



BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

November 2022



Transportation | Water Resources | Land Development | Surveying | Environmental

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

November 2022



November 16, 2022

Ms. Lillian Buter
Texas Commission on Environmental Quality (TCEQ)
Region 13
14250 Judson Road
San Antonio, Texas 78233-4480

Re: Bigbee Tract Turn Lane
Recharge Zone Exception Application

Dear Ms. Butler:

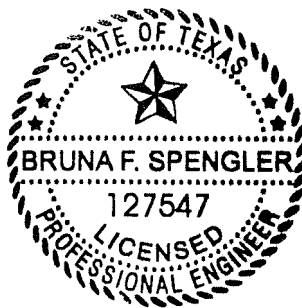
Please find included herein the Bigbee Tract Turn Lane Recharge Zone Exception Application. This Recharge Zone Exception Application has been prepared in accordance with the Texas Administrative Code (30 TAC 213) and current policies for development over the Edwards Aquifer Recharge Zone.

This Recharge Zone Exception Application applies to an approximate 3.36-acre site as identified by the project limits. Please review the plan information for the items it is intended to address. If acceptable, please provide a written approval of the plan in order that construction may begin at the earliest opportunity.

Appropriate review fees (\$500) and fee application are included. If you have questions or require additional information, please do not hesitate to contact me at your earliest convenience.

Sincerely,
Pape-Dawson Engineers, Inc.


Bruna Spengler, P.E.
Associate Vice President



Attachments

P:\127\82\01\Word\2022 - Exception Cover Letter.docx

**EDWARDS AQUIFER
APPLICATION COVER
PAGE (TCEQ-20705)**

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with [30 TAC 213](#).

Administrative Review

1. [Edwards Aquifer applications](#) must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: <http://www.tceq.texas.gov/field/eapp>.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.
3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.
4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.
6. If the geologic assessment was completed before October 1, 2004 and the site contains “possibly sensitive” features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.
2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

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

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

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

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

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

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

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

1. Regulated Entity Name:					2. Regulated Entity No.:				
3. Customer Name:					4. Customer No.:				
5. Project Type: (Please circle/check one)	New	Modification			Extension	Exception			
6. Plan Type: (Please circle/check one)	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Residential		Non-residential			8. Site (acres):			
9. Application Fee:			10. Permanent BMP(s):						
11. SCS (Linear Ft.):			12. AST/UST (No. Tanks):						
13. County:			14. Watershed:						

Application Distribution

Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which cross into multiple jurisdictions, can require additional copies. Refer to the "Texas Groundwater Conservation Districts within the EAPP Boundaries" map found at:

http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf

For more detailed boundaries, please contact the conservation district directly.

Austin Region			
County:	Hays	Travis	Williamson
Original (1 req.)	—	—	—
Region (1 req.)	—	—	—
County(ies)	—	—	—
Groundwater Conservation District(s)	___ Edwards Aquifer Authority ___ Barton Springs/ Edwards Aquifer ___ Hays Trinity ___ Plum Creek	___ Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___ Austin ___ Buda ___ Dripping Springs ___ Kyle ___ Mountain City ___ San Marcos ___ Wimberley ___ Woodcreek	___ Austin ___ Bee Cave ___ Pflugerville ___ Rollingwood ___ Round Rock ___ Sunset Valley ___ West Lake Hills	___ Austin ___ Cedar Park ___ Florence ___ Georgetown ___ Jerrell ___ Leander ___ Liberty Hill ___ Pflugerville ___ Round Rock

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

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

Print Name of Customer/Authorized Agent

Bruna Spangler

Signature of Customer/Authorized Agent

Date

****FOR TCEQ INTERNAL USE ONLY****

Date(s) Reviewed:		Date Administratively Complete:	
Received From:		Correct Number of Copies:	
Received By:		Distribution Date:	
EAPP File Number:		Complex:	
Admin. Review(s) (No.):		No. AR Rounds:	
Delinquent Fees (Y/N):		Review Time Spent:	
Lat./Long. Verified:		SOS Customer Verification:	
Agent Authorization Complete/Notarized (Y/N):		Fee Check:	Payable to TCEQ (Y/N):
Core Data Form Complete (Y/N):			Signed (Y/N):
Core Data Form Incomplete Nos.:			Less than 90 days old (Y/N):

**GENERAL INFORMATION
FORM (TCEQ-0587)**

General Information Form

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B) Effective June 1, 1999

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

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

Signature

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

Print Name of Customer/Agent: Bruna Spengler, P.E.

Date: 11/22/22

Signature of Customer/Agent:



Project Information

1. Regulated Entity Name: Bigbee Tract Turn Lane
2. County: Comal
3. Stream Basin: West Fork & Upper Dry Comal Creeek
4. Groundwater Conservation District (If applicable): Edwards Aquifer
5. Edwards Aquifer Zone:

- ☒ Recharge Zone
☐ Transition Zone

6. Plan Type:

- ☒ WPAP
☐ SCS
☐ Modification

- ☐ AST
☐ UST
☒ Exception Request

7. Customer (Applicant):

Contact Person: Blake Harrington

Entity: CW - Bigbee, LLC

Mailing Address: 17319 San Pedro Ave, Suite 140

City, State: San Antonio, Texas

Zip: 78232

Telephone: (210) 563-6988

FAX: _____

Email Address: blake.harrington@ashtonwoods.com

8. Agent/Representative (If any):

Contact Person: Bruna Spengler, P.E.

Entity: Pape-Dawson Engineers, Inc.

Mailing Address: 2000 NW Loop 410

City, State: San Antonio, Texas

Zip: 78213

Telephone: (210) 375-9000

FAX: (210) 375-9010

Email Address: bspengler@pape-dawson.com

9. Project Location:

- ☐ The project site is located inside the city limits of _____.
- ☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
- ☒ The project site is not located within any city's limits or ETJ.

10. ☒ The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

From the TCEQ regional office, head north towards Nacogdoches Rd. Travel east on Nacogdoches Rd for approximately 6 miles before turning left onto FM 3009 N. Travel approximately 12 miles north before turning left onto TX-46 W. The site is located northeast of the TX-46 W and Doehne Oaks intersection.

11. ☒ **Attachment A – Road Map.** A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.
12. ☒ **Attachment B - USGS / Edwards Recharge Zone Map.** A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:
- ☒ Project site boundaries.
 - ☒ USGS Quadrangle Name(s).
 - ☒ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
 - ☒ Drainage path from the project site to the boundary of the Recharge Zone.
13. ☒ **The TCEQ must be able to inspect the project site or the application will be returned.** Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate

the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

☒ Survey staking will be completed by this date: when advised by TCEQ

14. ☒ **Attachment C – Project Description.** Attached at the end of this form is a detailed narrative description of the proposed project. The project description is consistent throughout the application and contains, at a minimum, the following details:

- ☒ Area of the site
- ☒ Offsite areas
- ☒ Impervious cover
- ☐ Permanent BMP(s)
- ☒ Proposed site use
- ☐ Site history
- ☒ Previous development
- ☒ Area(s) to be demolished

15. Existing project site conditions are noted below:

- ☒ Existing commercial site
- ☐ Existing industrial site
- ☐ Existing residential site
- ☒ Existing paved and/or unpaved roads
- ☐ Undeveloped (Cleared)
- ☐ Undeveloped (Undisturbed/Uncleared)
- ☐ Other: _____

Prohibited Activities

16. ☒ I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:

- (1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
- (2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
- (3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;
- (4) The use of sewage holding tanks as parts of organized collection systems; and
- (5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).
- (6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

17. ☐ I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

- (1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);
- (2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and
- (3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

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

- ☒ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- ☐ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- ☐ For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
- ☐ A request for an exception to any substantive portion of the regulations related to the protection of water quality.
- ☐ A request for an extension to a previously approved plan.

19. ☒ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

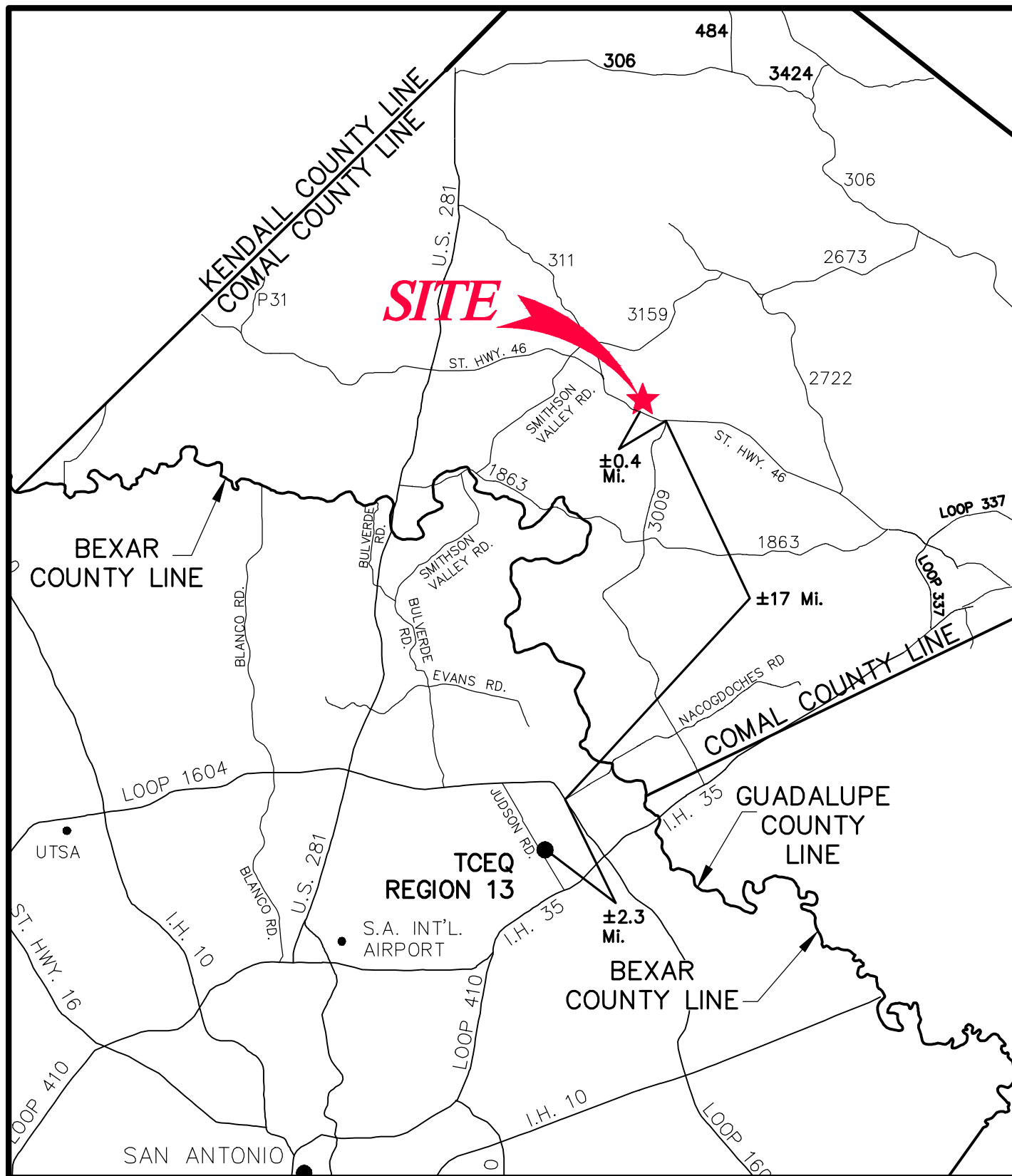
- ☒ TCEQ cashier
- ☐ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- ☐ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

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

21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

ATTACHMENT A

BIGBEE TRACT TURN LANE
Recharge Zone Exception Request




Pape-Dawson Engineers, Inc.

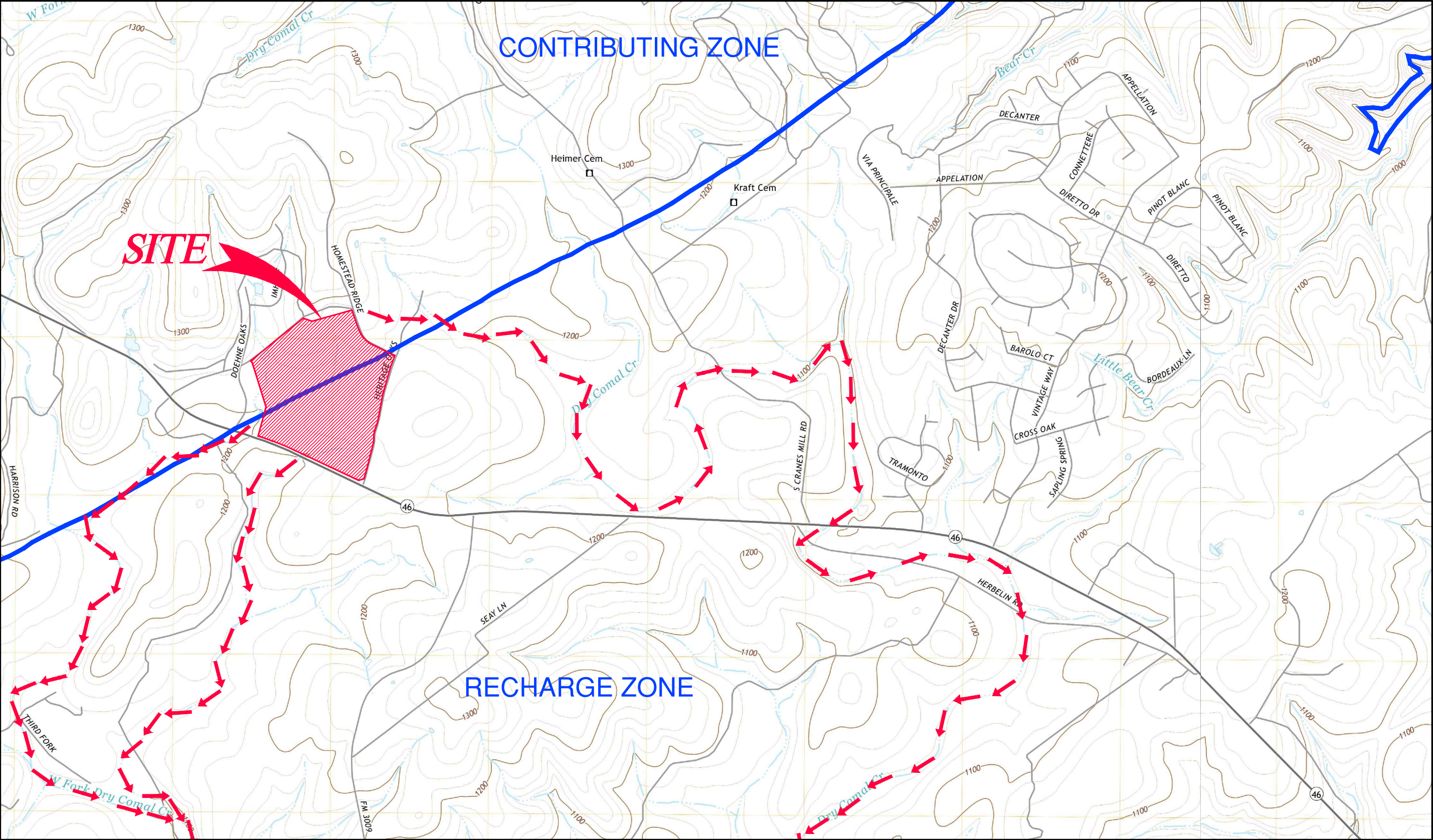
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File: P:\127\82\01\Design\ENV\RM1278201.dwg

ATTACHMENT A
Road Map


ATTACHMENT B

BIGBEE TRACT TURN LANE
Recharge Zone Exception Request


SCALE: 1" = 2000'

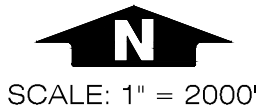


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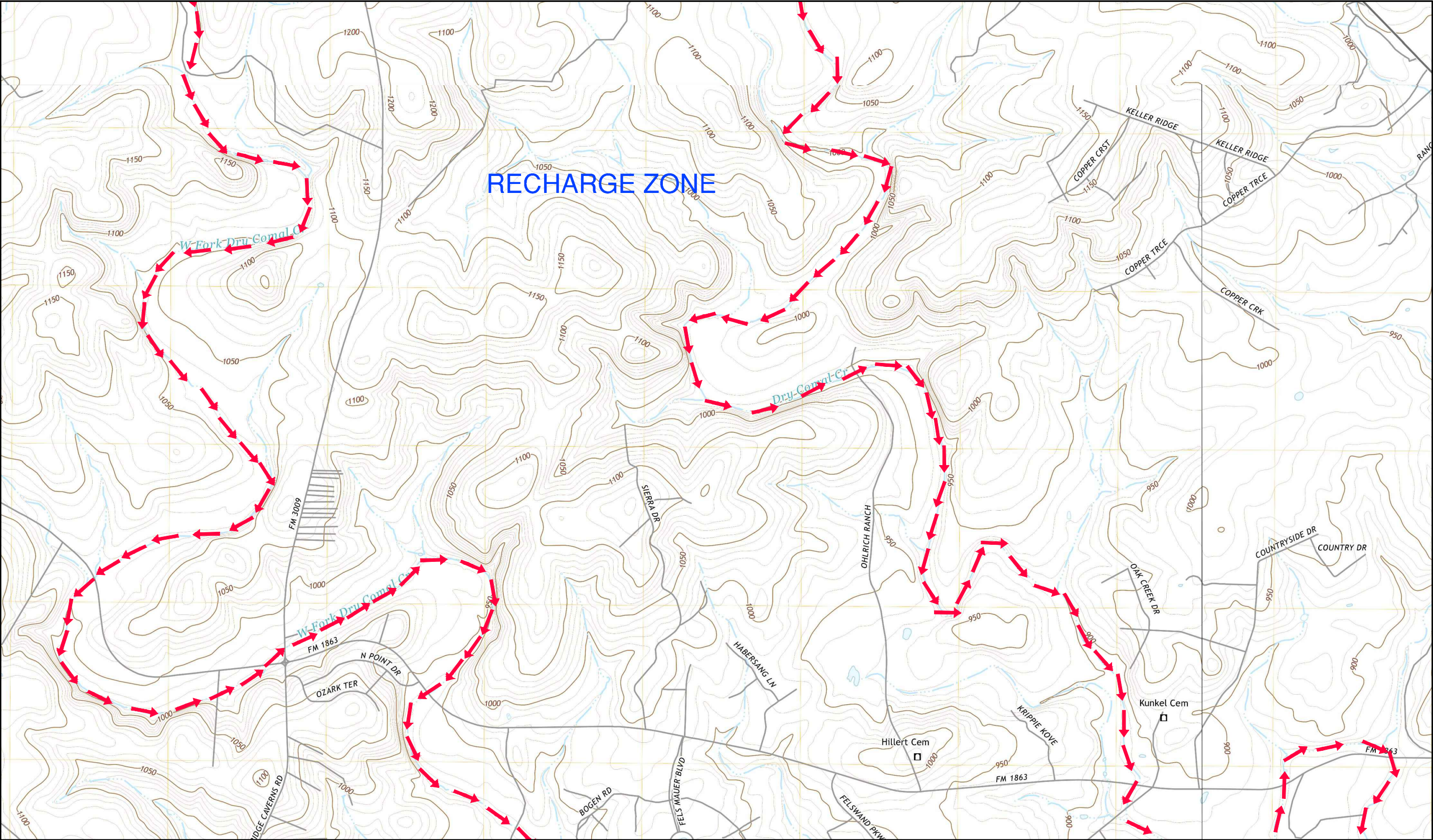
GENERAL LOCATION MAP - SATTLE, TX QUAD; SMITHSON VALLEY, TX QUAD;
NEW BRAUNFELS WEST, TX QUAD; BATCAVE, TX QUAD
DRAINAGE FLOW 
Pape-Dawson Engineers, Inc.

USGS/EDWARDS RECHARGE ZONE MAP
ATTACHMENT B


BIGBEE TRACT TURN LANE
Recharge Zone Exception Request



MATCHLINE See Sheet 1 of 4



MATCHLINE See Sheet 3 of 4

GENERAL LOCATION MAP - SATTLER, TX QUAD; SMITHSON VALLEY, TX QUAD;
NEW BRAUNFELS WEST, TX QUAD; BATCAVE, TX QUAD
DRAINAGE FLOW 
Pape-Dawson Engineers, Inc.

USGS/EDWARDS RECHARGE ZONE MAP
Sheet 2 Of 4
ATTACHMENT B

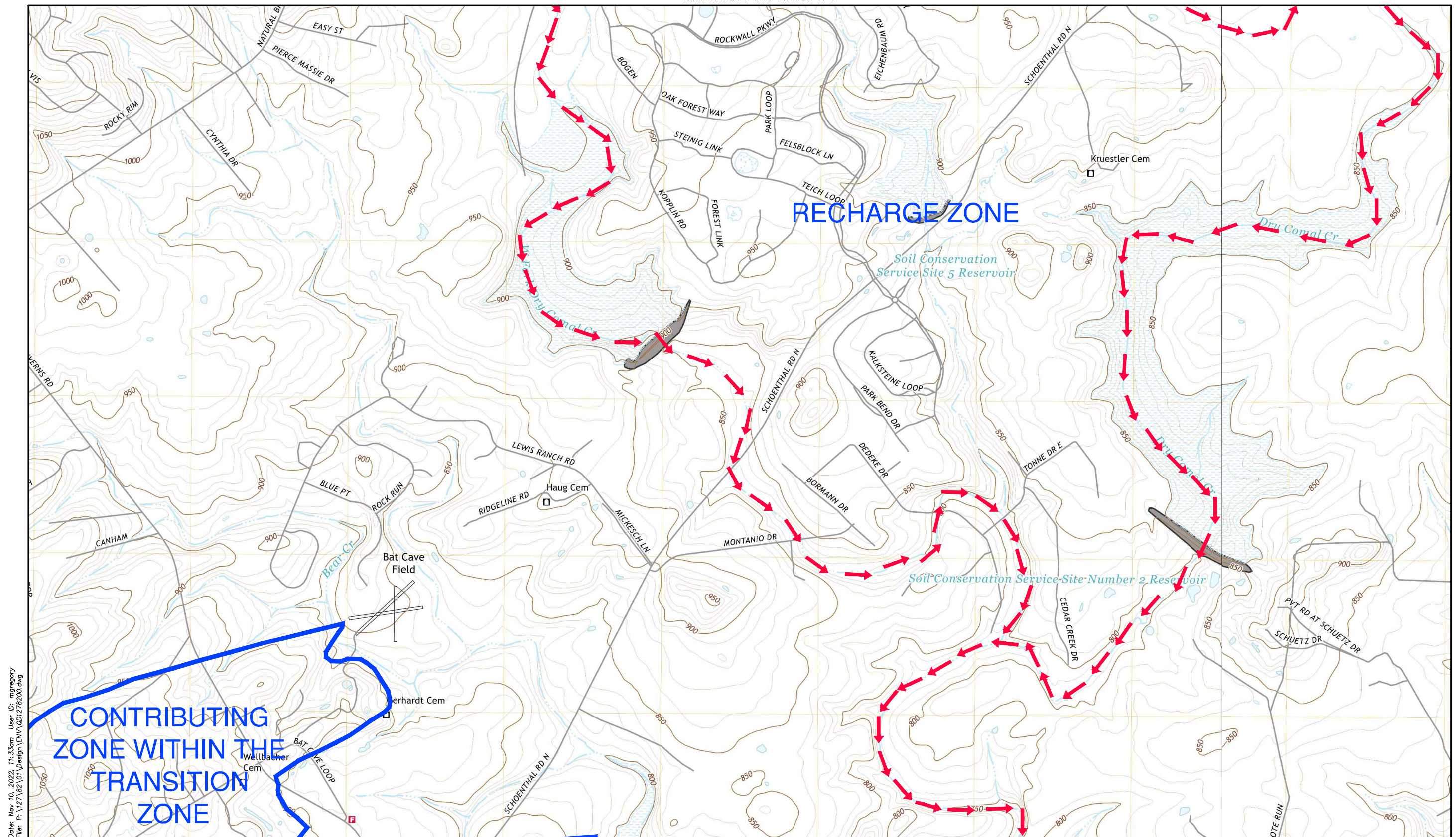
Date: Nov 10, 2022, 11:32am User ID: mgregory
File: P:\127\82\01\Design\EN\001278200.dwg

BIGBEE TRACT TURN LANE Recharge Zone Exception Request

MATCHLINE See Sheet 2 of 4




SCALE: 1" = 2000'



MATCHLINE See Sheet 4 of 4

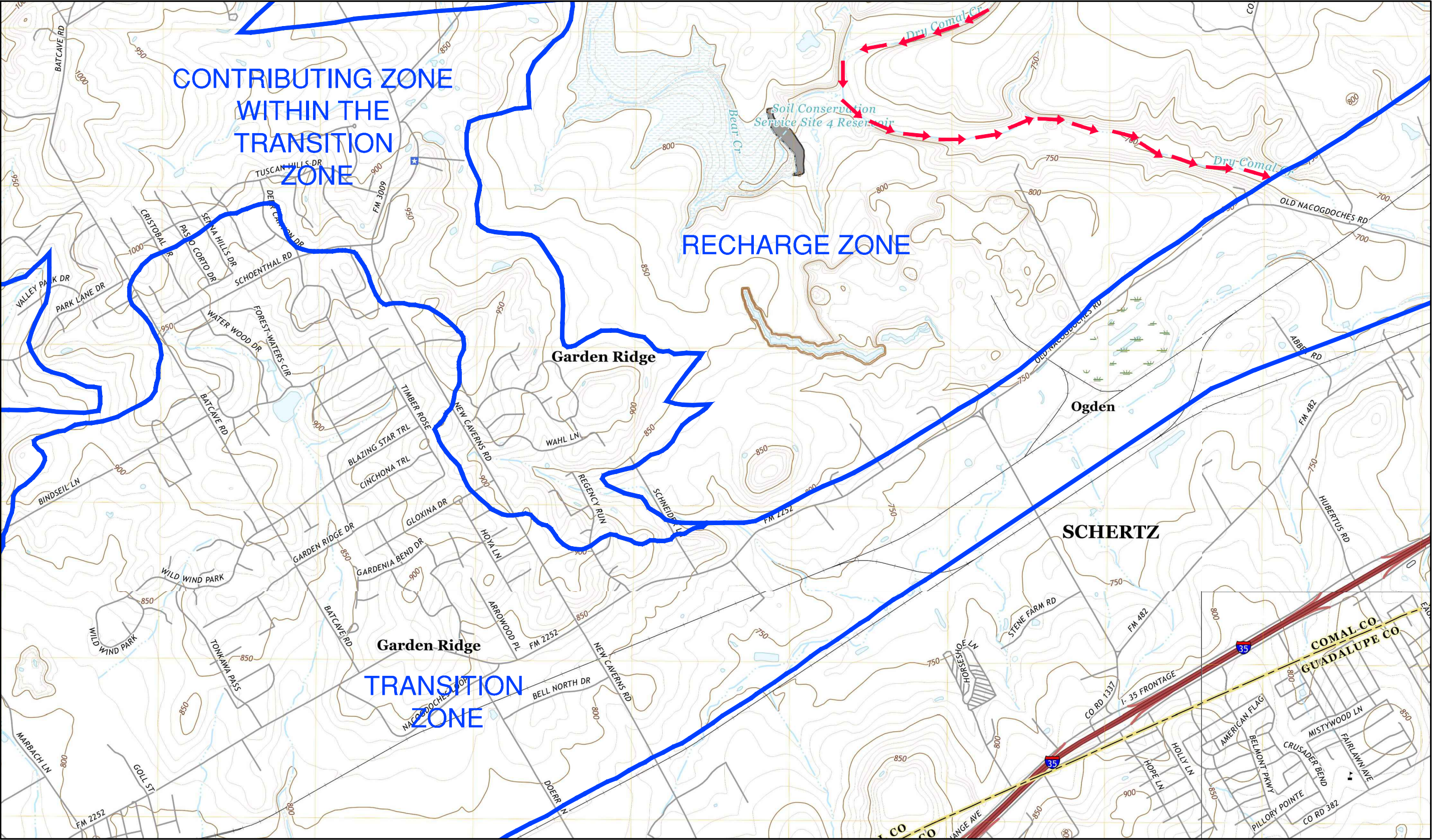
USGS/EDWARDS RECHARGE ZONE MAP
Sheet 3 Of 4
ATTACHMENT B

GENERAL LOCATION MAP - SATTLER, TX QUAD; SMITHSON VALLEY, TX QUAD;
NEW BRAUNFELS WEST, TX QUAD; BATCAVE, TX QUAD
DRAINAGE FLOW 
Pape-Dawson Engineers, Inc.

