

Case No. C8J-2021-0141.0A

Supporting Exhibits for Variance Applications

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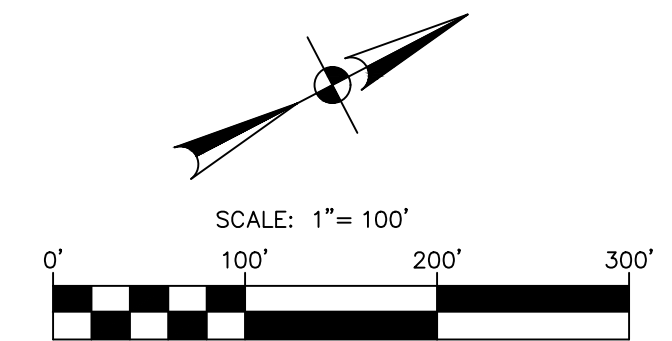
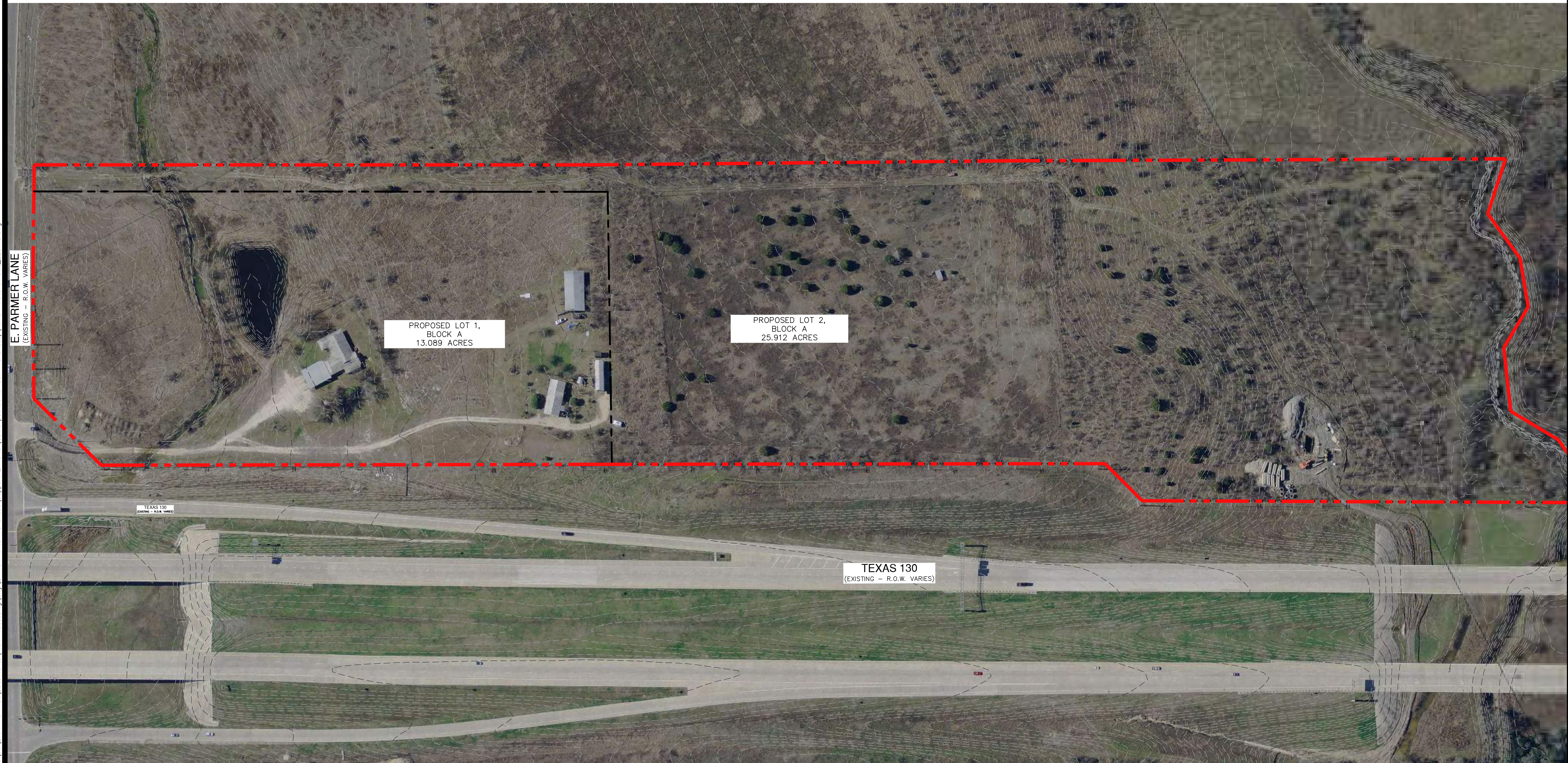
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EXHIBIT 1 — AERIAL PHOTO OF SITE

Date: Apr 18, 2022, 10:52am User ID: AKalifa
File: H:\Projects\512\09\00\216 Final Plat\Documents\Plan Processing\City\Environmental Variances\Support Exhibits (some packet for both variances)\Aerial Photo of site_220418.dwg

Date: Apr 18, 2022, 10:52am User ID: AKalifa

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PAPE-DAWSON
ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
10801 N. MOPAC EXPY. BLDG. 3, STE. 200 | AUSTIN, TX 78769 | 512.454.8711
TPEB FIRM REGISTRATION #10028801 | TPEBLS FIRM REGISTRATION #10028801

8020 PARMER/SH130 NW
AUSTIN, TEXAS

AERIAL PHOTO EXHIBIT

JOB NO. 51209-00
DATE NOVEMBER 2021
DESIGNER TM
CHECKED DRAWN HJG
SHEET 01 OF 01

EXHIBIT 2 – SITE PHOTOS

±14.34-ACRE PARMER MF Environmental Resource Inventory

Photo No. 1	Date: 03-30-2021
Description: View of the paved portion of the project site facing southeast, on the southeastern corner of the project site.	

A wide-angle photograph of a large, flat, paved area, possibly a parking lot or a construction site. The ground is a uniform, light brown color. In the background, there are several tall utility poles with power lines stretching across the sky. To the left, a bridge or overpass structure is visible. The sky is overcast and grey. The overall scene is industrial or utilitarian.

Photo No. 2	Date: 03-30-2021
Description: A typical view of upland habitat that bordered the paved parking lot, on the southeastern portion of the project site. The habitat was a largely mixture of disturbed herbaceous vegetation.	

A photograph showing a dense field of tall, dry, greyish-brown grasses and shrubs. In the background, there are several green trees and a paved parking lot. The sky is overcast and grey. The foreground is filled with the dry vegetation, which appears to be a mixture of different species.

±14.34-ACRE PARMER MF Environmental Resource Inventory

Photo No. 3	Date: 03-30-2021	
Description: A typical view of the intermittent stream (S-01) identified on the project site, facing east, near the southeastern boundary of the project site.		

Photo No. 4	Date: 03-30-2021	
Description: A view of one of the freshwater scrub-shrub wetlands (W-01) identified on the project site. This wetland was topographically elevated and within the OHWM of the intermittent stream (S-01) identified.		

±14.34-ACRE PARMER MF Environmental Resource Inventory

Photo No. 5	Date: 03-30-2021	
Description: A view of the second freshwater scrub-shrub wetland (W-02) observed on the project site. This wetland abutted the intermittent stream (S-01) identified.		

Photo No. 6	Date: 03-30-2021	
Description: A view of the freshwater pond (W-03) observed on the project site. This pond is located north of the intermittent stream (S-01) identified. The pond was topographically depressed and separated from S-01 by a natural berm.		

±14.34-ACRE PARMER MF Environmental Resource Inventory

Photo No. 7	Date: 03-30-2021	
Description: Another view of the intermittent stream (S-01) identified. This photo was taken on the western boundary of the project site. S-01 drained across an existing cobble road and diverged around the freshwater scrub-shrub wetland (W-01) identified above.		

Photo No. 8	Date: 03-30-2021
Description: A typical view of upland habitat near the center of the project site, facing northeast.	

A photograph of upland habitat. The foreground is filled with tall, dry, brownish grasses and some green shrubs. In the background, there is a building with a dark roof and some other structures, all under a cloudy sky.

±14.34-ACRE PARMER MF Environmental Resource Inventory

Photo No. 9	Date: 03-30-2021
Description: A view of the upland habitat observed on the northern portion of the project site.	

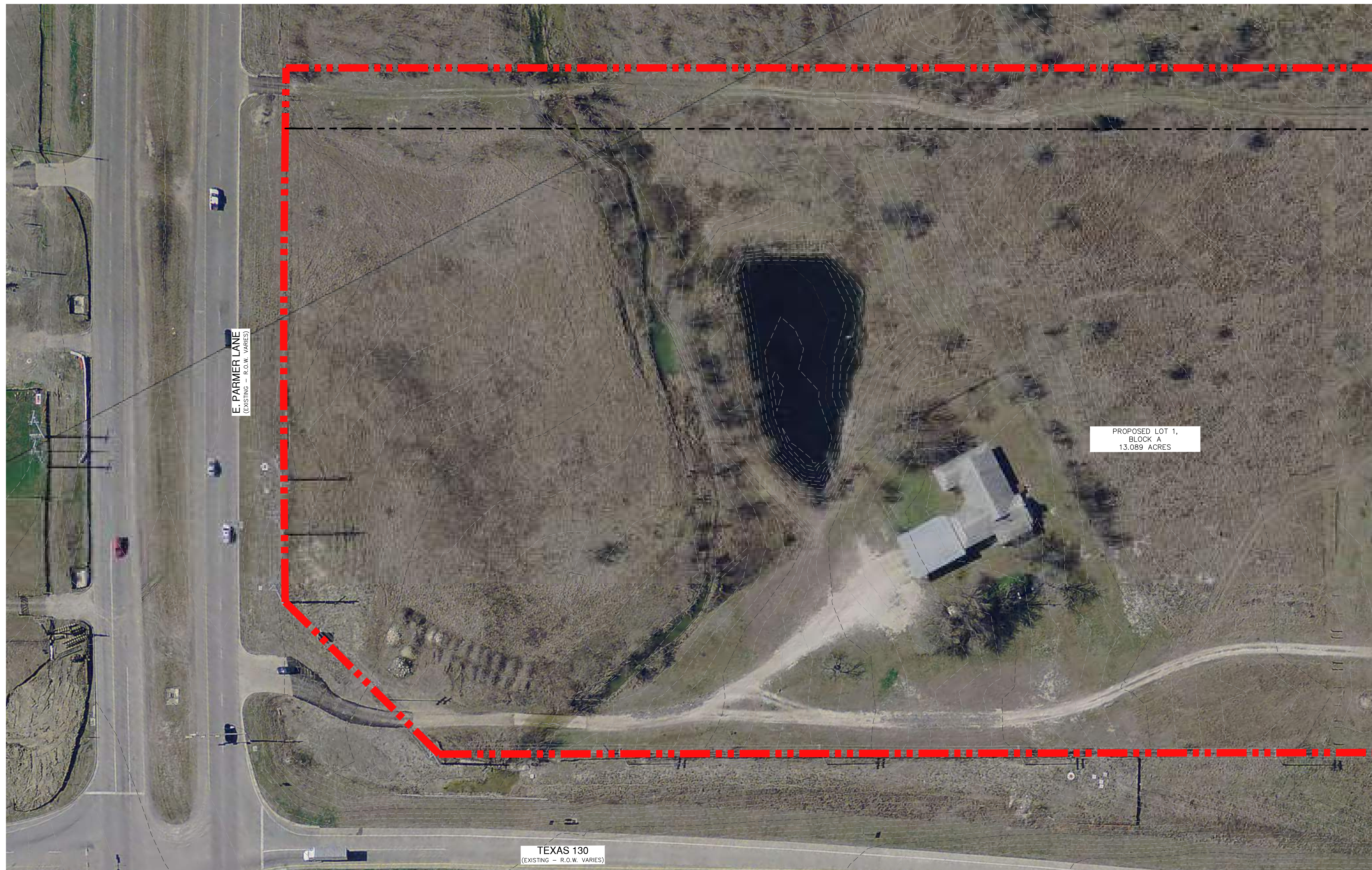
A photograph of an upland habitat. The foreground is a grassy field with some taller, dry grasses. In the background, there is a dark, possibly metal, building with a corrugated roof, surrounded by trees and shrubs under a cloudy sky.

Photo No. 10	Date: 03-30-2021	
Description: A view of piles of fill observed on the southwestern portion of the project site facing southwest.		

EXHIBIT 3 – AERIAL PHOTO OF VICINITY OF VARIANCE REQUEST AREA

Date: Apr 18, 2022, 10:56am User ID: AKalifa

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 WWW.PAPE-DAWSON.COM | TXBIS FIRM REGISTRATION #11002881

8020 PARMER/SH130 NW
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JOB NO. 51209-00
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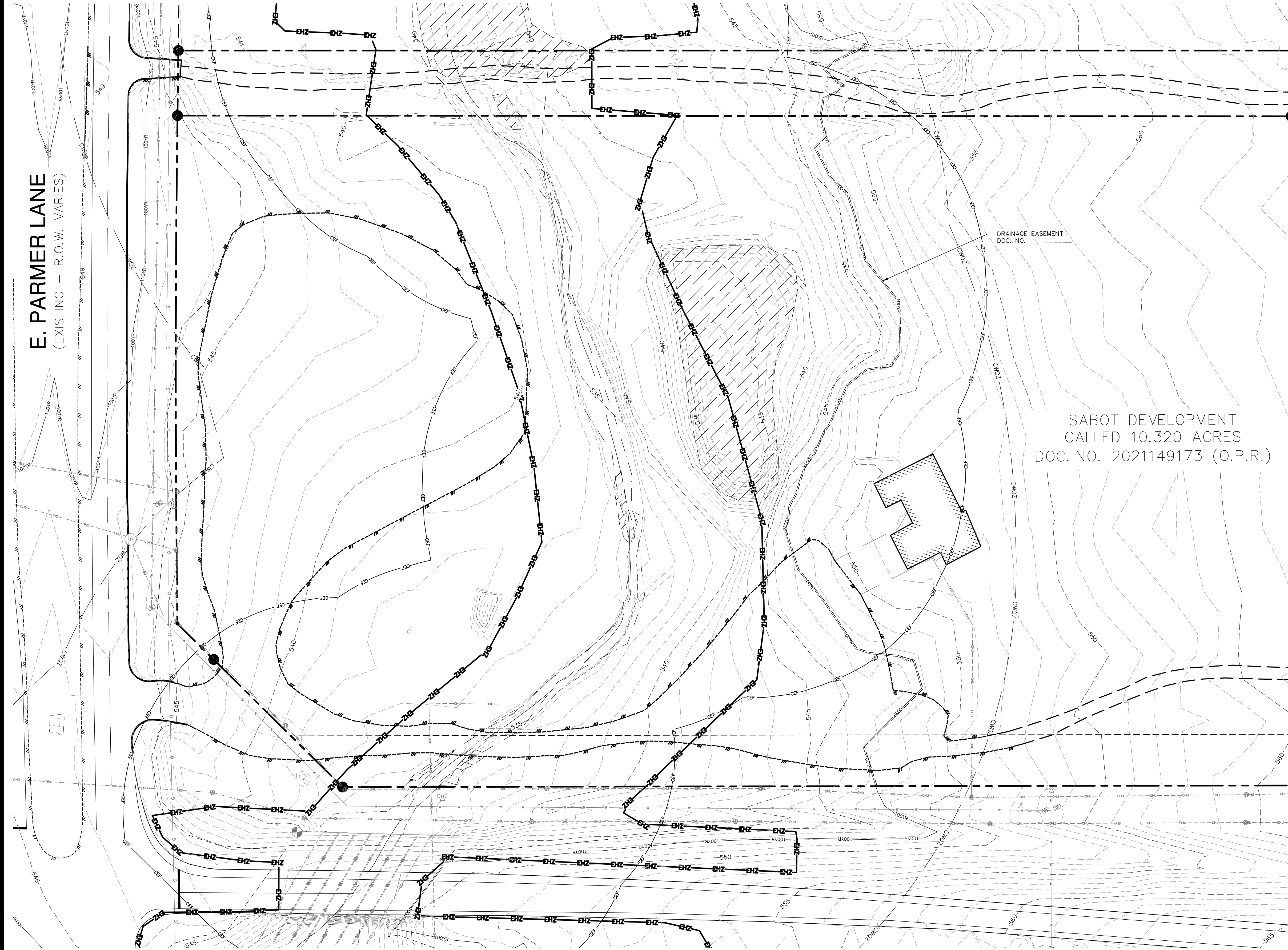
EXHIBIT 4 – CONTEXT MAP

EXHIBIT 5 – TOPOGRAPHIC MAPS

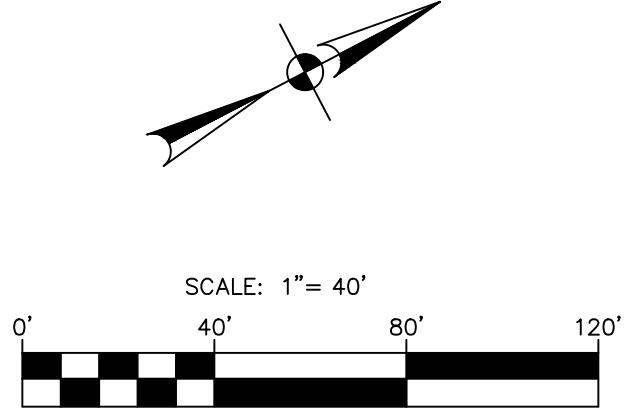
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E. PARMER LANE
(EXISTING - R.O.W. VARIES)



SABOT DEVELOPMENT
CALLED 10.320 ACRES
DOC. NO. 2021149173 (O.P.R.)



LEGEND

- | | | |
|--|-------|--|
| | LOC | LIMITS OF CONSTRUCTION |
| | | EXISTING PROPERTY LINE |
| | | ADJACENT CRITICAL WATER QUALITY LINE |
| | CWOZ | EXISTING CRITICAL WATER QUALITY ZONE |
| | 100YR | EXISTING ATLAS-14 100 YR FLOODPLAIN |
| | 25YR | EXISTING ATLAS-14 25 YR FLOODPLAIN |
| | CEF | EXISTING CRITICAL ENVIRONMENTAL FEATURE BUFFER |
| | X | EXISTING FENCE |
| | 777 | EXISTING CONTOUR LINE |
| | OHE | EXISTING OVERHEAD ELECTRICAL |
| | W | EXISTING PUBLIC WATER LINE |
| | X | EXISTING BARBED WIRE FENCE |
| | W | EXISTING PUBLIC WATER MANHOLE |
| | C | EXISTING CLEANOUT |
| | S | EXISTING SPRINKLER |
| | W | EXISTING WATER METER |
| | E | EXISTING ELECTRIC METER |
| | E | EXISTING ELECTRIC CONTROLS |
| | | EXISTING POWER POLE W/ TRANSFORMER |
| | | EXISTING UTILITY POLE |
| | | EXISTING GUY ANCHOR |
| | | EXISTING LIGHT POLE |
| | | EXISTING BENCHMARK |
| | | EXISTING FOUND IRON ROD |
| | | EXISTING MAILBOX |
| | | EXISTING GATE |

8020 PARMER/SH130 NW
AUSTIN, TEXAS

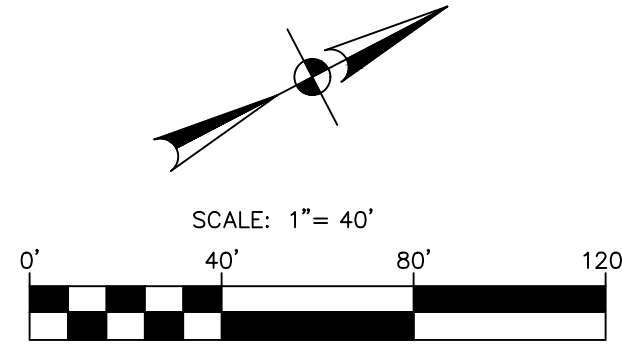
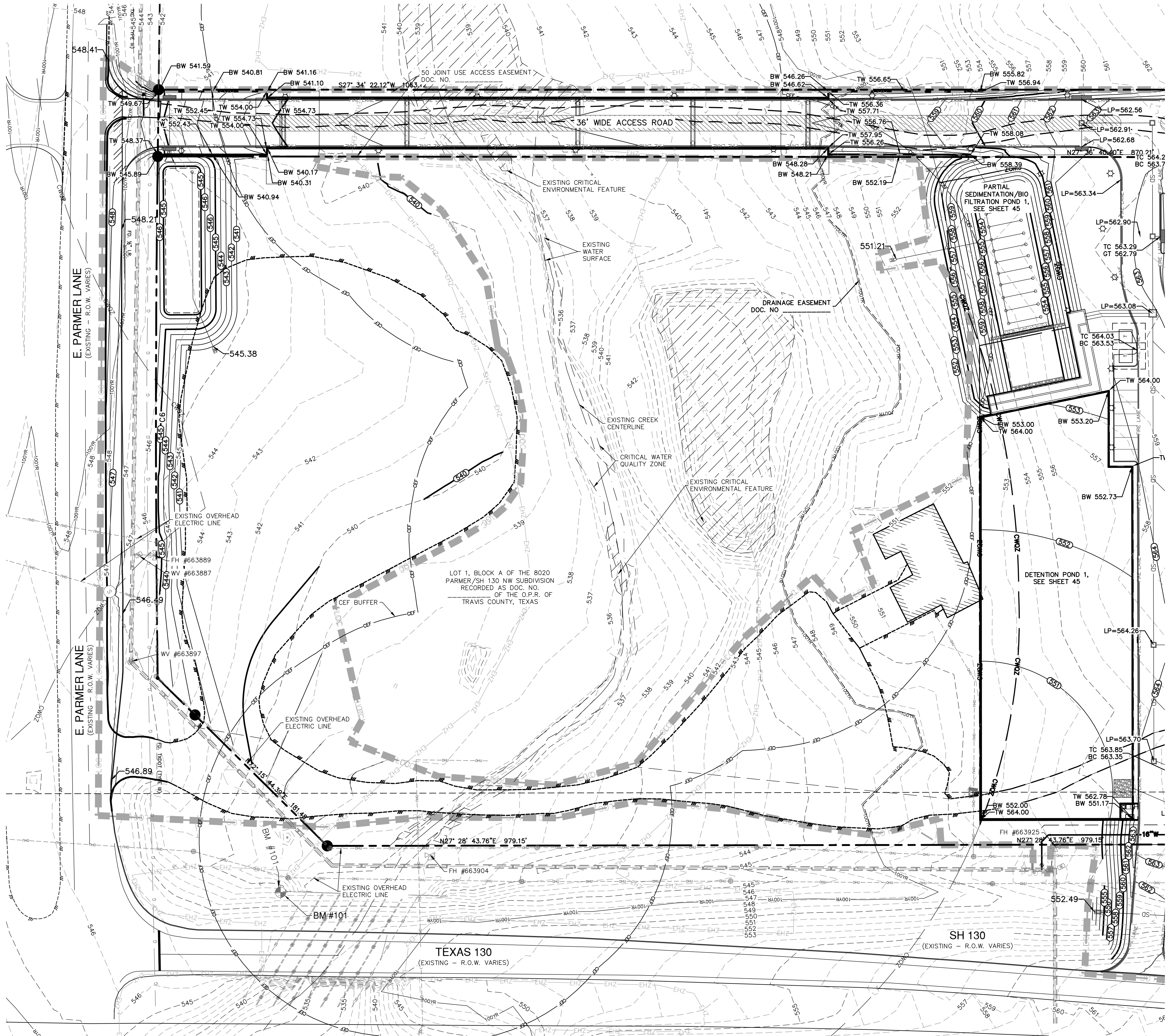
EXISTING GRADING PLAN EXHIBIT

JOB NO. 51209-00
DATE AUGUST 2021
DESIGNER TDM
CHECKED DRAWN HJG
SHEET 01 OF 04

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 BPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #100288001



- LEGEND**
- PROPERTY BOUNDARY
 - PROPOSED SWALE
 - LOC LIMITS OF CONSTRUCTION
 - EXISTING OVERHEAD ELECTRIC LINE
 - PROPOSED RETAINING WALL
 - TIE INTO EXISTING PAVEMENT
 - EXISTING CONTOUR LINE
 - PROPOSED CONTOUR LINE
 - PROPOSED SIDEWALK
 - PROPOSED ADA PATH
 - DRAINAGE FLOW ARROW
 - EXISTING GRADE ELEVATION
 - FINISHED GROUND ELEVATION
 - TOP OF PAVEMENT ELEVATION
 - TOP OF SIDEWALK ELEVATION
 - TOP OF WALL ELEVATION
 - BOTTOM OF WALL ELEVATION
 - LOW POINT ELEVATION
 - LOW POINT IN PAVEMENT ELEVATION
 - HIGH POINT
 - ADA RAMP
 - EXISTING SIGN
 - EXISTING UTILITY POLE

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TYPE FIRM REGISTRATION #470 | TYPE FIRM REGISTRATION #10028601

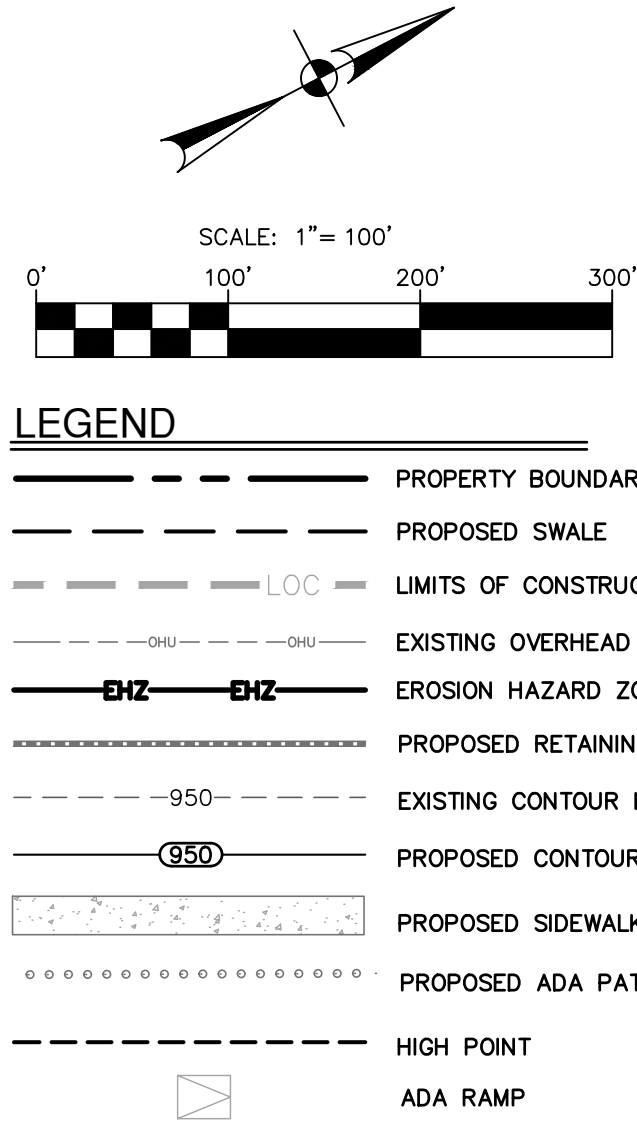
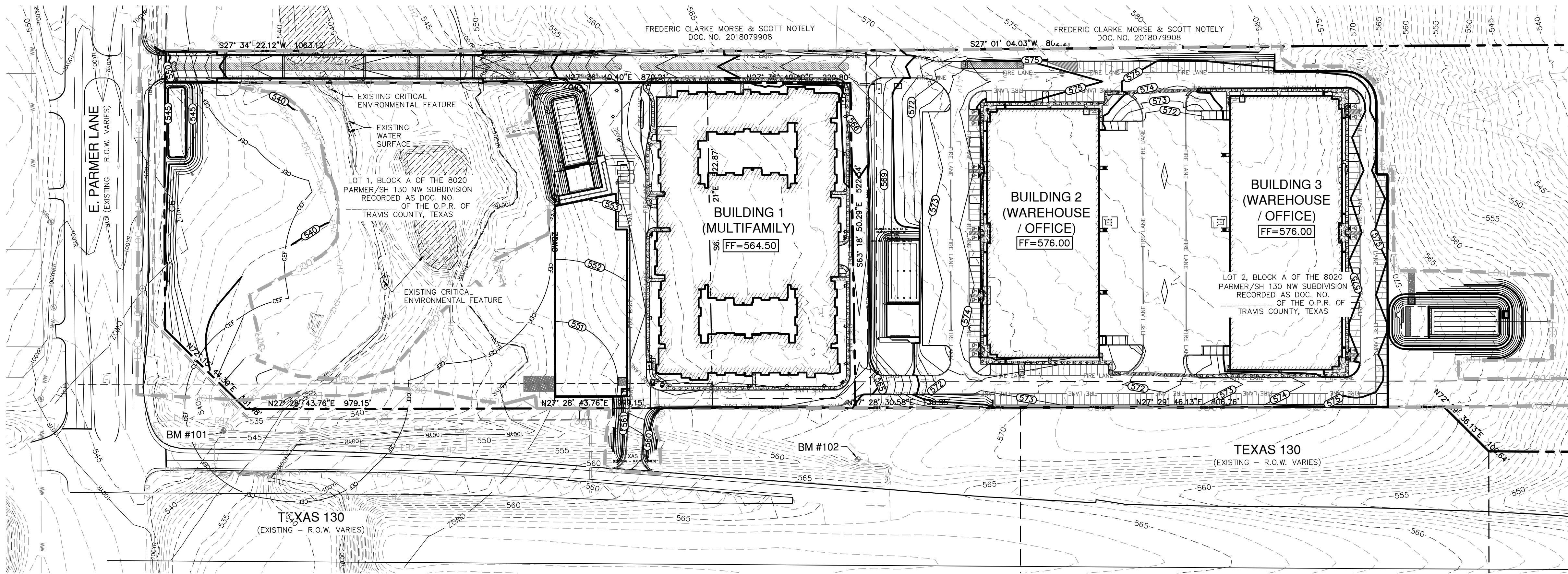
**8020 PARMER/SH130 NW
AUSTIN, TEXAS**

GRADING PLAN EXHIBIT

JOB NO. 51209-00
DATE NOVEMBER 2021
DESIGNER TM
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SHEET 03 OF 04

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8020 PARMER/SH130 NW
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OVERALL GRADING PLAN EXHIBIT

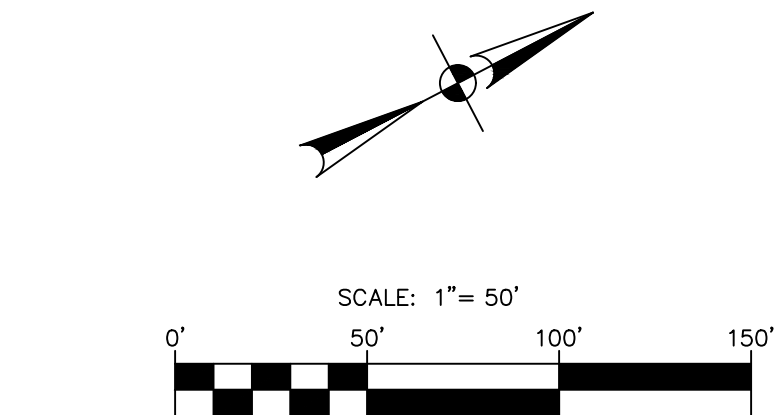
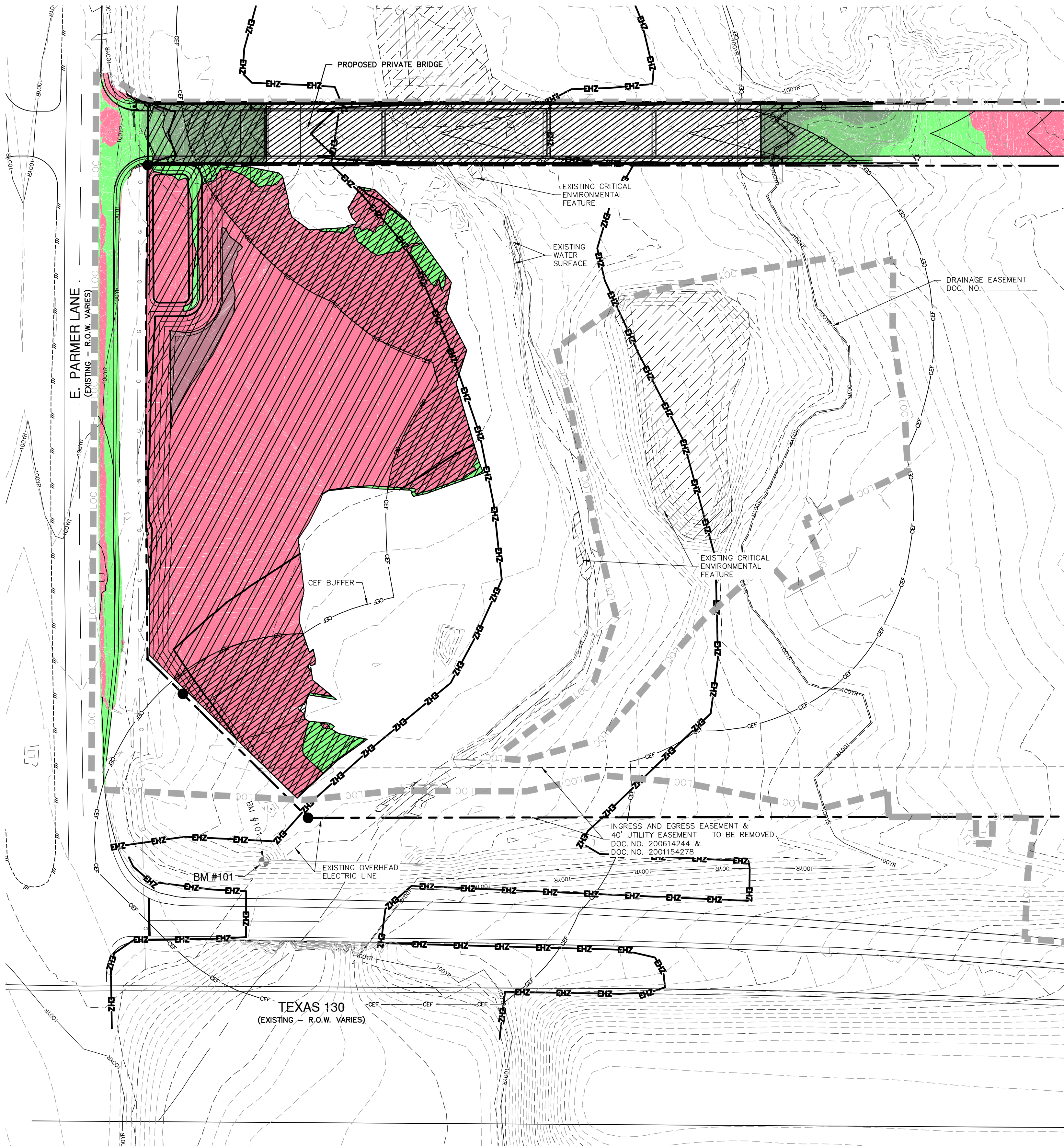
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DESIGNER TM
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SHEET 04 OF 04

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1801 N. MOPAC EXPY, SUITE 300 | AUSTIN, TX 78759 | 512.464.8711
TYPE FIRM REGISTRATION #4470 | TYPE FIRM REGISTRATION #10028601

NO.	REVISION	DATE

EXHIBIT 6 – CUT/FILL EXHIBITS

REVISIONS				
No.	Revision Description	Prepared by:	(Date)	Reviewed by: (Date)



LEGEND	
	LOC
	LIMITS OF CONSTRUCTION
	PROPERTY BOUNDARY
	EXISTING CONTOUR LINE
	PROPOSED CONTOUR LINE
	CUT AREA: -8' TO -4' VOLUME: 24.33 CUBIC YDS
	CUT AREA: -4' TO 0' VOLUME: 4981.31 CUBIC YDS
	FILL AREA: 0' TO 4' VOLUME: 3,750.01 CUBIC YDS
	FILL AREA: 4' TO 8' VOLUME: 3,593.17 CUBIC YDS
	FILL AREA: 8' TO 15' VOLUME: 4,957.69 CUBIC YDS
	FILL AREA: 15' TO GREATER VOLUME: 386.65 CUBIC YDS

	53,473.46 SF AREA GRADING DISTURBANCE WITHIN CEP BUFFER
	109,540.81 SF AREA GRADING DISTURBANCE WITHIN FLOODPLAIN

SITE PLAN RELEASE	
SITE PLAN APPROVAL	SHEET <u>08</u> OF <u>21</u>
FILE NUMBER <u>C8J-2021-0141.0APA</u>	APPLICATION DATE <u>AUGUST 20, 2021</u>
APPROVED BY COMMISSION _____	UNDER SECTION <u>112</u> OF
CHAPTER <u>25-5</u>	OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81, LDC) _____	CASE MANAGER <u>XXXX</u>
PROJECT EXPIRATION DATE (ORD. #970905-A) _____	DWPZ _____ DDZ _____
DEVELOPMENT SERVICES DEPARTMENT	
RELEASED FOR GENERAL COMPLIANCE: _____ ZONING <u>ETJ</u>	
Rev. 1 _____	Correction 1 _____
Rev. 2 _____	Correction 2 _____
Rev. 3 _____	Correction 3 _____
Final plan must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans Plans which do not comply with the Code current at the time of filing, and all required Building Permits and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.	

