ENGINEERING AND DRAINAGE REPORT FOR THE LODGE AT FOSSIL RIDGE

3306 FERGUSON LANE, AUSTIN, TEXAS 78754

12.55 ACRES OUT OF

WILLIAM HOTCHKISS SURVEY NO. 32, ABSTRACT NO. 374 CITY OF AUSTIN ETJ, TRAVIS COUNTY, TEXAS 78754

PREPARED FOR:

G3 EXHIBITS, LLC SCOTT AMERIE 304 BUCKEYE TRAIL AUSTIN, TX 78746

PREPARED BY:



parnell engineering

WILL PARNELL, P.E. 2709 MELBA PASS CEDAR PARK, TEXAS 78613 TEXAS ENGINEERING FIRM NO. 19566



01/21/2020



JANUARY 2020

January 21, 2020

Ms. Denise Lucas, Acting Director Development Services Department 505 Barton Springs Road Austin, Texas 78704

RE: Engineer's Summary Letter – Site Development Permit (SDP) Submittal The Lodge at Fossil Ridge, 3306 Ferguson Lane, Austin, Travis County, Texas 78754

Dear Ms. Lucas:

Please accept this Engineer's Summary Letter and report along with the accompanying application submittal package for the proposed The Lodge at Fossil Ridge project. A Site Development Permit (SDP) is being submitted for this project. The proposed project is located at 3306 Ferguson Lane, west of Springdale Road, located within the Extra Territorial Jurisdiction (ETJ) of the City of Austin, in Travis County, Texas. The subject site is 12.55 acres and is currently undeveloped. The planned development of this property is an event pavilion and storage building and an event and storage building, along with an associated parking lot addition.

The property is located entirely within Walnut Creek, which is classified as a Suburban Watershed. No portion of the subject site is located within the Edwards Aquifer Recharge or Contributing Zone as defined by the Texas Commission on Environmental Quality (TCEQ). A large portion of the subject tract is located within a 100-year FEMA designated flood plain as shown on FEMA Map Panel No. 48453C0460K, dated January 06, 2016, as well as the City of Austin 100-year fully developed flood plain. Development will be regulated under the combined City of Austin and Travis County requirements for projects within the City of Austin ETJ.

To our knowledge, the enclosed application materials are complete, correct, and in full compliance with the Land Development Code and Technical Criteria Manuals of the City of Austin. Should you have any questions regarding this project or application, please do not hesitate to contact our office.



Texas Engineering Firm No. F-19566

Will Parnell, P.E.





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APPENDIX: LIST OF EXHIBITS

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INTRODUCTION

The subject property is located at 3306 Ferguson Lane, west of Springdale Road, within the City of Austin Extra Territorial Jurisdiction (ETJ), in Travis County, Texas. A *Site Location Map* is included in the appendix of this report as *Exhibit 1*. The proposed project consists of two Travis County tax parcels # 236630 and # 236631 Ferguson Ln. Please refer to *Exhibit 2* for a tax parcel map. The tax parcels are out of the William Hotchkiss Survey No. 32, Abstract No. 374. Please refer to *Exhibit 3* for Survey Plat and Deed for this property. The subject site is 12.55 acres and is currently undeveloped and was used previously as farm land. The proposed use of the property will be for an event pavilion and storage building and event and storage building, along with an associated parking lot addition.

SUBDIVISION

According to our meeting with City of Austin planning, a Preliminary Subdivision Plan and Final Subdivision Plat will not be required for development of this project, since the property is a legal tract, remaining in its original configuration since before 1951. We applied for formal Land Status Determination to confirm the property is grandfathered, and received those results on October 21, 2019 included as *Exhibit 4.*

ZONING

Since the subject tract is located in the City of Austin's ETJ (not located within the City Limits of Austin), the property Is not subject to the City's zoning ordinance.

WATERSHED

The subject property is located entirely within the Walnut Creek Watershed, which is classified as a Suburban Watershed for development purposes (please see **Exhibit 5** for the watershed map of this area). The maximum allowable impervious cover is 65% allowed by watershed regulations. The subject site is not located within the Edwards Aquifer Recharge Zone or the Recharge Transition Zone as defined by TCEQ or the City of Austin (see *Exhibit 6* for Edwards Aquifer Map).

FLOOD PLAIN

A large portion of the subject tract is located within a 100-year FEMA designated flood plain, according to FEMA Map Panel No. 48453C0460K (January 6, 2016). A copy of the *FEMA Floodplain Map* has been included in the Appendix of this report as *Exhibit 7*. In addition, the property is also located in the City of Austin 100-yr fully developed flood plain, reference **Exhibit 8**.



EXISTING TOPOGRAPHY AND SOILS

The existing tract is predominantly open grass area with moderate tree coverage. Walnut Creek traverses the eastern portion of the property and drains southerly. A high point of approximately elevation 540-ft exists along the western portion of the property. The land slopes away to the east typically between 2-8% slope, towards Walnut Creek to the east. The soil on the site consists of Altoga Soils and Urban Land (AID), Oakalla Soils (Fs), and Lewisville Soils (LeB), which are all Hydrologic Soil Group D and Austin-Urban land complex soil groups. See **Exhibit 9** for the soil map and soil descriptions.

STORMWATER DETENTION AND WATER QUALITY

This project will adhere to the City's required Atlas 14 design criteria. We will analyze flows through the site and determine if stormwater detention is required for the development. If needed, storm water detention facilities will meet all City of Austin drainage criteria. This project will utilize vegetative filter strips to treat runoff from the development. Water quality facilities will be designed to meet City of Austin environmental technical criteria. Please refer to **Exhibit 10** for the proposed Drainage & Water Quality Plans.

WATER AND WASTEWATER

Austin Water Utility is the water and wastewater service provider for this property. All water and wastewater system improvements shall be in accordance with the City of Austin design criteria and specifications. We have coordinated the water service strategy with AWU and the City of Austin Fire Marshal. We will tap the existing 2.25" waterline in Ferguson with a 2" waterline; the 2" line will be a direct feed to an on-site tank. The tank will have a FDC, fire department connection, attached facing the drive lane. The 2" meter will sit right on the property line located in the public ROW of Ferguson. We propose a private on-site sewerage facility (OSSF) as part of this project, which will be submitted to Travis County in conjunction with this project application.Please refer to **Exhibit 11** for the proposed Overall Utility Plan and Wastewater Plan.

DRY UTILITIES

Austin Energy is the electric provider for this area. Telephone, cable, and internet service for the subject tract are available from both Spectrum and AT&T. Natural gas service is available from ONE Gas.



ROADWAY FRONTAGE AND ACCESS

The property has an existing 15-ft flag that extends to Ferguson Lane for access. Coordination with the City of Austin Fire Department will be required for allowable width of fire truck access as well as Travis County for required driveway access.

EROSION AND SEDIMENTATION CONTROL AND TREE PROTECTION

Appropriate erosion control measures will be designed in accordance with the Environmental Criteria Manual and to be included with the future Site Development Permits (SDP) submittals. These measures include the use of silt fences, mulch sock, tree protection and inlet protection for all inlets within the vicinity of the site. We do not anticipate any adverse impacts as a result of this development.

LANDSCAPING AND TREES

The site is not subject the City of Austin's landscape requirements. There is no tree mitigation in the County's jurisdiction or 2-mile ETJ. All trees greater than 18-inches in diameter will be surveyed and considered in our lot planning. Landscape design sheets will be included in the construction plan set.

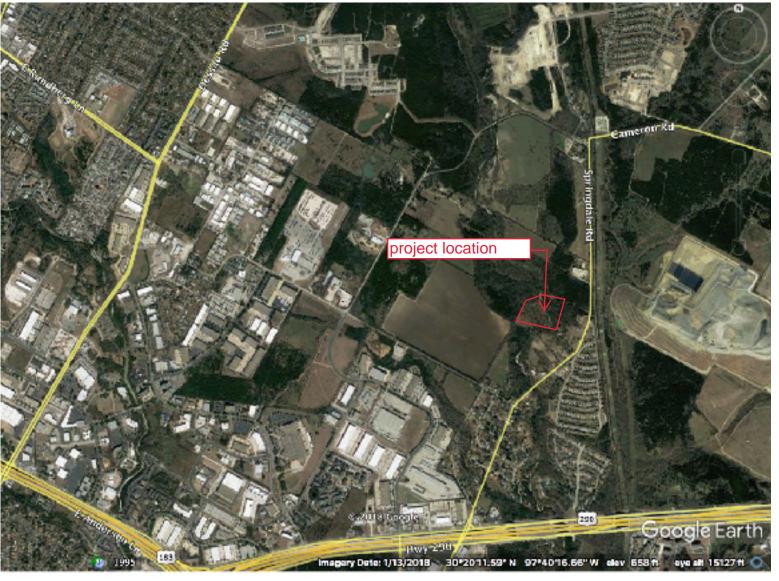
EXISTING CREEK / CRITICAL WATER QUALITY ZONE

Walnut Creek runs through the eastern portion of the property. There is an existing creek buffer, classified as a critical water quality zone. Setback requirements from this critical water quality zone are determined by the size of the drainage area draining to the creek. The classification of this waterway is major, or it has more than 640 Ac. of contributing drainage area. A 300-ft buffer will be placed on both sides of the centerline of the waterway. Development in this buffer will be limited. Generally, this buffer space can be used to treat water quality, detain stormwater runoff and can be counted as part of the open space requirement. This creek is likely jurisdictional, meaning any impacts to this creek may require an Army Corps of Engineering 404 permit. Our team has employed the services of Bowman Consulting to perform an environmental resource inventory report and is included as part of this submittal package for your information and records.



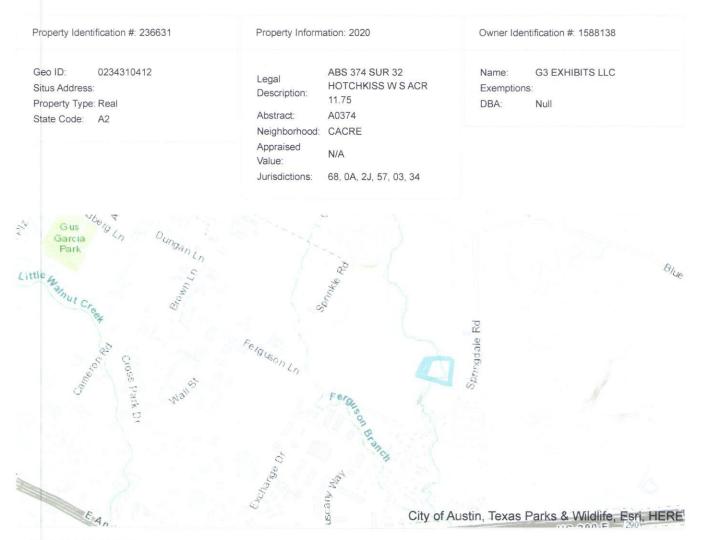
Site Location Map, 1

SITE LOCATION MAP





Tax Map, **2**



Travis CAD Map Search

This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an onthe-ground survey and represents only the approximate relative location of property boundaries. The Travis County Appraisal District expressly disclaims any and all liability in connection herewith.

