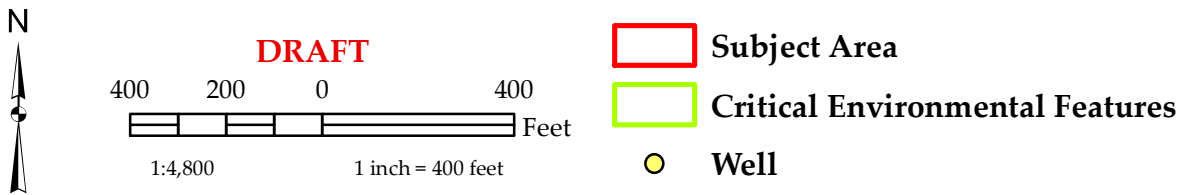


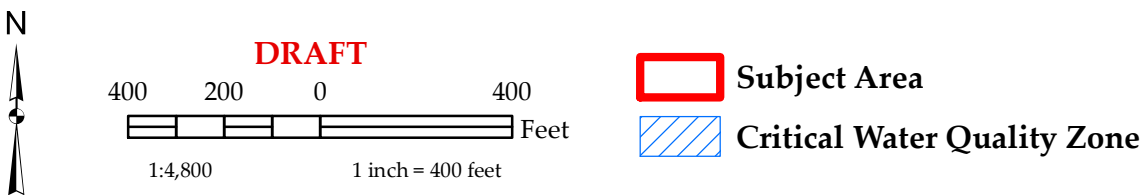


This map is intended for planning purposes only. All map data should be considered preliminary. All boundaries and designations are subject to confirmation.





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

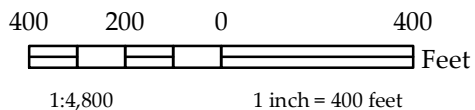





This map is intended for planning purposes only. All map data should be considered preliminary. All boundaries and designations are subject to confirmation.



DRAFT



 Subject Area



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

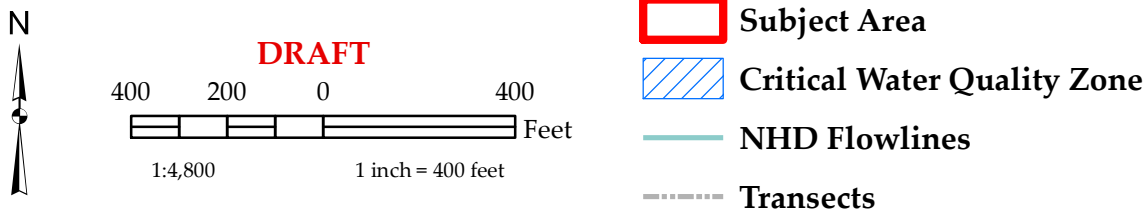
Transect	Zone 1 Score	Assessed Condition
T-4	15	Good

ATTACHMENT A

ZONE 2 TRANSECT LOCATIONS

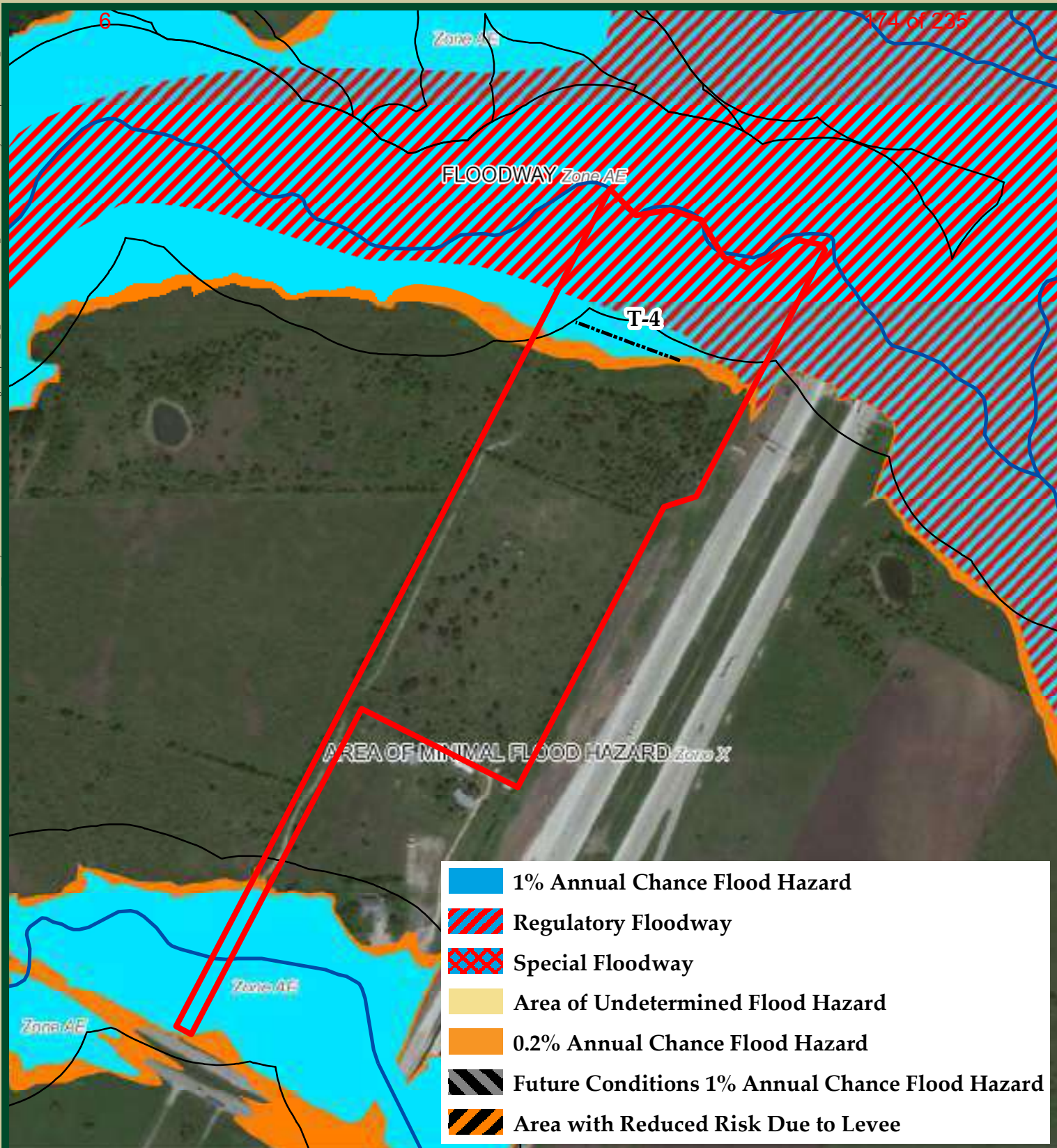


This map is intended for planning purposes only. All map data should be considered preliminary. All boundaries and designations are subject to confirmation.



ATTACHMENT B

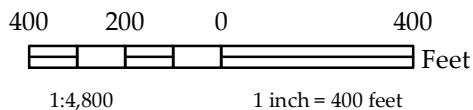
ZONE 1 TRANSECT LOCATIONS



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 ZoneSite/Project Name: 8020 East Parmer ERIDate: 12/1/20Time: 10:13Transect Number: T-1Staff (if applicable): Gabriel Nejad & Mason Finley**Gap Frequency**Number of 1 meter gaps: 0Percent 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	#1: <u>60</u> psi #2: <u>130</u> psi #3: <u>110</u> psi	#1: <u>160</u> psi #2: <u>250</u> psi #3: <u>180</u> psi
Average for Plot 1: <u>190</u> psi	Average for Plot 2: <u>100</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 ZoneSite/Project Name: 8020 East Parmer ERIDate: 12/1/20Time: 1:38Transect Number: T-3Staff (if applicable): Gabriel Nejad & Mason Finley**Gap Frequency**Number of 1 meter gaps: 0Percent 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	#1: <u>200</u> psi #2: <u>230</u> psi #3: <u>230</u> psi	#1: <u>150</u> psi #2: <u>160</u> psi #3: <u>150</u> psi
Average for Plot 1: <u>146.66</u> psi	Average for Plot 2: <u>226.66</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	#1: <u>190</u> psi #2: <u>200</u> psi #3: <u>140</u> psi	#1: <u>150</u> psi #2: <u>180</u> psi #3: <u>210</u> psi
Average for Plot 1: <u>140</u> psi	Average for Plot 2: <u>176.66</u> psi	Average for Plot 3: <u> </u> 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> %