NO. REVISION

DATE

03/18/2022

Shelly Mitchell

PAPE-DAWSON ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
1801 N. MO-PAC EXPY, SUITE 200 | AUSTIN, TX 78759 | 512.464.8711
TYPE FIRM REGISTRATION #470 | TYPE FIRM REGISTRATION #10058601

8020 PARMER/SH130 NW
AUSTIN, TEXAS

CUT - FILL PLAN

JOB NO. 51209-00

DATE AUGUST 2021

DESIGNER TDM

CHECKED TDM DRAWN KT

SHEET 08 of 22

Date: Mar 17, 2022, 4:41pm User ID: jRobinson
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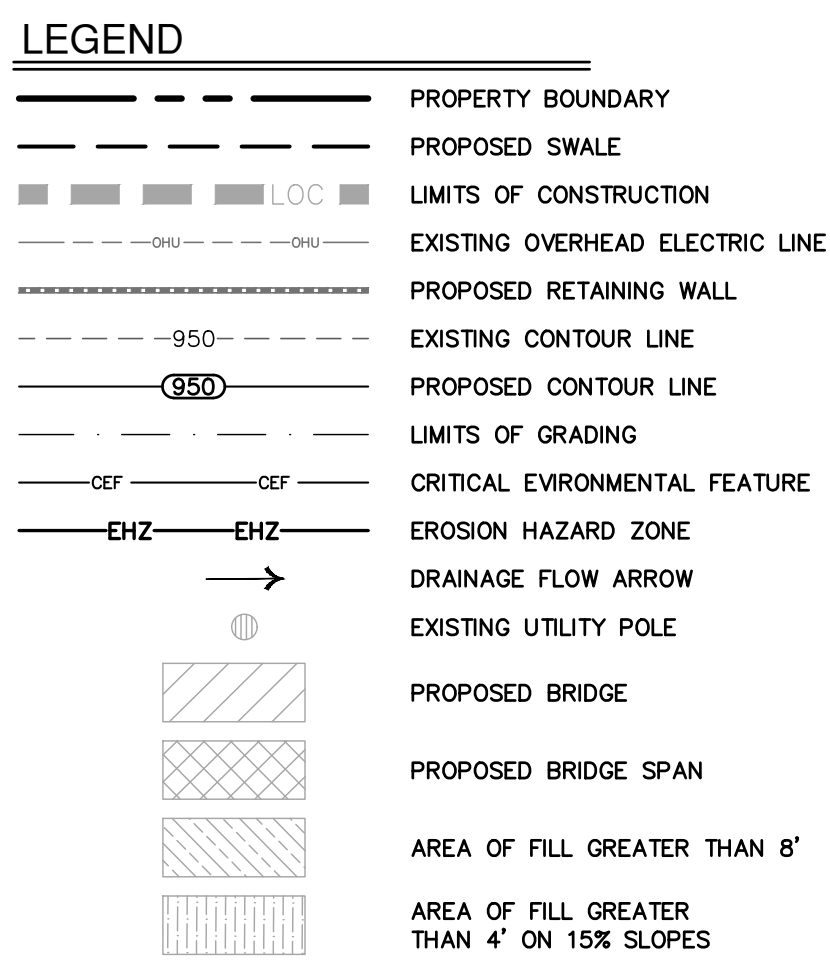
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EXHIBIT 7 – EXISTING CONDITIONS

EXHIBIT 8 – PROPOSED SITE PLAN

FLOODPLAIN NOTE:

GRADING SHOWN IN FLOODPLAIN AREA IS INTENDED TO PROVIDE APPROXIMATELY 4,850 CF OF ADDITIONAL FLOODPLAIN VOLUME TO OFFSET THE VOLUME DISPLACED BY THE PROPOSED PRIVATE DRIVE/BRIDGE. PLEASE REFER TO FLOODPLAIN ANALYSIS REPORT INCLUDED WITH THIS PROJECT ASSESSMENT SUBMITTAL. THE 500 YEAR FEMA FLOODPLAIN IS ACCEPTED AND NOTED AS THE FULLY DEVELOPED CITY OF AUSTIN 100 YEAR FLOODPLAIN. THE SITE PLAN IS NOTED BY THE 100 YEAR FLOODPLAIN LINEWORK IN PLAN VIEW.



NOTES

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE, AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND BE RESPONSIBLE TO BE IN POSSESSION OF THE INFORMATION, WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT.
3. SURFACE WALL ELEVATIONS AND DESIGN SHALL BE DETERMINED BY THE STRUCTURAL ENGINEER OF RECORD. RETAINING WALL CONSTRUCTION DRAWINGS WILL BE PROVIDED BY OTHERS DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL MAINTAIN WALL DESIGN.
4. ALL DISTURBED AREAS TO BE RE-VEGETATED.

BM #101: FOUND CHISELED SQUARE ON HEADWALL LOCATED ON THE WEST SIDE OF TEXAS 130 TOLL ROAD +/- 550' NORTH OF E. PARMER LANE.
DATUM: NAVD 88, GEOID12B
GRID NORTHING: 10102832.6'
GRID EASTING: 3160935.7'
ELEVATION=542.71'

BM #102: FOUND CHISELED SQUARE AT SOUTHWEST CORNER OF UTILITY VAULT LOCATED ON THE WEST SIDE OF TEXAS 130 TOLL ROAD +/- 1270' NORTH OF E. PARMER LANE.
DATUM: NAVD 88, GEOID03
GRID NORTHING: 10103714.4'
GRID EASTING: 3161447.4'
ELEVATION=566.68'

SITE PLAN APPROVAL SHEET 06 OF 21

FILE NUMBER CRJ-2021-0141-0A APPLICATION DATE AUGUST 20, 2021

APPROVED BY COMMISSION _____ UNDER SECTION 112 OF

CHAPTER 25-5 OF THE CITY OF AUSTIN CODE.

EXPIRATION DATE (25-5-81, LDC) _____ CASE MANAGER _____ XXXX

PROJECT EXPIRATION DATE ORD. #970905-A) _____ DWPZ _____ DDZ _____

RELEASED FOR GENERAL COMPLIANCE: _____ ZONING ETJ

Rev. 1 _____ Correction 1 _____

Rev. 2 _____ Correction 2 _____

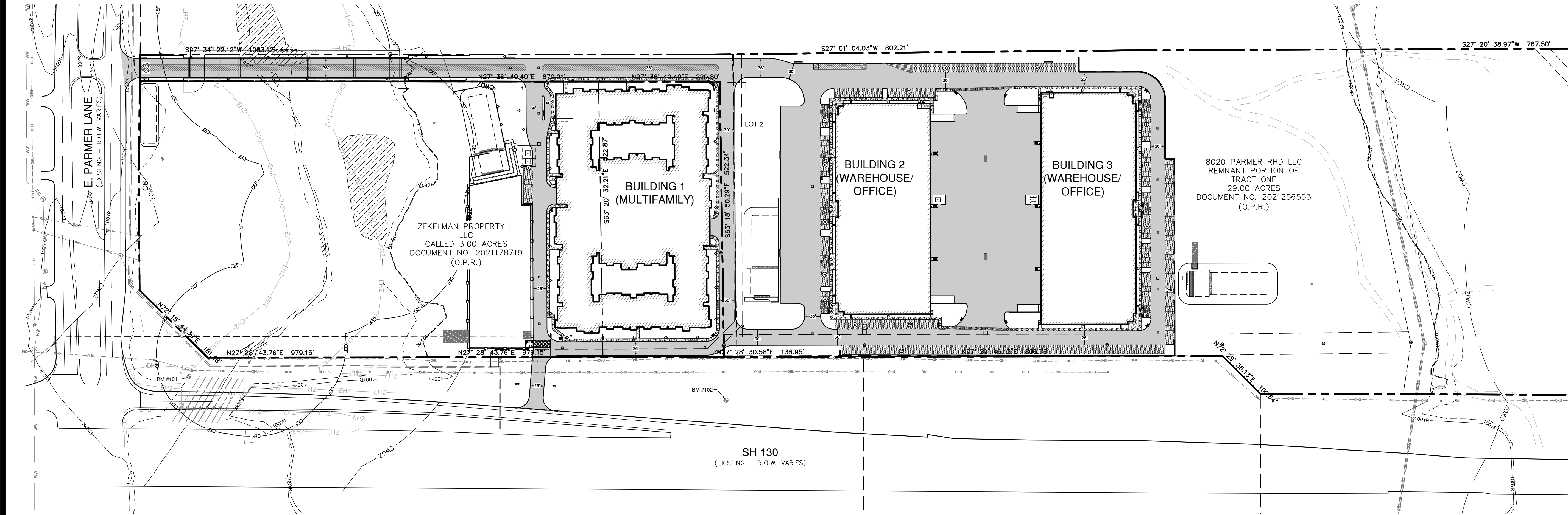
Rev. 3 _____ Correction 3 _____

Final plat must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans Plans which do not comply with the Code current at the time of filing, and all required Building Permits and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.

8020 PARMER/SH130 NW
AUSTIN, TEXAS
BRIDGE GRADING PLAN

JOB NO. 51209-00
DATE AUGUST 2021
DESIGNER TDM
CHECKED TDM DRAWN KT
SHEET 01 OF 02

Date: Apr 14, 2022, 9:50am User ID: hgarza
File: C:\Users\Local_Hgarza\Temp\AcPlotian_111532\SP0451209-00.dwg



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TYPE FIRM REGISTRATION #470 | TYPE FIRM REGISTRATION #10028601

8020 PARMER/SH130 NW
AUSTIN, TEXAS
OVERALL SITE PLAN EXHIBIT

JOB NO. 51209-00
DATE NOVEMBER 2021
DESIGNER TM
CHECKED DRAWN HJC
SHEET 02 OF 02

EXHIBIT 9 – ENVIRONMENTAL MAP

EXHIBIT 10 – ENVIRONMENTAL RESOURCE INVENTORIES

July 28, 2021

Mr. Warren Hayes – Senior Vice President
Z Modular
227 West Monroe Street., Suite 2600
Chicago, IL 60606

Re: ±14.34-Acre Parmer MF
Environmental Resource Inventory

Dear Mr. Hayes,

Pape-Dawson Engineers, Inc. (Pape-Dawson) conducted a Environmental Resource Inventory (ERI) for the ±14.34-acre Parmer MF project site located in Travis County, Texas. The purpose of this report is to identify any critical environmental features (CEFs) that may exist within the project site.

Based on Pape-Dawson's ERI, the proposed project contains two freshwater scrub-shrub wetlands and four freshwater emergent wetlands which would be considered critical environmental features (CEFs). In addition to the wetlands identified, one intermittent stream was mapped within the project site.

The conclusions presented in this report represent the professional opinion of Pape-Dawson Engineers and are limited to the conditions observed at the project site at the time and date of the field investigation.

If you have questions or require additional information, please do not hesitate to contact me at (210) 375-9000 at your earliest convenience.

Sincerely,
Pape-Dawson Engineers, Inc.



Valerie Collins, M.S., AICP
Associate Vice President

H:\Projects\512\49\00\ENV\Parmer-MF_ERI\Draft\20210408_51249-00_CoverLetter_ParmerMF.docx

Environmental Resource Inventory

For the City of Austin

Related to LDC 25-8-121, City Code 30-5-121, ECM 1.3.0 & 1.10.0

The ERI is required for projects that meet one or more of the criteria listed in LDC 25-8-121(A), City Code 30-5-121(A).

1. SITE/PROJECT NAME: 14.34-Acre Parmer MF
2. COUNTY APPRAISAL DISTRICT PROPERTY ID (#'s): 236741, 236750, 526010
3. ADDRESS/LOCATION OF PROJECT: Northwest of Intersection of E Parmer Lane and SH 130
4. WATERSHED: Gilleland Creek Watershed

5. THIS SITE IS WITHIN THE (Check all that apply)

Edwards Aquifer Recharge Zone* (See note below) ☐ YES ☒ No

Edwards Aquifer Contributing Zone* ☐ YES ☒ No

Edwards Aquifer 1500 ft Verification Zone* ☐ YES ☒ No

Barton Spring Zone* ☐ YES ☒ No

*(as defined by the City of Austin – LDC 25-8-2 or City Code 30-5-2)

Note: If the property is over the Edwards Aquifer Recharge zone, the Hydrogeologic Report and karst surveys must be completed and signed by a Professional Geoscientist Licensed in the State of Texas.

6. DOES THIS PROJECT PROPOSE FLOODPLAIN MODIFICATION?..... ☒ YES** ☐ NO

If yes, then check all that apply:

- ☐ (1) The floodplain modifications proposed are necessary to protect the public health and safety;
- ☒ (2) The floodplain modifications proposed would provide a significant, demonstrable environmental benefit, as determined by a **functional assessment** of floodplain health as prescribed by the Environmental Criteria Manual (ECM), or
- ☒ (3) The floodplain modifications proposed are necessary for development allowed in the critical water **quality zone under LDC 25-8-261 or 25-8-262, City Code 30-5-261 or 30-5-262.**
- ☐ (4) The floodplain modifications proposed are outside of the Critical Water Quality Zone in an area determined to be in poor or fair condition by a **functional assessment** of floodplain health.

**** If yes, then a functional assessment must be completed and attached to the ERI (see ECM 1.7 and Appendix X for forms and guidance) unless conditions 1 or 3 above apply.**

7. IF THE SITE IS WITHIN AN URBAN OR SUBURBAN WATERSHED, DOES THIS PROJECT PROPOSE A UTILITY LINE PARALLEL TO AND WITHIN THE CRITICAL WATER QUALITY ZONE? ☒ YES*** ☐ NO

*****If yes, then riparian restoration is required by LDC 25-8-261(E) or City Code 30-5-261(E) and a functional assessment must be completed and attached to the ERI (see ECM1.5 and Appendix X for forms and guidance).**

8. There is a total of 7 (#s) Critical Environmental Feature(s)(CEFs) on or within 150 feet of the project site. If CEF(s) are present, attach a detailed **DESCRIPTION** of the CEF(s), color **PHOTOGRAPHS**, the **CEF WORKSHEET** and provide **DESCRIPTIONS** of the proposed CEF buffer(s) and/or wetland mitigation. Provide the number of each type of CEFs on or within 150 feet of the site (Please provide the number of CEFs):

_____ (#'s) Spring(s)/Seep(s) _____ (#'s) Point Recharge Feature(s) _____ (#'s) Bluff(s)
 _____ (#'s) Canyon Rimrock(s) 7 (#'s) Wetland(s)

Note: Standard buffers for CEFs are 150 feet, with a maximum of 300 feet for point recharge features. Except for wetlands, if the standard buffer is not provided, you must provide a written request for an administrative variance from LDC 25-8-281(C)(1) and provide written findings of fact to support your request. Request forms for administrative variances from requirements stated in LDC 25-8-281 are available from Watershed Protection Department.

9. The following site maps are attached at the end of this report (Check all that apply and provide):

All ERI reports must include:

- ☒ **Site Specific Geologic Map with 2-ft Topography**
- ☒ **Historic Aerial Photo of the Site**
- ☒ **Site Soil Map**
- ☒ **Critical Environmental Features and Well Location Map on current Aerial Photo with 2-ft Topography**

Only if present on site (Maps can be combined):

- ☐ **Edwards Aquifer Recharge Zone with the 1500-ft Verification Zone**
(Only if site is over or within 1500 feet the recharge zone)
- ☐ **Edwards Aquifer Contributing Zone**
- ☐ **Water Quality Transition Zone (WQTZ)**
- ☒ **Critical Water Quality Zone (CWQZ)**
- ☐ **City of Austin Fully Developed Floodplains for all water courses with up to 64-acres of drainage**

10. **HYDROGEOLOGIC REPORT** – Provide a description of site soils, topography, and site specific geology below (Attach additional sheets if needed):

Surface Soils on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups*. If there is more than one soil unit on the project site, show each soil unit on the site soils map.

Soil Series Unit Names, Infiltration Characteristics & Thickness		
Soil Series Unit Name & Subgroup**	Group*	Thickness (feet)
See Table 1 & Exhibit 7		

***Soil Hydrologic Groups 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.

**Subgroup Classification – See Classification of Soil Series Table in County Soil Survey.

Description of Site Topography and Drainage *(Attach additional sheets if needed):*

Elevation at the project site ranged from 570 feet above sea level on the northern portion of the project site to approximately 540 feet above sea level on the southern portion. The project site had a general southeast sloping gradient.

List surface geologic units below:

Geologic Units Exposed at Surface		
Group	Formation	Member
Taylor Group	Navarro and Taylor Groups	N/A

Brief description of site geology *(Attach additional sheets if needed):*

The project site is located on the Navrro and Taylor Groups, undivided (Knt) geologic unit. The USGS describes the upper 250 feet of the geologic unit as mostly silty, calcar. clay with sandst beds and concentrionary masses near top, some interbeds of sandst. near base. The lower 200 feet are quartz sand, fine grained, silty, locally calcar. concentrations in discontin. beds.

The project site site is located outside the Edwards Aquifer and any associated zones.

Wells – Identify all recorded and unrecorded wells on site (test holes, monitoring, water, oil, unplugged, capped and/or abandoned wells, etc.):

There are 0 (#) wells present on the project site and the locations are shown and labeled

0 (#s) The wells are not in use and have been properly abandoned.

0 (#s) The wells are not in use and will be properly abandoned.

0 (#s) The wells are in use and comply with 16 TAC Chapter 76.

There are 0 (#s) wells that are off-site and within 150 feet of this site.

11. **THE VEGETATION REPORT** – Provide the information requested below:

Brief description of site plant communities (Attach additional sheets if needed):

The project site is depicted within the "Northern Blackland Prairie Level IV Ecoregion of Texas. The vegetation identified on the project site largely reflected vegetation common to this ecoregion. Examples of vegetation identified on the project site include Cedar Elm (*Ulmus crassifolia*), Ashe Juniper (*Juniperus ashei*), Sugar Hackberry (*Celtis laevigata*), Texas Pricklypear (*Opuntia engelmannii*), annual bastardcabbage (*Rapistrum rugosum*), Johnson grass (*Sorghum halepense*), and maximilian sunflower (*Helianthus maximiliani*).

There is woodland community on site ☒ YES ☐ NO (Check one).

If yes, list the dominant species below:

Woodland species	
Common Name	Scientific Name
Cedar Elm	<i>Ulmus crassifolia</i>
Ashe Juniper	<i>Juniperus ashei</i>
Sugar Hackberry	<i>Celtis laevigata</i>

There is grassland/prairie/savanna on site..... ☒ YES ☐ NO (Check one).

If yes, list the dominant species below:

Grassland/prairie/savanna species	
Common Name	Scientific Name
Maximilian Sunflower	<i>Helianthus maximiliani</i>
Annual Bastard Cabbage	<i>Rapistrum rugosum</i>
Johnson Grass	<i>Sorghum halepense</i>
Bermuda grass	<i>Cynodon dactylon</i>
Southern dewberry	<i>Rubus trivialis</i>

There is hydrophytic vegetation on site ☒ YES ☐ NO (Check one).

If yes, list the dominant species in table below (next page):

Hydrophytic plant species		
Common Name	Scientific Name	Wetland Indicator Status
Spike Rush	Eleocharis palustris	OBL
Broadleaf Cattail	Typha latifolia	OBL
Seaside Brookweed	Samolus parviflorus	OBL

A tree survey of all trees with a diameter of at least eight inches measured four and one-half feet above natural grade level has been completed on the site.

☐ YES ☒ NO (Check one).

12. WASTEWATER REPORT – Provide the information requested below.

Wastewater for the site will be treated by (Check of that Apply):

- ☐ On-site system(s)
☒ City of Austin Centralized sewage collection system
☐ Other Centralized collection system

Note: All sites that receive water or wastewater service from the Austin Water Utility must comply with City Code Chapter 15-12 and wells must be registered with the City of Austin

The site sewage collection system is designed and will be constructed to in accordance to all State, County and City standard specifications.

☒ YES ☐ NO (Check one).

Calculations of the size of the drainfield or wastewater irrigation area(s) are attached at the end of this report or shown on the site plan.

☐ YES ☐ NO ☒ Not Applicable (Check one).

Wastewater lines are proposed within the Critical Water Quality Zone?

☐ YES ☒ NO (Check one). If yes, then provide justification below:

Is the project site is over the Edwards Aquifer?

☐ YES ☒ NO (Check one).

If yes, then describe the wastewater disposal systems proposed for the site, its treatment level and effects on receiving watercourses or the Edwards Aquifer.

13. One (1) hard copy and one (1) electronic copy of the completed assessment have been provided.

Date(s) ERI Field Assessment was performed: 03/30/2021
Date(s)

My signature certifies that to the best of my knowledge, the responses on this form accurately reflect all information requested.

John Lee Gonzalez III

Print Name

John Lee Gonzalez III

Signature

(361) 585-8628

Telephone

johngonzalez@pape-dawson.com

Email Address

Pape-Dawson Engineers, Inc.

Name of Company

05/03/2021

Date

For project sites within the Edwards Aquifer Recharge Zone, my signature and seal also certifies that I am a licensed Professional Geoscientist in the State of Texas as defined by ECM 1.12.3(A).

P.G.
Seal

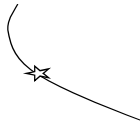

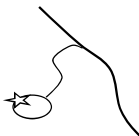
City of Austin Environmental Resource Inventory - Critical Environmental Feature Worksheet

[illegible]

Please state the method of coordinate data collection and the approximate precision and accuracy of the points and the unit of measurement.

Method	Accuracy
GPS	<input checked="" type="checkbox"/> sub-meter <input checked="" type="checkbox"/>
Surveyed	<input type="checkbox"/> meter <input type="checkbox"/>
Other	<input type="checkbox"/> > 1 meter <input type="checkbox"/>

Professional Geologists apply seal below

City of Austin Use Only	CASE NUMBER:
<p>For rimrock, locate the midpoint of the segment that describes the feature.</p> 	<p>For wetlands, locate the approximate centroid of the feature and the estimated area.</p> 
<p>For a spring or seep, locate the source of groundwater that feeds a pool or stream.</p> 	



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Environmental Resource Inventory

July 2021



Transportation | Water Resources | Land Development | Surveying | Environmental

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Environmental Resource Inventory

July 2021

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EXHIBITS

- Exhibit 1 – Location Map
- Exhibit 2 – Site Map
- Exhibit 3 – USGS Topographic Map (2019)
- Exhibit 4 – Floodplain Map
- Exhibit 5 – National Wetlands Inventory Map
- Exhibit 6 – Soils Map
- Exhibit 7 – Geologic Map
- Exhibit 8 – Edwards Aquifer Zone Map
- Exhibit 9 – Historical Aerial Photograph Map (1995)
- Exhibit 10 – Delineated Critical Environmental Features Map

APPENDICES

- Appendix A – Site Photographs
- Appendix B – Wetland Determination Form

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INTRODUCTION

Pape-Dawson Engineers, Inc. was contracted to conduct a City of Austin (COA) Environmental Resource Inventory (ERI) according to the Land Development Code (LDC) Section 25-8-121(A) and Title 30-5 for the approximately 14.34-acre Parmer MF project site in Travis County, Texas (**Exhibit 1**). The project site is located northwest of the intersection of East Parmer Lane and State Highway 130 in Austin, Texas (**Exhibit 2**).

The purpose of an ERI is to identify any critical environmental features (CEFs) within the project site. CEFs include bluffs, canyon rimrocks, caves, faults/fractures, seeps, sinkholes, springs, and wetlands (LDC 25-8-1; LDC 30-5-1).

METHODS

Desktop Review

Prior to a site investigation, a desktop review was performed utilizing the following resources to evaluate the project site for potential critical environmental features.

- COA environmental data;
- Railroad Commission of Texas (RRC) oil/gas well data;
- Texas Water Development Board (TWDB) water well data;
- Texas Commission of Environmental Quality (TCEQ) water well data;
- U.S. Geological Survey (USGS) historical and current topographic maps;
- Federal Emergency Management Agency (FEMA)'s digital flood insurance rate maps (dFIRM);
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI);
- National Resources Conservation Service (NRCS)' Web Soil Survey; and
- USGS geologic and structural feature data;
- TCEQ Edwards Aquifer zone data; and
- Google Earth Pro readily available historical and readily available current aerial imagery

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Environmental Resource Inventory

Field Methods

A Pape-Dawson environmental scientist familiar with the requirements of an ERI conducted a site investigation on March 30, 2021. Wetlands and other aquatic resources were delineated using the routine method described in the “Corps of Engineers Wetlands Delineation Manual” (Environmental Laboratory 1987) and the “U.S. Army Corps of Engineers (USACE) Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)” (Great Plains Regional Supplement Version 2010). The site was evaluated for other potential CEFs with transects similar to the protocols for assessing wetlands and consistent with the guidelines set forth by the City of Austin.

RESULTS

Desktop Review

Elevation at the site ranged from 570 feet above sea level (ASL) on the northern portion of the project site to approximately 540 feet ASL on the southern portion of the project site and had a general southeast sloping gradient. The COA depicts three tributaries within the project site. Two of the tributaries converge near the center of the project site and drain into the main tributary that transects the project site from west to east and drains southeast off the project site. The RRC, TWDB, and TCEQ do not depict any wells within 150 feet of the project site (**Exhibit 2**) (COA 2021; RRC 2021; TWDB 2021; TCEQ 2021).

The project site is depicted on the 2019 USGS Manor, TX 7.5-minute series topographic quadrangle map. The USGS depicts one pond near the center of the project site and one tributary just south of the depicted pond. The tributary transects the project site from west to east and drains southeast off the project site (**Exhibit 3**) (USGS 2019).

Review of FEMA’s dFIRM panels 48453C0480J (effective August 18, 2014) reveal that the southern half of the project site is transected by the 100-year floodplain of Gilleland Creek Tributary 1C. This tributary feature is depicted to drain southeast into Gilleland Creek. Two additional unnamed tributary features are depicted to converge near the center of the project site before draining south into Gilleland Creek Tributary 1C (**Exhibit 4**) (FEMA 2021).

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USFWS NWI depict a freshwater pond near the center of the project site and a riverine wetland that transects the project site from west to east before draining off the project site (**Exhibit 5**) (USFWS 2021).

According to the NRCS Web Soil Survey, four soil units are mapped within the project site Ferris-Heiden complex, 8 to 20 percent slopes, severely eroded (FhF3); Heiden clay, 3 to 5 percent slopes, eroded (HeC2); Heiden clay, 5 to 8 percent (HeD2); and Tinn clay, 0 to 1 percent slopes, frequently flooded (Tw) are all depicted within the project site (**Exhibit 6**). The soil unit's characteristics mapped within the project site are summarized in **Table 1** (NRCS 2020b). Only Tw is considered a hydric soil by the National Technical Committee for Hydric Soils (NRCS 2020a).

Table 1. Soil units within the project site according to the NRCS Web Soil Survey.

Mapping Unit	Soil Hydrologic Group	Drainage Class	Thickness
Ferris-Heiden complex, 8 to 20 percent slopes, severely eroded (FhF3)	D	Well drained	36-60 inches
Heiden clay, 3 to 5 percent slopes, eroded (HeC2)	D	Well drained	40-65 inches
Heiden clay, 5 to 8 percent (HeD2)	D	Well drained	40-65 inches
Tinn clay, 0 to 1 percent slopes, frequently flooded (Tw)	D	Moderately well drained	>80 inches

The project site is depicted wholly within the Navarro and Taylor groups, undivided (Knt) geologic unit (**Exhibit 7**). This geologic unit is described as areas where the Pecan Gap Chalk is not present because of gradation to marl, similar to that of the Marlbrook and Ozon Formations. The upper 250 feet is comprised of mostly silty, calcareous clay with sandstone beds and concretionary masses near the top, with some interbeds of sandstone near the base. The lower 200 feet of the unit is primarily composed of quartz sand, fine grained, silty locally calcareous concentrations in discontinued beds. The geologic age of the geologic unit is the Late Cretaceous epoch (Barnes 1983).

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The project site is not located within any designated TCEQ Edwards Aquifer zone (**Exhibit 8**) (TCEQ 2021).

A historical aerial photograph from 1995 was available and utilized to effectively investigate the site for CEFs. One tributary feature is depicted to transect the southern portion of the project site from west to east. A pond is visible north of the tributary feature. No direct surface water connections exist between the tributary or the pond identified (**Exhibit 9**) (Google Earth Pro 2021).

Field Results

No bluffs, canyon rimrock, caves, faults/fractures, seeps, sinkholes, or springs were found within the study area during the time of the site visit.

One intermittent stream, two freshwater scrub-shrub wetlands, four freshwater emergent wetlands, and one freshwater excavated pond were identified and mapped within the project site. Characteristics of the environmental features identified are described in **Table 2** below.

Table 2. Environmental Features Identified Within the Project Site.

ID	Feature Type	OHWL (Linear Feet)	Length (Linear Feet)	Area (Acres)	Jurisdictional Opinion
W-01	Freshwater Emergent Wetland	N/A	N/A	0.0567	Jurisdictional
W-02	Freshwater Scrub-Shrub Wetland	N/A	N/A	0.0072	Jurisdictional
W-03	Freshwater Emergent Wetland	N/A	N/A	0.0990	Jurisdictional
OW-01	Freshwater Pond	N/A	N/A	0.2444	Non-Jurisdictional
W-04	Freshwater Scrub-Shrub Wetland	N/A	N/A	0.0036	Jurisdictional
W-05	Freshwater Emergent Wetland	N/A	N/A	0.0047	Jurisdictional
W-06	Freshwater Emergent Wetland	N/A	N/A	0.0021	Jurisdictional
S-01	Intermittent Stream	8	799	0.280	Jurisdictional

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The intermittent stream identified (S-01) displayed flowing water and a consistent and well-defined ordinary high-water mark (OHWM) at the time of the site visit. A portion of S-01 had pooled near the south-central boundary of the project site. S-01 drains southeast and off the project site.

Two freshwater scrub-shrub wetlands (W-02, W-04) were identified within the project site. These freshwater scrub-shrub wetlands were identified within the riparian corridor of the intermittent stream (S-01) identified. Specifically, W-02 was identified on the southwestern portion of the project site, within the OHWM of S-01, on a topographically elevated portion of the stream. W-04 abutted S-01 near the center of the project site.

Four freshwater emergent wetlands (W-01, W-03, W-05, W-06) were identified within the project site. These wetlands were identified within the riparian corridor of the intermittent stream (S-01). W-01 is located east and on the edge of the project site. W-05 and W-06 are located where the intermittent stream drains southeast and off the project site. W-03 surrounds the freshwater pond (W-03) and is located near the center of the project site.

A freshwater pond (W-03) was identified within the project site. The freshwater pond is located approximately 75 feet north of S-01, near the center of the project site. This pond is separated by a natural berm. No direct channelized surface water connection was observed between the pond and S-01.

Site Photographs are included in **Appendix A**. Wetland Determination Forms are included in **Appendix B**.

DISCUSSION

Based on Pape-Dawson's ERI, seven environmental features were identified within the project site. Of the seven environmental features, Pape-Dawson would not consider the freshwater pond (W-03) to be a CEF.

The freshwater pond (OW-01) is excavated and would likely not be considered jurisdictional by the USACE. The earliest available USGS topographic map from 1968 does not depict a pond at the present-day location of the pond. USACE guidance mandates that artificial lakes and ponds are not jurisdictional if they are constructed or excavated in upland or non-jurisdictional waters. Because this pond is separated by a

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natural berm, there is likely no contribution of surface water flow to the pond in a typical year. Additionally, because the pond is artificial in nature and constructed in an upland; the freshwater pond (W-03) identified would likely not be considered jurisdictional. The COA mandates that permitted water quality wet ponds, roadside ditches, and ponds fed by wells or other artificial sources of hydrology are not considered wetlands. Because W-03 would not exist without artificial manipulation, Pape-Dawson would not consider W-03 to be a CEF.

The intermittent stream and two freshwater scrub-shrub wetlands were delineated and mapped according to USACE and COA protocols. The COA's critical water quality zone for the intermittent stream identified was utilized for this report. A 150-foot buffer was added to both freshwater scrub-shrub wetlands identified, in accordance with COA guidance. The intermittent stream (OW-01), two freshwater scrub-wetlands (W-02, W-04), four freshwater emergent wetlands, and associated buffers are depicted in **Exhibit 10**.

CONCLUSION

Based on Pape-Dawson's ERI, the proposed project contains two freshwater scrub-shrub wetlands and four freshwater emergent wetlands which would be considered critical environmental features (CEFs). In addition to the wetlands identified, one intermittent stream was mapped within the project site.