BIGBEE TRACT TURN LANE
Recharge Zone Exception Request

MATCHLINE See Sheet 3 of 4

SCALE: 1" = 2000'



Date: Nov 10, 2022, 11:33am User ID: mgregory
File: P:\127\82\01\Design\EN\1278200.dwg

GENERAL LOCATION MAP - SATTLE, TX QUAD; SMITHSON VALLEY, TX QUAD;
NEW BRAUNFELS WEST, TX QUAD; BATCAVE, TX QUAD
DRAINAGE FLOW → → →
Pape-Dawson Engineers, Inc.

USGS/EDWARDS RECHARGE ZONE MAP
Sheet 4 Of 4
ATTACHMENT B

ATTACHMENT C

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

Attachment C – Project Description

The Bigbee Tract Subdivision was originally approved as a Water Pollution Abatement Plan (WPAP) on June 25, 2021 (EAPP ID No. 13001326) for the construction of a single-family residential development on a 157.59-acre site, located approximately 2,500 LF west of Hwy 46 and 3009 intersection in Comal County, Texas. The WPAP was approved for 30.00 acres (19.03%) of impervious cover, and an exemption from PBMPs was granted by the executive director based on 20% or less impervious cover. This Bigbee Tract Turn Lane Exception Request is being submitted for the construction of turn lanes for this single-family home development, also known as Waldsanger Tract.

Proposed regulated activities include limited demolition, clearing, grading, and excavation for installation of utilities and drainage improvements for the construction of turn lanes associated with the single-family development. Approximately 0.26 acres of impervious cover is proposed for these turn lanes, which is 7.74% of the 3.36-acre project limits. The total impervious cover for the single-family development is 30.08 acres, which is 19.09% of the overall 157.59-acre site. Due to an overall impervious cover (IC) percentage below 20%, no Permanent Best Management Practices (PBMPs) are required.

The project limits is located within TxDOT right-of-way (ROW) with an approved WPAP. The State Highway 46 WPAP (EAPP ID# 13-06092810B) was approved on August 7, 2008, previously November 27, 2006, for road widening to provide passing lanes. Approved PBMPs were provided in arbitrary locations where vegetation widths and slopes would allow treatment. Within this proposed Bigbee Tract turn lane application, impervious cover to widen the road approximately 6-feet within a section of road will affect VFS on the north side of SH 46 from stations 930+50 – 936+00 where TxDOT has identified a PBMP. The approved PBMP will be revegetated and maintained in its current state outside of the proposed turn lane location. Increase in impervious cover in this area will have compensatory treatment within the current 20% plan approved for the Bigbee tract and not accounted in the currently approved TxDOT PBMP..

Please refer to the included exhibits for details of the proposed turn lanes and relationship to overall impervious cover. Additionally, included with this application is the Storm Water Pollution Prevention Plan illustrating the TBMPs utilized onsite for sediment control.

IMPERVIOUS COVER CALCULATIONS

**ON SH46 FROM 0.1 MILE EAST OF SUN VALLEY RD TO 0.1 MILE WEST OF FM 3009 AND ON
SH 46 FROM 1.5 MILES EAST OF FM 3009 TO 1.5 MILES WEST OF FM 2722, COMAL
COUNTY, TEXAS**

PROJECT NAME

CSJ: 0215-01-036 and 0215-02-046

Length of Project =

6.07 miles

32,134.21 feet

EXISTING ROW

(Area calculated in microstation) =

3,213,421.20 ft²

73.77 acres

EXISTING ROADWAY, DRIVEWAY AND INTERSECTIONS

(Area calculated in microstation) =

1,282,842.00 ft²

29.45 acres

EXISTING DRIVEWAYS

(Area calculated in microstation) =

EXISTING RIP-RAP

(Area calculated in microstation) =

TOTAL EXISTING IMPERVIOUS COVER

1,282,842.00 ft²

29.45 acres

PROPOSED ROW

(Same as existing)

3,213,421.20 ft²

73.77 acres

PROPOSED ROADWAY

(Area calculated in microstation) =

219,978.00 ft²

5.05 acres

PROPOSED DRIVEWAYS

(Area calculated in microstation) =

PROPOSED MOW STRIP

(Area calculated in microstation) =

27,442.80 ft²

0.63 acres

TOTAL PROPOSED IMPERVIOUS COVER

1,530,262.80 ft²

35.13 acres

Pre-Construction Fraction of Impervious Cover (IC)

39.92 %

Post-Construction Fraction of Impervious Cover (IC)

47.62 %

Net increase in Impervious Area (An)

247,420.80 ft²

5.68 acres

Runoff Coefficient Calculations:

Pre-Construction Runoff

$$R_v = 1.72x(IC)^3 - 1.97x(IC)^2 + 1.23x(IC) + 0.02$$

$$R_v = 1.72x(0.3992)^3 - 1.97x(0.3992)^2 + 1.23x(0.3992) + 0.02$$

$$R_v = 0.31$$

Post-Construction Runoff

$$R_v = 1.72x(IC)^3 - 1.97x(IC)^2 + 1.23x(IC) + 0.02$$

$$R_v = 1.72x(0.4762)^3 - 1.97x(0.4762)^2 + 1.23x(0.4762) + 0.02$$

$$R_v = 0.34$$



9-25-06

SH 46 TOTAL IMPERVIOUS COVER STATIONS W/15' FRONT SLOPES
Calculations for filter strips that meet the 15 foot minimum width and 20% of flatter slope criteria

Station - Left	Station - Right	AREA (MICROSTATION) - SQ.FT.
657+00	662+00	7951.00
662+50	690+00	68750.00
691+50	703+50	26454.00
706+00	715+00	19061.00
923+00	929+50	13818.00
930+50	936+00	13760.00
943+50	945+50	5000.00
946+00	954+50	21333.00
1095+00	1099+00	8132.00
1185+50	1187+50	4331.00
1190+00	1191+00	2057.00
1213+50	1217+00	6798.00
1219+00	1237+00	38816.00
		236,261.00 ft²

Station - Right	Station - Left	AREA (MICROSTATION) - SQ.FT.
848+00	850+60	5811.00
857+50	862+00	10908.00
881+50	901+00	50670.00
902+00	910+00	20146.00
913+00	918+50	15728.00
919+00	929+00	25319.00
1063+00	1070+50	18604.00
1071+00	1073+00	5194.00
1077+50	1081+00	9011.00
1082+00	1088+00	15569.00
1095+00	1120+00	69302.00
1179+00	1181+50	3422.00
1185+50	1187+50	4534.00
1190+00	1191+00	2333.00
1194+50	1209+50	36250.00
1210+50	1217+00	16333.00
1219+00	1222+00	7106.00
		316,240.00 ft²

TOTAL = 12.68 acres



[Signature]
 9-25-06

SH 46 MOW STRIP STATIONS W/15' FRONT SLOPE
Calculations for filter strips that meet the 15 foot minimum width and 20% of flatter slope criteria

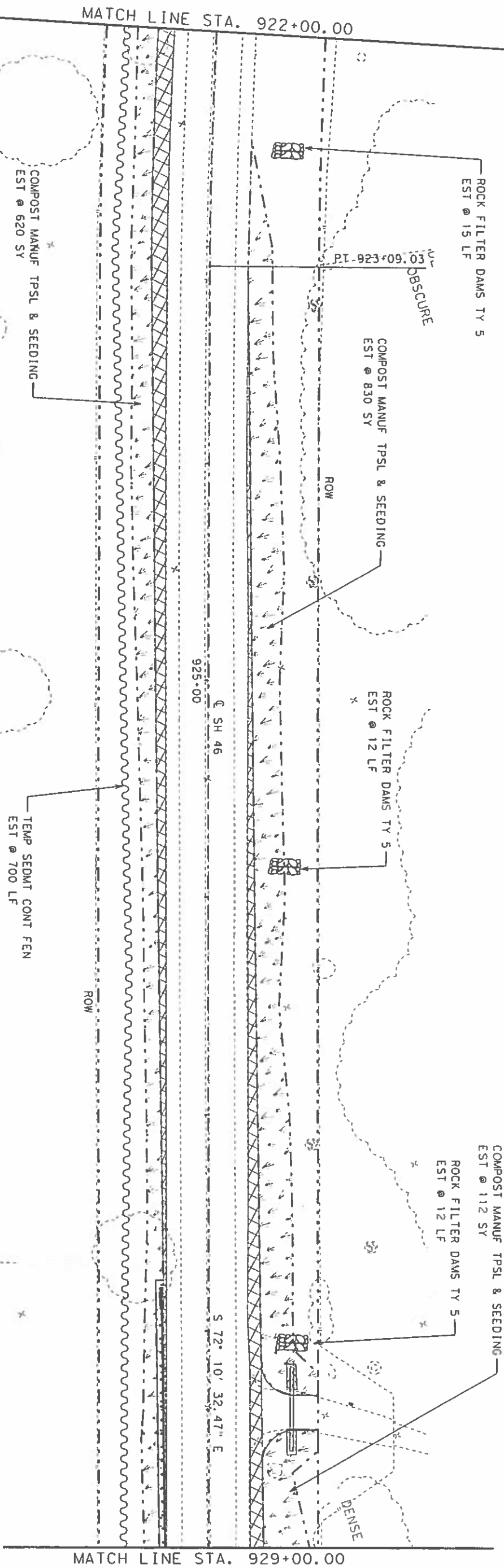
Station - Right	Station - Right	AREA (MICROSTATION) - SQ.FT.
660+00	662+00	6512.00
941+00	942+50	3826.00
944+00	945+00	2370.00
		12,708.00 ft ²

TOTAL = 000.29 acres



9-25-06

ESTIMATED QUANTITIES CSJ 0215-01-036			DESCRIPTION	UNIT
		1562	COMPOST MANUF TOPSOIL (BOS) (4")	SY
		1562	DRILL SEEDING (PERM) (RURAL) (CLAY)	SY
		1562	DRILL SEED (TEMP) (WARM OR COOL)	SY
		225	VEGETATIVE WATERING	MG
		39	ROCK FILTER DAMS (INSTALL) (TY 2)	LF
		39	ROCK FILTER DAMS (REMOVE)	LF
			CONSTRUCTION EXITS (INSTALL) (TY 1)	SY
			CONSTRUCTION EXITS (REMOVE)	SY
		700	TEMPORARY SEDIMENT CONTROL FENCE	LF
		39	ROCK FILTER DAMS (INSTALL) (TY 5)	LF
		0		0
		0		0
		0		0



- LEGEND
- AREA OF WIDENING
 - TEMP SEDMT CONT FEN
 - COMPOST MANUF TP&SL & SEEDING
 - ROCK FILTER DAMS TY 2
 - GABION MATTRESS
 - ROCK FILTER DAMS TY 5

NOTE:
LOCATION OF CONSTRUCTION
EXIT/ENTRANCE TO BE
DETERMINED IN THE FIELD
BY THE ENGINEER.



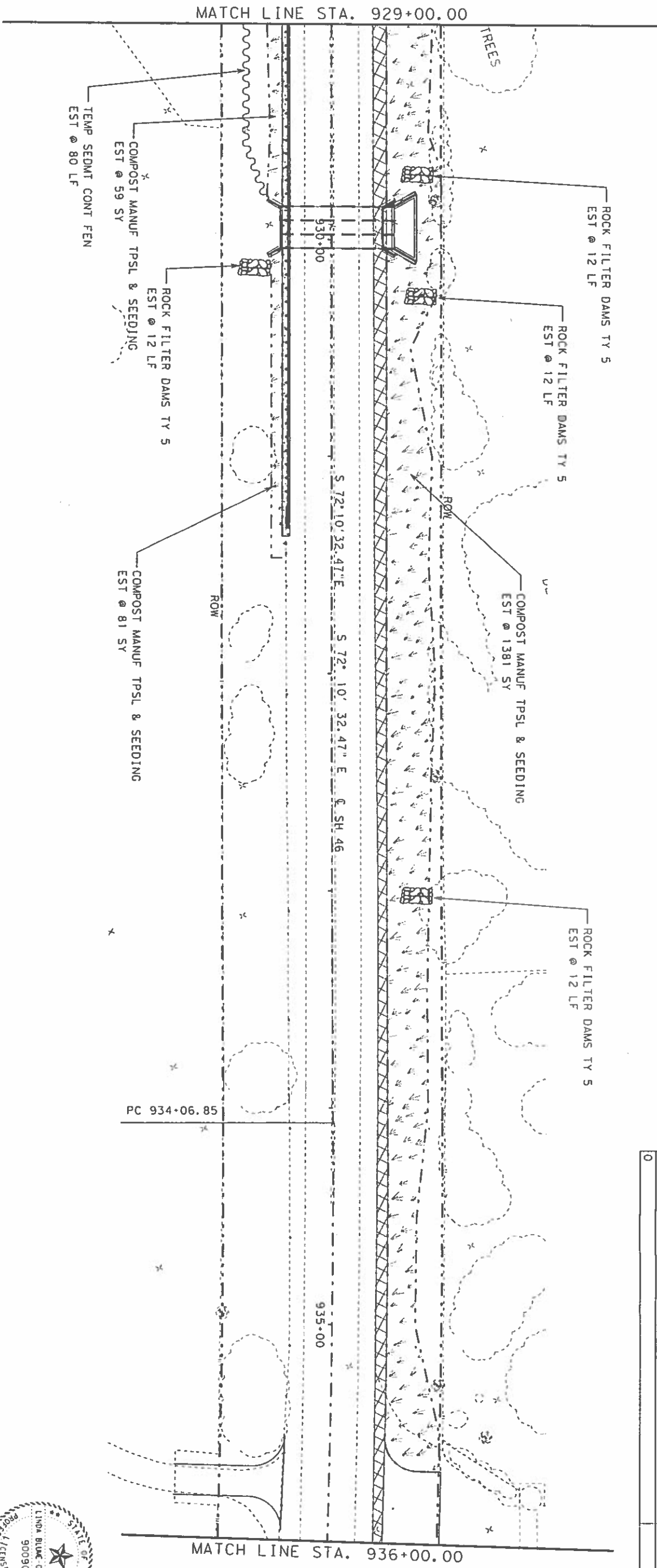
September 21, 2024
Linda Blue Crisley
P.E.

0 50
SCALE IN FEET

SH 46
SW3P LAYOUTS

SHEET 22 OF 48		PROJECT NO.		SHEET NO.	
STATE	0151	COUNTY			
TEXAS	SAT	COMAL			
CONTRACT	01	JOB	036, etc	SH 46	

ESTIMATED QUANTITIES CSJ 0215-01-036		UNIT
DESCRIPTION		
COMPOST MANUF TOPSOIL (BOS) (4")	1521	SY
DRILL SEEDING (PERM) (RURAL) (CLAY)	1521	SY
DRILL SEED (TEMP) (WARM OR COOL)	1521	SY
VEGETATIVE WATERING	219	MG
ROCK FILTER DAMS (INSTALL) (TY 2)		LF
ROCK FILTER DAMS (REMOVE)	48	LF
CONSTRUCTION EXITS (INSTALL) (TY 1)		SY
CONSTRUCTION EXITS (REMOVE)		SY
TEMPORARY SEDIMENT CONTROL FENCE	80	LF
ROCK FILTER DAMS (INSTALL) (TY 5)	48	LF
	0	0
	0	0
	0	0



- LEGEND**
- AREA OF WIDENING
 - TEMP SEDMT CONT FEN
 - COMPOST MANUF TPSL & SEEDING
 - ROCK FILTER DAMS TY 2
 - GABION MATTRESS
 - ROCK FILTER DAMS TY 5

NOTE:
LOCATION OF CONSTRUCTION
EXIT/ENTRANCE TO BE
DETERMINED IN THE FIELD
BY THE ENGINEER.

SH 46
SW3P LAYOUTS

Linda Blue, P.E.
Professional Engineer
No. 90090

DATE: 02/15/2016

SCALE IN FEET

0 50

SHEET 23 OF 48

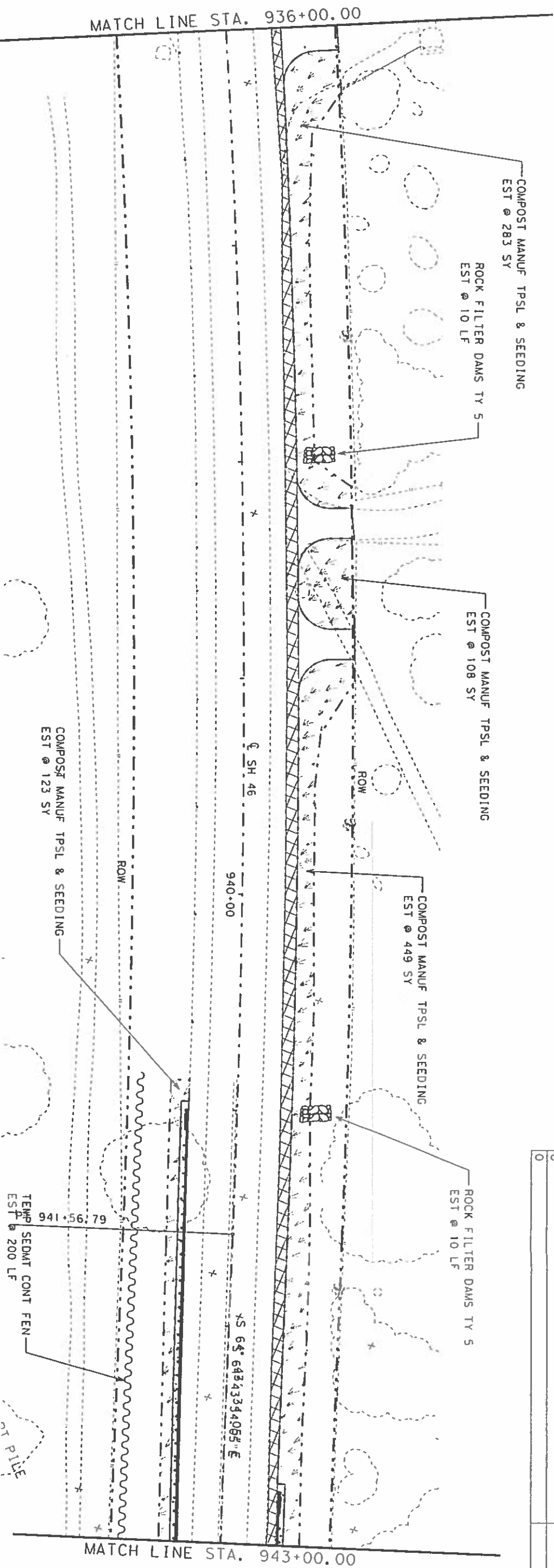
PROJECT NO.

STATE: DIST.: COUNTY:

TEXAS SAT. COMAL

CONTRACT NO. 0215-01-036, etc. SH 46

ESTIMATED QUANTITIES CSJ 0215-01-036			DESCRIPTION	UNIT
		963	COMPOST MANUF TOPSOIL (BOS) (4")	SY
		963	DRILL SEEDING (PERM) (RURAL) (CLAY)	SY
		963	DRILL SEED (TEMP) (WARM OR COOL)	SY
		139	VEGETATIVE WATERING	MG
			ROCK FILTER DAMS (INSTALL) (TY 2)	LF
		20	ROCK FILTER DAMS (REMOVE)	LF
			CONSTRUCTION EXITS (INSTALL) (TY 1)	SY
			CONSTRUCTION EXITS (REMOVE)	SY
		200	TEMPORARY SEDIMENT CONTROL FENCE	LF
		20	ROCK FILTER DAMS (INSTALL) (TY 5)	LF
0		0		0
0		0		0
0		0		0



September 24, 2016
Linda Blue Crisley
P.E.

0 50
SCALE IN FEET

SH 46
SW3P LAYOUTS

SHEET 24 OF 48	
FIG. NO.	PROJECT NO.
6	
STATE	DIST.
TEXAS	SAT
CDMT	SECT.
0215	01 1036, etc
SH 46	

NOTE:
LOCATION OF CONSTRUCTION
EXIT/ENTRANCE TO BE
DETERMINED IN THE FIELD
BY THE ENGINEER.

**GEOLOGIC ASSESSMENT
FORM (TCEQ-0585)**

GEOLOGIC ASSESSMENT (WPAP)

BIGBEE TRACT 158.77 ACRES COMAL COUNTY, TEXAS

**FROST GEOSCIENCES, INC. PROJECT NO.: FGS-E21115
APRIL 21, 2021**

Prepared exclusively for

**Ashton Woods
17319 San Pedro Avenue, Suite 140
San Antonio, Texas 78232**

The logo for Frost GeoSciences features a large, dark blue, stylized 'C' or 'S' shape that frames the company name. The name 'Frost GeoSciences' is written in a bold, italicized, sans-serif font. 'Frost' is in a dark blue color, while 'GeoSciences' is in a lighter blue color with a subtle gradient and a slight shadow effect.

Frost GeoSciences

***Geotechnical ▪ Construction Materials
Geologic ▪ Environmental***



Frost Geosciences, Inc.
13406 Western Oak
Helotes, Texas 78023
Office (210)-372-1315
Fax (210)-372-1318
www.frostgeosciences.com
TBPE Firm Registration # F-9227
TBPG Firm Registration # 50040

April 21, 2021

Ashton Woods
17319 San Pedro Avenue, Suite 140
San Antonio, Texas 78232

Attn: Mr. Kyle Lents, P.E.

SUBJECT:

Geologic Assessment (WPAP)
for the Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Bigbee Tract
158.77 Acres
Comal County, Texas
FGS Project N^o FGS-E21115

Dear Mr. Kyle Lents, P.E.:

Frost GeoSciences, Inc., (FGS) is pleased to submit the enclosed Geologic Assessment completed for the above referenced project site as it relates to 30 TAC §213.5(b)(3), effective June 1, 1999. Our investigation was conducted, and this report was prepared in general accordance with the Texas Commission on Environmental Quality (TCEQ) "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04).


If you have any questions regarding this report, or if Frost GeoSciences, Inc. may be of additional assistance to you on this project, please feel free to call our office. It has been a pleasure to work with you and we wish to thank you for the opportunity to be of service to you on this project. We look forward to being of continued service.

We appreciate the opportunity to perform these services for Ashton Woods. Please contact the undersigned if you have questions regarding this report.


Michael McMahan, P.G.
Project Manager



Respectfully submitted,
Frost GeoSciences, Inc.


Chris Wickman, P.G.
Professional Geoscientist

Copies Submitted:	(1)	Mr. Kyle Lents, P.E.; Ashton Woods
	(6)	Cude Engineers
	(1)	Electronic (pdf) Copy

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GEOLOGIC ASSESSMENT

Texas Commission on Environmental Quality (TCEQ)

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

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

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

Signature

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

Print Name of Geologist: Chris Wickman, P.G.

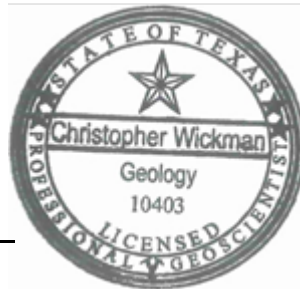
Telephone: (210) 372-1315

Date: April 21, 2021

Fax: (210) 372-1318

Representing: Frost GeoSciences, Inc. #50040 (Name of Company and TBPG or TBPE registration number)

Signature of the Geologist:

Regulated Entity Name: Bigbee Tract

Project Information

1. Date(s) Geologic Assessment was performed: February 25, 2021 and March 3 and 4, 2021

2. Type of Project:

☒ WPAP
☐ SCS

☐ AST
☐ UST

3. Location of Project:

☒ Recharge Zone
☐ Transition Zone
☒ Contributing Zone within the Transition Zone

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
Comfort	D	0-2
Denton	D	0-2
Purves	D	0-2
Rumple	C	0-2

**Soil Group Definitions (Abbreviated)*

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

6. ☒ **Attachment B – Stratigraphic Column.** A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.
7. ☒ **Attachment C – Site Geology.** A narrative description of the site-specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.
8. ☒ **Attachment D – Site Geologic Map(s).** The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'
 Applicant's Site Plan Scale: 1" = 400'
 Site Geologic Map Scale: 1" = 400'
 Site Soils Map Scale (if more than 1 soil type): 1" = 800'
9. Method of collecting positional data:
 - ☒ Global Positioning System (GPS) technology.
 - ☒ Other method(s). Please describe method of data collection: 2018 Aerial Photograph
10. ☒ The project site and boundaries are clearly shown and labeled on the Site Geologic Map.
11. ☒ Surface geologic units are shown and labeled on the Site Geologic Map.

12. ☒ Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.
- ☐ Geologic or manmade features were not discovered on the project site during the field investigation.
13. ☒ The Recharge Zone boundary is shown and labeled, if appropriate.
14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.
- ☒ There are 5 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
- ☐ The wells are not in use and have been properly abandoned.
- ☒ The wells are not in use and will be properly abandoned.
- ☒ The wells are in use and comply with 16 TAC Chapter 76.
- ☐ There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

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

STRATIGRAPHIC COLUMN

EXPLANATION OF HYDROSTRATIGRAPHIC UNITS

Group or Formation	Formal and informal member		Hydrologic unit or Informal hydrostratigraphic unit
Taylor Group (Pecan Gap)		Kpg	
Austin Group		Ka	
Eagle Ford Group		Kef	
Buda Limestone		Kb	
Del Rio Clay		Kdr	
Georgetown Formation		Kg	I
Person Formation	Cyclic and marine, undivided	Kpcm	II
	Leached and collapsed	Kplc	III
	Regional dense member	Kprd	IV
Kainer Formation	Grainstone	Kkg	V
	Kirschberg evaporite	Kkke	VI
	Dolomitic	Kkd	VII
	Basal nodular	Kkbn	VIII
Glen Rose Limestone	Upper Glen Rose Limestone	Kgrc	Cavernous
		Kgrcb	Camp Bullis
		Kgrue	Upper evaporite
		Kgrf	Fossiliferous
		Kgrlf	Upper
		Kgrle	Lower
	Lower Glen Rose Limestone	Kgrb	Bulverde
		Kgrlb	Little Blanco
		Kgrts	Twin Sisters
		Kgrd	Doeppenschmidt
		Kgrr	Rust
		Kgrhc	Honey Creek
Pearsall Formation	Hensell Sand	Kheh	Hensell
	Cow Creek Limestone	Kcccc	Cow Creek
	Hammett Shale	Khah	Hammett

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Bigbee Tract

PROJECT NUMBER: FGS-E21115

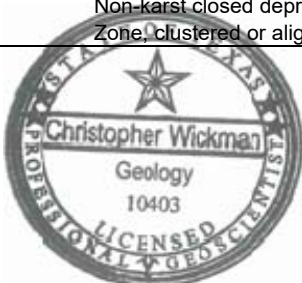
LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING			
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12	
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATIO N	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY	CATCHMENT AREA (ACRES)		TOPOGRAPHY		
						X	Y	Z		10							<40	>40	<1.6	>1.6	
S-1	29° 46' 48.38"	-98° 18' 24.97"	SC	20	Kkd	0.75	3	2	-	-	-	-	CF	15	35	35			YES		HILLSIDE
S-2	29° 46' 47.88"	-98° 18' 26.69"	SC	20	Kkd	1	3	2	-	-	-	-	CF	12	32	32			YES		HILLSIDE
S-3	29° 46' 49.51"	-98° 18' 28.84"	SC	20	Kkd	1.5	1	1.5	-	-	-	-	CF	13	33	33			YES		HILLSIDE
S-4	29° 46' 46.99"	-98° 18' 31.69"	SC	20	Kkd	1	1	1.5	-	-	-	-	CF	10	30	30			YES		HILLSIDE
S-5	29° 46' 46.72"	-98° 18' 30.98"	CD	5	Kkd	2	2	0.75	-	-	-	-	CF	10	15	15			YES		HILLSIDE
S-6	29° 46' 46.16"	-98° 18' 22.98"	SH	20	Kkd	4	5	2	-	-	-	-	CF	12	32	32			YES		HILLSIDE
S-7	29° 46' 46.39"	-98° 18' 22.68"	SC	20	Kkd	1	0.75	1	-	-	-	-	CF	12	32	32			YES		HILLSIDE
S-8	29° 46' 45.84"	-98° 18' 22.76"	SH	20	Kkd	4	5	2	-	-	-	-	CF	12	32	32			YES		HILLSIDE
S-9	29° 46' 45.63"	-98° 18' 33.26"	O ^{FR}	5	Kkd	12	20	-	-	-	1/ft	0.1 to 0.25	CF	10	15	15			YES		HILLSIDE
S-10	29° 46' 43.60"	-98° 18' 36.22"	SH	20	Kkd	5	4	2	-	-	-	-	CF	15	35	35			YES		HILLSIDE
S-11	29° 46' 43.09"	-98° 18' 19.72"	CD	5	Kkd	4	4	2	-	-	-	-	CF	10	15	15			YES		HILLSIDE
S-12	29° 46' 41.02"	-98° 18' 32.29"	SC	20	Kkd	1	3	2	-	-	-	-	CF	12	32	32			YES		HILLSIDE
S-13	29° 46' 41.49"	-98° 18' 35.75"	O ^{FR}	5	Kkd	15	20	-	-	-	1 to 2/ft	0.1 to 0.5	CF	15	20	20			YES		HILLSIDE

Datum: NAD 83

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING
N None, exposed bedrock
C Coarse - cobbles, breakdown, sand, gravel
O Loose or soft mud or soil, organics, leaves, sticks, dark colors
F Fines, compacted clay-rich sediment, soil profile, gray or red colors
V Vegetation. Give details in narrative description
FS Flowstone, cements, cave deposits
X Other materials

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Floodplain, Streambed



I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field. My signature certifies that I am qualified as a geologist as defined by 30 TAC 213.