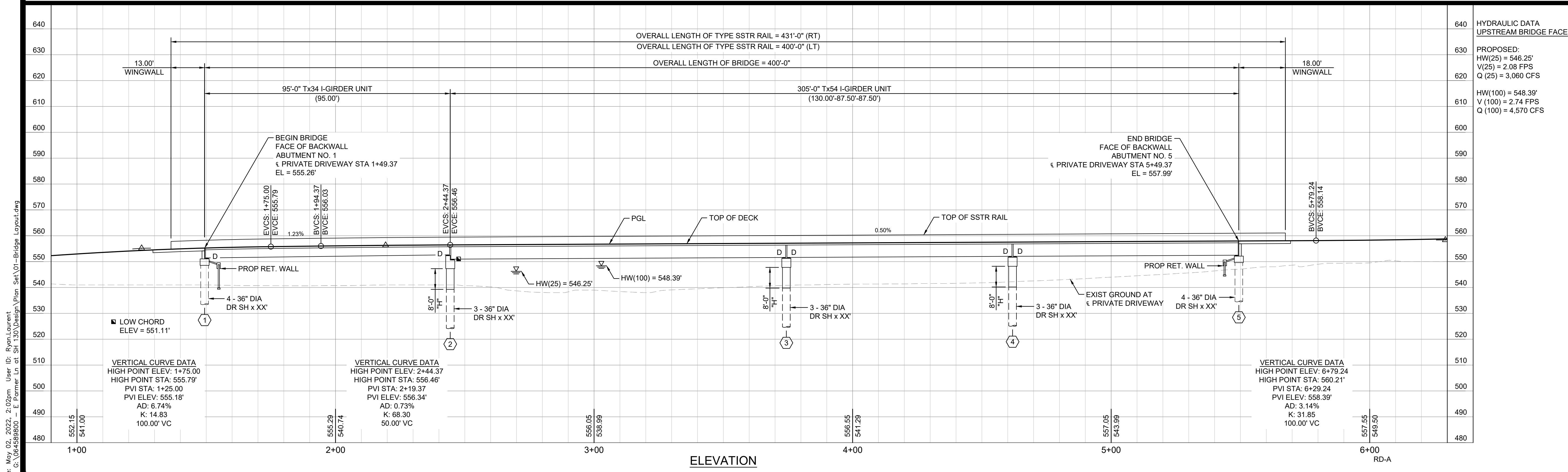
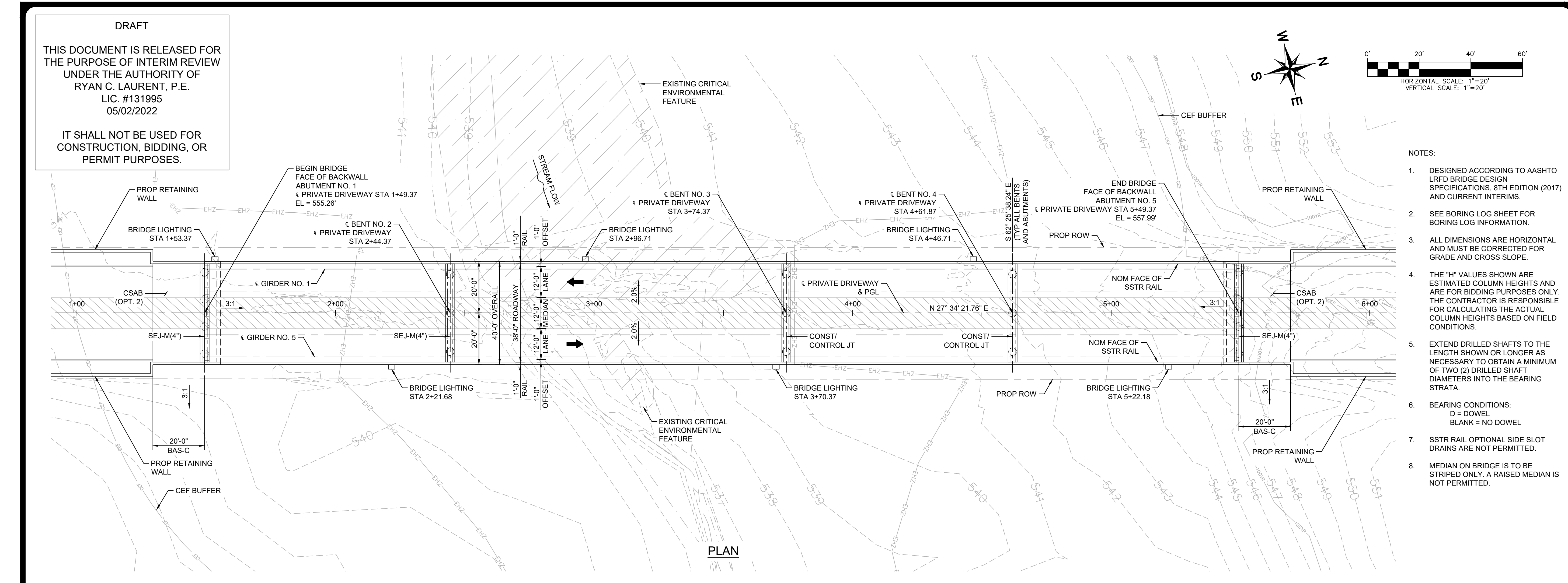
Average for All Sample Plots: Canopy: 76.66 % Understory: 100 %

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



NO.	REVISION	DATE



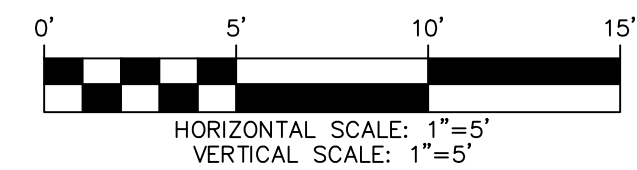
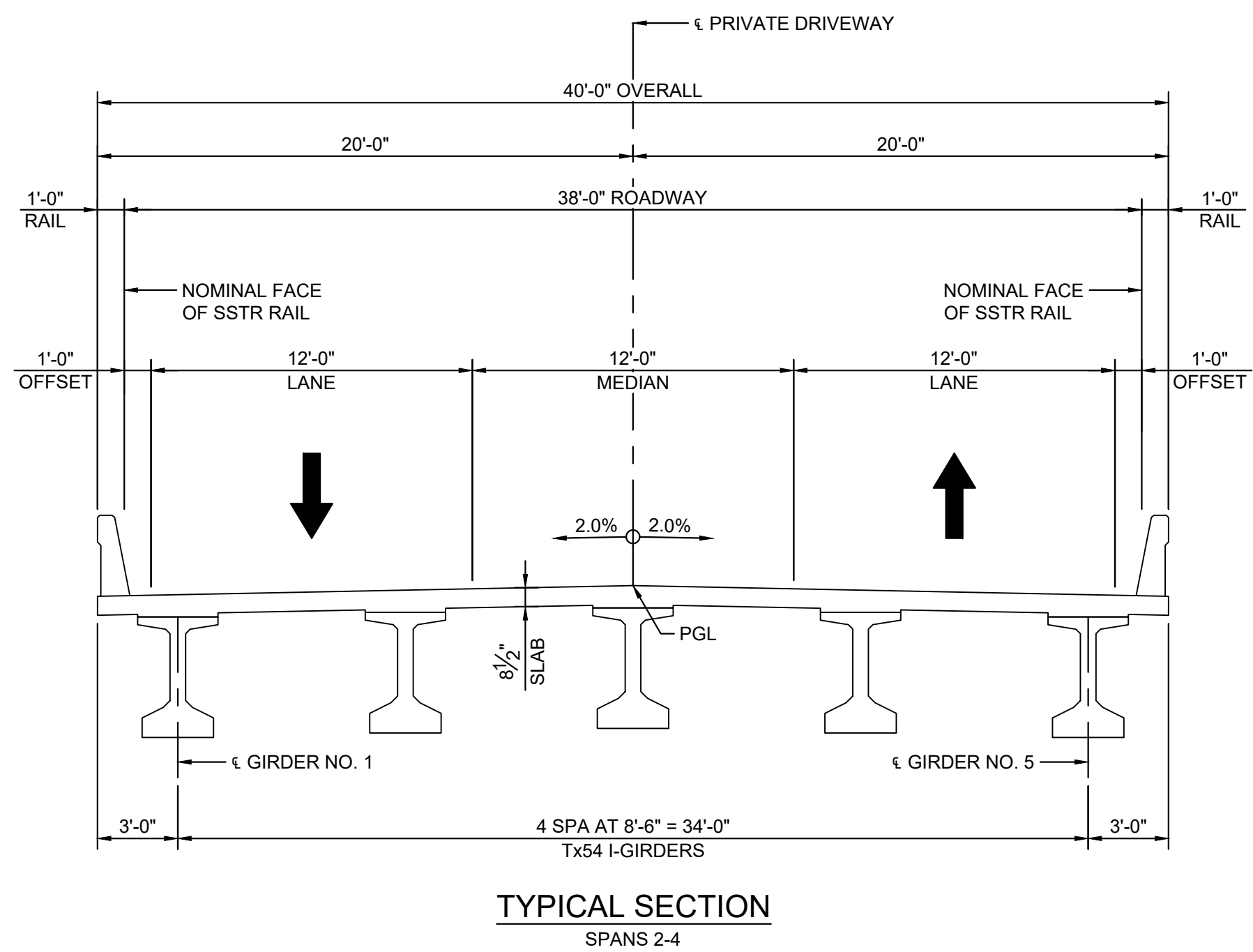
Kimley»Horn

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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 LAYOUT

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



Kimley»»Horn

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PHONE: 972-770-1300 FAX: 972-239-3820
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING FIRM F-928

BRIDGE TYPICAL SECTIONS

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

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

[illegible]

05/02/2021

Ryan C. Laurent

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.

