



ITEM FOR ENVIRONMENTAL COMMISSION AGENDA

COMMISSION MEETING DATE: 11/03/2021

NAME & NUMBER OF PROJECT: Park 183 Buildings 6 & 7 (SP-2021-0072C)

NAME OF APPLICANT OR ORGANIZATION: Nick Brown, P.E., LDC

LOCATION: 4201 W Parmer Lane, Suite C – 100, Austin, TX 78727

COUNCIL DISTRICT: District 2

ENVIRONMENTAL REVIEW STAFF: Tunde Daramola, Environmental Review Specialist Senior, DSD,
512-974-6316, Babatunde.Daramola@austintexas.gov

WATERSHED: Onion Creek Watershed, Suburban, Desired Development Zone

REQUEST: Variance request is as follows:
Request to vary from LDC 25-8-342 to allow fill over 4 feet up to 17 feet

STAFF RECOMMENDATION: Staff recommends this variance, having determined the findings of fact to have been met.

STAFF CONDITION: Provide structural containment of fill with retaining walls.



Development Services Department
Staff Recommendations Concerning Required Findings

Project Name: Park 183 Buildings 6 & 7
Ordinance Standard: Watershed Protection Ordinance / Comprehensive Watershed Ordinance / Other
Variance Request: **To allow for fill exceeding 4ft for building construction**

Include an explanation with each applicable finding of fact.

A. Land Use Commission variance determinations from Chapter 25-8-41 of the City Code:

1. The requirement will deprive the applicant of a privilege available to owners of similarly situated property with approximately contemporaneous development subject to similar code requirements.

Yes. The variance will not be providing a special privilege to the applicant. The proposed buildings are similar in size to similarly situated property. The style of the building proposes a single finished floor building with a 4 -foot loading dock and flat truck court. In order to facilitate this type of development, significant levelling is required to enhance maneuverability into the loading docks, allowing trucks to operate safely on site.

The limits of the fill do extend beyond the building as shown in the cut/fill exhibit but is contained with retaining wall structures designed in conjunction with the building walls, so the building is supported. Prior projects in this industrial development zone had a similar situation. A prime example is Crossroads Logistics Center SP-2021-0015D. Land Use Commission variances were granted to LDC 25-8-341 and 342 to allow cut and fill up to 14.3 feet and 16.5 feet, respectively.

2. The variance:
 - a) Is not necessitated by the scale, layout, construction method, or other design decision made by the applicant, unless the design decision provides greater overall environmental protection than is achievable without the variance;

Yes. The industrial use for this project requires level loading docks, parking, and drive aisles. Effective accessibility to portions of the building would not be achievable without this variance.

- b) Is the minimum deviation from the code requirement necessary to allow a reasonable use of the property;

Yes. There is significant fall across the property which poses challenges with cut/fill for a large single finished floor building. The development requires fill beyond 4ft for an efficient and operable building and site. In order to facilitate this type of development, a minimum deviation from code to allow fill up to 17ft is necessary. Structural containment will also be provided to contain and minimize the amount of fill.

- c) Does not create a significant probability of harmful environmental consequences.

Yes. The variance does not create a significant probability of harmful consequences. The variance is a minimum deviation from code to allow for reasonable use of the property. The fill will be minimized and structurally contained with retaining walls. Retaining walls will also reduce the amount of sloping required to return to existing grade.

3. Development with the variance will result in water quality that is at least equal to the water quality achievable without the variance.

Yes. The project is served by an existing water quality/wet pond designed to treat this development. All stormwater run from this site will be captured and conveyed to the existing pond.

B. The Land Use Commission may grant a variance from a requirement of Section 25-8-422 (*Water Supply Suburban Water Quality Transition Zone*), Section 25-8-452 (*Water Supply Rural Water Quality Transition Zone*), Section 25-8-482 (*Barton Springs Zone Water Quality Transition Zone*), Section 25-8-368 (*Restrictions on Development Impacting Lake Austin, Lady Bird Lake, and Lake Walter E. Long*), or Article 7, Division 1 (*Critical Water Quality Zone Restrictions*), after determining that::

1. The criteria for granting a variance in Subsection (A) are met;

Yes / No [provide summary of justification for determination]

2. The requirement for which a variance is requested prevents a reasonable, economic use of the entire property;

Yes / No [provide summary of justification for determination]

3. The variance is the minimum deviation from the code requirement necessary to allow a reasonable, economic use of the entire property.

Yes / No [provide summary of justification for determination]

Staff Determination: Staff determines that the findings of fact have been met. Staff recommends the following condition:

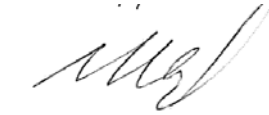
Provide structural containment of the fill with retaining walls.

Environmental Reviewer
(DSD)



Date ____
10/21/2021

Environmental Review
Manager (DSD)



Mike McDougal

Date 10-22-2021

Environmental Officer
(WPD)


Liz Johnston

Date 10-22-2021

September 24, 2021



ENVIRONMENTAL COMMISSION VARIANCE APPLICATION FORM

August 26, 2021

Denise Lucas, Director
Planning and Zoning Department
City of Austin
6310 Wilhelmina Delco Drive
Austin, TX 78752

RE: Variance Request Letter
Park 183 Buildings 6 & 7
4800 Distribution Drive & 7900 Industry Way
SP-2021-0072C
§25-8-342 Fill Requirements

Dear Ms. Lucas:

Please accept the following environmental commission variance application form and supporting materials as our request to allow for fill in excess of four (4) feet for the proposed development of the Park 183 Buildings 6 & 7 site development permit (SP-2021-0072C) located at 4800 Distribution Drive and 7900 Industry Way.

The subject project is a 19.128-acre tract of land located within the City of Austin Full Purpose Jurisdiction. The project is located within the Onion Creek Watershed classified by the City of Austin as a Suburban Watershed and is currently zoned LI-CO and is not located within the Edwards Aquifer Recharge Zone.

The Park 183 Buildings 6 & 7 site development permit proposes two (2) limited warehousing and distribution facilities totaling approximately 300,000 square feet with associated loading docks, surface parking, and utility connections.

Water quality and detention is provided in the existing wet pond designed and constructed with SP-2016-0360C, Park 183 – Building 2. We have analyzed the existing pond with Atlas 14 rainfall data and have determined the 100-year storm is contained within the pond walls and does not overtop the emergency spillway.

The property is zoned LI-CO and proposes limited warehousing and distribution facilities. Projects surrounding this development, Park 183 Buildings 1, 2, 3, 5 and Park 183 Fedex, are developed with similar sized buildings ranging between 115,000 SF to 160,000 SF.

This project requires a variance for the following code section:

Division 5. – Cut, Fill, and Spoil.

§25-8-342 – Fill Requirements

- (A) Fill on a tract of land may not exceed four feet of depth, except:
 - (1) in an urban watershed;
 - (2) in a roadway right-of-way;
 - (3) under a foundation with sides perpendicular to the ground, or with pier and beam construction;
 - (4) for construction of a water quality control or detention facility and appurtenances for conveyance such as swales, drainage ditches, and diversion berms, if:
 - (a) the design and location of the facility within the site minimize the amount of fill over four feet;
 - (b) the fill is the minimum necessary for the appropriate functioning of the facility; and
 - (c) the fill is not located on a slope with a gradient of more than 15 percent or within 100 feet of a classified waterway;
 - (5) for utility construction or a wastewater drain field; or
 - (6) in a state-permitted sanitary landfill located in the extraterritorial jurisdiction, if:
 - (a) the fill is derived from the landfill operation;
 - (b) the fill is not placed in a critical water quality zone or a 100-year floodplain;
 - (c) the landfill operation has an erosion and restoration plan approved by the City; and
 - (d) all other applicable City Code provisions are met.
- (B) A fill area must be restored and stabilized.
- (C) Fill for a roadway must be contained within the roadway clearing width described in Section 25-8-322 (Clearing For A Roadway).

The City of Austin Land Development Code allows Land Use Commission Variances per the following:

Division 3. – Variances

§25-8-41 Land Use Commission Variances.

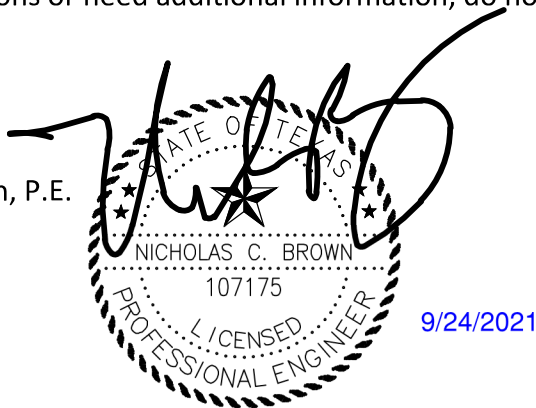
- (A) It is the applicant's burden to establish that the findings described in this Section have been met. Except as provided in Subsections (B) and (C), the Land Use Commission may grant a variance from a requirement of this subchapter after determining that:
 - (1) the requirement will deprive the applicant of a privilege available to owners of other similarly situated property with approximately contemporaneous development subject to similar code requirements;
 - (2) the variance:

- (a) is not necessitated by the scale, layout, construction method, or other design decision made by the applicant, unless the design decision provides greater overall environmental protection than is achievable without the variance;
 - (b) is the minimum deviation from the code requirement necessary to allow a reasonable use of the property; and
 - (c) does not create a significant probability of harmful environmental consequences; and
 - (3) development with the variance will result in water quality that is at least equal to the water quality achievable without the variance.
- (B) The Land Use Commission may grant a variance from a requirement of Section 25-8-422 (Water Quality Transition Zone), Section 25-8-452 (Water Quality Transition Zone), Section 25-8-482 (Water Quality Transition Zone), Section 25-8-652 (Restrictions on Development Impacting Lake Austin, Lady Bird Lake, and Lake Walter E. Long), or Article 7, Division 1 (Critical Water Quality Zone Restrictions), after determining that:
- (1) the criteria for granting a variance in Subsection (A) are met;
 - (2) the requirement for which a variance is requested prevents a reasonable, economic use of the entire property; and
 - (3) the variance is the minimum deviation from the code requirement necessary to allow a reasonable, economic use of the entire property.
- (C) The Land Use Commission may not grant a variance from a requirement of Article 13 (Save Our Springs Initiative).
- (D) The Land Use Commission shall prepare written findings of fact to support the grant or denial of a variance request under this section.