Chris Wickman, P.G.

Date: April 21, 2021

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Bigbee Tract

PROJECT NUMBER: FGS-E21115

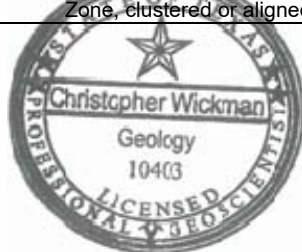
LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATIO N	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)	TOPOGRAPHY	
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S-14	29° 46' 37.10"	-98° 18' 30.12"	SH	20	Kkd	4	3	2	-	-	-	-	OCF	15	35	35		YES		HILLSIDE
S-15	29° 46' 37.37"	-98° 18' 18.57"	O ^{FR}	5	Kkd	15	20	-	-	-	3 to 6/ft	0.1 to 0.25	CF	17	22	22		YES		STREAMBED
S-16	29° 46' 51.06"	-98° 18' 21.08"	CD	5	Kkd	3	4	1.5	-	-	-	-	CF	10	15	15		YES		HILLSIDE
S-17	29° 46' 49.12"	-98° 18' 22.40"	SH	20	Kkd	2	3.5	7	-	-	-	-	CF	25	45	45		YES		STREAMBED
S-18	29° 46' 49.57"	-98° 18' 28.32"	CD	5	Kkd	1.5	3	1	-	-	-	-	CF	10	15	15		YES		HILLSIDE
S-19	29° 46' 46.84"	-98° 18' 35.00"	SC	20	Kkd	1	3	2	-	-	-	-	CF	15	35	35		YES		HILLSIDE
S-20	29° 47' 0.81"	-98° 18' 33.98"	MB	30	kgrc	0.5	0.5	400+	-	-	-	-	CF	8	38	38		YES		HILLSIDE
S-21	29° 47' 0.77"	-98° 18' 32.30"	MB	30	kgrc	0.5	0.5	400+	-	-	-	-	CF	8	38	38		YES		HILLSIDE
S-22	29° 47' 0.72"	-98° 18' 29.62"	MB	30	kgrc	0.5	0.5	400+	-	-	-	-	CF	8	38	38		YES		HILLSIDE
S-23	29° 46' 59.92"	-98° 18' 37.82"	MB	30	kgrc	0.5	0.5	400+	-	-	-	-	CF	8	38	38		YES		HILLSIDE
S-24	29° 46' 58.17"	-98° 18' 39.62"	MB	30	kgrc	0.5	0.5	?	-	-	-	-	CF	8	38	38		YES		HILLSIDE
S-25	29° 46' 40.56"	-98° 18' 19.22"	MB	30	kgrc	0.5	0.5	4	-	-	-	-	X	5	35	35		YES		HILLSIDE
S-26	29° 46' 43.26"	-98° 18' 26.35"	MB	30	karc	0.5	0.5	2.5	-	-	-	-	X	5	35	35		YES		HILLSIDE

Datum: NAD 83

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
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Cliff, Hilltop, Hillside, Floodplain, Streambed



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Chris Wickman, P.G.

Date: April 21, 2021

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Bigbee Tract

PROJECT NUMBER: FGS-E21115

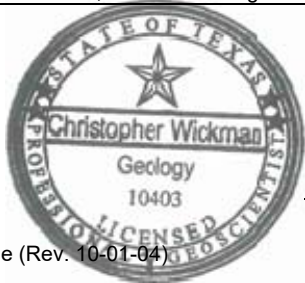
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						X	Y	Z		10							<40	>40	<1.6	>1.6	
S-27	29° 46' 39.21"	-98° 18' 35.17"	MB	30	Kkd	0.5	0.5	2.5	-	-	-	-	X	5	35	35		YES		HILLSIDE	
S-28	29° 46' 48.03"	-98° 18' 31.83"	MB	30	Kkd	0.5	0.5	2.5	-	-	-	-	X	5	35	35		YES		HILLSIDE	
S-29	29° 46' 53.65"	-98° 18' 39.02"	MB	30	Kgrc	0.5	0.5	15	-	-	-	-	X	5	35	35		YES		HILLSIDE	
S-30	29° 46' 52.67"	-98° 18' 31.61"	MB	30	Kgrc	0.5	0.5	15	-	-	-	-	X	5	35	35		YES		HILLSIDE	
S-31	29° 46' 59.27"	-98° 18' 31.23"	MB	30	Kgrc	0.5	0.5	2.5	-	-	-	-	X	5	35	35		YES		HILLSIDE	
S-32	29° 46' 56.76"	-98° 18' 23.17"	MB	30	Kgrc	0.5	0.5	15	-	-	-	-	X	5	35	35		YES		HILLSIDE	
S-33	29° 47' 2.04"	-98° 18' 21.94"	MB	30	Kgrc	0.5	0.5	3.5	-	-	-	-	X	5	35	35		YES		HILLSIDE	
S-34	29° 46' 55.74"	-98° 18' 15.54"	MB	30	Kgrc	0.5	0.5	4	-	-	-	-	X	5	35	35		YES		HILLSIDE	
S-35	29° 46' 52.07"	-98° 18' 22.49"	MB	30	Kgrc	0.5	0.5	4	-	-	-	-	X	5	35	35		YES		HILLSIDE	
S-36	29° 46' 48.25"	-98° 18' 17.45"	MB	30	Kkd	0.5	0.5	2	-	-	-	-	X	5	35	35		YES		HILLSIDE	
S-37	29° 46' 56.16"	-98° 18' 27.04"	F	20	Kgrc	-	-	-	-	-	-	-	CF	10	30	30		YES		HILLSIDE	
S-38	29° 46' 50.95"	-98° 18' 24.66"	F	20	Kkd/Kgrc	-	-	-	-	-	-	-	CF	15	35	35		YES		HILLSIDE	

Datum: NAD 83

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Floodplain, Streambed



I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists.
The information presented here complies with that document and is a true representation of the conditions observed in the field.
My signature certifies that I am qualified as a geologist as defined by 30 TAC 213.

Chris Wickman
Chris Wickman, P.G.

Date: April 21, 2021

LOCATION

The Site is located along the north side of State Highway 46 approximately ½ mile northwest of the intersection of Highway 46 and FM 3009 in Comal County, Texas. An overall view of the area is shown on copies of the site plan, a street map, the U.S.G.S. Topographic Map, the EAA-Edwards Aquifer Recharge Zone and Contributing Zone Map, the FIRM Map, the U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, a 2018 aerial photograph at a scale of 1"=800' and 400' and a NRCS Soil Survey aerial photograph at a scale of 1"=800'. These maps are included as Figures 1 through 9 in Appendix A.

METHODOLOGY

The Geologic Assessment was performed by Chris Wickman, P.G., Professional Geoscientist and Michael McMahan, P.G. with Frost GeoSciences, Inc. Mr. Wickman is a Licensed Professional Geoscientist in the State of Texas (License # 10403).

Frost GeoSciences, Inc. researched the geology of the area west and northwest of the intersection of State Highway 46 and FM 3009. The research included, but was not limited to, the Geologic Atlas of Texas, San Antonio Sheet, FEMA maps, Edwards Aquifer Recharge Zone Maps, U.S.G.S. 7.5 Minute Quadrangle Maps, U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, the Bureau of Economic Geology-Geologic Atlas of Texas, the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle, the U.S.G.S. Water-Resources Investigations Report 94-4117, and the U.S.D.A. Soil Survey of Comal and Hays Counties, Texas.

After reviewing the available information, a field investigation was performed to identify any geologic or man-made Potential Recharge Features (PRFs). A transect spacing of approximately 50 feet, or less depending on vegetation thickness, was used to inspect the project area. A 2018 aerial photograph, in conjunction with a hand-held Garmin GPS 72H Global Positioning System with an Estimated Potential Error ranging from 10 to 14 feet, was used to navigate around the property and identify the locations of PRFs, as recommended in the "Instructions to Geologists", TCEQ-0585-Instructions (Rev. 10-1-04). The locations of any PRFs noted in the field were marked with blue and white flagging. The flagging is numbered with the same potential recharge feature I.D. # that is used on the Site Geologic Map. The Site Geologic Map, indicating the limits of the project site, and the locations of PRFs and rock outcrops noted on the project site, is included in Appendix C of this report. A copy of a 2018 Aerial Photograph at an approximate scale of 1" =400' indicating the limits of the project site, and the locations of PRFs and rock outcrops noted on the project site, is included on Figure 9 in Appendix A. The Geologic Assessment Form TCEQ-0585, (Rev. 2-11-15), Stratigraphic Column, and the Geologic Assessment Table have been filled with the appropriate information for this project site and are included pages 1 through 7 of this report.

RESEARCH & OBSERVATIONS

7.5 Minute Quadrangle Map Review

According to the U.S.G.S. 7.5 Minute Quadrangle Map, Smithson Valley, Texas Sheet (1994), the elevation across the project site ranges from 1200 to 1280 feet above mean sea level. The project site has a total relief of approximately 80 feet. Runoff from the project site flows radially to the south and west into unnamed tributaries of West Fork Creek. Highway 46 is located along the southern property line of the project site. The intersection of Highway 46 and FM 3009 is located east of the project site. A copy of the U.S.G.S. 7.5 Minute Quadrangle Map indicating the location of the project site is included on Figure 3 in Appendix A.

Recharge/Transition Zone

According to the E.A.A. Edwards Aquifer Recharge Zone and Contributing Zone Map, Smithson Valley, Texas (2014), the Official Edwards Aquifer Recharge Zone Map, Smithson Valley, Texas Sheet (1994), and the TCEQ website: Edwards Aquifer Viewer – <https://tceq.maps.arcgis.com/apps/webappviewer/index.html>, the southern portion of the project site is located within the Recharge Zone of the Edwards Aquifer and the northern portion of the project site lying in the Contributing Zone. A copy of the E.A.A. Edwards Aquifer Recharge Zone and Contributing Zone Map indicating the location of the project site is included on Figure 4 in Appendix A.

100-Year Floodplain

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the Flood Insurance Map, Community Panel Numbers 48091C0240F and 48091C0245F, dated September 2, 2009 was reviewed to determine if the project site is located in areas prone to flooding. A review of the above-mentioned Panel Numbers indicated that the project site is located within "Zone X". According to the Panel Legend, Zone X represents areas determined to be outside the 0.2% annual chance floodplain. A copy of the above referenced FIRM panel indicating the location of the project site is included on Figure 5 in Appendix A.

Soils

According to the United States Department of Agriculture, Soil Conservation Service, Soil Survey of Comal and Hayes County, Texas, issued (1984), the project site is located on the Crawford and Bexar stony soils (Cb), Denton silty clay, 1 to 3 percent slopes (DeB), the Rumble-Comfort association (RUD) and the Purves clay, 1 to 5 percent slopes (PuC). A copy of the 1973 aerial photo (approximate scale: 1" = 800') from the U.S.D.A. Soil Survey of Comal and Hays County, Texas indicating the location of the project site and the soil types is included on Figure 6 in Appendix A.

- The Crawford and Bexar Stony Soils (Cb) are very dark grayish brown to reddish brown clay. They are stony clay in texture and are shallow to moderately deep over hard limestone. These soils are extensive in the northern part of the county. The surface layer is noncalcareous, about 8 inches thick, and very dark grayish brown or very dark brown. It has fine, subangular blocky and granular structure. When moist, this layer is very firm but breaks easily to a mass of fine clods. When dry, is very hard and contains many large cracks. Angular fragments of chert and limestone are common. These fragments may range in size from a quarter of an inch to 24 inches in diameter. The subsurface layer is dense, angular blocky clay. This layer is neutral or slightly acidic, but it may be limy in the lower parts. It is about 26 inches thick and either overlies a thin layer of yellowish red to pale brown,

limy clay or, if the limy layer is lacking, rests on hard, fractured limestone. Crawford soils are naturally well drained. Internal drainage and permeability vary according to moisture content. Water moves rapidly when the soil is dry and cracked, but very slowly when the soil is wet. This soil has a USDA Texture Classification of Cherty Clay Loam to Loam. The Unified Classification is CG or CL. The AASHTO Classification is A-2, A-4, or A-6. This soil has an average permeability from 1.0 to 1.5 inches/hour.

- Denton silty clay, 1 to 3 percent slopes (DeB) is a moderately deep, gently sloping soil located on valley slopes on uplands in the Edwards Plateau. Typically, the surface layer is dark grayish brown silty clay approximately 14" thick. The underlying layer extends to a depth of 25" and is dark brown silty clay. The subsoil extends to a depth of 33". It is light yellowish-brown silty clay. The underlying material to a depth of 36" is light brown and reddish yellow silty clay. It is underlain by fractured limestone interbedded with calcareous clayey marl. The soil is moderately alkaline and calcareous throughout. This is a well-drained and slowly permeable soil. Runoff is medium. The available water capacity is medium, and erosion is a slight hazard. This soil has a USDA Texture Classification of silty clay, clay, silty clay loam and weathered bedrock. The Unified Classification is CH or CL. The AASHTO Classification is A-7-6. This soil has an average permeability from 0.06 to 0.2 inches/hour.
- The Rumple-Comfort Association (RUD) consists of shallow and moderately deep soils on uplands in the Edwards Plateau Land Resource Area. The surface layer of the Rumple Soil is dark reddish brown very cherty clay loam about 10 inches thick. Rounded chert and limestone cobbles and gravel cover about 20 percent of the surface. The subsoil to a depth of 14 inches is dark reddish-brown very cherty clay, and to a depth of 28 inches it is dark reddish-brown extremely stony clay. The underlying material is indurated fractured limestone. The Comfort Soil is dark brown, neutral, extremely stony clay about 7 inches thick. The subsoil to a depth of 12 inches is dark reddish-brown, mildly alkaline, extremely stony clay. The underlying material is indurated fractured limestone. The soil is non-calcareous throughout. The soils in this association are well drained. Surface runoff is medium, but varies due to the occurrence of caves, fracture zones, and sinks. Permeability is moderately slow. Water erosion is a moderate hazard. This soil has a USDA Texture Classification of that ranges from very cherty clay loam to very cherty clay, extremely stony clay and extremely stony clay, stony clay to very stony clay and extremely stony clay. The Unified Classification is GC, CL, SC and CH, GC, SC and CL. The AASHTO Classification is A-2-6, A-6, A-2-7 and A-7-6. This soil has an average permeability from 0.2 to 0.6 and 0.06 to 0.2 inches/hour.
- The Purves clay, 1 to 5 percent slopes (PuC) consists of shallow, gently sloping soil located on uplands. Typically, the surface layer is very dark gray clay about 10 inches thick. The layer below that to a depth of 16 inches is dark gray clay, and to a depth of 19 inches it is dark grayish brown clay that is approximately 10% (by volume) coarse fragments of limestone. The underlying layer is fractured indurated limestone bedrock. The Purves clay is well drained. Surface Runoff is medium. Permeability is moderately slow, and available water capacity is very low. Surface runoff is slow to medium, and the hazard of erosion is moderate. This soil has a USDA Texture Classification of that ranges from very cherty clay loam to very cherty clay, extremely stony clay and extremely stony clay, stony clay to very stony clay and extremely stony clay. The Unified Classification is CH, SC and GC. The AASHTO Classification is A-7-6. This soil has an average permeability from 0.2 to 0.6 inches/hour.

Narrative Description of the Site Geology

Based on a visual inspection of the ground surface, the overall potential for fluid flow from the project site into the Edwards Aquifer appears to be low. The locations of the PRFs are identified on the 2018 aerial photograph on Figure 9 in Appendix A, and on the Site Geologic Map provided in Appendix C. Color photos of the project site and some of the PRFs are included in Appendix B.

PRF #s S-1 through S-4, S-7, S-12, and S-19 are solution cavities of varying dimensions that are filled in with clay and leaves. The solution cavities occur on hillsides located under rock ledges and at the bases of trees. The majority of these solution cavities appeared to have been excavated by burrowing animals. Frost GeoSciences rates these features as low on figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). These features score 32 to 35 points on the sensitivity scale, column 10 of the Geologic Assessment Table included on page 5 and 6 of this report. Frost GeoSciences, Inc. does not consider the solution cavities to be sensitive features.

PRF #s S-5, S-11, S-16 and S-18 are non-karst closed depressions. The closed depressions were infilled with compacted fine soils and leaves. PRF S-5 and S-16 may have been the result of a tree removed from the ground. PRF # S-11 and S-18 may have been animal wallows or the result of soil deflation. Frost GeoSciences rates these features as low on figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The features score a 15 on the sensitivity scale, column 10 of the Geologic Assessment Table included on page 5 and 6 of this report. Frost GeoSciences, Inc. does not consider the closed depressions to be sensitive features.

PRF #s S-6, S-8, S-10 and S-14 appear to be a sink holes located on moderately sloping hillsides. The sink holes were backfilled with compacted fine soils and leaves. The sink holes were observed between boulders adjacent to trees. The sink holes may have resulted from fallen trees and/or tree/tree roots spreading limestone boulders. No obvious indications of water channels or drainage paths leading into the sink holes. Frost GeoSciences, Inc. rates the features as low on Figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The features score a 32 and 35 on the sensitivity scale, column 10 of the Geologic Assessment Table included on page 5 and 6 of this report. Frost GeoSciences, Inc. does not consider the sink hole to be a sensitive feature.

PRF #s S-9, S-13 and S-15 are outcrops of gray fractured limestone. The density of fractures occurring in the areas of fractured rock ranged from 1 to 6 fractures per foot. The aperture of the fractures ranged from 1 inch to 6 inches. The fractures were infilled with fine soils, coarse sand and small gravel. PRF #S-15 was observed within a streambed. Frost GeoSciences, Inc. rates these features as low on Figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The outcrops of fractured rock scored a 15, 20 and 22, respectively, on the sensitivity scale, column 10 of the Geologic Assessment Table included on pages 5 and 6 of this report. Frost GeoSciences, Inc. does not consider the outcrops to be sensitive features.

PRF #S-17 is a solution cavity at the bottom of a large depression approximately 12 feet wide, 10 feet long and 7 feet deep. A cavity was observed in the bottom of the depression. This cavity was 2 feet wide, 3.5 feet long and approximately 7 feet deep. The bottom of the cavity is filled with rocks and gravel. The feature is located in a densely wooded area of the project site. A small drainage path was observed leading to the cavity. Frost GeoSciences, Inc. rates the feature as high on Figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The feature scores a 45 on the sensitivity scale, column 10 of the Geologic Assessment Table included on page 6 of this report. Frost GeoSciences, Inc. does consider the solution cavity to be a sensitive feature.

PRF #s S-20, S-21, S-22, S-23, and S-24 are water-wells. The wells are in operation. PRF #S-24 was observed in association with a windmill. Frost GeoSciences rates the features as low on figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The feature scores a 38 on the sensitivity scale, column 10 of the Geologic Assessment Table included on page 6 of this report. Frost GeoSciences, Inc. does not consider the water wells to be sensitive features.

PRF #s S-25 through S-36 are geotechnical soil borings. According to the Frost Geosciences, Inc. Geotechnical Report, the soil borings S-25 through S-28, S-31 and S-33 through S-36 ranged from 2 to 4 feet in depth below ground surface. PRF # S-29, S-30 and S-32 were drilled 15 feet bgs. According to the geotechnical report, the borings were backfilled to the ground surface with a mixture of bentonite pellets and soil cuttings. Frost GeoSciences, Inc. rates the geotechnical soil borings as low on Figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The geotechnical soil borings score a 35 on the sensitivity scale, column 10 of the Geologic Assessment Table included on pages 6 and 7 of this report. Frost GeoSciences, Inc. does not consider the geotechnical soil borings to be sensitive features.

Potential Recharge Feature # S-37 was an inferred fault identified on the geologic map crossing the northern portion of the project site. The U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map identified the fault. Obvious visual indications of the fault were not observed at the time of the site reconnaissance. Based on the absence of direct visual evidence of the fault due to thick soil cover and vegetation, Frost GeoSciences, Inc. rates the fault as low on Figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The fault scored a 30 on the sensitivity scale, column 10 in the Geologic Assessment Table on page 7 of this report. Frost GeoSciences, Inc. does not consider the inferred fault to be a sensitive feature.

Potential Recharge Feature # S-38 was a fault identified on the geologic map crossing the central portion of the project site. The U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map identified the fault. The fault marks the boundary of Contributing Zone with the Recharge Zone. Obvious visual indications of the fault were not observed at the time of the site reconnaissance; however, minor evidence of the fault, (i.e., lithology changes and fractured limestone outcrops observed in the vicinity of the fault) was observed in the central portion of the Site. Based on review of the geologic maps of the area, the upwardly displaced formation to the north of the fault is Cretaceous Upper Glen Rose limestone and the downward displaced formations, to the south of the fault, is the Edwards Kainer limestone. Based on the absence of direct visual evidence of the fault due to soil cover and vegetation, Frost GeoSciences, Inc. rates the fault as low on Figure 1 of the TCEQ-0585-Instructions (Rev. 10-01-04). The fault scored a 35 on the sensitivity scale, column 10 in the Geologic Assessment Table on page 7 of this report.

The Site consists of an irregularly shaped parcel approximately 158.77 acres in size. The Site is designed and used for cattle grazing, hunting and as the Castle Avalon wedding venue. Site visit photos indicating the condition of the property at the time of the on-site inspection are included in Appendix B. The vegetative cover consisted primarily of Live oak (*Quercus fusiformis*) and Ashe Juniper (*Juniperus ashei*) woodland, with occasional specimens of Texas persimmon (*Diospyros texana*). Net-leaf hackberry (*Celtis laevigata*) were noted along fence lines in the northwestern portion of the Site.

The understory layer was relatively open, and included regrowth Ashe juniper (*Juniperus ashei*), Agarita (*Berberis trifoliolata*), Prickly pear (*Opuntia engelmannii*) and various native grasses. Mature ashe juniper specimens were noted throughout the Site. Vegetation was densest in the southern, central, and northwestern portions of the Site. Vegetation in the eastern portion of the Site was relatively open and park-like. Large areas of agricultural clearing were observed in the western and central portions of the Site. The variations in the vegetative cover on the property are visible in the 2018 aerial photo on Figures 8 and 9 in Appendix A. A copy of the site layout indicating the boundary of the project site and the elevations is included on the Site Geologic Map in Appendix C of this report.

According to the U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, the project site is located on the Dolomitic and the Basal Nodular Members of the Cretaceous Edwards Kainer limestone, Kkd and Kkbn, respectively, as well as the Cavernous member of the Cretaceous Upper Glen Rose limestone, Kgrc. A copy of the U.S. Geological Survey, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366 is included on Figure 7 in Appendix A. A copy of the Stratigraphic Column highlighting the outcropping formations is included on Page 4 of this report.

The Dolomitic Member of the Edwards Kainer limestone (Kkbn) consists of mudstone to grainstone with crystalline limestone and chert. This member is massively bedded and light gray with abundant fossils of *Toucasia*. Karst features within this member are typically related to structure or bedding planes. Overall thickness ranges from 110 to 130 feet.

The Basal Nodular Member of the Edwards Kainer limestone (Kkd) consists of shaly, nodular limestone, mudstone, and miliolid grainstone. This member is massive, nodular, and mottled with fossils of *Exogyra texana*. This member typically forms large lateral caves at the surface.

The Cavernous member of the Upper Glen Rose limestone (Kgrc) is approximately 1 to 120 feet thick. The Cavernous member contains fabric-selective porosity associated with molds and burrows and non-fabric-selective porosity in the form of bedding planes, fractures and caves. The Cavernous member consists of evaporites, wackestones, packstones miliolid grainstone and argillaceous limestone. The member is heavily bioturbated with beds *Thalassinoides* and rhizcretions, which are pedo-diagenetic mineral accumulations around plant roots. The bioturbated beds have resulted in interconnected lateral flow and linked bedding planes, fractures and caves.

According to the site plan provided by Cude Engineers, the surveyed elevations on the project site range from 1200 to 1291 feet. According to this survey, the total relief on the project site is approximately 91 feet. A copy of the site plan indicating the boundary of the project site and the elevations is included on the Site Plan on Figure 1 in Appendix A and the Site Geologic Map in Appendix C of this report.

BEST MANAGEMENT PRACTICES

Based on a visual inspection of the ground surface, the overall potential for fluid flow from the project site into the Edwards Aquifer appears to range from low to moderate. The potential always exists to encounter solution cavities within the subsurface during excavating activities. Frost GeoSciences, Inc. is of the opinion that it is very important for construction personnel to be informed of the potential to encounter cavities in the subsurface that lack a surface expression. Construction personnel should also be informed of the proper protocol to follow in the event a karst feature is encountered during the development of the project site.

DISCLAIMER

This report has been prepared in general accordance with the “Instructions to Geologists”, TCEQ-0585-Instructions (Rev. 10-1-04) by a Licensed Texas Professional Geoscientist. All areas of the project site were carefully inspected for features that could contribute to the recharge of the Edwards Aquifer; however, this survey cannot preclude the presence of subsurface karst features that lack surface expression. This report is not intended to be a definitive investigation of all possible geologic or karst features at this site. All conclusions, opinions, and recommendations for Best Management Practices (BMP’s) in this report are based on information obtained while researching the project and on the site conditions at the time of our field investigation.

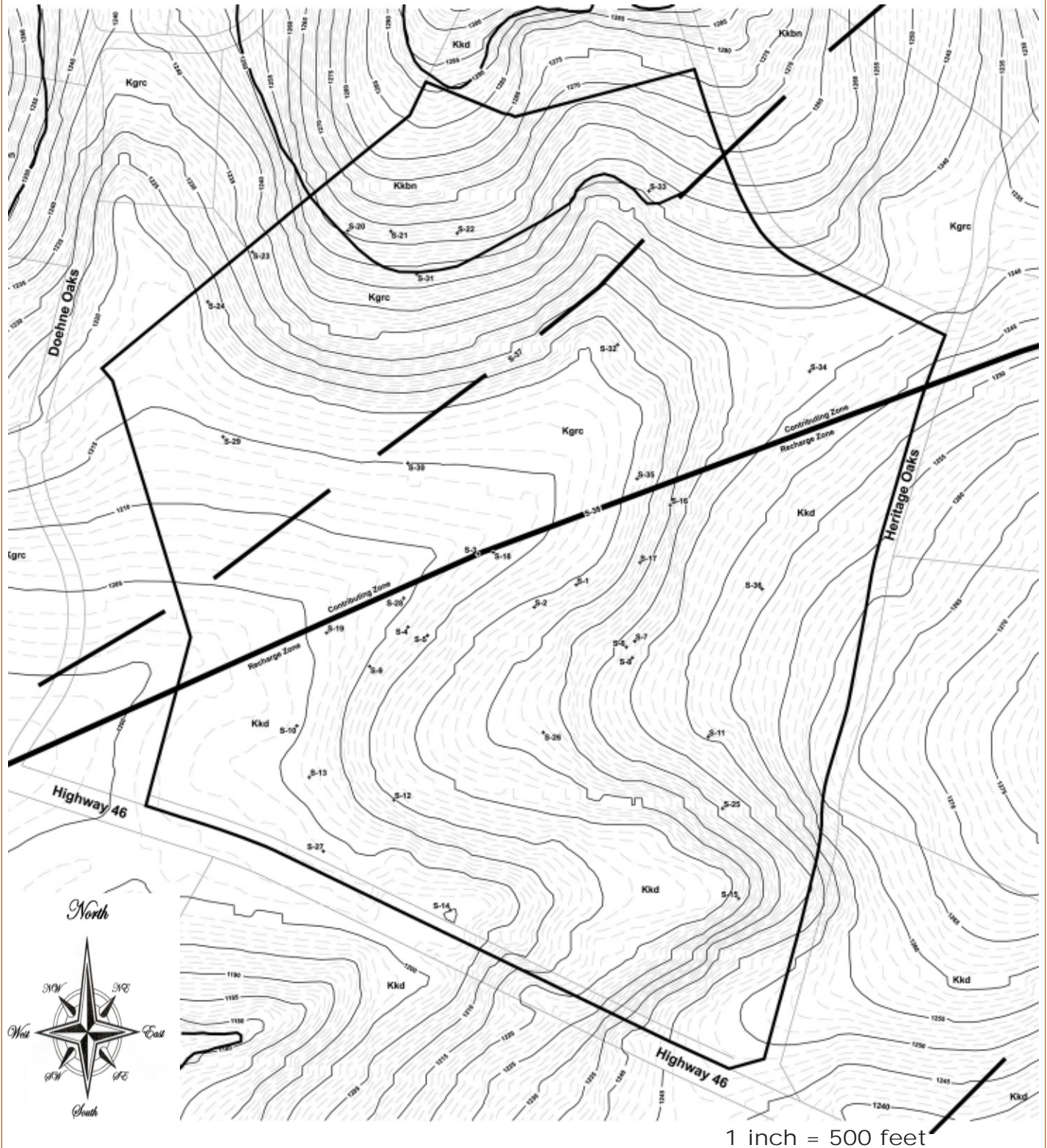
This report has been prepared for the exclusive use of Ashton Woods. This report is based on available known records, a visual inspection of the project site, and the work generally accepted for a Geologic Assessment for Regulated Activities / Developments on the Edwards Aquifer Recharge / Transition Zone, relating to 30 TAC §213.5(b)(3), effective June 1, 1999.