EXHIBIT 12 – WETLAND MITIGATION SHEETS



1601 Rio Grande Street
Suite 450
Austin, Texas 78701
T 512.770.4503
hitchcockdesigngroup.com



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

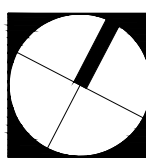
Wetland Mitigation

SCALE IN FEET

1" = 50'



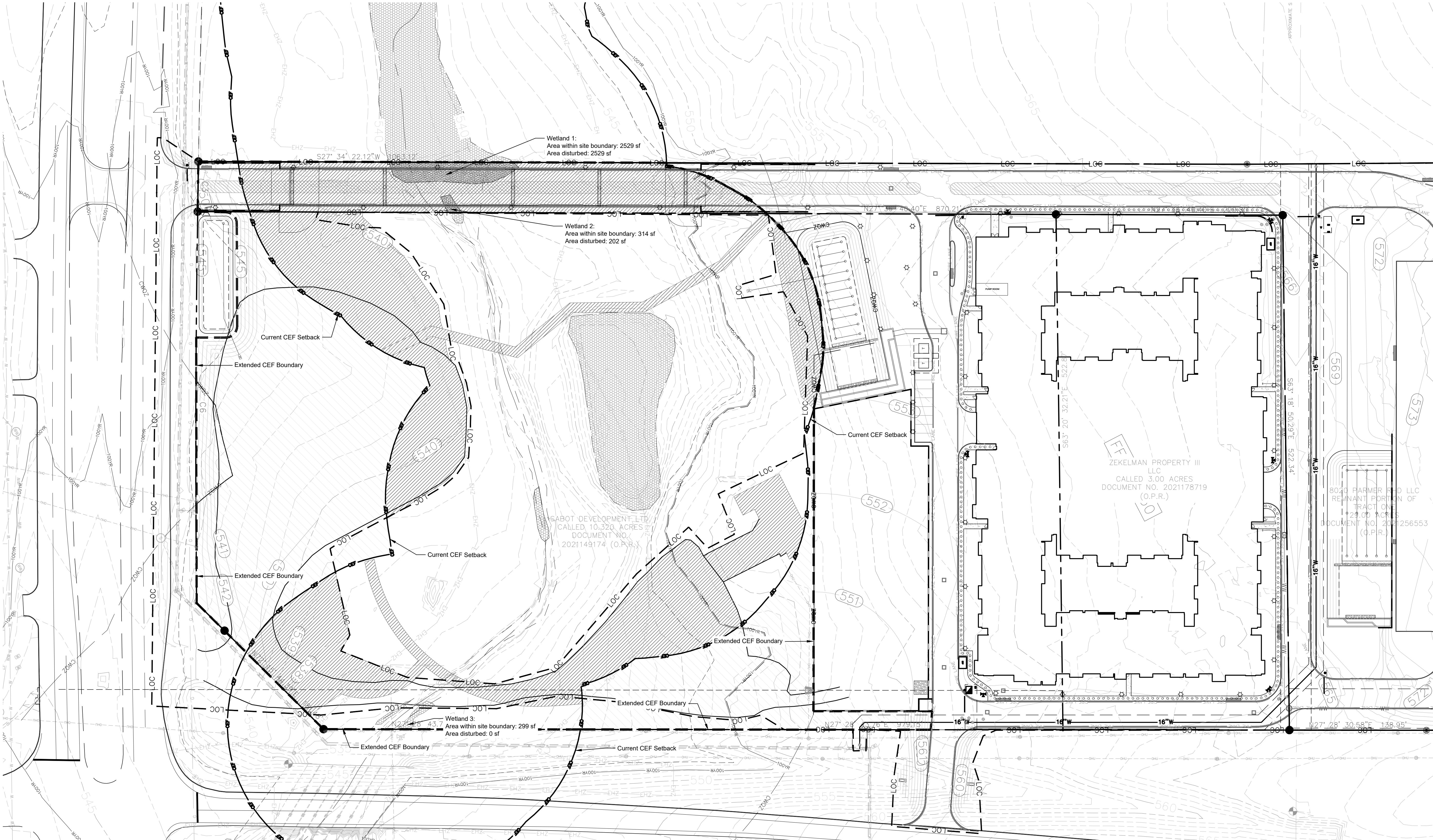
NORTH



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
- CEF
- 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
APPROVED BY COMMISSION ON	UNDER SECTION
CHAPTER	25.5
EXPIRATION DATE (25-S-81.LDC)	CASE MANAGER
PROJECT EXPIRATION DATE (ORD.#97905-A)	DWPZ
Development Services Department	
RELEASED FOR GENERAL COMPLIANCE: ZONING	
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.	



1601 Rio Grande Street
Suite 450
Austin, Texas 78701
T 512.770.4503
hitchcockdesigngroup.com



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

Plant List					
Code	Botanical Name	Common Name	Size	Spacing (min.)	Quantity
Shade Trees, High Water Use, 1-gallon specimens					
POD	Populus deltoides	Eastern Cottonwood	5 GAL	48"	11
TDI	Taxodium distichum	Common Baldcypress	5 GAL	48"	18
Total					29

Shade Trees, Moderate Water Use, 1-gallon specimens					
CIL*	Carya illinoensis	Pecan	5 GAL	48"	12
JNI*	Juglans nigra	Black Walnut	5 GAL	48"	10
POC*	Platanus occidentalis	American Sycamore	5 GAL	48"	9
Total					31

Shade Trees, Light Water Use, 1-gallon specimens					
QVI*	Quercus virginiana	Live Oak	5 GAL	48"	17
UAM*	Ulmus americana	American Elm	5 GAL	48"	14
UIL*	Ulmus crassifolia	Cedar Elm	5 GAL	48"	28
Total					59
Total Shade Tree Count					119

Shrubs, High Water Use, 1-gallon specimens					
CEC	Cephalanthus occidentalis	Buttonbush	5 GAL	48"	13
LIB	Lindera benzoin	Northern Spicebush	5 GAL	24"	16
Total					29

Shrubs, Moderate Water Use, 1-gallon specimens					
CAA*	Callicarpa americana	American Beautyberry	5 GAL	48"	10
LAU*	Lantana urticoides	Texas Lantana	5 GAL	48"	7
MGL*	Malpighia glabra	Barbados Cherry	5 GAL	48"	5
SYO*	Symphoricarpos orbiculatus	Coral Berry	5 GAL	36"	9
Total					31

Shrubs, Light Water Use, 1-gallon specimens					
AGW*	Ageratina havanensis	White Mistflower	5 GAL	48"	11
BMA*	Buddleia marubifolia	Woolly Butterfly Bush	5 GAL	48"	14
LFC*	Leucophyllum frutescens	Texas Sage	5 GAL	72"	14
MTR*	Mahonia trifoliolata	Agarita	5 GAL	48"	10
RHA*	Rhus aromatica	Fragrant Sumac	5 GAL	72"	10
Total					59
* To be planted outside of saturated zone.					
Total Shrub Count					119

Code	Botanical Name	Common Name	Size	Spacing (min.)	Quantity
Non Mitigation Revegetation - Riparian Area, 1-gallon specimens					
POD1	Populus deltoides	Eastern Cottonwood	1 GAL	24"	162
TDI1	Taxodium distichum	Common Baldcypress	1 GAL	24"	162
CEC1	Cephalanthus occidentalis	Buttonbush	1 GAL	24"	162
LIB1	Lindera benzoin	Northern Spicebush	1 GAL	24"	164
Total					650

Code	Botanical Name	Common Name	Size	Spacing (min.)	Quantity
Aquatic Plant List, 1-gallon specimens within the conservation pool					
ELA	Equisetum laevigatum	Scouring Rush	1 GAL	24"	50
JEF	Juncus effusus	Soft Rush	1 GAL	24"	50
LCS	Lobelia cardinalis	Cardinal Flower	1 GAL	24"	50
LOC	Ludwigia octovalvis	Shrubby Water Primrose	1 GAL	24"	50
NLU	Nelumbo lutea	American Lotus	1 GAL	24"	50
Total					250

Code	Botanical Name	Common Name	Size	Spacing (min.)	Quantity
Bunch Grass at Stilling Basin					
	Tripsacum dactyloides	Eastern Gamagrass	3 GAL	18"	65
	Panicum virgatum	Switchgrass	3 GAL	18"	66
Total					131

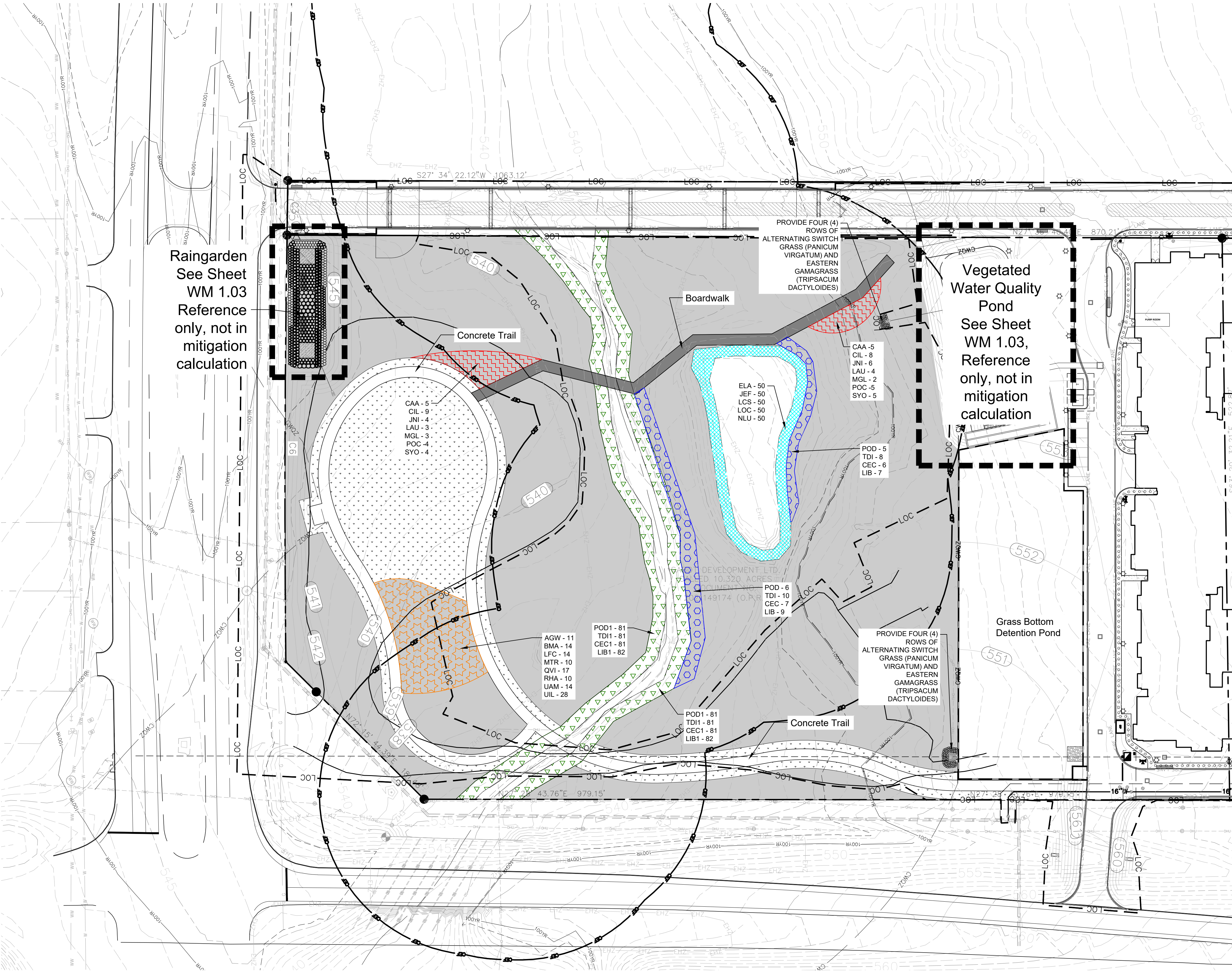
CEF/Wetland Mitigation		
Area of Disturbance	2.11	AC
Minimum CEF Extention Area Required	2.11	AC
CEF Extension Area Provided	2.11	AC
Required Trees (2/100 SF)	92,038 (1/100 SF /2)	460
	Provided Trees	119
Required Shrubs(2/100 SF)	92,038 (1/100 SF /2)	460
	Provided Shrubs	119
* Required trees and shrubs are based on 1 gallon material. Provided trees and shrubs are 5 gallon. Per Table 7 of 6095.5 - Native Seeding and Planting, 5 gallon material is equivalent to four 1 gallon material.		