The conclusions presented in this report represent the professional opinion of Pape-Dawson Engineers and are limited to the conditions observed at the project site at the time and date of the field investigation.

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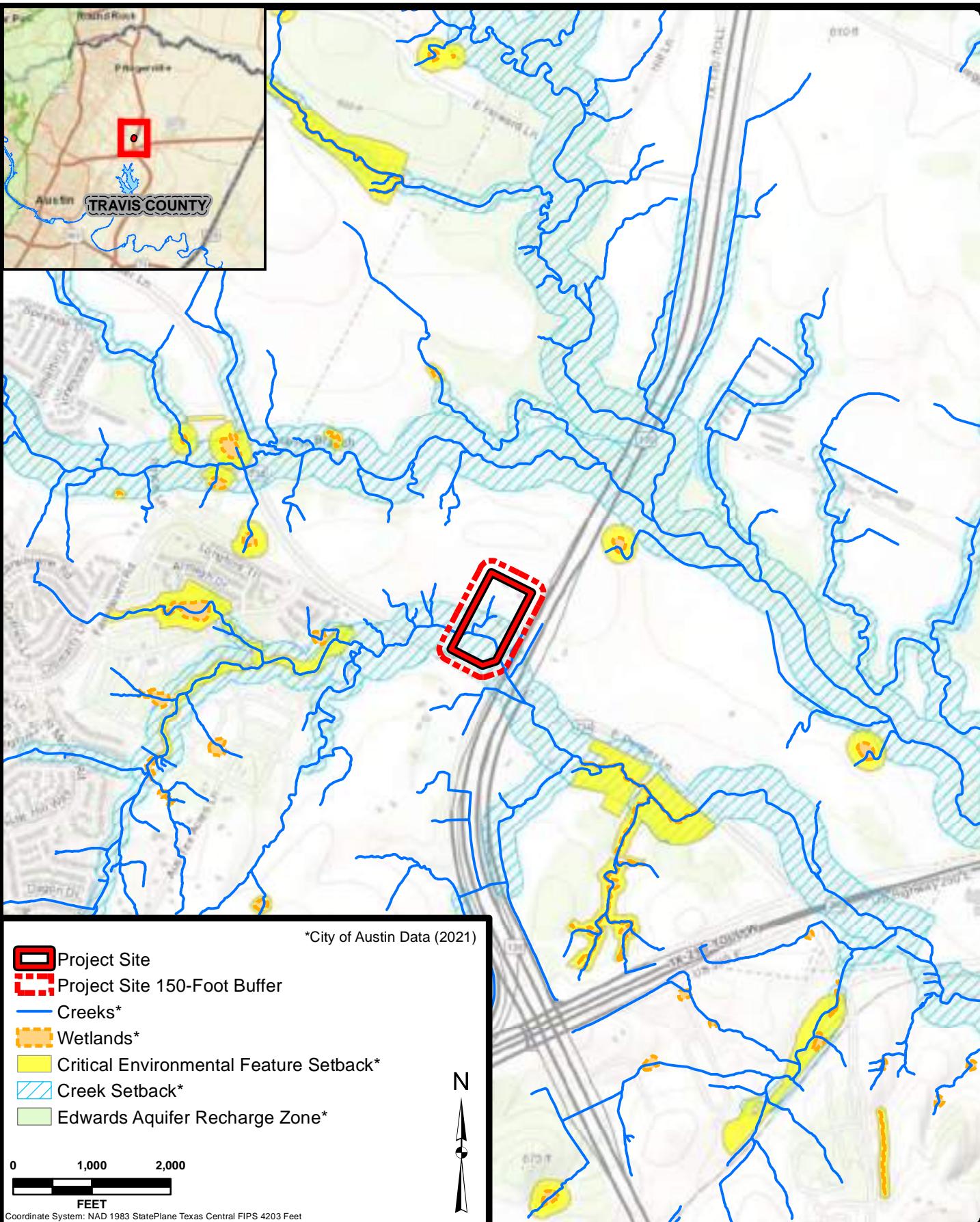
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EXHIBITS

EXHIBIT 1

Location Map



*City of Austin Data (2021)

- Project Site
- Project Site 150-Foot Buffer
- Creeks*
- Wetlands*
- Critical Environmental Feature Setback*
- Creek Setback*
- Edwards Aquifer Recharge Zone*

0 1,000 2,000
FEET

Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet

N
↑

JOB NO.	51249-00
DATE	May 2021
DESIGNER	JG
CHECKED	VC
DRAWN	JG
SHEET	EXHIBIT 01

Parmer MF

Environmental Resources Inventory

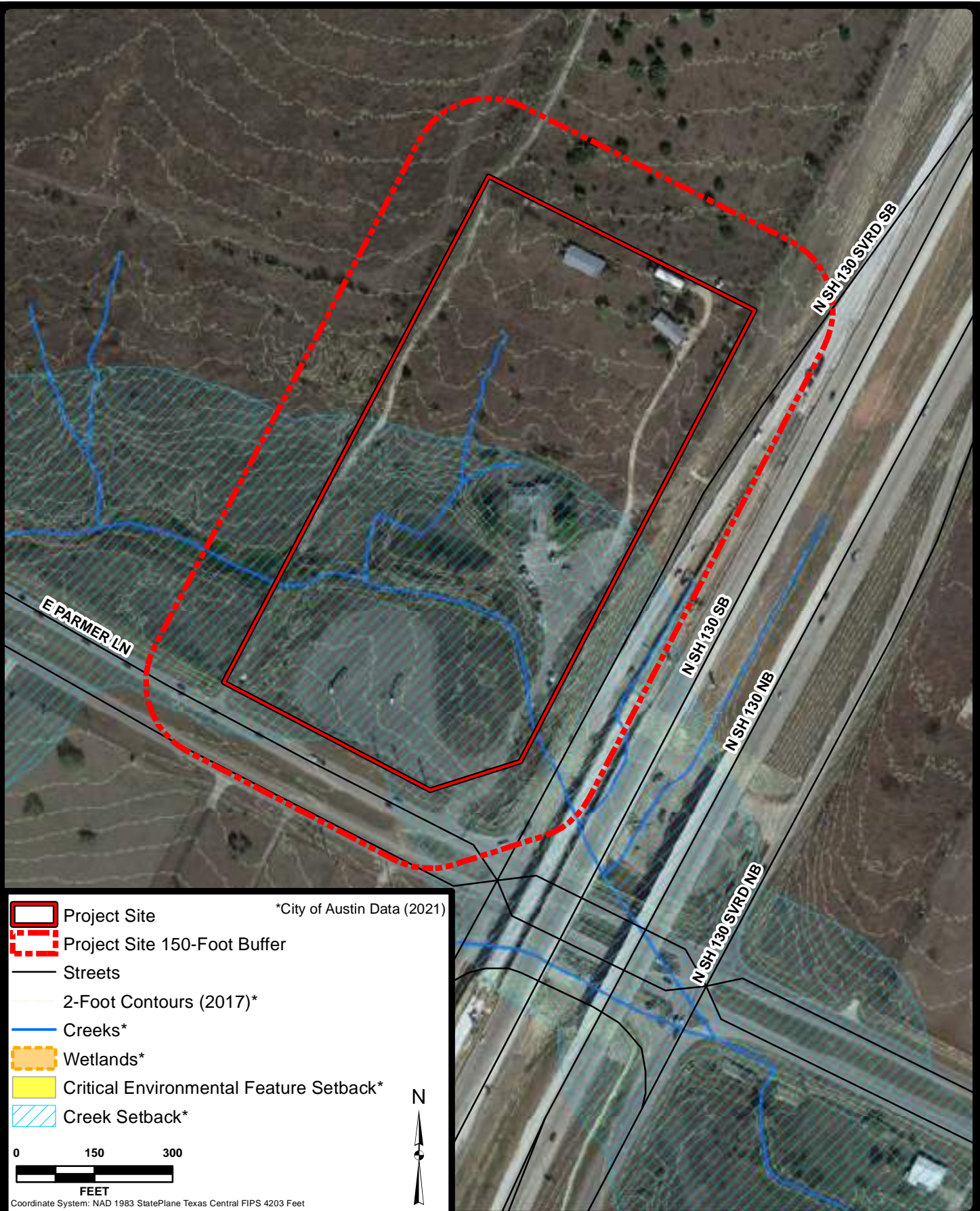
LOCATION MAP



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

EXHIBIT 2

Site Map



Project Site

Project Site 150-Foot Buffer

Streets

2-Foot Contours (2017)*

Creeks*

Wetlands*

Critical Environmental Feature Setback*

Creek Setback*

0

150

300

FEET

Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet

N

JOB NO.	51249-00
DATE	May 2021
DESIGNER	JG
CHECKED	VC
DRAWN	JG
SHEET	EXHIBIT 02

Parmer MF

Environmental Resource Inventory

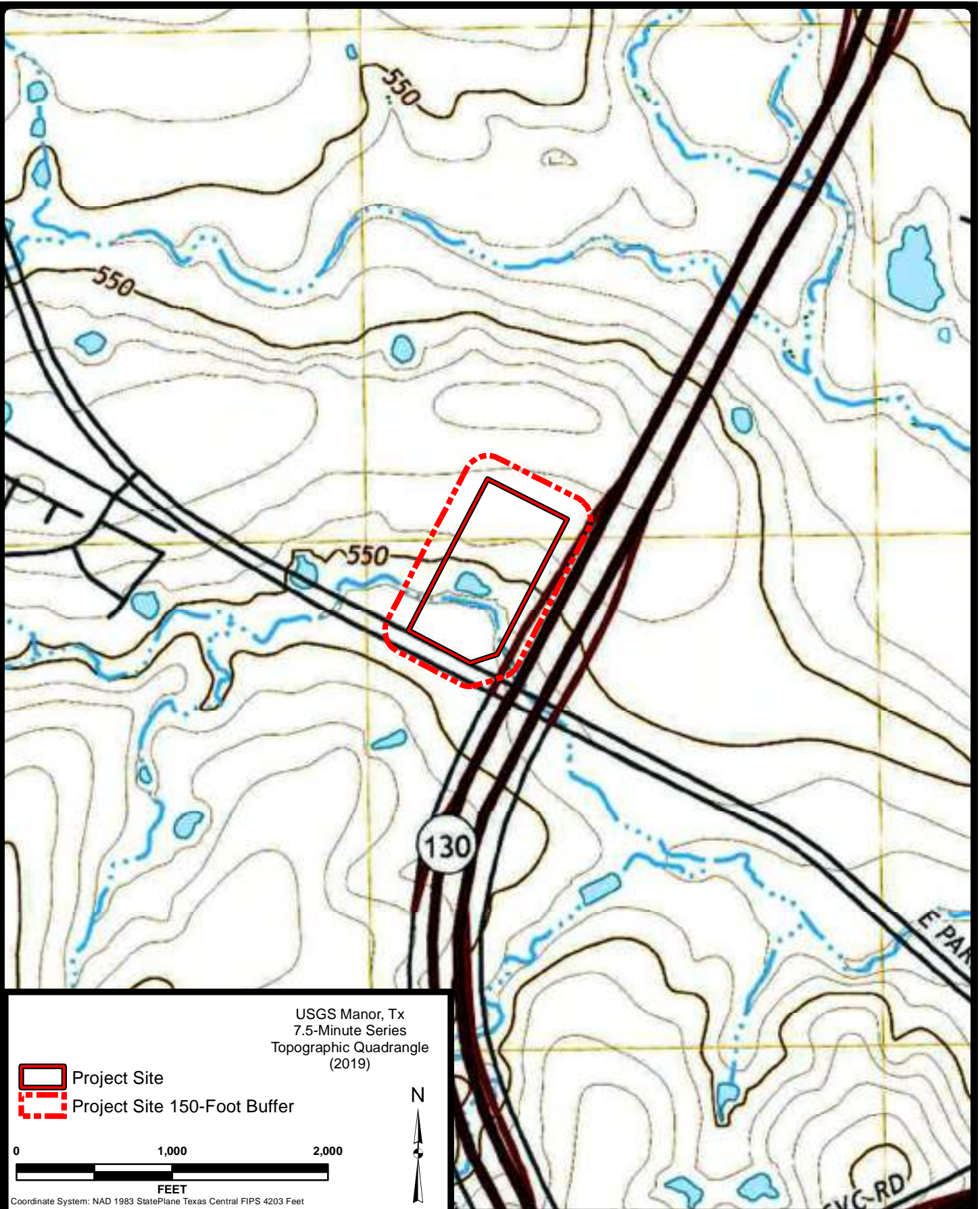
SITE MAP

PAPE-DAWSON
ENGINEERS

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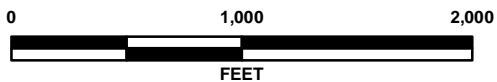
EXHIBIT 3

USGS Topographic Map (2019)



Project Site

Project Site 150-Foot Buffer



Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet



JOB NO. **51249-00**
DATE **May 2021**
DESIGNER **JG**
CHECKED **VC** DRAWN **JG**
SHEET **EXHIBIT 03**
Backup page 56 of 88

Parmer MF
Environmental Resource Inventory
USGS TOPOGRAPHIC MAP (2019)

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

EXHIBIT 4

Floodplain Map



Project Site
Project Site 150-Foot Buffer
Streets
Tributary (FEMA 2020)
100-Year Floodplain (FEMA 2020)

0 150 300
FEET

Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet

FEMA FIRM Panel:
48453C0480J
Effective Date:
08/18/2014

N

JOB NO.	51249-00
DATE	May 2021
DESIGNER	JG
CHECKED	VC
DRAWN	JG
SHEET	EXHIBIT 04

Parmer MF
Environmental Resource Inventory
FLOODPLAIN MAP

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

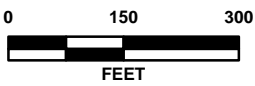
EXHIBIT 5

National Wetlands Inventory

Map



- Project Site
- Project Site 150-Foot Buffer
- Streets
- NWI Data (2020)**
- Freshwater Pond
- Riverine



Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet

JOB NO.	51249-00
DATE	May 2021
DESIGNER	JG
CHECKED	VC
DRAWN	JG
SHEET	EXHIBIT 05

Parmer MF Environmental Resource Inventory NATIONAL WETLANDS INVENTORY MAP

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 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

EXHIBIT 6

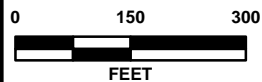
Soils Map



- Project Site
- Project Site 150-Foot Buffer
- Streets

NRCS Soil Units (2021)

- Ferris-Heiden complex, 8 to 20 percent slopes, severely eroded (FhF3)
- Heiden clay, 3 to 5 percent slopes, eroded (HeC2)
- Heiden clay, 5 to 8 percent slopes, eroded (HeD2)
- Tinn clay, 0 to 1 percent slopes, frequently flooded (Tw)



Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet



JOB NO.	51249-00
DATE	May 2021
DESIGNER	JG
CHECKED	VC
DRAWN	JG
SHEET	EXHIBIT 06

Parmer MF Environmental Resource Inventory Soils Map

**PAPE-DAWSON
ENGINEERS**

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 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

EXHIBIT 7

Geologic Map

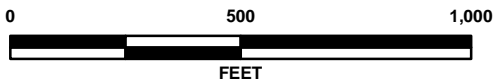


Project Site

Project Site 150-Foot Buffer

Geologic Units

Navarro and Taylor Groups, undivided (Knt)



Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet



JOB NO. 51249-00
DATE May 2021
DESIGNER JG
CHECKED VC DRAWN JG
SHEET EXHIBIT 07

Parmer MF

Environmental Resource Inventory

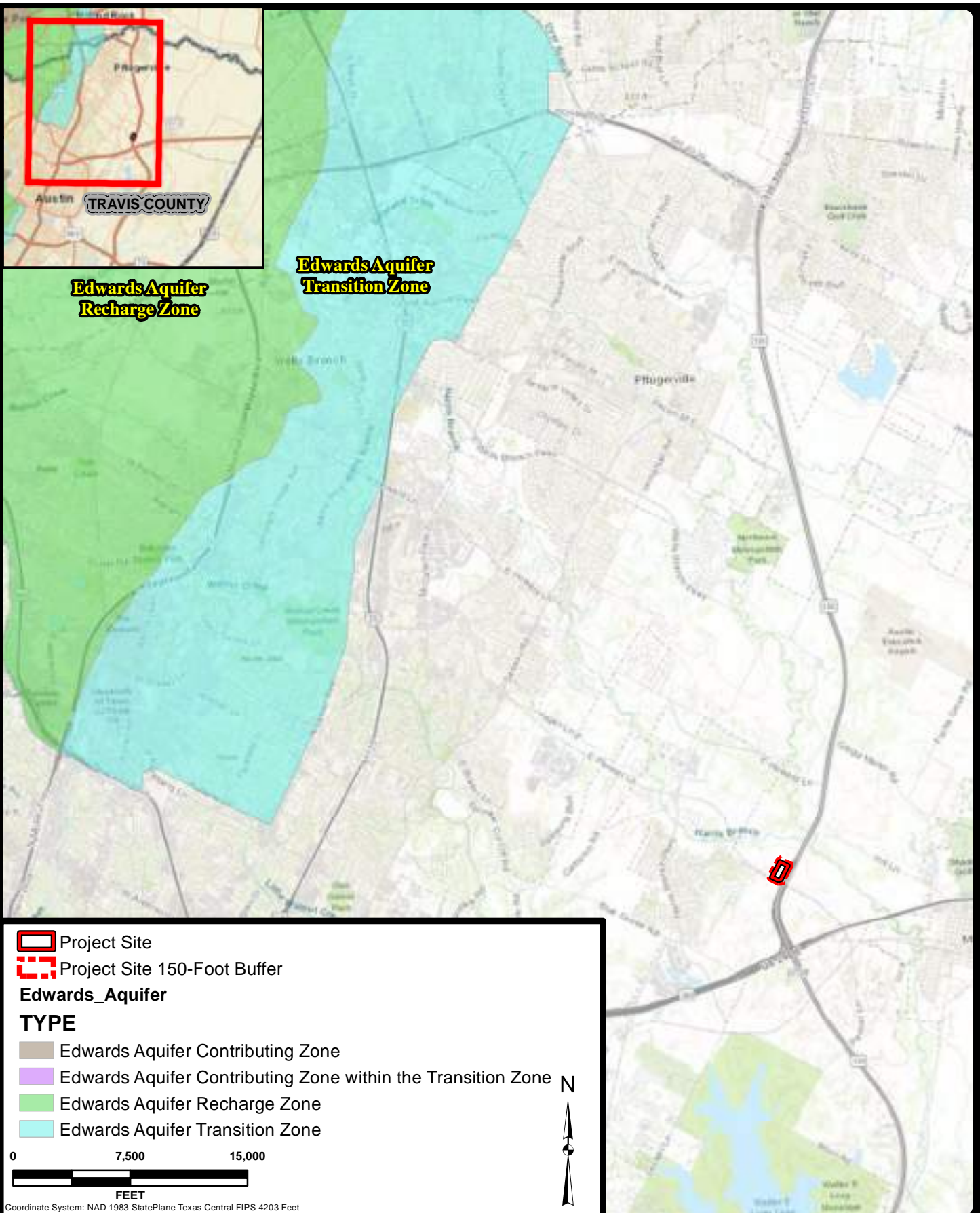
GEOLOGIC MAP



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

EXHIBIT 8

Edwards Aquifer Zone Map



JOB NO. 51249-00
DATE May 2021
DESIGNER JG
CHECKED VC DRAWN JG
SHEET EXHIBIT 08

Parmer MF
Environmental Resource Inventory
EDWARDS AQUIFER ZONE MAP

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

EXHIBIT 9

1995 Historical Aerial Photograph Map



 Project Site
 Project Site 150-Foot Buffer

0 150 300
FEET

Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet

JOB NO. 51249-00
DATE May 2021
DESIGNER JG
CHECKED VC DRAWN JG
SHEET EXHIBIT 09

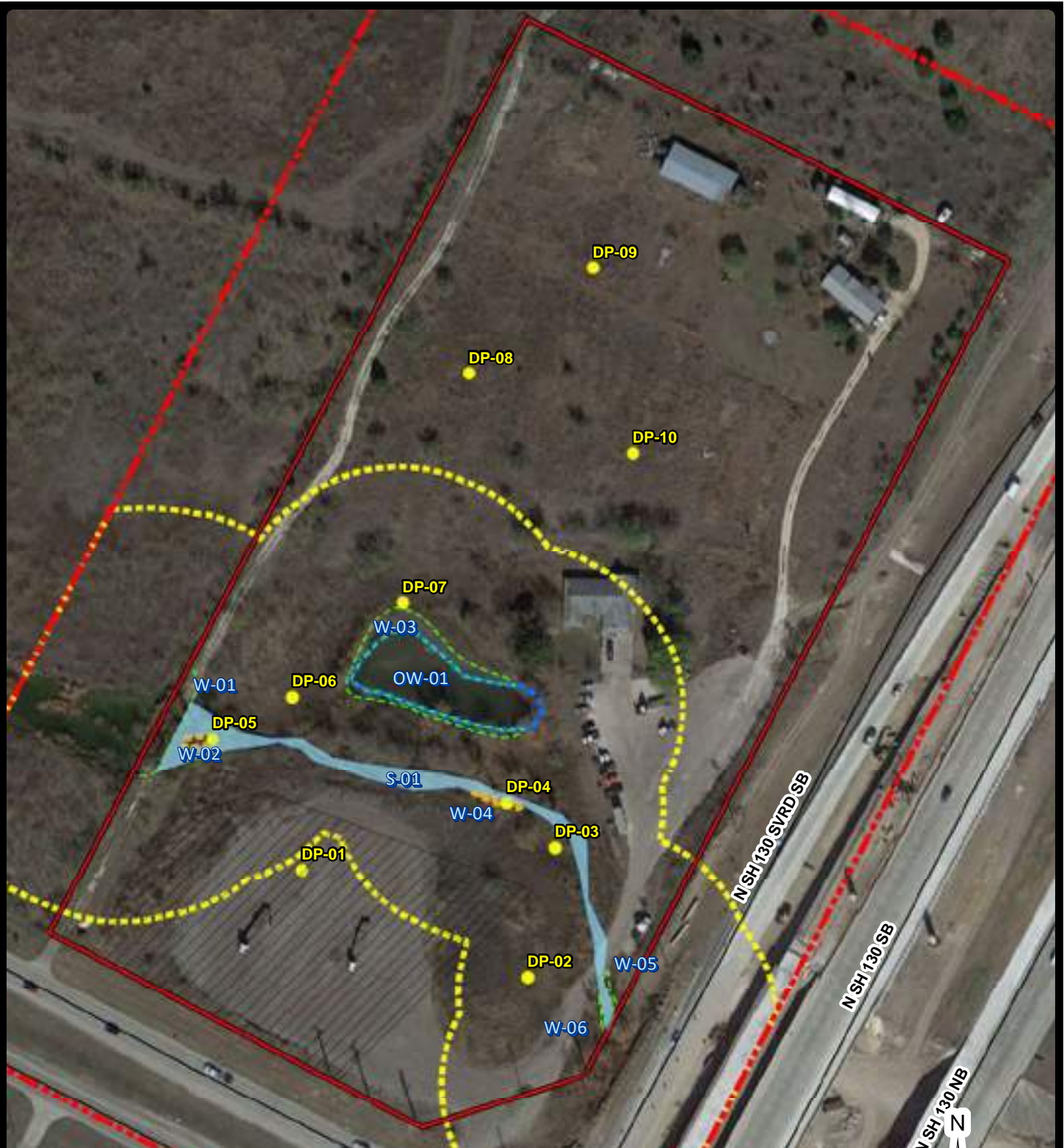
Parmer MF
Environmental Resource Inventory
Historical Aerial Photograph (1995)










PAPE-DAWSON
ENGINEERS

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

EXHIBIT 10

Delineated Critical Environmental Features Map



- | | |
|--|--|
|  Project Site |  150-Foot CEF Setback |
|  Project Site 150-Foot Buffer |  Freshwater Emergent Wetland |
|  Streets |  Freshwater Pond (Excavated) |
|  Proposed Grading |  Freshwater Scrub-Shrub Wetland |
|  Data Points (DPs) | |
- Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet

JOB NO.	51249-00
DATE	Jul 2021
DESIGNER	JG
CHECKED	VC
DRAWN	JG
SHEET	EXHIBIT 10

Parmer MF
Environmental Resource Inventory
DELINEATED CRITICAL
ENVIRONMENTAL FEATURES MAP

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

APPENDIX

APPENDIX A

Site Photographs

±14.34-ACRE PARMER MF Environmental Resource Inventory

Photo No. 1	Date: 03-30-2021
Description: View of the paved portion of the project site facing southeast, on the southeastern corner of the project site.	

A wide-angle photograph of a large, flat, paved area, possibly a parking lot or a construction site. The ground is a uniform brownish-grey color. In the background, there are several tall utility poles with power lines stretching across the sky. To the left, a bridge or overpass structure is visible. The sky is overcast and grey. The overall scene is industrial or utilitarian.

Photo No. 2	Date: 03-30-2021
Description: A typical view of upland habitat that bordered the paved parking lot, on the southeastern portion of the project site. The habitat was a largely mixture of disturbed herbaceous vegetation.	

A photograph showing a dense field of tall, dry, greyish-brown grasses and shrubs. In the background, there are several green trees and a paved parking lot. The sky is overcast and grey. The foreground is filled with the dry vegetation, which appears to be a mixture of different species. The overall scene is a typical view of upland habitat.

±14.34-ACRE PARMER MF Environmental Resource Inventory

Photo No. 3	Date: 03-30-2021	
Description: A typical view of the intermittent stream (S-01) identified on the project site, facing east, near the southeastern boundary of the project site.		

Photo No. 4	Date: 03-30-2021	
Description: A view of one of the freshwater scrub-shrub wetlands (W-01) identified on the project site. This wetland was topographically elevated and within the OHWM of the intermittent stream (S-01) identified.		

±14.34-ACRE PARMER MF Environmental Resource Inventory

Photo No. 5	Date: 03-30-2021
Description: A view of the second freshwater scrub-shrub wetland (W-02) observed on the project site. This wetland abutted the intermittent stream (S-01) identified.	

A photograph of a freshwater scrub-shrub wetland (W-02) showing dense vegetation, including trees and shrubs, with a stream (S-01) visible in the background. The image captures a dense thicket of trees and shrubs, with a prominent tree trunk in the foreground. The vegetation is lush green, indicating a healthy wetland environment. The background shows a stream (S-01) flowing through the wetland, surrounded by more dense vegetation. The overall scene is a natural, undisturbed wetland habitat.

Photo No. 6	Date: 03-30-2021
Description: A view of the freshwater pond (W-03) observed on the project site. This pond is located north of the intermittent stream (S-01) identified. The pond was topographically depressed and separated from S-01 by a natural berm.	



±14.34-ACRE PARMER MF Environmental Resource Inventory

Photo No. 7	Date: 03-30-2021	
Description: Another view of the intermittent stream (S-01) identified. This photo was taken on the western boundary of the project site. S-01 drained across an existing cobble road and diverged around the freshwater scrub-shrub wetland (W-01) identified above.		

Photo No. 8	Date: 03-30-2021
Description: A typical view of upland habitat near the center of the project site, facing northeast.	

A photograph of upland habitat. The foreground is filled with tall, dry, brownish grasses and some green shrubs. In the background, there is a small, dark-colored building with a light-colored roof, and several utility poles are visible. The sky is overcast with grey clouds.

±14.34-ACRE PARMER MF Environmental Resource Inventory

Photo No. 9	Date: 03-30-2021
Description: A view of the upland habitat observed on the northern portion of the project site.	

A photograph of an upland habitat. The foreground is a lush green field with some taller, dry grasses. In the middle ground, there's a dark, open-sided structure, possibly a barn or shed, surrounded by trees and shrubs. The sky is overcast with grey clouds.

Photo No. 10	Date: 03-30-2021	
Description: A view of piles of fill observed on the southwestern portion of the project site facing southwest.		

APPENDIX B

Wetland Determination Forms

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site:	Parmer MF	City/ County:	Travis County	Sampling Date:	3/30/2021
Applicant/Owner:	Z Modular	State:	TX	Sampling Point:	DP-01
Investigator(s):	JG	Section, Township, Range:	N/A		
Landform (hillside, terrace, etc.):	Plains	Local relief (concave, convex, none):	None	Slope (%):	1-2%
Subregion (LRR or MLRA):	LRR-J	Lat: 30.353935	Long: -97.593634	Datum:	NAD83
Soil Map Unit Name:	Tinn clay, 0 to 1 percent slopes, frequently flooded (Tw)			NWI Classification:	N/A

Are climatic/hydrological conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☒ No Are "Normal Circumstances" Present? ☒ Yes ☐ No

Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☒ No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Remarks: None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland. This Data Point was taken on the paved parking lot on the southern portion of the project site.	
Habitat ID:	Habitat Type: N/A

Vegetation - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
Tree stratum (Plot size : 30')				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Sapling/Shrub Stratum (Plot size : 15')				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL Species _____ x 1 = _____ FACW Species _____ x 2 = _____ FAC Species _____ x 3 = _____ FACU Species _____ x 4 = _____ UPL Species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
Herb Stratum (Plot size : 5')				Hydrophytic Vegetation Indicators: Dominance Test is >50% _____ Prevalence Index is ≤3.01 _____ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
Woody Vine Stratum (Plot size : 30')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum: <u>100</u>				

Remarks: (if observed, list morphological adaptations below).

Percentage of dominant plants that are OBL, FACW, or FAC is less than or equal to 50%. The hydrophytic vegetation parameter is not met.

SOIL

Sampling Point: DP-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 1 cm Muck (A9) (LRR P, T)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Mucky Mineral (S1) (LRR O, S)

☐ 2.5 cm Mucky Peat or Peat (S1) (LRR G, H)

☐ 5 cm Mucky Peat or Peat (S2) (LRR G, H)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1) (LRR O)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ High Plains Depressions (F16) (MLRA 72 & 73 of LRRH)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR I, J)

☐ Coast Prairie Redox (A16) (LRR F, G, H)

☐ Dark Surface (S7) (LRR G)

☐ High Plains Depressions (F16) (LRR H outside of MLRA 75 & 73)

☐ Reduced Vertic (F18) (outside MLRA 150A,

☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:
Depth (inches):

Hydric Soils Present?

☐ Yes☒ No

Remarks:
Indicators of hydric soils lacking; hydric soils parameter is not met.

Hydrology

Wetland Hydrology Indicators:

Primary indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Water-Stained Leaves (B9)

☐ Salt Crust (B11)

☐ Aquatic Invertebrates (B13)

☐ Hydrogen Sulfide Odor (C1)

☐ Dry Season Water Table (C2)

☐ Oxidized Rhizospheres on Living Roots (C3)

Where not tilled

☐ Presence of Reduced Iron (C4)

☐ Thick Muck Surface (C7)

☐ Other

Secondary Indicators (minimum of two required)

☐ Surface Soil Cracks (B6)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Drainage Patterns (B10)

☐ Oxidized Rhizospheres on Living Roots (C3)

Where tilled

☐ Crayfish Burrows (C8)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Occasional Potholes (C2)

☐ FAC-Neutral Test (D5)

☐ Frost-Heave Hammocks (D7) (LRR F)

Field Observations:

Surface Water Present?

☐ Yes☒ No

Water Table Present?

☐ Yes☒ No

Saturation Present?

☐ Yes☒ No

(includes capillary fringe)

Depth (Inches):
Depth (Inches):
Depth (Inches):

Wetland Hydrology Present?:

Yes☐ No☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No indicators of wetland hydrology were present. The wetland hydrology parameter is not met.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site:	Parmer MF	City/ County:	Travis County	Sampling Date:	3/30/2021
Applicant/Owner:	Z Modular	State:	TX	Sampling Point:	DP-02
Investigator(s):	JG	Section, Township, Range:	N/A		
Landform (hillside, terrace, etc.):	Plains	Local relief (concave, convex, none):	Concave	Slope (%):	1-2%
Subregion (LRR or MLRA):	LRR-J	Lat: 30.353604	Long: -97.592881	Datum:	NAD83
Soil Map Unit Name:	Tinn clay, 0 to 1 percent slopes, frequently flooded (Tw)			NWI Classification:	N/A

Are climatic/hydrological conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☒ No Are "Normal Circumstances" Present? ☒ Yes ☐ No

Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☒ No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Remarks: Hydric soils were observed; however, hydrophytic vegetation and hydrology were not. The data point is not within a wetland.	
Habitat ID:	Habitat Type: N/A

Vegetation - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
Tree stratum (Plot size : 30')				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Sapling/Shrub Stratum (Plot size : 15')				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL Species _____ x 1 = _____ FACW Species _____ x 2 = _____ FAC Species _____ x 3 = _____ FACU Species <u>100</u> x 4 = <u>400</u> UPL Species _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>4.00</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Herb Stratum (Plot size : 5')				Hydrophytic Vegetation Indicators: <input type="checkbox"/> No Dominance Test is >50% <input type="checkbox"/> No Prevalence Index is ≤3.01 <input type="checkbox"/> No Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
1. <i>Helianthus maximiliani</i>	45	Yes	FACU	
2. <i>Bromus japonicus</i>	25	Yes	FACU	
3. <i>Cynodon dactylon</i>	15	No	FACU	
4. <i>Bowlesia incana</i>	15	No	FACU	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	100	_____	_____	
Woody Vine Stratum (Plot size : 30')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____	_____	_____	_____	
% Bare Ground in Herb Stratum: <u>0</u>				

Remarks: (if observed, list morphological adaptations below).

Percentage of dominant plants that are OBL, FACW, or FAC is less than or equal to 50%. The hydrophytic vegetation parameter is not met.

SOIL

Sampling Point: DP-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/1	100					Clay	
6-14	10YR 5/2	85	5YR 5/6	15	C	M	Clay	Rocks throughout

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ 2.5 cm Mucky Peat or Peat (S1) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ High Plains Depressions (F16) (MLRA 72 & 73 of LRRH)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 75 & 73)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:
Depth (inches):

Hydric Soils Present?

☒ Yes

☐ No

Remarks:
Indicators of hydric soils were observed; hydric soil parameter is met.

Hydrology

Wetland Hydrology Indicators:

Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- Where not tilled
- ☐ Presence of Reduced Iron (C4)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- Where tilled
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Occasional Potholes (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Mounds (D7) (LRR F)

Field Observations:

Surface Water Present?

☐ Yes

☒ No

Water Table Present?

☐ Yes

☒ No

Saturation Present?

