                                                                                                                     | IN A FENCE BEING CLOSE<br>PED-ON PLANKING TO A HE<br>TO THE REDUCED FENCING                                                                                                                                       | ER THAN 4 FEET TO A<br>EIGHT OF 8 FT (OR TO<br>G PROVIDED.                                                  |          | NOI                                                  | DET,                                                                                            |
| CATIONS AFTER THE<br>D THAT AT THE TIME<br>IS LOCATED IS                                                                                | <ol> <li>TREES APPROVED FOR<br/>TREES TO BE SAVED.</li> <li>ANY ROOTS EXPOSED</li> </ol>                                                                                                                              | REMOVAL SHALL BE REMO                                                                                                                                                                                                           | IVED IN A MANNER WHICH                                                                                                                                                                                            | SH WITH THE SOIL.                                                                                           |          | SO                                                   |                                                                                                 |
| MAY BE<br>R FUTURE PLACEMENT<br>T PERMIT FOR SUCH                                                                                       | BACKFILL ROOT AREAS<br>AREAS ARE NOT BACKI<br>MANNER WHICH REDUC<br>EVAPORATION.                                                                                                                                      | WITH GOOD QUALITY TOP<br>FILLED WITHIN 2 DAYS, COV<br>CES SOIL TEMPERATURE AN                                                                                                                                                   | SOIL AS SOON AS POSSIE<br>/ER THEM WITH ORGANIC<br>ND MINIMIZES WATER LOS                                                                                                                                         | BLE. IF EXPOSED ROOT<br>MATERIAL IN A<br>IS DUE TO                                                          |          | ER(                                                  | NTRO                                                                                            |
| THE EVENT THERE HAS<br>PERIOD OF TWO (2)                                                                                                | 11. NO LANDSCAPE TOPSC                                                                                                                                                                                                | EXISTING TREE TRUNKS AS                                                                                                                                                                                                         | S POSSIBLE.<br>AN 4 INCHES SHALL BE PE                                                                                                                                                                            | RMITTED WITHIN THE                                                                                          |          |                                                      | ō                                                                                               |
| D, AS APPLICABLE, THE<br>EGETATE OR                                                                                                     | DRIP LINE OF TREES. N<br>12. PRUNING TO PROVIDE                                                                                                                                                                       | NO SOIL IS PERMITTED ON T                                                                                                                                                                                                       | THE ROOT FLARE OF ANY                                                                                                                                                                                             |                                                                                                             |          |                                                      |                                                                                                 |
|                                                                                                                                         | SHALL TAKE PLACE BEI<br>13. ALL FINISHED PRUNING<br>THE INDUSTRY (REFER                                                                                                                                               | OKE DAMAGE OCCURS (RI<br>S SHALL BE DONE ACCORDI<br>ENCE THE NATIONAL ARBO                                                                                                                                                      | IPPING OF BRANCHES, ET<br>NG TO RECOGNIZED, APP<br>RIST ASSOCIATION PRIM                                                                                                                                          | ROVED STANDARDS OF                                                                                          |          |                                                      |                                                                                                 |