Please accept the following findings of fact concerning the need for the variance. If you have any questions or need additional information, do not hesitate to contact our office.

Sincerely,

Nick Brown, P.E.



9/24/2021

PROJECT DESCRIPTION

Applicant Contact Information

Name of Applicant	LDC
Street Address	4201 W Parmer Lane, Suite C-100

City State ZIP Code	Austin, Texas 78727
Work Phone	512-872-6696
E-Mail Address	Nick.brown@ldcteams.com
Variance Case Information	
Case Name	Park 183 Buildings 6 & 7
Case Number	SP-2021-0072C
Address or Location	4800 Distribution Dr. & 7900 Industry Way
Environmental Reviewer Name	Babatunde Daramola
Environmental Resource Management Reviewer Name	
Applicable Ordinance	Watershed Protection Ordinance (WPO)
Watershed Name	Onion Creek
Watershed Classification	<input type="checkbox"/> Urban <input checked="" type="checkbox"/> Suburban <input type="checkbox"/> Water Supply Suburban <input type="checkbox"/> Water Supply Rural <input type="checkbox"/> Barton Springs Zone
Edwards Aquifer Recharge Zone	<input type="checkbox"/> Barton Springs Segment <input type="checkbox"/> Northern Edwards Segment <input checked="" type="checkbox"/> Not in Edwards Aquifer Zones
Edwards Aquifer Contributing Zone	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Distance to Nearest Classified Waterway	0.25 Miles
Water and Waste Water service to be provided by	Austin Water Utility
Request	The variance request is as follows (Cite code references: 25-8-342

Impervious cover	Existing	Proposed
square footage:	0	666,468
acreage:	0	15.3
percentage:	0	80

Provide general description of the property (slope range, elevation range, summary of vegetation / trees, summary of the geology, CWQZ, WQTZ, CEFs, floodplain, heritage trees, any other notable or outstanding characteristics of the property)	<p>The site generally slopes from South to North ranging between +/-525 to 503. Slopes vary but do not exceed 15% in any direction except for a man-made drainage swale on the north side of the property.</p> <p>0-15% slopes; 19.13 acres</p> <p>15-25% slopes; 0 acres</p> <p>25-35% slopes; 0 acres</p> <p>Over 35% slopes; 0 acres</p> <p>Site vegetation generally consists of tall grasses, weeds, and tree cover. The tree cover is mostly hackberry, mesquite, and chinaberry less than 19-inches in diameter mixed with some dead trees.</p> <p>Soils are composed of surface clays then lean clays, sands and gravels, then Austin Group limestone</p> <p>The site does not have CWQZ, WQTZ, CEF's, or floodplain identified</p>	
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Clearly indicate in what way the proposed project does not comply with current Code (include maps and exhibits)	The site complies with all applicable code except fill exceeding 4-feet depicted on the exhibit included
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FINDINGS OF FACT

As required in LDC Section 25-8-41, in order to grant a variance the Land Use Commission must make the following findings of fact:

Include an explanation with each applicable finding of fact.

Project:

Ordinance:

A. Land Use Commission variance determinations from Chapter 25-8-41 of the City Code:

1. The requirement will deprive the applicant of a privilege available to owners of similarly situated property with approximately contemporaneous development subject to similar code requirements.

Yes / No

This project lay within an industrial park zoned LI-CO with similar warehouse buildings ranging between 115,000 SF to 160,000 SF in size. The style of building proposes a single finished floor building with a 4-foot loading dock and relatively flat truck court where semi-trucks can maneuver into loading docks. These criteria are necessary for an efficient and operable building and site.

Existing slopes on the property eliminate the ability to develop this property with an industrial warehouse building. As noted above, this type of development requires significant leveling to allow trucks to operate on the site.

2. The variance:
 - a) Is not necessitated by the scale, layout, construction method, or other design decision made by the applicant, unless the design decision provides greater overall environmental protection than is achievable without the variance;

Yes / No

The industrial user for this project requires level loading docks, parking, and drive aisles. Without the variance, the property would not be reasonably developed to comply with the LI-CO zoning and uses.

It is also noted, accessible access to portions of the building would not be achievable without this variance.

The structural engineer has also provided a letter stating the proposed structural system is safer and more reliable.

- b) Is the minimum deviation from the code requirement necessary to allow a reasonable use of the property;

Yes / No

The project is zoned LI-CO and the proposed use is allowed in this zoning classification. The proposed buildings are similar in size to the adjacent developments permitted in this industrial park and designed to limit the departure from the code. It is not possible to design a project with 4-foot loading docks and large single floor buildings without exceeding the allowable fill.

The building is supported by the structural design as well as the surrounding retaining walls. These retaining walls are designed to limit the extents of fill and reduce the limits in which fill would otherwise be required to return to existing grade.

- c) Does not create a significant probability of harmful environmental consequences.

Yes / No

The proposed design limits the amount of fill in lieu of earth slopes. By retaining the fill, this will reduce the amount of sloping required to return to existing grade and limit the fill to 8-feet or less. Please reference the previously mentioned structural letter explaining the benefit to the proposed design as support.

3. Development with the variance will result in water quality that is at least equal to the water quality achievable without the variance.

Yes / No

This development is served by an existing water quality/wet pond designed and constructed under SP-2016-0360C to treat this development. All storm water runoff from this site will be captured and conveyed to the existing pond.

B. Additional Land Use Commission variance determinations for a requirement of Section 25-8-422 (Water Quality Transition Zone), Section 25-8-452 (Water Quality Transition Zone), Article 7, Division 1 (Critical Water Quality Zone Restrictions), or Section 25-8-368 (Restrictions on Development Impacting Lake Austin, Lady Bird Lake, and Lake Walter E. Long):

1. The criteria for granting a variance in Subsection (A) are met;

N/A

2. The requirement for which a variance is requested prevents a reasonable, economic use of the entire property;

N/A

3. The variance is the minimum deviation from the code requirement necessary to allow a reasonable, economic use of the entire property.

N/A

**Variance approval requires all above affirmative findings.

Exhibits for Commission Variance

- Aerial photos of the site
- Site photos
- Aerial photos of the vicinity
- Context Map—A map illustrating the subject property in relation to developments in the vicinity to include nearby major streets and waterways
- Topographic Map - A topographic map is recommended if a significant grade change on the subject site exists or if there is a significant difference in grade in relation to adjacent properties.
- For cut/fill variances, a plan sheet showing areas and depth of cut/fill with topographic elevations.
- Site plan showing existing conditions if development exists currently on the property
- Proposed Site Plan- full size electronic or at least legible 11x17 showing proposed development, include tree survey if required as part of site or subdivision plan
- Environmental Map – A map that shows pertinent features including Floodplain, CWQZ, WQTZ, CEFs, Setbacks, Recharge Zone, etc.
- An Environmental Resource Inventory pursuant to ECM 1.3.0 (*if required by 25-8-121*)
- Applicant's variance request letter



August 20, 2021

Mr. Clayton Baca
Trammell Crow Company
500 W. 2nd Street, Suite 1400
Austin, TX 78701

Re: Park 183 – Phase 4 (Building B6 & B7)
Foundation Design Considerations for Extreme Grading Conditions

Clayton:

The proposed buildings on this site will be constructed utilizing load-bearing tilt-up concrete perimeter wall panels to match the previously constructed surrounding buildings in this same business park development. Conventional tilt-up wall panel construction relies upon the lower portion of the wall panel to serve as a "retaining wall" that separates and restrains the soil beneath the building floor slab from the surrounding exterior grading conditions. Using conventional tilt-up wall panel design, there is a practical limit to the grade difference between the building finish floor elevation and the final exterior grade of about 7 to 8 feet in height. If the grade difference becomes greater than this height, the wall panels become progressively taller & heavier and it becomes difficult or impossible to safely lift and erect the individual wall panel units using commonly available mobile crane equipment. The thickness & reinforcing of the wall panel elements also start to be controlled by the lower level retaining wall forces rather than by the floor-to-roof span above that is normally the critical design criterion.

At the north & northeast portions of this site, we have a situation where the existing natural ground level grades are as much as 15 feet below the finish floor elevations for the proposed new buildings. For the above stated reasons, it is more economical, safe & construction friendly to utilize a separate system of site retaining walls to elevate & permanently support the new building pads so that conventional tilt-up wall panel design and construction can be used above. The site retaining walls must be located several feet beyond the building footprint to prevent overlapping interference between the tilt-up panel foundations (drilled concrete piers) and the separate retaining wall foundation system (relatively wide continuous strip footings). This arrangement also provides the added benefit of a perimeter band of elevated soil against the building that can accommodate sidewalk pathways to required ingress and egress doorways. We strongly recommend this method of construction at this site in order to provide a foundation system that has reliable performance characteristics without the need for unusual and/or expensive basement wall type designs.

Let us know if you have further questions or comments concerning this matter.

Best Regards,

A handwritten signature in blue ink that reads "Kent Penrod".