☐ Yes

☒ No

Depth (Inches):

Depth (Inches):

Depth (Inches):

(includes capillary fringe)

Wetland Hydrology Present?: Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology were present. The wetland hydrology parameter is not met.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site:	Parmer MF	City/ County:	Travis County	Sampling Date:	3/30/2021
Applicant/Owner:	Z Modular	State:	TX	Sampling Point:	DP-03
Investigator(s):	JG	Section, Township, Range:	N/A		
Landform (hillside, terrace, etc.):	Plains	Local relief (concave, convex, none):	Concave	Slope (%):	2-5%
Subregion (LRR or MLRA):	LRR-J	Lat: 30.353982	Long: -97.592778	Datum:	NAD83
Soil Map Unit Name:	Tinn clay, 0 to 1 percent slopes, frequently flooded (Tw)			NWI Classification:	N/A

Are climatic/hydrological conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☒ No Are "Normal Circumstances" Present? ☒ Yes ☐ No

Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☒ No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Remarks: Hydric Soils were observed; however hydrology and hydrophytic vegetation were not. The data point is not within a wetland.	
Habitat ID:	Habitat Type: N/A

Vegetation - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
Tree stratum (Plot size : 30')				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>Celtis laevigata</u>	25	Yes	FAC	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Sapling/Shrub Stratum (Plot size : 15')				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL Species _____ x 1 = _____ FACW Species <u>5</u> x 2 = <u>10</u> FAC Species <u>35</u> x 3 = <u>105</u> FACU Species <u>105</u> x 4 = <u>420</u> UPL Species <u>5</u> x 5 = <u>25</u> Column Totals: <u>150</u> (A) <u>560</u> (B) Prevalence Index = B/A = <u>3.73</u>
1. <u>Celtis laevigata</u>	10	Yes	FAC	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Herb Stratum (Plot size : 5')				Hydrophytic Vegetation Indicators: <input type="checkbox"/> No Dominance Test is >50% <input type="checkbox"/> No Prevalence Index is ≤3.01 <input type="checkbox"/> No Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
1. <u>Rubus trivialis</u>	45	Yes	FACU	
2. <u>Helianthus maximiliani</u>	45	Yes	FACU	
3. <u>Solidago altissima</u>	15	No	FACU	
4. <u>Polytaenia texana</u>	5	No	UPL	
5. <u>Helenium autumnale</u>	5	No	FACW	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
Woody Vine Stratum (Plot size : 30')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum: <u>0</u>				

Remarks: (if observed, list morphological adaptations below).

Percentage of dominant plants that are OBL, FACW, or FAC is less than or equal to 50%. The hydrophytic vegetation parameter is not met.

SOIL

Sampling Point: DP-03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/1	100					Clay Loam	
8-14	10YR 5/2	85	10YR 6/2	25	C	M	Clay Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 1 cm Muck (A9) (LRR P, T)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Mucky Mineral (S1) (LRR O, S)

☐ 2.5 cm Mucky Peat or Peat (S1) (LRR G, H)

☐ 5 cm Mucky Peat or Peat (S2) (LRR G, H)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1) (LRR O)

☐ Loamy Gleyed Matrix (F2)

☒ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ High Plains Depressions (F16) (MLRA 72 & 73 of LRRH)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR I, J)

☐ Coast Prairie Redox (A16) (LRR F, G, H)

☐ Dark Surface (S7) (LRR G)

☐ High Plains Depressions (F16) (LRR H outside of MLRA 75 & 73)

☐ Reduced Vertic (F18) (outside MLRA 150A,

☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:
Depth (inches):

Hydric Soils Present?

☒ Yes☐ No

Remarks:
Indicators of hydric soils were observed; hydric soil parameter is met.

Hydrology

Wetland Hydrology Indicators:

Primary indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Water-Stained Leaves (B9)

☐ Salt Crust (B11)

☐ Aquatic Invertebrates (B13)

☐ Hydrogen Sulfide Odor (C1)

☐ Dry Season Water Table (C2)

☐ Oxidized Rhizospheres on Living Roots (C3)

Where not tilled

☐ Presence of Reduced Iron (C4)

☐ Thick Muck Surface (C7)

☐ Other

Secondary Indicators (minimum of two required)

☐ Surface Soil Cracks (B6)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Drainage Patterns (B10)

☐ Oxidized Rhizospheres on Living Roots (C3)

Where tilled

☐ Crayfish Burrows (C8)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Occasional Pools (D2)

☐ FAC-Neutral Test (D5)

☐ Frost-Heave Mounds (D7) (LRR F)

Field Observations:

Surface Water Present?

☐ Yes☒ No

Depth (Inches):

Water Table Present?

☐ Yes☒ No

Depth (Inches):

Saturation Present?

☐ Yes☒ No

Depth (Inches):

(includes capillary fringe)

Wetland Hydrology Present?:

Yes☐No☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No indicators of wetland hydrology were present. The wetland hydrology parameter is not met.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: Parmer MF City/ County: Travis County Sampling Date: 3/30/2021
 Applicant/Owner: Z Modular State: TX Sampling Point: DP-04
 Investigator(s): JG Section, Township, Range: N/A
 Landform (hillside, terrace, etc.): Plains Local relief (concave, convex, none): Concave Slope (%): 2-5%
 Subregion (LRR or MLRA): LRR-J Lat: 30.354116 Long: -97.592938 Datum: NAD83
 Soil Map Unit Name: Tinn clay, 0 to 1 percent slopes, frequently flooded (Tw) NWI Classification: N/A

Are climatic/hydrological conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☒ No Are "Normal Circumstances" Present? ☒ Yes ☐ No
 Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☒ No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>
Remarks: Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.	
Habitat ID: _____ Habitat Type: Freshwater Forested Wetland	

Vegetation - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
Tree stratum (Plot size : 30')				Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>71%</u> (A/B)
1. <u>Ptelea trifoliata</u>	5	Yes	FAC	
2. <u>Celtis laevigata</u>	5	Yes	FAC	
3. _____				
4. _____	10			
Sapling/Shrub Stratum (Plot size : 15')				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL Species <u>25</u> x 1 = <u>25</u> FACW Species <u>10</u> x 2 = <u>20</u> FAC Species <u>45</u> x 3 = <u>135</u> FACU Species <u>40</u> x 4 = <u>160</u> UPL Species _____ x 5 = _____ Column Totals: <u>120</u> (A) <u>340</u> (B) Prevalence Index = B/A = <u>2.83</u>
1. <u>Ptelea trifoliata</u>	20	Yes	FAC	
2. <u>Celtis laevigata</u>	15	Yes	FAC	
3. _____				
4. _____				
Herb Stratum (Plot size : 5')				Hydrophytic Vegetation Indicators: Yes Dominance Test is >50% Yes Prevalence Index is ≤3.01 No Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>
1. <u>Rubus trivialis</u>	25	Yes	FACU	
2. <u>Solidago altissima</u>	15	Yes	FACU	
3. <u>Eleocharis palustris</u>	15	Yes	OBL	
4. <u>Ptilimnium capillaceum</u>	10	No	FACW	
5. <u>Samolus parviflorus</u>	5	No	OBL	
6. <u>Typha latifolia</u>	5	No	OBL	
7. _____				
8. _____				
9. _____				
10. _____	75			
Woody Vine Stratum (Plot size : 30')				
1. _____				
2. _____				
% Bare Ground in Herb Stratum: <u>25</u>				

Remarks: (if observed, list morphological adaptations below).
 Percentage of dominant plants that are OBL, FACW, or FAC is greater than 50%. The hydrophytic vegetation parameter is met.

SOIL

Sampling Point: DP-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/1	100					Clay	
4-8	10YR 6/1	65	7.5YR 5/8	35	C	M	Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ 2.5 cm Mucky Peat or Peat (S1) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ High Plains Depressions (F16) (MLRA 72 & 73 of LRRH)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) (LRR H outside of MLRA 75 & 73)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:		
Depth (inches):		Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks: Indicators of hydric soils were observed; hydric soil parameter is met.		

Hydrology

Wetland Hydrology Indicators:

Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☒ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☒ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation of Soil on Aerial Imagery (C9)
- ☐ Occasional Potholes (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hammocks (D7) (LRR F)

Field Observations:

Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (Inches):	
Water Table Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth (Inches):	8
Saturation Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth (Inches):	2

(includes capillary fringe)

Wetland Hydrology Present?: Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Five primary indicators and one secondary indicator of wetland hydrology were observed. The wetland hydrology parameter is met.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: Parmer MF City/ County: Travis County Sampling Date: 3/30/2021
 Applicant/Owner: Z Modular State: TX Sampling Point: DP-05
 Investigator(s): JG Section, Township, Range: N/A
 Landform (hillside, terrace, etc.): Plains Local relief (concave, convex, none): Concave Slope (%): 2-5%
 Subregion (LRR or MLRA): LRR-J Lat: 30.354325 Long: -97.593924 Datum: NAD83
 Soil Map Unit Name: Tinn clay, 0 to 1 percent slopes, frequently flooded (Tw) NWI Classification: Riverine

Are climatic/hydrological conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)
 Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☒ No Are "Normal Circumstances" Present? ☒ Yes ☐ No
 Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☒ No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>
Remarks: Hydrophytic vegetation, wetland hydrology and hydric soil indicators were all observed. The Data Point (DP) is within a wetland.	
Habitat ID: _____ Habitat Type: <u>Freshwater Forested Wetland</u>	

Vegetation - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
Tree stratum (Plot size : 30')				Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>83%</u> (A/B)
1. <u>Ulmus crassifolia</u>	10	Yes	FAC	
2. <u>Celtis laevigata</u>	10	Yes	FAC	
3. _____	20			
Sapling/Shrub Stratum (Plot size : 15')				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL Species <u>10</u> x 1 = <u>10</u> FACW Species <u>10</u> x 2 = <u>20</u> FAC Species <u>35</u> x 3 = <u>105</u> FACU Species _____ x 4 = _____ UPL Species <u>20</u> x 5 = <u>100</u> Column Totals: <u>75</u> (A) <u>235</u> (B) Prevalence Index = B/A = <u>3.13</u>
1. <u>Ptelea trifoliata</u>	10	Yes	FAC	
2. <u>Celtis laevigata</u>	5	Yes	FAC	
3. _____	15			
Herb Stratum (Plot size : 5')				Hydrophytic Vegetation Indicators: Yes Dominance Test is >50% No Prevalence Index is ≤3.01 No Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Torilis arvensis</u>	15	Yes	UPL	
2. <u>Valerianella radiata</u>	10	Yes	FACW	
3. <u>Anemone berlandieri</u>	5	No	UPL	
4. <u>Eleocharis palustris</u>	5	No	OBL	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. <u>Typha latifolia</u>	5	No	OBL	
6. _____				
7. _____				
Woody Vine Stratum (Plot size : 30')				Hydrophytic Vegetation Present? Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>
1. _____				
2. _____				
% Bare Ground in Herb Stratum: <u>60</u>				

Remarks: (if observed, list morphological adaptations below).
 Percentage of dominant plants that are OBL, FACW, or FAC is greater than 50%. The hydrophytic vegetation parameter is met.

SOIL

Sampling Point: DP-05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/1	85	5YR 5/6	15	C	M	Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 1 cm Muck (A9) (LRR P, T)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Mucky Mineral (S1) (LRR O, S)

☐ 2.5 cm Mucky Peat or Peat (S1) (LRR G, H)

☐ 5 cm Mucky Peat or Peat (S2) (LRR G, H)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1) (LRR O)

☐ Loamy Gleyed Matrix (F2)

☒ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ High Plains Depressions (F16) (MLRA 72 & 73 of LRRH)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR I, J)

☐ Coast Prairie Redox (A16) (LRR F, G, H)

☐ Dark Surface (S7) (LRR G)

☐ High Plains Depressions (F16) (LRR H outside of MLRA 75 & 73)

☐ Reduced Vertic (F18) (outside MLRA 150A,

☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:
Depth (inches):

Hydric Soils Present?

☒ Yes

☐ No

Remarks:
Indicators of hydric soils were observed; hydric soil parameter is met.

Hydrology

Wetland Hydrology Indicators:

Primary indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)

☐ High Water Table (A2)

☒ Saturation (A3)

☒ Water Marks (B1)

☐ Sediment Deposits (B2)

☒ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☒ Inundation Visible on Aerial Imagery (B7)

☐ Water-Stained Leaves (B9)

☐ Salt Crust (B11)

☐ Aquatic Invertebrates (B13)

☐ Hydrogen Sulfide Odor (C1)

☐ Dry Season Water Table (C2)

☐ Oxidized Rhizospheres on Living Roots (C3)

Where not tilled

☐ Presence of Reduced Iron (C4)☐ Thick Muck Surface (C7)☐ Other

Secondary Indicators (minimum of two required)

☐ Surface Soil Cracks (B6)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Drainage Patterns (B10)

☐ Oxidized Rhizospheres on Living Roots (C3)

Where tilled

☐ Crayfish Burrows (C8)☐ Saturation of Soil on Aerial Imagery (C9)☐ Occasional Potholes (C2)☐ FAC-Neutral Test (D5)☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?

☐ Yes

☒ No

Water Table Present?

☐ Yes

☒ No

Saturation Present?

☒ Yes

☐ No

(includes capillary fringe)

Depth (Inches):
Depth (Inches):
Depth (Inches): 3

Wetland Hydrology Present?:

Yes ☒

No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Four primary indicators and no secondary indicators of wetland hydrology were observed. The wetland hydrology parameter is met.

US Army Corps of Engineers

Great Plains Region - Version 2.0

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site:	Parmer MF	City/ County:	Travis County	Sampling Date:	3/30/2021
Applicant/Owner:	Z Modular	State:	TX	Sampling Point:	DP-06
Investigator(s):	JG	Section, Township, Range:	N/A		
Landform (hillside, terrace, etc.):	Plains	Local relief (concave, convex, none):	Convex	Slope (%):	2-5%
Subregion (LRR or MLRA):	LRR-J	Lat: 30.354441	Long: -97.593651	Datum:	NAD83
Soil Map Unit Name:	Tinn clay, 0 to 1 percent slopes, frequently flooded (Tw)			NWI Classification:	N/A

Are climatic/hydrological conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☒ No Are "Normal Circumstances" Present? ☒ Yes ☐ No

Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☒ No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Remarks: None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.	
Habitat ID:	Habitat Type: N/A

Vegetation - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
Tree stratum (Plot size : 30')				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>33%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Sapling/Shrub Stratum (Plot size : 15')				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL Species _____ x 1 = _____ FACW Species _____ x 2 = _____ FAC Species <u>5</u> x 3 = <u>15</u> FACU Species <u>90</u> x 4 = <u>360</u> UPL Species <u>15</u> x 5 = <u>75</u> Column Totals: <u>110</u> (A) <u>450</u> (B) Prevalence Index = B/A = <u>4.09</u>
1. <u>Ulmus crassifolia</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Prosopis glandulosa</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
Herb Stratum (Plot size : 5')				Hydrophytic Vegetation Indicators: <input type="checkbox"/> No Dominance Test is >50% <input type="checkbox"/> No Prevalence Index is ≤3.01 <input type="checkbox"/> No Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Solidago altissima</u>	<u>85</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Torilis arvensis</u>	<u>15</u>	<u>No</u>	<u>UPL</u>	
3. _____	_____	_____	_____	
Woody Vine Stratum (Plot size : 30')				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
% Bare Ground in Herb Stratum: <u>0</u>				

Remarks: (if observed, list morphological adaptations below).

Percentage of dominant plants that are OBL, FACW, or FAC is less than or equal to 50%. The hydrophytic vegetation parameter is not met.

SOIL

Sampling Point: DP-06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/1	100					Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ 2.5 cm Mucky Peat or Peat (S1) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ High Plains Depressions (F16) (MLRA 72 & 73 of LRRH)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) (LRR H outside of MLRA 75 & 73)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:		
Depth (inches):		Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Remarks: Indicators of hydric soils lacking; hydric soils parameter is not met.		

Hydrology

Wetland Hydrology Indicators:

Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Occasional Pore in GZ
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hammocks (D7) (LRR F)

Field Observations:

Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (Inches):	
Water Table Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (Inches):	
Saturation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (Inches):	

(includes capillary fringe)

Wetland Hydrology Present?: Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology were present. The wetland hydrology parameter is not met.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site:	Parmer MF	City/ County:	Travis County	Sampling Date:	3/30/2021
Applicant/Owner:	Z Modular	State:	TX	Sampling Point:	DP-07
Investigator(s):	JG	Section, Township, Range:	N/A		
Landform (hillside, terrace, etc.):	Plains	Local relief (concave, convex, none):	Concave	Slope (%):	1-8%
Subregion (LRR or MLRA):	LRR-J	Lat: 30.354709	Long: -97.593271	Datum:	NAD83
Soil Map Unit Name:	Ferris-Heiden complex, 8 to 20 percent slopes, severely eroded (FhF3)			NWI Classification:	Freshwater Pond

Are climatic/hydrological conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☒ No Are "Normal Circumstances" Present? ☒ Yes ☐ No

Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☒ No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Remarks: None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.	
Habitat ID:	
Habitat Type: N/A	

Vegetation - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree stratum (Plot size : 30')				
1.				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>0%</u> (A/B)
2.				
3.				
4.				
Sapling/Shrub Stratum (Plot size : 15')				
1.				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL Species <u> </u> x 1 = <u> </u> FACW Species <u> </u> x 2 = <u> </u> FAC Species <u>10</u> x 3 = <u>30</u> FACU Species <u>5</u> x 4 = <u>20</u> UPL Species <u>80</u> x 5 = <u>400</u> Column Totals: <u>95</u> (A) <u>450</u> (B) Prevalence Index = B/A = <u>4.74</u>
2.				
3.				
4.				
5.				
Herb Stratum (Plot size : 5')				
1. <i>Torilis arvensis</i>	75	Yes	UPL	Hydrophytic Vegetation Indicators: No Dominance Test is >50% No Prevalence Index is ≤3.01 No Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
2. <i>Sonchus asper</i>	10	No	FAC	
3. <i>Galium aparine</i>	5	No	FACU	
4. <i>Rapistrum rugosum</i>	5	No	UPL	
5.				
6.				
7.				
8.				
9.				
10.				
Woody Vine Stratum (Plot size : 30')				
1.				
2.				
% Bare Ground in Herb Stratum: <u>5</u>				

Remarks: (if observed, list morphological adaptations below).

Percentage of dominant plants that are OBL, FACW, or FAC is less than or equal to 50%. The hydrophytic vegetation parameter is not met.

SOIL

Sampling Point: DP-07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 4/1	100					Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (LRR G, S)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ High Plains Depressions (F16) (MLRA 72 & 73 of LRRH)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 75 & 73)**
- ☐ Reduced Vertic (F18) (outside MLRA 150A,
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:		
Depth (inches):		
Remarks:		
Indicators of hydric soils lacking; hydric soils parameter is not met.		

Hydrology

Wetland Hydrology Indicators:

Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Redox Deposition (B2)
- ☐ Drift Deposits (B3)
- ☒ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Mammal Signatures (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- Where not tilled**
- ☐ Presence of Redox Iron (C4)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☒ Oxidized Rhizospheres on Living Roots (C3)
- Where tilled**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Decomposing Plant Matter (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (Inches):	
Water Table Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (Inches):	
Saturation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (Inches):	
(includes capillary fringe)			

Wetland Hydrology Present?: Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology were present. The wetland hydrology parameter is not met.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site:	Parmer MF	City/ County:	Travis County	Sampling Date:	3/30/2021
Applicant/Owner:	Z Modular	State:	TX	Sampling Point:	DP-08
Investigator(s):	JG	Section, Township, Range:	N/A		
Landform (hillside, terrace, etc.):	Plains	Local relief (concave, convex, none):	Convex	Slope (%):	1-2%
Subregion (LRR or MLRA):	LRR-J	Lat: 30.355375	Long: -97.593029	Datum:	NAD83
Soil Map Unit Name:	Heiden clay, 3 to 5 percent slopes, eroded (HeC2)			NWI Classification:	N/A

Are climatic/hydrological conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☒ No Are "Normal Circumstances" Present? ☒ Yes ☐ No

Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☒ No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Remarks: None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.	
Habitat ID:	Habitat Type: N/A

Vegetation - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
Tree stratum (Plot size : 30')				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Sapling/Shrub Stratum (Plot size : 15')				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL Species _____ x 1 = _____ FACW Species _____ x 2 = _____ FAC Species _____ x 3 = _____ FACU Species <u>90</u> x 4 = <u>360</u> UPL Species <u>15</u> x 5 = <u>75</u> Column Totals: <u>105</u> (A) <u>435</u> (B) Prevalence Index = B/A = <u>4.14</u>
1. <u>Prosopis glandulosa</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Herb Stratum (Plot size : 5')				Hydrophytic Vegetation Indicators: <input type="checkbox"/> No Dominance Test is >50% <input type="checkbox"/> No Prevalence Index is ≤3.01 <input type="checkbox"/> No Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Schizachyrium scoparium</u>	<u>75</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Engelmannia peristenia</u>	<u>10</u>	<u>No</u>	<u>UPL</u>	
3. <u>Anemone berlandieri</u>	<u>5</u>	<u>No</u>	<u>UPL</u>	
Woody Vine Stratum (Plot size : 30')				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum: <u>10</u>				

Remarks: (if observed, list morphological adaptations below).

Percentage of dominant plants that are OBL, FACW, or FAC is less than or equal to 50%. The hydrophytic vegetation parameter is not met.

SOIL

Sampling Point: DP-08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 3/1	100					Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (LRR G, S)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ High Plains Depressions (F16) (MLRA 72 & 73 of LRRH)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) (LRR H outside of MLRA 75 & 73)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:		
Depth (inches):		Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Remarks: Indicators of hydric soils lacking; hydric soils parameter is not met.		

Hydrology

Wetland Hydrology Indicators:

Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Redox Iron Deposits (B2)
- ☐ Drift Deposits (B3)
- ☒ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Mammal Signatures (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Where not tilled
- ☐ Presence of Redox Iron (C4)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☒ Oxidized Rhizospheres on Living Roots (C3) Where tilled
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Decomposing Plant Matter (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (Inches):		Wetland Hydrology Present?: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (Inches):		
Saturation Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (Inches):		
(includes capillary fringe)				

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology were present. The wetland hydrology parameter is not met.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site:	Parmer MF	City/ County:	Travis County	Sampling Date:	3/30/2021
Applicant/Owner:	Z Modular	State:	TX	Sampling Point:	DP-09
Investigator(s):	JG	Section, Township, Range:	N/A		
Landform (hillside, terrace, etc.):	Plains	Local relief (concave, convex, none):	None	Slope (%):	1-2%
Subregion (LRR or MLRA):	LRR-J	Lat: 30.355675	Long: -97.592602	Datum:	NAD83
Soil Map Unit Name:	Heiden clay, 3 to 5 percent slopes, eroded (HeC2)			NWI Classification:	N/A

Are climatic/hydrological conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☒ No

Are "Normal Circumstances" Present? ☒ Yes ☐ No

Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☒ No

(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Remarks: None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.	
Habitat ID: _____ Habitat Type: N/A	

Vegetation - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
Tree stratum (Plot size : 30')				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Sapling/Shrub Stratum (Plot size : 15')				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL Species _____ x 1 = _____ FACW Species _____ x 2 = _____ FAC Species <u>85</u> x 3 = <u>255</u> FACU Species <u>10</u> x 4 = <u>40</u> UPL Species <u>5</u> x 5 = <u>25</u> Column Totals: <u>100</u> (A) <u>320</u> (B) Prevalence Index = B/A = <u>3.20</u>
1. <u>Prosopis glandulosa</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Herb Stratum (Plot size : 5')				Hydrophytic Vegetation Indicators: No Dominance Test is >50% No Prevalence Index is ≤3.01 No Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Paspalum notatum</u>	<u>85</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Schizachyrium scoparium</u>	<u>5</u>	<u>No</u>	<u>FACU</u>	
3. <u>Engelmannia peristenia</u>	<u>5</u>	<u>No</u>	<u>UPL</u>	
Woody Vine Stratum (Plot size : 30')				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
% Bare Ground in Herb Stratum: <u>5</u>				

Remarks: (if observed, list morphological adaptations below).

Percentage of dominant plants that are OBL, FACW, or FAC is less than or equal to 50%. The hydrophytic vegetation parameter is not met.

SOIL

Sampling Point: DP-09

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 3/1	100					Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 1 cm Muck (A9) (LRR P, T)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Mucky Mineral (S1) (LRR G, S)

☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)

☐ 5 cm Mucky Peat or Peat (S2) (LRR G, H)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1) (LRR O)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ High Plains Depressions (F16) (MLRA 72 & 73 of LRRH)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR I, J)

☐ Coast Prairie Redox (A16) (LRR F, G, H)

☐ Dark Surface (S7) (LRR G)

☐ High Plains Depressions (F16) (LRR H outside of MLRA 75 & 73)

☐ Reduced Vertic (F18) (outside MLRA 150A,

☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:
Depth (inches):

Hydric Soils Present?

☐ Yes☒ No

Remarks:
Indicators of hydric soils lacking; hydric soils parameter is not met.

Hydrology

Wetland Hydrology Indicators:

Primary indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)

☒ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Redox Iron Deposits (B2)

☐ Drift Deposits (B3)

☒ Algal Mat or Oxide (B4)

☐ Iron Deposits (B5)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Mammal Signatures (B9)

☐ Salt Crust (B11)

☐ Aquatic Invertebrates (B13)

☐ Hydrogen Sulfide Odor (C1)

☐ Dry Season Water Table (C2)

☐ Oxidized Rhizospheres in Living Roots (C3)

Where not tilled

☐ Presence of Redox Iron (C4)☐ Thick Muck Surface (C7)☐ Other

Secondary indicators (minimum of two required)

☐ Surface Soil Cracks (B6)

☐ Sparsely Vegetated or Concrete Surface (B8)

☐ Drainage Patterns (B10)

☒ Oxidized Rhizospheres on Living Roots (C3) Where tilled

☐ Crayfish Burrows (C8)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Decomposing Plant Matter (D2)

☐ FAC-Neutral Test (D5)

☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?

☐ Yes☒ No

Water Table Present?

☐ Yes☒ No

Saturation Present?

☐ Yes☒ No

(includes capillary fringe)

Depth (Inches):
Depth (Inches):
Depth (Inches):

Wetland Hydrology Present?:

Yes☐No☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No indicators of wetland hydrology were present. The wetland hydrology parameter is not met.

US Army Corps of Engineers

Great Plains Region - Version 2.0

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site:	Parmer MF	City/ County:	Travis County	Sampling Date:	3/30/2021
Applicant/Owner:	Z Modular	State:	TX	Sampling Point:	DP-10
Investigator(s):	JG	Section, Township, Range:	N/A		
Landform (hillside, terrace, etc.):	Plains	Local relief (concave, convex, none):	Convex	Slope (%):	1-2%
Subregion (LRR or MLRA):	LRR-J	Lat: 30.355130	Long: -97.592482	Datum:	NAD83
Soil Map Unit Name:	Ferris-Heiden complex, 8 to 20 percent slopes, severely eroded (FhF3)			NWI Classification:	N/A

Are climatic/hydrological conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Are Vegetation, Soil, or Hydrology significantly disturbed? ☐ Yes ☒ No

Are Vegetation, Soil, or Hydrology naturally problematic? ☐ Yes ☒ No

Are "Normal Circumstances" Present? ☒ Yes ☐ No

(If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS- Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic vegetation present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Remarks: None of the three parameters, hydrophytic vegetation, wetland hydrology, and hydric soil indicators, were observed. The Data Point (DP) is not within a wetland.	
Habitat ID:	
Habitat Type: N/A	

Vegetation - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree stratum (Plot size : 30')				
1.				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>33%</u> (A/B)
2.				
3.				
4.				
Sapling/Shrub Stratum (Plot size : 15')				
1.	<i>Prosopis glandulosa</i>	15	Yes	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL Species <u> </u> x 1 = <u> </u> FACW Species <u> </u> x 2 = <u> </u> FAC Species <u>5</u> x 3 = <u>15</u> FACU Species <u>90</u> x 4 = <u>360</u> UPL Species <u>15</u> x 5 = <u>75</u> Column Totals: <u>110</u> (A) <u>450</u> (B) Prevalence Index = B/A = <u>4.09</u>
2.	<i>Ulmus crassifolia</i>	5	Yes	
3.				
4.				
5.				
Herb Stratum (Plot size : 5')				
1.	<i>Schizachyrium scoparium</i>	75	Yes	Hydrophytic Vegetation Indicators: No Dominance Test is >50% No Prevalence Index is ≤3.01 No Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
2.	<i>Engelmannia peristenia</i>	10	No	
3.	<i>Anemone berlandieri</i>	5	No	
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Woody Vine Stratum (Plot size : 30')				
1.				
2.				
% Bare Ground in Herb Stratum: <u>10</u>				

Remarks: (if observed, list morphological adaptations below).

Percentage of dominant plants that are OBL, FACW, or FAC is less than or equal to 50%. The hydrophytic vegetation parameter is not met.

SOIL

Sampling Point: DP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 3/1	100					Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (LRR G, S)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ High Plains Depressions (F16) (MLRA 72 & 73 of LRRH)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) (LRR H outside of MLRA 75 & 73)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soils Present?

☐ Yes☒ No

Remarks:

Indicators of hydric soils lacking; hydric soils parameter is not met.

Hydrology

Wetland Hydrology Indicators:

Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Redox Iron Deposits (B2)
- ☐ Drift Deposits (B3)
- ☒ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Mammal Signatures (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Where not tilled
- ☐ Presence of Redox Iron (C4)
- ☐ Thick Muck Surface (C7)
- ☐ Other

Secondary indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated or Concrete Surface (B8)
- ☐ Drainage Patterns (B10)
- ☒ Oxidized Rhizospheres on Living Roots (C3) Where tilled
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Decomposing Plant Matter (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? ☐ Yes ☒ No Depth (Inches): _____

Water Table Present? ☐ Yes ☒ No Depth (Inches): _____

Saturation Present? ☐ Yes ☒ No Depth (Inches): _____

(includes capillary fringe)

Wetland Hydrology Present?:

Yes ☐No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology were present. The wetland hydrology parameter is not met.

**CITY OF AUSTIN
ENVIRONMENTAL RESOURCE INVENTORY
FOR THE
8020 EAST PARMER TRACT**

Travis County, Texas

November 2020

Submitted to:

Vincent F. Barletta
BDG Acquisitions, LLC
40 Shamut Road, Suite 200
Canton, Massachusetts 02021

Prepared By:

aci consulting
1001 Mopac Circle
Austin, Texas 78746

aci Project No.: 35-20-174

Environmental Resource Inventory

For the City of Austin
Relating to the Land Development Code (LDC) Section 25-8, Title 30-5, ECM 1.3.0 & 1.10.0
Effective October 28, 2013

The ERI is required for projects that meet one or more of the criteria listed in (LDC) Section 25-8-121(A), Title 30-5-121(A).

1. SITE/PROJECT NAME: 8020 East Parmer ERI
2. COUNTY APPRAISAL DISTRICT PROPERTY ID (#'s): 236741 & 247979
3. ADDRESS/LOCATION OF PROJECT: 8020 East Parmer Lane, Manor, Texas 78653
4. WATERSHED: Harris Branch and Gilleland Creek
5. THIS SITE IS WITHIN THE (Check all that apply)

Edwards Aquifer Recharge Zone* (See note below)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> No
Edwards Aquifer Contributing Zone*	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> No
Edwards Aquifer 1500 ft Verification Zone*	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> No
Barton Spring Zone*	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> No

*(as defined by the City of Austin – LDC 25-8-2)

Note: If the property is over the Edwards Aquifer Recharge zone, the Hydrogeologic Report and karst surveys must be completed and signed by a Professional Geoscientist Licensed in the State of Texas.

6. DOES THIS PROJECT PROPOSE FLOODPLAIN MODIFICATION?.....☒ YES** ☐ NO
If yes, then check all that apply:

<input type="checkbox"/> (1) The floodplain modifications proposed are necessary to protect the public health and safety;
<input checked="" type="checkbox"/> (2) The floodplain modifications proposed would provide a significant, demonstrable environmental benefit, as determined by a functional assessment of floodplain health as prescribed by the Environmental Criteria Manual, or
<input checked="" type="checkbox"/> (3) The floodplain modifications proposed are necessary for development allowed in the critical water quality zone under Section 25-8-261 or 25-8-262 of the LDC.
<input type="checkbox"/> (4) The floodplain modifications proposed are outside of the Critical Water Quality Zone in an area determined to be in poor or fair condition by a functional assessment of floodplain health.

**** If yes, then a functional assessment must be completed and attached to the ERI (see Section 1.7 and Appendix X in the Environmental Criteria Manual for forms and guidance) unless conditions 1 or 3 above apply.**

7. IF THE SITE IS WITHIN AN URBAN OR SUBURBAN WATERSHED, DOES THIS PROJECT PROPOSE A UTILITY LINE PARALLEL TO AND WITHIN THE CRITICAL WATER QUALITY ZONE? ☒ YES*** ☐ NO

*****If yes, then riparian restoration is required by Section 25-8-261(E) of the LDC and a functional assessment must be completed and attached to the ERI (see Section 1.5 and Appendix X in the Environmental Criteria Manual for forms and guidance).**

8. There is a total of 1 (#'s) Critical Environmental Feature(s)(CEFs) on or within 150 feet of the project site. If CEF(s) are present, attach a detailed **DESCRIPTION** of the CEF(s), color **PHOTOGRAPHS**, the **CEF WORKSHEET** and provide **DESCRIPTIONS** of the proposed CEF buffer(s) and/or wetland mitigation. Provide the number of each type of CEFs on or within 150 feet of the site (Please provide the number of CEFs):

_____ (#'s) Spring(s)/Seep(s) _____ (#'s) Point Recharge Feature(s) _____ (#'s) Bluff(s)
 _____ (#'s) Canyon Rimrock(s) 1 (#'s) Wetland(s)

Note: Standard buffers for CEFs are 150 feet, with a maximum of 300 feet for point recharge features. Except for wetlands, if the standard buffer is not provided, you must provide a written request for an administrative variance from Section 25-8-281(C)(1) and provide written findings of fact to support your request. Request forms for administrative variances from requirements stated in LDC 25-8-281 are available from Watershed Protection Department.

9. The following site maps are attached at the end of this report (Check all that apply and provide):

All ERI reports must include:

- ☒ **Site Specific Geologic Map with 2-ft Topography**
- ☒ **Historic Aerial Photo of the Site**
- ☒ **Site Soil Map**
- ☒ **Critical Environmental Features and Well Location Map on current Aerial Photo with 2-ft Topography**

Only if present on site (Maps can be combined):

- ☐ **Edwards Aquifer Recharge Zone with the 1500-ft Verification Zone**
(Only if site is over or within 1500 feet the recharge zone)
- ☐ **Edwards Aquifer Contributing Zone**
- ☐ **Water Quality Transition Zone (WQTZ)**
- ☒ **Critical Water Quality Zone (CWQZ)**
- ☐ **City of Austin Fully Developed Floodplains for all water courses with up to 64-acres of drainage**

10. **HYDROGEOLOGIC REPORT** – Provide a description of site soils, topography, and site specific geology below (Attach additional sheets if needed):

Surface Soils on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups*. If there is more than one soil unit on the project site, show each soil unit on the site soils map.

Soil Series Unit Names, Infiltration Characteristics & Thickness		
Soil Series Unit Name & Subgroup**	Group*	Thickness (feet)
See Q10-1. Surface Soils		

*Soil Hydrologic Groups 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.