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'.



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.	



LEGEND

	Mitigation Revegetation - High Water Use Tree & Shrub Mix - 0.18 acres		Non Mitigation Revegetation - Riparian Area - 1-gallon native woody saplings - 0.35 acres
	Mitigation Revegetation - Moderate Water Use Tree & Shrub Mix - 0.07 acres		Non Mitigation Revegetation - Upland Species Seed Mix, Full Sun Area - 5.37 acres
	Mitigation Revegetation - Light Water Use Tree & Shrub Mix - 0.17 acres		Non Mitigation Revegetation - Solid Sod - 5.20 acres
	Mitigation Revegetation - Aquatic Plant Mix - 0.12 acres		

Total Mitigation Revegetation Area: 0.54 acres

COMPLETENESS CHECK
JULY 16, 2021
REVISIONS

No	Date	Issue

CHECKED BY DTR
DRAWN BY JTH

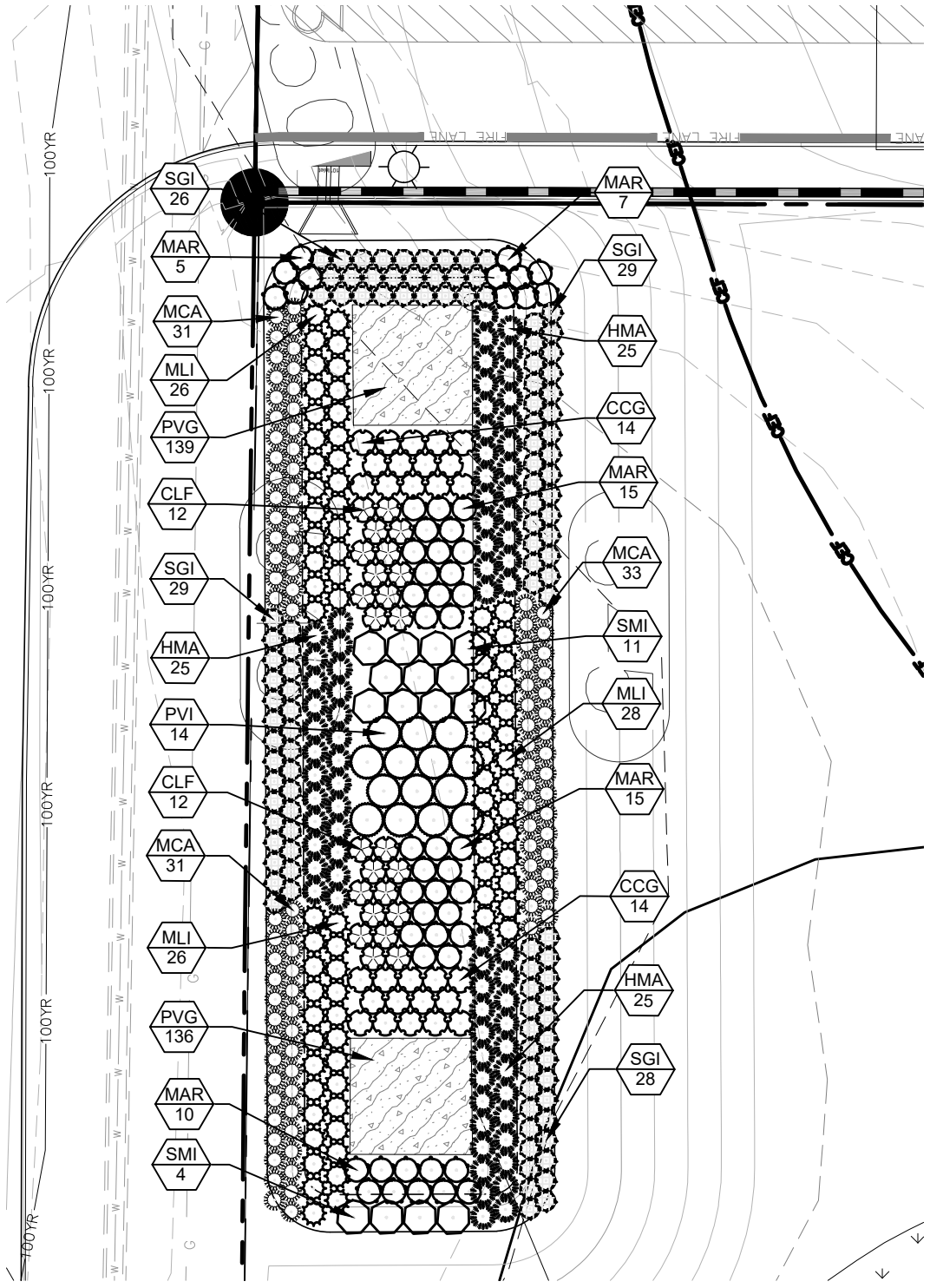
SHEET TITLE
Wetland
Revegetation &
Calculation

SCALE IN FEET
1" = 50'
0' 25' 50' 150'

NORTH
SHEET NUMBER
WM1.02



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

811

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.

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creating better places

1601 Rio Grande Street
Suite 450
Austin, Texas 78701
T 512.770.4503
hitchcockdesigngroup.com

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'

NORTH

SHEET NUMBER
WM1.03

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EXHIBIT 13 – FLOODPLAIN MODIFICATION SHEET