Travis CAD

Property Search > 236631 G3 EXHIBITS LLC for Year 2019

Tax Year: 2019

Property Account Legal Description: ABS 374 SUR 32 HOTCHKISS W S ACR 11.75 Property ID: 236631 Geographic ID: 0234310412 Zoning: Agent Code: ID:1755939 Type: Real Property Use Code: Property Use Description: Protest Protest Status: Informal Date: Formal Date: Location Address: 3306 FERGUSON LN Mapsco: TX 78754 Map ID: 023431 Neighborhood: CACRE Neighborhood CD: _CACRE Owner Owner ID: 1588138 Name: **G3 EXHIBITS LLC** Mailing Address: **304 BUCKEYE TR** % Ownership: 100.000000000% AUSTIN, TX 78746-4422 Exemptions: Values \$0 (+) Improvement Homesite Value: \$230 (+) Improvement Non-Homesite Value: + (+) Land Homesite Value: \$0 (+) Land Non-Homesite Value: + \$57,575 Ag / Timber Use Value \$0 \$0 (+) Agricultural Market Valuation: \$0 (+) Timber Market Valuation: \$0 (=) Market Value: \$57,805 = (-) Ag or Timber Use Value Reduction: \$0 \$57,805 (=) Appraised Value: = (-) HS Cap: \$0 \$57,805 (=) Assessed Value: = **Taxing Jurisdiction** Owner: **G3 EXHIBITS LLC** % Ownership: 100.000000000% **Total Value:** \$57,805 **Entity Description Appraised Value** Taxable Value **Estimated Tax** Tax Rate 03 TRAVIS COUNTY 0.354200 \$57,805 \$57,805 \$204.74

				Taxes w/o Exemptions:	\$1,259.70
				Taxes w/Current Exemptions:	\$1,259.69
	Total Tax Rate:	2.179221			
68	AUSTIN COMM COLL DIST	0.104800	\$57,805	\$57,805	\$60.58
57	TRAVIS CO ESD NO 4	0.100000	\$57,805	\$57,805	\$57.81
34	MANOR ISD	1.515000	\$57,805	\$57,805	\$875.74
2J	TRAVIS COUNTY HEALTHCARE DISTRICT	0.105221	\$57,805	\$57,805	\$60.82
OA	TRAVIS CENTRAL APP DIST	0.000000	\$57,805	\$57,805	\$0.00

Improvement / Building

Improvement #1: MOHO SINGLE REAL State Code: A2 Living Area: 720.0 sqft Value: \$230

Туре	Description	Class CD	Exterior Wall	Year Built	SQFT
1ST	1st Floor	MH - 2		1969	720.0
041	GARAGE ATT 1ST F	WM - 1		1969	638.0
121	WATER/SEWER INF	INF - *		1969	1.0
581	STORAGE ATT	WW - 2-		1969	682.0

Land

#	Туре	Description	Acres	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
1	LAND	Land	11.7500	511830.00	0.00	0.00	\$57,575	\$0

Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap	Assessed
2020	N/A	N/A	N/A	N/A	N/A	N/A
2019	\$230	\$57,575	0	57,805	\$0	\$57,805
2018	\$218	\$57,575	0	57,793	\$0	\$57,793
2017	\$233	\$57,575	0	57,808	\$0	\$57,808
2016	\$233	\$57,575	0	57,808	\$0	\$57,808
2015	\$233	\$57,575	0	57,808	\$0	\$57,808

Deed History - (Last 3 Deed Transactions)

#	Deed Date	Туре	Description	Grantor	Grantee	Volume	Page	Deed Number
1	12/21/2018	WD	WARRANTY DEED	BOHN JOHN WILLIAM &	G3 EXHIBITS LLC			2018197063
2	6/26/1998	MS	MISCELLANEOUS	FRADY HELEN B & JOHN W BOHN	BOHN JOHN WILLIAM &	13217	00070	
3	12/27/1990	WD	WARRANTY DEED	BOHN JOHANNES	FRADY HELEN B & JOHN W BOHN	11344	00796	

Questions Please Call (512) 834-9317

This site requires cookies to be enabled in your browser settings.

Website version: 1.2.2.30

Database last updated on: 10/16/2019 11:58 PM

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Travis CAD

Property Search > 236630 G3 EXHIBITS LLC for Year 2019

Tax Year: 2019

2.00	-	01		
	~	~ 1		

Account				
Property ID:	236630		Legal Description:	ABS 374 SUR 32 HOTCHKISS W S ACR 1.0000
Geographic ID:	0234310412		Zoning:	
Type:	Real		Agent Code:	ID:2094
Property Use Code:				
Property Use Description:				
Protest				
Protest Status:				
Informal Date: Formal Date:				
Location				
Address:	3306 FERGUSON TX 78754	I LN	Mapsco:	
Neighborhood:	CACRE		Map ID:	023431
Neighborhood CD:	_CACRE			
Owner				
Name:	G3 EXHIBITS LLC	:	Owner ID:	1588138
Mailing Address:	304 BUCKEYE TR		% Ownership:	100.000000000%
	AUSTIN, TX 787	46-4422	Exemptions:	
alues			40	
(+) Improvement Home		+	\$0	
(+) Improvement Non-H			\$0	
(+) Land Homesite Value		+	\$0	An / Timber Han Malur
(+) Land Non-Homesite		+	\$11,500	Ag / Timber Use Value
(+) Agricultural Market		+	\$0	\$0
(+) Timber Market Valua	ation:	+	\$0	\$0
(-) Market) (-)		_	611 500	
(=) Market Value:	lue Deduction	=	\$11,500	
(–) Ag or Timber Use Va	ine Reduction:	-	\$0	
(=) Appraised Value:		=	\$11,500	
(-) HS Cap:		_	\$0	
(=) Assessed Value:		=	\$11,500	
axing Jurisdiction				
Owner: G3 EXHI	BITS LLC			
% Ownership: 100.000				
76 Ownership: 100.000	00000076			

Total Value:

2019			Travis CAD - Property Deta	ails	
Entity	Description	Tax Rate	Appraised Value	Taxable Value	Estimated Tax
03	TRAVIS COUNTY	0.354200	\$11,500	\$11,500	\$40.73
AO	TRAVIS CENTRAL APP DIST	0.000000	\$11,500	\$11,500	\$0.00
2J	TRAVIS COUNTY HEALTHCARE DISTRICT	0.105221	\$11,500	\$11,500	\$12.10
34	MANOR ISD	1.515000	\$11,500	\$11,500	\$174.23
57	TRAVIS CO ESD NO 4	0.100000	\$11,500	\$11,500	\$11.50
68	AUSTIN COMM COLL DIST	0.104800	\$11,500	\$11,500	\$12.05
	Total Tax Rate:	2.179221			
			Та	es w/Current Exemptions:	\$250.61
			Та	kes w/o Exemptions:	\$250.61

Improvement / Building

No improvements exist for this property.

Land

#	Туре	Description	Acres	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
1	LAND	Land	1.0000	43560.00	0.00	0.00	\$11,500	\$0

Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap	Assessed
2019	\$0	\$11,500	0	11,500	\$0	\$11,500
2018	\$0	\$5,750	0	5,750	\$0	\$5,750
2017	\$0	\$5,750	0	5,750	\$0	\$5,750
2016	\$0	\$5,750	0	5,750	\$0	\$5,750
2015	\$0	\$5,750	0	5,750	\$0	\$5,750
2014	\$0	\$4,025	0	4,025	\$0	\$4,025

Questions Please Call (512) 834-9317

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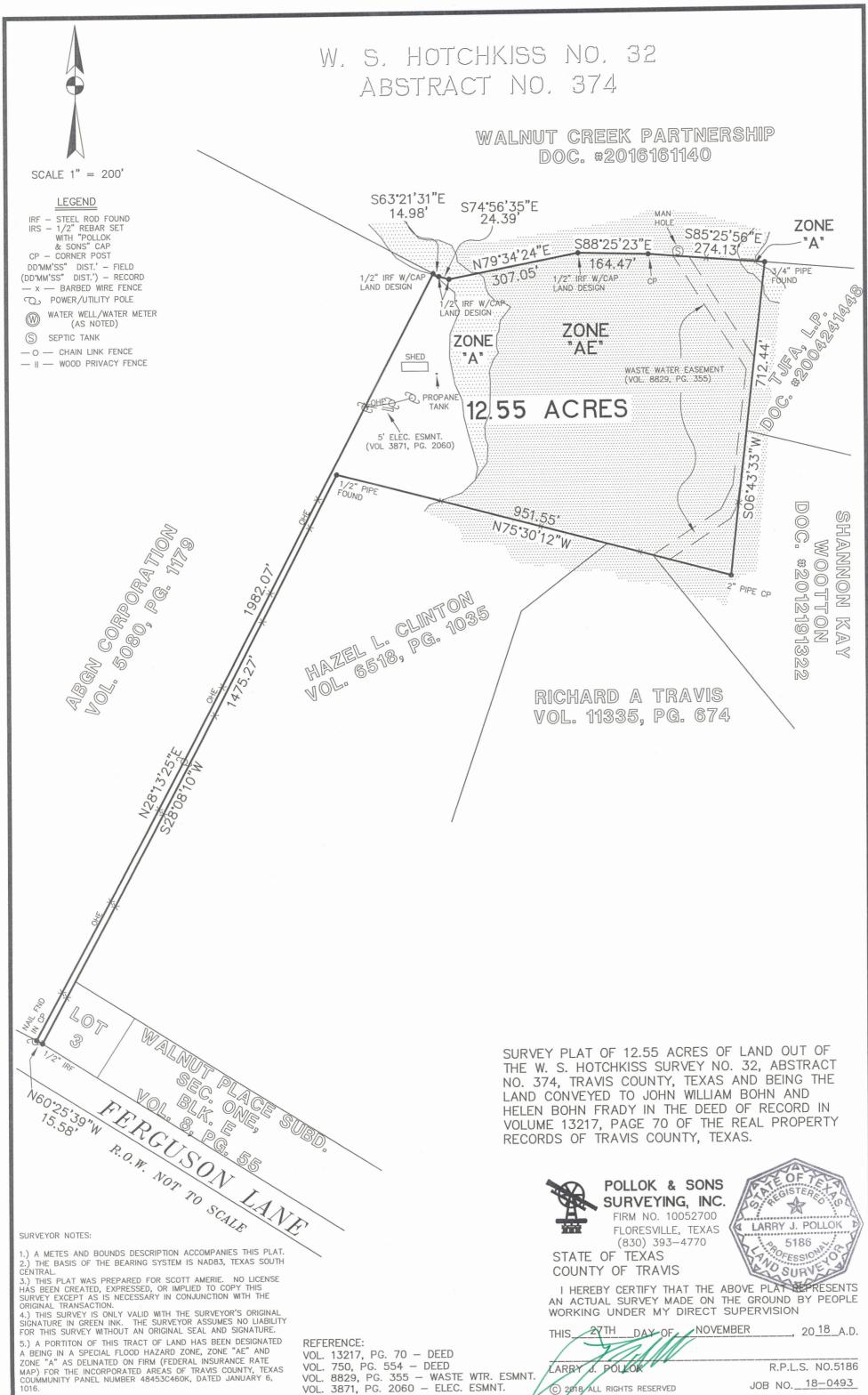
Website version: 1.2.2.30