| ND TREE PROTECTIVE<br>CONTACT<br>CONSTRUCTION.                                                                                          | <ul> <li>SHADE TREES AVAILAB</li> <li>14. DEVIATIONS FROM THE SUBSTANTIAL NONCOM</li> </ul>                                                                                                                           | LE ON REQUEST FROM THE<br>ABOVE NOTES MAY BE CO<br>IPLIANCE OR IF A TREE SUS                                                                                                                                                    | E CITY ARBORIST).<br>INSIDERED ORDINANCE VI<br>STAINS DAMAGE AS A RES                                                                                                                                             | OLATIONS IF THERE IS SULT.                                                                                  |          | ۲<br>ا                                               | ,                                                                                               |
| CE OF CONTROLS AND<br>ED AREAS. SILT<br>CHES SIX (6) INCHES.                                                                            |                                                                                                                                                                                                                       |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                   |                                                                                                             |          |                                                      | )ER<br>Y, TEXA:                                                                                 |
| CE UNLESS<br>XCEED 10 FEET IN ANY                                                                                                       |                                                                                                                                                                                                                       |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                   |                                                                                                             |          | С<br>С<br>Ч<br>С<br>Ч<br>С                           | EANE                                                                                            |
| ESTORED WITH A<br>NGLE FAMILY LOTS MAY<br>BLEND SHALL CONSIST                                                                           |                                                                                                                                                                                                                       |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                   |                                                                                                             |          | GEV<br>IITY                                          | TY OF L<br>ASON CO                                                                              |
| ISTIN GROW GREEN<br>ES (SPEC 164WC001<br>SHALL NOT BE USED.<br>RE CONSTRUCTION<br>NSTRUCTION<br>MAIN CLEAR OF SILT<br>ENTRANCES WHERE A |                                                                                                                                                                                                                       |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                   | <u>APPROVAL</u>                                                                                             | <u> </u> | AMEN                                                 | CI                                                                                              |
| SITUATION, THE                                                                                                                          |                                                                                                                                                                                                                       |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                   |                                                                                                             |          | SHEET N                                              | UMBER                                                                                           |
| TIME AS THE                                                                                                                             |                                                                                                                                                                                                                       |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                   |                                                                                                             |          | 30                                                   | )                                                                                               |



















MIN. TOP OF ROCK ELEVATION ON

CHANNEL SLOPES

Le = 10D

TOE TRENCH

La = 10D

\*EXTEND ROCK RIPRAP ON CHANNEL SLOPES TO THE TOP OF THE PIPE BOFFIT ELEVATION OR TOP OF CHANNEL BANK

SECTION VIEW

~~~~~

ITEM 510,

NTER PIPE

EARTH

TRENCH

APPROVAL









APPROVAL





WASTEWATER LINE ONE JOINT (SIZE VARIES) OF PRESSURE RATED AT 150 PSI, CENTERED BELOW POINT OF WATER CROSSING:

ITILITY CROSSING DETAIL NOT TO SCALE



SHALL HAVE RECLAIMED WATER	CASTINIO	I HEW.	
CITY OF AUSTIN AUSTIN WATER		AIR RELEASE AND AIR/VA	CUUM VALVE
Kathi L. Flowers	05/18/2016 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO 511-AW-04 1 OF 3

2 OF 2



NOTES

AIR RELEASE AND AIR/VACUUM VALVE

RESPONSIBILITY FOR APPROPRIATE 511-AW-04

2 OF 3

THE ARCHITECT/ENGINEER ASSUMES

USE OF THIS STANDARD.

AUSTIN WATER

05/18/2016

Kathi L. Flowers

- . ON 10" AND LARGER TWO PIECE COMBINATION AIR VALVES, THE OUTLET PIPING OF THE SMALL VALVE SHALL BE VENTED WITHIN THE VAULT INTO THE LARGER VENT PIPE
- AIR VENT PIPE 6" AND LARGER SHALL BE DI (CLASS 350 MIN.) PIPE FLANGE FITTINGS AND EXTERIOR SURFACES OF ALL EXPOSED PIPE SHALL BE PAINTED PER SPL WW-3C. POTABLE WATER PIPE SHALL BE PAINTED SAFETY BLUE. SURFACE PREPARATION SHALL BE PER PAINT MANUFACTURER'S REQUIREMENTS.
- ENTIRE AIR VENT ASSEMBLY SHALL BE LOCATED WITHIN EASEMENT OR R.O.W.
- 4. CONCRETE PIPE PENETRATIONS SHALL BE CORE BIT DRILLED. VOID SHALL BE SEALED w/LINKSEAL LS 300 OR APPROVED EQUAL.
- CROSS SECTIONAL AREA OF OPENING TO BE EQUAL TO OR GREATER THAN CROSS SECTIONAL AREA OF AIR VENT PIPE.
- AIR/VACUUM VALVE SHALL BE INSTALLED IN A MANNER WHICH WILL ALLOW REMOVAL OF ASSEMBLY WITHOUT REMOVAL OF PRECAST CONCRETE LID.