1601 Rio Grande Street
Suite 450
Austin, Texas 78701
T 512.770.4503
hitchcockdesigngroup.com



07.16.2021

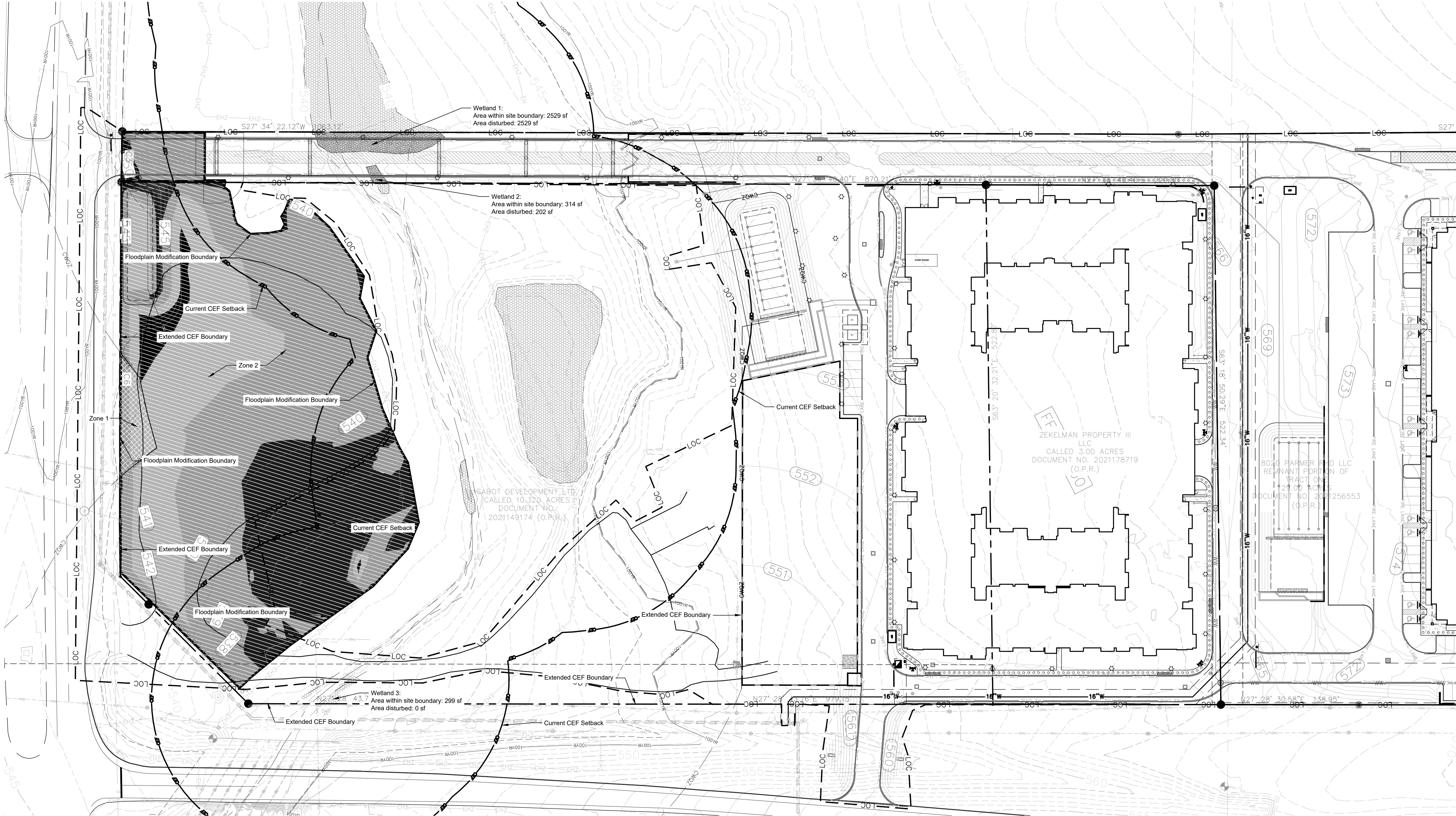
PROJECT

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

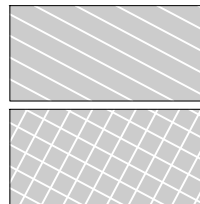
Floodplain Modification Calculations (Zone 1, FP outside the CWQZ, fair condition)		
Area of Modification	0.064 AC	
Floodplain Mitigation Land Required	0.064 AC	
Floodplain Mitigation Land Provided	0.000 AC	
Restoration Ratio	1:3	
Floodplain Mitigation by Payment	0.192 AC	
Base Fee	\$15,000	
Annual Adjustment 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

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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

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

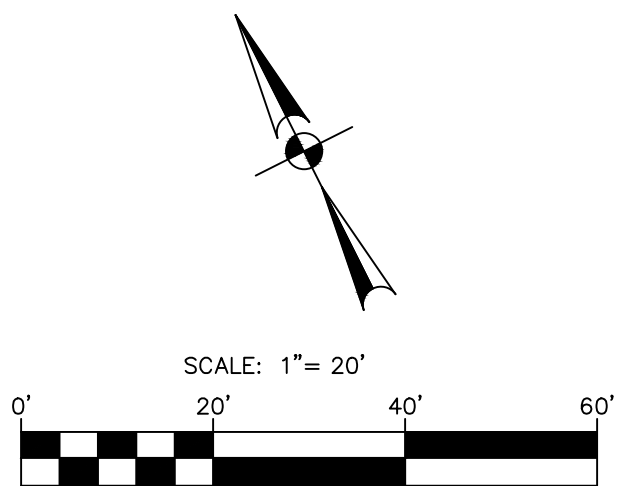
D50 CALCULATION:
 $V = Q/A$
 $Q = 99.99 \text{ CFS}$
 $A = 10 * (1 \text{ FT} * 1.5 \text{ FT}) = 15.0 \text{ FT}^2$
 $V = 99.99/15.0 = 6.67 \text{ FPS}$

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

NOTES:

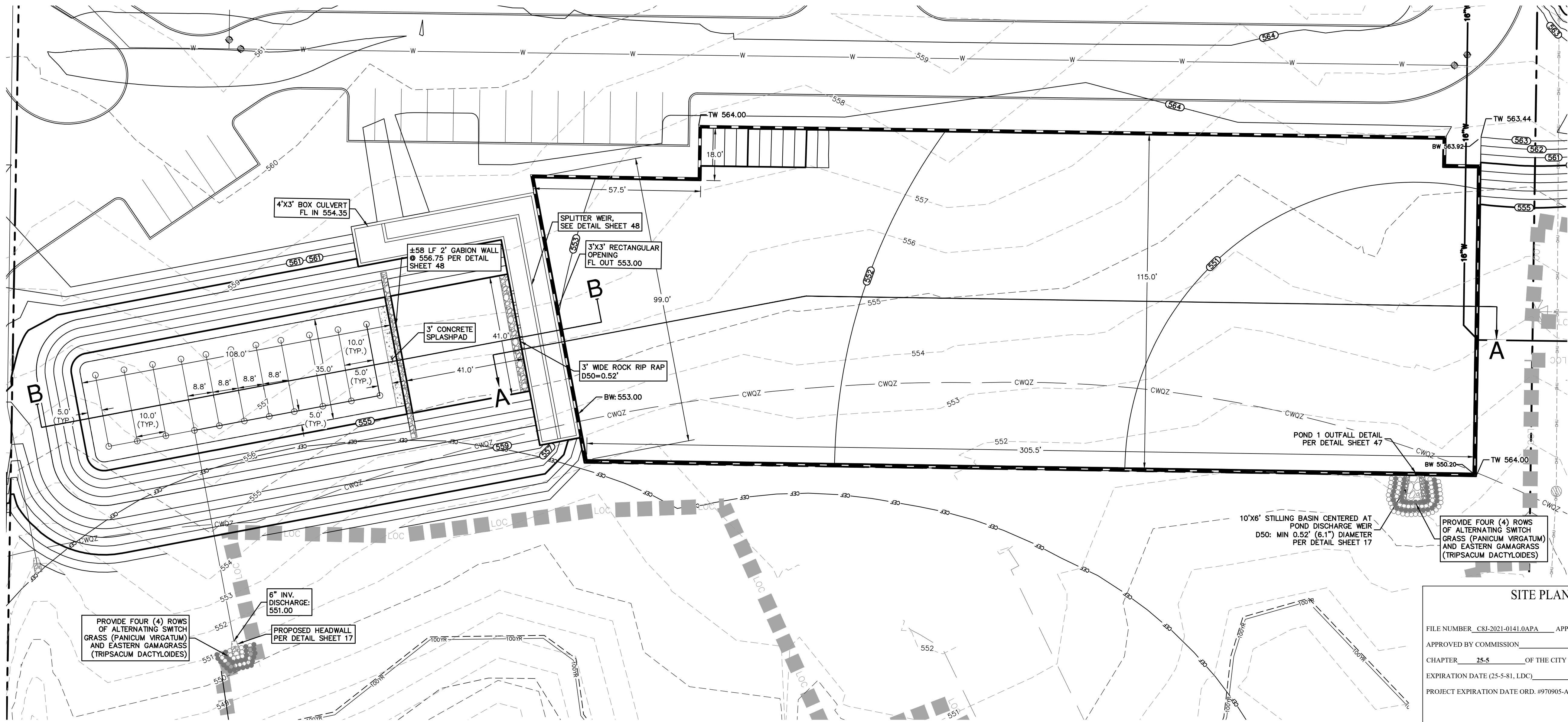
1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR 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

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.



**PAPE-DAWSON
ENGINEERS**
AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
1801 N. MOORE AVE., SUITE 300 | AUSTIN, TX 78759 | 512.464.8711
TYPE FIRM REGISTRATION #470 | TYPE FIRM REGISTRATION #10028601

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

POND PLAN

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 BIOFILTRATION

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) = $CD \cdot DA \cdot 3630$ @ 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
For Partial Sedimentation Pond Volume (min of 20% of WQV)	6,161.22 cf	7,676.05 cf
For Full Filtration Pond Area, $A_f = WQV / (7 + 2.33 \cdot H)$		sf
For Partial Filtration Pond Area, $A_f = WQV / (4 + 1.33 \cdot H)$	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	0.495/188 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)		0.76 in
Underdrain Orifice Size (area)		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