REFERENCES

1. USGS - 7.5 Minute Topographic Quadrangle of Smithson Valley, Texas, 1992
2. E.A.A. Edwards Aquifer Recharge Zone and Contributing Zone Map, Smithson Valley, Texas (2014).
3. Official Edwards Aquifer Recharge Zone Map, Smithson Valley, Texas, 1999
4. The Texas Commission on Environmental Quality (TCEQ) website: Edwards Aquifer Viewer – <https://tceq.maps.arcgis.com/apps/webappviewer/index.html>.
5. Clark, A.K., Golab, J.A. and Morris, R.R., 2016, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, Science Investigations Map 3366, United States Geological Survey.
6. Clark, A.K., Golab, J.A. and Morris, R.R., 2016, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers within Northern Bexar and Comal Counties, Texas, United States Geological Survey.
7. Collins, Edward, W., 2000, Geologic Map of the New Braunfels 30 X 60 Minute Quadrangle, Bureau of Economic Geology, The University of Texas at Austin, Texas.
8. Barnes, V.L., 1982, Geologic Atlas of Texas San Antonio Sheet, Bureau of Economic Geology and University of Texas at Austin, Geologic Atlas of Texas.
9. Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, Flood Insurance Map, Community Panel Number 48091C0240F and 48091C0245F, dated September 2, 2009
10. United States Department of Agriculture Soil Conservation Service Soil Survey of Comal and Hays Counties 1984.
11. USDA NRCS Web Soil Survey (WSS) website: <https://websoilsurvey.nrcs.usda.gov> (2014)
12. TCEQ-0585-Instructions (Rev. 10-1-04), "Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zone".

APPENDIX A

SITE LOCATION FIGURES



PROJECT NAME:

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Bigbee Tract
Comal County, Texas

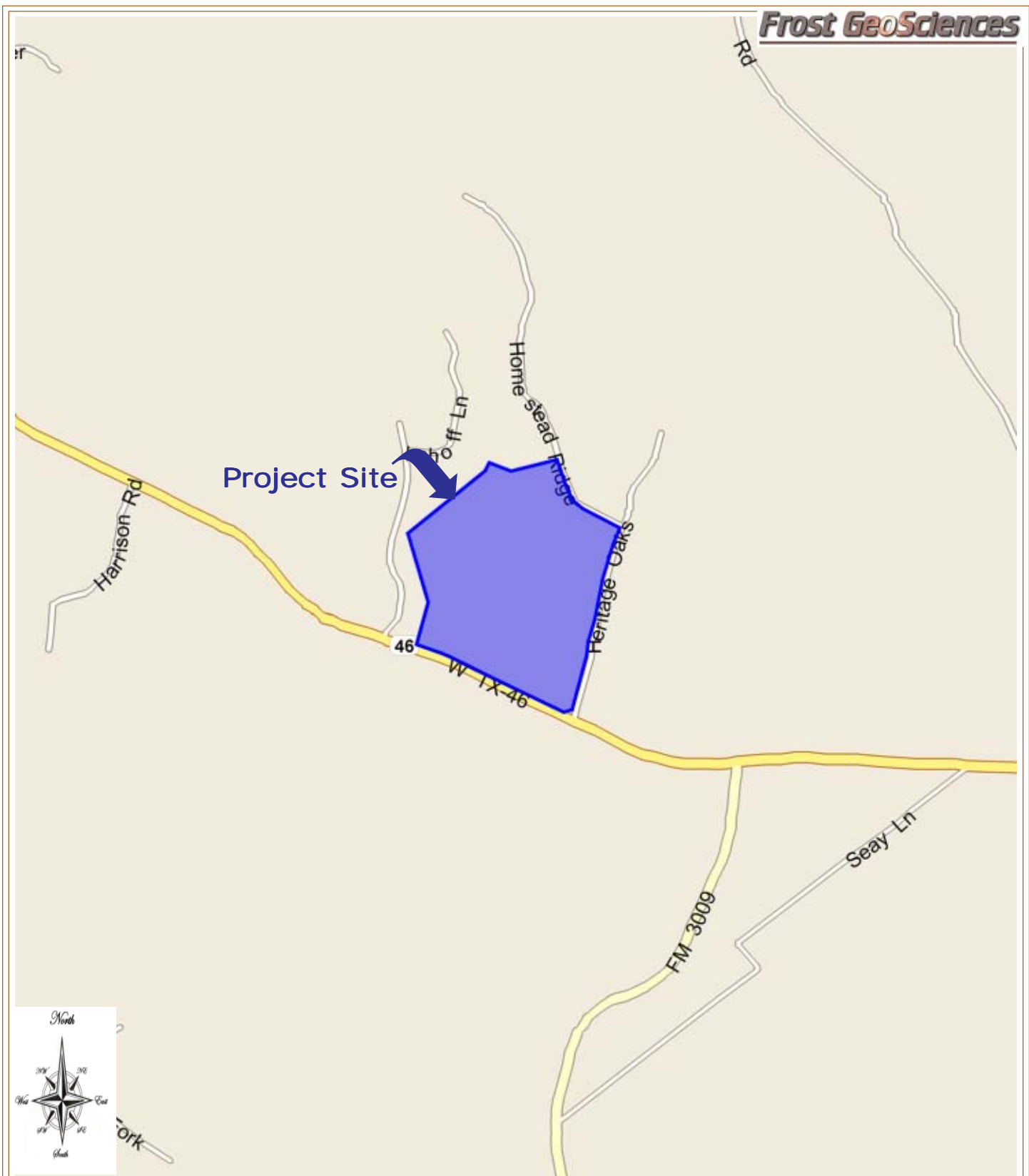
Site Layout

PROJECT NO.:

FGS-E21115

DATE:

April 21, 2021



PROJECT NAME:

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Bigbee Tract
Comal County, Texas

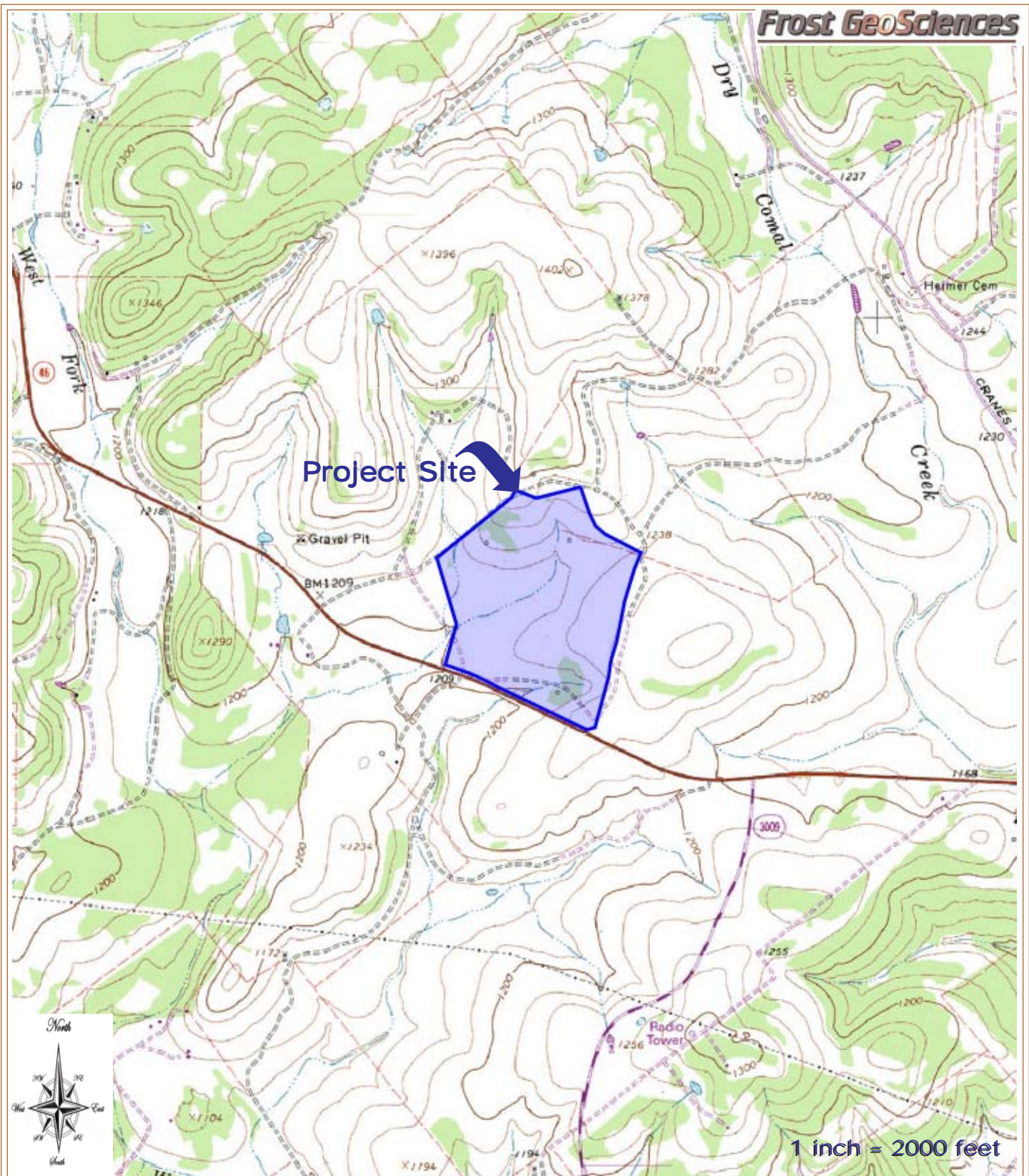
Street Map

PROJECT NO.:

FGS-E21115

DATE:

April 21, 2021



PROJECT NAME:

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Bigbee Tract
Comal County, Texas

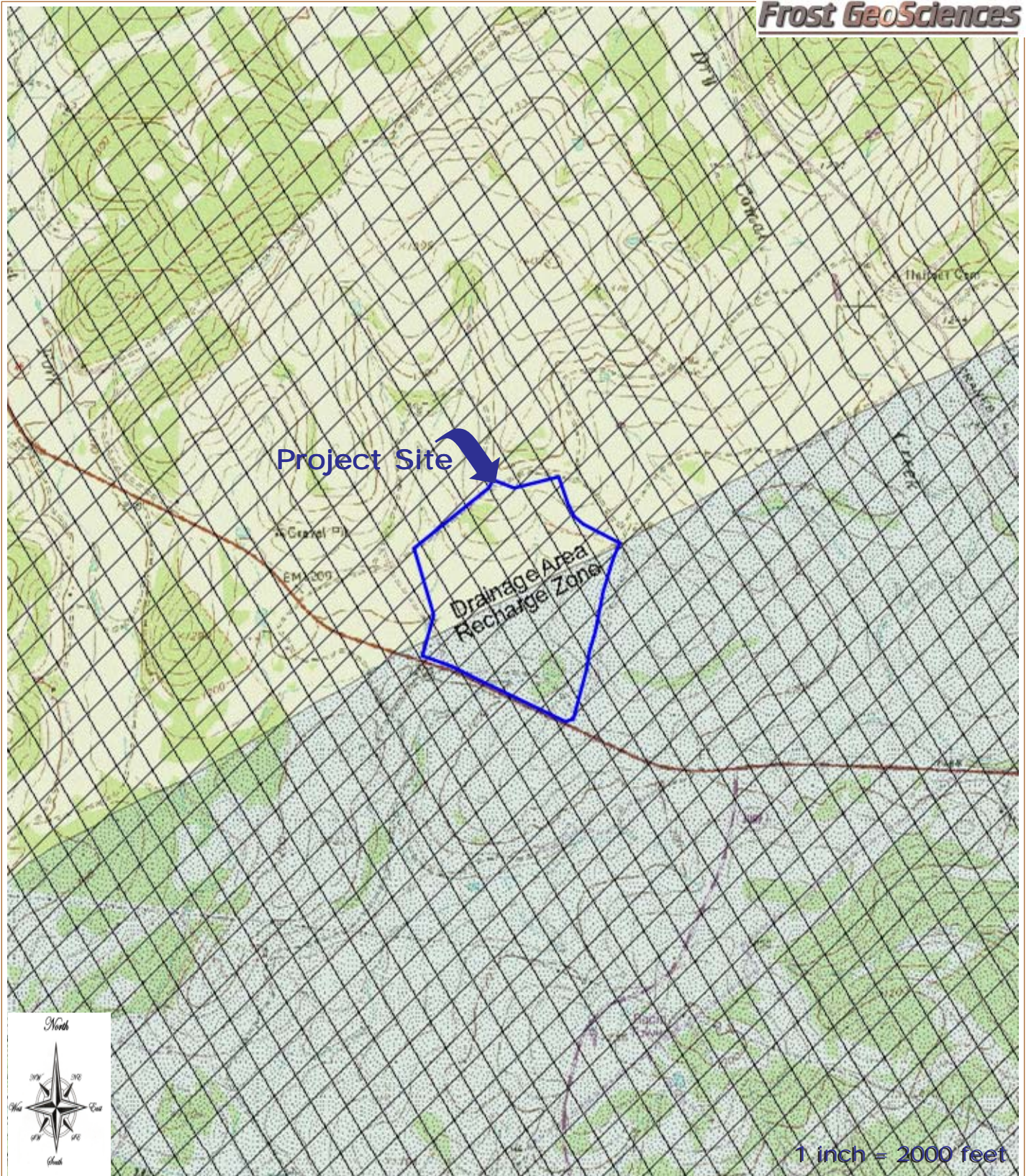
U.S.G.S. 7.5 Minute Quadrangle Map
Smithson Valley, Texas (1994)

PROJECT NO.:

FGS-E21115

DATE:

April 21, 2021



PROJECT NAME:

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Bigbee Tract
Comal County, Texas

Official Edwards Aquifer Recharge Zone Map
Smithson Valley, Texas (2014)

PROJECT NO.:

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DATE:

April 21, 2021



PROJECT NAME:

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Bigbee Tract
Comal County, Texas

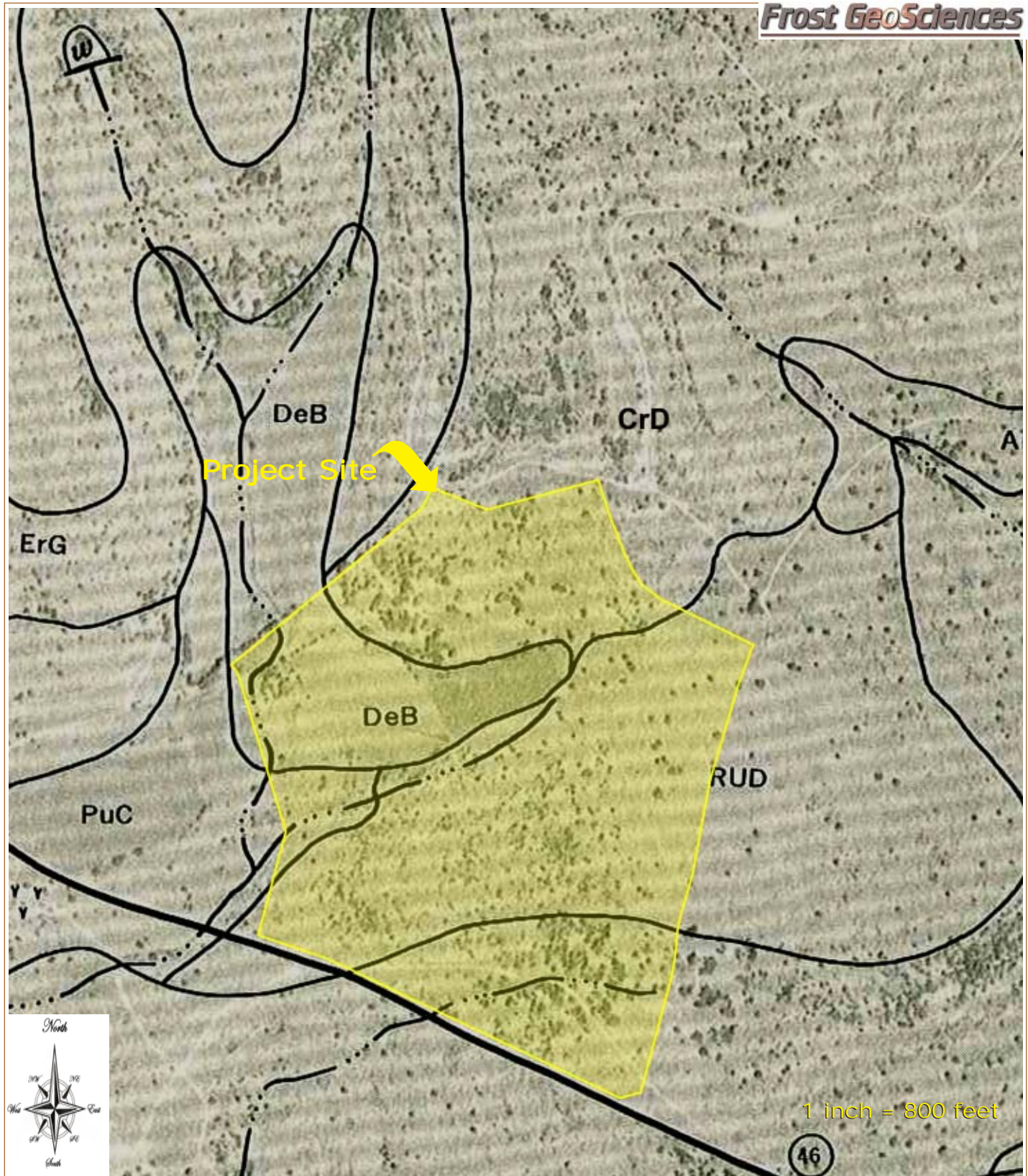
Flood Insurance Rate Map (FIRM)
Community Panel #s 48091C0240F and C0245F
Revised 9/2/2009

PROJECT NO.:

FGS-E21115

DATE:

April 21, 2021



PROJECT NAME:

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Bigbee Tract
Comal County, Texas

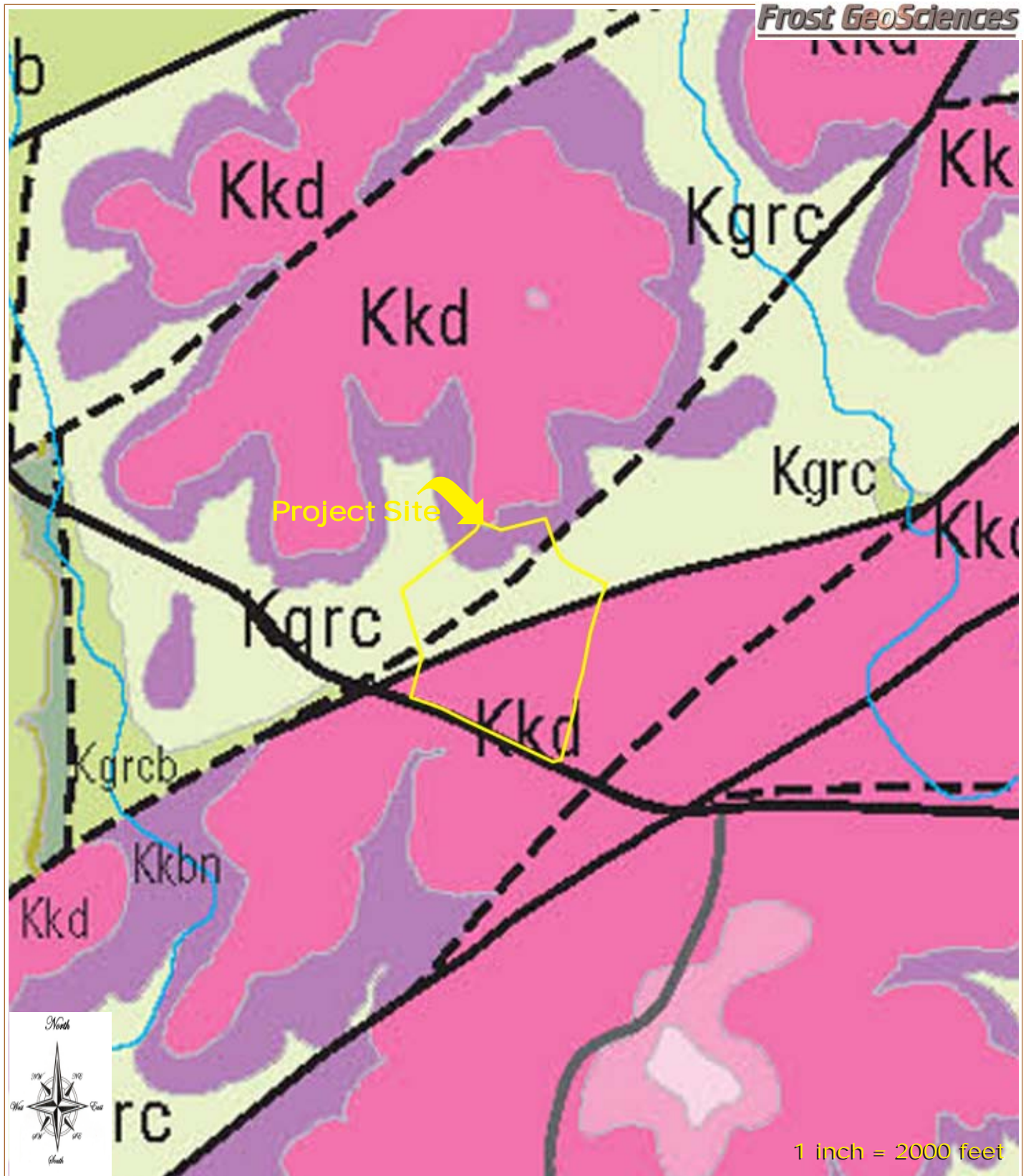
Soils Map
USDA Soil Survey for
Comal and Hays Counties (1984)

PROJECT NO.:

FGS-E21115

DATE:

April 21, 2021



PROJECT NAME:

Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Bigbee Tract
Comal County, Texas

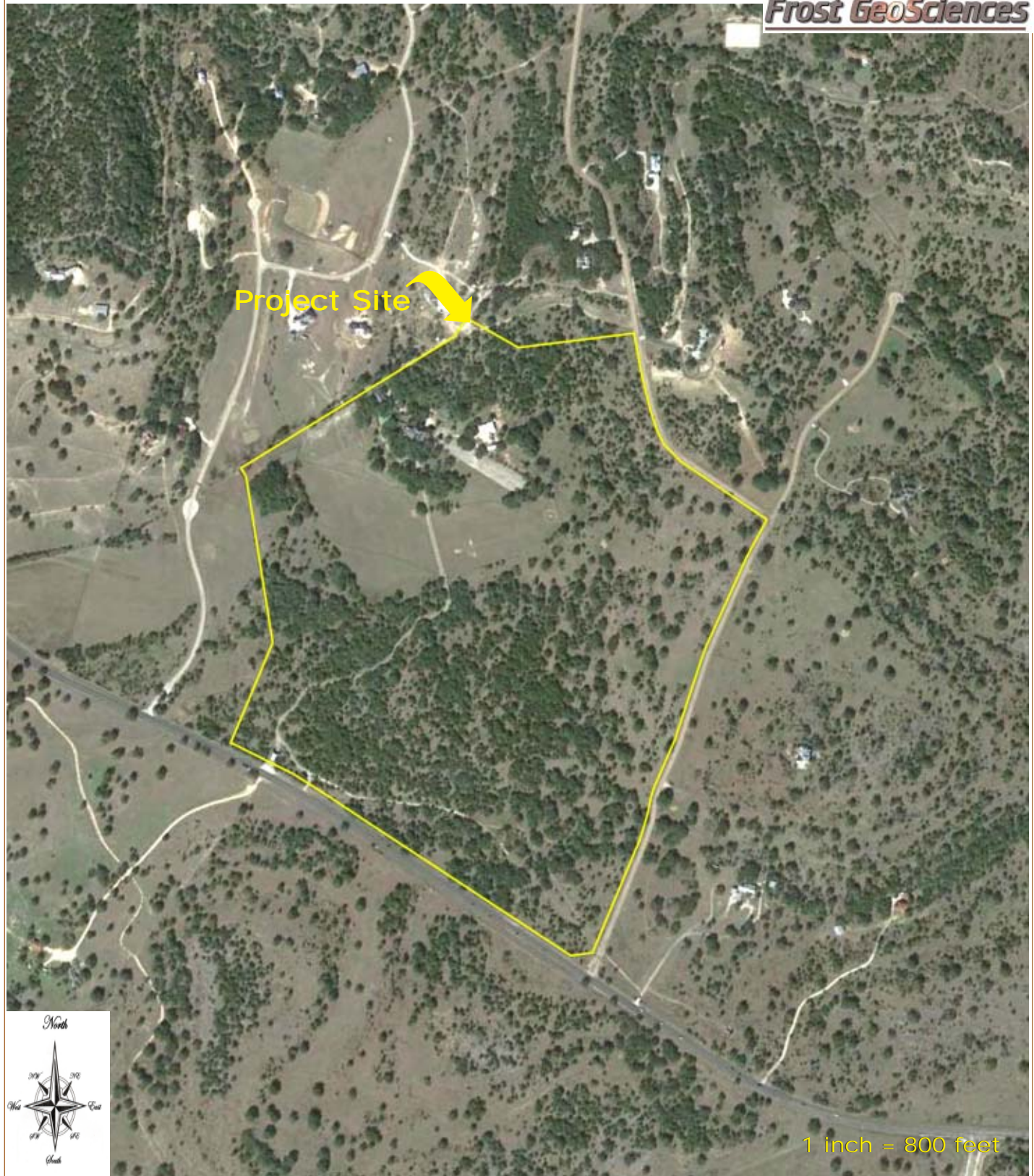
U.S.Geological Survey
Scientific Investigations Map 3366
Clarke (2016)

PROJECT NO.:

FGS-E21115

DATE:

April 21, 2021

**PROJECT NAME:**

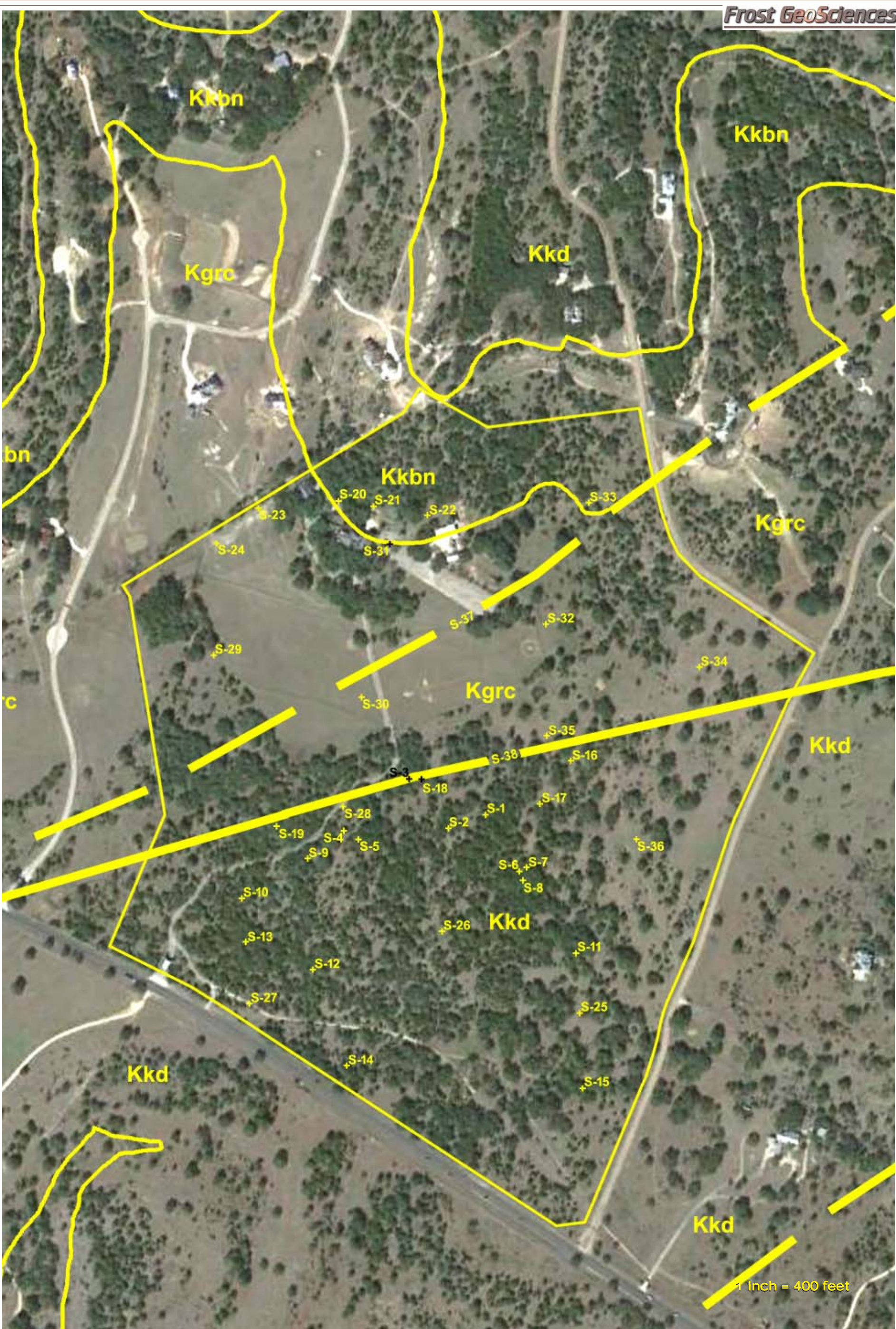
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Bigbee Tract
Comal County, Texas

2018 Aerial Photograph
Google Earth**PROJECT NO.:**

FGS-E21115

DATE:

April 21, 2021



PROJECT NAME:
Geologic Site Assessment (WPAP)
for Regulated Activities / Development on the
Edwards Aquifer Recharge / Transition Zone
Bigbee Tract
Comal County, Texas



2018 Aerial Photograph with PRFs
Google Earth

PROJECT NO.:
FGS-E21115

DATE:
April 21, 2021

**RECHARGE AND TRANSITION
ZONE EXCEPTION
REQUEST FORM (TCEQ-
0628)**

Recharge and Transition Zone Exception Request Form

Texas Commission on Environmental Quality

30 TAC §213.9 Effective June 1, 1999

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

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

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Recharge and Transition Zone Exception Request Form** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Bruna Spengler, P.E.