Database last updated on: 10/10/2019 12:01 AM

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ALTA / NSPS Land Title Survey, 3



A BEING IN A SPECIAL FLOOD HAZARD ZONE, ZONE "AE" AND ZONE "A" AS DELINATED ON FIRM (FEDERAL INSURANCE RATE MAP) FOR THE INCORPORATED AREAS OF TRAVIS COUNTY, TEXAS COUMMUNITY PANEL NUMBER 48453C460K, DATED JANUARY 6, 1016.

VOL. 8829, PG. 355 – WASTE WTR. ESMNT. VOL. 3871, PG. 2060 – ELEC. ESMNT.



Land Status Determination, 4



Development Services Department Land Status Determination Legal Tract Platting Exception Certification

October 21, 2019

File Number: C8I-2019-0264

Address: 3306 FERGUSON LN

Tax Parcel I.D. #0234310412 Tax Map Date: 10/21/2019

The Watershed Protection and Development Review Department has determined that the property described below and **as shown on the attached tax map**:

Is a LEGAL TRACT consisting of 12.55 acres of land out of the W. S. Hotchkiss Survey No. 32, Abstract No. 374, created prior to Jul 19, 1951 (Grandfather Date) as evidenced by deed recorded in Volume 750, Page 554 of the Travis County Deed Records on Jan 12, 1945 being the same property as currently described in deed recorded in Document #2018197064 of the Travis County Deed Records on Dec 21, 2018 and is eligible to receive utility service.

Additional Notes/Conditions: NONE

This determination of the status of the property is based on the application of Chapter 212, Municipal Regulation of Subdivision and Property Development, Texas Local Government Code; and the City of Austin Land Development Code, Chapter 25-4, Subdivision. Recognition hereby does not imply approval of any other portion of the City Code or any other regulation.

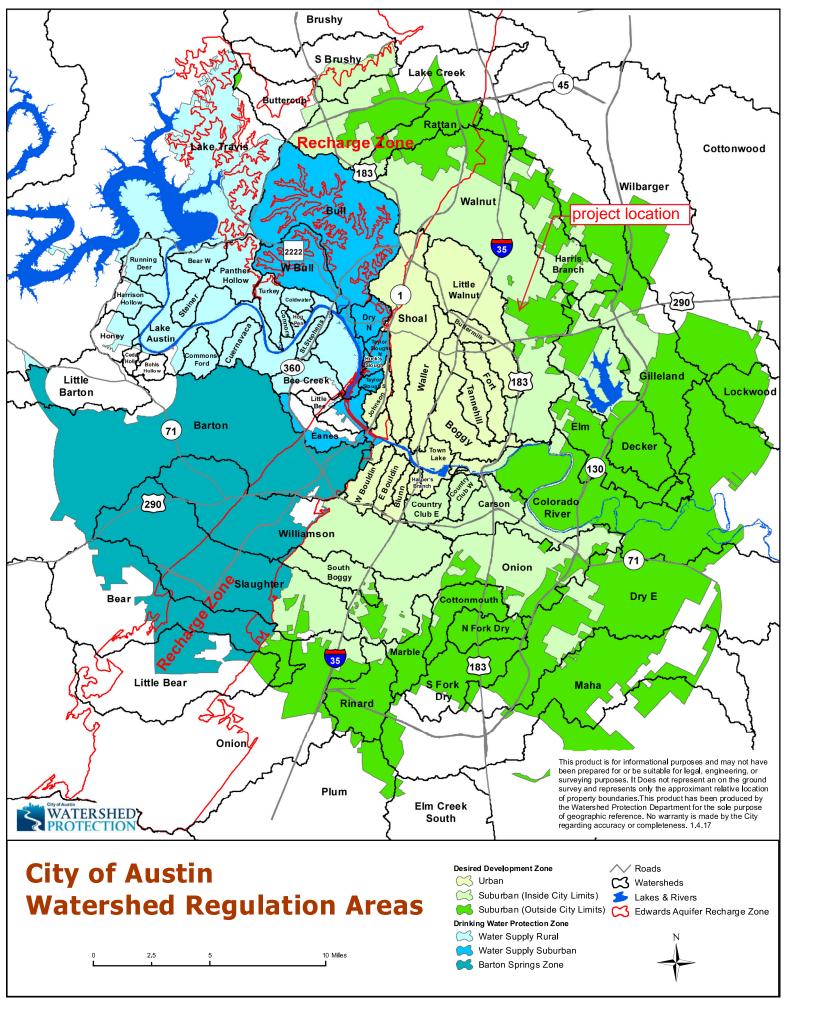
By: N

Michelle Casillas, Representative of the Director Development Services Department

Map Attachment



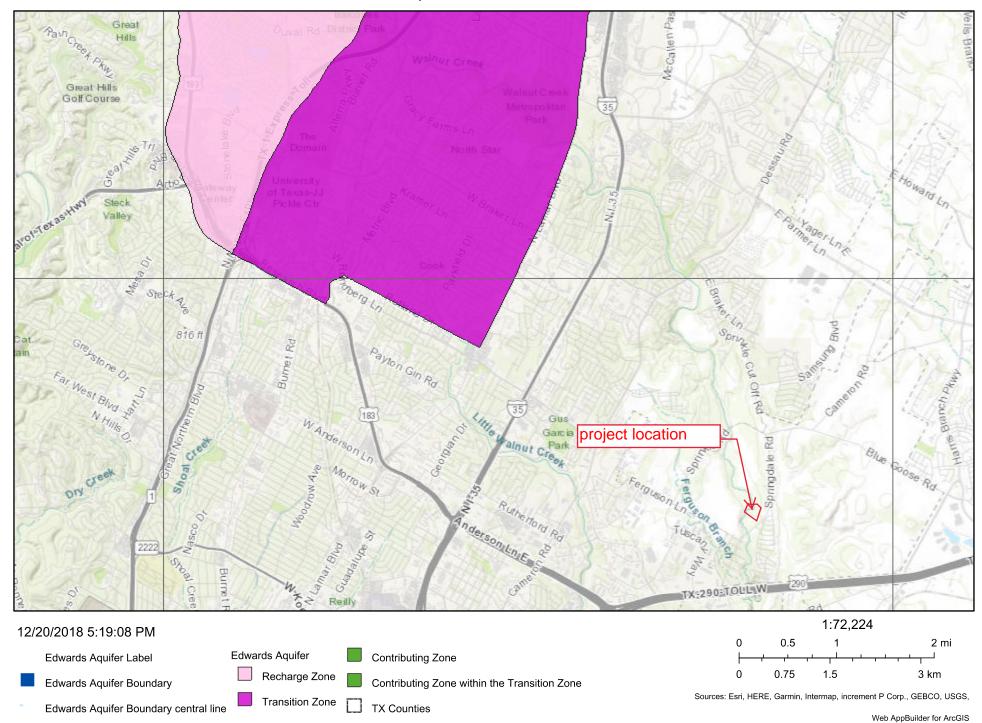
Watershed Map, 5





Edward's Aquifer Map, 6

Edwards Aquifer Viewer Custom Print



Austin Community College, City of Austin, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA | TCEQ |



FEMA Floodplain Map, 7

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Texas State Plane Central Zone (FIPS zone 4203). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <u>http://www.ngs.noaa.gov</u> or contact the National Geodetic Survey at the following address:

NGS Information Services NOAA, N/NGS12 National Geodetic Survey SSMC-3, #9202 1315 East-West Highway Silver Spring, Maryland 20910-3282 (301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at <u>http://www.ngs.noaa.gov</u>.

Base map information shown on this FIRM was provided in digital format by the City of Austin and CAPCOG. The projection used in the preparation of the FIRMs was Texas State Plane Central Zone (FIPSZONE 4203) and the horizontal datum was NAD83, GRS1980 spheroid.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