Kent Penrod
Chief of Production



0 500' 1,000'
SCALE: 1" = 500'

PROJECT LOCATION

BURLESON RD

DISTRIBUTION DRIVE

INDUSTRY WAY

US HW 183



TBPE NO: 16384 - TBPLS NO: 10194101
4201 W. PARKER LANE, SUITE C-100
AUSTIN, TX 78727
512.872.6896
LDCTEAMS.COM

PARK 183 BUILDINGS 6 & 7 AERIAL LOCATION MAP



0 600' 1,200'

SCALE: 1" = 600'

PARK 183 BUILDING 1

PROJECT LOCATION

BURLESON RD

PARK 183 BUILDING 2

DISTRIBUTION DRIVE

PARK 183 BUILDING 5

INDUSTRY WAY

US HW 183

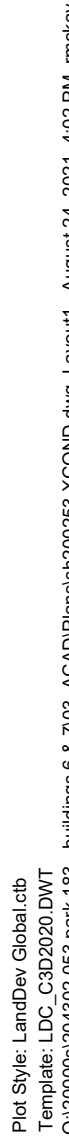
PARK 183 FEDEX

PARK 183 BUILDING 3



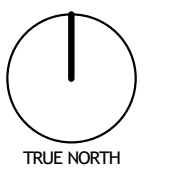
TBPE NO: 16384 - TBPLS NO: 10194101
4201 W. PARKER LANE, SUITE C-100
AUSTIN, TX 78727
512.872.6896
LDCTEAMS.COM

PARK 183 BUILDINGS 6 & 7 CONTEXT MAP



Park 183 Building 6

7900 Industry Way
Austin, TX 78744



3 PR1 08/23/21
0 ISSUE FOR 06/01/21
CONSTRUCTION

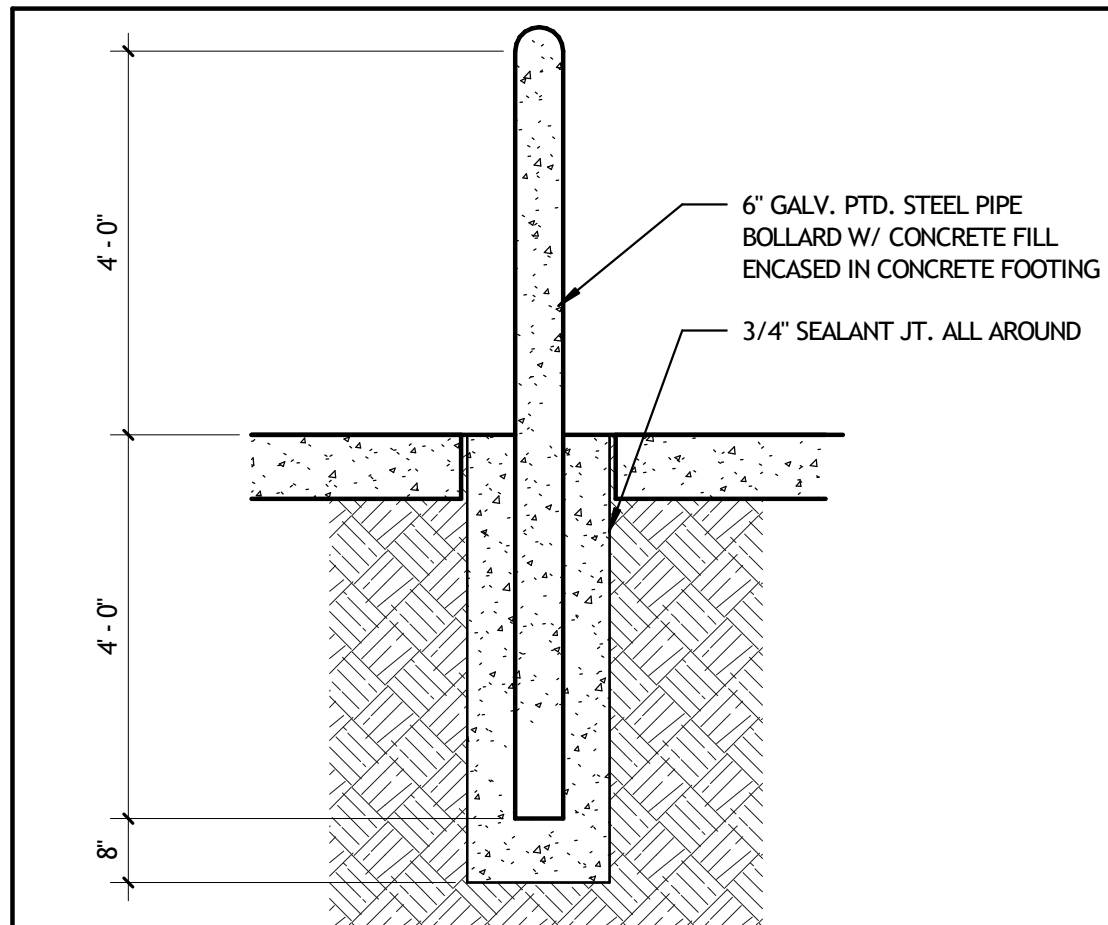
△ Issues

Project Number: 16.21242.00

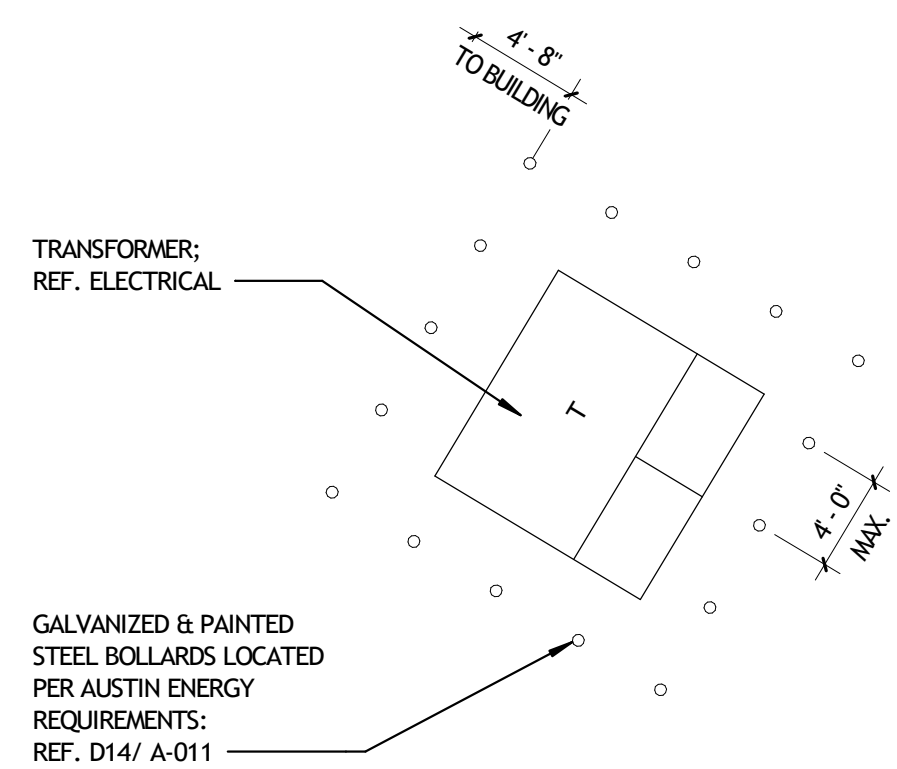
Project Lead: MJ

ARCHITECTURAL SITE
REFERENCE PLAN

A-011



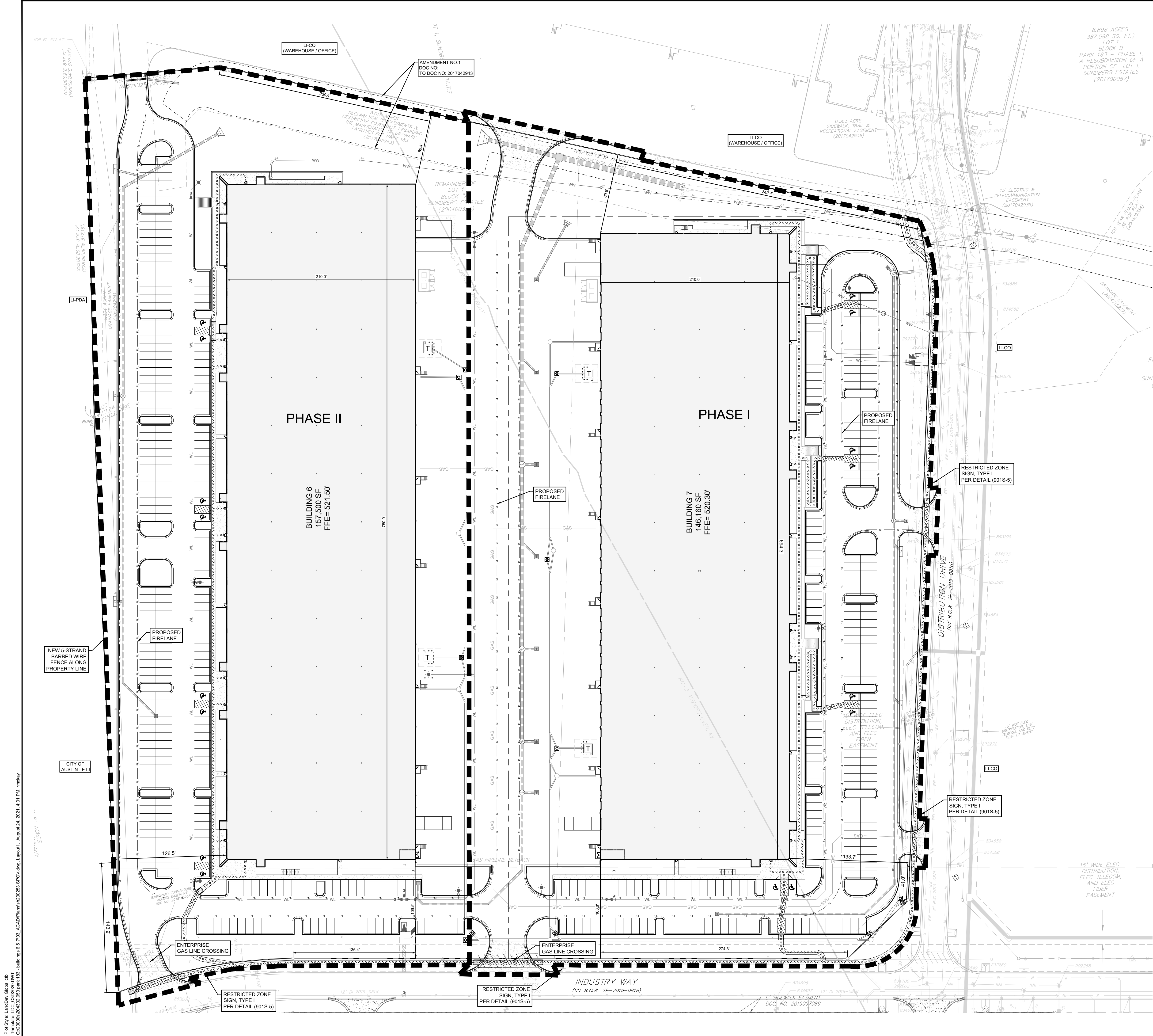
D13 BOLLARD DETAIL
1/2" = 1'-0"