Date: 11/22/22

Signature of Customer/Agent:



Regulated Entity Name: Bigbee Tract Turn Lane

Exception Request

1. ☒ **Attachment A - Nature of Exception.** A narrative description of the nature of each exception requested is attached. All provisions of 30 TAC §213 Subchapter A for which an exception is being requested have been identified in the description.
2. ☒ **Attachment B - Documentation of Equivalent Water Quality Protection.** Documentation demonstrating equivalent water quality protection for the Edwards Aquifer is attached.

Administrative Information

3. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
4. ☒ The applicant understands that no exception will be granted for a prohibited activity in Chapter 213.
5. ☒ The applicant understands that prior approval under this section must be obtained from the executive director for the exception to be authorized.

ATTACHMENT A

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

Attachment A – Nature of Exception

The Bigbee Tract Subdivision was originally approved as a Water Pollution Abatement Plan (WPAP) on June 25, 2021 (EAPP ID No. 13001326) for the construction of a single-family residential development on a 157.59-acre site, located approximately 2,500 LF west of Hwy 46 and 3009 intersection in Comal County, Texas. The WPAP was approved for 30.00 acres (19.03%) of impervious cover, and an exemption from PBMPs was granted by the executive director based on 20% or less impervious cover. This Bigbee Tract Turn Lane Exception Request is being submitted for the construction of turn lanes for this single-family home development, also known as Waldsanger Tract.

This Recharge Zone Exception Request is submitted as an exception from the Water Pollution Abatement Plan Application. A minor fraction of the overall development is proposed for the construction of turn lanes, which was included as part of the 20% plan exemption granted by the executive director. Approximately 0.26 acres of impervious cover will be constructed for the turn lanes, which will maintain compliance of the 20% impervious cover waiver.

ATTACHMENT B

BIGBEE TRACT TURN LANE Recharge Zone Plan Exception Request

Attachment B – Documentation of Equivalent Water Quality Protection

Proposed regulated activities include limited demolition, clearing, grading, and excavation for utilities and drainage improvements for construction of turn lanes associated with a future single-family residential development. Approximately 0.26 acres of impervious cover is proposed, which is 7.74% of the 3.36 -acre site. This is still in compliance with the 20% impervious cover waiver. Equivalent water quality protection is accounted with the compliance of the 20% impervious cover waiver.

Due to the nature of the proposed construction, this exception request is proposed. Please refer to the included exhibits for additional details.

**TEMPORARY STORMWATER
SECTION (TCEQ-0602)**

Temporary Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

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

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

Signature

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

Print Name of Customer/Agent: Bruna Spengler, P.E.

Date: 11/22/22

Signature of Customer/Agent:



Regulated Entity Name: Bigbee Tract Turn Lane

Project Information

Potential Sources of Contamination

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

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

☒ The following fuels and/or hazardous substances will be stored on the site: construction staging area

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

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

- ☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.
- ☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.
- ☐ Fuels and hazardous substances will not be stored on the site.
- 2. ☒ **Attachment A - Spill Response Actions.** A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.
- 3. ☒ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
- 4. ☒ **Attachment B - Potential Sources of Contamination.** A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

- 5. ☒ **Attachment C - Sequence of Major Activities.** A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.
 - ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.
 - ☒ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.
- 6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: West Fork and Upper Dry Comal Creek

Temporary Best Management Practices (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.

- 7. ☒ **Attachment D – Temporary Best Management Practices and Measures.** TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

- ☒ A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.
 - ☒ A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.
 - ☒ A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
 - ☒ A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.
8. ☒ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.
- ☐ **Attachment E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.
- ☒ There will be no temporary sealing of naturally-occurring sensitive features on the site.
9. ☒ **Attachment F - Structural Practices.** A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.
10. ☒ **Attachment G - Drainage Area Map.** A drainage area map supporting the following requirements is attached:
- ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.
 - ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.
 - ☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.
 - ☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

- ☒ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.
11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations.** Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.
- ☒ N/A
12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.
13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.
14. ☒ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).
15. ☐ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.
16. ☒ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. ☒ **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices.** A schedule of the interim and permanent soil stabilization practices for the site is attached.

- 18. ☒ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
- 19. ☒ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

- 20. ☒ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.
- 21. ☒ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.
- 22. ☒ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

ATTACHMENT A

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

Attachment A – Spill Response Actions

In the event of an accidental leak or spill:

- Spill must be contained and cleaned up immediately.
- Spills will not be merely buried or washed with water.
- Contractor shall take action to contain spill. Contractor may use sand or other absorbent material stockpiled on site to absorb spill. Absorbent material should be spread over the spill area to absorb the spilled product.
- In the event of an uncontained discharge the contractor shall utilize onsite equipment to construct berms downgradient of the spill with sand or other absorbent material to contain and absorb the spilled product.
- Spill containment/absorbent materials along with impacted media must be collected and stored in such a way so as not to continue to affect additional media (soil/water). Once the spill has been contained, collected material should be placed on poly or plastic sheeting until removed from the site. The impacted media and cleanup materials should be covered with plastic sheeting and the edges weighed down with paving bricks or other similarly dense objects as the material is being accumulated. This will prevent the impacted media and cleanup materials from becoming airborne in windy conditions or impacting runoff during a rain event. The stockpiled materials should not be located within an area of concentrated runoff such as along a curb line or within a swale.
- Contaminated soils and cleanup materials will be sampled for waste characterization. When the analysis results are known the contaminated soils and cleanup materials will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.
- The contractor will be required to notify the owner, who will in turn contact TCEQ to notify them in the event of a significant hazardous/reportable quantity spill. Additional notifications as required by the type and amount of spill will be conducted by owner or owner's representative.

In the event of an accidental significant or hazardous spill:

- The contractor will be required to report significant or hazardous spills in reportable quantities to:
 - Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
 - For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
 - Notification should first be made by telephone and followed up with a written report.

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

- The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
- Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.
- Contaminated soils will be sampled for waste characterization. When the analysis results are known the contaminated soils will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.

Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 1.4.16. Contractor shall review this section.

ATTACHMENT B

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

Attachment B – Potential Sources of Contamination

Other potential sources of contamination during construction include:

Potential Source	●	Asphalt products used on this project.
Preventative Measure	■	After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.
Potential Source	●	Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.
Preventative Measure	■	Vehicle maintenance when possible will be performed within the construction staging area.
	■	Construction vehicles and equipment shall be checked regularly for leaks and repaired immediately.
Potential Source	●	Accidental leaks or spills of oil, petroleum products and substances listed under 40 CFR parts 110, 117, and 302 used or stored temporarily on site.
Preventative Measure	■	Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures.
	■	Contractor's superintendent or representative overseer shall enforce proper spill prevention and control measures.
	■	Hazardous materials and wastes shall be stored in covered containers and protected from vandalism.
	■	A stockpile of spill cleanup materials shall be stored on site where it will be readily accessible.
Potential Source	●	Miscellaneous trash and litter from construction workers and material wrappings.
Preventive Measure	■	Trash containers will be placed throughout the site to encourage proper trash disposal.
Potential Source	●	Construction debris.
Preventive Measure	■	Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

Potential Source	●	Spills/Overflow of waste from portable toilets
Preventative Measure	■	Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets.
	■	Portable toilets will be placed on a level ground surface.
	■	Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.

ATTACHMENT C

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

Attachment C – Sequence of Major Activities

The sequence of major activities which disturb soil during construction on this site will be divided into two stages. The first is site preparation that will include installation of TBMPs, clearing and grubbing of vegetation where applicable. This will disturb approximately 157.59 acres. The second is construction that will include construction of homes, the detention basin, construction of new pavement area, landscaping and site cleanup. This will disturb approximately 157.59 acres. Regulated activities proposed in this application will be concurrent with the overall site disturbance and within the 3.36-acre project area.

ATTACHMENT D

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

Attachment D – Temporary Best Management Practices and Measures

A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

No upgradient water will cross the site. All TBMPs are adequate for the drainage areas they serve.

- b. A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.

Site preparation, which is the initiation of all activity on the project, will disturb the largest amount of soil. Therefore, before any of this work can begin, the clearing and grading contractor will be responsible for the installation of all on-site control measures. The methodology for pollution prevention of on-site stormwater will include: (1) erection of silt fences along the downgradient boundary of construction activities for temporary erosion and sedimentation controls, (2) installation of rock berms with silt fencing downgradient from areas of concentrated stormwater flow for temporary erosion control, (3) installation of stabilized construction entrance/exit(s) to reduce the dispersion of sediment from the site, and (4) installation of construction staging area(s).

Prior to the initiation of construction, all previously installed control measures will be repaired or reestablished for their designed or intended purpose. This work, which is the remainder of all activity on the project, may also disturb additional soil. The construction contractor will be responsible for the installation of all remaining on-site control measures that includes installation of the concrete truck washout pit(s), as construction phasing warrants.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.

- c. A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.

There are no sensitive features observed within the project limits. Any surface waters within the project limits will be protected by the proposed TBMPs within this plan. Temporary BMPs utilized are adequate for the drainage areas served.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

- d. A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

There are no sensitive features observed within the project limits. Any surface waters within the project limits will be protected by the proposed TBMPs within this plan. Temporary BMPs utilized are adequate for the drainage areas served.

BMP measures utilized in this plan are intended to allow stormwater to continue downstream after passing through the BMPs. This will allow stormwater runoff to continue downgradient to streams or features that may exist downstream of the site.

ATTACHMENT F

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

Attachment F – Structural Practices

The following structural measures will be installed prior to the initiation of site preparation activities:

- Erection of silt fences along the downgradient boundary of construction activities and rock berms with silt fence for secondary protection, as located on Exhibit 1 and illustrated in Exhibit 2.
- Installation of stabilized construction entrance/exit(s) and construction staging area(s), as located on Exhibit 1, and illustrated on Exhibit 2.

The following structural measures will be installed at the initiation of construction activities or as appropriate based on the construction sequencing:

- Installation of concrete truck washout pit(s), as required and located on Exhibit 1 and illustrated on Exhibit 2.

ATTACHMENT G

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

Attachment G – Drainage Area Map

No more than ten (10) acres will be disturbed on the site. All TBMPs utilized are adequate for the drainage areas served.

ATTACHMENT I

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

INSPECTIONS

Designated and qualified person(s) shall inspect Pollution Control Measures weekly and within 24 hours after a storm event. An inspection report that summarizes the scope of the inspection, names and qualifications of personnel conducting the inspection, date of the inspection, major observations, and actions taken as a result of the inspection shall be recorded and maintained as part of Storm Water TPDES data for a period of three years after the Notice of Termination (NOT) has been filed. A copy of the Inspection Report Form is provided in this Storm Water Pollution Prevention Plan.

As a minimum, the inspector shall observe: (1) significant disturbed areas for evidence of erosion, (2) storage areas for evidence of leakage from the exposed stored materials, (3) structural controls (rock berm outlets, silt fences, drainage swales, etc.) for evidence of failure or excess siltation (over 6 inches deep), (4) vehicle exit point for evidence of off-site sediment tracking, (5) vehicle storage areas for signs of leaking equipment or spills, (6) concrete truck rinse-out pit for signs of potential failure, (7) embankment, spillways, and outlet of sediment basin (where applicable) for erosion damage, and (8) sediment basins (where applicable) for evidence that basin has accumulated 50% of its volume in silt. Deficiencies noted during the inspection will be corrected and documented within seven calendar days following the inspection or before the next anticipated storm event if practicable.

Contractor shall review Sections 1.3 and 1.4 of TCEQ's Technical Guidance Manual for additional BMP inspection and maintenance requirements.

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

Pollution Prevention Measure	Inspected in Compliance	Corrective Action Required	
		Description (use additional sheet if necessary)	Date Completed
Best Management Practices			
Natural vegetation buffer strips			
Temporary vegetation			
Permanent vegetation			
Sediment control basin			
Silt fences			
Rock berms			
Gravel filter bags			
Drain inlet protection			
Other structural controls			
Vehicle exits (off-site tracking)			
Material storage areas (leakage)			
Equipment areas (leaks, spills)			
Concrete washout pit (leaks, failure)			
General site cleanliness			
Trash receptacles			
Evidence of Erosion			
Site preparation			
Roadway or parking lot construction			
Utility construction			
Drainage construction			
Building construction			
Major Observations			
Sediment discharges from site			
BMPs requiring maintenance			
BMPs requiring modification			
Additional BMPs required			

_____ A brief statement describing the qualifications of the inspector is included in this SWP3.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

"I further certify I am an authorized signatory in accordance with the provisions of 30 TAC §305.128."

Inspector's Name

Inspector's Signature

Date

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

PROJECT MILESTONE DATES

Date when major site grading activities begin:

<u>Construction Activity</u>	<u>Date</u>
Installation of BMPs	

Dates when construction activities temporarily or permanently cease on all or a portion of the project:

<u>Construction Activity</u>	<u>Date</u>

Dates when stabilization measures are initiated:

<u>Stabilization Activity</u>	<u>Date</u>
Removal of BMPs	

ATTACHMENT J

BIGBEE TRACT TURN LANE

Recharge Zone Plan Exception Request

Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

Interim on-site stabilization measures, which are continuous, will include minimizing soil disturbances by exposing the smallest practical area of land required for the shortest period of time and maximizing use of natural vegetation. As soon as practical, all disturbed soil will be stabilized as per project specifications in accordance with pages 1-35 to 1-60 of TCEQ's Technical Guidance Manual (TGM) RG-348 (2005). Mulching, netting, erosion blankets and seeding are acceptable.

Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided below, will be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practicable.

AGENT AUTHORIZATION FORM
(TCEQ-0599)

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

I Blake Harrington,
Print Name

VP Land Acquisition and Development,
Title - Owner/President/Other

of CW – Bigbee, LLC,
Corporation/Partnership/Entity Name

have authorized **Pape-Dawson Engineers, Inc.**
Print Name of Agent/Engineer

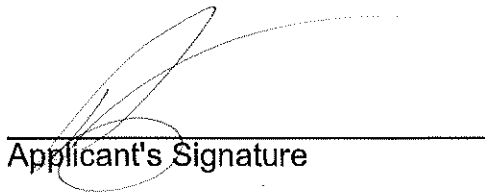
of **Pape-Dawson Engineers, Inc.**
Print Name of Firm

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

I also understand that:

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

SIGNATURE PAGE:

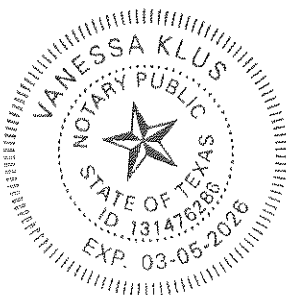

Applicant's Signature

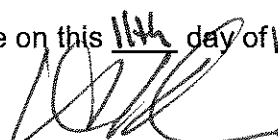
11/11/2022
Date

THE STATE OF Texas §
County of Bexar §

BEFORE ME, the undersigned authority, on this day personally appeared Blake Hampton known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 11th day of November, 2022




NOTARY PUBLIC
Vanessa Klus
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 3-5-2026



4615 NW Loop 410 | San Antonio, TEXAS 78229-0928 | (210) 615-1110 | WWW.TXDOT.GOV

Letter of Intent For Work In TxDOT Right Of Way Requiring An Edwards Aquifer Protection Plan

TxDOT Tracking #:	CML23-SH0046-001
Roadway:	SH 46
Limits:	On SH 46, approximately 1,815 LF West of Heritage Oaks

The purpose of this letter is to provide the Texas Commission On Environmental Quality (TCEQ) acknowledgement that TxDOT will be allowing work to occur in TxDOT right of way (ROW) that would require an Edwards Aquifer Protection Plan (EAPP), where the applicant of the EAPP is CW – Bigbee, LLC.

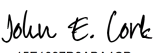
Furthermore, by signing this letter, CW – Bigbee, LLC certifies that all permanent Best Management Practices (BMP's) required to treat the proposed new impervious cover within TxDOT ROW would be constructed entirely on CW – Bigbee, LLC property and outside of TxDOT right of way including areas of ROW reservation or dedication.

The work to be performed in TxDOT ROW is part of a larger plan of development by the Permittee, and is not part of a TxDOT roadway project.

Note that this is not an approval from TxDOT for work to proceed to construction. No construction shall begin until all of the following have occurred:

- TxDOT has been provided a copy of the Permittee's TCEQ Authorization Letter
- All of the terms of the Donation Agreement have been met
- An Access Permit has been issued
- The Pre-work Meeting has been held

Signatures:

DocuSigned by:

 15E1097D9A8A4CD...
 Permittee

1/30/2023

Date

DocuSigned by:

 7FE0931F1A32401...
 TxDOT Area Engineer/District Maintenance Engineer

1/31/2023

Date

APPLICATION FEE FORM
(TCEQ-0574)

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Bigbee Tract Turn Lane

Regulated Entity Location: Approx. 2,500 LF west of Hwy 46 & 3009 intersection

Name of Customer: CW - Bigbee, LLC

Contact Person: Blake Harrington

Phone: (210) 563-6988

Customer Reference Number (if issued):CN _____

Regulated Entity Reference Number (if issued):RN 111243622

Austin Regional Office (3373)

☐ Hays

☐ Travis

☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar

☐ Medina

☐ Uvalde

☒ Comal

☐ Kinney

Application fees must be paid by check, certified check, or money order, payable to the **Texas Commission on Environmental Quality**. Your canceled check will serve as your receipt. **This form must be submitted with your fee payment.** This payment is being submitted to:

☐ Austin Regional Office

☐ San Antonio Regional Office

☐ Mailed to: TCEQ - Cashier

☒ Overnight Delivery to: TCEQ - Cashier

Revenues Section

Mail Code 214

P.O. Box 13088

Austin, TX 78711-3088

12100 Park 35 Circle

Building A, 3rd Floor

Austin, TX 78753

(512)239-0357

Site Location (Check All That Apply):

☒ Recharge Zone

☒ Contributing Zone

☐ Transition Zone

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	Acres	\$
Sewage Collection System	L.F.	\$
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	1 Each	\$ 500
Extension of Time	Each	\$

Signature: Bruna Spingler

Date: _____

Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

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

Organized Sewage Collection Systems and Modifications

<i>Project</i>	<i>Cost per Linear Foot</i>	<i>Minimum Fee- Maximum Fee</i>
Sewage Collection Systems	\$0.50	\$650 - \$6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

<i>Project</i>	<i>Cost per Tank or Piping System</i>	<i>Minimum Fee- Maximum Fee</i>
Underground and Aboveground Storage Tank Facility	\$650	\$650 - \$6,500

Exception Requests

<i>Project</i>	<i>Fee</i>
Exception Request	\$500

Extension of Time Requests

<i>Project</i>	<i>Fee</i>
Extension of Time Request	\$150

**CORE DATA FORM
(TCEQ-10400)**



TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

1. Reason for Submission (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)		<input type="checkbox"/> Other
2. Customer Reference Number (if issued)		3. Regulated Entity Reference Number (if issued)
CN		RN 111243622

[Follow this link to search for CN or RN numbers in Central Registry**](#)

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)	
<input checked="" type="checkbox"/> New Customer		<input type="checkbox"/> Update to Customer Information	
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)		<input type="checkbox"/> Change in Regulated Entity Ownership	
The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).			
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)		If new Customer, enter previous Customer below:	
CW - Bigbee, LLC			
7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
804066475	32079222694	87-0928412	
11. Type of Customer:	<input checked="" type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship	<input type="checkbox"/> Other:	
12. Number of Employees		13. Independently Owned and Operated?	
<input type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Owner & Operator			
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> Voluntary Cleanup Applicant <input type="checkbox"/> Other:			
15. Mailing Address:	17319 San Pedro Ave		
	Suite 140		
	City	San Antonio	State TX ZIP 78232 ZIP + 4
16. Country Mailing Information (if outside USA)		17. E-Mail Address (if applicable)	
		blake.harrington@ashtonwoods.com	
18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)	
(210) 563-6988		() -	

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)	
<input type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input checked="" type="checkbox"/> Update to Regulated Entity Information	
The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).	
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)	
Bigbee Tract Turn Lane	

23. Street Address of the Regulated Entity: (No PO Boxes)							
	City		State		ZIP		ZIP + 4
24. County	Comal						

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Approximately 2,500 LF west of Hwy 46 & 3009 intersection						
26. Nearest City					State	Nearest ZIP Code	
New Braunfels					TX	78132	
27. Latitude (N) In Decimal:	29.777681 N			28. Longitude (W) In Decimal:	-98.311036 W		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
29	46	39.65	-98	18	39.73		
29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)		31. Primary NAICS Code (5 or 6 digits)		32. Secondary NAICS Code (5 or 6 digits)		
1611	1623		237310		237110		
33. What is the Primary Business of this entity? (Do not repeat the SIC or NAICS description.)							
Turn Lane for Single-Family Residential Development							
34. Mailing Address:	17319 San Pedro Ave						
	Suite 140						
	City	San Antonio	State	TX	ZIP	78232	ZIP + 4
35. E-Mail Address:	blake.harrington@ashtonwoods.com						
36. Telephone Number	37. Extension or Code		38. Fax Number (if applicable)				
(210) 563-6988			() -				

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

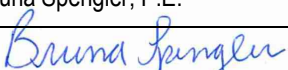
<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input checked="" type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

SECTION IV: Preparer Information

40. Name:	Jean Autrey, P.E., CESSWI	41. Title:	Senior project Engineer
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 375-9000		(210) 375-9010	jautrey@pape-dawson.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Pape-Dawson Engineers, Inc	Job Title:	Associate Vice President
Name (In Print):	Bruna Spengler, P.E.	Phone:	(210) 375- 9000
Signature:		Date:	11/22/22

EXHIBITS



1. SOIL DISTURBANCES WILL OCCUR OVER THE SITE UNLESS INDICATED OTHERWISE AS A "AREA OF UNDISTURBED SOIL."
2. LOCATIONS OF MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS ARE LABELED. THESE ARE THE TEMPORARY BEST MANAGEMENT PRACTICES (B.M.P.'S).
3. SOIL STABILIZATION PRACTICES SHALL OCCUR OVER ALL DISTURBED AREAS WITH THE USE OF PAVEMENT, SIDEWALKS, GRASS SOD AND GRASS SEEDING.
4. THERE ARE NO LOCATIONS WHERE STORMWATER DISCHARGES DIRECTLY TO SURFACE WATER.
5. ALL STORMWATER DISCHARGING TO SENSITIVE FEATURES SHALL BE COVERED WITH GRASS SOD.
6. NO PART OF THIS PROJECT SITE IS WITHIN THE 100-YEAR FLOODPLAIN, PER FIRM MAP NO. 48091C0240F AND 48091C0245F, EFFECTIVE DATE SEPTEMBER 2, 2009.
7. EACH LOT WILL BE RESPONSIBLE FOR ITS OWN TEMPORARY BMP.
8. CONSTRUCTION ENTRANCE/EXIT, WASHOUT PITS, AND STAGING AREAS MUST BE PLACED AT THE LOCATION WHERE THE PROJECT SITE IS BEING ACCESSED FOR CONSTRUCTION DURING VARIOUS PHASES.

TCEQ-0592 (REV. 7/15/15)

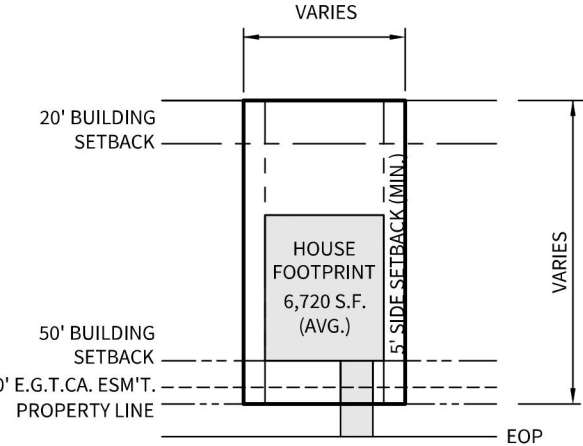
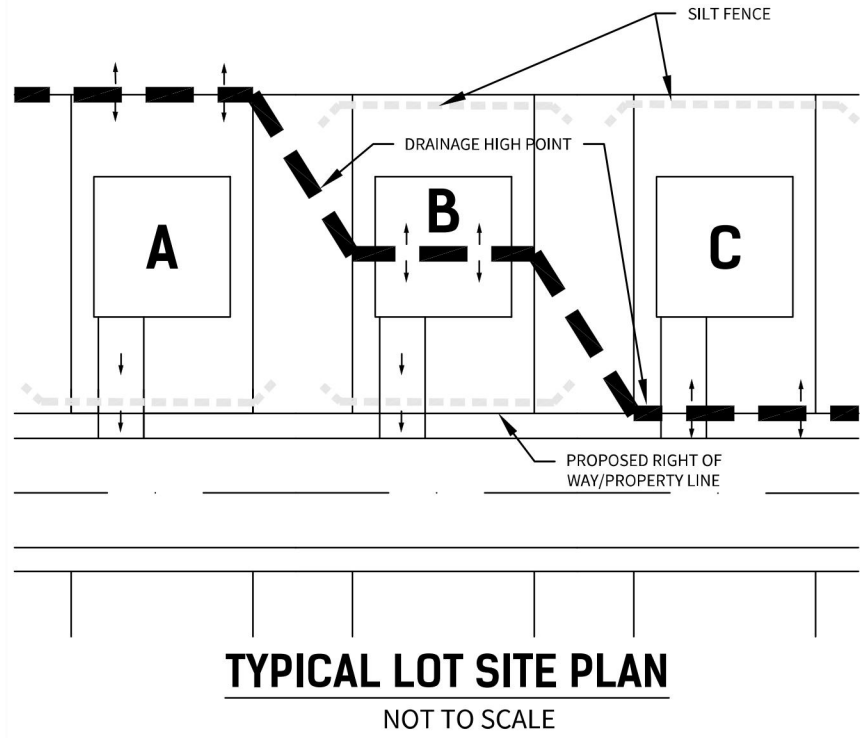
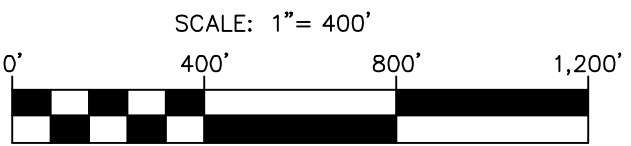
1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCQEZ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
 - THE NAME OF THE APPROVED PROJECT;
 - THE ACTIVITY START DATE, AND;
 - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCQEZ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.
3. IF ANY SENSITIVE FEATURE(S) [CAVES, SLOPMENT CAVITY, SINK HOLE, ETC.] IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCQEZ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURE ENCOUNTERING DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCQEZ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.
4. NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
5. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (EGS) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
6. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
7. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN TCQEZ-0592 (PREP. JULY 13, 2015) PAGE 2 OF 2 WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION MATERIALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
9. ALL DISPOSAL (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER EGS CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL, OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.
10. IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT CHANGE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
11. THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCQEZ UPON REQUEST:
 - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
 - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE, AND;
 - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
12. THE HOLDER OF ANY APPROVED EDWARDS AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:
 - A. ANY PHYSICAL, OR OPERATIONAL, MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND OVERSIGHTOR STRUCTURES;
 - B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;
 - C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

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

CONTRACTOR IS TO COORDINATE WITH TREE PRESERVATION PLAN FOR FINAL TREE REMOVAL INSTRUCTIONS.