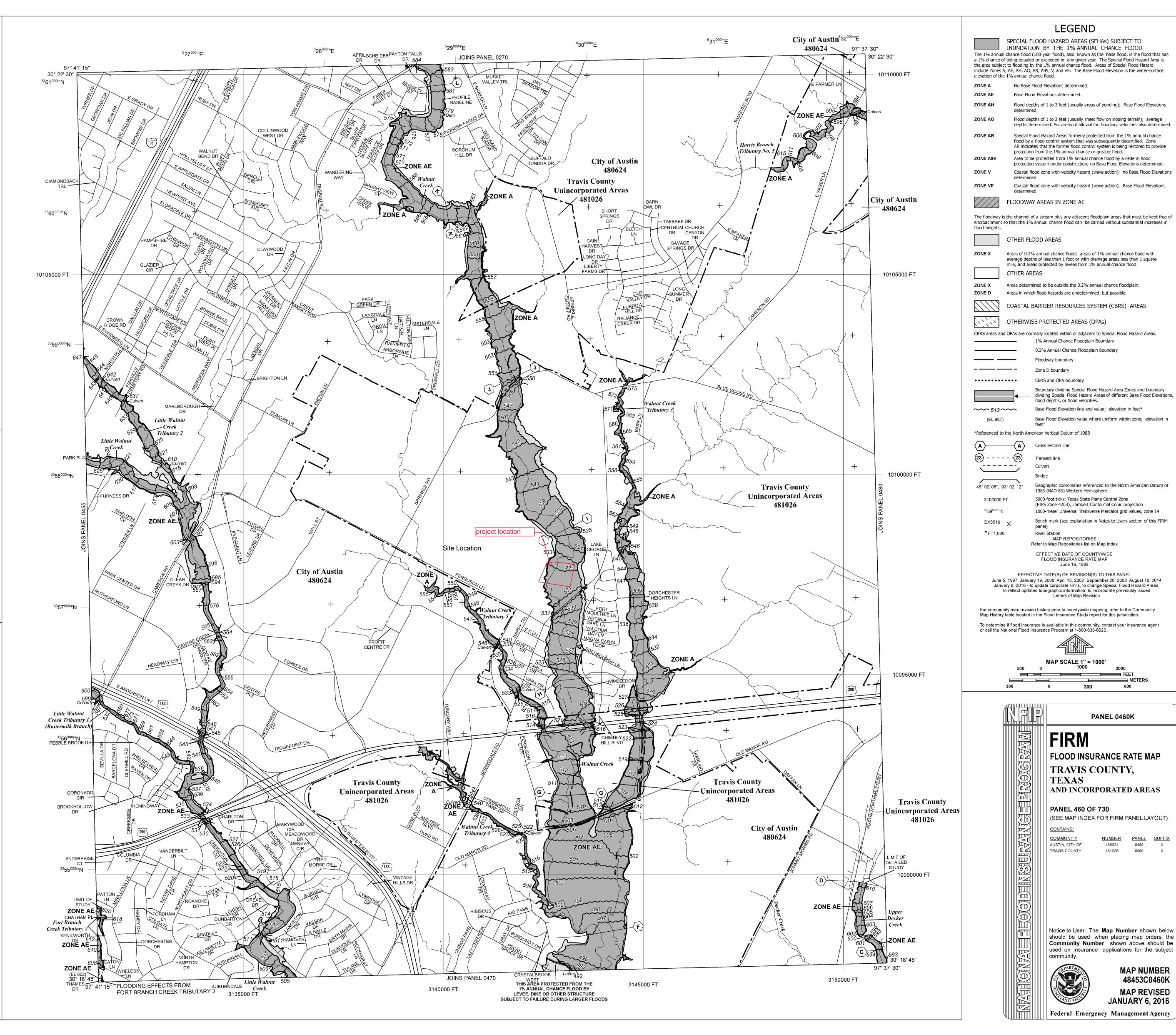
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at <u>http://msc.fema.gov.</u> Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

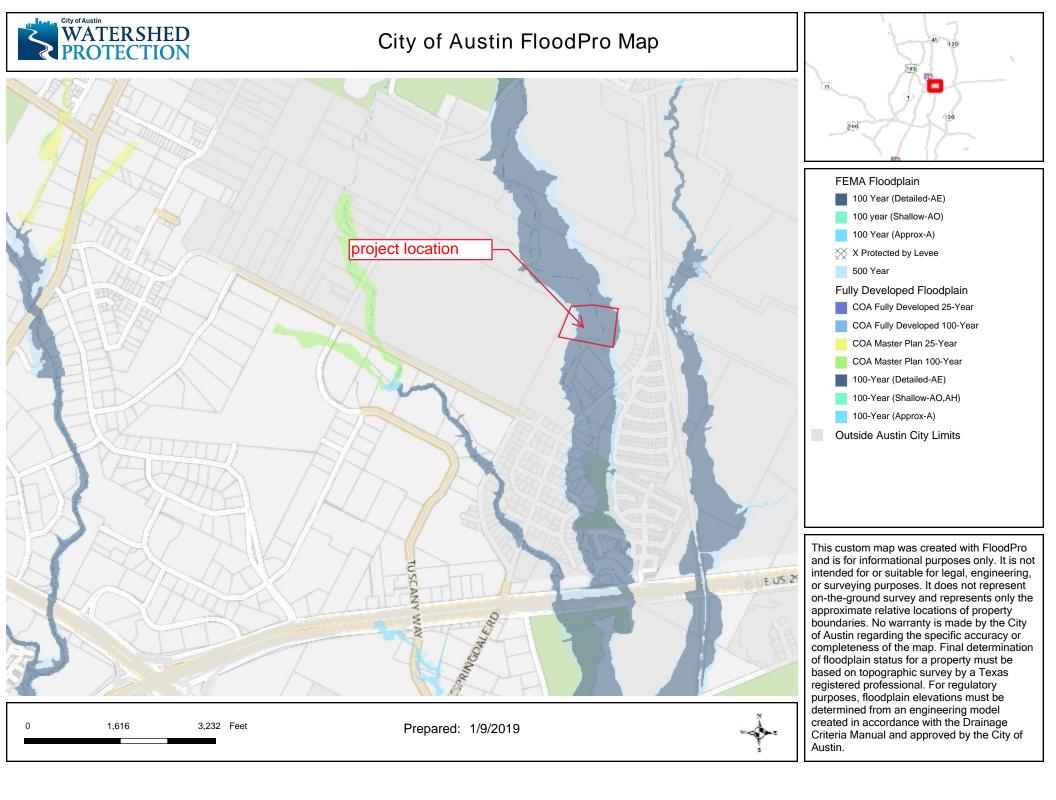
If you have **questions about this map,** how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at <u>http://www.fema.gov/business/nfip</u>.

Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system (s) shown as providing protection for areas on this panel. To mitigate flood risk in residual areas, property owners and residents are encouraged to consider flood insurance and flood-proofing or other protective measures. For more information on flood insurance, intrested parties should visit the FEMA Website at http://www.gema.gov/business/nfip/index.shtm.





COA Floodplain Map, 8





Soils Map, 9



USDA Natural Resources

Conservation Service

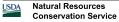
Web Soil Survey National Cooperative Soil Survey 10/20/2019 Page 1 of 3

	MAP L	EGEND		MAP INFORMATION		
Area of Inte	erest (AOI)	3	Spoil Area	The soil surveys that comprise your AOI were mapped at		
	Area of Interest (AOI)	۵	Stony Spot	1:24,000.		
Soils		0	Very Stony Spot	Warning: Soil Map may not be valid at this scale.		
	Soil Map Unit Polygons	Ŷ	Wet Spot	Enlargement of maps beyond the scale of mapping can cause		
~	Soil Map Unit Lines	∆	Other	misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of		
	Soil Map Unit Points		Special Line Features	contrasting soils that could have been shown at a more detailed		
Special P	oint Features	Water Fea		scale.		
అ	Blowout		Streams and Canals	Please rely on the bar scale on each map sheet for map		
\boxtimes	Borrow Pit	Transporta	tation	measurements.		
Ж	Clay Spot	++++	Rails	Source of Map: Natural Resources Conservation Service		
\diamond	Closed Depression	~	Interstate Highways	Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)		
X	Gravel Pit	~	US Routes	Maps from the Web Soil Survey are based on the Web Mercato		
0 0 0	Gravelly Spot	~	Major Roads	projection, which preserves direction and shape but distorts		
0	Landfill	~	Local Roads	distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more		
A	Lava Flow	Backgrou		accurate calculations of distance or area are required.		
عليه	Marsh or swamp	Duongrou	Aerial Photography	This product is generated from the USDA-NRCS certified data a		
爱	Mine or Quarry			of the version date(s) listed below.		
0	Miscellaneous Water			Soil Survey Area: Travis County, Texas Survey Area Data: Version 21, Sep 12, 2019		
õ	Perennial Water			Soil map units are labeled (as space allows) for map scales		
v	Rock Outcrop			1:50,000 or larger.		
+	Saline Spot			Date(s) aerial images were photographed: May 27, 2018—No		
°°.	Sandy Spot			20, 2018		
-	Severely Eroded Spot			The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background		
0	Sinkhole			imagery displayed on these maps. As a result, some minor		
à	Slide or Slip			shifting of map unit boundaries may be evident.		
	Sodic Spot					
ø						