A13 TRANSFORMER PLAN
1/8" = 1'-0"



A1 ARCHITECTURAL SITE PLAN
1" = 60'-0"



- LEGEND**
- 8.34 EXISTING MINOR CONTOUR
 - 8.35 EXISTING MAJOR CONTOUR
 - 8.35 PROPOSED MAJOR CONTOUR
 - 8.35 PROPOSED MINOR CONTOUR
 - 8.35 BOUNDARY
 - 8.35 EASEMENT
 - 8.35 RETAINING WALL
 - 8.35 CURB/EOP
 - 8.35 SIDEWALK (BY BUILDER)
 - 8.35 ADA RAMP
 - 8.35 STORM SEWER JUNCTION BOX
 - 8.35 STORM SEWER MAHNOLE
 - 8.35 CURB INLET
 - 8.35 AREA INLET
 - 8.35 GRATE INLET
 - 8.35 YARD INLET
 - 8.35 CONCRETE HEADWALL
 - 8.35 FIRE HYDRANT
 - 8.35 WATER VALVE
 - 8.35 WASTEWATER MANHOLE
 - 8.35 WASTEWATER CLEANOUT
 - 8.35 TREES TO REMAIN-HERITAGE
 - 8.35 PHASE LINE

ACCESSIBILITY NOTES:

- SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP. [TAS 4.3.7]
- GROUND SURFACES ALONG ACCESSIBLE ROUTES MUST BE STABLE, FIRM, AND SLIP RESISTANT. [TAS 4.3.1]
- THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION IS 1:12. THE MAXIMUM RISE FOR ANY RAMP RUN IS 30 IN. [TAS 4.3.2]
- ACCESSIBLE ROUTES MUST HAVE A CROSS-SLOPE NO GREATER THAN 1:50. [TAS 4.3.7]
- APPROVAL OF THESE PLANS BY THE CITY OF AUSTIN INDICATES COMPLIANCE WITH APPLICABLE CITY REGULATIONS ONLY. COMPLIANCE WITH ACCESSIBILITY STANDARDS SUCH AS THE 2010 STANDARDS FOR ACCESSIBLE DESIGN OR THE 2012 TEXAS ACCESSIBILITY STANDARDS WAS NOT VERIFIED. THE APPLICANT IS RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE ACCESSIBILITY STANDARDS.

NOTES:

- ALL DIMENSIONS TO CURBS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
- ALL RADI PARKING DIMENSIONS ARE 2.50' TO BACK OF CURB UNLESS OTHERWISE NOTED.
- REFERENCE MASTER SITE & PAVING PLAN FOR SITE PLAN NOTES.
- A TRAFFIC IMPACT ANALYSIS IS NOT REQUIRED FOR THIS SITE PER ORDINANCE NUMBER 980430-P.
- APPROVAL OF THESE PLANS BY THE CITY OF AUSTIN INDICATES COMPLIANCE WITH APPLICABLE CITY REGULATIONS ONLY. COMPLIANCE WITH ACCESSIBILITY STANDARDS SUCH AS THE 2010 STANDARDS FOR ACCESSIBLE DESIGN OR THE 2012 TEXAS ACCESSIBILITY STANDARDS WAS NOT VERIFIED. THE APPLICANT IS RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE ACCESSIBILITY STANDARDS.
- COORDINATE EXACT LOCATION OF UTILITY TRANSFORMERS AND MAIN SWITCHBOARDS WITH AUSTIN ENERGY AND CITY OF AUSTIN INSPECTIONS ON SITE AND IN WRITING PRIOR TO BEGINNING OF WORK.
- ALL EXTERIOR LIGHTING WILL BE FULL CUT-OFF AND FULLY SHIELDED IN COMPLIANCE WITH SUBCHAPTER E 2.5 AND WILL BE REVIEWED DURING BUILDING PLAN REVIEW. ANY CHANGE OR SUBSTITUTION OF LAMP/FLIGHT FIXTURES SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL IN ACCORDANCE WITH SECTION 2.5.2.
- THE SITE IS COMPOSED OF 2 LOTS/TRACTS. IT HAS BEEN APPROVED AS ONE COHESIVE DEVELOPMENT. IF PORTIONS OF THE LOTS/TRACTS ARE SOLD, APPLICATION FOR SUBDIVISION AND SITE PLAN APPROVAL MAY BE REQUIRED.

BEARING BASIS NOTE:

THE BASIS OF BEARING OF THE SURVEY SHOWN HEREON IS TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NAD 83(90), UTILIZING WESTERN DATA SYSTEMS CONTINUALLY OPERATING REFERENCE STATION (CORS) NETWORK.

THIS IS A SURFACE DRAWING. TO CONVERT FROM SURFACE TO GRID USE A CORNERED SCALE FACTOR OF 0.999995089.

SITE PLAN APPROVAL Sheet 9 of 46
FILE NUMBER: SP-2021-0072C APPLICATION DATE: 03/26/2021
APPROVED BY COMMISSION ON: UNDER SECTION 112 OF CHAPTER 25-5 OF THE CITY OF AUSTIN CODE.
EXPIRATION DATE (25-5-81, LDC): CASE MANAGER: R. MIA

Director, Planning and Development Review Department
RELEASED FOR GENERAL COMPLIANCE: ZONING: U-CO
Rev. 1: Correction 1
Rev. 2: Correction 2
Rev. 3: Correction 3

Final plot 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.

811

Know what's below.
Call before you dig.

LAND DEV

CONSULTING, LLC

4201 WESTERLY LANE, SUITE D-100

AUSTIN, TX 78727

OFFICE: 512.872.6696

FIRM NO. 16384

STATE OF TEXAS

NICHOLAS C. BROWN

107175

LICENSED PROFESSIONAL ENGINEER

8/24/2021

OVERALL SITE PLAN

PARK 183 BLDG 6 & 7

4800 DISTRIBUTION DRIVE

& 7900 INDUSTRY WAY

AUSTIN, TRAVIS COUNTY, TEXAS

DESIGNED BY: RM

DRAWN BY: AH

CHECKED BY: NB

APPROVED BY: NB

SHEET 9 OF 46

SP-2021-0072C

City of Austin Environmental Resource Inventory

**~95 Acre Tract – Burleson Road
Austin, Travis County, Texas**

April 11, 2016

Terracon Project No. 96167242



Prepared for:

TC Austin Industrial Development, Inc.
Trammell Crow Company
Austin, Texas

Prepared by:

Terracon Consultants, Inc.
Austin, Texas

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

April 11, 2016



Mr. Neal Holdridge
TC Austin Industrial Development, Inc.
Trammell Crow Company
3501 Jamboree Road, Suite 230
Newport Beach, California 92660

Telephone: (949) 477-4719
Email: nholdridge@trammellcrow.com

Re: City of Austin Environmental Resource Inventory (ERI)
~95 Acre Tract – Burleson Road
8219 Burleson Road
Austin, Travis County, Texas
Terracon Project No. 96167242

Dear Mr. Holdridge:

Terracon Consultants, Inc. (Terracon) is pleased to provide this critical environmental feature (CEF) and hydrogeologic portions of the City of Austin (COA) Environmental Resource Investigation (ERI) prepared for the above-referenced site.

The results of our consulting services are solely the professional opinion of Terracon based on the site conditions documented and observed at the time of the field assessment. It should be noted that some CEFs may be seasonal or ephemeral, indicating that their presence/absence and condition are dependent on various weather conditions (including rainfall) and other changes in the surrounding ecosystem. Terracon is not liable for ephemeral and/or seasonal CEFs that are exposed or created after Terracon's field assessment. Additionally, Terracon's opinion is based on the most current regulations; therefore, changes in regulations may require a re-evaluation of the findings of this report. It is recommended that if this report is not to be submitted promptly to the COA, an updated report (based on an additional field assessment) be prepared. The results of our consulting services are solely the professional opinion of Terracon based on conditions documented and observed at the time of the field investigation. We appreciate the opportunity to provide this report. Should you have any questions or require additional information, please call me at (512) 442-1122.

Sincerely,
Terracon Consultants, Inc.

A blue ink signature of Arthur D. Potts, written in a cursive style.

Arthur D. Potts
Project Environmental Scientist

A blue ink signature of Hilary D. Johns, P.G., written in a cursive style.