DATA ON INDICATED SUBSURFACE CONDITIONS ARE NOT INTENDED AS REPRESENTATIONS OR WARRANTIES OF ACCURACY OR CONTINUITY BETWEEN SOIL BORINGS. IT IS EXPRESSLY UNDERSTOOD THAT THE OWNER, ARCHITECT, AND/OR STRUCTURAL, CIVIL OR MECHANICAL, PLUMBING OR ELECTRICAL ENGINEER WILL NOT BE RESPONSIBLE FOR INTERPRETATIONS OR CONCLUSIONS DRAWN THEREFROM BY CONTRACTOR. DATA ARE MADE AVAILABLE FOR CONVENIENCE OF CONTRACTOR ONLY AND AS SUCH, THE SOIL BORINGS ARE NOT CONSIDERED TO BE A PART OF THESE CONTRACT DOCUMENTS. THE CONTRACTOR MAY, AT HIS OPTION, OBTAIN A COPY OF THE GEOTECHNICAL REPORT FROM PROJECT ENGINEER.

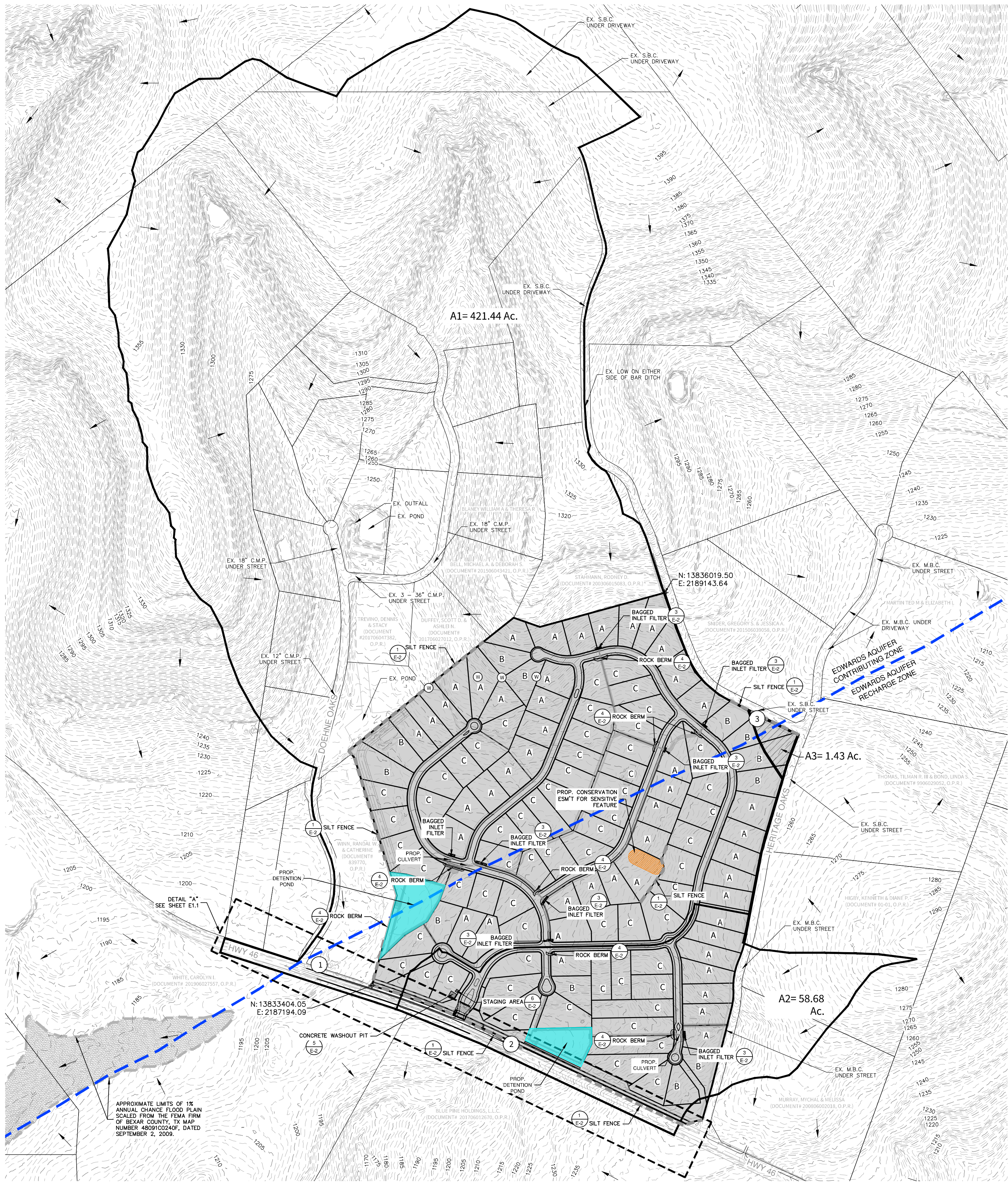
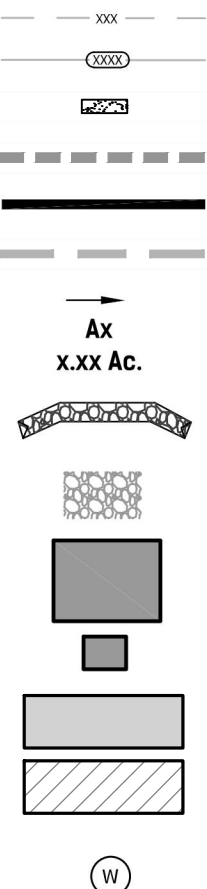
STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED, WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASES IS PRECLUDED BY WEATHER CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE, WHERE CONSTRUCTION ACTIVITY ON ANY PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH STABILIZING ACTIVITIES WILL BE RESUMED WITHIN 21 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF SITE. IN AREAS EXPERIENCING DROUGHTS WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED IS PRECLUDED BY SEASONAL ARID CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.



TYPICAL LOT

ROOFTOP = 6,430 sf
 DRIVEWAY = 1,040 sf
 PATIO/POOL = 290 sf
 TOTAL: 7,760 sf

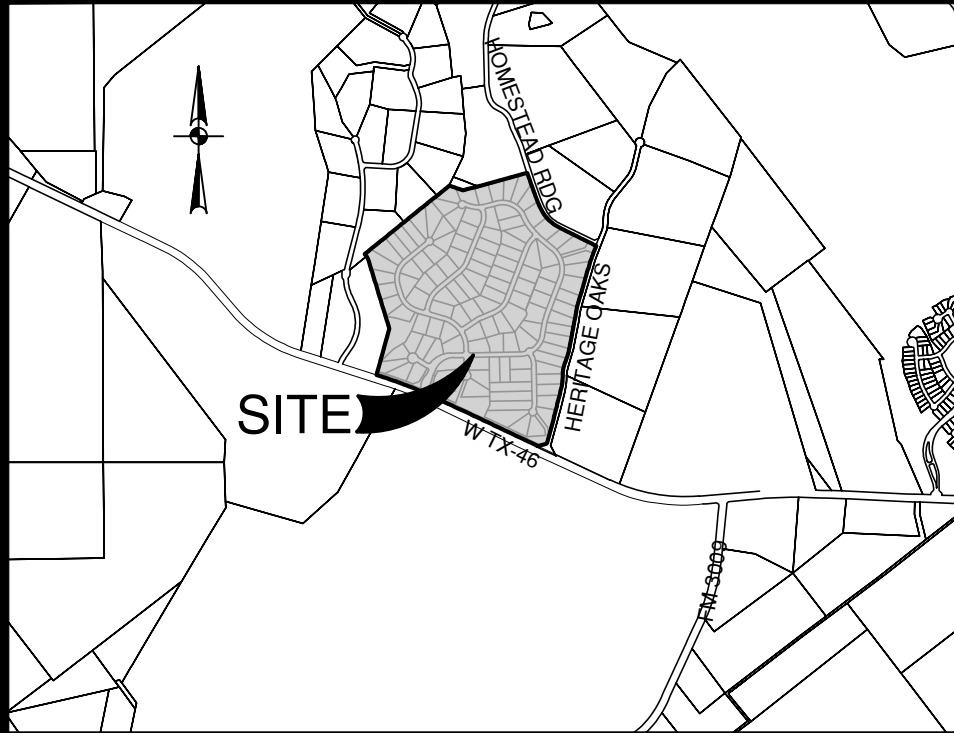
EXISTING CONTOUR
PROPOSED CONTOUR
BAGGED GRAVEL INLET FILTER
SILT FENCE
DRAINAGE AREA
1% ANNUAL CHANCE FLOODPLAIN
DRAINAGE FLOW ARROW
DRAINAGE AREA NUMBER
ROCK BERM
TEMPORARY CONSTRUCTION
ENTRANCE / EXIT
STAGING AREA
CONCRETE WASHOUT PIT
DISTURBED AREA/
SUBDIVISION LIMITS
UNDISTURBED AREA/
SUBDIVISION LIMITS
EXISTING WATER WELL



**PAPE-DAWSON
ENGINEERS**
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

BIGBEE TRACT
COMAL COUNTY, TX

WATER POLLUTION ABATEMENT PLAN
SITE PLAN - ADDENDUM #2



LOCATION MAP
NOT-TO-SCALE

GENERAL NOTES

- SOIL DISTURBANCES WILL OCCUR OVER THE SITE UNLESS INDICATED OTHERWISE AS A "AREA OF UNDISTURBED SOIL."
- LOCATIONS OF MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS ARE LABELED. THESE ARE THE TEMPORARY BEST MANAGEMENT PRACTICES (B.M.P.'S).
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- NO PART OF THIS PROJECT SITE IS WITHIN THE 100-YEAR FLOODPLAIN, PER FIRM MAP NO. 48091C0240F AND 48091C0245F, EFFECTIVE DATE SEPTEMBER 2, 2009.
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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER POLLUTION ABATEMENT PLAN GENERAL CONSTRUCTION NOTES:

TCEQ-0592 (REV. 7/15/15)

- A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
 - THE NAME OF THE APPROVED PROJECT;
 - THE ACTIVITY START DATE; AND
 - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
- ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.
- IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.
- NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
- PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
- ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
- SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN TCEQ-0592 (REV. JULY 15, 2015) PAGE 2 OF 2 WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
- LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
- ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.
- IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
- THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
 - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
 - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
 - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
- THE HOLDER OF ANY APPROVED EDWARD AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:
 - ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;
 - ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;
 - ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

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

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

TREE REMOVAL NOTE:

CONTRACTOR IS TO COORDINATE WITH TREE PRESERVATION PLAN FOR FINAL TREE REMOVAL INSTRUCTIONS.

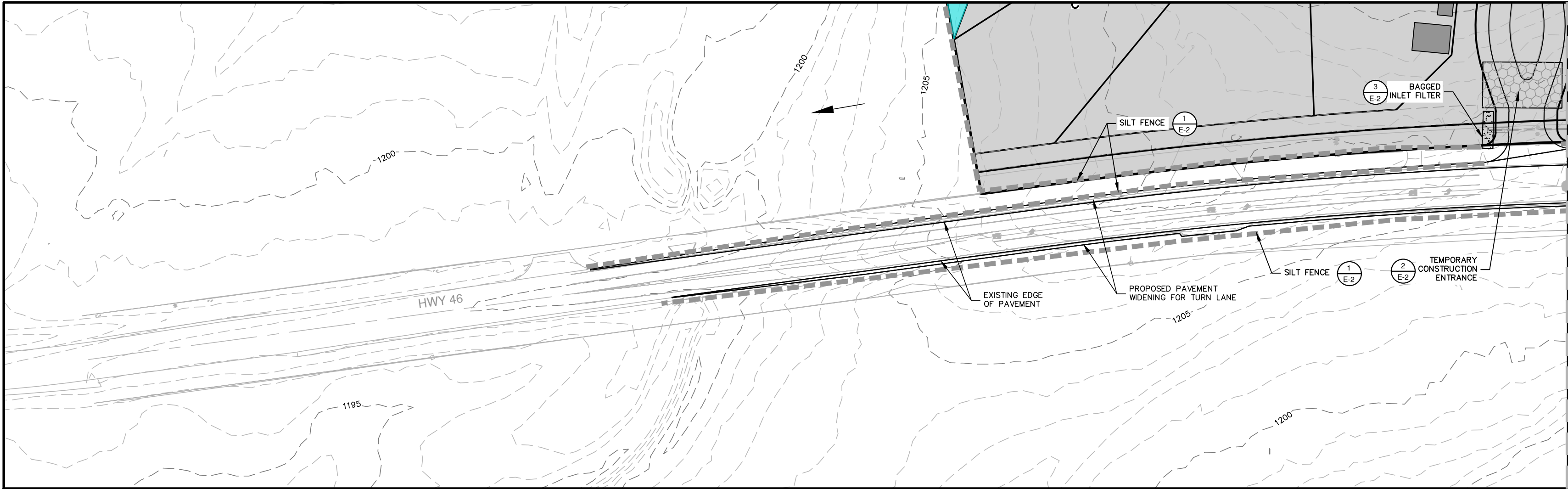
SITE INFORMATION:

DATA ON INDICATED SUBSURFACE CONDITIONS ARE NOT INTENDED AS REPRESENTATIONS OR WARRANTIES OF ACCURACY OR CONTINUITY BETWEEN SOIL BORINGS. IT IS EXPRESSLY UNDERSTOOD THAT THE OWNER, ARCHITECT, AND/OR STRUCTURAL, CIVIL OR MECHANICAL, PLUMBING OR ELECTRICAL ENGINEER WILL NOT BE RESPONSIBLE FOR INTERPRETATIONS OR CONCLUSIONS DRAWN THEREFROM BY CONTRACTOR. DATA ARE MADE AVAILABLE FOR CONVENIENCE OF CONTRACTOR ONLY AND AS SUCH, THE SOIL BORINGS ARE NOT CONSIDERED TO BE A PART OF THESE CONTRACT DOCUMENTS. THE CONTRACTOR MAY, AT HIS OPTION, OBTAIN A COPY OF THE GEOTECHNICAL REPORT FROM PROJECT ENGINEER.

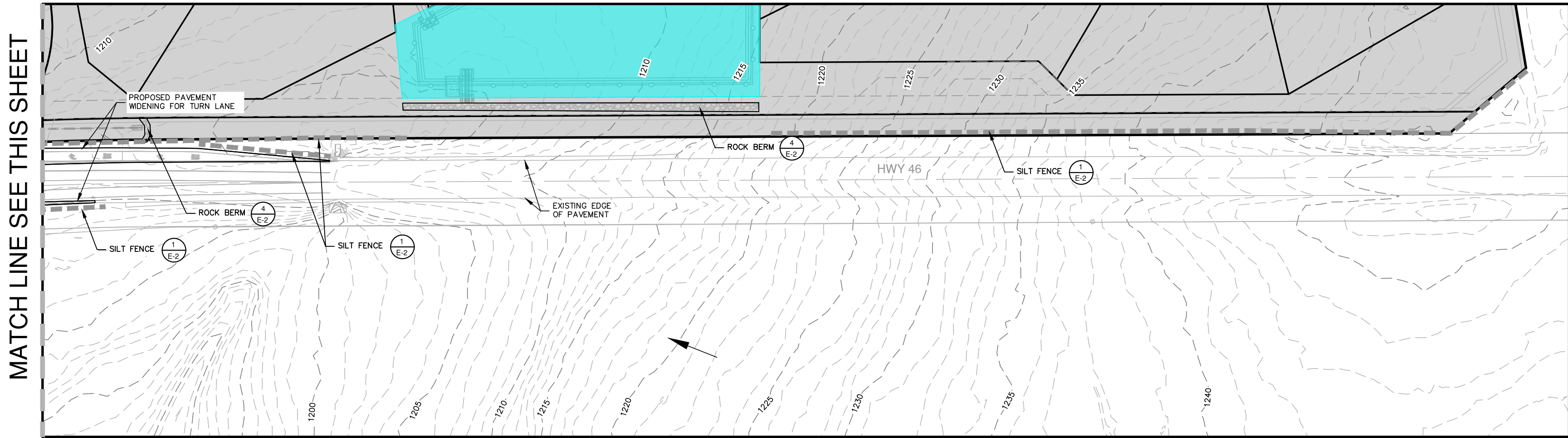
SOIL STABILIZATION PROCEDURE:

STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASES IS PRECLUDED BY WEATHER CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE. WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 21 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF SITE. IN AREAS EXPERIENCING DROUGHTS WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED IS PRECLUDED BY SEASONAL ARID CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.

DRAINAGE AREAS									
AREA	TOTAL ACREAGE (AC)	ON-SITE ACREAGE (AC.)	OFF-SITE ACREAGE (AC.)	STREETS IMPERVIOUS COVER (SF)	TXDOT TURN LANE IMPERVIOUS COVER (SF)	LOT IMPERVIOUS COVER (SF)	INCREASE IMPERVIOUS COVER (SF)	EXISTING IMPERVIOUS COVER (TXDOT) (SF)	EXISTING IMPERVIOUS COVER (NON-TXDOT) (SF)
1	421.44	116.45	302.91	279,440	4,030	729,440	1,012,910	93,009	149,390
2	58.68	39.63	17.03	88,050	7,405	201,760	297,215	56,251	8,930
3	1.43	1.51	0.00	-	-	-	-	-	-
TOTAL	481.55	157.59	319.94	367,490	11,435	931,200	1,310,125	149,260	158,320

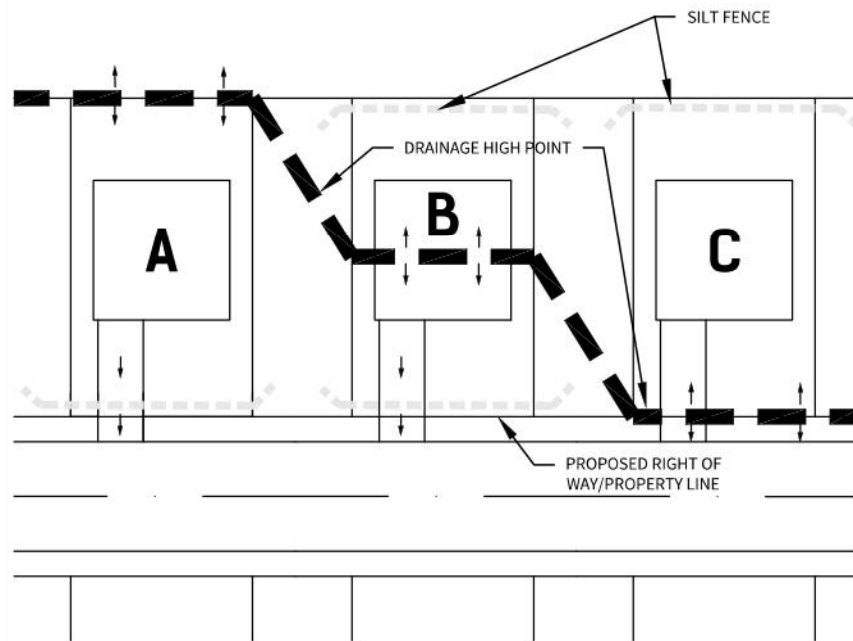


DETAIL "2"
SCALE: 1"=100'

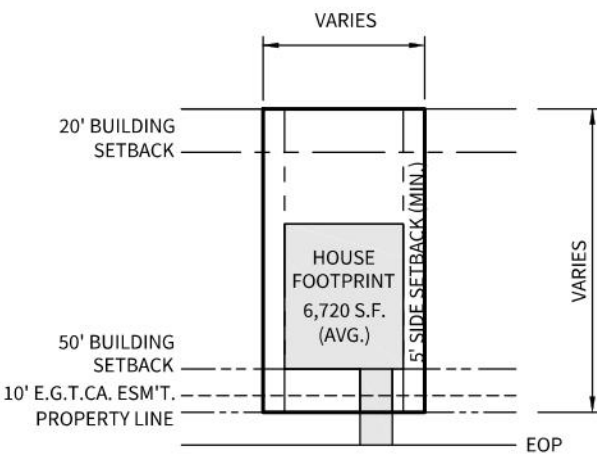


DETAIL "2"
SCALE: 1"=100'

MATCH LINE SEE THIS SHEET



TYPICAL LOT SITE PLAN
NOT TO SCALE

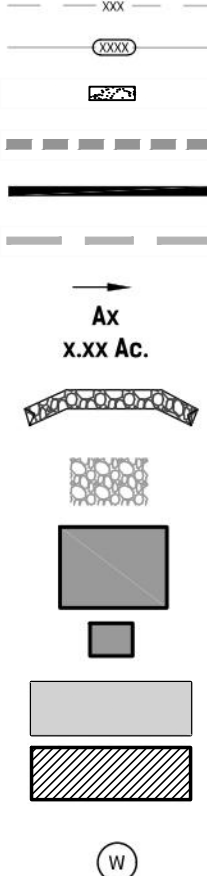


TYPICAL LOT
NOT TO SCALE

AVERAGE IMPERVIOUS COVER:
- ROOFTOP = 4,430 sf
- DRIVEWAY = 1,040 sf
- PATIO/POOL = 290 sf
TOTAL: 7,760 sf

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- BAGGED GRAVEL INLET FILTER
- SILT FENCE
- DRAINAGE AREA
- 1% ANNUAL CHANCE FLOODPLAIN
- DRAINAGE FLOW ARROW
- DRAINAGE AREA NUMBER
- ROCK BERM
- TEMPORARY CONSTRUCTION ENTRANCE \ EXIT
- STAGING AREA
- CONCRETE WASHOUT PIT
- DISTURBED AREA/ SUBDIVISION LIMITS
- UNDISTURBED AREA/ SUBDIVISION LIMITS
- EXISTING WATER WELL



BIGBEE TRACT
COMAL COUNTY, TX

WATER POLLUTION ABATEMENT PLAN
SITE PLAN - ADDENDUM #2

PLAT NO. -
JOB NO. 12782-01
DATE MAY 2022
DESIGNER BS
CHECKED BS DRAWN BR
SHEET E1.1

NO.	REVISION	DATE



**PAPE-DAWSON
ENGINEERS**
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 25, 2021

Mr. Blake Harrington
Ashton San Antonio Residential, LLC
17319 San Pedro Ave. Suite 140
San Antonio, Texas 78232

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: Bigbee Tract Subdivision; Located approximately 0.85 miles northwest of Hwy 46 and FM 3009 intersection; Comal County, Texas

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

Regulated Entity No. RN111243622; Additional ID. No. 13001326

Dear Mr. Harrington:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Application for the above-referenced project submitted to the San Antonio Regional Office by Cude Engineers on behalf of Ashton San Antonio Residential, LLC on May 3, 2021. Final review of the WPAP was completed after additional material was received on June 2, 2021. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The project proposes a single-family residential development on a 157.59-acre site. Impervious cover totals 30.00 acres (19.03 percent). The project proposes the construction of 119 single-family homes, street infrastructure and utility infrastructure. All residential lots within the development will be greater than or equal to one (1) acre. According to a letter dated, April 27,

2021, signed by Mr. Robert Boyd, P.E., with Comal County, the site is suitable for the use of on-site sewage facilities.

PERMANENT POLLUTION ABATEMENT MEASURES

This single-family residential development will have no more than 20 percent impervious cover.

GEOLOGY

According to the geologic assessment included with the application, the site is located on the dolomitic member and basal nodular member of the Kainer Formation and the cavernous member of the Glen Rose Formation. Four (4) non-karst closed depressions, seventeen (17) non-sensitive manmade features in bedrock, sixteen (16) non-sensitive geologic features and one (1) sensitive geologic feature were noted by the project geologist.

Sensitive karst feature S-17 (sinkhole) will have a natural buffer that is based on the drainage area of the feature. The buffer is shown on the site plan. No regulated activities, such as construction or soil disturbing activities, will take place within the natural buffer. The buffer is to remain in a natural state. The site assessment conducted on June 9, 2021 revealed that the site was generally as described in the application.

SPECIAL CONDITIONS

- I. Since this project will not have more than 20 percent impervious cover, an exemption from additional permanent BMPs is approved. If the percent impervious cover ever increases above 20 percent or the land use changes, the exemption for the whole site as described in the property boundaries required by §213.4(g), may no longer apply and the property owner must notify the appropriate regional office of these changes.
- II. The impervious cover for each proposed lot will be limited to 7,760 square feet in the Declarations, Covenant, Conditions and Restrictions of the future Homeowners Association.

STANDARD CONDITIONS

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

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed

Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.

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

During Construction:

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information related to tank location and spill containment. Refer to Standard Condition No. 6, above.
12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

13. Five (5) wells exist on site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.
14. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.
15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.
16. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

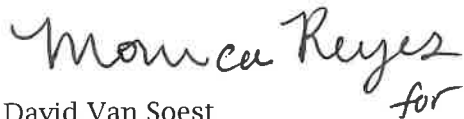
18. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.
19. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.
20. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
21. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

Mr. Blake Harrington
June 25, 2021
Page 5

22. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Dianne Pavlicek-Mesa, P.G., of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4074.

Sincerely,

A handwritten signature in cursive script that reads "Monica Reyes". Below the signature, the word "for" is written in a smaller, simpler script.