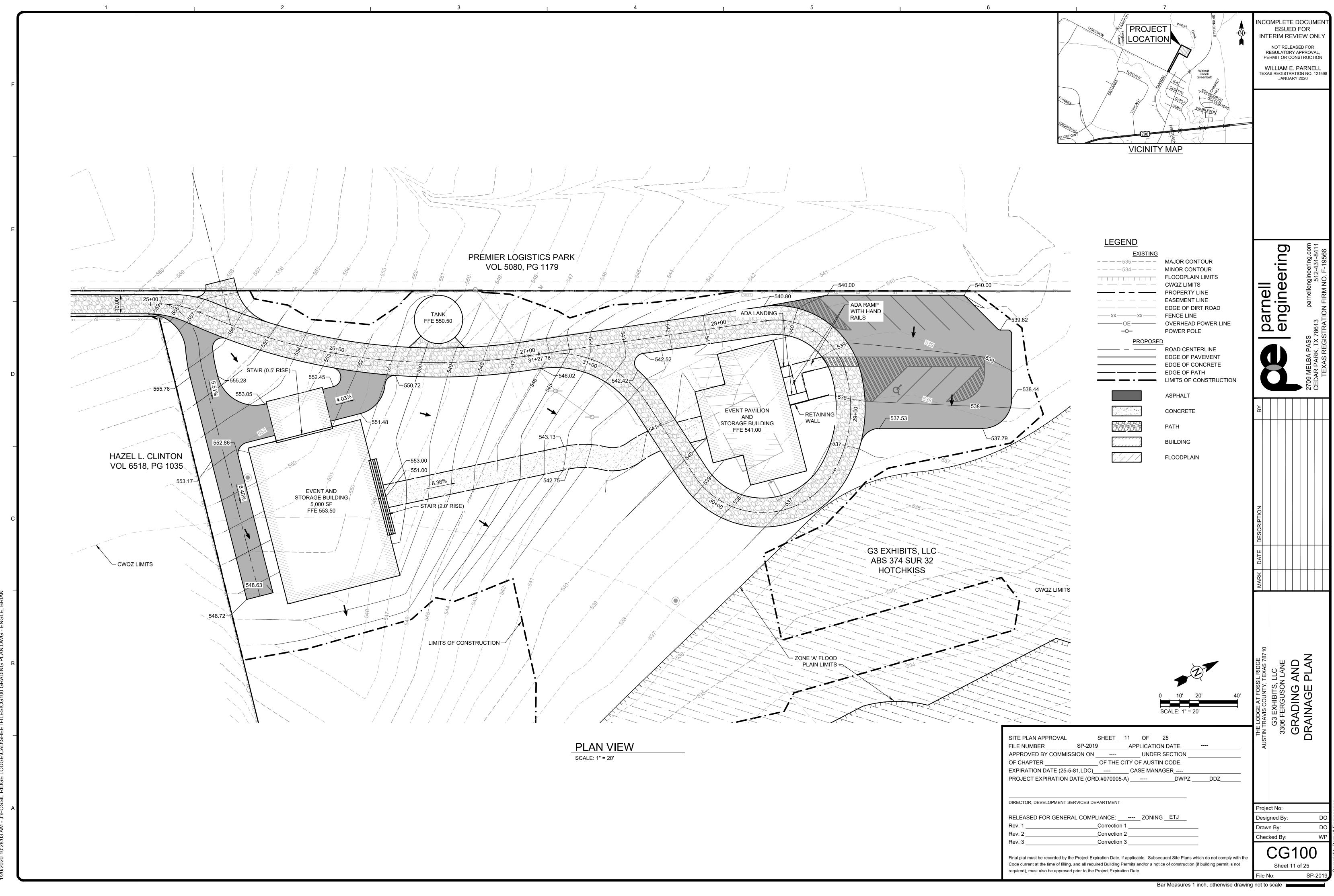
Map Unit Legend

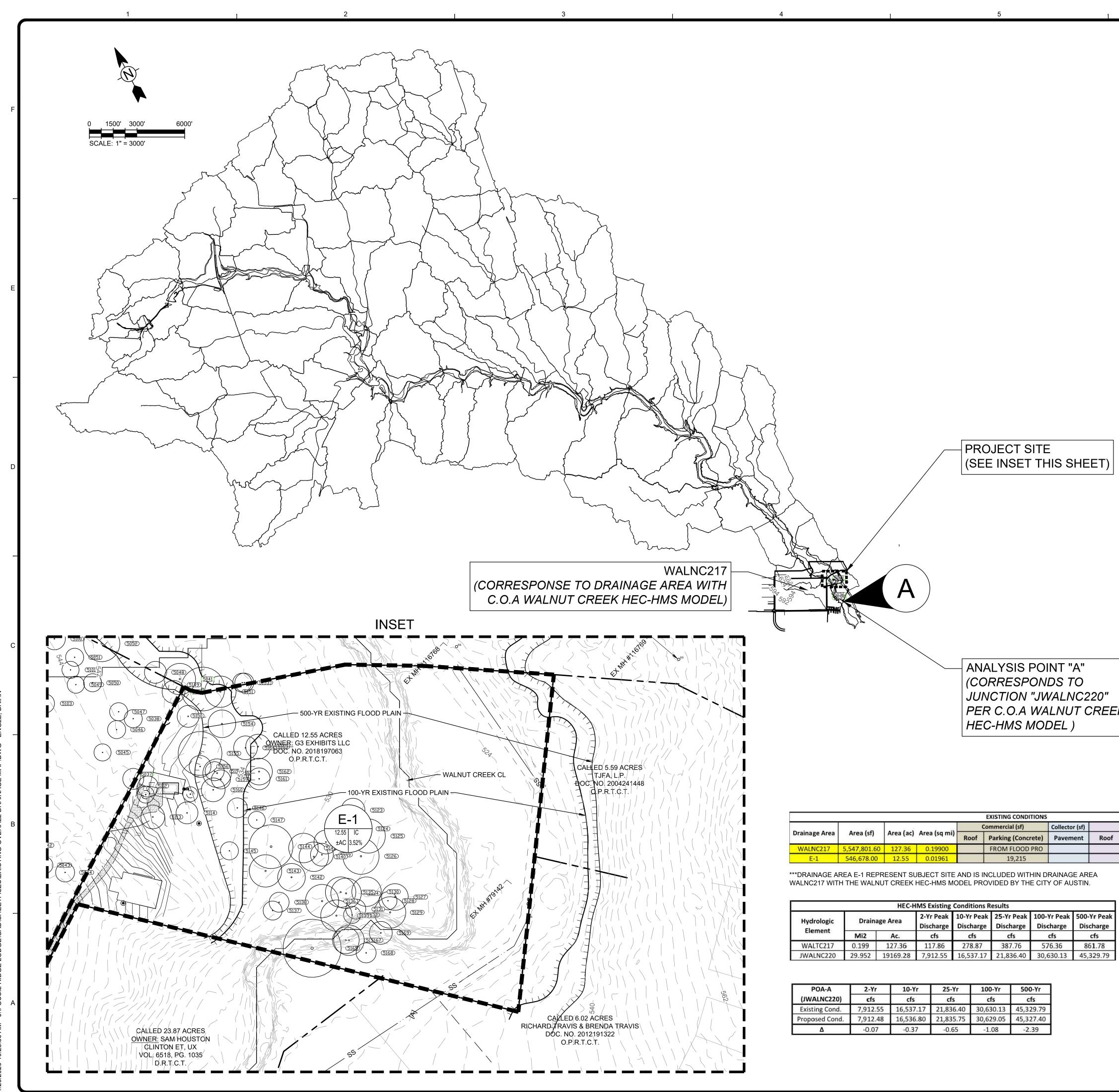
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AID	Altoga soils and Urban land, 2 to 8 percent slopes	3.9	70.7%
Fs	Oakalla soils, 0 to 1 percent slopes, channeled, frequently flooded	1.4	24.3%
LeB	Lewisville soils and Urban land, 0 to 2 percent slopes	0.3	5.0%
Totals for Area of Interest	·	5.6	100.0%