Hilary D. Johns, P.G.
Manager – Environmental Services

Environmental Resource Inventory

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

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

1. SITE/PROJECT NAME: ~95 Acre Tract - Burleson Road _____
2. COUNTY APPRAISAL DISTRICT PROPERTY ID (#'s): 801625 _____
3. ADDRESS/LOCATION OF PROJECT: 8219 Burleson Road _____
4. WATERSHED: Onion Creek _____
5. THIS SITE IS WITHIN THE (Check all that apply)
 - Edwards Aquifer Recharge Zone* (See note below) ☐ YES ☒ No
 - Edwards Aquifer Contributing Zone* ☐ YES ☒ No
 - Edwards Aquifer 1500 ft Verification Zone* ☐ YES ☒ No
 - Barton Spring Zone* ☐ YES ☒ No

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

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

6. DOES THIS PROJECT PROPOSE FLOODPLAIN MODIFICATION?..... ☐ YES** ☒ NO
If yes, then check all that apply:
 - ☐ (1) The floodplain modifications proposed are necessary to protect the public health and safety;
 - ☐ (2) The floodplain modifications proposed would provide a significant, demonstrable environmental benefit, as determined by a **functional assessment** of floodplain health as prescribed by the Environmental Criteria Manual (ECM), or
 - ☐ (3) The floodplain modifications proposed are necessary for development allowed in the critical water **quality zone under LDC 25-8-261 or 25-8-262, City Code 30-5-261 or 30-5-262.**
 - ☐ (4) The floodplain modifications proposed are outside of the Critical Water Quality Zone in an area determined to be in poor or fair condition by a **functional assessment** of floodplain health.

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

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

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

8. There is a total of 2 (#s) Critical Environmental Feature(s)(CEFs) on or within 150 feet of the project site. If CEF(s) are present, attach a detailed **DESCRIPTION** of the CEF(s), color **PHOTOGRAPHS**, the **CEF WORKSHEET** and provide **DESCRIPTIONS** of the proposed CEF buffer(s) and/or wetland mitigation. Provide the number of each type of CEFs on or within 150 feet of the site (Please provide the number of CEFs):

_____ (#'s) Spring(s)/Seep(s) _____ (#'s) Point Recharge Feature(s) _____ (#'s) Bluff(s)
 _____ (#'s) Canyon Rimrock(s) 2 (#'s) Wetland(s)

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

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

All ERI reports must include:

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

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

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

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

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

Soil Series Unit Names, Infiltration Characteristics & Thickness		
Soil Series Unit Name & Subgroup**	Group*	Thickness (feet)
Altoga Series - AgC2	B	0 to 2.00
Lewisville Series - LcA	B	0 to 2.42
Lewisville Series - LcB	B	0 to 2.42
Mixed Alluvial Land	D	0 to 3.67
Continued in Appendix A...		

***Soil Hydrologic Groups Definitions (Abbreviated)**

- A. Soils having a high infiltration rate when thoroughly wetted.
- B. Soils having a moderate infiltration rate when thoroughly wetted.
- C. Soils having a slow infiltration rate when thoroughly wetted.
- D. Soils having a very slow infiltration rate when thoroughly wetted.

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

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

This site is located within the Onion Creek Watershed. The site is not located within the Edwards Aquifer Recharge or Contributing Zones as mapped by the 1998 City of Austin Watershed Regulation Areas Map. Based on a review of the USGS Montopolis, Texas 7.5 minute topographic map, the site ranges from approximately 480 to 515 feet above mean sea level, with the site sloping toward the south. Onion Creek (mapped as perennial or ponded by solid blue shading) is located to the adjacent south of the site and a pond is indicated in the central portion of the site. No other potential surface waters are mapped on the site.

Continued in Appendix A...

List surface geologic units below:

Geologic Units Exposed at Surface		
Group	Formation	Member
Taylor	-	-

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

A review of existing literature shows that the site is entirely underlain by is underlain by the Taylor Group (Kta), which is typified as dark gray to green-gray, calcareous, montmorillonitic clay which is generally more calcareous in mid-portion of unit. The underlying formation is not known to form caves and voids suitable for usage by Terrestrial Karst Invertebrates (TKIs). No faults, fractures, caves, voids, or significant recharge features were observed during the field reconnaissance.

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

There are $\frac{0}{0}$ (#) wells present on the project site and the locations are shown and labeled
 $\frac{0}{-}$ (#s)The wells are not in use and have been properly abandoned.
 $\frac{-}{-}$ (#s)The wells are not in use and will be properly abandoned.
 $\frac{-}{0}$ (#s)The wells are in use and comply with 16 TAC Chapter 76.
 There are $\frac{0}{-}$ (#s) wells that are off-site and within 150 feet of this site.

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

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

The site is located within the Live Oak-Mesquite Savanna region of the Edwards Plateau physiographic province (Amos and Gehlbach, 1988). Dominant vegetation associated with this region includes Texas oak (*Quercus texana*), live oak (*Q. virginiana*), plateau live oak (*Q. fusiformis*), honey mesquite (*Prosopis glandulosa*), Indiangrass (*Sorghastrum nutans*), little bluestem (*Schizachyrium scoparium*), wild rye (*Elymus* sp.), and buffalograss (*Buchloë dactyloides*).

Continued in Appendix A...

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

If yes, list the dominant species below:

Woodland species	
Common Name	Scientific Name
mesquite	<i>Prosopis glandulosa</i>
live oak	<i>Quercus virginiana</i>
cedar elm	<i>Ulmus crassifolia</i>
hackberry	<i>Celtis laevigata</i>
pecan	<i>Carya illinoensis</i>

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

If yes, list the dominant species below:

Grassland/prairie/savanna species	
Common Name	Scientific Name
Texas wintergrass	<i>Nassella leucotricha</i>
bermudagrass	<i>Cynodon dactylon</i>
silver bluestem	<i>Lupinus texensis</i>
dewberry	<i>Rubus trivialis</i>

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

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

Hydrophytic plant species		
Common Name	Scientific Name	Wetland Indicator Status
spikerush	Eleocharis sp.	FAC
bald cypress	Taxodium distichum	OBL
Emory's sedge	Carex emoryi	OBL
false indigo bush	Amorpha fruticosa	FACW
box elder	Acer negundo	FACW

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

☐ YES ☒ NO (Check one).

12. WASTEWATER REPORT – Provide the information requested below.

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

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

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

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

☒ YES ☐ NO (Check one).

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

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

Wastewater lines are proposed within the Critical Water Quality Zone?

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

Is the project site is over the Edwards Aquifer?

☐ YES ☒ NO (Check one).

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

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

Date(s) ERI Field Assessment was performed: April 8, 2016
Date(s)

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

Arthur D. Potts

(512) 442-1122

Print Name

Telephone

Potts, Arthur D

Digitally signed by Potts, Arthur D
DN: cn=Potts, Arthur D, ou=General Users,
email=Arthur.Potts@terracon.com
Date: 2016.04.11 13:32:09 -05'00'

arthur.potts@terracon.com

Signature

Email Address

Terracon Consultants, Inc.

April 11, 2016

Name of Company

Date

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

P.G.
Seal

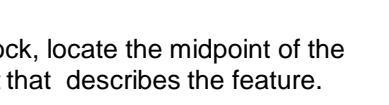
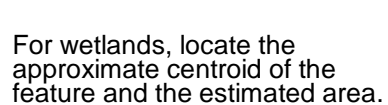
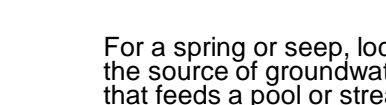
City of Austin Environmental Resource Inventory - Critical Environmental Feature Worksheet

1	Project Name:	~95 Acre Site - Burleson Road
2	Project Address:	8219 Burleson Road
3	Site Visit Date:	April 8, 2016
4	Environmental Resource Inventory Date:	April 11, 2016

5	Primary Contact Name:	Arthur D. Potts
6	Phone Number:	(512) 442-1122
7	Prepared By:	Arthur D. Potts
8	Email Address:	arthur.potts@terracon.com

[illegible]

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

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

Method

Accuracy

GPS ☐ sub-meter ☐

Surveyed ☐ meter ☐

Other ☐ > 1 meter ☐

Professional Geologists apply seal below

APPENDIX A
ADDITIONAL DISCUSSION

Description of Site Surface Soils *Continued...*

- Patrick Series – PaE: Group B; Depth: 0 to 1.83 feet
- Gravel Pits: An area mapped as Gravel Pits (GP) is mapped in the southeastern portion of the site.

Description of Site Topography and Drainage *Continued...*

According to the National Wetland Inventory (NWI) map (prepared by the United States Fish and Wildlife Service [USFWS]), two wetlands classified as a riverine – lower perennial – unconsolidated shore – temporarily flooded (R2USA) are mapped within the Onion Creek channel to adjacent south. No other potential wetlands were indicated in the site vicinity.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) indicates that the southern portion of the site is mapped as Zone AE (areas within the floodway), Zone A (areas within the 100-year floodplain), and as Zone X-shaded (areas within the 500-year floodplain). The eastern portion of the site is mapped as Zone X-shaded, while the remaining areas of the site are mapped as Zone X-unshaded (areas outside of the 100- or 500-year floodplain).

Review of historical aerials indicates that gravel pits appear to have operated on the southern portion of the site in the past, and a quarry was observed to the adjoining southwestern during the field investigation. Ponding was observed in this area during the site investigation; however, due to steep gradients, field delineation was not feasible. The ponding area is identified as W-2 on Exhibit 2 in Appendix B.

Additionally, Onion Creek was observed along the southern site boundary. The stream was flowing at the time of the investigation, and due to steep gradient, water depth, and abundant vegetation, the stream was unable to be fully delineated. Onion Creek is identified as W-1 on Exhibit 2 in Appendix B. The pond mapped on the USGS topographic map in the central portion of the site was not observed during the site investigation. It appears that the pond may have been previously filled in.

Description of Site Plant Communities *Continued...*

Common species include Indiangrass (*Sorghastrum nutans*), little bluestem (*Schizachyrium scoparium*), and tall dropseed (*Sporobolus asper*).