- IN UNDEVELOPED AREAS, THE AIR VENT PIPE SHALL BE 4' MIN. IN HEIGHT SUPPORTED BY A 4" DIA. DI PIPE WHICH HAS BEEN FILLED WITH CONCRETE (SUPPORT PIPE SHALL BE 6' LONG, BURIED IN CLASS A CONCRETE OR CLSM 3' BELOW FINAL GRADE AND EXTENDING 3' ABOVE FINAL GRADE). INSTALL ONE DELINEATOR STAKE WITHIN 3' OF THE VAULT ON THE VEHICULAR ACCESS SIDE OF VAULT OR AS DIRECTED BY AUSTIN WATER. DELINEATOR SHALL BE BLUE FOR POTABLE WATER AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE IN COLOR, TYPE I REFLECTIVE TAPE MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES. IN DEVELOPED AREAS, THE AIR VENT PIPE SHALL BE LOCATED NOT TO CONFLICT WITH SIDEWALK, DRIVEWAY, OR OTHER PEDESTRIAN TRAFFIC
- GATE VALVE, PIPE, AND FITTINGS FROM MAIN TO ARV SHALL BE OF EQUAL DIAMETER AS THE AIR VALVE EXCEPT 3" ARV SHALL HAVE 4" FITTINGS AND A 4"x3" REDUCER AT THE ARV, AND ALL PIPE AND FITTINGS ON THE OUTLET SIDE OF THE ARV SHALL BE EQUAL TO THE SIZE OF THE OUTLE" OF THE ARV. VAULTS SHALL BE 5' DIAMETER FOR 3" VALVE; 6' DIAMETER FOR 4", 6", AND 8" VALVES; AND 7' DIAMETER FOR 10" AND 12" VALVES.
- FOR 24" AND LARGER MAINS, AN 18" OUTLET WITH BLIND FLANGE SHALL BE INSTALLED AT CONNECTION OF ARV.

3" OR LARGER AIR/VACUUM VALVE INSTALLATION - TYPE II

RECLAIMED WATER: ALL RECLAIMED PVC PIPE SHALL BE MANUFACTURED PURPLE PIPE. HDPE PIPE SHALL BE MANUFACTURED WITH PURPLE STRIPES. ALL OTHER PIPE AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL PIPE AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER		AIR RELEASE AND AIR/VA	CUUM VALVE
Kathi L. Flowers	05/18/2016	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-AW-04 3 OF 3



APPROVAL

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	1
	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	
	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 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).

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growth

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.

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.

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.

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. 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".

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 ct. Contractor shall verify all benchmarks and information used in design and compare to existing conditions.

is Contractor's responsibility to provide proper positive drainage throughout this contract area. Field conditions shall be verified in conjunction with the sed elevations to ensure that adequate drainage is provided. Report deviations or conflicts to Owner's Representative. Unless otherwise indicated, minimum 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' um. Maximum ground slopes to be 4' horizontal to 1' vertical, unless otherwise approved in advance.

sign elevations shown are "finished grades" unless otherwise indicated. Contractors shall refer to drawings, details and specifications regarding depth of ade materials required to construct project improvements.

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

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

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

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 ractor 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

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

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

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

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

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

ire 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.

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	09/27/2023
	EDGEWOOD AMENITY CENTER LANDSCAPE IMPROVEMENT PLANS LEANDER, TEXAS 78641
	Drawing File Name V:\200116-MIHO\Cadfiles\LA\Amenity Center\Sheets\LN-1.dwg Issued: 09/27/2023 2.
	CONSTRUCTION NOTES
]	Sheet No. LN-1 35 of 38
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Know what's below. Call before you dig.

FEXAS LAW REQUIRES 48 HOURS OF NOTICE PRIOR TO DIGGING. EXCLUDING WEEKENDS ID HOLIDAYS. ALL BEFORE YOU DIG, WAIT THE REQUIRED AMOUNT OF TIME, RESPECT FE MARKS, AND DIG WITH CARE! THE LOCATION OF EXISTING UNDERGROUND TILITIES 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 MAGES WHICH MAY OCCUR BY A FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

Approval

PROJECT # 21-PICP-023

GENERAL PLANTING NOTES

- 1. Contractor shall be responsible for becoming aware of all related existing conditions, utilities, pipes and structures, etc. prior to bidding and construction. The Contractor shall be held responsible for contacting all utility companies for field location of all underground utility lines, including depths, prior to any excavation. The Contractor shall notify the Owner's representative of apparent conflicts with construction and utilities so that adjustments can be planned prior to installation. Contractor shall take sole responsibility for any and all cost or other liabilities incurred due to damage of said utilities/structures/etc.
- The Contractor shall not willfully proceed with construction as designed when it is apparent that unknown obstructions and/or grade differences exist that may not have been known during design. Such conditions shall be immediately brought to the attention of the Owner's Representative for clarification. The Contractor shall assume full responsibility for all liabilities, including necessary revisions due to failure to give such notification.
- 3. Contractor shall be responsible for coordination with subcontractors and other contractors of related trades as required to accomplish the planting and related operations.
- 4. The acceptable tolerances for this project are minimal and specific layout is required as shown on the layout, planting and other plans. Final location and staking of all plant materials shall be accepted by the Owner's Representative in advance of plantings.