Drainage & Water Quality Plans, 10



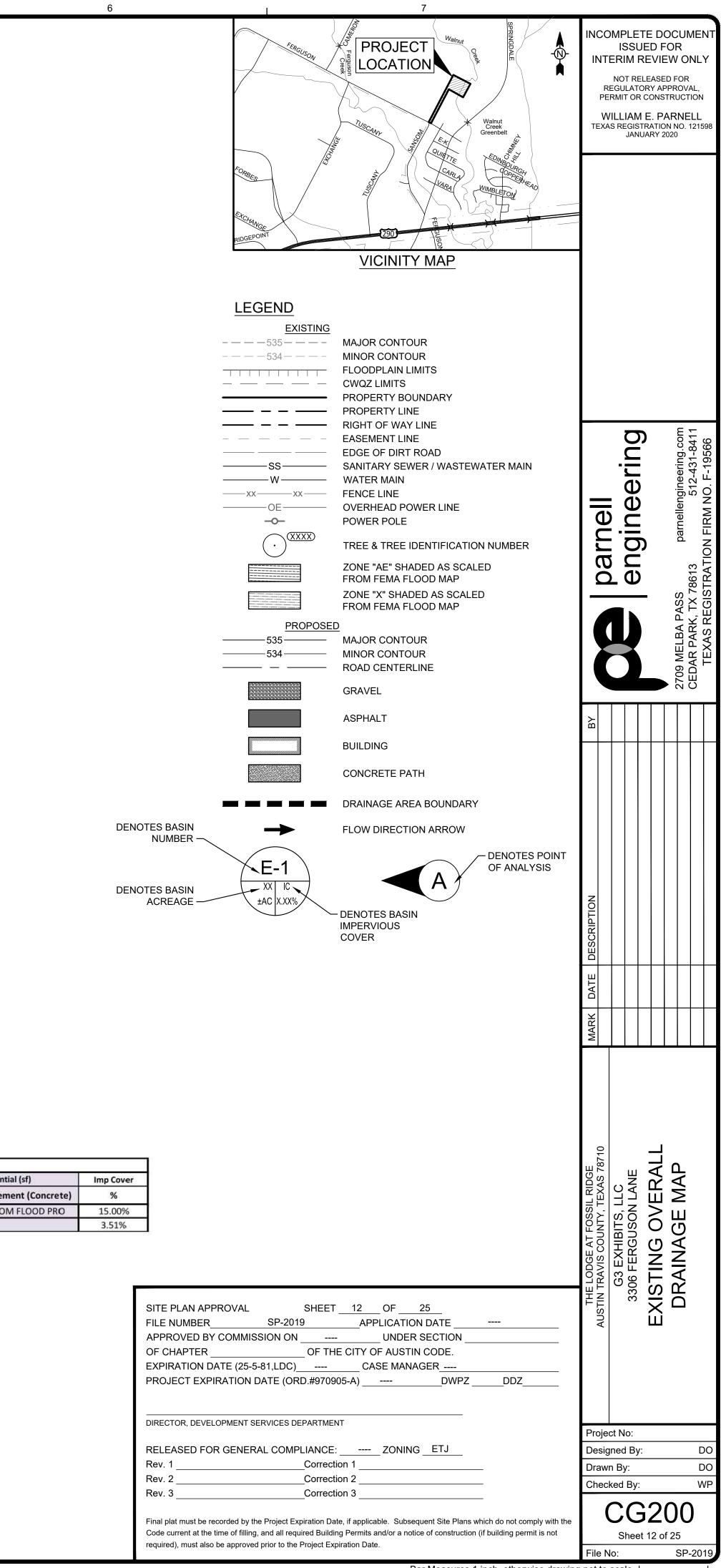


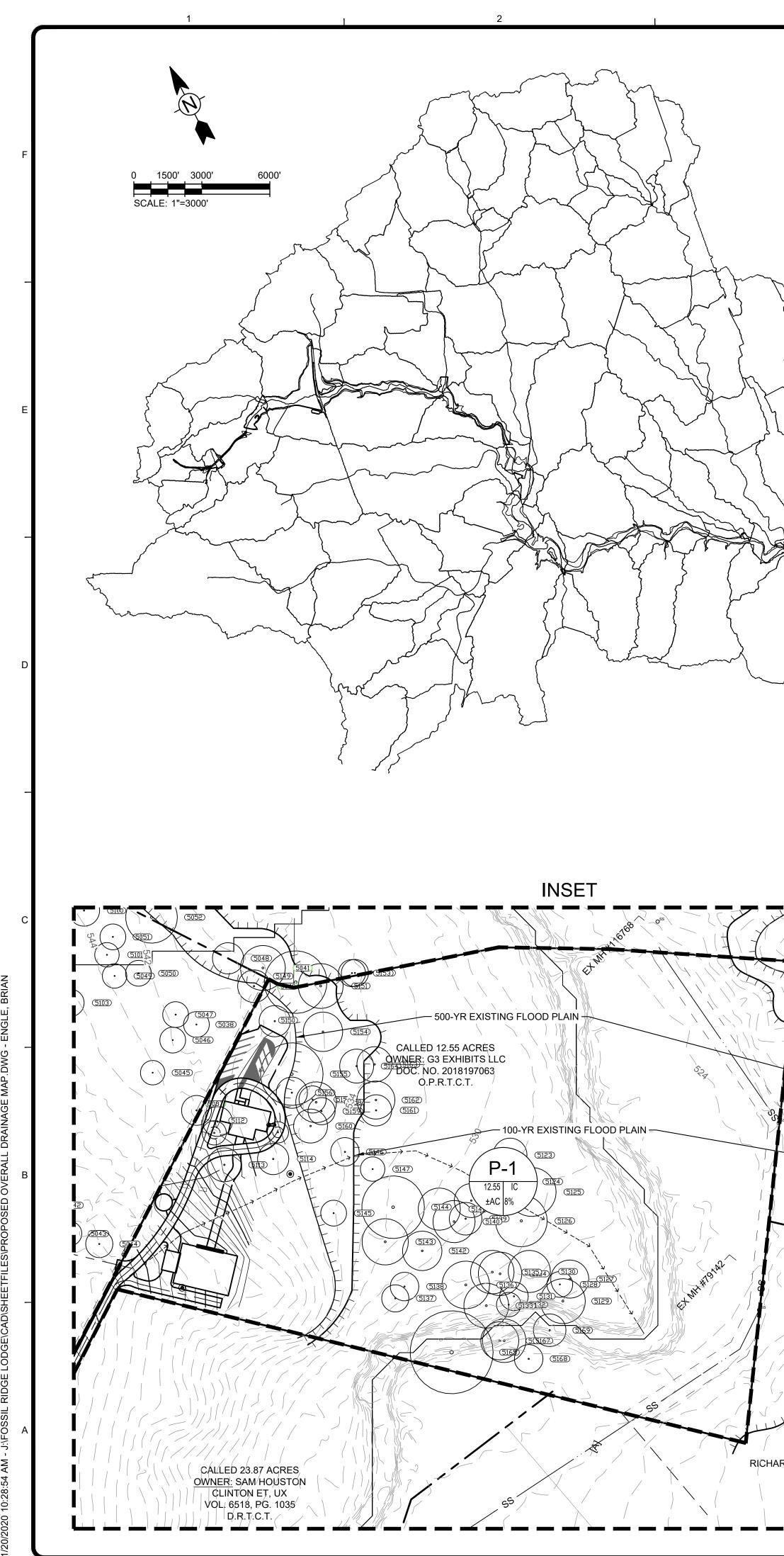
JUNCTION JWALNCZZU
PER C.O.A WALNUT CREEK
HEC-HMS MODEL)

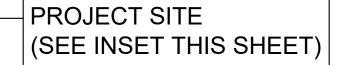
1					EXISTING CONDITIONS			
					Commercial (sf)	Collector (sf)		Residenti
Drainage Area	Area (sf)	Area (ac)	Area (sq mi)	Roof	Parking (Concrete)	Pavement	Roof	Pavem
WALNC217	5,547,801.60	127.36	0.19900		FROM FLOOD PRO			FROM
E-1	546,678.00	12.55	0.01961		19,215			

	-2.55	HEC-H	IMS Existing	Conditions R	esults		14 J
Hydrologic	Drain	age Area	2-Yr Peak Discharge	10-Yr Peak Discharge	25-Yr Peak Discharge	100-Yr Peak Discharge	500-Yr Peak Discharge
Element	Mi2	Ac.	cfs	cfs	cfs	cfs	cfs
WALTC217	0.199	127.36	117.86	278.87	387.76	576.36	861.78
JWALNC220	29.952	19169.28	7,912.55	16,537.17	21,836.40	30,630.13	45,329.79

POA-A	2-Yr	10-Yr	25-Yr	100-Yr	500-Yr
(JWALNC220)	cfs	cfs	cfs	cfs	cfs
Existing Cond.	7,912.55	16,537.17	21,836.40	30,630.13	45,329.79
Proposed Cond.	7,912.48	16,536.80	21,835.75	30,629.05	45,327.40
Δ	-0.07	-0.37	-0.65	-1.08	-2.39







ANALYSIS POINT "A" CORRESPONSE TO JUNCTION "JWALNC220" PER C.O.A WALNUT CREEK HEC-HMS MODEL .

s \ +BOC.NO 2004241448 \ / / / / / / / /	
CALLED 6.02 ACRES	
RD TRAVIS & BRENDA TRAVIS DOC. NO. 2012191322	
O.P.R.T.C.T.	

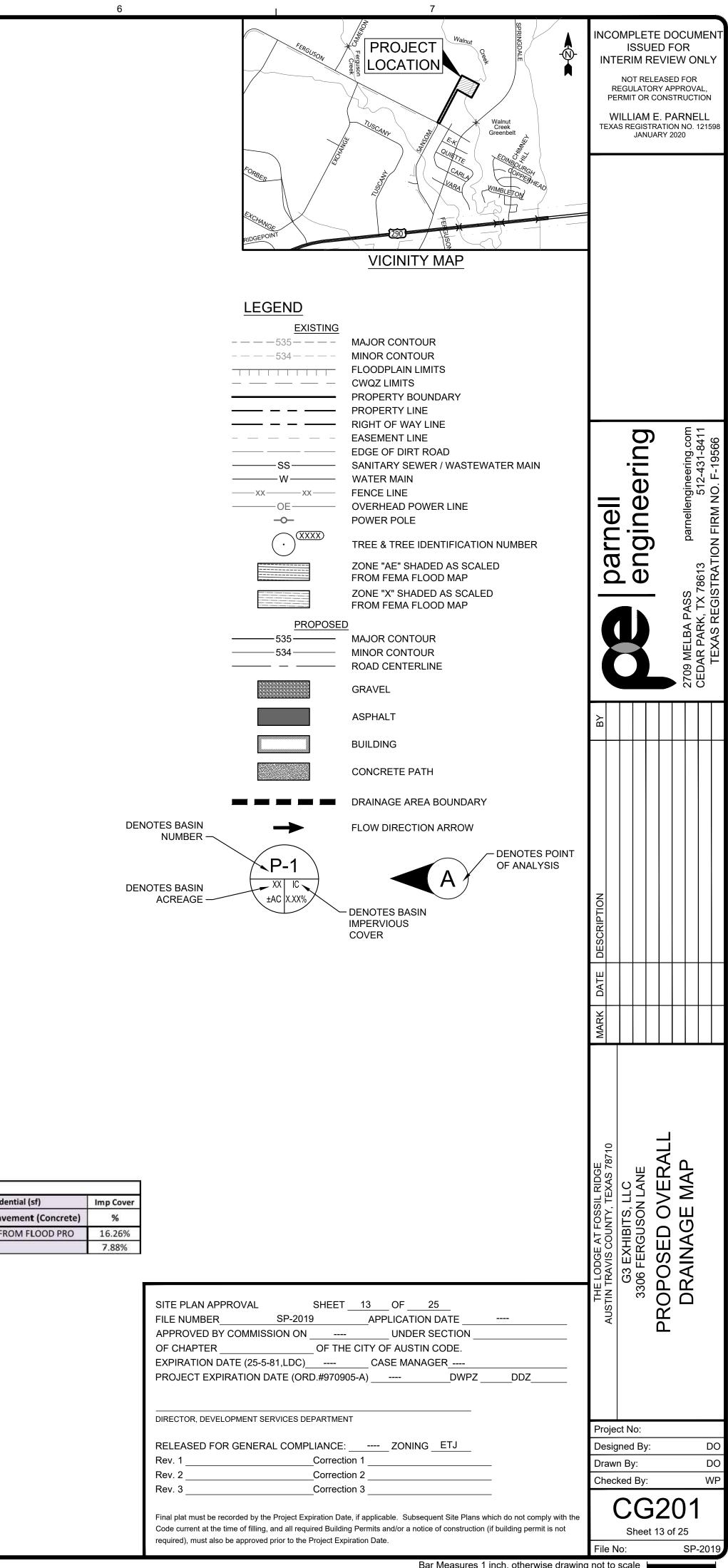
trum

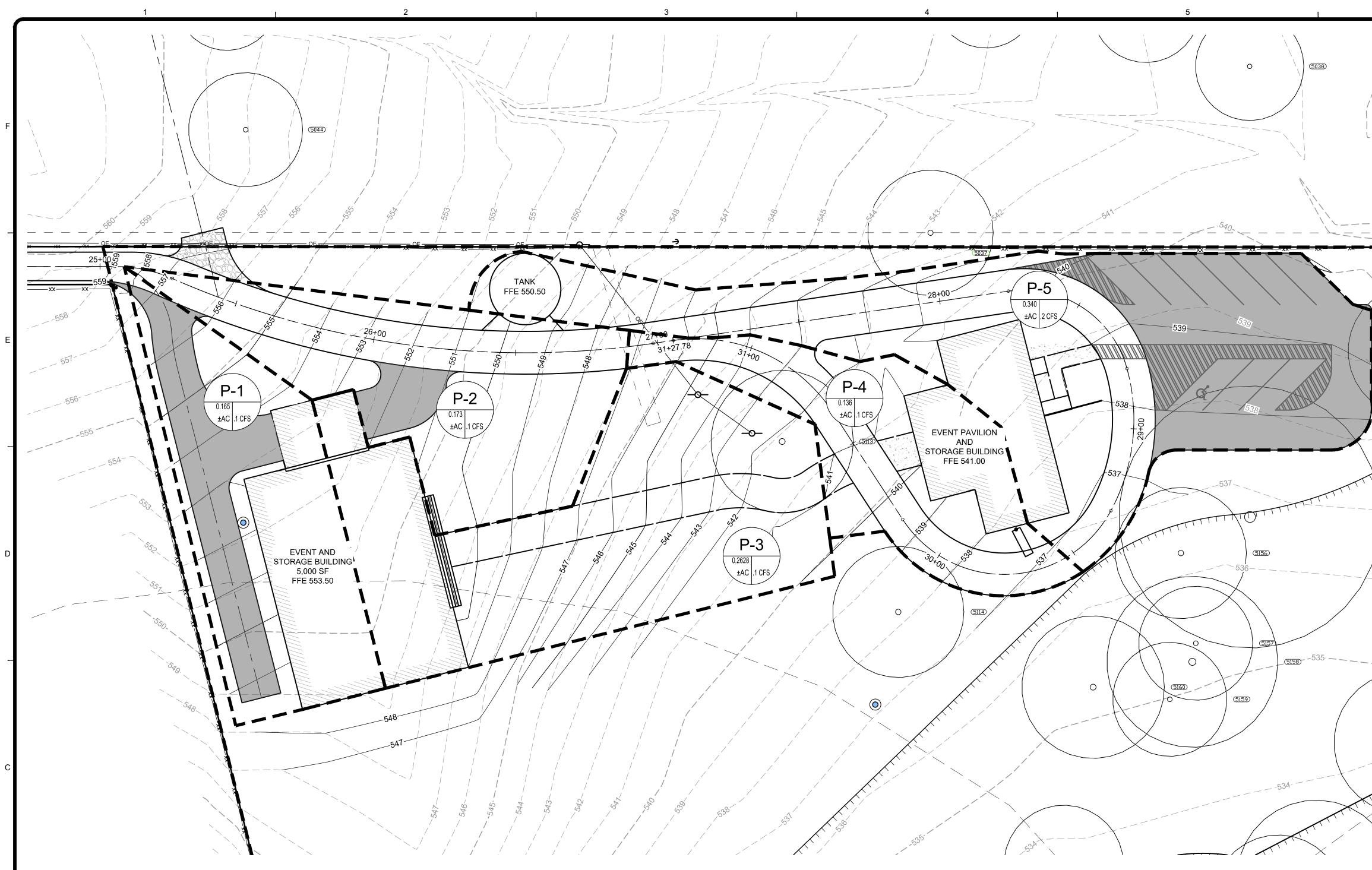
				PRO	POSED CONDITIONS			
		Viet 14 44		Co	ommercial (sf)	Collector (sf)		Resider
Drainage Area	Area (sf)	Area (ac)	Area (sq mi)	Building	Parking, Driveway	Pavement	Roof	Pave
WALN217	5,001,123.60	114.81	0.179391	0	FROM FLOOD PRO	0	0	FRC
P-1	546,678.00	12.55	0.019609	8,470	34,624	0	0	

***DRAINAGE AREA P-1 REPRESENT SUBJECT SITE AND IS INCLUDED WITHIN DRAINAGE AREA WALNC217 WITH THE WALNUT CREEK HEC-HMS MODEL PROVIDED BY THE CITY OF AUSTIN.