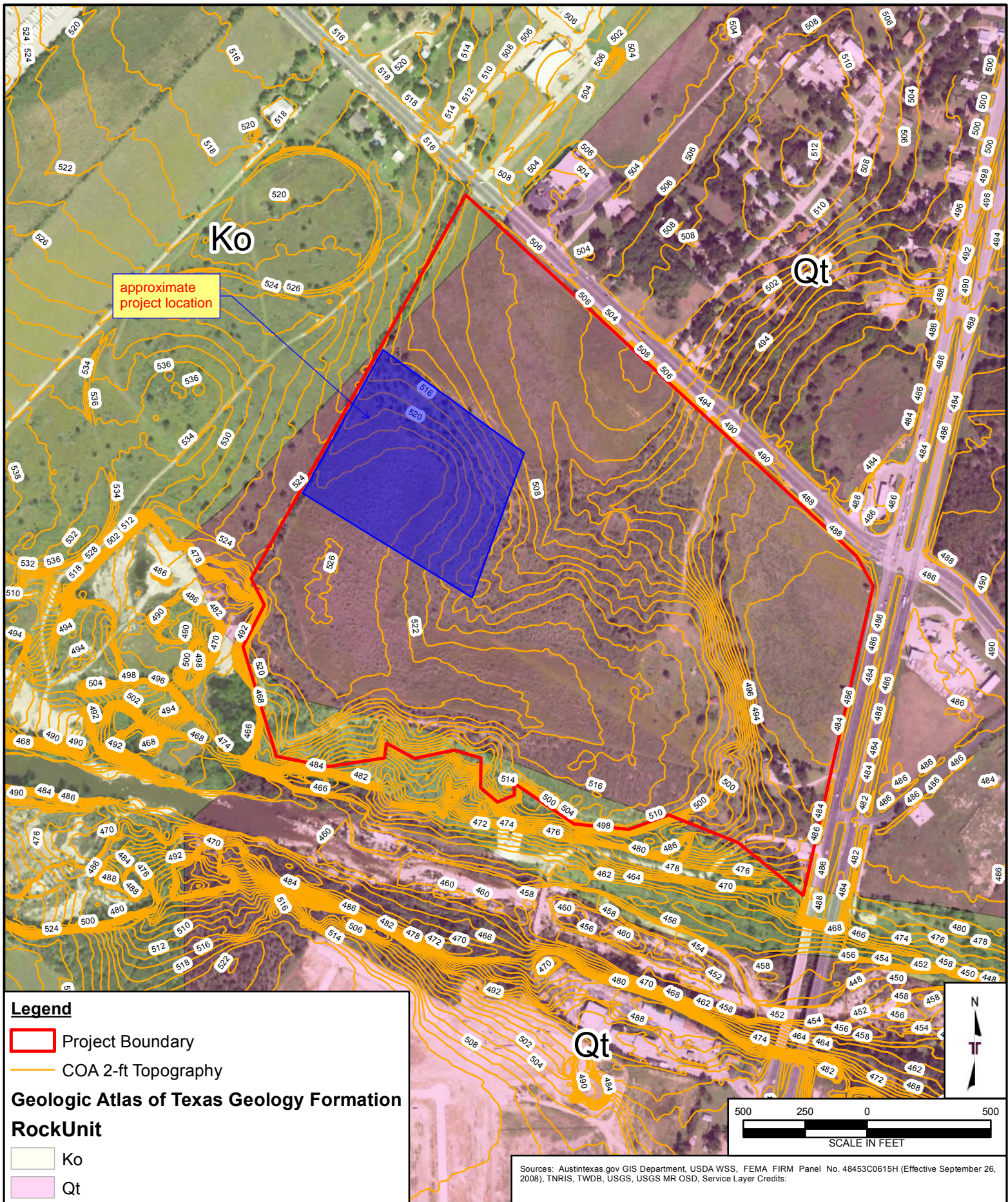
The TPWD's Vegetation Types of Texas maps the site within the "Other Native and/or Introduced Grasses". This vegetation type is described as being a mix of native or introduced grasses and forbs on grassland sites or mixed herbaceous communities resulting from the clearing of woody vegetation. This vegetation type is also associated with the clearing of forests and may portray early stages of "Young Forest" vegetation type.

Dominant species observed on the site included mesquite (*Prosopis glandulosa*), live oak (*Quercus virginiana*), hackberry (*Celtis laevigata*), pecan (*Carya illinoensis*), Texas

wintergrass (*Nassella leucotricha*), and bermudagrass (*Cynodon dactylon*), and bluebonnet (*Lupinus texensis*).

Additionally, hydrophytic vegetation was observed along the corridor of Onion Creek. Dominant species included bald cypress (*Taxodium distichum* - OBL), Emory's sedge (*Carex emoryi* - OBL), false indigo bush (*Amorpha fruticosa* - FACW), box elder (*Acer negundo* - FACW), and spikerush (*Eleocharis sp.* - FACW).

APPENDIX B
EXHIBITS



Project Mngr:	AP	Project No:	96167242
Drawn By:	JC	Scale:	AS SHOWN
Checked By:	JC	File No.:	96167242
Approved By:	HJ	Date:	Apr. 6, 2016

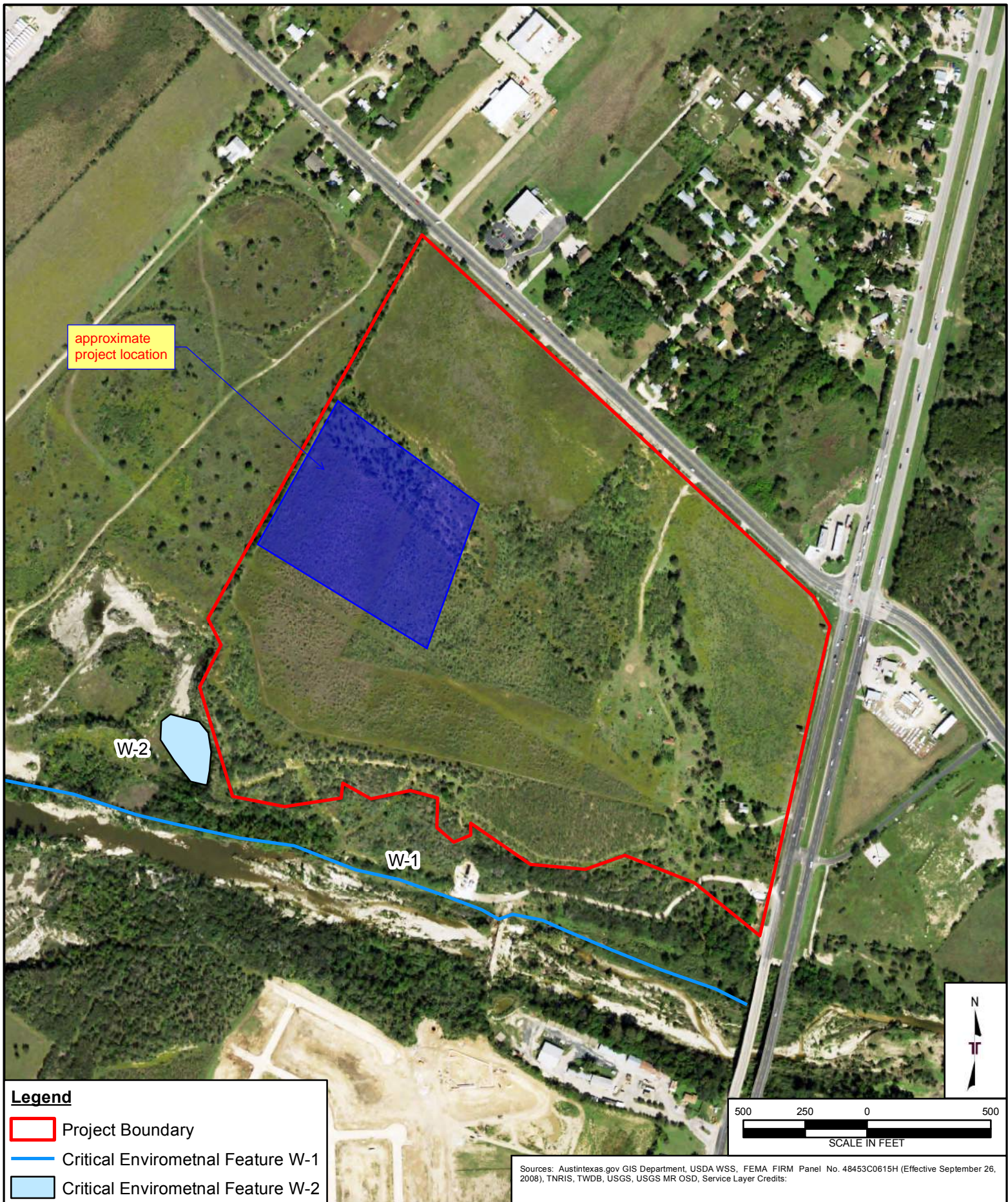
Terracon
Consulting Engineers & Scientists
 5307 INDUSTRIAL OAKS BLVD. - #160 AUSTIN, TX 78735
 PH. (512) 442-1122 FAX. (512) 442-1181

Site Specific Geologic Map with 2-ft Topography

~95 Acre Tract – Burleson Road
 8219 Burleson Road
 Austin, Travis County, Texas

EXHIBIT

1



Legend

- Project Boundary
- Critical Envirometnal Feature W-1
- Critical Envirometnal Feature W-2



Sources: Austintexas.gov GIS Department, USDA WSS, FEMA FIRM Panel No. 48453C0615H (Effective September 26, 2008), TNRIIS, TWDB, USGS, USGS MR OSD, Service Layer Credits:

Project Mngr:	AP	Project No:	96167242
Drawn By:	JC	Scale:	AS SHOWN
Checked By:	JC	File No.:	96167242
Approved By:	HJ	Date:	Apr. 6, 2016