- 5. Coordinate installation of all plant material with installation of all adjacent irrigation, pavements, curb and related structures. Any damage to existing improvements is the responsibility of the Contractor.
- 6. Contractor shall notify Owner's Representative 48 hours prior to commencement of work to coordinate project inspection schedules.
- 7. The Contractor shall take all necessary scheduling and other precautions to avoid climatic damage to plants. A "planting" of specific calendar days is required to be submitted by the Contractor for approval and planting operations should occur per this approved schedule.
- 8. If conflicts arise between size of areas and plans, Contractor is required to contact Owner's Representative for resolution. Failure to make such conflicts known to the Owner's Representative will result in Contractor's liability to relocate the materials.
- 9. Plant names may be abbreviated on the drawings. See plant legend for symbols, abbreviations, botanical/common names, sizes, estimated quantities (if given) and other remarks.
- 10. It is the Contractor's responsibility to furnish all plant materials free of pests or plant diseases. Pre-selected or "tagged" material must be inspected by the Contractor and certified pest and disease free. It is the Contractor's obligation to maintain and warranty all plant materials per the specifications. All plants shall be subject to Owner's approval prior to installation.
- 11. Where provided, area takeoffs and plant quantity estimates in plant list are for information only. Contractor is responsible to do their own quantity take-offs for all plant materials and sizes shown on plans. In case of any discrepancies, plans take precedence over call-outs and/or the plant list(s).
- 12. Contractor shall provide "per-unit costs" for every size of plant material, and by type, as called out on Planting Plans in the Bid Proposal. Unit cost to include the plant material itself and installation, including all labor, amendments, fertilizers, warranty, etc., as detailed and specified for each size, "complete in place".
- 13. The Contractor is responsible to restore all areas of the site, or adjacent areas, where disturbed by operations of or related to the Contractor's work. Sod areas disturbed shall be restored with new sod. Native areas disturbed, if not already improved to meet other requirements of this contract, shall be restored consistent with type, rates and species of existing condition.
- 14. During plant establishment, native and wetland areas shall be protected from sedimentation and erosion. Prior to construction activities, native and wetland areas outside of the project limits shall be protected with silt fence.
- 15. When planting trees and shrubs in existing natural areas, minimize disturbance to adjacent existing vegetation.
- 16. No Ball & Burlap (B&B) material will be allowed or accepted unless specifically specified.
- 17. All plants shall be nursery grown, Grade 1 plants meeting American Nursery and Landscape Association (ANLA) standards set forth in the "American Standard for Nursery Stock" (ANSI Z60.1-2004). Plants are to be typical in shape and size for species. Plants shall not be root-bound or loose in their containers. Handle all plants with care in transporting, planting and maintenance until inspection and final acceptance.
- 18. Warranty: Provide a one-year replacement warranty for all plant materials. Warranty shall cover plants which have died or partially died (thereby ruining their natural shape), but shall not include damage by vandalism, browsing, hail, abnormal freezes, drought or negligence by the Owner. The Warranty is intended to cover Contractor negligence, infestations, disease and damage or shock to plants. Plants replaced under Warranty will be warranted for one year following replacement.

PLANTING LAYOUT AND INSTALLATION

- The Contractor shall be responsible for accurately laying out the plant beds and lawn areas by scaling the Drawings. The Contractor shall provide paint lines/stakes/hose or other means to fully indicate the specific layout geometry of all bed lines for approval by Owner's Representative prior to installation. The Contractor's Base Bid shall anticipate minor adjustments as directed by the Landscape Architect in the field. Changes affecting quantities will be covered by unit prices.
- 2. Following the approval of layout, the Contractor shall closely coordinate the installation of the irrigation system to conform to the approved layout.
- All planting beds are to be separated from adjacent Turf Sod, Turf Seed and Native Seed areas with edging per specifications and details. Additional locations may be indicated on the Drawings. Install edging following manufacture's installation instructions. Maintain an accurate layout with smooth curves and transitions, free of kinks and abrupt bends. Top of edging is to be 1" above soil level of adjacent turf. In Bid Proposal furnish a unit price per linear foot of edging installed.
- 4. Provide matching sizes and forms for all species of trees and plants installed on grid or spaced equally in rows as shown on drawings. Adjust spacing (to "equal-equal") as necessary, subject to acceptance by the Owner's Representative.