		HEC-H	MS Proposed	Conditions I	Results		
Hydrologic	Drain	age Area	2-Yr Peak Discharge	10-Yr Peak Discharge	25-Yr Peak Discharge	100-Yr Peak Discharge	500-Yr Peak Discharge
Element	Mi2	Ac.	cfs	cfs	cfs	cfs	cfs
WALTC217	0.1794	114.81	108.73	253.90	352.01	521.96	779.26
P-1	0.020	12.55	19.56	48.36	67.13	98.05	142.02
JWALNC220	29.952	19169.28	7,912.48	16,536.80	21,835.75	30,629.05	45,327.40

POA-A	2-Yr	10-Yr	25-Yr	100-Yr	500-Yr
(JWALNC220)	cfs	cfs	cfs	cfs	cfs
Existing Cond.	7,912.55	16,537.17	21,836.40	30,630.13	45,329.79
Proposed Cond.	7,912.48	16,536.80	21,835.75	30,629.05	45,327.40
Δ	-0.07	-0.37	-0.65	-1.08	-2.39





Austin IDF (Zone 2) Curve Coefficients (Per Atlas 14 Revision)

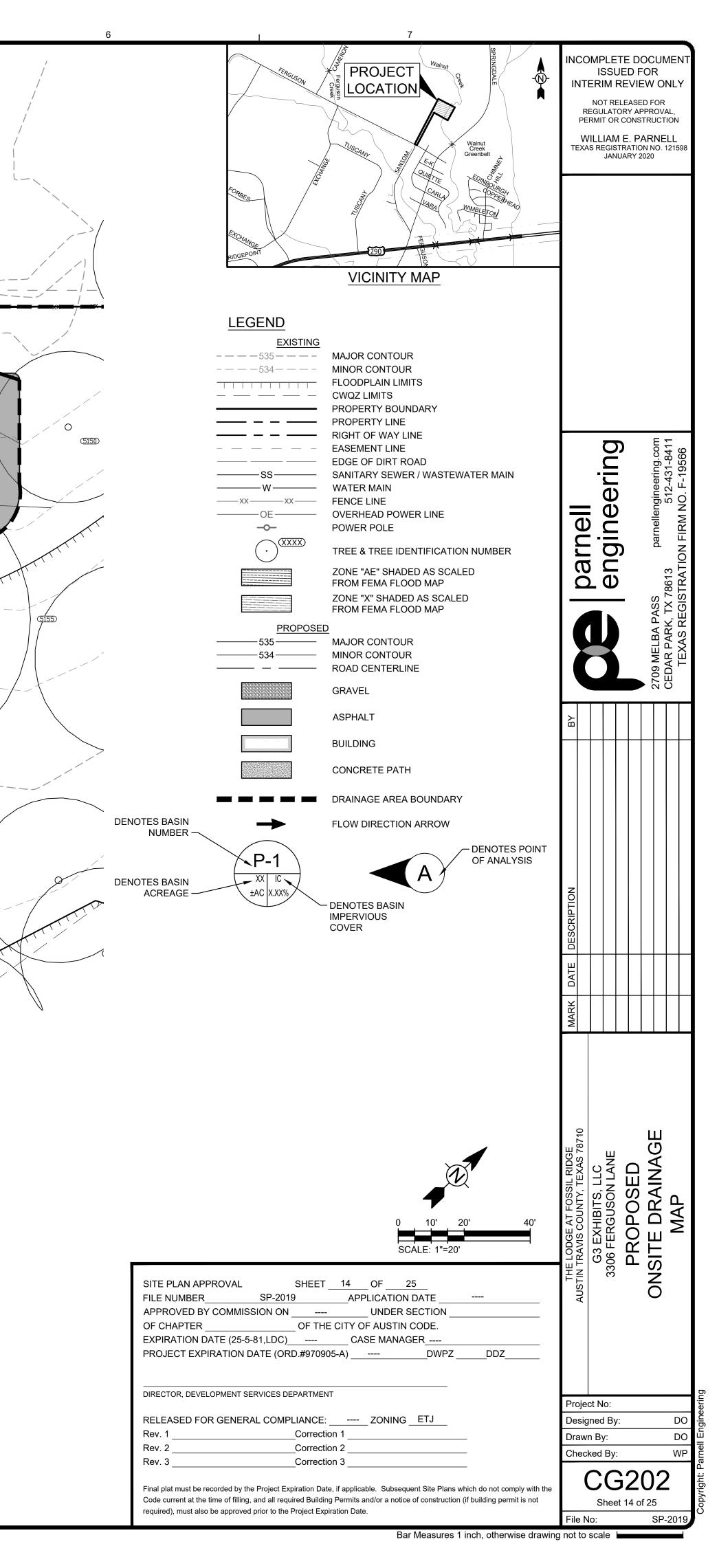
Year	а	b	C
2	46.99	9.575	0.7517
5	56.57	9.176	0.7402
10	60.75	8.361	0.7185
25	64.56	7.382	0.6814
50	70.73	7.016	0.6681
100	76.9	6.726	0.6554
500	80.36	5.219	0.5979

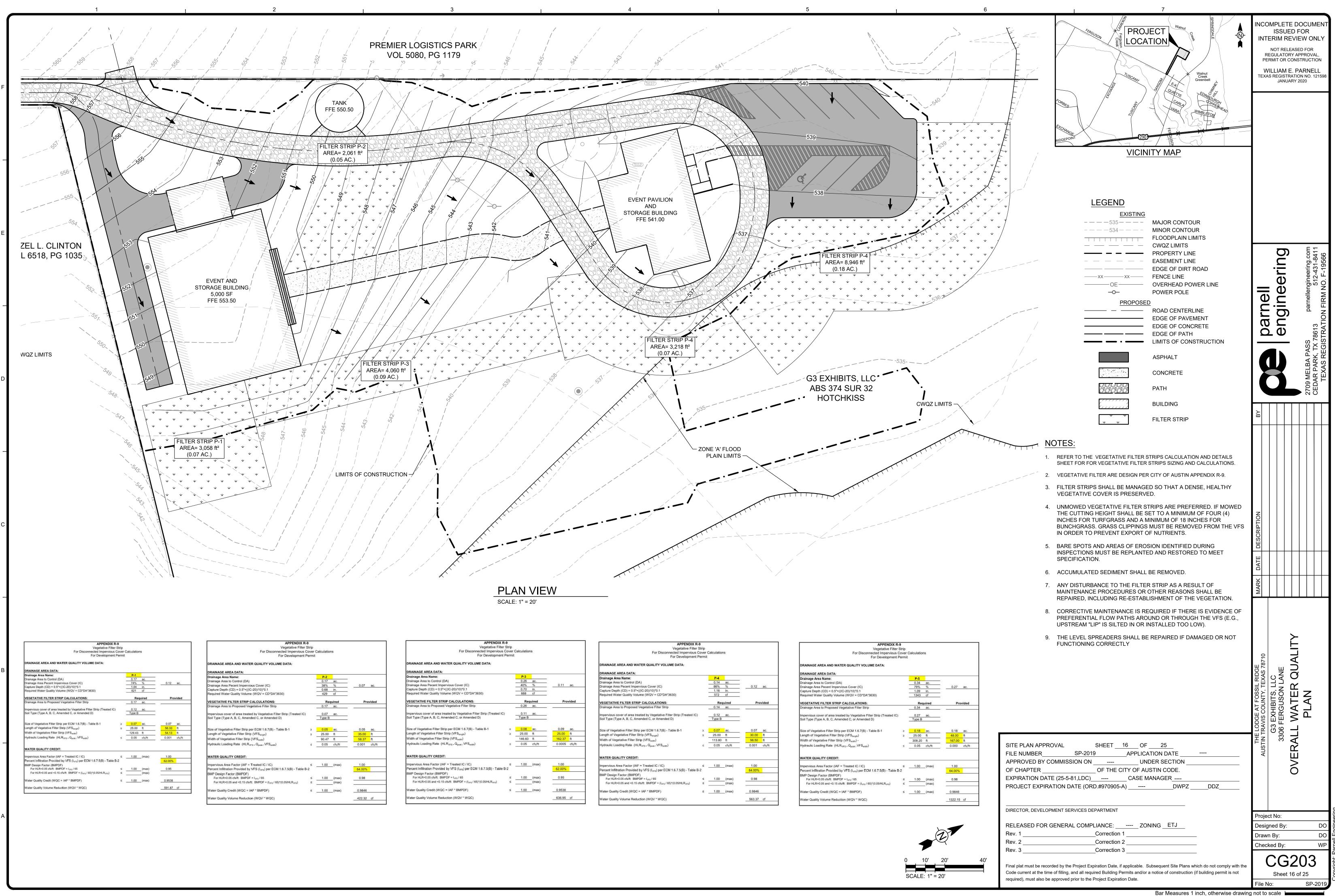
FOSSIL RIDGE - DRAINAGE SUMMARY TABLE (RATIONAL METHOD) (2yr, 3hr)