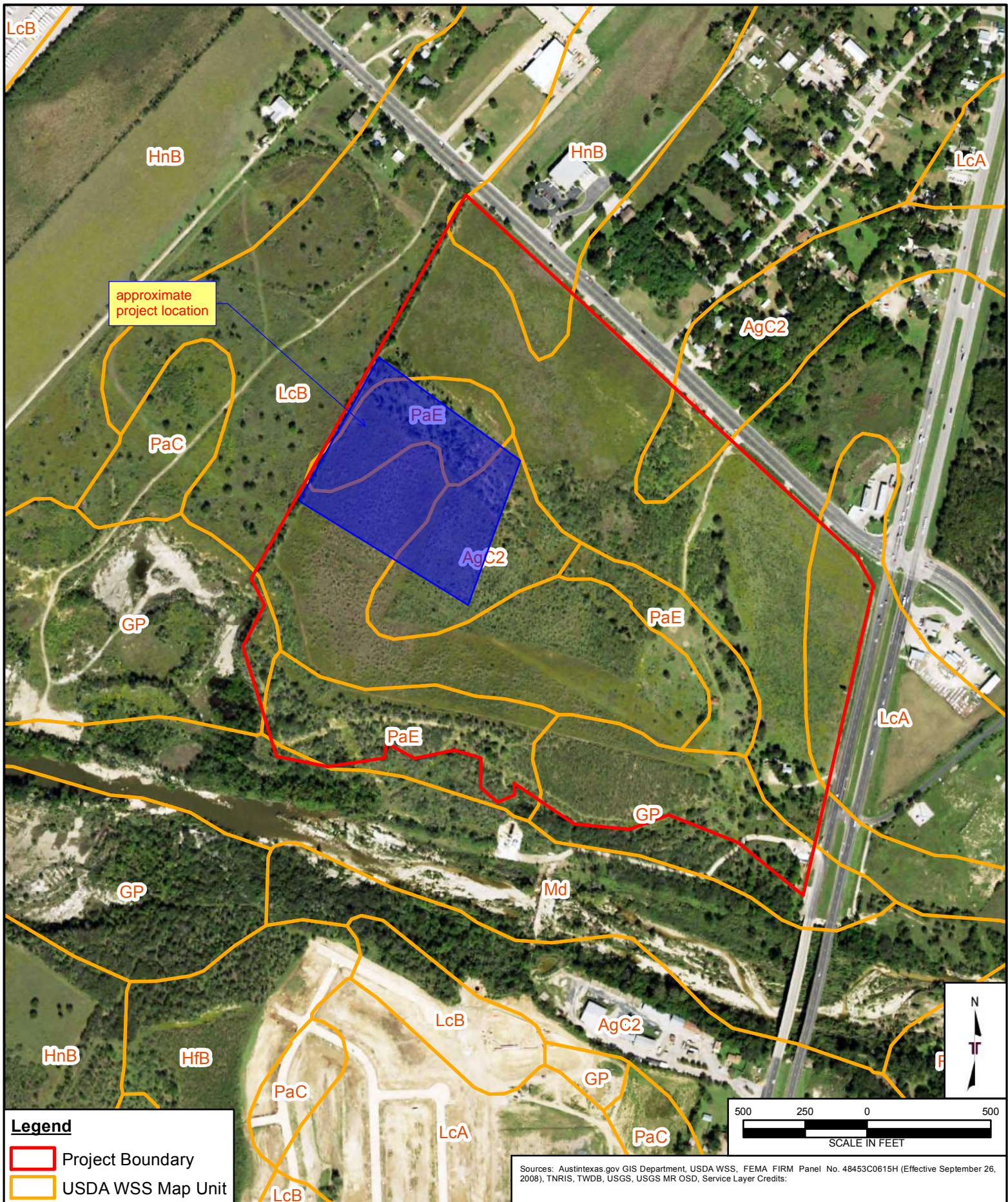
Terracon
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Site 2014 Historic Aerial Photo and CEFs

~95 Acre Tract – Burleson Road
 8219 Burleson Road
 Austin, Travis County, Texas

EXHIBIT

2



Project Mngr:	AP
Drawn By:	JC
Checked By:	JC
Approved By:	HJ

Project No.	96167242
Scale:	AS SHOWN
File No.:	96167242
Date:	Apr. 6, 2016

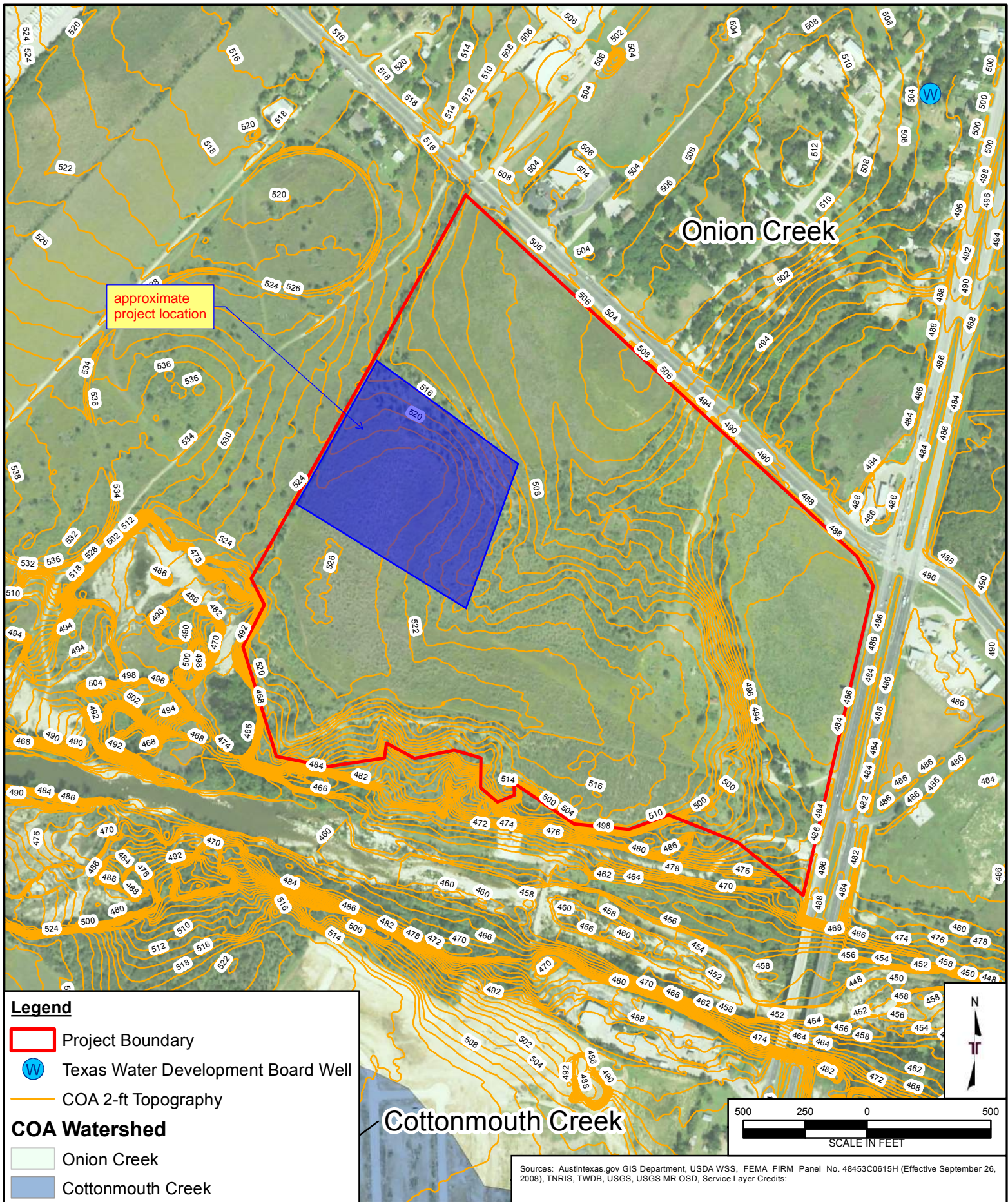
Terracon
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 5307 INDUSTRIAL OAKS BLVD. - #160 AUSTIN, TX 78735
 PH. (512) 442-1122 FAX. (512) 442-1181