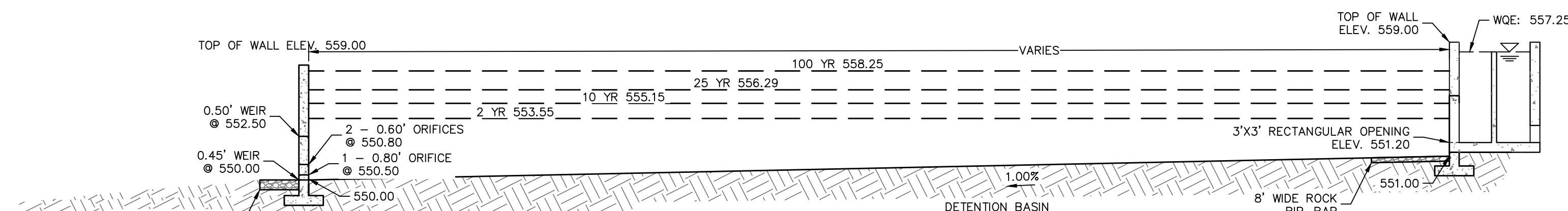
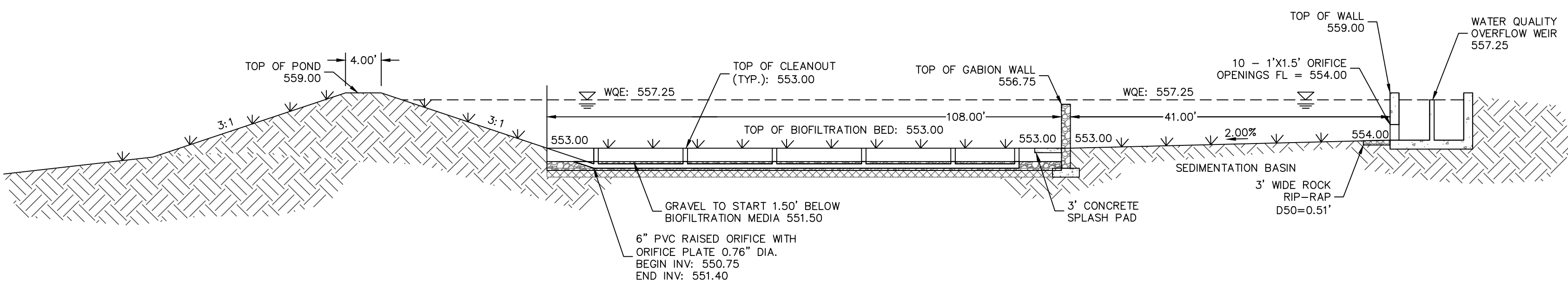
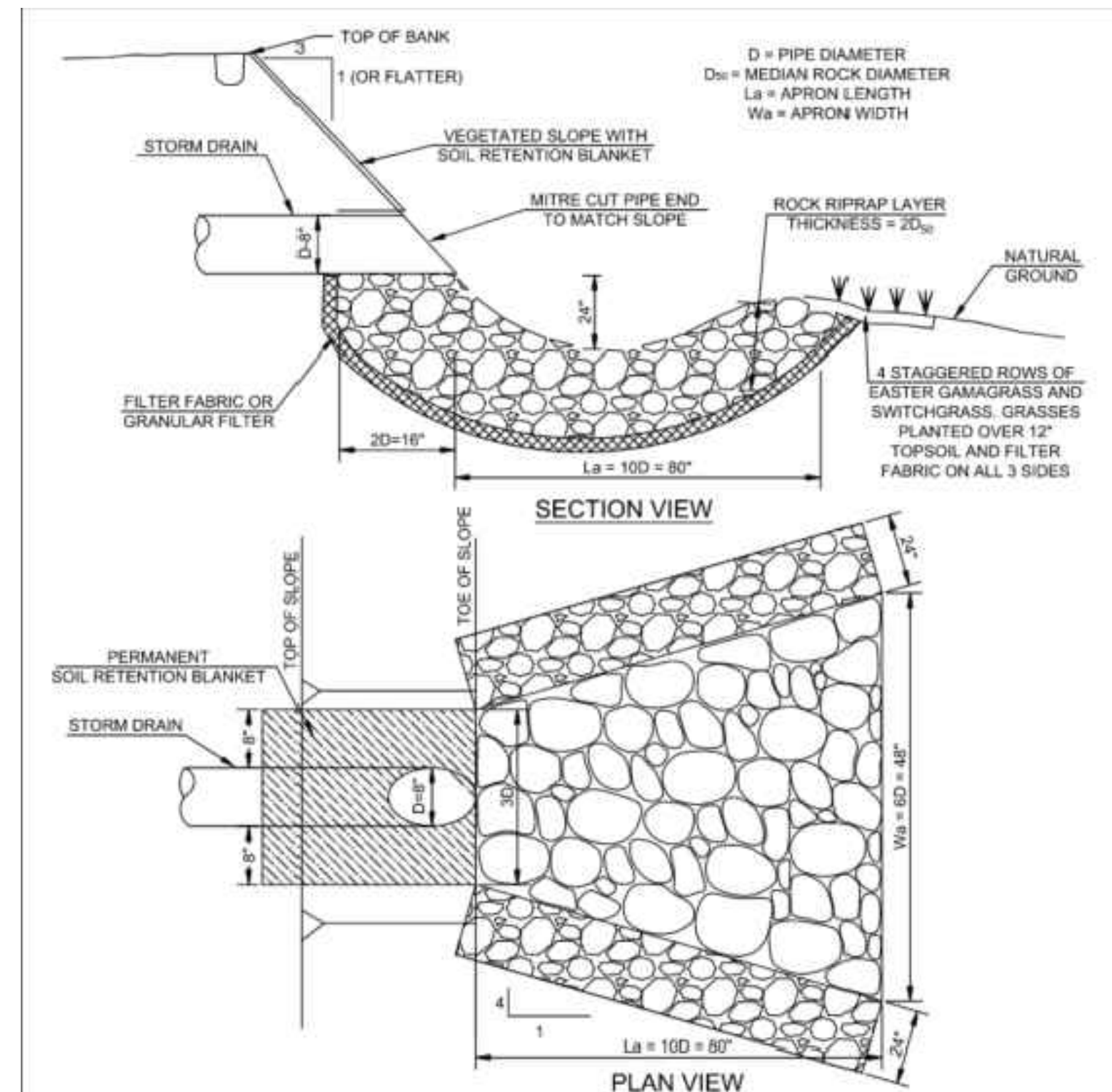
Filtration Pond

Stage (ft msl) (Elevation)	Pond Depth (ft)	Cumulative Pond Depth (ft)	Area (sf)	Volume (cf)	Cumulative Volume (cf)	Combined Pond Volumes (cf)	Notes
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	WQV
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

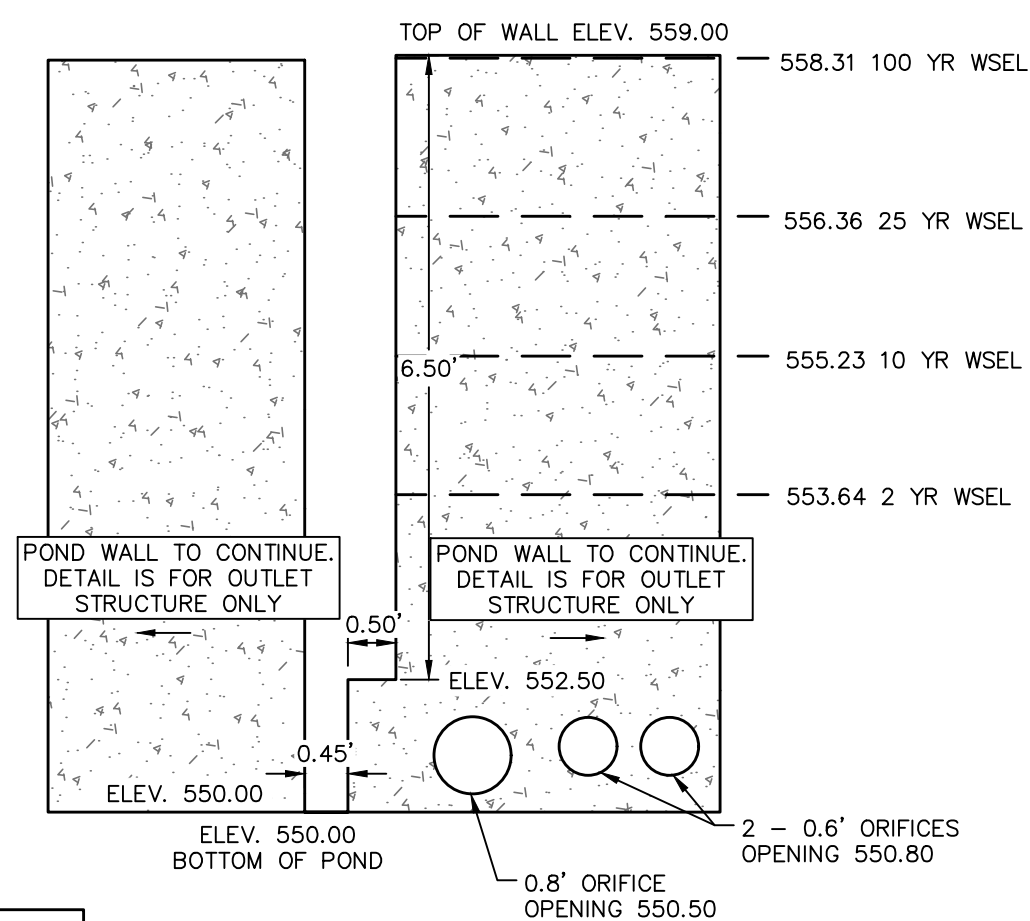
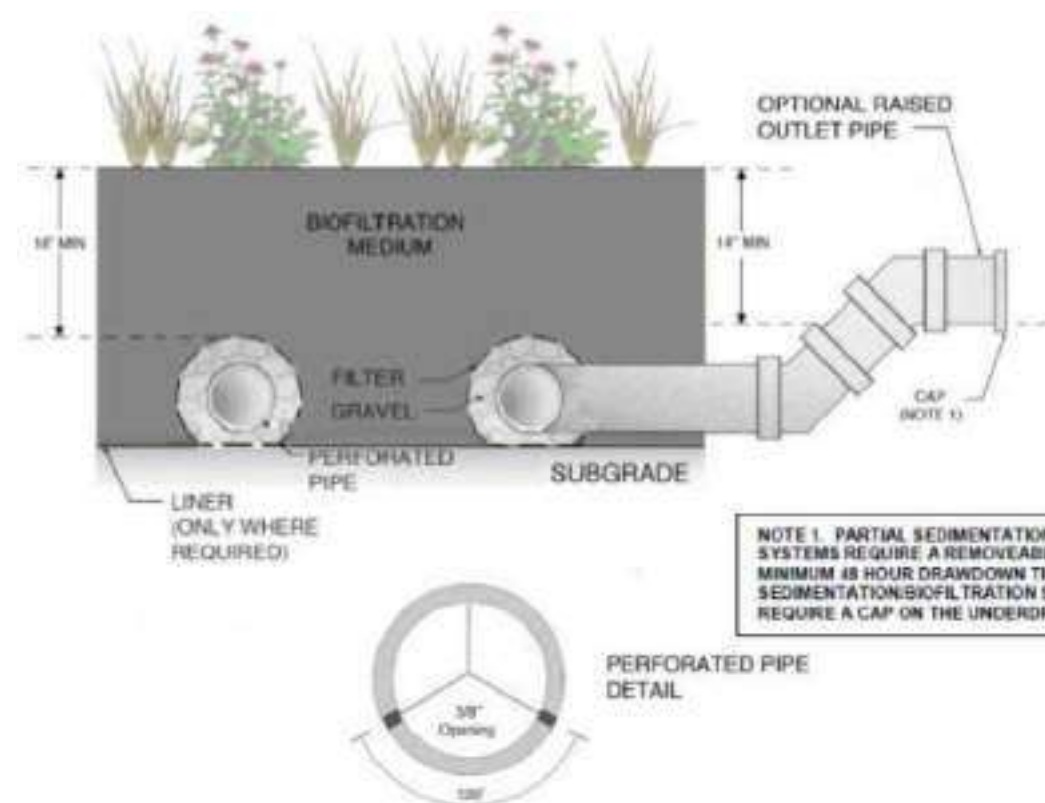
DETENTION POND - SOUTH									
Elev. (ft)	Depth (ft)	Pr. Area (ft ²)	Area (ac)	Incremental Volume (ft ³)	Cumulative Volume (ft ³)	0.45' Weir @ 550.00 (cfs)	1 - 0.8' Orifice @ Center: 550.50 (cfs)	2 - 0.6' Orifice @ Center: 550.80 (cfs)	0.50' Weir @ 552.50 (cfs)
550.00	0.00	3	0.00007	0	0	0.00	-	-	0.00
550.50	0.50	3	0.00007	0	0	0.48	-	-	0.48
551.00	1.00	9,841	0.22591	3,338	3,338	1.35	1.33	0.00	2.29
551.50	1.50	23,961	0.55007	16,385	19,724	3.82	1.71	1.22	4.28
552.00	2.00	23,961	0.55007	11,580	31,304	5.34	3.42	3.55	9.77
552.50	2.50	34,905	0.80132	14,831	46,135	7.01	3.83	4.04	15.41
553.00	3.00	35,363	0.81183	35,134	81,269	10.80	4.53	4.87	22.95
553.50	3.50	35,363	0.81183	35,363	116,632	15.09	5.13	5.58	31.74
554.00	4.00	35,363	0.81183	35,363	152,000	19.84	5.88	6.21	41.56
554.50	4.50	35,363	0.81183	17,682	169,682	22.37	5.93	6.50	46.80
555.00	5.00	35,363	0.81183	17,682	187,364	25.00	6.17	6.78	52.27
555.50	5.50	35,363	0.81183	10,963	198,327	30.55	6.63	7.31	63.83
556.00	6.00	35,363	0.81183	24,401	222,728	36.45	7.06	7.80	76.16