David Van Soest
Regional Director
Austin and Waco Regions
Texas Commission on Environmental Quality

DVS/dpm

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625

cc: Mr. David D. Cupit, II, P.E., Cude Engineers
Mr. Armando Calvillo, Jr., Cude Engineers
Mr. Thomas H. Hornseth, P.E., Comal County Engineer
Mr. H. L. Saur, Comal Trinity Groundwater Conservation District
Mr. Roland Ruiz, Edwards Aquifer Authority

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	-		1
STATE	STATE DIST.	COUNTY	
TEXAS	SAT	COMAL	
CONT.	SECT.	JOB	HIGHWAY NO.
0215	01	-	SH 46

WALDSANGER TRACT

COMAL COUNTY SPRING BRANCH, TX

SH 46 AADT (2021): 13,271
SH 46 SPEED LIMIT: 60 MPH
AREA OF DISTURBED SOIL : 1.51 ACRES

INDEX OF SHEETS

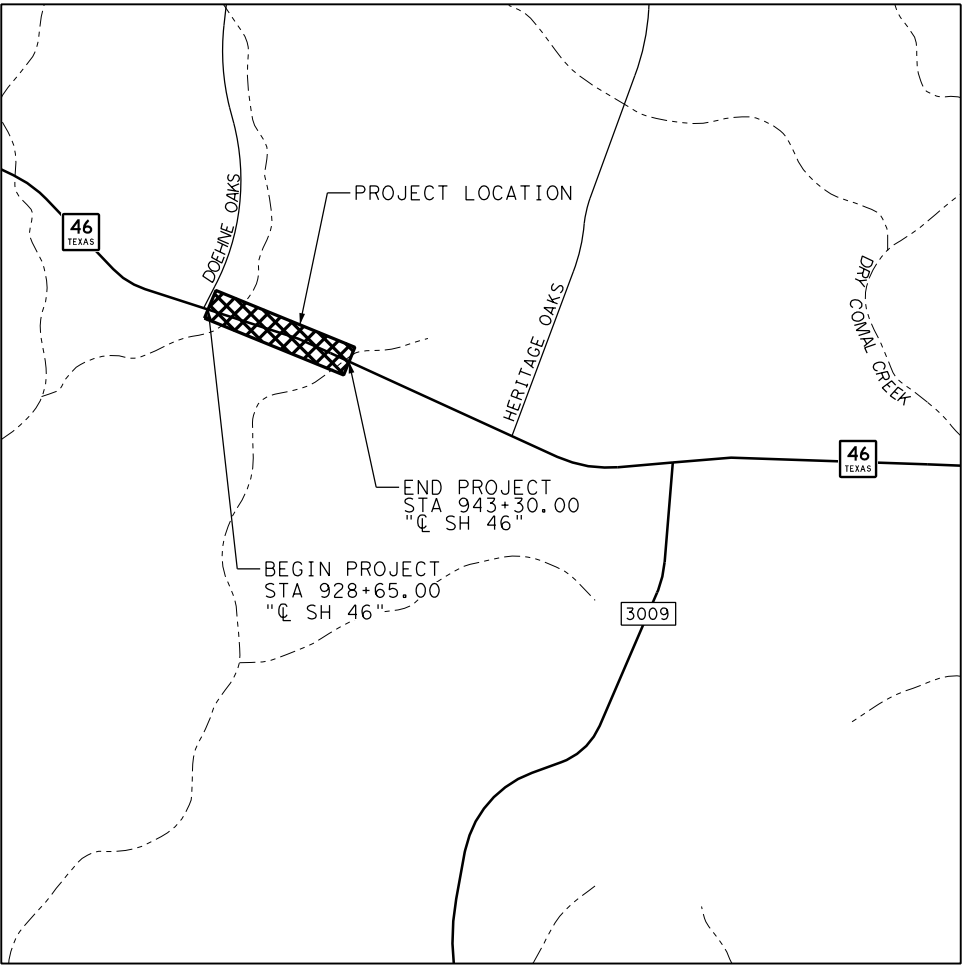
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PROJECT LAYOUT
3	EXISTING TYPICAL SECTIONS
4	PROPOSED TYPICAL SECTIONS
5-7	GENERAL NOTES
8-9	SUMMARY OF QUANTITIES
10	TCP SCHEDULE OF BARRICADES
11-12	TCP NARRATIVE
13-14	TCP TYPICAL SECTIONS
15	* TREATMENT FOR VARIOUS EDGE CONDITIONS
16-27	* BC(1-12)-21
28	* TCP(2-1)-18
29	* TCP(2-5)-18
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31	HORIZONTAL ALIGNMENT DATA
32-34	PLAN LAYOUT
35	SUMMARY OF SMALL SIGNS
36	CROSS SECTION AT CULVERT
37	STORM WATER POLLUTION PREVENTION PLAN (SW3P)
38	DESIGN DETAILS FOR TYPICAL MAILBOX TURNOUTS
39	* GF(31)-19
40	* GF(31)LS-19
41	* GF(31)MS-19
42	* SGT(12S)31-18
43-45	* D&OM(1-2,6)-20
46	* BCS
47-48	* MC-6(1-2)-16
49	* PW
50-52	* PM(1-3)-20
53	** TWLTL(1)-22
54	* SMD(GEN)-08
55-57	* SMD(SLIP-1-3)-08
58-60	* EC(1-3)-16
61-76	CROSS SECTIONS
77-80	CROSS SECTIONS AT TREE LOCATIONS
	* TxDOT STANDARDS
	** TxDOT SAN ANTONIO DISTRICT STANDARDS

LIMITS

FROM: 0.73 MILE WEST OF FM 3009
TO: 0.45 MILES WEST OF FM 3009

NET LENTH OF ROADWAY = 1465 FT 0.277 MI
NET LENTH OF BRIDGE = 0.0 FT 0.000 MI
NET LENTH OF PROJECT = 1465 FT 0.277 MI

FOR WORK CONSISTING OF ROADWAY WIDENING
TO ACCOMMODATE LEFT AND RIGHT TURN LANES



FILE LOCATION AND NAME
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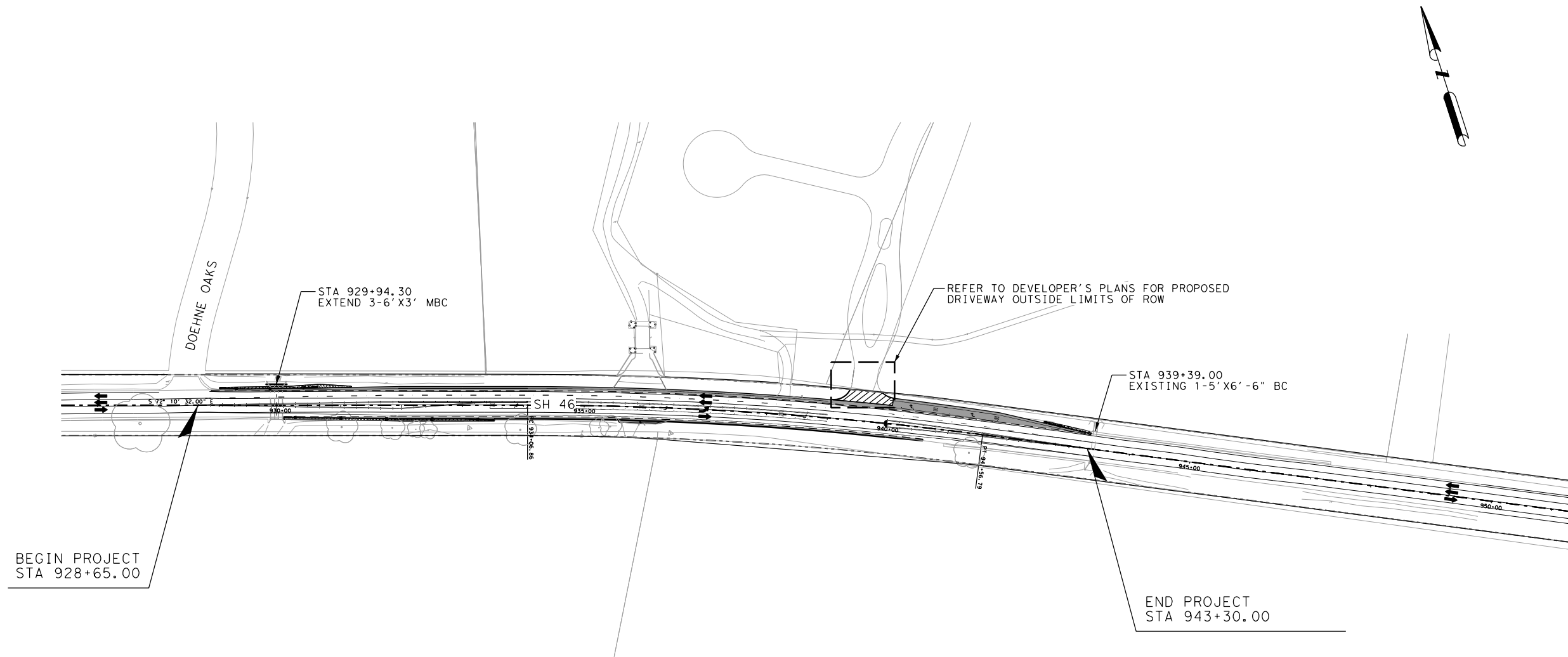
LEVELS DISPLAYED
1

COUNTY _____ PROJ. NO. _____
HWY. NO. _____ LETTING DATE _____
DATE ACCEPTED _____

PLANS PREPARED BY:



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Legacy Engineering Group
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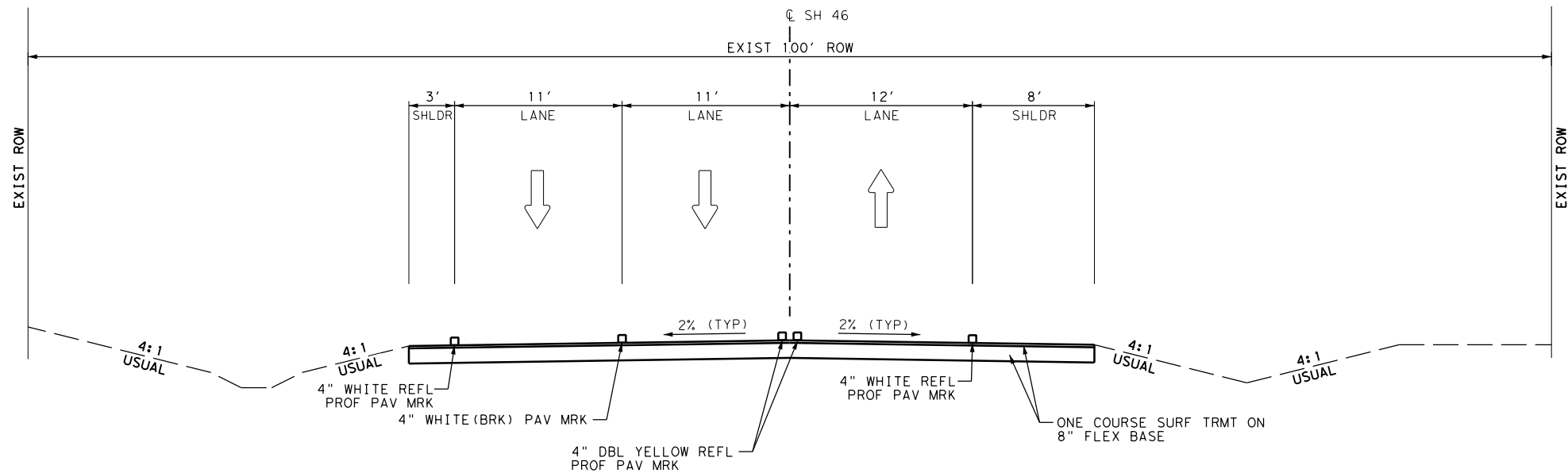
Legacy Engineering Group, PLLC
7800 W Interstate 10, Ste. 830, San Antonio, Texas 78230,
210.660.1960/ TBPE Firm Registration No. 20623

WALDSANGER TRACT PROJECT LAYOUT

SCALE: 1" = 200' SHEET 1 OF 1

FED. RD. DIV. NO.	PROJECT NO.		SHEET
6	-		2
STATE	DIST.	COUNTY	
TEXAS	SAT	COMAL	
CONT.	SECT.	JOB	ROADWAY
0215	01	-	SH 46

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SH 46 EXISTING TYPICAL SECTION

STA 922+22.00 TO STA 951+10.00



Eric Hernandez
11/18/2022



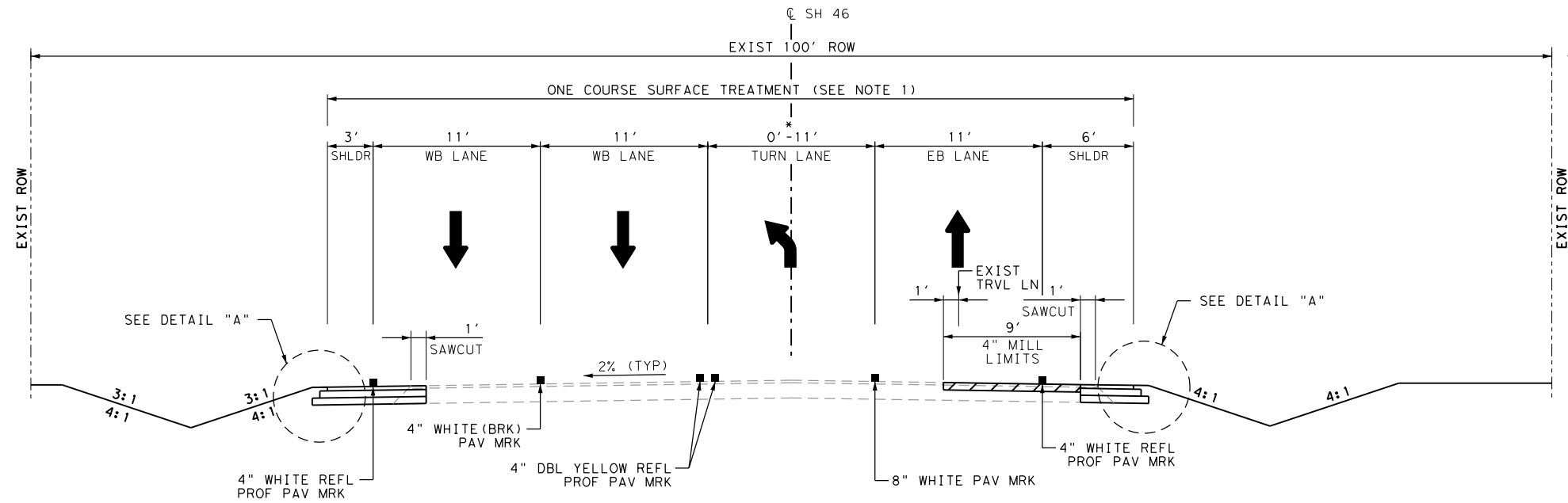
Legacy Engineering Group, PLLC
7800 W Interstate 10, Ste. 830, San Antonio, Texas 78230,
210.660.1960/TBPE Firm Registration No. 20623

WALDSANGER TRACT

EXISTING
TYPICAL SECTION

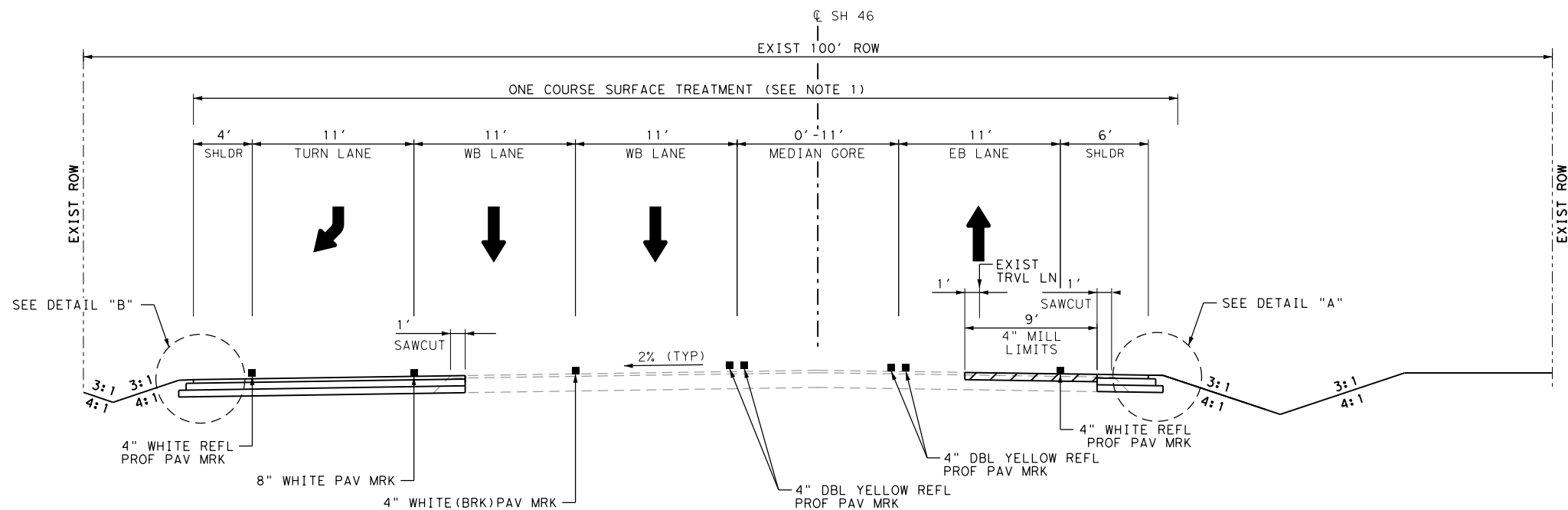
N. T. S.		SHEET 1 OF 1	
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6	-		3
STATE	DIST.	COUNTY	
TEXAS	SAT	COMAL	
CONT.	SECT.	JOB	ROADWAY
0215	01	-	SH 46

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Legacy Engineering Group
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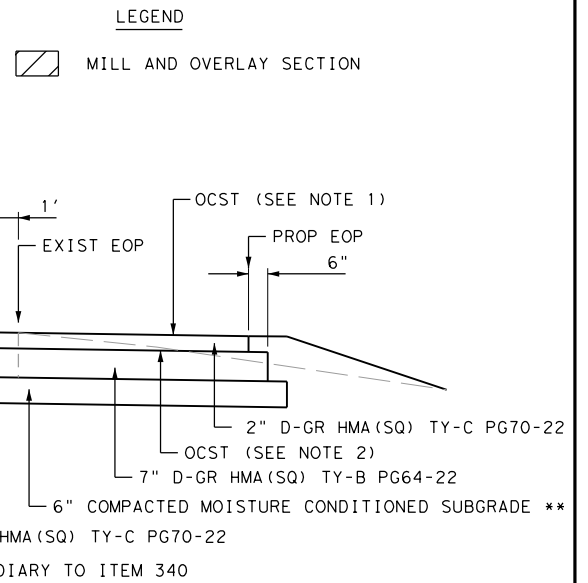
SH 46 PROPOSED TYPICAL SECTION

* STA 928+65.00 TO STA 931+97.00 (TRANSITION)
STA 931+97.00 TO STA 939+00.00

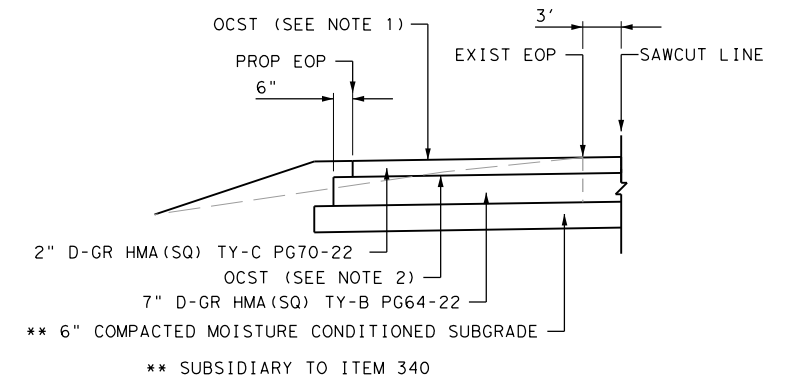


SH 46 PROPOSED TYPICAL SECTION

STA 940+05.00 TO STA 943+30.00



PROPOSED PAVEMENT SECTION DETAIL "A"



PROPOSED PAVEMENT SECTION DETAIL "B"

NOTES:

- (TOP) ONE COURSE SURFACE TREATMENT (OCST) - FOR FINAL SURFACE EOP TO EOP.
AGGR (TY PB GR-4 SAC-B) @ 1 CY/115 SY
WITH ASPH (AC-20-5TR) GAL @ 0.30 GAL/SY
- (BOTTOM) ONE COURSE SURFACE TREATMENT (OCST) - FOR ROADWAY WIDENING AND 4" MILL LIMITS.
AGGR (TY B GR-4) @ 1 CY/115 SY
WITH ASPH (AC-15P, AC-20-5TR, AC-20XP, AC10-2TR) GAL @ 0.30 GAL/SY



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PROPOSED
TYPICAL SECTIONS

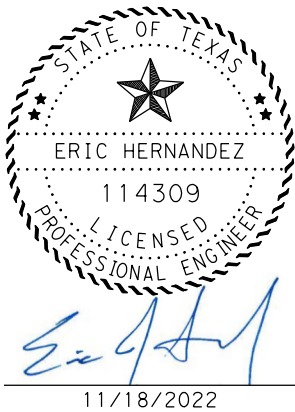
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GENERAL NOTES

1. THE DESIGN AND CONSTRUCTION WILL PROVIDE FOR PRESERVING ALL EXISTING FEATURES IN OR NEAR THE STATE RIGHT OF WAY BEING AFFECTED BY THE WIDENING. THIS INCLUDES BUT IS NOT LIMITED TO, EXISTING DRIVEWAY GATE SET-BACKS, RELOCATION OF ELECTRONIC PRIVATE PROPERTY GATES, MAILBOX TURNOUTS, MAILBOXES AND SUPPORTS, CATTLE GUARDS, ROADWAY SIGNING, EXISTING RIP-RAP OR OTHER PERMANENT EROSION CONTROL FEATURES, DIVERSIONARY BERMS, SWALES, DITCHES, AMOUNT AND CONFIGURATION OF DRIVEWAY FLARES AND DRIVEWAY CENTERLINE PROFILE, METAL BEAM GUARD FENCE AND END TREATMENTS, ETC. EXISTING DRIVEWAY CULVERTS AND SAFETY END TREATMENTS IF EFFECTED BY ROADWAY WIDENING WILL BE RECONSTRUCTED TO PRESERVE EXISTING FRONT SLOPE RATES. THE COORDINATION OF ITEMS THAT EFFECT EXISTING PRIVATE PROPERTY ACCESS, MAIL DELIVERY, ETC. IS THE RESPONSIBILITY OF THE DEVELOPER. THE WRITTEN CONCURRENCE OF ANY EFFECTED PROPERTY OWNERS FOR CONSTRUCTION EFFECTING THEIR DRIVEWAYS OR MAILBOX TURNOUTS MUST BE OBTAINED AND PROVIDED TXDOT PRIOR TO TXDOT DRIVEWAY PERMITS BEING ISSUED.
2. FOR WORK IN STATE RIGHT OF WAY, THE DEVELOPER IS RESPONSIBLE FOR COORDINATION OF, OBTAINING PERMITS FOR, AND COMPLYING WITH ANY AND ALL STATE AND FEDERAL REGULATORY AGENCIES AND ALL APPLICABLE LAWS, RULES AND REGULATIONS PERTAINING TO THE REGULATION OF DRAINAGE, PRESERVATION OF CULTURAL RESOURCES, NATURAL RESOURCES AND THE ENVIRONMENT. THE DEVELOPER IS RESPONSIBLE FOR DETERMINING IF THE PROJECT IS IN AN ENVIRONMENTALLY SENSITIVE AREA SUCH AS WITHIN THE RECHARGE OR CONTRIBUTING ZONE OF PROTECTED AQUIFERS, AND ACT IN ACCORDANCE WITH ALL RESOURCE AGENCY REGULATIONS. IF TXDOT HAS A CZP OR WPAP ON FILE WITH TCEQ, THE DEVELOPER IS RESPONSIBLE FOR AMENDING TXDOT'S PERMIT, OBTAINING TCEQ APPROVAL AND PROVIDING TXDOT WITH THE APPROVED AMENDED PERMIT. THE AMENDED PERMIT WILL ADDRESS THE RELOCATION OF ANY TXDOT PERMANENT BMP'S INCLUDING VEGETATIVE FILTER STRIPS THAT MAY BE IMPACTED BY WORK DONE WITHIN TXDOT ROW.
- IF TXDOT DOES NOT HAVE A CZP OR WPAP ON FILE WITH TCEQ, ANY PERMANENT BMP'S INCLUDING VEGETATIVE FILTER STRIPS, THAT MAY BE REQUIRED IN ORDER TO TREAT ADDITIONAL IMPERVIOUS COVER PLACED IN TXDOT ROW WILL BE LOCATED IN PRIVATE PROPERTY AND THE DEVELOPER WILL PROVIDE TXDOT WITH EVIDENCE OF TCEQ APPROVAL OF THE ADDITIONAL IMPERVIOUS COVER.
- THE DEVELOPER MAY NOT OPERATE UNDER RESOURCE AGENCY ENVIRONMENTAL CLEARANCE OF A PREVIOUS OR ONGOING TXDOT PROJECT BUT WILL BE REQUIRED TO OBTAIN SEPARATE RESOURCE/ENVIRONMENTAL AGENCY CLEARANCE.
3. IF WASTE AREAS OR MATERIAL SOURCE AREAS RESULT FROM THIS PROJECT, THE CONTRACTOR IS REMINDED TO FOLLOW THE REQUIREMENTS OF THE TEXAS AGGREGATE QUARRY AND PIT SAFETY ACT. IN ADDITION, IT IS REQUESTED THAT THESE AREAS NOT BE VISIBLE FROM ANY HIGHWAY ON THE STATE SYSTEM.
- ANY MATERIALS REMOVED AND NOT REUSED AND DETERMINED TO BE SALVAGEABLE SHALL BE STORED WITHIN THE PROJECT LIMITS AT AN APPROVED LOCATION OR DELIVERED UNDAMAGED TO THE STORAGE YARD AS DIRECTED. PROPERLY DISPOSE UNSALVAGEABLE MATERIALS IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS. DEFACE TRAFFIC SIGNS SO THAT THEY WILL NOT REAPPEAR IN PUBLIC AS SIGNS.
4. ANY TREES EXISTING WITHIN STATE RIGHT OF WAY ARE THE NATURAL RESOURCES OF THE STATE AND WILL BE PROTECTED. IN THE EVENT THAT TREES MUST BE REMOVED, TXDOT WRITTEN PERMISSION WILL BE RECEIVED IN ADVANCE AND WILL IDENTIFY THE SPECIFIC TREES BY SPECIES, DIAMETER AND LOCATION TO BE REMOVED. THE DEVELOPER WILL BE FINED FOR ANY UNPERMITTED REMOVAL OF TREES.