Site Soil Map

~95 Acre Tract – Burleson Road
 8219 Burleson Road
 Austin, Travis County, Texas

EXHIBIT

3

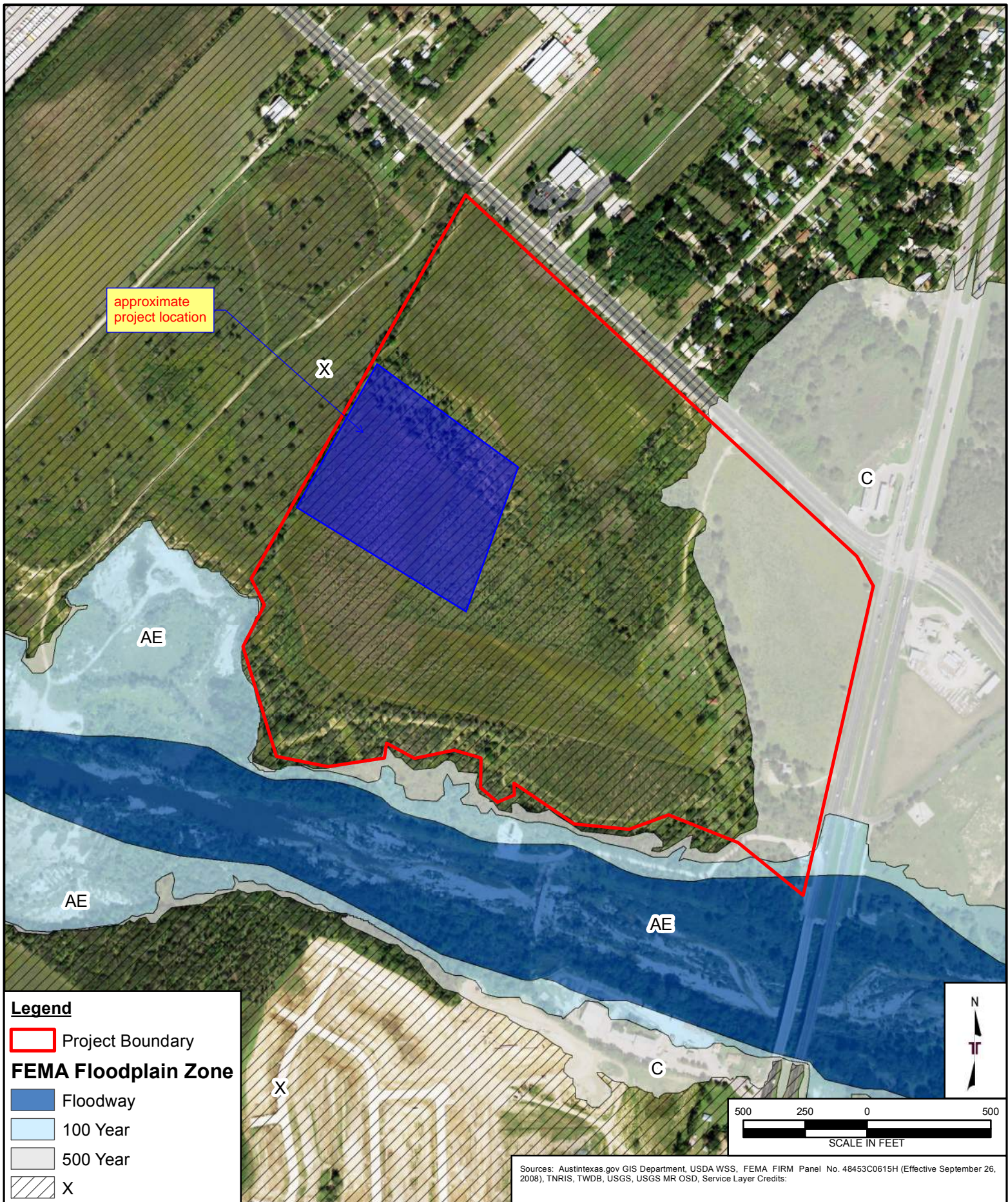


Project Mngr:	AP	Project No.	96167242
Drawn By:	JC	Scale:	AS SHOWN
Checked By:	JC	File No.:	96167242
Approved By:	HJ	Date:	Apr. 6, 2016

Terracon
Consulting Engineers & Scientists
 5307 INDUSTRIAL OAKS BLVD. - #160 AUSTIN, TX 78735
 PH. (512) 442-1122 FAX. (512) 442-1181

Two Foot Topography and Wells
 ~95 Acre Tract – Burleson Road
 8219 Burleson Road
 Austin, Travis County, Texas

EXHIBIT
4

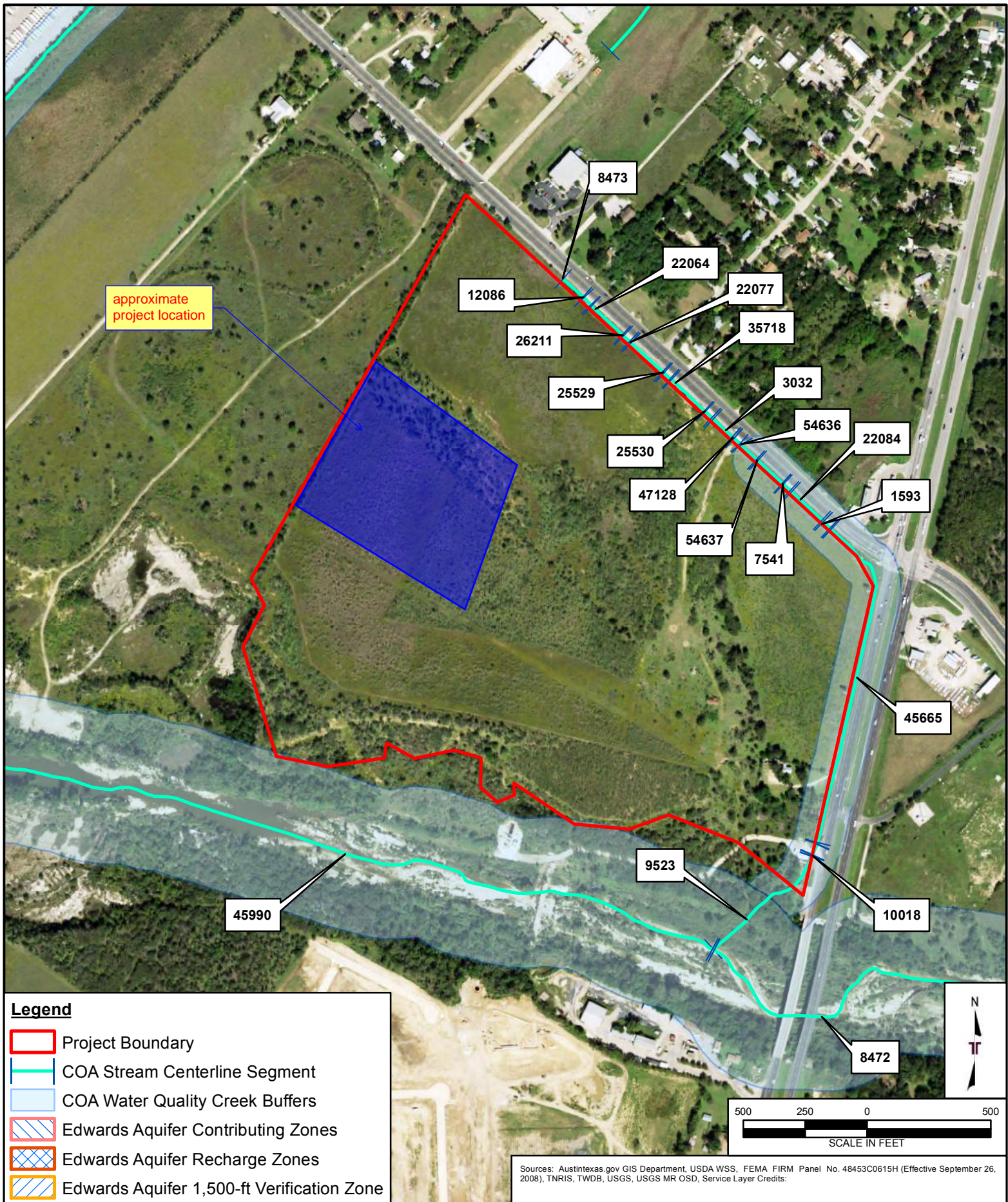


Project Mngr:	AP	Project No:	96167242
Drawn By:	JC	Scale:	AS SHOWN
Checked By:	JC	File No.:	96167242
Approved By:	HJ	Date:	Apr. 6, 2016

Terracon
Consulting Engineers & Scientists
 5307 INDUSTRIAL OAKS BLVD. - #160 AUSTIN, TX 78735
 PH. (512) 442-1122 FAX. (512) 442-1181

FEMA Floodplain Map
 ~95 Acre Tract – Burleson Road
 8219 Burleson Road
 Austin, Travis County, Texas

EXHIBIT
5



Project Mngr:	AP
Drawn By:	JC
Checked By:	JC
Approved By:	HJ

Project No.	96167242
Scale:	AS SHOWN
File No.:	96167242
Date:	Apr. 6, 2016

Terracon
Consulting Engineers & Scientists
 5307 INDUSTRIAL OAKS BLVD. - #160 AUSTIN, TX 78735
 PH. (512) 442-1122 FAX. (512) 442-1181

Water Quality Zones
 ~95 Acre Tract – Burleson Road
 8219 Burleson Road
 Austin, Travis County, Texas

EXHIBIT
6

APPENDIX C
SITE PHOTOGRAPHS



Photo 1 Typical site view



Photo 2 Typical site view



Photo 3 Onion Creek to the adjacent south (W-1)



Photo 4 View toward ponded area in former quarry (W-2)

The City of Austin (COA) Environmental Resource Inventory (ERI) was performed in accordance with generally accepted scientific and engineering evaluation practices of this profession undertaken in similar studies at the same time and in the same geographical area. The limitations of this ERI should be recognized.

In conducting the limited scope of services described herein, certain sources of information and public records were not reviewed. The scope of this ERI was conducted in general accordance with the City of Austin's Land Development Code (LDC), Section 25-8-121 (A), and the City of Austin Title 30-5. The service's scope is not intended to be compliant or consistent with the State of Texas Edwards Aquifer Rule (30 TAC 213, Subchapter B; pertaining to Travis County, Texas) or the Texas Commission on Environmental Quality (TCEQ) Edwards Aquifer Protection Program.

Field identification of Critical Environmental Features (CEFs) as defined by the COA can be seasonally influenced. Due to seasonal changes, Terracon cannot guarantee areas to exhibit or not to exhibit CEF characteristics at all times of the year.

CEF wetlands were evaluated using the USACE 1987 Manual and Great Plains Regional Supplement. The manuals provide assistance for identifying wetlands based on the three criteria discussed. However, the manuals alone may not have provided enough information to document whether or not the three criteria were met. Various physical properties or other visual signs used to evaluate whether the three wetland identification criteria areas were satisfied may not be straightforward, especially in disturbed or problem areas. The manuals also allow the user to visually estimate certain indicators, such as the percentage of area covered by dominant species for the entire community. Terracon did not attempt to identify every possible plant species and did not classify soil types by laboratory methods.

This report is for the exclusive use of the client and any relying government entities for the project being discussed. No warranties, either expressed or implied, are intended or made.