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	135.66	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	

SECTION A-A
1" = 10'SECTION B-B
1" = 10'

- NOTE:
- ROCK RIPRAP SHALL BE SOUND MATERIAL AND GRADED PER REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 591S.
 - ROCK SIZE (D_{50}) AND GRADATION SHALL BE STABLE FOR THE DESIGN HYDRAULIC CONDITIONS AND IN ACCORDANCE WITH THE EGM 1.4.6.D PERMANENT STRUCTURAL PRACTICES, STONE RIPRAP OR OTHER ENGINEERING STANDARD OF PRACTICE FOR SIZING ROCK RIPRAP. ROCK RIPRAP D_{50} AND FILTER TYPE SHALL BE NOTED ON PLANS.
 - GEOTEXTILE FILTER FABRIC SHALL MEET THE REQUIREMENTS SPECIFIED IN STANDARD SPECIFICATION ITEM NO. 620S.
 - 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.



DETENTION POND 1 OUTFALL

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

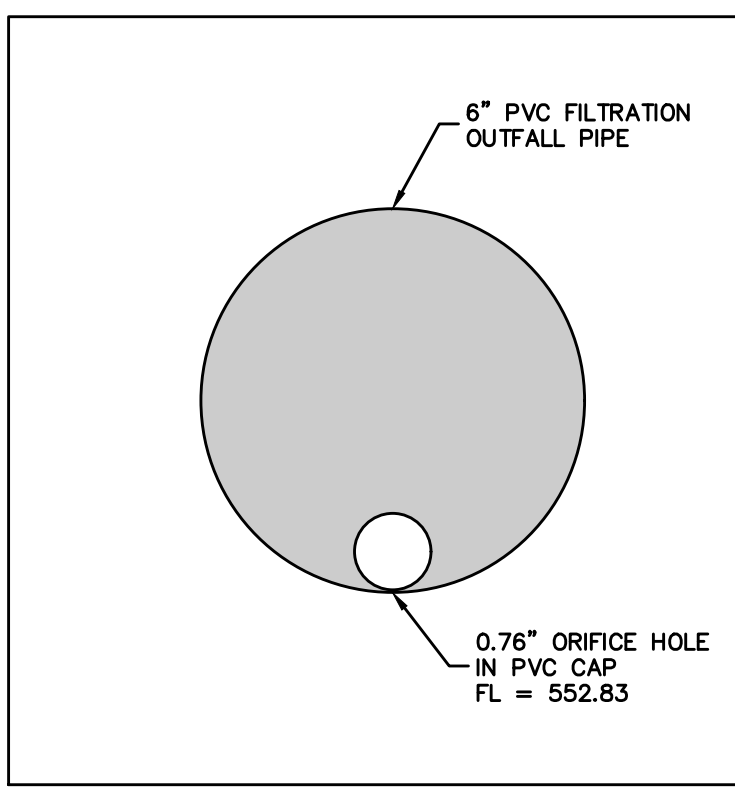
RELEASED FOR GENERAL COMPLIANCE:

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 OUTFALL
SECTION

NO.	REVISION	DATE



05/19/2022

Shelly Mitchell

**PAPE-DAWSON
ENGINEERS**

AUSTIN | SAN ANTONIO | HOUSTON | FORT WORTH | DALLAS
 1807 N. MOORE AVE., SUITE 300 | AUSTIN, TX 78758 | 512-464-8711
 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

C8J-2021-0141.0APA

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

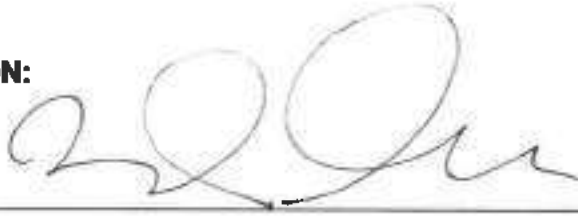
Annual Adjustment Factor: 7% beginning October 1, 2008

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 stylized 'J' and a horizontal stroke.

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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DISCUSSION.....	3
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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

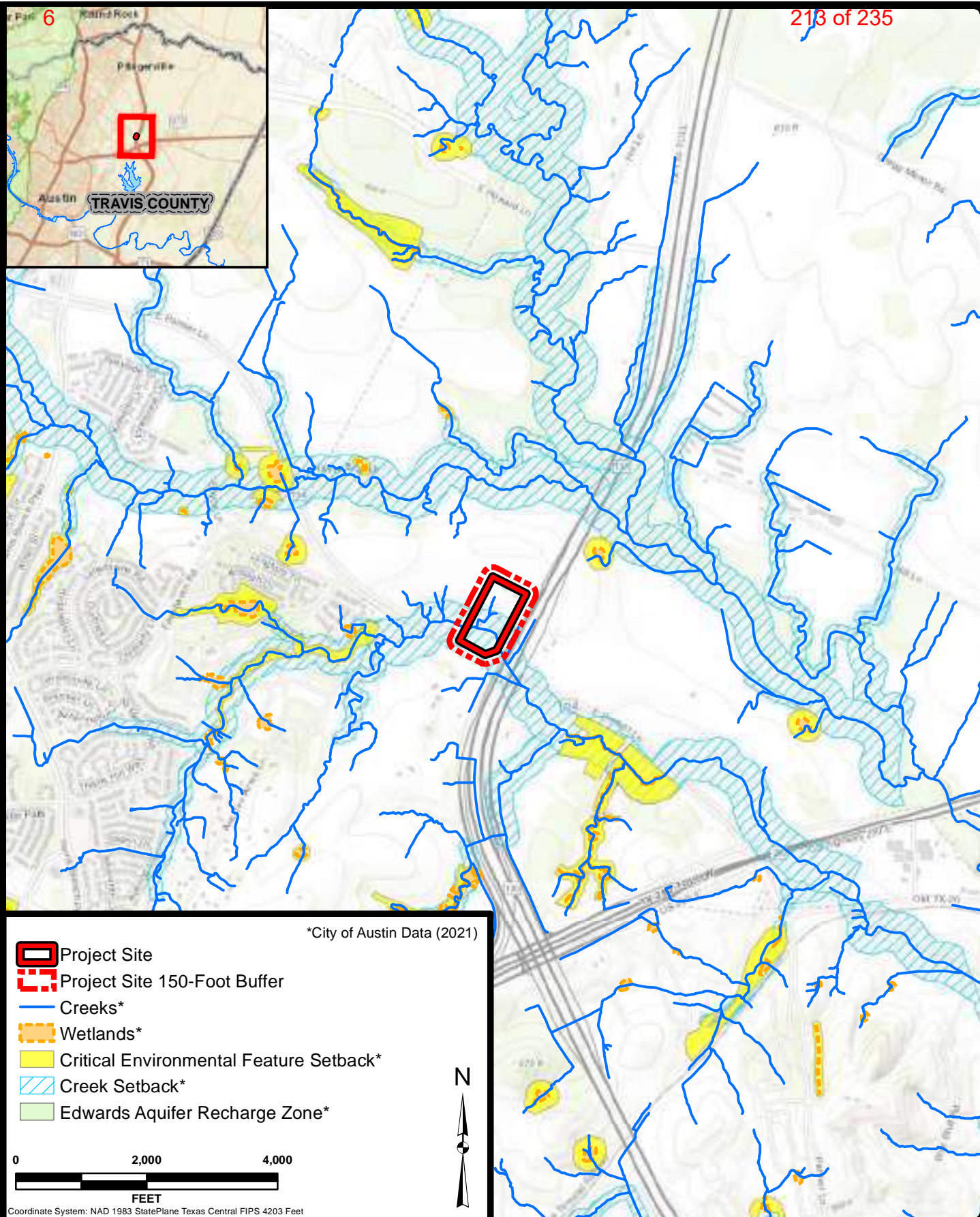
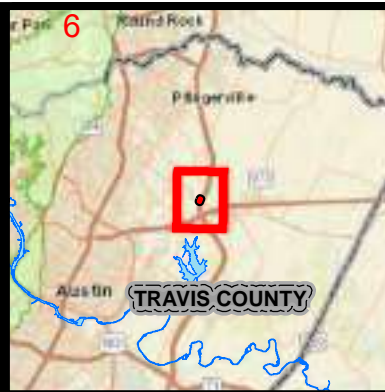
Google Earth Pro. 2021. Aerial Photography of the Project Site. 30.354798°, -97.592998°. Austin, Texas.