Drainage Area	6.1 X X	Estimated	Impervious Cover	22270. Crest 52			2-Yr. Flow	S
No.	Area (ac.)	Impervious Cover (ac.)	(%)	T _c (min.)	Pervious Cover Condition	C ₂	i ₂ (in/hr)	$Q_2(cfs)$
P-1	0.1650 ac	0.1214 ac	74%	5.0 min.	Dev - Grass - Good Condition - Flat, 0-2%	0.61	0.77 in/hr	0.08 cfs
P-2	0.1730 ac	0.0663 ac	38%	5.0 min.	Dev - Grass - Fair Condition - Flat, 0-2%	0.44	0.77 in/hr	0.06 cfs
P-3	0.2628 ac	0.1051 ac	40%	5.0 min.	Dev - Grass - Fair Condition - Flat, 0-2%	0.45	0.77 in/hr	0.09 cfs
P-4	0.1360 ac	0.1168 ac	86%	5.0 min.	Dev - Grass - Fair Condition - Flat, 0-2%	0.68	0.77 in/hr	0.07 cfs
P-5	0.3400 ac	0.2679 ac	79%	5.0 min.	Dev - Grass - Fair Condition - Flat, 0-2%	0.64	0.77 in/hr	0.17 cfs

***2YR, 3HR STORM EVENTS CALCULATIONS ARE UTILIZED TO DESIGNED THE VEGETATIVE FILTER STRIPS PER CITY OF AUSTIN'S E.C.M 1.6.7.B

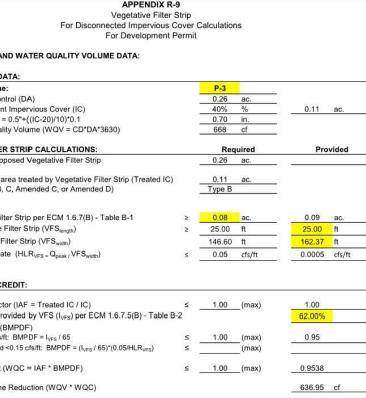
0/2020 10:29:07 AM - J:\FOSSIL RIDGE LODGE\CAD\SHEETFILES\PROPOSED ONSITE DRAINAGE MAP.DWG - ENGLE, BRIAN





APPENDIX R-9 Vegetative Filter S For Disconnected Impervious C For Development Po	trip over (Calculatior	s		
DRAINAGE AREA AND WATER QUALITY VOLUME DATA:					
DRAINAGE AREA DATA:					
Drainage Area Name:		P-1			
Drainage Area to Control (DA)		0.17	ac.		
Drainage Area Pecent Impervious Cover (IC)		74%	%	0.12	ac.
Capture Depth (CD) = 0.5"+((IC-20)/10)*0.1		1.04	in.		
Required Water Quality Volume (WQV = CD*DA*3630)		621	cf		
VEGETATIVE FILTER STRIP CALCULATIONS:		Reg	uired	Pro	video
Drainage Area to Proposed Vegetative Filter Strip		0.17	ac.	-	
Impervious cover of area treated by Vegetative Filter Strip (Treated IC)		0.12	ac.		
Soil Type (Type A, B, C, Amended C, or Amended D)		Type B			
Size of Vegetative Filter Strip per ECM 1.6.7(B) - Table B-1	2	0.07	ac.	0.07	ac.
Length of Vegetative Filter Strip (VFS _{length})	5	25.00	ft	56.33	ft
Width of Vegetative Filter Strip (VFS _{width})		129.43	ft	54.13	ft
Hydraulic Loading Rate (HLR _{VFS =} Q _{peak} , VFS _{width})	≤	0.05	cfs/ft	0.001	cfs/
WATER QUALITY CREDIT:					
Impervious Area Factor (IAF = Treated IC / IC)	≤	1.00	(max)	1.00	
Percent Infiltration Provided by VFS (Ives) per ECM 1.6.7.5(B) - Table B-2	(-	62.00%	
BMP Design Factor (BMPDF) For HLR<0.05 cfs/ft: BMPDF = I _{VES} / 65	5	1.00	(mar)	0.95	
		1.00	- (max)	0.95	
For HLR>0.05 and <0.15 cfs/ft: BMPDF = (I_{VFS} / 65)*(0.05/HLR _{VFS})	5		(max)		
Water Quality Credit (WQC = IAF * BMPDF)	≤	1.00	(max)	0.9538	
Water Quality Volume Reduction (WQV * WQC)				591.87	cf

APPENDIX R	-9				
Vegetative Filter					
For Disconnected Impervious		Calculation	าร		
For Development			151		
	A-1750A-0497				
DRAINAGE AREA AND WATER QUALITY VOLUME DATA:					
DRAINAGE AREA DATA:					
Drainage Area Name:		P-2			
Drainage Area to Control (DA)		0.17	ac.		
Drainage Area Pecent Impervious Cover (IC)		38%	%	0.07	ac.
Capture Depth (CD) = 0.5"+((IC-20)/10)*0.1		0.68	in.	-	
Required Water Quality Volume (WQV = CD*DA*3630)		429	cf		
VEGETATIVE FILTER STRIP CALCULATIONS:		Rec	uired	Pro	ovided
Drainage Area to Proposed Vegetative Filter Strip	-	0.17	ac.	12	
Impervious cover of area treated by Vegetative Filter Strip (Treated IC)	0.07	ac.		
Soil Type (Type A, B, C, Amended C, or Amended D)		Type B			
Size of Vegetative Filter Strip per ECM 1.6.7(B) - Table B-1	2	0.05	ac.	0.05	ac.
Length of Vegetative Filter Strip (VFS _{length})	≥	25.00	ft	35.00	ft
Width of Vegetative Filter Strip (VFS _{width})		90.47	ft	58.37	ft
Hydraulic Loading Rate (HLR _{VFS =} Q _{peak /} VFS _{width})	≤	0.05	cfs/ft	0.001	cfs/ft
WATER QUALITY CREDIT:					
Impervious Area Factor (IAF = Treated IC / IC)	s	1.00	_(max)	1.00	
Percent Infiltration Provided by VFS (I _{VFS}) per ECM 1.6.7.5(B) - Table I	B-2		stani Vil	64.00%	
BMP Design Factor (BMPDF)					
For HLR<0.05 cfs/ft: BMPDF = I _{VFS} / 65	≤	1.00	(max)	0.98	
For HLR>0.05 and <0.15 cfs/ft: BMPDF = (I_{VFS} / 65)*(0.05/HLR_{VFS})	≤	-	(max)		
Water Quality Credit (WQC = IAF * BMPDF)	≤	1.00	_(max)	0.9846	
Water Quality Volume Reduction (WQV * WQC)				422.32	cf



APPENDIX F	2-9				
Vegetative Filte	Strip				
For Disconnected Impervious			ns		
For Development	Permit				
DRAINAGE AREA AND WATER QUALITY VOLUME DATA:					
DRAINAGE AREA DATA: Drainage Area Name:		P-4			
Drainage Area to Control (DA)		0.14	ac.		
Drainage Area Pecent Impervious Cover (IC)		86%	%	0.12	ac.
Capture Depth (CD) = 0.5"+((IC-20)/10)*0.1		1.16	in.	0.12	ac.
Required Water Quality Volume (WQV = CD*DA*3630)		572	cf		
VEGETATIVE FILTER STRIP CALCULATIONS:		Reg	uired	Pro	vided
Drainage Area to Proposed Vegetative Filter Strip		0.14	ac.		
Impervious cover of area treated by Vegetative Filter Strip (Treated IC)	0.12	ac.		
Soil Type (Type A, B, C, Amended C, or Amended D)		Type B			
Size of Vegetative Filter Strip per ECM 1.6.7(B) - Table B-1	2	0.07	ac.	0.07	ac.
Length of Vegetative Filter Strip (VFS _{length})	2	25.00	ft	30.00	ft
Width of Vegetative Filter Strip (VFS _{width})		113.80	ft	98.50	ft
Hydraulic Loading Rate (HLR _{VFS = Q_{peak} / VFS_{width})}	\$	0.05	cfs/ft	0.001	cfs/ft
WATER QUALITY CREDIT:					
Impervious Area Factor (IAF = Treated IC / IC)	≤	1.00	(max)	1.00	
Percent Infiltration Provided by VFS (IVES) per ECM 1.6.7.5(B) - Table	B-2		-0.0	64.00%	
BMP Design Factor (BMPDF) For HLR<0.05 cfs/ft: BMPDF = I _{VFS} / 65	5	1.00	(max)	0.98	
For HLR>0.05 and <0.15 cfs/ft: BMPDF = $(I_{VFS} / 65)^*(0.05/HLR_{VFS})$	5	1.00	(max)	0.00	
Water Quality Credit (WQC = IAF * BMPDF)	≤	1.00	_(max)	0.9846	
Water Quality Volume Reduction (WQV * WQC)				563.37	cf

APPENDIX	APPENDIX R-9						
Vegetative Filter Strip							
For Disconnected Impervious	S Cover	Calculation					
For Developmen	For Development Permit						
DRAINAGE AREA AND WATER QUALITY VOLUME DATA:							
DRAINAGE AREA DATA:							
Drainage Area Name:		P-5					
Drainage Area to Control (DA)							
Drainage Area Pecent Impervious Cover (IC)		79%					
Capture Depth (CD) = 0.5"+((IC-20)/10)*0.1		1.09					
Required Water Quality Volume (WQV = CD*DA*3630)							
VEGETATIVE FILTER STRIP CALCULATIONS:		Req					
Drainage Area to Proposed Vegetative Filter Strip		0.34					
Impervious cover of area treated by Vegetative Filter Strip (Treated IC	C)	0.27					
Soil Type (Type A, B, C, Amended C, or Amended D)							
Size of Vegetative Filter Strip per ECM 1.6.7(B) - Table B-1		0.18					
Length of Vegetative Filter Strip (VFS	≥	-					
	2	25.00					
Width of Vegetative Filter Strip (VFS _{width}) -		308.20					
Hydraulic Loading Rate (HLR _{VFS =} Q _{peak /} VFS _{width})	≤	0.05					
WATER QUALITY CREDIT:							
Impervious Area Factor (IAF = Treated IC / IC)	5	1.00					
Percent Infiltration Provided by VFS (Ives) per ECM 1.6.7.5(B) - Table							
BMP Design Factor (BMPDF)							
For HLR<0.05 cfs/ft: BMPDF = Ives / 65	5	1.00					
For HLR>0.05 and <0.15 cfs/ft: BMPDF = (I_{VFS} / 65)*(0.05/HLR _{VFS})	≤						
Water Quality Credit (WQC = IAF * BMPDF)	≤	1.00					
Water Quality Volume Reduction (WQV * WQC)							





Overall Utility and Wastewater Plan, 11