**Subgroup Classification – See Classification of Soil Series Table in County Soil Survey.

Description of Site Topography and Drainage *(Attach additional sheets if needed):*

According to the Manor U.S. Geologic Survey (USGS) 7.5-Minute Topographic Quadrangle and the City of Austin 2015 two-foot contours, the elevation within the subject area ranges from 450 feet above mean sea level (MSL) to 432 feet above MSL. The subject area slopes from southwest to northwest across the subject area (USGS 1988).

(COA) City of Austin. 2015. Two-foot Topographic Lines. City of Austin: Austin, TX.

(USGS) U.S. Geologic Survey. 1988. Manor Texas Quadrangle. USGS - Department of the Interior: Denver, CO.

List surface geologic units below:

Geologic Units Exposed at Surface		
Group	Formation	Member
Taylor Group	Navarro and Taylor Groups	N/A
	undivided (Knt)	
N/A	Alluvium (Qal)	N/A

Brief description of site geology *(Attach additional sheets if needed):*

The subject area is mapped as Navarro and Taylor Groups undivided (Knt) and Alluvium (Qal)

Knt - "in areas where Pecan Gap Chalk is not present because of gradation of marl similar to that of the Marlbrook and Ozan Formations"

Qal - "Floodplain deposits, including indistinct low terrace deposit; clay, sand, and gravel; silt and clay, calcareous to surface, dark gray to dark brown; sand largely quartz; gravel, siliceous, mostly chert, quartzite, limestone, and petrified wood, along Colorado River much igneous and metamorphic rock, probably mostly reworked from terrace deposits; fluvial morphology well preserved with point bars, oxbows, and abandoned channel segments"

(USGS) U.S. Geologic Survey. 2020a. Texas Geology Web Map. Last accessed: November 25, 2020. <https://txpub.usgs.gov>.

Wells – Identify all recorded and unrecorded wells on site (test holes, monitoring, water, oil, unplugged, capped and/or abandoned wells, etc.):

There are 1 (#) wells present on the project site and the locations are shown and labeled

 0 (#s) The wells are not in use and have been properly abandoned.

 0 (#s) The wells are not in use and will be properly abandoned.

 1 (#s) The wells are in use and comply with 16 TAC Chapter 76.

There are 0 (#s) wells that are off-site and within 150 feet of this site.

11. **THE VEGETATION REPORT** – Provide the information requested below:

Brief description of site plant communities *(Attach additional sheets if needed):*

The subject area contains but is not limited to honey mesquite (*Prosopis glandulosa*), sugar hackberry (*Celtis laevigata*), common hackberry (*Celtis occidentalis*), green ash (*Fraxinus pennsylvanica*), southern bristle grass (*Setaria schreelei*), late bonset (*Eupatorium serotinum*), spike rush (*Eleocharis palustris*), cedar elm (*Ulmus crassifolia*), Johnson grass (*Sorghum halepense*), velvety goldenrod (*Solidago mollis*), balloon vine (*Cardiospermum halicacabum*), redosier dogwood (*Cornus sericea*), annual bastardcabbage (*Rapistrum rugosum*), eastern red cedar (*Juniperus virginiana*), silver bluestem (*Bothriochloa saccharoides*), maximilian sunflower (*Helianthus maximiliani*), Texas pricklypear (*Opuntia engelmannii*), gum bumelia (*Sideroxylon lanuginosum*), antelope horn (spider milkweed), broom-corn (*Sorghum bicolor*), common hoptree (*Ptelea trifoliata*), and broadleaf cattail (*Typha latifolia*).

There is woodland community on site ☒ YES ☐ NO *(Check one).*

If yes, list the dominant species below:

Woodland species	
Common Name	Scientific Name
eastern red cedar	<i>Juniperus virginiana</i>
cedar elm	<i>Ulmus crassifolia</i>
common hoptree	<i>Ptelea trifoliata</i>
green ash	<i>Fraxinus pennsylvanica</i>
common hackberry	<i>Celtis occidentalis</i>

There is grassland/prairie/savanna on site..... ☒ YES ☐ NO *(Check one).*

If yes, list the dominant species below:

Grassland/prairie/savanna species	
Common Name	Scientific Name
silver bluestem	<i>Bothriochloa saccharoides</i>
Johnson grass	<i>Sorghum halepense</i>
southern bristle grass	<i>Setaria schreelei</i>

There is hydrophytic vegetation on site ☒ YES ☐ NO *(Check one).*

If yes, list the dominant species in table below *(next page):*

Hydrophytic plant species		
Common Name	Scientific Name	Wetland Indicator Status
spike rush	Eleocharis palustris	OBL
broadleaf cattail	Typha latifolia	OBL

A tree survey of all trees with a diameter of at least eight inches measured four and one-half feet above natural grade level has been completed on the site.

☐ YES ☒ NO (Check one).

12. WASTEWATER REPORT – Provide the information requested below.

Wastewater for the site will be treated by (Check of that Apply):

- ☐ On-site system(s)
☒ City of Austin Centralized sewage collection system
☐ Other Centralized collection system

Note: All sites that receive water or wastewater service from the Austin Water Utility must comply with Chapter 15-12 of Austin City Code and wells must be registered with the City of Austin

The site sewage collection system is designed and will be constructed to in accordance to all State, County and City standard specifications.

☒ YES ☐ NO (Check one).

Calculations of the size of the drainfield or wastewater irrigation area(s) are attached at the end of this report or shown on the site plan.

☐ YES ☐ NO ☒ Not Applicable (Check one).

Wastewater lines are proposed within the Critical Water Quality Zone?

☐ YES ☒ NO (Check one). If yes, then provide justification below:

Is the project site is over the Edwards Aquifer?

☐ YES ☒ NO (Check one).

If yes, then describe the wastewater disposal systems proposed for the site, its treatment level and effects on receiving watercourses or the Edwards Aquifer.

13. One (1) hard copy and one (1) electronic copy of the completed assessment have been provided.

Date(s) ERI Field Assessment was performed: 12/01/2020
Date(s)

My signature certifies that to the best of my knowledge, the responses on this form accurately reflect all information requested.

Stephen Meyer

Print Name



Signature

aci consulting

Name of Company

(512) 852-3860

Telephone

smeyer@aci-group.net

Email Address

12/7/2020

Date

For project sites within the Edwards Aquifer Recharge Zone, my signature and seal also certifies that I am a licensed Professional Geoscientist in the State of Texas as defined by ECM 1.12.3(A).

P.G.
Seal

Print Form

**List of Attachments for the
Environmental Resource Inventory Form**

Question 8:

Q8-1. CEF Worksheet

Q8-2. CEF Description

Question 9:

Q9-1. Site Specific Geologic Map with 2-ft Topography

Q9-2. Historic Aerial Photo of the Site (1996)

Q9-3. Site Soils Map

Q9-4. Critical Environmental Features (CEF) current Aerial Photo with 2-ft Topography

Q9-5. City of Austin Critical Water Quality Zones (CRQZ)

Q9-6. FEMA Flood Hazard Zones

Question 10:

Q10-1. Surface Soils

Q10-2. Wells

Q10-3. Functional Assessment of Floodplain Health

Question 8 Attachments

City of Austin Environmental Resource Inventory - Critical Environmental Feature Worksheet

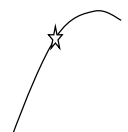
1	Project Name:	8020 East Parmer ERI
2	Project Address:	8020 East Parmer Lane , Manor, TX 78653
3	Site Visit Date:	12/1/2020
4	Environmental Resource Inventory Date:	12/3/2020

5	Primary Contact Name:	Stephen Meyer
6	Phone Number:	(512) 347-3860
7	Prepared By:	Stephen Meyer
8	Email Address:	smeyer@aci-group.net


9	FEATURE TYPE {Wetland,Rimrock, Bluffs,Recharge Feature,Spring}	FEATURE ID (eg S-1)	FEATURE LONGITUDE (WGS 1984 in Meters)		FEATURE LATITUDE (WGS 1984 in Meters)		WETLAND DIMENSIONS (ft)		RIMROCK/BLUFF DIMENSIONS (ft)		RECHARGE FEATURE DIMENSIONS				Springs Est. Discharge
			coordinate	notation	coordinate	notation	X	Y	Length	Avg Height	X	Y	Z	Trend	cfs
	Wetland	CEF-1	30.35432	DD	-97.594091	DD	22	5.5							

City of Austin Use Only CASE NUMBER:	
---	--


For rimrock, locate the midpoint of the segment that describes the feature.



For wetlands, locate the approximate centroid of the feature and the estimated area.



For a spring or seep, locate the source of groundwater that feeds a pool or stream.



Please state the method of coordinate data collection and the approximate precision and accuracy of the points and the unit of measurement.

<u>Method</u>	<u>Accuracy</u>	
GPS	X	sub-meter
Surveyed		meter
Other		> 1 meter X

Professional Geologists apply seal below

Q8-2. CEF Description

Section 25-8-1 of the City of Austin (COA) LDC defines Critical Environmental Features (CEF) as “features that are of critical importance to the protection of environmental resources, and include bluffs, canyon rimrocks, caves, faults and fractures, seeps, sinkholes, springs, and wetlands.”

Aerial photographs and topographic maps were utilized to orient surveyors in the field. If potential CEFs were identified in the field, they were carefully examined and recorded, and each potential feature was described, photographed and its location recorded using a handheld Garmin GPS unit.

Field reconnaissance was conducted on December 1, 2020. One CEF was identified within the subject area.

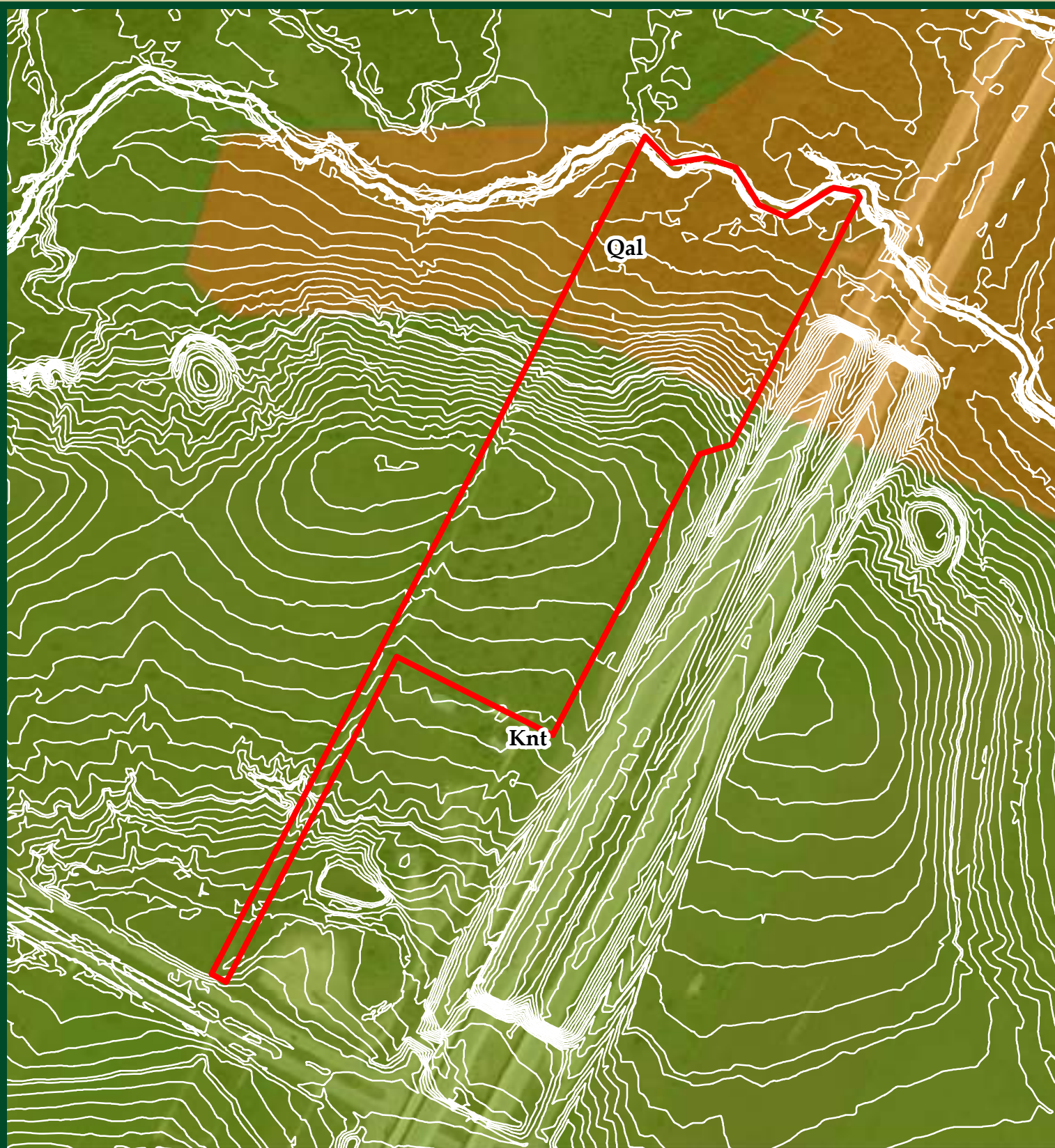
CEF-1

CEF-1 is an emergent wetland located in the southern portion of the subject area. CEF-1 was inundated at the time of the field visit. CEF-1 has wetland hydrology, hydric soils, and is dominated by hydrophytic vegetation such as spike rush and cattails. The boundary between CEF-1 and the adjacent non-wetland was identified based on changes in hydrology, dominant plant composition, and soils. The 1% Annual Chance FEMA Flood Hazard Zone extends on subject area at CEF-1. The total area of CEF-1 is approximately 1,012 square feet, or approximately 0.023 acre within the subject area (Photo 1).

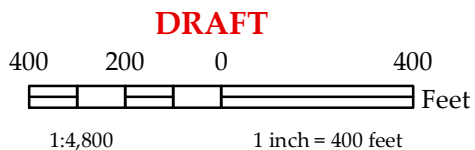



8020 East Parmer ERI Tract Date: 12/1/2020	Feature	CEF-1	Photo 1
	Description	CEF-1 in the southern portion of the subject area	Direction: North
	Photographer	aci consulting	

Question 9 Attachments



This map is intended for planning purposes only. All map data should be considered preliminary. All boundaries and designations are subject to confirmation.

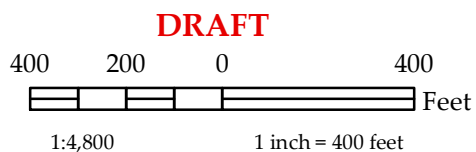



 Subject Area





This map is intended for planning purposes only. All map data should be considered preliminary. All boundaries and designations are subject to confirmation.

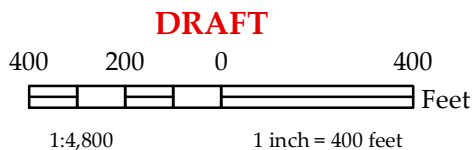



 **Subject Area**





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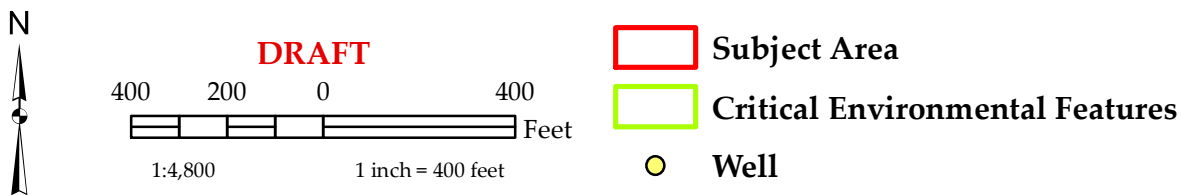


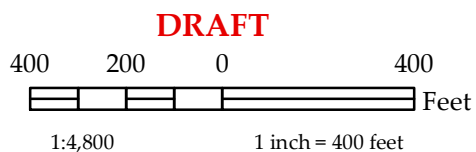
 Subject Area





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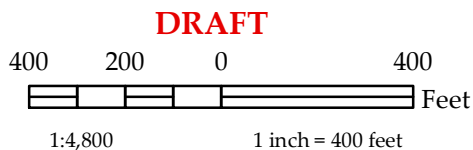



-  Subject Area
-  Critical Water Quality Zone





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 Subject Area



Question 10 Attachments

Q10-1. Surface Soils

According to the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey (2020), four soil map units occur within the subject area:

Soil Type	Group	Thickness (inches)
Ferris-Heiden complex, 8 to 20 percent slopes, severely eroded (FhF3)	D	36 to 60 inches
Heiden clay, 3 to 5 percent slopes, eroded (HeC2)	D	40 to 65 inches
Houston Black clay, 1 to 3 percent slopes (HnB)	D	<80 inches
Tinn clay, 0 to 1 percent slopes, frequently flooded	D	<80 inches

Reference Section:

(USDA NRCS) United States Department of Agriculture, Natural Resource Conservation Service. 2020. Web Soil Survey. Available at: <http://websoilsurvey.nrcs.usda.gov/>. Accessed on: November 25, 2020.

Q10-2. Wells

According to the Texas Water Development Board Well Viewer (TWDB 2020), one monitoring well is located in the northeastern portion to the subject area.

Reference Section:

(TWDB 2020) Texas Water Development Board. 2020. Well Viewer. Available at: <https://www3.twdb.texas.gov/apps/WaterDataInteractive/GroundwaterDataViewer>. Accessed on: December 1, 2020.

Q10-3. Functional Assessment of Floodplain Health

8020 EAST PARMER ERI

TRAVIS COUNTY, TEXAS

Date: December 4, 2020

Project: 8020 East Parmer ERI Tract Functional Assessment of Floodplain Health

To: Cityline Companies, LLC

From: aci consulting | Stephen Meyer

Subject: **Supporting Documentation for the City of Austin Functional Assessment of Floodplain Health of the Zone 1 Floodplain Health and Zone 2 Critical Water Quality Zone**

On December 1, 2020, **aci consulting** conducted a City of Austin (COA) Functional Assessment of Floodplain Health (FAFH) for the Zone 1 – Floodplain Health and Zone 2 – Critical Water Quality Zone (CWQZ) within the 8020 East Parmer ERI Tract in Travis County, Texas.

There were three transects within the Critical Water Quality Zone (CWQZ) (Zone 2), that were evaluated for the FAFH: T-1, T-2, and T-3 (Attachment A). There was one transect within the FEMA Floodplain Health Zone (Zone 1) that was evaluated for the FAFH: T-4 (Attachment B).

The FAFH was conducted according to Appendix X of the COA Environmental Criteria Manual (ECM) along all four transects. As defined in Appendix X of the ECM for FAFH's, a typical transect is 100 meters. For this study, each transect was examined at three 100m² plots: at 5 meters, 50 meters, and 95 meters. The results were then averaged to represent each transect. Lastly, all three transects in Zone 2 were averaged to quantify the area as a whole. The Zone 1 and Zone 2 scores and the assessed condition for each transect are shown below in Table 1 and Table 2, respectively.

Zone 2

Transects T-1, T-2, and T-3 were positioned within the CWQZ; therefore, the methods and scoring for *Zone 2: Critical Water Quality Zone* were used during the field investigations. Attachment A shows the placement of the transects within the subject area.

Attachment C contains the field investigation findings of the FAFH in *Zone 2: Critical Water Quality Zone*. Transect 1 was located in the CWQZ associated with the unnamed creek and Transect 2 and 3 were located in CWQZ associated with Harris Branch. The findings for T-1 are depicted in Table 1 and the findings for T-2 and T-3 are in Table 2. Overall, the FAFH score for T-1 was 14 points, indicating that the current assessed conditions are “Fair”. The overall average FAFH score for T-2 and T-3 was 20.5 points, indicating that the current assessed conditions are “Good”.

Table 1: Zone 2 Scores and Assessed Conditions for each Transect

Transect	Zone 1 Score	Assessed Condition
T-1	14	Fair

Table 2: Zone 2 Scores and Assessed Conditions for each Transect

Transect	Zone 1 Score	Assessed Condition
T-2	19	Good
T-3	22	Good
Average	20.5	Good

Zone 1

Transect T-4 was positioned within the FEMA Floodplain; therefore, the methods and scoring for *Zone 1: Floodplain Health* were used during the field investigation. Attachment B shows the placement of the transect within the subject.

Attachment D contains the field investigation findings of the FAFH in *Zone 1: Floodplain Health*. Transect 4 was located in the FEMA Floodplain associated with Harris Branch. The findings for T-4 are depicted in Table 3. Overall, the average FAFH score was 15 points, indicating that the current assessed conditions for both zones are “Good”.

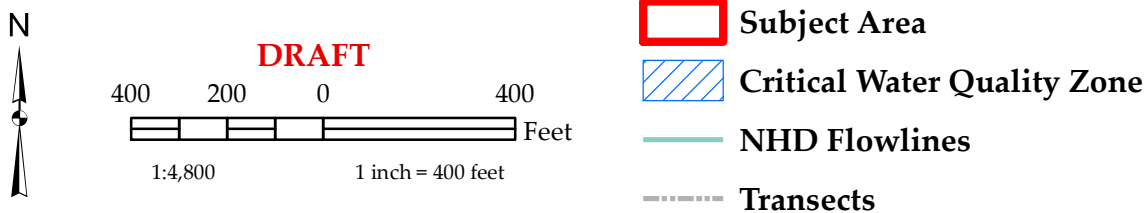
Table 3: Zone 1 Scores and Assessed Conditions for each Transect

Transect	Zone 1 Score	Assessed Condition
T-4	15	Good

ATTACHMENT A
ZONE 2 TRANSECT LOCATIONS

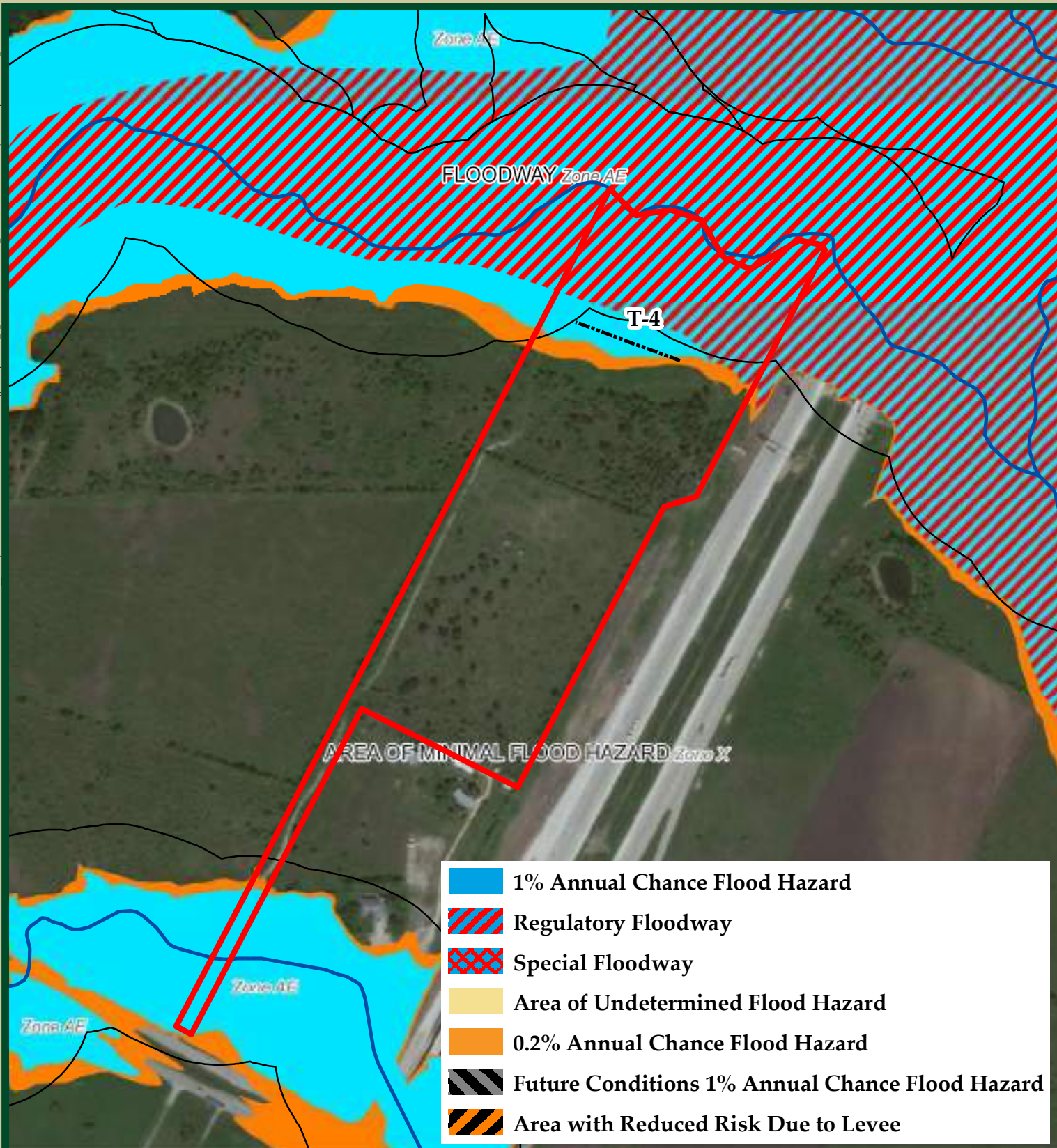


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ATTACHMENT B

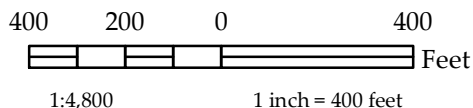
ZONE 1 TRANSECT LOCATIONS



This map is intended for planning purposes only. All map data should be considered preliminary. All boundaries and designations are subject to confirmation.



DRAFT



- Subject Area**
- Transect**
- NHD Flowlines**
- Critical Water Quality Zone**



ATTACHMENT C
FUNCTIONAL ASSESSMENT OF FLOODPLAIN HEALTH FORMS
ZONE 2 – CRITICAL WATER QUALITY ZONE

Scoring: Zone 2 – Critical Water Quality Zone

Site/Project Name: 8020 East Parmer ERI
 Transect Number: T-1

Date: 12/01/2020 Time: 10:13 AM
 Staff (if applicable): GN & MF

Parameter	Excellent (4)	Good (3)	Fair (2)	Poor (1)	Score
Gap Frequency <i>A visual assessment of the number of gaps in vegetation.</i>	0 - 20% of riparian area has visual gaps in vegetation	20% - 40% of riparian area has visual gaps in vegetation	40 - 60% of riparian area has visual gaps in vegetation	> 60% of riparian area has visual gaps in vegetation	4
Large Woody Debris <i>An evaluation of the amount of large woody debris.</i>	7 or more pieces of large woody debris	5 - 6 pieces of large woody debris	3 - 4 pieces of large woody debris	2 or less pieces of large woody debris	1
Soil Compaction <i>An assessment of the bulk density of the soil.</i>	0 - 200 pounds per square inch	201 - 400 pounds per square inch	401 - 600 pounds per square inch	> 600 pounds per square inch	4
Structural Diversity <i>An evaluation of the canopy and understory vegetation.</i>	> 65% canopy; or > 50% canopy and > 50% understory	51 - 65% canopy; or 0 - 50% canopy and > 40% understory	31 - 50% canopy; or 0 - 30% canopy and > 30% understory	0 - 30% canopy; or 0 - 15% canopy and 0 - 30% understory	2
Tree Demography <i>An assessment of the age class distribution of all canopy tree species.</i>	Canopy tree species are present in all 4 age classes	Canopy tree species are present in 3 of 4 age classes	Canopy tree species are present in 2 of 4 age classes	Canopy tree species are present in only 1 age class or no trees	1
Wetland Tree Status <i>Percent of total trees that are defined as FAC+ or greater with respect to wetland status.</i>	> 65% of trees are FAC+ or greater	50 - 65% of trees are FAC+ or greater	25 - 49% of trees are FAC+ or greater	< 25% of trees are FAC+ or greater	1
Riparian Zone Width <i>A measure of the width of the undisturbed riparian zone.</i>	> 18 meters or > 75% of the CWQZ	12 - 18 meters or 50 - 75% of the CWQZ	6 - 12 meters or 25 - 49% of the CWQZ	< 6 meters or < 25% of the CWQZ	1

Zone 2 Score: 14

Assessed Condition (Circle One)

Excellent: 25 - 28

Good: 18 - 24

Fair: 11 - 17

Poor: 7 - 10

Field Sheet: Zone 2 – Critical Water Quality Zone

Site/Project Name: 8020 East Parmer ERI

Date: 12/1/20 Time: 10:13

Transect Number: T-1

Staff (if applicable): Gabriel Nejad & Mason Finley

Gap Frequency

Number of 1 meter gaps: 0

Percent of Transect: 0 %

Large Woody Debris

Number of Large Woody Debris Pieces: 0

Soil Compaction

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
#1: <u>200</u> psi #2: <u>210</u> psi #3: <u>160</u> psi Average for Plot 1: <u>190</u> psi	#1: <u>60</u> psi #2: <u>130</u> psi #3: <u>110</u> psi Average for Plot 2: <u>100</u> psi	#1: <u>160</u> psi #2: <u>250</u> psi #3: <u>180</u> psi Average for Plot 3: <u>197</u> psi

Average for All Sample Plots: 162 psi

Structural Diversity

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Canopy: <u>0</u> % Understory: <u>35</u> %	Canopy: <u>10</u> % Understory: <u>30</u> %	Canopy: <u>0</u> % Understory: <u>40</u> %

Average for All Sample Plots: Canopy: 3.33 % Understory: 41.67 %

Tree Demography

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Number of Age Classes: <u>0</u>	Number of Age Classes: <u>2</u>	Number of Age Classes: <u>0</u>

Average for All Sample Plots: 0.66

Field Sheet: Zone 2 – Critical Water Quality Zone

Site/Project Name: 8020 East Parmer ERI

Date: 12/1/2020 Time: 10:13

Transect Number: T-1

Staff (if applicable): Gabriel Nejad & Mason Finley

Wetland Tree Status

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Number of FAC+ or Greater Trees: <u>0</u>	Number of FAC+ or Greater Trees: <u>1</u>	Number of FAC+ or Greater Trees: <u>0</u>
Total Number of Trees: <u>0</u>	Total Number of Trees: <u>2</u>	Total Number of Trees: <u>0</u>
Percent FAC+ or Greater: <u>0</u> %	Percent FAC+ or Greater: <u>50</u> %	Percent FAC+ or Greater: <u>0</u> %

Average for All Sample Plots: 16.66 %

Riparian Zone Width

Measurement 1 (5 meters)	Measurement 2 (50 meters)	Measurement 3 (95 meters)
Riparian Zone Width: <u>0</u> m	Riparian Zone Width: <u>12</u> m	Riparian Zone Width: <u>0</u> m

Average for All Measurements: 4 m

Scoring: Zone 2 – Critical Water Quality Zone

Site/Project Name: 8020 East Parmer ERI

Transect Number: T-2

Date: 12/01/2020 Time: 12:49 PM

Staff (if applicable): GN & MF

Parameter	Excellent (4)	Good (3)	Fair (2)	Poor (1)	Score
Gap Frequency <i>A visual assessment of the number of gaps in vegetation.</i>	0 - 20% of riparian area has visual gaps in vegetation	20% - 40% of riparian area has visual gaps in vegetation	40 - 60% of riparian area has visual gaps in vegetation	> 60% of riparian area has visual gaps in vegetation	4
Large Woody Debris <i>An evaluation of the amount of large woody debris.</i>	7 or more pieces of large woody debris	5 - 6 pieces of large woody debris	3 - 4 pieces of large woody debris	2 or less pieces of large woody debris	2
Soil Compaction <i>An assessment of the bulk density of the soil.</i>	0 - 200 pounds per square inch	201 - 400 pounds per square inch	401 - 600 pounds per square inch	> 600 pounds per square inch	4
Structural Diversity <i>An evaluation of the canopy and understory vegetation.</i>	> 65% canopy; or > 50% canopy and > 50% understory	51 - 65% canopy; or 0 - 50% canopy and > 40% understory	31 - 50% canopy; or 0 - 30% canopy and > 30% understory	0 - 30% canopy; or 0 - 15% canopy and 0 - 30% understory	4
Tree Demography <i>An assessment of the age class distribution of all canopy tree species.</i>	Canopy tree species are present in all 4 age classes	Canopy tree species are present in 3 of 4 age classes	Canopy tree species are present in 2 of 4 age classes	Canopy tree species are present in only 1 age class or no trees	2
Wetland Tree Status <i>Percent of total trees that are defined as FAC+ or greater with respect to wetland status.</i>	> 65% of trees are FAC+ or greater	50 - 65% of trees are FAC+ or greater	25 - 49% of trees are FAC+ or greater	< 25% of trees are FAC+ or greater	2
Riparian Zone Width <i>A measure of the width of the undisturbed riparian zone.</i>	> 18 meters or > 75% of the CWQZ	12 - 18 meters or 50 - 75% of the CWQZ	6 - 12 meters or 25 - 49% of the CWQZ	< 6 meters or < 25% of the CWQZ	1

Zone 2 Score: 19

Assessed Condition (Circle One)

Excellent: 25 - 28

Good: 18 - 24

Fair: 11 - 17

Poor: 7 - 10

Field Sheet: Zone 2 – Critical Water Quality Zone

Site/Project Name: 8020 East Parmer ERI

Date: 12/1/20

Time: 1:38

Transect Number: T-3

Staff (if applicable): Gabriel Nejad & Mason Finley

Gap Frequency

Number of 1 meter gaps: 0

Percent of Transect: 0 %

Large Woody Debris

Number of Large Woody Debris Pieces: 7

Soil Compaction

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
#1: <u>150</u> psi #2: <u>140</u> psi #3: <u>130</u> psi Average for Plot 1: <u>146.66</u> psi	#1: <u>200</u> psi #2: <u>230</u> psi #3: <u>230</u> psi Average for Plot 2: <u>226.66</u> psi	#1: <u>150</u> psi #2: <u>160</u> psi #3: <u>150</u> psi Average for Plot 3: <u>153.33</u> psi

Average for All Sample Plots: 175.55 psi

Structural Diversity

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Canopy: <u>40</u> % Understory: <u>100</u> %	Canopy: <u>80</u> % Understory: <u>100</u> %	Canopy: <u>50</u> % Understory: <u>100</u> %

Average for All Sample Plots: Canopy: 36.66 % Understory: 100 %

Tree Demography

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Number of Age Classes: <u>3</u>	Number of Age Classes: <u>2</u>	Number of Age Classes: <u>3</u>

Average for All Sample Plots: 2.66

Field Sheet: Zone 2 – Critical Water Quality Zone

Site/Project Name: 8020 East Parmer ERI

Date: 12/1/2020 Time: 1:38

Transect Number: T-3

Staff (if applicable): Gabriel Nejad & Mason Finley

Wetland Tree Status

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Number of FAC+ or Greater Trees: <u>2</u>	Number of FAC+ or Greater Trees: <u>1</u>	Number of FAC+ or Greater Trees: <u>2</u>
Total Number of Trees: <u>3</u>	Total Number of Trees: <u>3</u>	Total Number of Trees: <u>4</u>
Percent FAC+ or Greater: <u>66</u> %	Percent FAC+ or Greater: <u>33</u> %	Percent FAC+ or Greater: <u>50</u> %