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

EXHIBITS

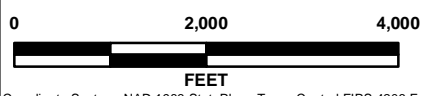
EXHIBIT 1

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

**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 2

Site Map



*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 02

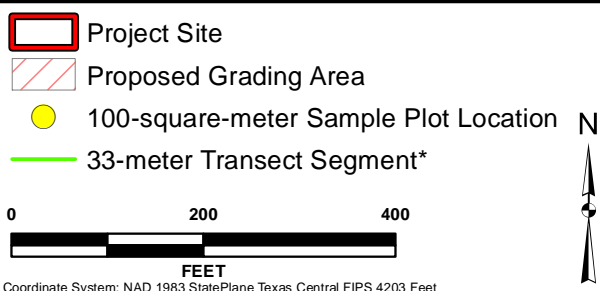
Parmer MF
Functional Assessment
SITE MAP

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 3

2015 Historical Aerial Photograph Map



*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.

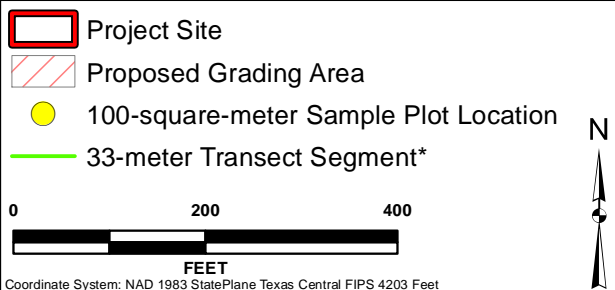
JOB NO. 51249-00
DATE May 2022
DESIGNER JG
CHECKED VC DRAWN JG
SHEET EXHIBIT 03

Parmer MF
Functional Assessment
Historical Aerial Photograph (2015)

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

EXHIBIT 4

2005 Historical Aerial Photograph Map



*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)





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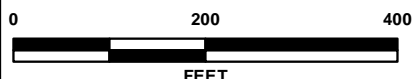
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

EXHIBIT 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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ENGINEERS**

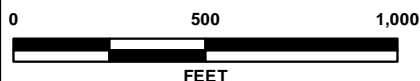
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

EXHIBIT 6

1968 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 06**

Parmer MF

Functional Assessment

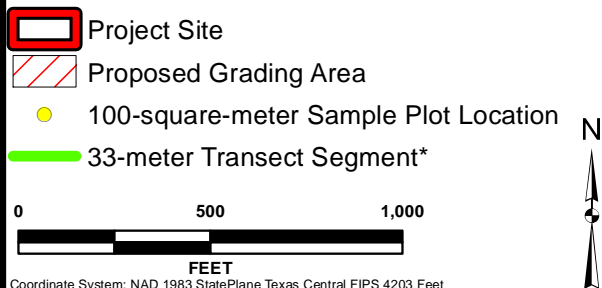
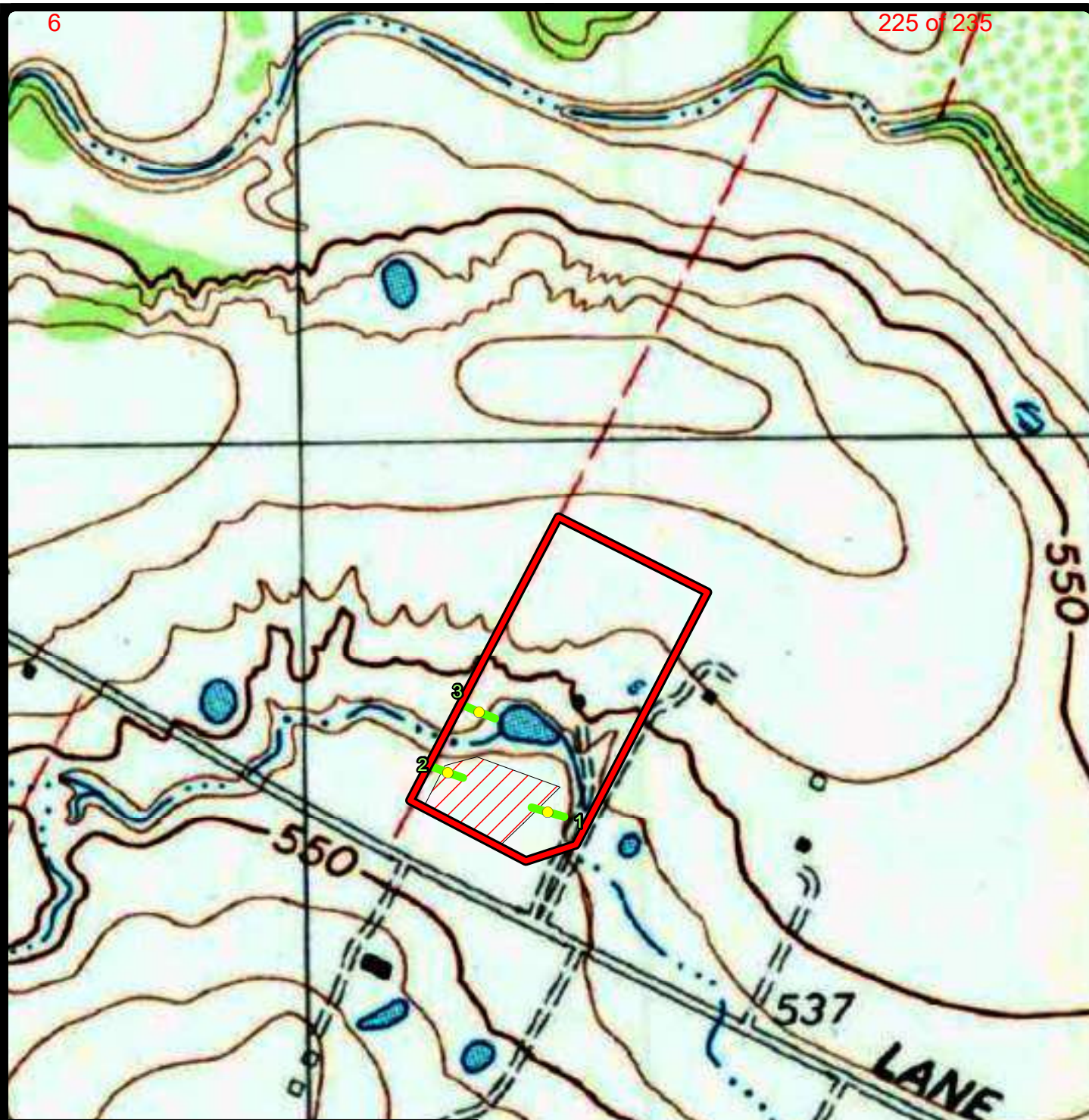
HISTORICAL TOPOGRAPHIC MAP (1968)

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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

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

Backup page 178 of 188

Parmer MF
Functional Assessment

HISTORICAL TOPOGRAPHIC MAP (1988)

PAPE-DAWSON
ENGINEERS

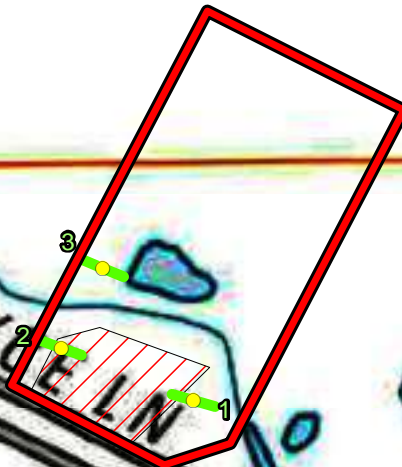
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

EXHIBIT 8

2010 Historical Topographic Map

Harris Branch

BOYCE LN



Project Site



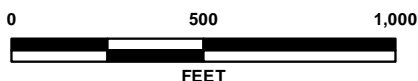
Proposed Grading Area



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

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

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 road, under an overcast sky. In the background, there are several utility poles with power lines, and a bridge structure is visible on the left side. The ground is a light gray color, and the sky is a uniform, pale blue-gray.

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	<div data-bbox="203 331 483 525"> Description: A view of the vegetation found on either side of the creek with the unpermitted parking lot visible in the background. </div> 
Photo No. 4	Date: 07-20-2021	<div data-bbox="203 1146 483 1339"> Description: A view the vegetation present from the northern representative transect segment, facing south, towards the creek. </div> 

APPENDIX B

Scoring/Field Sheets

Scoring: Zone 2 – Critical Water Quality ZoneSite/Project Name: Parmer MFDate: 07/20/2021 Time: 11:00 AMTransect Number: Transect 1Staff (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 MFTransect Number: Transect 1

Gap Frequency

Number of 1 meter gaps: 15Percent of Transect: 15 %Date: 7/20/2021 Time: 11:00 AMStaff (if applicable): John Lee Gonzalez III

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: Palmer 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