- 5. Unless otherwise indicated:
- a. All groupings of groundcovers, perennials, ornamental grasses and annuals shall be triangularly spaced (equal-equal). b. All planting areas including sod, seed and planting beds, shall receive soil amendments per the notes and specifications. c. Sodded lawn shall have been grown between 9 and 18 months and shall be vigorous, well-rooted and healthy turf. Minimum thatch thickness shall be $\frac{3}{4}$ ".
- d. All gravel areas or rock mulches should be installed over weed barrier fabric. Edges of weed barrier should overlap minimum 6".
- e. All bulb planting shall occur after mid-October and before ground is frozen. See details for bulb planting layout.
- All Plant Beds and pit planted plants shall receive a 3" depth layer of shredded hardwood mulch. Refer to plans, details and specifications for location and type of any alternate mulch used. In Bid Proposal furnish a unit price(s) per cubic yard of mulch(es) placed. This unit price(s) will be used in the adjustment of bed areas.
- 7. Planting pits for 1 and 5 gallon shrubs shall be at least 8" larger in diameter than the container size. Larger container sizes and B&B plants shall be planted in pits at least 3 times larger in diameter than the root ball size.
- 8. Plants shall be installed to present their best side facing the viewer.
- 9. Owner's representative shall have final approval of plant material layout.

Large Boulders

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TURF GRASS/ PLANT BEDS				
NAME	TOTAL	UNITS	DESCRIPTION	
Mulch Bed - Under Existing Trees	452	sf		
	4	су	Mulch	3" Depth (Native Hardwood Mulch)
Plant Bed	6,343	sf		
	117	су	Planting mix	6" depth (Pro-Gro Soil Mix by Whittlesey Landscape Supply or approved equal)
	59	су	Mulch	3" Depth (Native Hardwood Mulch)
Cynodon dactylon `Tif 419` / Bermuda Grass	21,965	sf		Cynodon dactylon "TIFWAY 419"
	2,441	sy	Turf Sod	Bermuda T419
	407	су	Top Soil	6" Depth (75% Chocolate Loam / 25% Compost)
Native Grass Seed	17,253	sf		
	191 <i>7</i>	sy	Native Seed Mix	Native Sun Turf Mixture Buffalo/Blue Gamma
	107	су	Top Soil	2" depth Compost
MISCELANEOUS				
NAME	TOTAL	UNITS	DESCRIPTION	COMMENTS
Steel Edging	1,806	lf	3/16" thick; Brown	
Gravel	19	су	3" Depth / Size	
Small Boulders	18	ea	12"x12"x18": Type Limestone / Sandstone	;

Section 1.04.V Turfgrass Percentage Calculations

Total Provided Landscapable Area	47,595	39%
		Percentages
Native Seed Mix	17,253 SF	36%
Turfgrass Sod	21,965 SF	46%
Plant Bed	6,343 SF	13%
River Rock	2,034 SF	4%

TREE DISTRIBUTION								
Code	Botanical/Common	Grow Green Guide Classification	QTY.	PERCENTAGE				
QUVI	Quercus Virginiana / Southern Live Oak	Tree	10	27%				
QUTE	Quercus Texana / Texas Red Oak	Tree	10	27%				
ULCR	Ulmus crassifolia / Cedar Elm	Tree	8	22%				
PRME	Prunus Mexicana / Mexican Plum	Small Tree	5	14%				
LAIN	Lagerstroemia indica `Natchez` / Crape Myrtle	Small tree	4	11%				
		Total (Tree and Small Tree)	37	100%				
		Total Trees	28	76%				
		Total Small Trees	9	24%				

verall Required Landscape Area						P	Provided Landscape Area							
	%		SQFT		Total				SQFT	%				
Multi-Family	20%	Х		=	0	Тс	otal Are	а	18,215	15%				
Office/Professional	15%	Х		=	0	Тс	otal Pro	vided	47,595	39%				
Commercial	15%	Х		=	0									
Industrial/Manufacturing	10%	Х		=	0									
School/Church/Community	15%	Х	121,433	=	18,215									
Park	15%	Х		=	0									