Average for All Sample Plots: 49.66 %

Riparian Zone Width

Measurement 1 (5 meters)	Measurement 2 (50 meters)	Measurement 3 (95 meters)
Riparian Zone Width: <u>0</u> m	Riparian Zone Width: <u>0</u> m	Riparian Zone Width: <u>0</u> m

Average for All Measurements: 0 m

ATTACHMENT D
FUNCTIONAL ASSESSMENT OF FLOODPLAIN HEALTH FORMS
ZONE 1 – FLOODPLAIN HEALTH

Scoring: Zone 1 – Floodplain Health

Site/Project Name: 8020 East Parmer ERI

Transect Number: T-4

Date: 12/1/2020 Time: 12:08 PM

Staff (if applicable): GN & MF

Parameter	Excellent (4)	Good (3)	Fair (2)	Poor (1)	Score
Gap Frequency <i>A visual assessment of the number of gaps in vegetation.</i>	0 - 20% of area has visual gaps in vegetation	20% - 40% of area has visual gaps in vegetation	40 - 60% of area has visual gaps in vegetation	> 60% of area has visual gaps in vegetation	4
Large Woody Debris <i>An evaluation of the amount of large woody debris.</i>	7 or more pieces of large woody debris	5 - 6 pieces of large woody debris	3 - 4 pieces of large woody debris	2 or less pieces of large woody debris	1
Soil Compaction <i>An assessment of the bulk density of the soil.</i>	0 - 200 pounds per square inch	201 - 400 pounds per square inch	401 - 600 pounds per square inch	> 600 pounds per square inch	4
Structural Diversity <i>An evaluation of the canopy and understory vegetation.</i>	> 65% canopy; or > 50% canopy and > 50% understory	51 - 65% canopy; or 0 - 50% canopy and > 40% understory	31 - 50% canopy; or 0 - 30% canopy and > 30% understory	0 - 30% canopy; or 0 - 15% canopy and 0 - 30% understory	4
Tree Demography <i>An assessment of the age class distribution of all canopy tree species.</i>	Canopy tree species are present in all 4 age classes	Canopy tree species are present in 3 of 4 age classes	Canopy tree species are present in 2 of 4 age classes	Canopy tree species are present in only 1 age class or no trees	2

Zone 1 Score: 15

Assessed Condition (Circle One)

Excellent: 18 - 20

Good: 13 - 17

Fair: 8 - 12

Poor: 5 - 7

Field Sheet: Zone 1 – Floodplain Health

Site/Project Name: 8020 East Parmer ERI

Date: 12/1/2020 Time: 12:08 PM

Transect Number: T-4

Staff (if applicable): GN & MF

Gap Frequency

Number of 1 meter gaps: 0

Percent of Transect: 0 %

Large Woody Debris

Number of Large Woody Debris Pieces: 0

Soil Compaction

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
#1: <u>120</u> psi #2: <u>160</u> psi #3: <u>140</u> psi Average for Plot 1: <u>140</u> psi	#1: <u>190</u> psi #2: <u>200</u> psi #3: <u>140</u> psi Average for Plot 2: <u>176.66</u> psi	#1: <u>150</u> psi #2: <u>180</u> psi #3: <u>210</u> psi Average for Plot 3: _____ psi

Average for All Sample Plots: 165.55 psi

Structural Diversity

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Canopy: <u>80</u> % Understory: <u>100</u> %	Canopy: <u>100</u> % Understory: <u>100</u> %	Canopy: <u>50</u> % Understory: <u>100</u> %

Average for All Sample Plots: Canopy: 76.66 % Understory: 100 %

Tree Demography

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Number of Age Classes: <u>3</u>	Number of Age Classes: <u>1</u>	Number of Age Classes: <u>2</u>

Average for All Sample Plots: 2

EXHIBIT 11 – PRELIMINARY BRIDGE PLANS

THIS DOCUMENT IS RELEASED FOR
THE PURPOSE OF INTERIM REVIEW
UNDER THE AUTHORITY OF
RYAN C. LAURENT, P.E.
LIC. #131995
05/02/2022

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF RYAN C. LAURENT, P.E. LIC. #131995 05/02/2022

IT SHALL NOT BE USED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

EXISTING CRITICAL ENVIRONMENTAL FEATURE

CEF BUFFER

BEGIN BRIDGE FACE OF BACKWALL ABUTMENT NO. 1 ϵ PRIVATE DRIVEWAY STA 1+49.37 EL = 555.28'

ϵ BENT NO. 2 ϵ PRIVATE DRIVEWAY STA 2+44.37

BRIDGE LIGHTING STA 1+53.37

CSAB (OPT. 2)

SEJ-M(4")

ϵ GIRDER NO. 1

3:1

2+00

20'-0" OVERALL

38'-0" ROADWAY

1'-0" RAIL

1'-0" OFFSET

12'-0" LANE

12'-0" MEDIAN LANE

2.0%

3+00

BRIDGE LIGHTING STA 2+96.71

ϵ BENT NO. 3 ϵ PRIVATE DRIVEWAY STA 3+74.37

BRIDGE LIGHTING STA 2+21.68

EXISTING CRITICAL ENVIRONMENTAL FEATURE

ϵ PRIVATE DRIVEWAY & PGL

CONST/ CONTROL JT

BRIDGE LIGHTING STA 3+70.37

ϵ BENT NO. 4 ϵ PRIVATE DRIVEWAY STA 4+61.87

BRIDGE LIGHTING STA 4+46.71

S 62° 25' 38.24" E (TYP ALL BENTS AND ABUTMENTS)

PROP ROW

END BRIDGE FACE OF BACKWALL ABUTMENT NO. 5 ϵ PRIVATE DRIVEWAY STA 5+49.37 EL = 557.99'

PROP ROW

NOM FACE OF SSTR RAIL

CSAB (OPT. 2)

SEJ-M(4")

3:1

5+00

20'-0" BAS-C

PROP RETAINING WALL

CEF BUFFER

PLAN

1. DESIGNED ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION (2017) AND CURRENT INTERIMS.
2. SEE BORING LOG SHEET FOR BORING LOG INFORMATION.
3. ALL DIMENSIONS ARE HORIZONTAL AND MUST BE CORRECTED FOR GRADE AND CROSS SLOPE.
4. THE "H" VALUES SHOWN ARE ESTIMATED COLUMN HEIGHTS AND ARE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CALCULATING THE ACTUAL COLUMN HEIGHTS BASED ON FIELD CONDITIONS.
5. EXTEND DRILLED SHAFTS TO THE LENGTH SHOWN OR LONGER AS NECESSARY TO OBTAIN A MINIMUM OF TWO (2) DRILLED SHAFT DIAMETERS INTO THE BEARING STRATA.
6. BEARING CONDITIONS:
D = DOWEL
BLANK = NO DOWEL
7. SSTR RAIL OPTIONAL SIDE SLOT DRAINS ARE NOT PERMITTED.
8. MEDIAN ON BRIDGE IS TO BE STRIPED ONLY. A RAISED MEDIAN IS NOT PERMITTED.

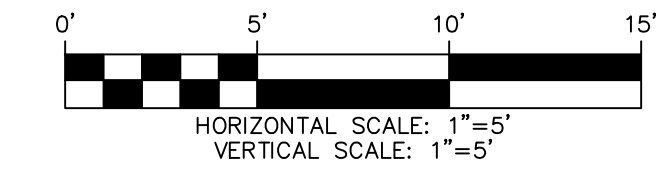
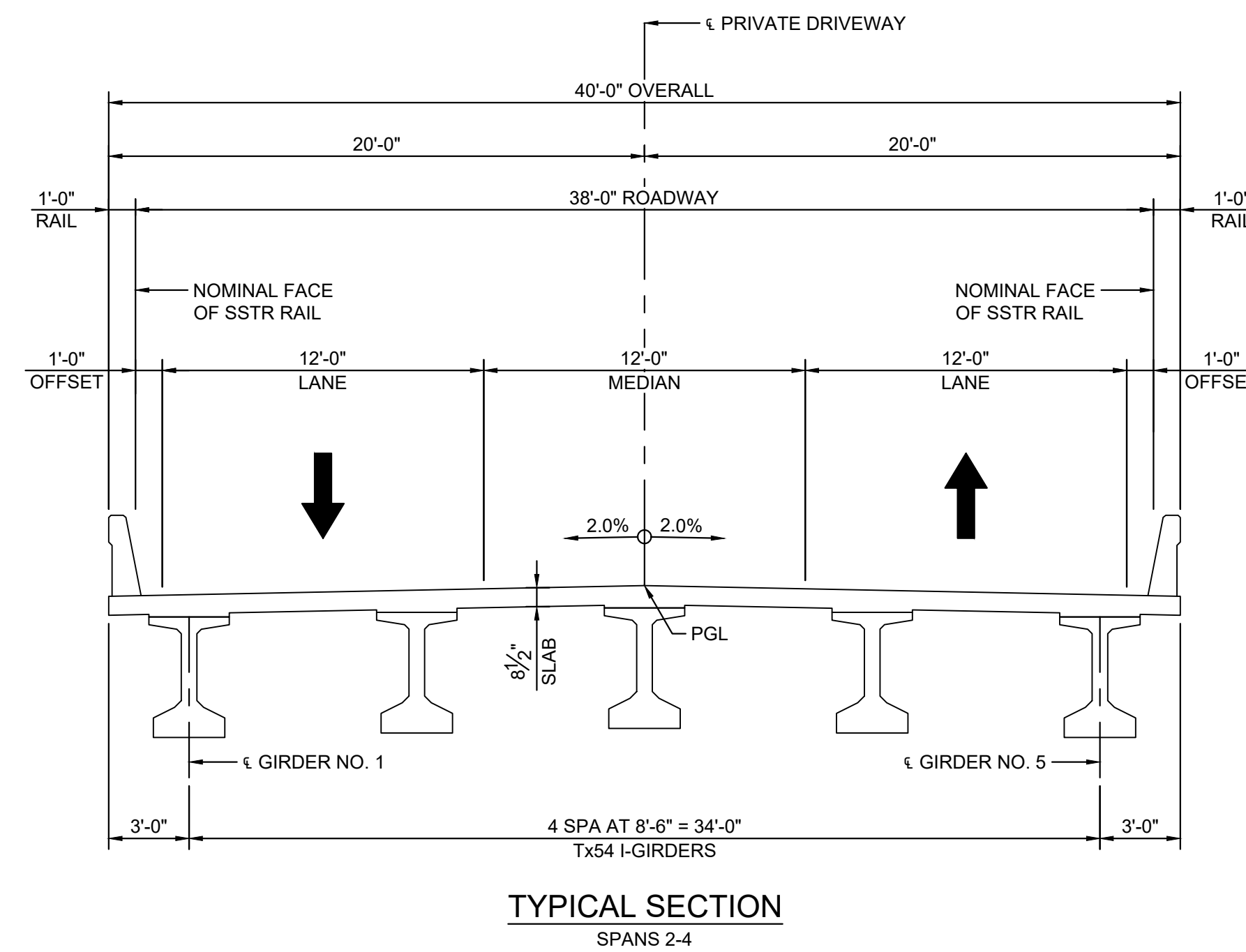
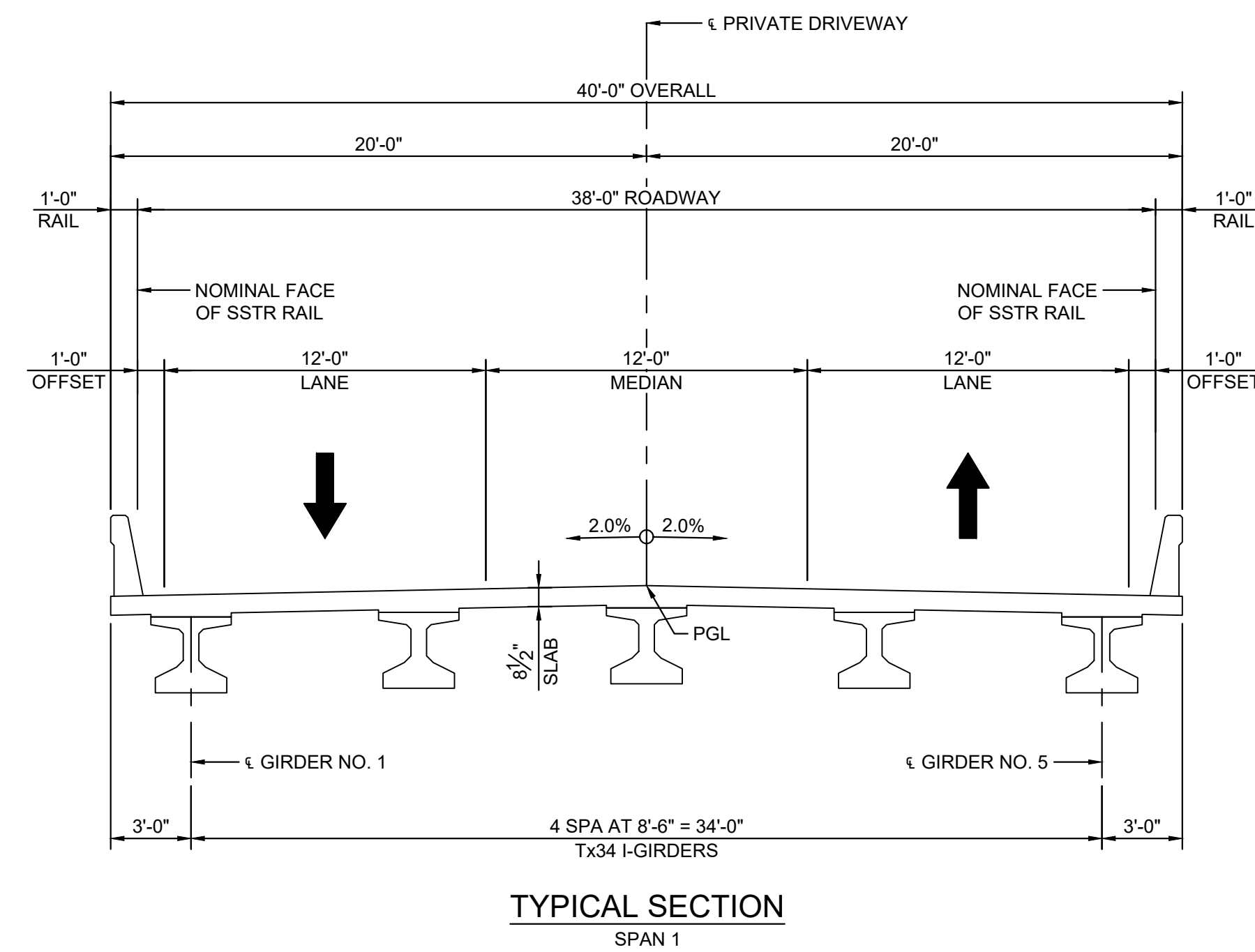


TEXAS REGISTERED ENGINEERING FIRM F-928



BRIDGE LAYOUT

JOB NO. 51209-00
DATE MARCH 2022
DESIGNER RCL
CHECKED RCL DRAWN KMY
SHEET S-01



DRAFT

THIS DOCUMENT IS RELEASED FOR
THE PURPOSE OF INTERIM REVIEW
UNDER THE AUTHORITY OF
RYAN C. LAURENT, P.E.
LIC. #131995
05/02/2022

IT SHALL NOT BE USED FOR
CONSTRUCTION, BIDDING, OR
PERMIT PURPOSES.

[illegible]

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13455 NOEL ROAD, SUITE 700, DALLAS, TX 75240
PHONE: 972-770-1300 FAX: 972-239-3820
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING FIRM F-928

8020 PARMER/SH130 NW
8020 EAST PARMER LANE, AUSTIN, TEXAS

BRIDGE TYPICAL SECTIONS

JOB NO. 51209-00
DATE MARCH 2022
DESIGNER RCL
CHECKED RCL DRAWN KMY
SHEET S-02

EXHIBIT 12 – WETLAND MITIGATION SHEETS



07.16.2021

PROJECT

8020 Parmer/ SH130 NW

8020 East Parmer Lane
Austin, Texas

CONSULTANTS

Civil Engineer
Pape Dawson
10800 North Mopac Expressway
Building 3, Suite 200
Austin, Texas 78759

COMPLETENESS CHECK

JULY 16, 2021

REVISIONS

No	Date	Issue

CHECKED BY
DTR

DRAWN BY
JTH

SHEET TITLE

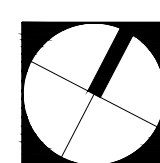
Wetland Mitigation

SCALE IN FEET

1" = 50'



NORTH



SHEET NUMBER

WM1.01

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CALCULATIONS

CEF Buffer Area Disturbed (Outside Wetland) - 2.05 acres
Wetland Area Disturbed - 0.06 acres
Total Site Area Disturbed - 2.11 acres

Note:
In the CEF mitigation and floodplain restoration area, the top 12 inches of topsoil shall be used onsite and reseeded with appropriate 6045.6, native grasses and forbs, and provide temporary irrigation in compliance with ECM P1. This is a condition of the environmental variances granted for the grading in the floodplain and fill greater than 4'.

LEGEND

	Wetland
	Disturbed Wetland Area - 0.06 acres
	Disturbed Area Outside Wetland - 2.05 acres
	Extended CEF Area - 2.11 acres
	Current CEF Setback
	Extend CEF Boundary



Know what's Below.
Call before you dig.

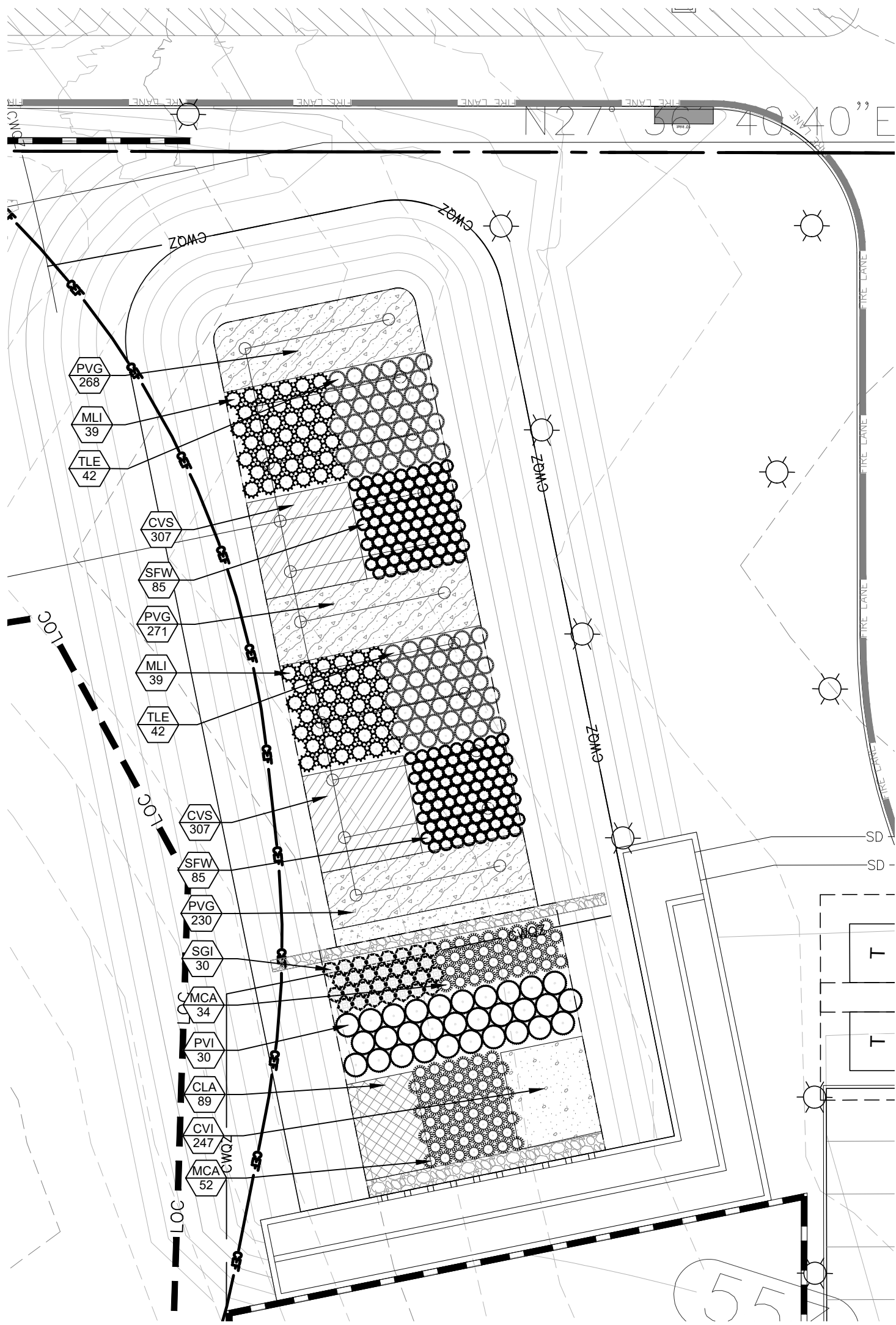
WARNING: CONTRACTOR IS TO
VERIFY PRESENCE AND EXACT
LOCATION OF ALL UTILITIES
PRIOR TO CONSTRUCTION.

SITE PLAN RELEASE

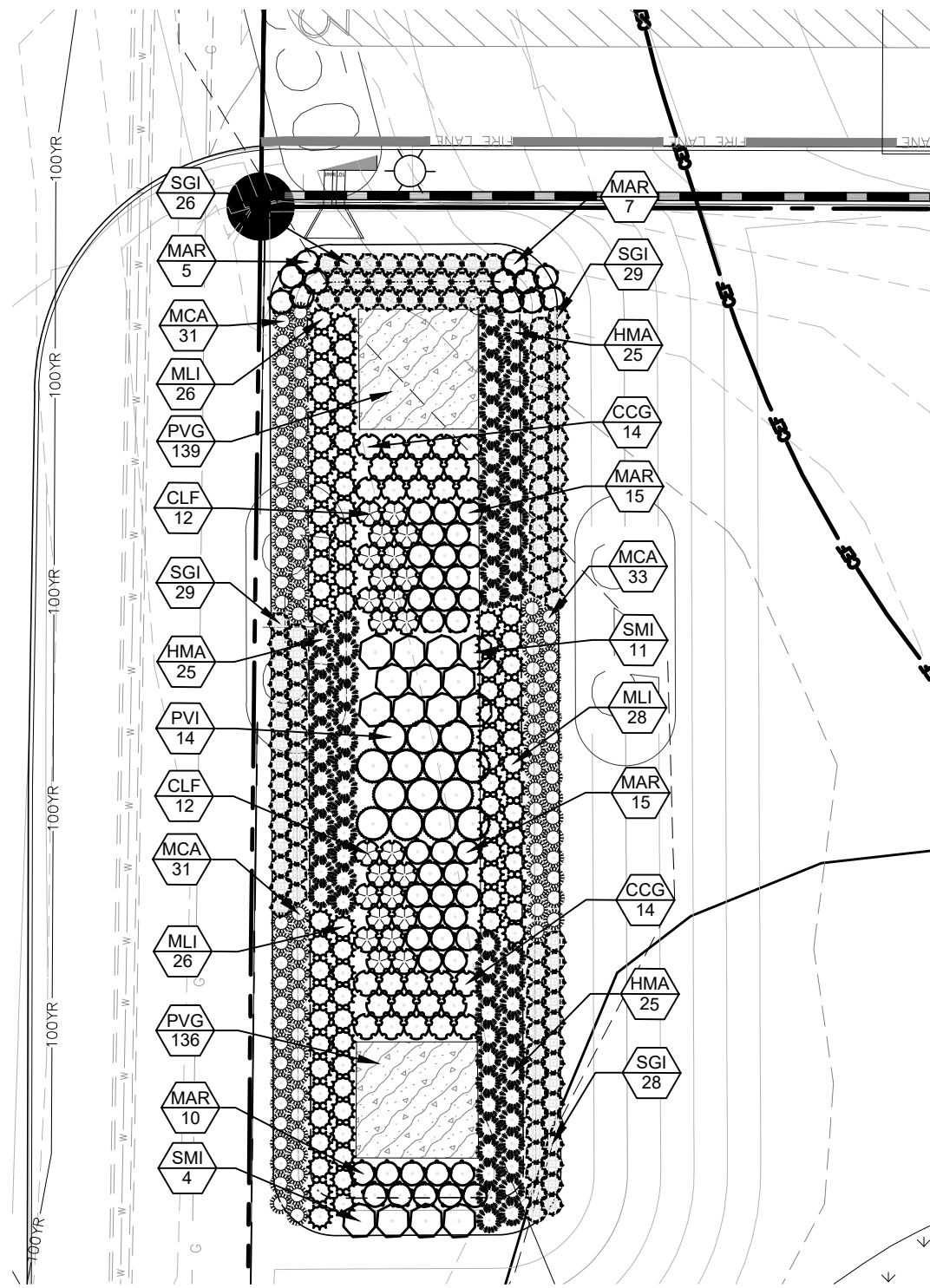
FILE NUMBER SP-2021-XXXX APPLICATION DATE JULY 16, 2021
APPROVED BY COMMISSION ON UNDER SECTION OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81.LDC) CASE MANAGER XXXX
PROJECT EXPIRATION DATE (ORD.#979905-A) DWPZ DDZ

Development Services Department
RELEASED FOR GENERAL COMPLIANCE: ZONING ETJ
Rev. 1 Correction 1
Rev. 2 Correction 2
Rev. 3 Correction 3

Final plat must be recorded by the Project Expiration Date, (if applicable). Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permits and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.



1 VEGETATED WATER QUALITY POND
1" = 20'-0"



2 RAINGARDEN PLANTING
1" = 20'-0"

PLANT SCHEDULE WQP & RAINGARDEN					
SHRUBS	BOTANICAL / COMMON NAME	CONTAINER	HEIGHT		QTY
CLF	Chasmanthium latifolium Northern Sea Oats	5 gal			24
CCG	Conoclinium greggii Gregg's Mistflower	5 gal			28
HMA	Helianthus maximiliani Maximilian Sunflower	5 Gal.			75
MAR	Malvaviscus drummondii Turk's Cap	5 gal			52
MCA	Muhlenbergia capillaris Gulf Muhly	3 Gal	10-12"		181
MLI	Muhlenbergia lindheimeri 'Big' Big Muhly	5 gal			158
PVI	Physostegia virginiana Obedient Plant	5 Gal.			44
SMI	Sabal minor Dwarf Palmetto	5 gal			15
SFW	Salvia farinacea Mealy Sage	5 Gal.			170
SGI	Salvia greggii Autumn Sage	5 gal			142
TLE	Tagetes lemmonii Copper Canyon Daisy	5 Gal.			84
GROUND COVERS	BOTANICAL / COMMON NAME	CONTAINER		SPACING	
CVI	Callirhoe involucrata Purple Poppymallow	1 gal		12" o.c.	238 sf
CVS	Calyptocarpus vialis Horseherb	1 gal		12" o.c.	590 sf
CLA	Coreopsis lanceolata Lanceleaf Tickseed	1 gal		18" o.c.	191 sf
PVG	Panicum virgatum Switch Grass	1 gal		15" o.c.	1,565 sf

Full Sun Areas - 609S Table 4 Mix (Total 5.37 acres)				
	Botanical Name	Common Name	Application Rate (lbs/ac)	Total Application (lbs/ac)
Grass Seed Mix				
	Aristida purpurea	Purple Threeawn	4	21.48
	Bouteloua curtipendula	Sideoats Grama	7	37.59
	Bouteloua gracilis	Blue Grama	10	53.70
	Leptochloa dubia	Green Sprangletop	2	10.74
	Sporobolus cryptandrus	Sand Dropseed	1	5.37
	Total Grass Seed Mix		24	128.88
Forb Seed Mix				
	Dalea purpurea	Purple Prairie Clover	4	21.48
	Oenothera speciosa	Pink Evening Primrose	1	5.37
	Ratibida columnaris	Mexican Hat	2	10.74
	Thelesperma filifolium	Greenthread	6	32.22
	Total Forb Seed Mix		13	69.81
Seed Mix Application Rate				
		Recommended	Provided	
		Grass Seed Mix	23.5	128.88
		Forb Seed Mix	11.5	69.81
		Total Full Sun Seed Mix	35	198.69

Wetland Fringe Mix Total: 0.35 acres			
	Botanical Name	Common Name	Application Rate (lbs/ac) Total Application (lbs/ac)
Grass Seed Mix			
		Clasping Coneflower	1.5 0.53
		Cutleaf Daisy	1.5 0.53
		Plains Coreopsis	1.5 0.53
		Illinois Bundleflower	1.5 0.53
		Black-Eyed Susan	1.5 0.53
		Pink Evening Primrose	1.5 0.53
		Meximilian Sunflower	1.5 0.53
		American Basketflower	1.5 0.53
Seed Mix Application Rate			12 4.2



SITE PLAN RELEASE

FILE NUMBER SP-2021-XXXX APPLICATION DATE JULY 16, 2021

APPROVED BY COMMISSION ON UNDER SECTION OF CHAPTER 25.5 OF THE CITY OF AUSTIN CODE.

EXPIRATION DATE (25-5-81.LDC) CASE MANAGER XXXX

PROJECT EXPIRATION DATE (ORD.#970905-A) DWPZ DDZ

Development Services Department

RELEASED FOR GENERAL COMPLIANCE: ZONING ETJ

Rev. 1 Correction 1

Rev. 2 Correction 2

Rev. 3 Correction 3

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HITCHCOCK DESIGN GROUP
creating better places

1601 Rio Grande Street
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Austin, Texas 78701
T 512.770.4503
hitchcockdesigngroup.com

REGISTERED LANDSCAPE ARCHITECT
T. R. RUSSELL
STATE OF TEXAS
07.16.2021

PROJECT
8020 Parmer/
SH130 NW
8020 East Parmer Lane
Austin, Texas

CONSULTANTS
Civil Engineer
Pape Dawson
10800 North Mopac Expressway
Building 3, Suite 200
Austin, Texas 78759

COMPLETENESS CHECK JULY 16, 2021 REVISIONS		
No	Date	Issue

CHECKED BY DTR
DRAWN BY JTH

SHEET TITLE
Pond & Raingarden
Planting Plan

SCALE IN FEET
1" = 50'

0' 25' 50' 150'

NORTH

SHEET NUMBER
WM1.03

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EXHIBIT 13 – FLOODPLAIN MODIFICATION SHEET



07.16.2021

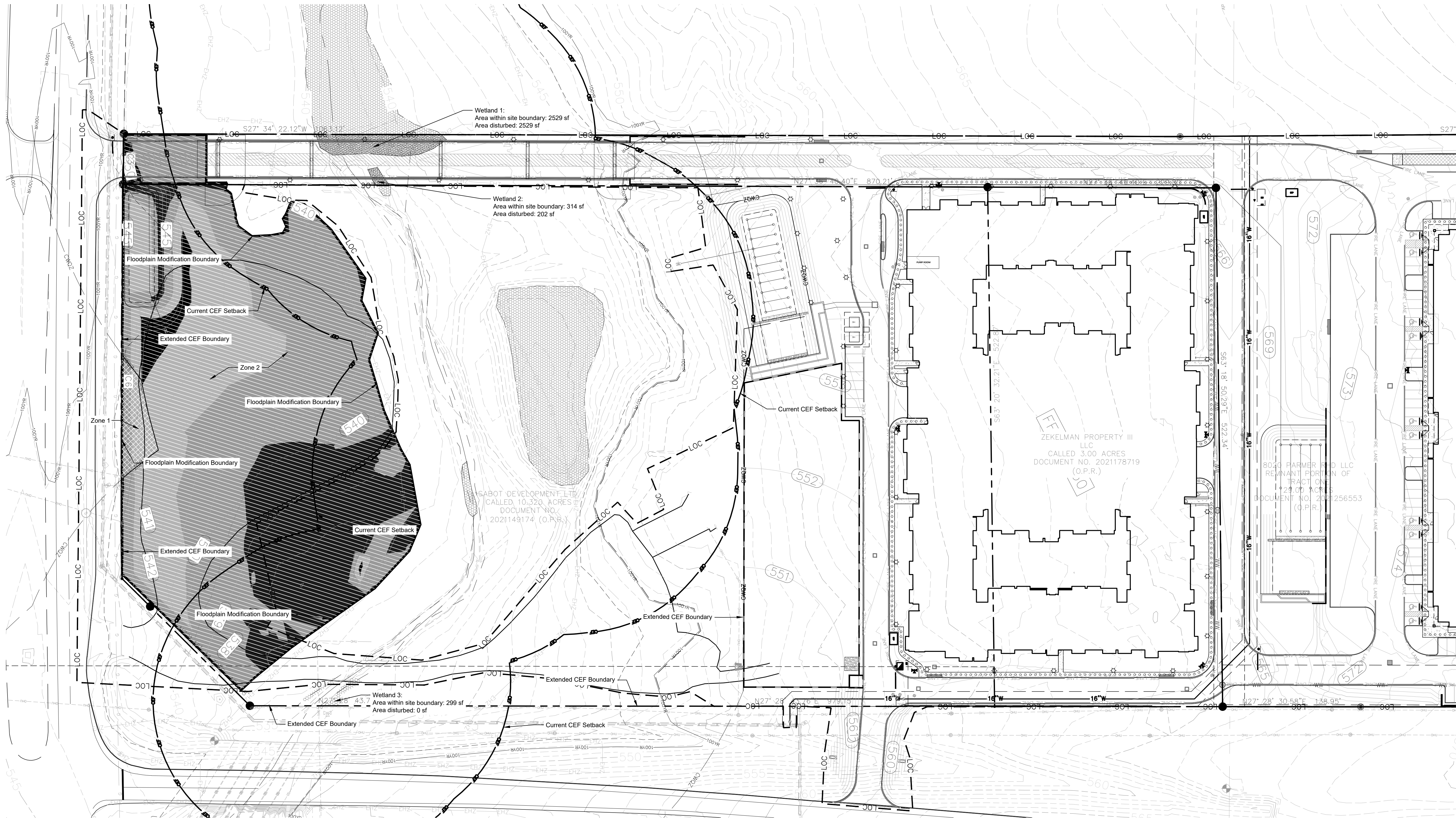
PROJECT

8020 Parmer/ SH130 NW

8020 East Parmer Lane
Austin, Texas

CONSULTANTS

Civil Engineer
Pape Dawson
10800 North Mopac Expressway
Building 3, Suite 200
Austin, Texas 78759



Floodplain Modification Calculations		
Area of Modification	2.69 AC	
Floodplain Mitigation Land Required	2.69 AC	
Floodplain Mitigation Land Provided	0.00 AC	
Restoration Ratio	1:3 for Zone 1, 1:6 for Zone 2	
Floodplain Mitigation by Payment	0.192 + 15.756 = 15.948 AC	
Base Fee	\$15,000	
Annual Adjustment Factor	7% Beginning Oct, 2008	
Adjusted Fee	15000*((100%+7%)^(2022-2008))	\$38,678.01
Total Fee	Mitigation by Payment x Adjusted Fee =	\$616,836.91

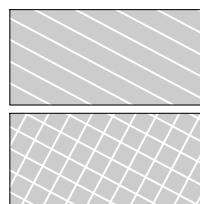
Floodplain Modification Calculations (Zone 1, FP outside the CWQZ, fair condition)		
Area of Modification	0.064 AC	
Floodplain Mitigation Land Required	0.064 AC	
Floodplain Mitigation Land Provided	0.000 AC	
Restoration Ratio	1:3	
Floodplain Mitigation by Payment	0.192 AC	
Base Fee	\$15,000	
Annual Adjustment Factor	7% Beginning Oct, 2008	
Adjusted Fee	15000*((100%+7%)^(2022-2008))	\$38,678.01
Total Fee	Mitigation by Payment x Adjusted Fee =	\$7,426.18

Floodplain Modification Calculations (Zone 2, FP within the CWQZ, fair condition)		
Area of Modification	2.626 AC	
Floodplain Mitigation Land Required	2.626 AC	
Floodplain Mitigation Land Provided	0.000 AC	
Restoration Ratio	1:6	
Floodplain Mitigation by Payment	15.756 AC	
Base Fee	\$15,000	
Annual Adjustment Factor	7% Beginning Oct, 2008	
Adjusted Fee	15000*((100%+7%)^(2022-2008))	\$38,678.01
Total Fee	Mitigation by Payment x Adjusted Fee =	\$609,410.73

Note:
In the CEF mitigation and floodplain restoration area, the top 12 inches of topsoil shall be used onsite and reseeded with appropriate 6045.6, native grasses and forbs, and provide temporary irrigation in compliance with ECM P1. This is a condition of the environmental variances granted for the grading in the floodplain and fill greater than 4'.

LEGEND

- Floodplain Modification Boundary, Area: 2.69 ac
- CEF Current CEF Setback
- Extend CEF Boundary



- Zone 1 (Floodplain outside the CWQZ)
- Zone 2 (Floodplain within the CWQZ)



Know what's Below.
Call before you dig.

WARNING: CONTRACTOR IS TO
VERIFY PRESENCE AND EXACT
LOCATION OF ALL UTILITIES
PRIOR TO CONSTRUCTION.

SITE PLAN RELEASE

FILE NUMBER SP-2021-XXXX APPLICATION DATE JULY 16, 2021
APPROVED BY COMMISSION ON UNDER SECTION OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81.LDC) CASE MANAGER XXXX
PROJECT EXPIRATION DATE (ORD.#970905-A) DWPZ DDZ

Development Services Department
RELEASED FOR GENERAL COMPLIANCE: ZONING ETJ
Rev. 1 Correction 1
Rev. 2 Correction 2
Rev. 3 Correction 3

Final plat must be recorded by the Project Expiration Date, (if applicable, Subsequent Site Plans which do not comply with the Code current at the time of filing, and all required Building Permits and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.

COMPLETENESS CHECK

JULY 16, 2021

REVISIONS

No	Date	Issue

CHECKED BY
DTR

DRAWN BY
JTH

SHEET TITLE

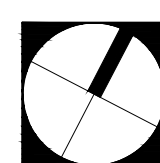
Floodplain Modification

SCALE IN FEET

1" = 50'



NORTH



SHEET NUMBER

FM1.04

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EXHIBIT 14 – PRELIMINARY POND PLANS

REVISIONS				
No.	Revision Description	Prepared by:	(Date)	Reviewed by: (Date)

SEDIMENTATION/FILTRATION
POND MAINTENANCE PLAN:

- STANDARD REQUIREMENTS
1. ACCUMULATED PAPER, TRASH AND DEBRIS SHALL BE REMOVED EVERY SIX (6) MONTHS OR AS NECESSARY TO MAINTAIN PROPER OPERATION.
 2. STRUCTURAL INTEGRITY SHALL BE MAINTAINED AT ALL TIMES. BASINS AND ALL APPURTENANCES SHALL BE INSPECTED ANNUALLY, OR MORE FREQUENTLY IF SPECIFIED, AND REPAIRS SHALL BE MADE IF NECESSARY. WHEN MAINTENANCE OR REPAIRS ARE PERFORMED, THE SCM SHALL BE RESTORED TO THE ORIGINAL LINES AND GRADES.
 3. CORRECTIVE MAINTENANCE SHALL OCCUR:
 - a. ANY TIME DRAWDOWN OF THE WATER QUALITY VOLUME DOES NOT OCCUR WITHIN NINETY-SIX (96) HOURS (I.E., NO STANDING WATER IS ALLOWED), UNLESS A GREATER MAXIMUM DRAWDOWN TIME IS SPECIFIED IN THE PLANS.
 - b. FOR DETENTION PONDS ONLY, ANY TIME DRAWDOWN DOES NOT OCCUR WITHIN TWENTY-FOUR (24) HOURS.
 4. THE INLET AND OUTLET OF SOMS SHALL BE MAINTAINED UNIMPEDED IN ORDER TO CONVEY FLOW AT ALL TIMES. OBSERVED BLOCKAGES TO THE INLET AND OUTLET, DUE TO VEGETATION, SEDIMENT, DEBRIS, OR ANY OTHER CAUSE, SHALL BE REMOVED.
 5. NO UNVEGETATED AREA SHALL EXCEED TEN (10) SQUARE FEET. THIS PERFORMANCE REQUIREMENT APPLIES TO THE ENTIRE POND INCLUDING THE POND BOTTOM, SIDE SLOPES, AND AREAS ADJACENT TO THE POND, AND IS INTENDED TO LIMIT EROSION.
 6. INTEGRATED PEST MANAGEMENT SHALL BE PERFORMED AND SHALL ADHERE TO SECTION 1.6.2.F, INTEGRATED PEST MANAGEMENT GUIDELINES.
 7. THE MINIMUM VEGETATION HEIGHT SHALL BE FOUR (4) INCHES IN THE SCM AND ALL APPURTENANCES, INCLUDING THE TOE OF THE BERM OR WALL OUTSIDE THE SCM, WHERE APPLICABLE.
 8. SEDIMENT BUILD-UP SHALL BE REMOVED:
 - a. WHEN THE ACCUMULATION EXCEEDS SIX (6) INCHES IN SPLITTER BOXES, WET WELLS AND BASINS.
 - b. WHEN SEDIMENT TRAPS ARE FULL.
 - c. WHEN SEDIMENT, OF ANY AMOUNT, CAUSES STANDING WATER CONDITIONS OR REDUCES BASIN STORAGE BY MORE THAN 10%.
 9. WHEN SEDIMENT IS REMOVED, THE FOLLOWING REQUIREMENTS APPLY:
 - a. IRRIGATION SHALL BE PROVIDED, AS NEEDED, UNTIL VEGETATION IS ESTABLISHED (WELL ROOTED). SEE SECTION 1.6.3.D, IRRIGATION GUIDELINES.
 - b. THE DESIGN DEPTH OF THE FILTRATION MEDIA SHALL BE VERIFIED. SEE SECTION 1.6.3.B.5.
 - c. TILLING OF THE FILTRATION MEDIUM IS NOT ALLOWED.

WATER QUALITY POND SUMMARY:

WATER QUALITY POND ORIFICES:
10 - 1" W X 1.5" H ORIFICES
Q25 = 99.99 CFS

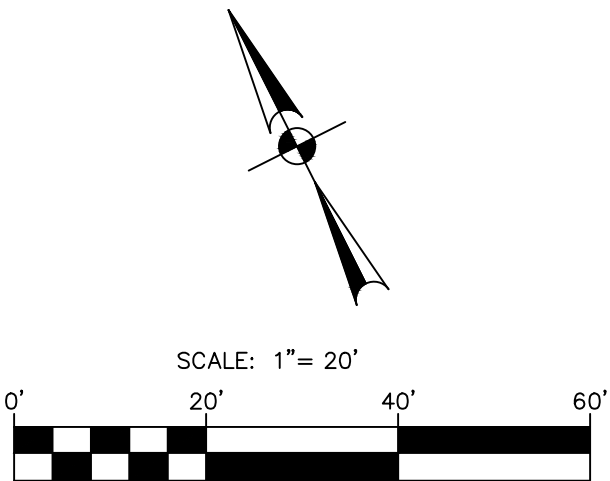
D50 CALCULATION:
 $V = Q/A$
 $Q = 99.99 \text{ CFS}$
 $A = 10 * (1 \text{ FT} * 1.5 \text{ FT}) = 15.0 \text{ FT}^2$
 $V = 99.99/15.0 = 6.67 \text{ FPS}$

$D50 = 0.0105 * (V)^{2.06}$
 $D50 = 0.0105 * (6.67)^{2.06}$
 $D50 = 0.52 \text{ FT}$

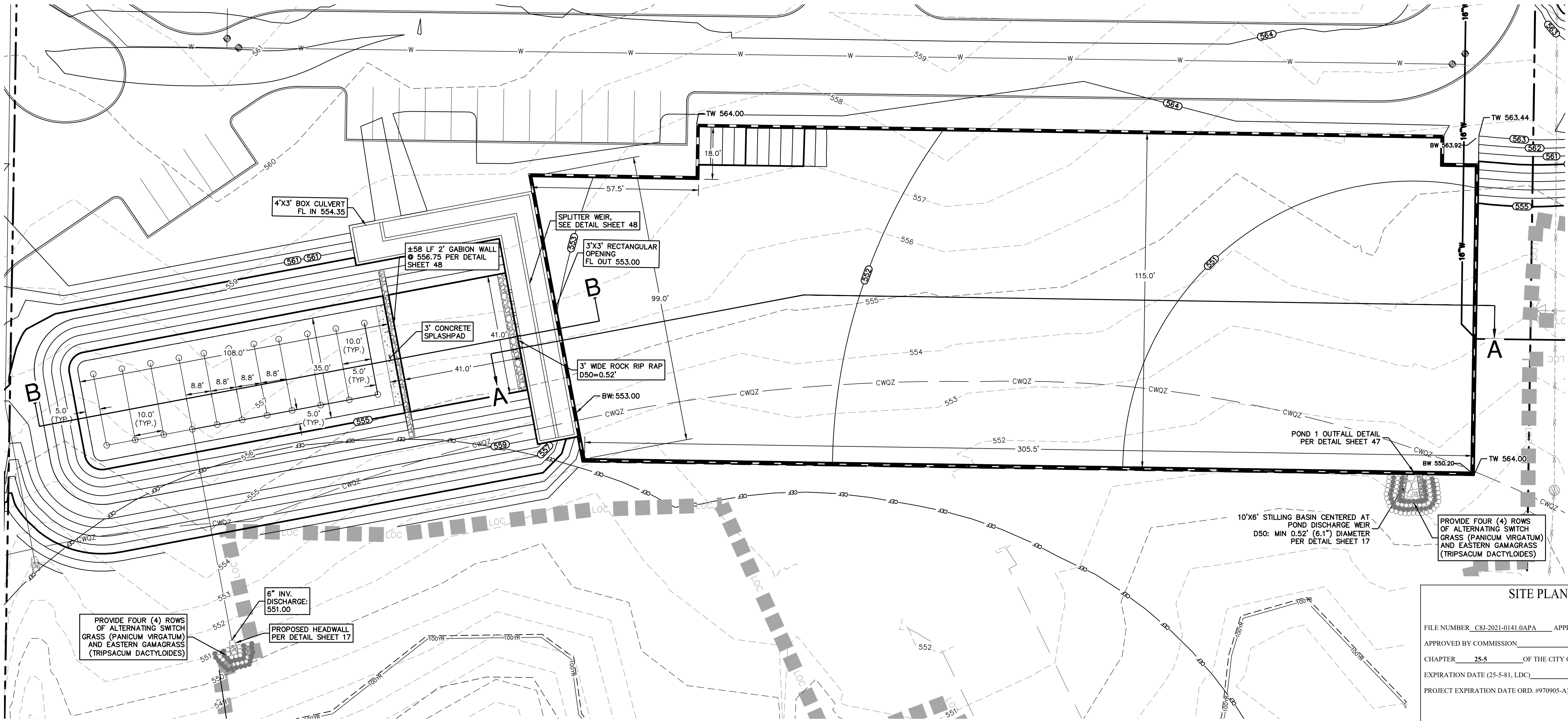
NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. EXISTING CONTOUR INFORMATION SHOWN IS AT 1 FOOT INTERVALS. THE CONTOURS ARE COMPUTER GENERATED USING A COMBINATION OF FIELD SURVEY DATA FROM
3. WATERSTOPS SHALL BE PROVIDED DURING CONSTRUCTION OF EXPANSION JOINTS IN RETAINING WALLS PER STANDARD SPECIFICATION 414S, CONCRETE RETAINING WALLS.

POND SHEET INCLUDED FOR GENERAL DESIGN AND
OUTFALL DETAILS ONLY. POND IMPROVMENTS WILL
BE DETAILED AND PERMITTED UNDER THE SITE
PLAN APPLICATION



LEGEND	
---	PROPERTY LINE
-SD-	PROPOSED STORM DRAIN LINE
(790)	PROPOSED CONTOUR LINE
---	EXISTING CONTOUR LINE



SITE PLAN RELEASE

FILE NUMBER: C8J-2021-0141.0APA APPLICATION DATE: AUGUST 20, 2021
APPROVED BY COMMISSION UNDER SECTION 112 OF
CHAPTER 25-5 OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81, LDC) CASE MANAGER XXXX
PROJECT EXPIRATION DATE ORD. #970905-A) DWPZ DDZ

DEVELOPMENT SERVICES DEPARTMENT
RELEASED FOR GENERAL COMPLIANCE: ZONING ETJ
Rev. 1 Correction 1
Rev. 2 Correction 2
Rev. 3 Correction 3

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**PAPE-DAWSON
ENGINEERS**
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
1801 N. MOPAC EXPY, SUITE 300 | AUSTIN, TX 78759 | 512.464.8711
TYPE FIRM REGISTRATION #4470 | TYPE FIRM REGISTRATION #10028601

**8020 PARMER/SH130 NW
AUSTIN, TEXAS**

JOB NO. 51209-00
DATE AUGUST 2021
DESIGNER TDM
CHECKED TDM DRAWN KT
SHEET 16 of 21

C8J-2021-0141.0APA

REVISIONS				
No.	Revision Description	Prepared by:	(Date)	Reviewed by: (Date)

APPENDIX R-6: FULL OR PARTIAL BIOFILTRATION POND CALCULATIONS FOR DEVELOPMENT PERMITS				
Parmer MF Sed/Fil Pond 1 - South, 51209-00				
DRAINAGE AREA DATA:				
Drainage area to control (DA)	11.94	ac		
Drainage area Impervious Cover	36.60%			
Capture Depth (CD) = (0.5+(IC-20)/100)	0.666	in		
WATER QUALITY CONTROL CALCULATIONS				
	Required		Provided	
The Water Quality Control is to be BIOFILTRATON				
25-year peak flow rate to control (Q25)	99.99	cfs	102.14	cfs
100-year peak flow rate to control (Q100)	135.9	cfs		
Water Quality Volume (WQV=CD*DA*3630) @ WQE	28,866	cf	30,806	cf
Maximum Ponding Depth above Sand Bed (H)	4.25	ft		
Sedimentation Pond Area			1,763	sf
For Full Sedimentation Pond Volume (min. of WQV)		cf		cf
For Partial Sedimentation Pond Volume (min of 20% of WQV)	6,161.22	cf	7,676.05	cf
For Full Filtration Pond Area , Af = WQV/(7 + 2.33*H)		sf		sf
For Partial Filtration Pond Area , Af = WQV/(4 + 1.33*H)	3,191.52	sf	3,776.14	sf
Filtration Pond Volume			21,357	cf
Water Quality Elevation			557.25	ft msl
Elevation of Splitter/Overflow Weir (min WQ elev)	557.25	ft msl	557.25	ft msl
Length of Splitter Weir			130	ft
Required head to Pass Q100 (max 1ft)	1.00	ft	0.495188	ft
Pond freeboard to pass Q100 (min 0.25 ft)	0.25	ft	1.750	ft
Top of peripheral wall (elev)			556.75	ft msl
Biofiltration Pond Drawdown Time (min. 48 hrs)	48	hrs	48.00	hrs
Underdrain Orifice Size (diameter)		in	0.76	in
Underdrain Orifice Size (area)		sq in	0.45	sq in
BIOLOGICAL ELEMENTS CALCULATIONS:				
Surface Area of Entire Pond Bottom (SA)	400	sf	5539.14	sf
Total Plantings Required (Min 10% of SA)	40	plants	554.00	plants
Sedimentation Pond Plantings (Min. 20% of Total Plantings)	8	plants	111.00	plants
Filtration Pond Plantings (Min. 50% of Total Plantings)	20	plants	443.00	plants

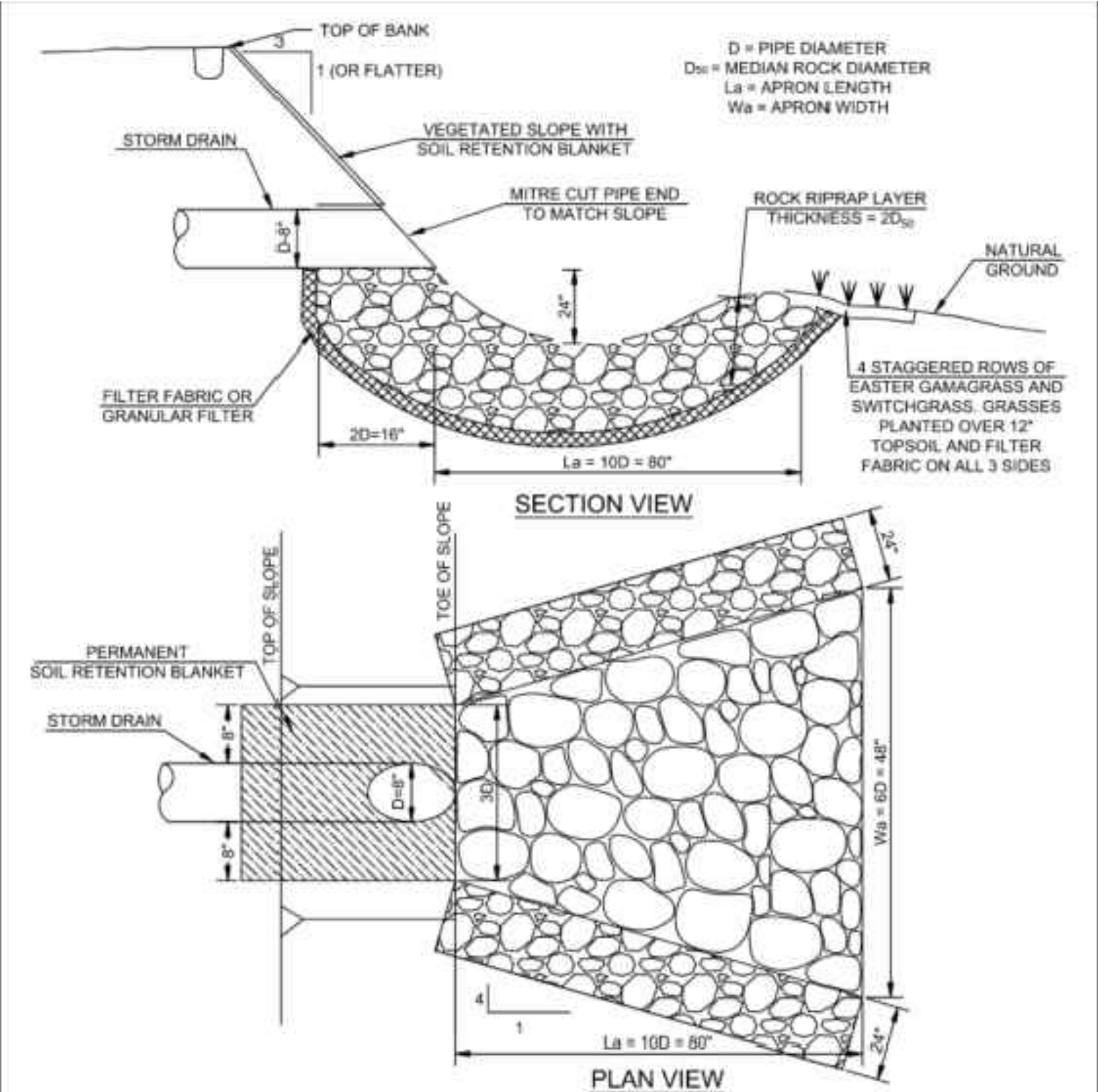
Sedimentation Pond						
Stage (ft msl) (Elevation)	Pond Depth (ft)	Cumulative Pond Depth (ft)	Area (sf)	Volume (cf)	Cumulative Volume (cf)	Notes
553.00	0.00	0.00	0	0	0	
554.00	1.00	1.00	1,763	588	588	
555.00	1.00	2.00	2,021	1,891	2,478	
556.00	1.00	3.00	2,279	2,149	4,627	
557.00	1.00	4.00	2,537	2,407	7,034	
557.25	0.25	4.25	2,602	642	7,676	WQV
558.00	0.75	5.00	2,795	2,023	9,699	
559.00	1.00	6.00	3,053	2,923	12,622	TOP OF POND

Filtration Pond						
Stage (ft msl) (Elevation)	Pond Depth (ft)	Cumulative Pond Depth (ft)	Area (sf)	Volume (cf)	Cumulative Volume (cf)	Combined Pond Volumes (cf)
553.00	0.00	0.00	3,776	0.00	0.00	0.00
554.00	1.00	1.00	4,536	4,150	4,150	4,737.72
555.00	1.00	2.00	5,323	4,924	9,074	11,552.39
556.00	1.00	3.00	6,139	5,726	14,801	19,427.46
557.00	1.00	4.00	6,983	6,557	21,357	28,391.09
557.25	0.25	4.25	7,199	1,773	23,130	30,806.11
558.00	0.75	5.00	7,856	5,644	28,774	38,473.14
559.00	1.00	6.00	8,757	8,302	37,076	49,698.45
						TOP OF POND

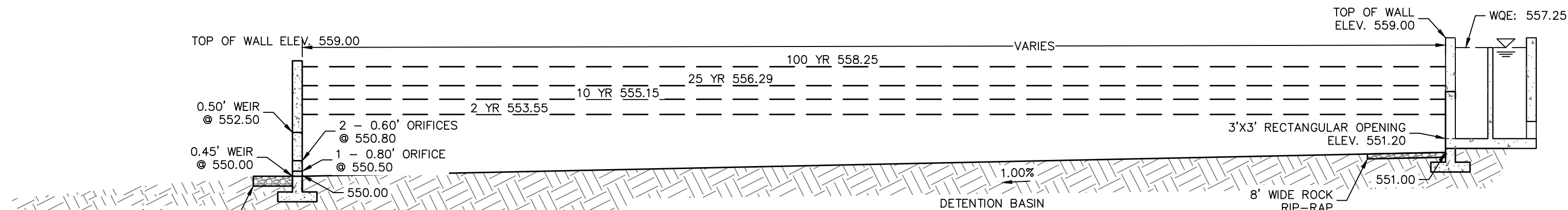
DETENTION POND - SOUTH									
Elev. (ft)	Depth (ft)	Pr. Area (ft²)	Area (ac)	Incremental Volume (ft³)	Cumulative Volume (ft³)	0.45' Weir @ 550.00 (cfs)	1 - 0.8' Orifice @ Center: 550.50 (cfs)	2 - 0.6' Orifice @ Center: 550.80 (cfs)	0.50' Weir @ 552.50 (cfs)
550.00	0.00	3	0.00007	0	0	0.00	-	-	0.00
550.50	0.00	3	0.00007	0	0	0.48	-	-	0.48
550.90	0.00	3	0.00007	0	0	0.97	1.33	0.00	2.29
551.00	1.00	9.841	0.22591	3,338	3,338	1.35	1.71	1.22	4.28
552.00	1.00	23.961	0.55007	16,385	19,724	3.82	2.06	2.98	9.77
552.50	0.50	23.961	0.55007	11,580	31,704	5.34	3.42	3.55	12.31
553.00	0.50	34.905	0.80132	14,831	34,355	7.01	3.83	4.04	15.41
554.00	1.00	35,363	0.81183	35,134	69,489	10.80	4.53	4.87	22.95
555.00	1.00	35,363	0.81183	35,363	104,852	15.09	5.13	5.58	31.74
556.00	1.00	35,363	0.81183	35,363	140,216	19.84	5.88	6.21	41.55
556.50	0.50	35,363	0.81183	17,682	157,897	22.37	5.93	6.50	46.80
557.00	0.50	35,363	0.81183	17,682	157,897	25.00	6.17	6.78	52.27
558.00	1.00	35,363	0.81183	35,363	193,261	30.55	6.63	7.31	63.83
558.31	0.31	35,363	0.81183	10,963	204,223	32.34	6.76	7.46	67.57
559.00	0.69	35,363	0.81183	24,401	228,624	36.45	7.06	7.80	76.16
									100 YR WSEL
									TOP OF POND

Detention Pond 1 Routing				
Return Event	Peak In-Flow (CFS)	Peak Out-Flow (CFS)	Surface Elevation (ft)	Max Storage (Ac-ft)
2	81.50	19.39	553.55	1.57
10	135.65	33.15	555.15	2.86
25	170.55	44.55	556.29	3.79
100	229.93	66.89	558.25	5.38

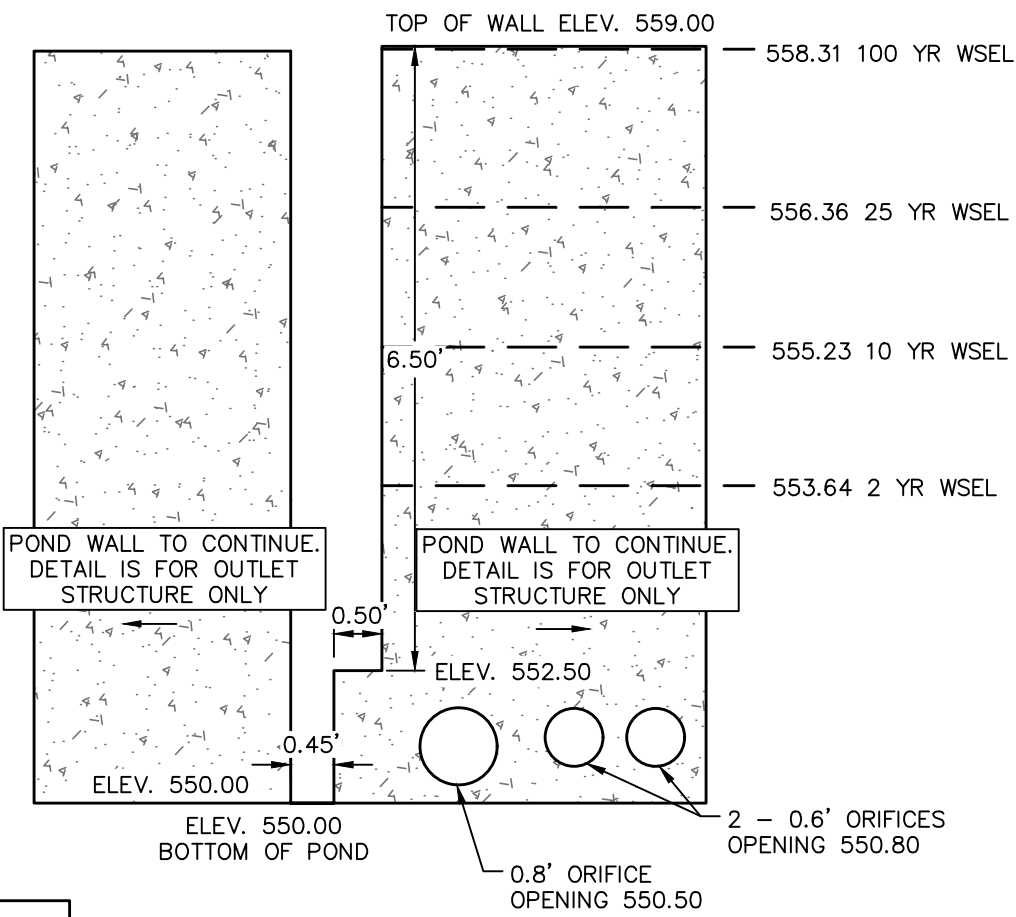
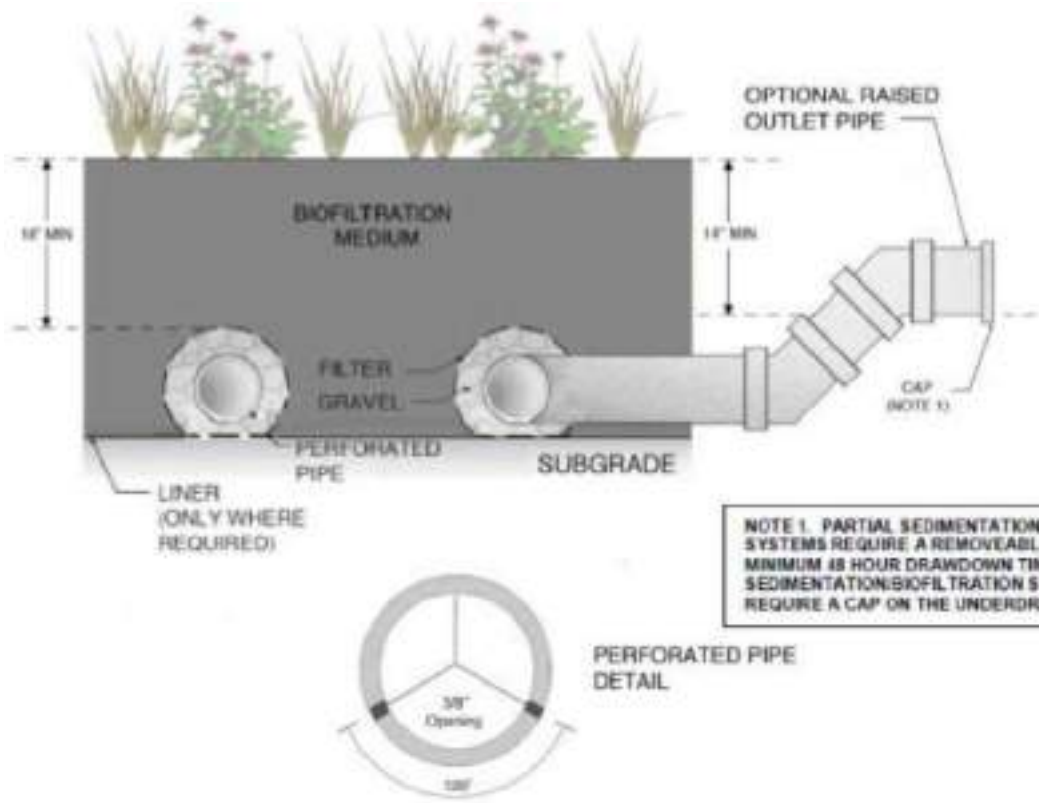
DETENTION POND 1 WSEL			
2 YEAR			553.55
10 YEAR			555.15
25 YEAR			556.29
100 YEAR			558.25



- NOTE:
- ROCK RIPRAP SHALL BE SOUND MATERIAL AND GRADED PER REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 591S.
 - ROCK SIZE (D₅₀) AND GRADATION SHALL BE STABLE FOR THE DESIGN HYDRAULIC CONDITIONS AND IN ACCORDANCE WITH THE ECM 1.4.6.D PERMANENT STRUCTURAL PRACTICES, STONE RIPRAP OR OTHER ENGINEERING STANDARD OF PRACTICE FOR SIZING ROCK RIPRAP. ROCK RIPRAP D₅₀ AND FILTER TYPE SHALL BE NOTED ON PLANS.
 - GEOTEXTILE FILTER FABRIC SHALL MEET THE REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 6205.
 - AGGREGATE FOR GRANULAR FILTER SHALL MEET THE REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 403. AGGREGATE SIZE CLASSIFICATION/GRADE, NUMBER OF LAYERS AND LAYER THICKNESS SHOULD BE NOTED ON THE PLANS.



SECTION A-A
1" = 10'



DETENTION POND 1 OUTFALL
1" = 1'

SITE PLAN RELEASE	
FILE NUMBER	C8J-2021-0141.0APA
APPLICATION DATE	AUGUST 20, 2021
APPROVED BY COMMISSION	UNDER SECTION 112 OF
CHAPTER 25-5	OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81, LDC)	CASE MANAGER XXXX
PROJECT EXPIRATION DATE ORD. #970905-A)	DWPZ DDZ
DEVELOPMENT SERVICES DEPARTMENT	
RELEASED FOR GENERAL COMPLIANCE:	ZONING ETJ
Rev. 1	Correction 1
Rev. 2	Correction 2
Rev. 3	Correction 3
Final plan must be recorded by the Project Expiration Date, if applicable. Subsequent Site Plans Plans which do not comply with the Code current at the time of filing, and all required Building Permits and/or a notice of construction (if a building permit is not required), must also be approved prior to the Project Expiration Date.	

FILTRATION POND OUTLET
SECTION

NO.

REVISION

DATE

STATE OF TEXAS

SHELLY MITCHELL

103682

PROFESSIONAL ENGINEER

05/19/2022

Shelly Mitchell

PAPE-DAWSON

ENGINEERS

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS

1807 N. MOORE AVE., SUITE 300 | AUSTIN, TX 78758 | 772-64-6711

TYPE FIRM REGISTRATION 4470 | TYPE FIRM REGISTRATION #10028601

8020 PARMER/SH130 NW

AUSTIN, TEXAS

POND DETAILS

JOB NO.

51209-00

DATE

AUGUST 2021

DESIGNER

TDM

CHECKED

TDM

DRAWN

KT

SHEET

17 of 21

EXHIBIT 15 – RIPARIAN ZONE MITIGATION FUND Q7 FORM

Appendix Q-7: Riparian Zone Mitigation

Section 25-8-364 of the Land Development Code (*Floodplain Modification*) allows for mitigation where restoration of floodplain health is infeasible, in accordance with Section 1.7 of this manual. The mitigation requirement may be satisfied by:

- (1) Paying into the Water Supply Mitigation Fund (see Option 1 Worksheet);
- (2) Transferring mitigation land to the City of Austin or placing restrictions on mitigation land through a conservation easement (see Option 2 Worksheet); or
- (3) A combination of these mitigation methods (see Option 1 and Option 2 Worksheets).

Section 25-8-261 of the Land Development Code (*Critical Water Quality Zone Development*) allows for payment into the Riparian Zone Mitigation Fund as mitigation for a utility line in urban and suburban watersheds located parallel to and within the Critical Water Quality Zone (CWQZ) if on-site restoration is infeasible, in accordance with Section 1.5 of this manual.