The minimum percentage of equired to be landscaped ev	flandsc ven if th	ape nev	e area may exceed th	/ in ne a	clude s above p	etback ercent	areas.	Howeve	er, the se	tback a	areas are	2		
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PLANT SCHE	DULE					
TREES		BOTANICAL / COMMON NAME	CONTAINER	CALIPER	HT/SPD	WATER USE
QUTE	10	Quercus texana / Texas Red Oak	Container Grown	3"Cal	12-15` H X 8` Spd	M
QUVI	10	Quercus virginiana / Southern Live Oak	Container Grown	3"Cal	12-15` H X 8` Spd	L
ULCR	8	Ulmus crassifolia / Cedar Elm	Container Grown 3"Cal		12-15` H X 8` Spd	м
ORNAMENTAL TREES	QTY	BOTANICAL / COMMON NAME	CONTAINER	CALIPER	HT/SPD	WATER USE
LAIN	4	Lagerstroemia x `Natchez` / Crape Myrtle	1" Cal @ 3 trunks, min.	8-9` H X 3-4` Spd	М	
PRME	5	Prunus mexicana / Mexican Plum	Container Grown	1" Cal @ 3 trunks, min.	8-9` H X 3-4` Spd	L
					•	
SHRUBS	QTY	BOTANICAL / COMMON NAME	CONTAINER	CONTAINER SIZE	NOTES	WATER USE
ABGR	19	Abelia x grandiflora / Glossy Abelia	Container Grown	5 gallon	Full to Ground	L-M
ILBN	17	Ilex cornuta `Burfordii Nana` / Dwarf Burford Holly	Container Grown	5 gallon	Full to Ground	М
LEGI	24	Leucophyllum frutescens `Cimarron` / Green Cloud Texas Ranger	Container Grown	5 gallon	Full to Ground	L
SAGR	35	Salvia greggii / Autumn Sage	Container Grown	5 gallon	Full to Ground	L
TEFR	28	Teucrium fruticans / Bush Germander	Container Grown	5 gallon	Full to Ground	L-M
GRASSES	QTY	BOTANICAL / COMMON NAME	CONTAINER	CONTAINER SIZE	NOTES	WATER USE
LIMU	116	Liriope muscari / Lily Turf	Container Grown	1 gallon	Full	L-M
MUCA	69	Muhlenbergia capillaris / Gulf Coast Muhly	Container Grown	5 gallon	Full	L
MULI	21	Muhlenbergia lindheimeri / Lindheimer`s Muhly	Container Grown	5 gallon	Full, Unbroken Blades	М
STTE	89	Stipa tenuissima / Mexican Feathergrass	Container Grown	1 gallon	Full	L
					•	
PERENNIALS	QTY	BOTANICAL / COMMON NAME	CONTAINER	CONTAINER SIZE	NOTES	WATER USE
ANQU	24	Anisacanthus quadrifidus var. wrightii / Flame Acanthus	Container Grown	5 gallon	Full	L
LAHO	20	Lantana horrida / Texas Lantana	Container Grown	5 gallon	Full	L
RHAR	19	Rhus aromatica / Fragrant Sumac	Container Grown	5 gallon	Full	L-M
			_		-	_
SUCCULENTS	QTY	BOTANICAL / COMMON NAME	CONTAINER	CONTAINER SIZE	NOTES	WATER USE
AGWT	11	Agave ovatifolia `Whale`s Tongue` / Whale`s Tongue Agave	vatifolia `Whale`s Tongue Agave Container Grown		Full, Unbroken Blades	VL
DATE	5	Dasylirion texanum / Texas Sotol	Container Grown	5 gallon	Full, Unbroken Blades	
НЕРА	19	Hesperaloe parviflora / Red Yucca	Container Grown	5 gallon	Full, Unbroken Blades	VL
						_
GROUNDCOVER	QTY	BOTANICAL / COMMON NAME	CONTAINER	CONTAINER SIZE	NOTES	WATER USE
ARPO	54	Artemisia x `Powis Castle` / Powis Castle Artemisia	Container Grown	1 gallon	Full	L-M
ROOP	22	Rosmarinus officinalis `Prostratus` / Prostrate Rosemary	Container Grown	1 gallon	Full Canopy, Shrub Form	L
TECO	44	Teucrium cossonii / Creeping Germander	Container Grown	1 gallon	Full Canopy, Shrub Form	L-M

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24"x24"x36" : Type Limestone / Sandstone

LANDSCAPE WORKSHEET

Approval





TEXAS LAW REQUIRES 48 HOURS OF NOTICE PRIOR TO DIGGING. EXCLUDING WEFKENDS ND HOLIDAYS. ALL BEFORE YOU DIG, WAIT THE REQUIRED AMOUNT OF TIME, RESPECT HE MARKS, AND DIG WITH CARE! THE LOCATION OF EXISTING UNDERGROUND TILITIES 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 MAGES WHICH MAY OCCUR BY A FAILURE TO EXACTLY LOCATE AND PRESERVE ANY

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PROJECT # 21-PICP-023



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