If land is dedicated or restricted, it must be approved by the City and the applicant must file in the deed records a restrictive covenant, approved by the city attorney, that runs with the transferring tract and describes the restrictions on development and vegetation management. In addition, the applicant shall pay all costs of restricting the mitigation land or transferring the mitigation land to the City, including the costs of:

- (a) an environmental site assessment without any recommendations for further clean-up, certified to the City not earlier than the 120th day before the closing date transferring land to the City;
- (b) a category 1(a) land title survey, certified to the City and the title company not earlier than the 120th day before the closing date transferring land to the City;
- (c) a title commitment with copies of all Schedule B and C documents, and an owner's title policy;
- (d) a fee simple deed, or, for a restriction, a restrictive covenant approved as to form by the city attorney;
- (e) taxes prorated to the closing date;
- (f) recording fees; and charges or fees collected by the title company.

The mitigation land must also have acceptable operating & maintenance (O&M) conditions, as approved by the proposed land manager. The presence of an outstanding environmental feature or attribute may allow the mitigation land to deviate slightly from the previous criteria where desirable and appropriate, pending approval from the Director of the Watershed Protection Department. If the applicant is placing restrictions on the mitigation land, the conservation easement must be approved and recorded prior to the issuance of a development permit.

**OPTION 1 WORKSHEET
CALCULATION FOR PAYMENT INTO THE RIPARIAN ZONE MITIGATION FUND**

A. OWNER/AGENT INFORMATION:

Name: Brandon Ryckman
Company: Zekelman Property II, LLC
Telephone: 734-582-2650 Fax: _____

B. PROJECT INFORMATION:

Name: 8020 Parmer Lane SH 130 NW Project Assessment
Location or Address: 8106 E Parmer Lane, Austin, Texas 78653
Permit Number: C8J-2021-0141.0APA and SP-2021-0446D
Case Manager: Kate Castles

C. MITIGATION REQUIRED

Area Modified within the 100-Year Floodplain: 0.064 (Zone 1)
2.626 (Zone 2) (ac.)
Area Disturbed by a Parallel Utility within the CWQZ: 0 (ac.)

Ratio Applied (circle): 1:1 2:1 3:1 4:1 6:1 8:1

The ratio for an area modified within the 100-Year Floodplain is determined by ECM 1.7.6. The ratio is 1:1 for a parallel utility within the CWQZ. Multiply the acres modified or disturbed by the ratio to determine the mitigation required.

Mitigation Required: 0.192 (Zone 1)+15.756 (Zone 2)=15.948 (ac.)

D. PAYMENT CALCULATION:

Mitigation Land Provided by Applicant: 0 (ac.)

Mitigation land provided by the applicant must be approved by the Director of the Watershed Protection Department and the Proposed Land Manager (Option 2 Worksheet). A project disturbing the CWQZ with a parallel utility does not have the option to provide mitigation land.

Mitigation by Payment (ac.) = Mitigation Required - Mitigation Land Provided by Applicant

Mitigation by Payment: 15.948 (ac.)

Base Fee: \$15,000 per acre

Annual Adjustment Factor: 7% beginning October 1, 2008

Adjusted Fee: \$ 38,678.01

Total Fee: Mitigation by Payment (ac.) x Adjusted Fee = \$ 616,836.91

E. AUTHORIZATION:

Owner/Agent:

A handwritten signature in black ink, consisting of two large loops followed by a series of smaller, connected strokes.

Reviewed by:

For the Director of the Planning and Development Review Department

EXHIBIT 16 – FUNCTIONAL ASSESSMENT OF FLOODPLAIN HEALTH

July 28, 2021

Mr. Warren Hayes
Z Modular
227 West Monroe Street., Suite 2600
Chicago, IL 60606

Re: ±14.34-Acre Parmer MF
 Functional Assessment of Floodplain Health

Dear Mr. Hayes,

Pape-Dawson Engineers, Inc. conducted a functional assessment of floodplain health (functional assessment) for the ±14.34-acre Parmer MF project site located in Travis County, Texas. The purpose of the functional assessment is to assess the functional characteristics of the Critical Water Quality Zone (CWQZ), the floodplain outside the CWQZ, and the active channel, in order to determine the health of the floodplain.

Based on Pape-Dawson's functional assessment, the area of proposed floodplain modification resulted in a Zone 2 score of fifteen, which is considered "fair" conditions for floodplain health by the City of Austin (COA). The transect used for the functional assessment was a representative transect, as the area of proposed floodplain modification had unpermitted work take place, thus altering the assessment process. The transect used to assess floodplain health was determined in coordination with the COA and their respective methodologies.

The conclusions presented in this report represent the professional opinion of Pape-Dawson Engineers and are limited to the conditions observed at the project site at the time and date of the field investigation.

If you have questions or require additional information, please do not hesitate to contact me at (512) 454-8711 at your earliest convenience.

Sincerely,
Pape-Dawson Engineers, Inc.



Valerie Collins, AICP
Associate Vice President

H:\Projects\512\49\00\ENV\Parmer-MF_FunctionalAssessment\Draft\210715_ParmerMF_CoverLetter.docx



±14.34-ACRE PARMER MF

Functional Assessment of Floodplain Health

July 2021



Transportation | Water Resources | Land Development | Surveying | Environmental

±14.34-ACRE PARMER MF

Functional Assessment of Floodplain Health

July 2021

±14.34-ACRE PARMER MF

Functional Assessment of Floodplain Health

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Field Methods.....	2
RESULTS	2
DISCUSSION.....	3
CONCLUSION.....	4
REFERENCES.....	5

EXHIBITS

- Exhibit 1 – Location Map
- Exhibit 2 – Site Map
- Exhibit 3 – Historical Aerial Photograph Map (2015)
- Exhibit 4 – Historical Aerial Photograph Map (2005)
- Exhibit 5 – Historical Aerial Photograph Map (1995)
- Exhibit 6 – Historical Topographic Map (1968)
- Exhibit 7 – Historical Topographic Map (1988)
- Exhibit 8 – Historical Topographic Map (2010)

APPENDICES

- Appendix A – Site Photographs
- Appendix B – Scoring/Field Sheets

±14.34-ACRE PARMER MF

Functional Assessment of Floodplain Health

INTRODUCTION

Pape-Dawson Engineers, Inc. was contracted to conduct a City of Austin (COA) Functional Assessment of Floodplain Health (Functional Assessment) according to Appendix X of the Environmental Criteria Manual, and as required by the Land Development Code (LDC) 25-8-261 and 25-8-364, for the approximately 14.34-acre Parmer MF project site in Travis County, Texas (**Exhibit 1**). The project site is located northwest of the intersection of East Parmer Lane and State Highway 130 in Austin, Texas (**Exhibit 2**).

The purpose of the functional assessment is to assess the functional characteristics of the Critical Water Quality Zone (CWQZ), the floodplain outside the CWQZ, and the active channel, in order to determine the health of the floodplain.

METHODS

Desktop Review

Prior to a site investigation, a desktop review was performed utilizing the following resources to evaluate the potential floodplain health of the project site.

- COA environmental data;
- U.S. Geological Survey (USGS) historical and current topographic maps;
- Google Earth Pro readily available historical and readily available current aerial imagery

A Zone 2 functional assessment was performed for the project site because the proposed floodplain modifications necessary for the project extend into the CWQZ of the project site. Currently, the proposed area of floodplain modification is on the southside of the project site, over an area where unpermitted work previously occurred. After coordination with the City of Austin, three transect segments and sample plots were developed that would appropriately represent a functional assessment for the area of proposed floodplain modification prior to any unpermitted work taking place.

±14.34-ACRE PARMER MF

Functional Assessment of Floodplain Health

The transect segments were selected utilizing a combination of the resources discussed above and field investigation to determine that the area being assessed is analogous to the preexisting floodplain condition of the area of proposed floodplain modification. The transect segments and sample plots utilized for the functional assessment are shown in **(Exhibit 2)**.

Field Methods

A Pape-Dawson environmental scientist conducted the functional assessment for the project site on June 25, 2021 following the methodology outlined in Appendix X of the COA's Environmental Criteria Manual. Because a traditional 100-meter transect would not be appropriate for assessing the site's current conditions, three 33-meter transect segments were used instead, to assess analogous areas within the project site.

RESULTS

Aerial photography from 2015 **(Exhibit 3)** show the beginning of unpermitted work within the CWQZ, on the southside of the project site. It is unclear precisely what activity took place; however, it resulted in the south portion of the project site being cleared and paved.

Prior to 2015, the area of proposed floodplain modification looked similar to the northern portion of the project site. Aerial photography from 2005 **(Exhibit 4)** and 1995 **(Exhibit 5)** show that the area of proposed floodplain modification appears to have been agricultural in nature.

Historical topographic maps from 1968, 1988, and 2010 **(Exhibit 6, Exhibit 7, Exhibit 8)** show no major changes of elevation or topography within the project site. One change of note is that a small pond is depicted within a tributary feature in the 1968 topographic map, but this pond appears to grow in size by the 1988 topographic map, before becoming entirely isolated from the depicted tributary feature in the 2010 topographic map, according to USGS topographic data.

The functional assessment was conducted on July 20, 2021 and resulted in a Zone 2 score of fifteen, which is considered a "fair" by the COA. The areas assessed chosen in areas representative of the conditions prior to the unpermitted work that occurred in 2015. The vegetation largely consisted of Bahia grass

±14.34-ACRE PARMER MF

Functional Assessment of Floodplain Health

(*Paspalum notatum*), with small patches of little bluestem (*Schizachyrium scoparium*), Giant cutgrass (*Zizaniopsis miliacea*), Canada wildrye (*Elymus canadensis*), Texas stork's bill (*Erodium texanum*) and Engelmann daisy (*Engelmannia peristenia*) present throughout.

Site Photographs are included in **Appendix A**. The field sheets and scoring for the functional assessment are included in **Appendix B**.

DISCUSSION

Based on Pape-Dawson's functional assessment of floodplain health, the areas assessed were analogous to the area of proposed floodplain modification, would have resulted in a Zone 2 score of fifteen, which is considered "fair" conditions for floodplain health by the COA.

Currently, the proposed floodplain modifications are partially to an area where unpermitted work occurred. After coordination with the City of Austin, three transect segments (each about 33 meters in length) were developed that would appropriately represent a functional assessment for the area of proposed floodplain modification prior to any unpermitted work taking place. The transect segments utilized were selected utilizing a combination of historical and current aerial imagery, historical and current topographic maps, and field investigation to determine that the areas being assessed, in lieu of the area where unpermitted work currently exists, are analogous to the preexisting floodplain condition. Specifically, using Google Earth Pro's historical and present-day aerial imagery, it is noticeable that the area of proposed floodplain modification looked similar to the nearby representative transect segments, including the assessment area north of the creek. The area of proposed modification appears to have been maintained and agricultural in nature. Because of the similarity between the representative transect segments utilized on the project site and the area of proposed floodplain modification prior to the unpermitted work taking place, it is Pape-Dawson's professional opinion that the functional assessment is representative of the pre-existing conditions of the area of proposed floodplain modification, and thus our results valid.

±14.34-ACRE PARMER MF

Functional Assessment of Floodplain Health

CONCLUSION

Based on Pape-Dawson's functional assessment of floodplain health, the area of proposed floodplain modification resulted in a Zone 2 score of fifteen, which is considered "fair" conditions for floodplain health by the COA. The three 33-meter transect segments used for the functional assessment were scored as a 100-meter representative transect, as the area of proposed floodplain modification had unpermitted work take place, thus altering the assessment process. The transect segments used to assess floodplain health were determined in coordination with the COA and their respective methodologies.

The conclusions presented in this report represent the professional opinion of Pape-Dawson Engineers and are limited to the conditions observed at the project site at the time and date of the field investigation.

±14.34-ACRE PARMER MF

Functional Assessment of Floodplain Health

REFERENCES

City of Austin (CoA). 2021. GIS Data. <https://austintexas.gov/department/gis-data>.

City of Austin (CoA) Environmental Criteria Manual. 2021. Appendix X – Functional Assessment of Floodplain Health.

City of Austin (CoA) Land Development Code (LDC).

- Section 25-8-261
- Section 25-8-364

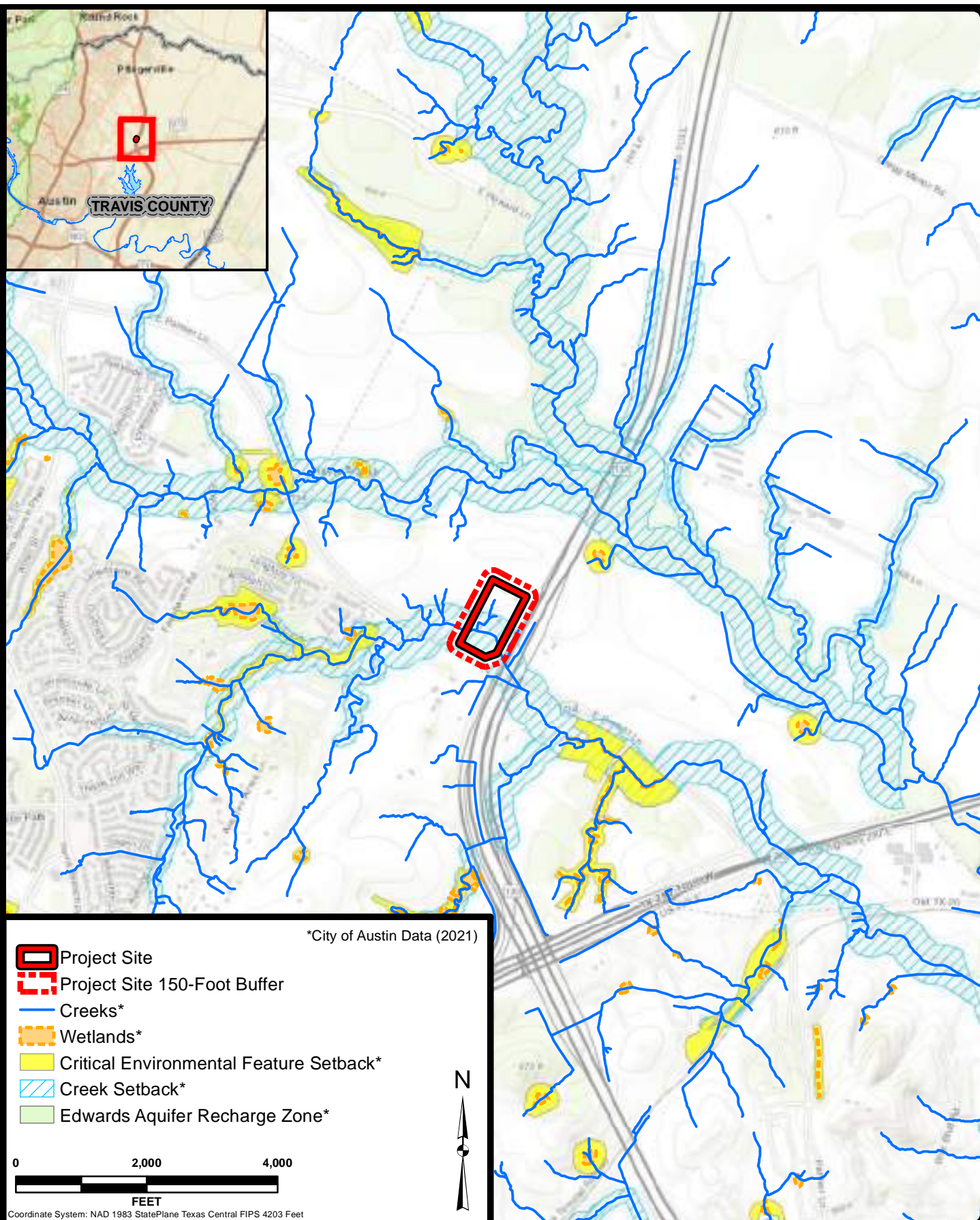
Google Earth Pro. 2021. Aerial Photography of the Project Site. 30.354798°, -97.592998°. Austin, Texas.

U.S. Geological Survey (USGS). 2019. Manor, TX Quadrangle, 1:24,000. 7.5-Minute Series. United States Department of the Interior, USGS.







EXHIBITS

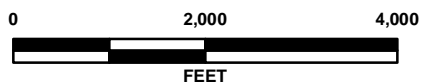
EXHIBIT 1

Location Map



*City of Austin Data (2021)

-  Project Site
-  Project Site 150-Foot Buffer
-  Creeks*
-  Wetlands*
-  Critical Environmental Feature Setback*
-  Creek Setback*
-  Edwards Aquifer Recharge Zone*



Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet



JOB NO.	51249-00
DATE	Jul 2021
DESIGNER	JG
CHECKED	VC
DRAWN	JG
SHEET	EXHIBIT 01

Parmer MF

Functional Assessment

LOCATION MAP



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

EXHIBIT 2

Site Map



JOB NO. 51249-00
DATE May 2022
DESIGNER JG
CHECKED VC DRAWN JG
SHEET EXHIBIT 02

Parmer MF
Functional Assessment
SITE MAP

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EXHIBIT 3


2015 Historical Aerial Photograph Map


EXHIBIT 4


2005 Historical Aerial Photograph Map



 Project Site

 Proposed Grading Area


 100-square-meter Sample Plot Location

 33-meter Transect Segment*

0200400

FEET

Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet



*Three 33-meter transect segments were used in place of a standard 100-meter transect because the project site did not contain an appropriate 100-meter linear representative area due to the previously constructed unpermitted parking area.

JOB NO.	51249-00
DATE	May 2022
DESIGNER	JG
CHECKED	VC
DRAWN	JG
SHEET	EXHIBIT 04

Parmer MF

Functional Assessment

Historical Aerial Photograph (2005)





 **PAPE-DAWSON
ENGINEERS**

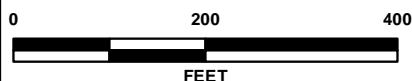
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
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EXHIBIT 5

1995 Historical Aerial Photograph Map



-  Project Site
-  Proposed Grading Area
-  100-square-meter Sample Plot Location
-  33-meter Transect Segment*



Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet



*Three 33-meter transect segments were used in place of a standard 100-meter transect because the project site did not contain an appropriate 100-meter linear representative area due to the previously constructed unpermitted parking area.

JOB NO. **51249-00**
 DATE **May 2022**
 DESIGNER **JG**
 CHECKED **VC** DRAWN **JG**
 SHEET **EXHIBIT 05**

Backup page 174 of 188

Parmer MF Functional Assessment

Historical Aerial Photograph (1995)





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EXHIBIT 6

1968 Historical Topographic Map



-  Project Site
-  Proposed Grading Area
-  100-square-meter Sample Plot Location
-  33-meter Transect Segment*

0 500 1,000
FEET

Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet



*Three 33-meter transect segments were used in place of a standard 100-meter transect because the project site did not contain an appropriate 100-meter linear representative area due to the previously constructed unpermitted parking area.

JOB NO. 51249-00
DATE May 2022
DESIGNER JG
CHECKED VC DRAWN JG
SHEET EXHIBIT 06

Parmer MF Functional Assessment

HISTORICAL TOPOGRAPHIC MAP (1968)

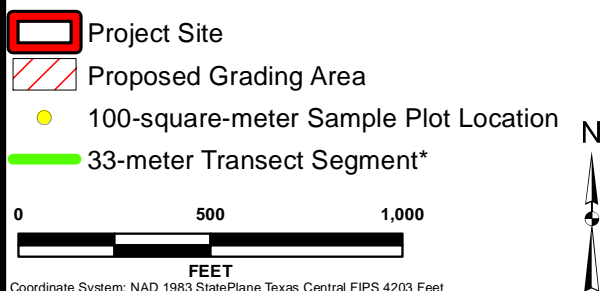
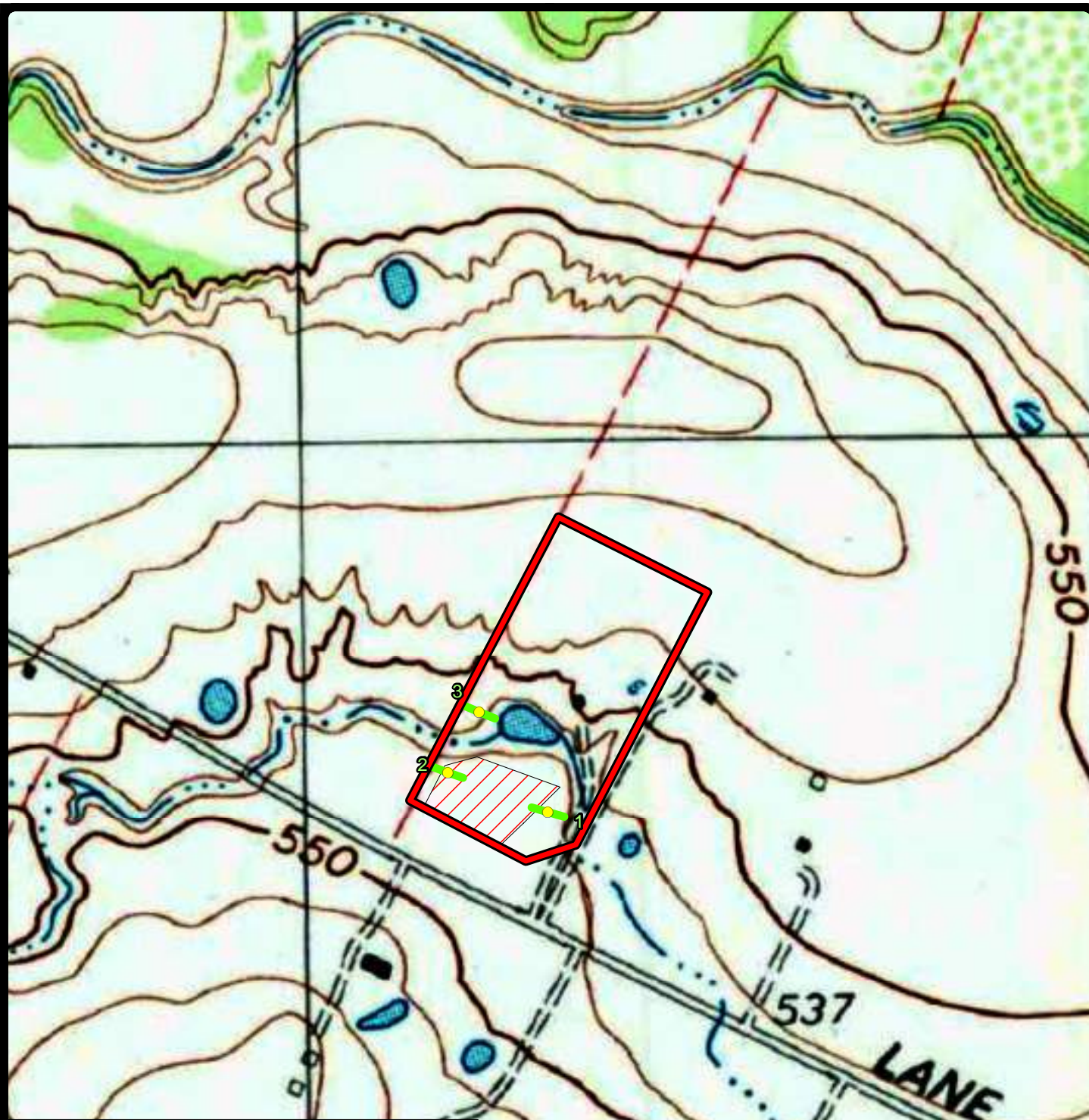
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EXHIBIT 7

1988 Historical Topographic

Map



Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet

*Three 33-meter transect segments were used in place of a standard 100-meter transect because the project site did not contain an appropriate 100-meter linear representative area due to the previously constructed unpermitted parking area.

JOB NO. 51249-00
DATE May 2022
DESIGNER JG
CHECKED VC DRAWN JG
SHEET EXHIBIT 07

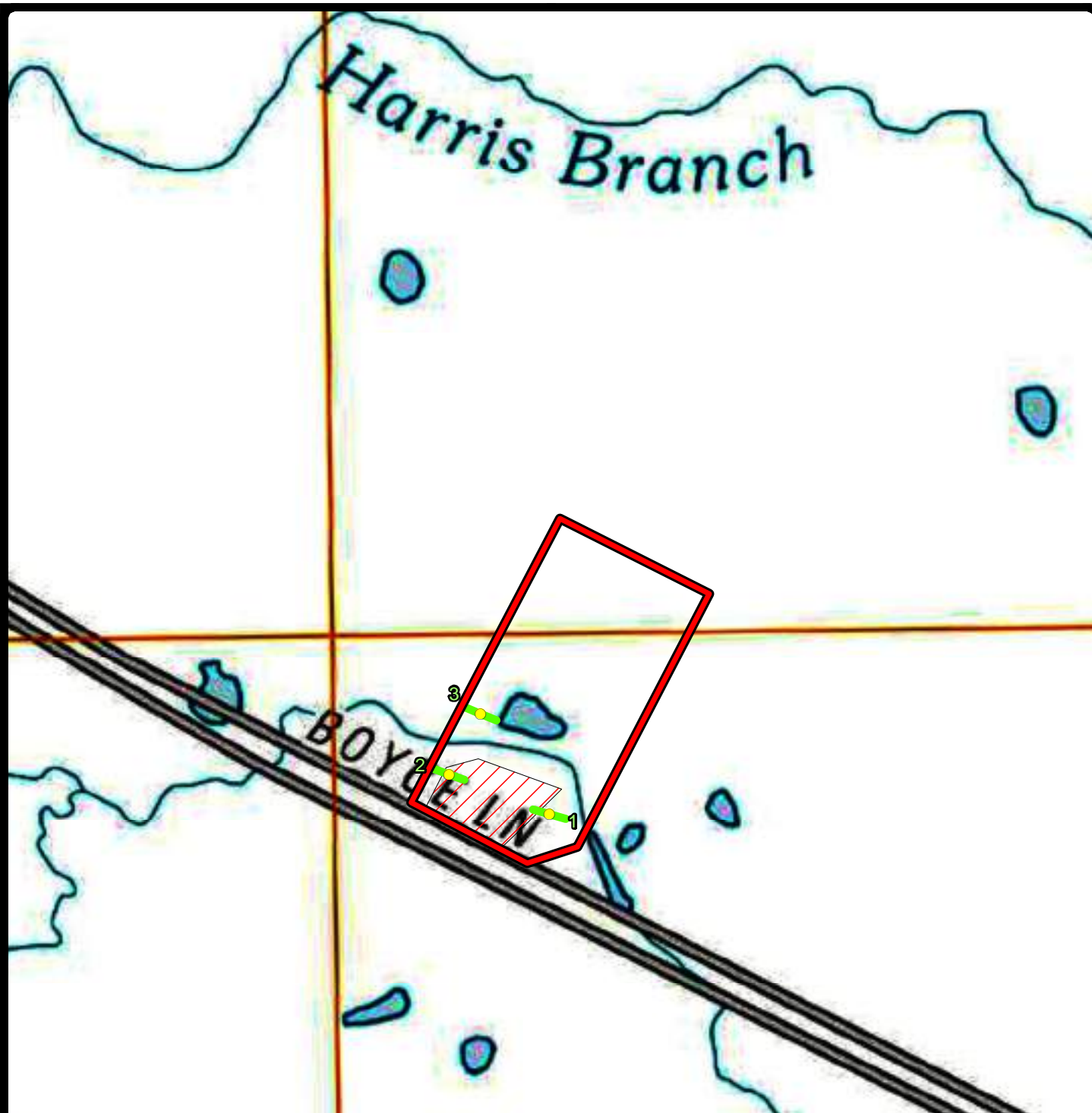
Parmer MF
Functional Assessment
HISTORICAL TOPOGRAPHIC MAP (1988)





PAPE-DAWSON ENGINEERS

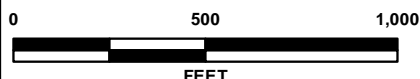
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

EXHIBIT 8

2010 Historical Topographic Map



-  Project Site
-  Proposed Grading Area
-  100-square-meter Sample Plot Location
-  33-meter Transect Segment*



Coordinate System: NAD 1983 StatePlane Texas Central FIPS 4203 Feet



*Three 33-meter transect segments were used in place of a standard 100-meter transect because the project site did not contain an appropriate 100-meter linear representative area due to the previously constructed unpermitted parking area.

JOB NO. **51249-00**
 DATE **May 2022**
 DESIGNER **JG**
 CHECKED **VC** DRAWN **JG**
 SHEET **EXHIBIT 08**

Parmer MF Functional Assessment

HISTORICAL TOPOGRAPHIC MAP (2010)

**PAPE-DAWSON
ENGINEERS**

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 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

APPENDICES

APPENDIX A

Site Photographs

±14.34-ACRE PARMER MF

Functional Assessment of Floodplain Health

Photo No. 1	Date: 03-30-2021
Description: View of the paved portion of the project site facing southeast, on the southeastern corner of the project site.	

A wide-angle photograph of a large, flat, paved area, possibly a parking lot or a cleared section of a road. The pavement is a light gray color with some darker patches. In the background, there are several tall utility poles with cross-arms, and a bridge structure is visible on the left side. The sky is overcast and gray. The overall scene is industrial or construction-related.

Photo No. 2	Date: 03-30-2021	
Description: A typical view of upland habitat that bordered the paved parking lot, on the southeastern portion of the project site. The habitat was a largely mixture of disturbed herbaceous vegetation.		

±14.34-ACRE PARMER MF

Functional Assessment of Floodplain Health

Photo No. 3	Date: 07-20-2021
Description: A view of the vegetation found on either side of the creek with the unpermitted parking lot visible in the background.	

A photograph showing dense green vegetation in the foreground, a gravel parking lot in the middle ground, and a bridge with power lines in the background. The vegetation consists of various green plants and shrubs. In the background, a bridge spans across the scene, with several utility poles and power lines visible. A white vehicle is parked in the gravel lot near the bridge.

Photo No. 4	Date: 07-20-2021
Description: A view the vegetation present from the northern representative transect segment, facing south, towards the creek.	

A photograph showing a dense thicket of vegetation. In the foreground and middle ground, there are tall, green grasses with long, narrow leaves, some of which are leaning over. Interspersed among the grasses are various shrubs and small trees with green foliage. The background is slightly out of focus, showing more of the same vegetation and a pale, overcast sky. The overall scene suggests a natural, uncultivated area, possibly a wetland or a creek bank.

APPENDIX B

Scoring/Field Sheets

Scoring: Zone 2 – Critical Water Quality Zone

Site/Project Name: Parmer MF
 Transect Number: Transect 1

Date: 07/20/2021 Time: 11:00 AM
 Staff (if applicable): John Lee Gonzalez III

Parameter	Excellent (4)	Good (3)	Fair (2)	Poor (1)	Score
Gap Frequency <i>A visual assessment of the number of gaps in vegetation.</i>	0 - 20% of riparian area has visual gaps in vegetation	20% - 40% of riparian area has visual gaps in vegetation	40 - 60% of riparian area has visual gaps in vegetation	> 60% of riparian area has visual gaps in vegetation	4
Large Woody Debris <i>An evaluation of the amount of large woody debris.</i>	7 or more pieces of large woody debris	5 - 6 pieces of large woody debris	3 - 4 pieces of large woody debris	2 or less pieces of large woody debris	1
Soil Compaction <i>An assessment of the bulk density of the soil.</i>	0 - 125 pounds per square inch	126 - 175 pounds per square inch	176 - 225 pounds per square inch	> 225 pounds per square inch	2
Structural Diversity <i>An evaluation of the canopy and understory vegetation.</i>	> 65% canopy; or > 50% canopy and > 50% understory	51 - 65% canopy; or 0 - 50% canopy and > 40% understory	31 - 50% canopy; or 0 - 30% canopy and > 30% understory	0 - 30% canopy; or 0 - 15% canopy and 0 - 30% understory	2
Tree Demography <i>An assessment of the age class distribution of all canopy tree species.</i>	Canopy tree species are present in all 4 age classes	Canopy tree species are present in 3 of 4 age classes	Canopy tree species are present in 2 of 4 age classes	Canopy tree species are present in only 1 age class or no trees	1
Wetland Tree Status <i>Percent of total trees that are defined as FAC+ or greater with respect to wetland status.</i>	> 65% of trees are FAC+ or greater	50 - 65% of trees are FAC+ or greater	25 - 49% of trees are FAC+ or greater	< 25% of trees are FAC+ or greater	1
Riparian Zone Width <i>A measure of the width of the undisturbed riparian zone.</i>	> 18 meters or > 75% of the CWQZ	12 - 18 meters or 50 - 75% of the CWQZ	6 - 12 meters or 25 - 49% of the CWQZ	< 6 meters or < 25% of the CWQZ	4

Assessed Condition (Circle One)

Excellent: 25 - 28

Good: 18 - 24

Fair: 11 - 17

Poor: 7 - 10

Zone 2 Score: 15

Field Sheet: Zone 2 – Critical Water Quality Zone

Site/Project Name: Palmer MF
 Transect Number: Transect 1
 Gap Frequency

Date: 7/20/2021 Time: 11:00 AM
 Staff (if applicable): John Lee Gonzalez III

Number of 1 meter gaps: 15
 Percent of Transect: 15 %

Large Woody Debris

Number of Large Woody Debris Pieces: 0

Soil Compaction

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
#1: <u>100</u> psi #2: <u>150</u> psi #3: <u>300</u> psi	#1: <u>150</u> psi #2: <u>300</u> psi #3: <u>150</u> psi	#1: <u>200</u> psi #2: <u>300</u> psi #3: <u>250</u> psi
Average for Plot 1: <u>183</u> psi	Average for Plot 2: <u>200</u> psi	Average for Plot 3: <u>250</u> psi

Average for All Sample Plots: 211 psi

Structural Diversity

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Canopy: <u>0</u> % Understory: <u>100</u> %	Canopy: <u>70</u> % Understory: <u>50</u> %	Canopy: <u>5</u> % Understory: <u>90</u> %

Average for All Sample Plots: Canopy: 25 % Understory: 80 %

Tree Demography

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Number of Age Classes: <u>0</u>	Number of Age Classes: <u>1</u>	Number of Age Classes: <u>2</u>

Average for All Sample Plots: 1

Field Sheet: Zone 2 – Critical Water Quality Zone

Site/Project Name: Palmar MF
Transect Number: Transect 1

Date: 7/20/2021 Time: 11:10 AM
Staff (if applicable): John Lee Gonzalez III

Wetland Tree Status

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Number of FAC+ or Greater Trees: <u>0</u>	Number of FAC+ or Greater Trees: <u>0</u>	Number of FAC+ or Greater Trees: <u>2</u>
Total Number of Trees: <u>0</u>	Total Number of Trees: <u>11</u>	Total Number of Trees: <u>7</u>
Percent FAC+ or Greater: <u>0</u> %	Percent FAC+ or Greater: <u>0</u> %	Percent FAC+ or Greater: <u>28.5</u> %

Average for All Sample Plots: 4.5 %

Riparian Zone Width

Measurement 1 (5 meters)	Measurement 2 (50 meters)	Measurement 3 (95 meters)
Riparian Zone Width: <u>12</u> m	Riparian Zone Width: <u>5</u> m	Riparian Zone Width: <u>44</u> m

Average for All Measurements: 37 m