- IN THE EVENT THAT THERE ARE AREAS OF PUBLIC ROW DEDICATION RESULTING FROM THE PLATTING PROCESS, THE AREA WITHIN THE PUBLIC ROW DEDICATION DOES NOT PASS INTO TXDOT OWNERSHIP AS A RESULT OF PLATTING. HOWEVER, THE DEVELOPER WILL REMOVE ANY OLD FENCING, GATES AND UNSIGHTLY VEGETATION WITHIN THE AREA OF THE ROW DEDICATION, LEAVING IT IN AN AESTHETICALLY PLEASING CONDITION. THE AREA OF ROW DEDICATION WILL NOT BE MOWED OR OTHERWISE MAINTAINED BY TXDOT. PRIOR TO REMOVAL OF TREES IN THE AREA OF ROW DEDICATION, THE TREES WILL FIRST BE EVALUATED IN ACCORDANCE WITH THE REQUIREMENTS OF LOCAL TREE PROTECTION ORDINANCES AND THE WRITTEN CONCURRENCE OF THE LOCAL JURISDICTION WILL BE PROVIDED TO TXDOT.
5. THE DEVELOPER WILL MAINTAIN AT THE PROJECT SITE, AND MAKE AVAILABLE UPON REQUEST, COPIES OF ALL APPROVED ENVIRONMENTAL PLANS AND PERMITS RELATING TO WORK IN STATE RIGHT OF WAY.
6. PRIOR TO BEGINNING GRADING ACTIVITY THE CONTRACTOR WILL SET AND MAINTAIN ROADWAY STATIONING, CONTROL POINTS, MARKS, STAKES TO ESTABLISH LINES, SLOPES, GRADES AND CENTERLINES.
7. ANY SLOPES IN STATE RIGHT OF WAY WHICH BECOME STEEPER THAN 3:1 AS A RESULT OF THE WORK WILL BE TREATED WITH 4" THICK REINFORCED CONCRETE RIPRAP AND BE TREATED WITH METAL BEAM GUARD FENCE. THIS MAY ENTAIL ADDITIONAL RIP-RAP BEYOND THAT SHOWN IN THE PLANS.
- UNLESS OTHERWISE SHOWN ON THE PLANS, WHERE EXISTING CONCRETE RIP-RAP IS REMOVED, MODIFIED OR EXTENDED, THE PORTION TO BE REMOVED WILL BE NEATLY SAW-CUT PRIOR TO REMOVAL AND THE NEW RIP-RAP WILL BE FORMED TO MATCH THE EXISTING LINES AND GRADES OF THE EXISTING RIP-RAP AND WILL BE DOWELED INTO THE EXISTING RIP-RAP WITH #3 BARS ON 12" CENTERS. THE DOWEL BARS WILL BE EPOXIED IN PLACE WITH EPOXY MEETING TXDOT REQUIREMENTS. THE MINIMUM EMBEDMENT LENGTH IS 9 INCHES. THIS APPLIES TO ANY TYPE OF CONCRETE RIP-RAP INCLUDING METAL BEAM GUARD FENCE OR CABLE BARRIER MOW STRIPS.
8. DUANE HOFFERLICHTER (830) 609-0707 NEW BRAUNFELS, TXDOT MAINTENANCE OFFICE WILL BE CONTACTED BY THE CONTRACTOR 48 HOURS PRIOR TO WORK OCCURRING IN STATE RIGHT OF WAY.
9. STATE RIGHT OF WAY WILL NOT BE USED AS AN AREA FOR CONTRACTOR PARKING OR FOR STAGING THE RECEIPT OF MATERIALS OR EQUIPMENT.
10. TRAFFIC CONTROL AND CONSTRUCTION BARRICADES WILL MEET THE REQUIREMENTS OF THE TEXAS MUTCD.
11. THE CONTRACTOR WILL PROVIDE ADVANCE NOTIFICATION TO THE ENGINEER OF IMPENDING/UPCOMING LANE CLOSURES FOR ALL TEMPORARY AND/OR PERMANENT LANE, RAMP, CONNECTOR, FRONTAGE, SHOULDER, MEDIAN Crossover, ETC. CLOSURES OR DETOURS.
12. ACCESS TO ADJOINING PROPERTY MUST BE MAINTAINED AT ALL TIMES.
13. UNLESS OTHERWISE NOTED IN THE PLANS AND/OR AS DIRECTED BY THE AREA ENGINEER OR MAINTENANCE SUPERVISOR, DAILY LANE CLOSURES SHALL BE LIMITED ACCORDING TO THE FOLLOWING RESTRICTIONS:
- NIGHTTIME: MAINTENANCE SUPERVISOR AND/OR AREA ENGINEER APPROVAL REQUIRED. (WITH UNIFORMED OFF DUTY LAW ENFORCEMENT OFFICERS).
- WEEKEND CLOSURES: MAINTENANCE SUPERVISOR AND/OR AREA ENGINEER APPROVAL REQUIRED.
14. NO LANE CLOSURES OR ROADWAY CLOSURES WILL BE PERMITTED FOR THE FOLLOWING KEY DATES AND/OR SPECIAL EVENTS:
- BETWEEN DECEMBER 15 AND JANUARY 1.
- WEDNESDAY BEFORE THANKSGIVING THRU THE SUNDAY AFTER THANKSGIVING.
- SATURDAY AND SUNDAY BEFORE MEMORIAL DAY AND LABOR DAY.
- SATURDAY OR SUNDAY WHEN JULY 4 FALLS ON A FRIDAY OR MONDAY.
15. AT NO TIME WILL THE ROADWAY TRAVEL WAY BE BLOCKED





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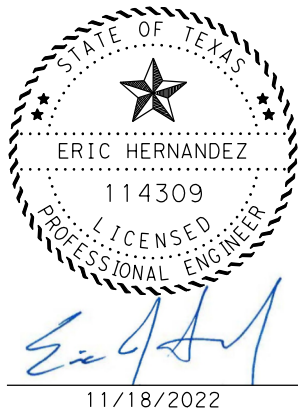
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16. LANE CLOSURES WILL ONLY BE PERMITTED WITH 48 HOUR PRIOR APPROVAL OF THE TXDOT MAINTENANCE SUPERVISOR. LANE CLOSURES WILL BE PERMITTED ONLY BETWEEN 9:00 A.M. AND 4:00 P.M. MONDAY THROUGH FRIDAY.
- FOR LANE CLOSURES ON TWO-LANE TWO-WAY ROADWAYS, INCLUDING DURING PILOT CAR OPERATIONS, FLAGGERS WILL BE PLACED AT THE BEGINNING AND END OF THE WORK ZONE AS WELL AS AT EACH INDIVIDUAL DRIVEWAY AND SIDE ROAD INTERSECTION WITHIN THE LIMITS OF THE WORK ZONE AND EXTENDING FOR A MINIMUM OF THE BEGINNING OF ADVANCED WARNING SIGNS EITHER END OF THE WORK ZONE TO CONTROL, WARN AND DIRECT SIDE ROAD AND DRIVEWAY TRAFFIC OF THE CHANGE IN TRAFFIC OPERATIONS. WHENEVER ONE WAY TRAFFIC CONTROL IS ACCOMPLISHED BY TRAFFIC SIGNALS WORK ZONE FLAGGERS WILL BE SIMILARLY STATIONED AT EACH INDIVIDUAL DRIVEWAY AND SIDE ROAD INTERSECTION WITHIN THE LIMITS OF THE WORK ZONE AND EXTENDING FOR A MINIMUM OF THE BEGINNING OF THE ADVANCED WARNING SIGNS EITHER END OF THE WORK ZONE. ALL FLAGGERS WILL BE IN CONSTANT RADIO CONTACT.
17. A MINIMUM 3:1 (H:V) TEMPORARY SAFETY SLOPE OF STABLE COMPACTED MATERIAL WILL BE REQUIRED ADJACENT TO THE STATE HIGHWAY EDGE OF PAVEMENT AT ALL TIMES DURING NON WORKING HOURS.
18. ONLY ONE SIDE OF THE ROADWAY WILL BE OPEN TO CONSTRUCTION AT A TIME. WORK WILL BE COMPLETED AND PAVEMENT EDGES BACKFILLED ON ONE SIDE OF THE ROAD BEFORE WORK WILL BEGIN ON THE OPPOSITE SIDE OF THE ROADWAY.
19. ALL MILLING, PAVING AND SEAL COAT OPERATIONS SHALL PROCEED IN THE DIRECTION OF TRAFFIC.
20. ANY PAVEMENT EDGE DROP-OFFS BETWEEN 1 AND 2 INCHES IN HEIGHT WILL HAVE CW 8-11 WARNING SIGNS. ANY PAVEMENT EDGE DROP-OFF 2 INCHES OR GREATER WILL HAVE A 3:1 COMPACTED SAFETY SLOPE AND CW 8-9A OR CW 8-11 SIGNS PLUS CHANNELIZING DEVICES. PAVEMENT EDGES WILL BE SHOULDERED UP WITH COMPACTED EMBANKMENT MATERIAL AND 4 INCHES OF TOPSOIL AS SOON AS POSSIBLE AFTER PAVING IS COMPLETED ON THE SIDE OF THE ROAD BEING WIDENED.
21. PROOF ROLLING OF SUBGRADE IS REQUIRED AND SHALL BE WITNESSED BY TXDOT PRIOR TO PLACEMENT OF PAVEMENT STRUCTURE UNLESS OTHERWISE APPROVED BY THE TXDOT MAINTENANCE SUPERVISOR. THE REQUIREMENT FOR PROOF-ROLLING OF SUBGRADE IS NOT SUPERSEDED BY ANY OTHER REQUIREMENTS INCLUDING THOSE OF ANY GEOTECHNICAL REPORT.
22. ALL FLEXIBLE BASE WILL HAVE A MINIMUM PLASTICITY INDEX OF 4.
23. ALL COURSES OF ASPHALTIC CONCRETE PAVEMENT (REGARDLESS OF TYPE) WILL BE PLACED WITH A ASPHALT PAVING EQUIPMENT MEETING THE REQUIREMENTS OF TXDOT ITEM 320, "EQUIPMENT FOR ASPHALT CONCRETE PAVEMENT", UNLESS OTHERWISE APPROVED BY THE MAINTENANCE SUPERVISOR.
- TACK COAT WILL BE APPLIED WITH AN ASPHALT DISTRIBUTOR AND SPREAD ACROSS THE SURFACE RECEIVING THE TACK COAT BY MULTIPLE PASSES OF A PNEUMATIC ROLLER. THE APPLICATION OF TACK COAT AND THE NUMBER OF PASSES OF THE PNEUMATIC ROLLER WILL BE SUFFICIENT TO MAKE THE SURFACE AND EXPOSED EDGES CONSISTENTLY BLACK WITH NO AREAS DEVOID OF TACK. ASPHALT FOR TACK COAT SHALL MEET TXDOT SPECS AND BE FROM A TXDOT APPROVED SOURCE.
24. ALL SURFACE AGGREGATES WILL MEET THE REQUIREMENTS OF TXDOT FRICTION CLASSIFICATION "B" AND WILL MEET PG BINDER GRADE 70-22.
25. ALL SURFACE ASPHALT CONCRETE PAVEMENT WILL BE UNDER-SEALED WITH A ONE COURSE SURFACE TREATMENT. "
26. ALL ASPHALTIC CONCRETE PAVEMENT USED IN BASE COURSES WILL BE TYPE "A" OR "B" AND WILL MEET PG BINDER GRADE 64-22.
27. ALL PAVEMENT WIDENING INCLUDING SHOULDERS WILL MATCH THE EXISTING PAVEMENT CROSS SLOPE.

28. ALL PAVEMENT MARKINGS WILL BE TYPE I THERMOPLASTIC (100 MIL) WITH UNDER-SEAL MEETING THE REQUIREMENTS OF TXDOT ITEM 666, REFLECTORIZED PAVEMENT MARKINGS. THE CONTRACTOR WILL PLACE GUIDE MARKS IN ACCORDANCE WITH ITEM 666 AND WILL MAKE ARRANGEMENTS FOR TXDOT INSPECTION OF THE PAVEMENT MARKING LAYOUT PRIOR TO PLACEMENT OF STRIPING. EQUIPMENT USED FOR THE PLACEMENT OF STRIPING WILL MEET THE PRODUCTION REQUIREMENTS OF ITEM 666 UNLESS OTHERWISE APPROVED IN ADVANCE BY THE TXDOT MAINTENANCE SUPERVISOR.
29. EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED PAVEMENT MARKINGS WILL BE LIGHTLY GROUND IN A MANNER THAT DOES NOT DAMAGE THE PAVEMENT SURFACE, TO REMOVE ANY PAVEMENT MARKING ACCUMULATION, AND WILL BE COVERED WITH A STRIP SEAL OF 18" MINIMUM WIDTH, CONSISTING OF PRECOATED GRADE 5, FRICTION CLASS B AGGREGATE.
30. EXISTING PAVEMENT MARKINGS SET TO BE ELIMINATED WILL BE SKIM MILLED PRIOR TO PLACEMENT OF TEMPORARY PAVEMENT MARKINGS. ADDITIONALLY, PAVEMENT MARKINGS THAT WERE STRIP SEALED WILL NEED TO BE SKIM MILLED PRIOR TO FINAL PAVING.
31. ALL MATERIALS AND CONSTRUCTION METHODS USED IN STATE RIGHT OF WAY WILL MEET TXDOT SPECIFICATIONS. THIS SUPERSEDES ALL OTHER SPECIFICATIONS IN THE PLANS.
32. ALL TURN LANE CONCRETE PAVEMENT IN STATE ROW WILL MEET THE REQUIREMENTS OF TXDOT ITEM 360 CLASS P CONCRETE AND WILL BE BATCHED AT CONCRETE PLANTS HAVING A CURRENT APPROVED MIX DESIGN. CLASS P CONCRETE SHALL HAVE 7 AND 28 DAY COMPRESSIVE STRENGTH OF 3200 PSI AND 4400 PSI RESPECTIVELY.
33. WHEN WIDENING EXISTING CONCRETE PAVEMENTS, JOINTS IN THE NEW PAVEMENT WILL MATCH JOINTS IN EXISTING PAVEMENT AND CURB.
34. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT TXDOT APPROVED MATERIALS, MIX DESIGNS, APPROVED SOURCES AND PRODUCTS ARE USED FOR ALL WORK IN STATE ROW. THE CONTRACTOR WILL ARRANGE FOR THE SERVICES OF A QUALIFIED TESTING LABORATORY FOR ALL ITEMS REQUIRING TESTING AND WILL NOTIFY TXDOT OF ANY DISCREPANCIES BETWEEN TEST RESULTS AND TXDOT SPECS IN A TIMELY MANNER. THE CONTRACTOR WILL PROVIDE TO TXDOT INVOICES AND TESTING RESULTS AS SOON THEY ARE AVAILABLE. FAILURE TO DO THIS WILL RESULT IN REJECTION OF THE WORK.
35. SAWING OF CONTRACTION/CONSTRUCTION JOINTS IN CONCRETE PAVEMENT WILL BE ACCOMPLISHED AS SOON AS PERSONNEL CAN WALK ON THE CONCRETE WITHOUT DAMAGING THE SURFACE REGARDLESS OF TIME OF DAY OR WEATHER CONDITIONS. STAND-BY POWER DRIVEN CONCRETE SAWS WILL BE PROVIDED DURING THE SAWING OPERATION. CURING COMPOUND WILL BE RE-APPLIED TO THE SAWED JOINT IMMEDIATELY UPON SAWING THE JOINT.
36. GUARDRAIL SGT'S WILL BE TYPE 3 UNLESS OTHERWISE APPROVED BY THE TXDOT MAINTENANCE SUPERVISOR. GUARDRAIL MOW STRIP PLACED ADJACENT TO OTHER CONCRETE RIP-RAP WILL BE SEPARATED BY A FORMED CONSTRUCTION JOINT.
37. ANY CONCRETE CURB TO BE REMOVED WILL BE SAW-CUT AT THE LIMITS OF REMOVAL AND BE REMOVED ENTIRELY. SLICING THE TOP PORTION OF THE CURB OFF AND LEAVING REMAINING PORTION OF CURB IN PLACE IS UNACCEPTABLE.
38. ANY DAMAGE TO TXDOT FACILITIES WILL BE REPAIRED AT NO EXPENSE TO THE STATE, TO TXDOT'S SATISFACTION.



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39. SIDEWALKS PLACED IN THE HIGHWAY RIGHT-OF-WAY WILL BE A MINIMUM WIDTH OF FIVE FEET OR COMPLY WITH THE MORE STRINGENT WIDTH AS REQUIRED BY CITY ORDINANCE AND WILL MEET ALL OTHER REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT. PEDESTRIAN RAMPS WILL BE PROVIDED AT STREET AND DRIVEWAY INTERSECTIONS AS SHOWN ON THE CURRENT STATE STANDARD FOR PEDESTRIAN FACILITIES. COLOR CONTRAST AND TEXTURING OF PEDESTRIAN RAMPS WILL BE PLACE AT STREET INTERSECTION RAMPS ONLY AS SHOWN ON THE CURRENT STATE STANDARD FOR PEDESTRIAN FACILITIES. PEDESTRIAN RAMPS AT DRIVEWAY INTERSECTIONS WILL NOT RECEIVE ANY COLOR CONTRAST OR TEXTURING. METAL PLATING FOR SIDEWALK BRIDGES WILL MATCH THE TYPICAL WIDTH OF THE APPROACH SIDEWALK. HIS MAY RESULT IN A WIDTH THAT IS GREATER THAN SHOWN IN THE STANDARD DETAILS INCLUDED IN THE PLANS.
40. THE CONTRACTOR WILL USE BEST MANAGEMENT PRACTICES (BMP’S) TO MINIMIZE EROSION AND SEDIMENTATION IN THE STATE RIGHT OF WAY RESULTING FROM THE PROPOSED CONSTRUCTION. RE-VEGETATION OF DISTURBED AREAS WILL BE COMPLETED IN ACCORDANCE WITH TXDOT STANDARD SPECIFICATIONS. PERMANENT VEGETATIVE COVER MUST ACHIEVE 70% COVERAGE PRIOR TO PROJECT ACCEPTANCE. SOIL RETENTION BLANKETS MAY BE REQUIRED TO PREVENT EROSION OF TOPSOIL PRIOR TO VEGETATION RE-ESTABLISHMENT
41. PRIOR TO SEEDING OR RE-VEGETATION THE FRONT SLOPES WILL BE SHOULDERED UP WITH TOPSOIL TO ELIMINATE ANY PAVEMENT EDGE DROP-OFF.
42. MUD TRACKED ONTO THE ROADWAY FROM THE SITE WILL BE IMMEDIATELY REMOVED TO THE SATISFACTION OF TXDOT.
43. IT WILL BE THE DEVELOPER/OWNER’S RESPONSIBILITY TO CLEAN OUT, TO THE STATE’S SATISFACTION, ANY DRAINAGE STRUCTURE OR STORM SEWER SYSTEM THAT BECOMES SILTED AS A RESULT OF THEIR OPERATIONS.
44. THE ADJUSTMENT OF ANY UTILITIES IN STATE RIGHT OF WAY OR ADJACENT PRIVATE EASEMENT WILL BE THE RESPONSIBILITY OF THE DEVELOPER/OWNER’S.
45. THE CONTRACTOR IS RESPONSIBLE FOR PLACING AND MAINTAINING EXISTING SIGNS ON TXDOT APPROVED TEMPORARY MOUNTS UNTIL PERMANENT SIGNS ARE PLACED.
46. THE FINAL PLACEMENT OF PERMANENT SIGNS WILL BE COORDINATED PRIOR TO PLACEMENT WITH THE LOCAL TXDOT MAINTENANCE SUPERVISOR.
47. FOR WORK WITHIN THE STATE RIGHT OF WAY WHERE REMOVAL OF MATERIALS OR DEBRIS WITHIN THE CONSTRUCTION LIMITS AND NOT INCORPORATED IN THE FINISHED ROADWAY SECTION OF RIGHT OF WAY, WILL BE DISPOSED OF IN A MANNER ACCEPTABLE TO THE MAINTENANCE SUPERVISOR AT NO EXPENSE TO THE STATE. MATERIALS THAT ARE NOT DETERMINED TO BE SALVAGEABLE BY THE MAINTENANCE SUPERVISOR BECOME THE PROPERTY OF THE CONTRACTOR FOR PROPER DISPOSAL AT THEIR EXPENSE. MATERIALS DETERMINED TO BE SALVAGEABLE WILL BE RETURNED TO THE STATE AND DELIVERED TO THE LOCATION AS DETERMINED BY THE MAINTENANCE SUPERVISOR.
48. REGARDLESS OF ERRORS AND OMISSIONS IN INFORMATION PROVIDED IN THE PLANS OR CROSS-SECTIONS THE PERMITEE IS RESPONSIBLE FOR PROVIDING FOR POSITIVE DRAINAGE OUTFALLS WITHIN AND OFF THE LIMITS OF THE PROJECT.
- KEEP THE SIGNALS IN OPERATION AT ALL TIMES EXCEPT WHEN NECESSARY FOR SPECIFIC INSTALLATION OPERATIONS, INCLUDING ANY MODIFICATIONS TO EXISTING SIGNAL HEADS TO MAINTAIN CLEAR VISIBILITY AT ALL TIMES. WHEN IT IS NECESSARY FOR A SIGNAL TO BE TURNED OFF, HIRE OFF DUTY POLICE OFFICERS TO CONTROL THE TRAFFIC UNTIL THE SIGNALS ARE BACK IN SATISFACTORY CONDITION.

49. ALL TRAFFIC SIGNALS ON THE STATE HIGHWAY SYSTEM WITHIN THE NEW BRAUNFELS CITY LIMITS, WITH THE EXCEPTION OF SIGNALS ON IH 35, ARE THE RESPONSIBILITY OF THE CITY OF NEW BRAUNFELS AND THE CITY OF NEW BRAUNFELS WILL PERFORM CONSTRUCTION INSPECTION. CONTACT GARRY FORD, P.E. AT (830) 221-4645, 48 HOURS PRIOR TO THE NEED FOR ANY INSPECTIONS. ALSO WHEN NON-TRAFFIC SIGNAL WORK IS BEING PERFORMED WITHIN 400 FEET OF AN EXISTING SIGNALIZED INTERSECTION, FLASHING BEACON OR SCHOOL ZONE FLASHER OR OTHER TYPE OF SIGNAL; IF WITHIN THE CITY OF NEW BRAUNFELS AREA OF RESPONSIBILITY CONTACT GARRY FORD, P.E. TO DETERMINE/VERIFY THE LOCATION OF LOOP DETECTORS, CONDUIT, GROUND-BOXES, ETC. FOR ALL OTHER LOCATIONS, CONTACT TXDOT REPRESENTATIVE, EDUARDO VILLALON, P.E., AT (210) 615-6308, E-MAIL IS EDUARDO.VILLALON@TXDOT.GOV. THE CONTRACTOR IS RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY SIGNAL EQUIPMENT DAMAGED BY CONSTRUCTION OPERATIONS. THE METHOD OF REPAIR OR REPLACEMENT SHALL BE PRE-APPROVED AND INSPECTED. DEPENDING ON THE TYPE AND EXTENT OF THE DAMAGE, THE ENGINEER RESERVES THE RIGHT TO PERFORM THE REPAIR OR REPLACEMENT WORK AND THE CONTRACTOR WILL BE BILLED FOR THIS WORK. WHEN WORKING NEAR AERIAL ELECTRICAL LINES OR UTILITY POLES, COMPLY WITH FEDERAL, STATE AND LOCAL REGULATIONS.
- NON-TRAFFIC SIGNAL WORK IS BEING PERFORMED WITHIN 400 FEET OF AN EXISTING SIGNALIZED INTERSECTION, FLASHING BEACON OR SCHOOL ZONE FLASHER OR OTHER TYPE OF SIGNAL, CONTACT TXDOT REPRESENTATIVE, EDUARDO VILLALON, P.E., AT (210) 615-6308, E-MAIL IS EDUARDO.VILLALON@TXDOT.GOV. THE CONTRACTOR IS RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY SIGNAL EQUIPMENT DAMAGED BY CONSTRUCTION OPERATIONS. THE METHOD OF REPAIR OR REPLACEMENT SHALL BE PRE-APPROVED AND INSPECTED. DEPENDING ON THE TYPE AND EXTENT OF THE DAMAGE, TXDOT RESERVES THE RIGHT TO PERFORM THE REPAIR OR REPLACEMENT WORK AND THE CONTRACTOR WILL BE BILLED FOR THIS WORK. WHEN WORKING NEAR AERIAL ELECTRICAL LINES OR UTILITY POLES, COMPLY WITH FEDERAL, STATE AND LOCAL REGULATIONS.





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SUMMARY OF QUANTITIES

ITEM NO.				100	104	104	110	132	160	164	168	316	316	316	316		354	420	432	432	462
DESCRIPTION CODE				6002	6009	6017	6001	6003	6003	6035	6001	6017	6224	6409	6410	*	6057	6074	6002	6045	6010
SHEET NO.	ALIGNMENT	BEGINNING STATION	ENDING STATION	PREPARING ROW	REMOVING CONC (RIPRAP)	REMOVING CONC (DRIVEWAYS)	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL) (O RD COMP) (TY B)	FURNISHING AND PLACING TOPSOIL (4")	DRILL SEEDING (PERM) (RURAL) (CLAY)	VEGETATIVE WATERING	ASPH (AC-20-5TR)	AGGR (TY-PB GR-4 SAC-B)	AGGR (TY-B GR-4)	ASPH (AC-15P, AC-20-5TR, AC-20XP, AC10-2TR)	COMPACTED MOISTURE CONDITIONED SUBGRADE	PLANE ASPH CONC PAV (4")	CL C CONC (MISC)	RIPRAP (CONC) (5 IN)	RIPRAP (MOW STRIP) (4 IN)	CONC BOX CULV (6 FT X 3 FT)
				STA	SY	SY	CY	CY	SY	SY	MG	GAL	CY	CY	GAL	SY	SY	CY	CY	CY	LF
1	SH 46 CL	BEGIN PROJECT	933+00	5	48				1610	1610	25	716	20.7	2.9	101	376	443		6	23	24
2	SH 46 CL	933+00	939+00	6	19	162			2941	2941	46	1061	30.7	6.4	220	801	599			3	
3	SH 46 CL	939+00	END PROJECT	4	31				1722	1722	27	855	24.8	6.9	239	797	486	3		4	
PROJECT TOTALS				15	98	162	376	237	6273	6273	98	2632	76.2	16.2	560	1974	1528	3	6	30	24

SUMMARY OF QUANTITIES

ITEM NO.				466	502	506	506	506	506	506	506	512	512	530	530	540	540	542	544	544	545
DESCRIPTION CODE				6179	6001	6001	6011	6020	6024	6038	6039	6001	6049	6006	6009	6001	6033	6001	6001	6003	6019
SHEET NO.	ALIGNMENT	BEGINNING STATION	ENDING STATION	WINGWALL (PW - 1) (HW=4 FT)	BARRICADES, SIGNS AND TRAFFIC HANDLING	ROCK FILTER DAMS (INSTALL) (TY 1)	ROCK FILTER DAMS (REMOVE)	CONSTRUCTION EXITS (INSTALL) (TY 1)	CONSTRUCTION EXITS (REMOVE)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	PORT CTB (FUR & INST) (SGL SLOPE) (TY 1)	PORT CTB (REMOVE) (SGL SLOPE) (TY 1)	DRIVEWAYS (SURF TREAT)	TURNOUTS (SURF TREAT)	MTL W-BEAM GD FEN (TIM POST)	MTL BM GD FEN (LONG SPAN SYSTEM)	REMOVE METAL BEAM GUARD FENCE	GUARDRAIL END TREATMENT (INSTALL)	GUARDRAIL END TREATMENT (REMOVE)	CRASH CUSH ATTEN (INSTL) (S) (N) (TL3)
				EA	MO	LF	LF	SY	SY	LF	LF	LF	LF	SY	SY	LF	EA	LF	EA	EA	EA
1	SH 46 CL	BEGIN PROJECT	933+00	1		55	55			272	272	180	180			425.0	1	300.0	2		2
2	SH 46 CL	933+00	939+00							551	551			16	16	37.5		37.5	1	1	
3	SH 46 CL	939+00	END PROJECT			63	63			397	397					25.0		25.0	1	1	
PROJECT TOTALS				1	2	118	118	224	224	1220	1220	180	180	16	16	487.5	1	362.5	4	2	2

SUMMARY OF QUANTITIES

ITEM NO.				545	560	644	644	658	662	666	666	666	666	666	666	666
DESCRIPTION CODE				6005	6025	6001	6068	6080	6063	6036	6054	6078	6156	6300	6315	6342
SHEET NO.	ALIGNMENT	BEGINNING STATION	ENDING STATION	CRASH CUSH ATTEN (REMOVE)	RELOCATE EXISTING MAILBOX	IN SM RD SN SUP&AM TY10BWG (1) SA (P)	RELOCATE SM RD SN SUP&AM TY 10BWG	INSTL DEL ASSM (D-SW) SZ 1 (WFLX) GND	WK ZN PAV MRK REMOV (W) 4" (SLD)	REFL PAV MRK TY I (W) 8" (SLD) (100MIL)	REFL PAV MRK TY I (W) (ARROW) (100MIL)	REFL PAV MRK TY I (W) (WORD) (100MIL)	REFL PAV MRK TY I (Y) (MED NOSE) (100 MIL)	RE PM W/RET REQ TY I (W) 4" (BRK) (100MIL)	RE PM W/RET REQ TY I (Y) 4" (SLD) (100MIL)	REF PROF PAV MRK TY I (W) 4" (SLD) (100MIL)
				EA	EA	EA	EA	EA	LF	LF	EA	EA	EA	LF	LF	LF
1	SH 46 CL	BEGIN PROJECT	933+00	2			1	7						110	1741	871
2	SH 46 CL	933+00	939+00		2			1		579	3	3		150	1281	1202
3	SH 46 CL	939+00	END PROJECT			2		2		181	2	2	1	90	1324	762
PROJECT TOTALS				2	2	2	1	10	2525	760	5	5	1	350	4346	2835

* SUBSIDIARY TO PAVEMENT ITEMS



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WALDSANGER TRACT

SUMMARY OF QUANTITIES

SHEET 1 OF 2			
FED. RD. DIV. NO.	PROJECT NO.		SHEET
6	-		8
STATE	DIST.	COUNTY	
TEXAS	SAT	COMAL	
CONT.	SECT.	JOB	ROADWAY
0215	01	-	SH 46

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Legacy Engineering Group
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SUMMARY OF QUANTITIES

ITEM NO.				672	672	677	3076	3076	6001	6185	6185
DESCRIPTION CODE				6007	6009	6001	6003	6081	6001	6002	6005
SHEET NO.	ALIGNMENT	BEGINNING STATION	ENDING STATION	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A	ELIM EXT PAV MRK & MRKS (4")	D-GR HMA TY-B PG64-22 (EXEMPT)	D-GR HMA TY-C PG70-22 (EXEMPT)	PORTABLE CHANGEABLE MESSAGE SIGN	TMA (STATIONARY)	TMA (MOBILE OPERATION)
				EA	EA	LF	TON	TON	DAY	DAY	DAY
1	SH 46 CL	BEGIN PROJECT	933+00	6	88	1727	130	130			
2	SH 46 CL	933+00	939+00	37	64	2403	283	205			
3	SH 46 CL	939+00	END PROJECT	15	68	1724	306	191			
PROJECT TOTALS				58	220	5854	719	526	28	30	1

NOTES

1. PCMS TO BE USED AT THE BEGINING AND END OF PROJECT LIMITS
7 DAYS PRIOR TO COMMENCING PHASE 1 AND PHASE 2 CONSTRUCTION
TO NOTIFY PUBLIC.

STATE OF TEXAS


ERIC HERNANDEZ

114309

LICENSED
PROFESSIONAL ENGINEER



11/18/2022



LEGACY

ENGINEERING GROUP

Legacy Engineering Group, PLLC

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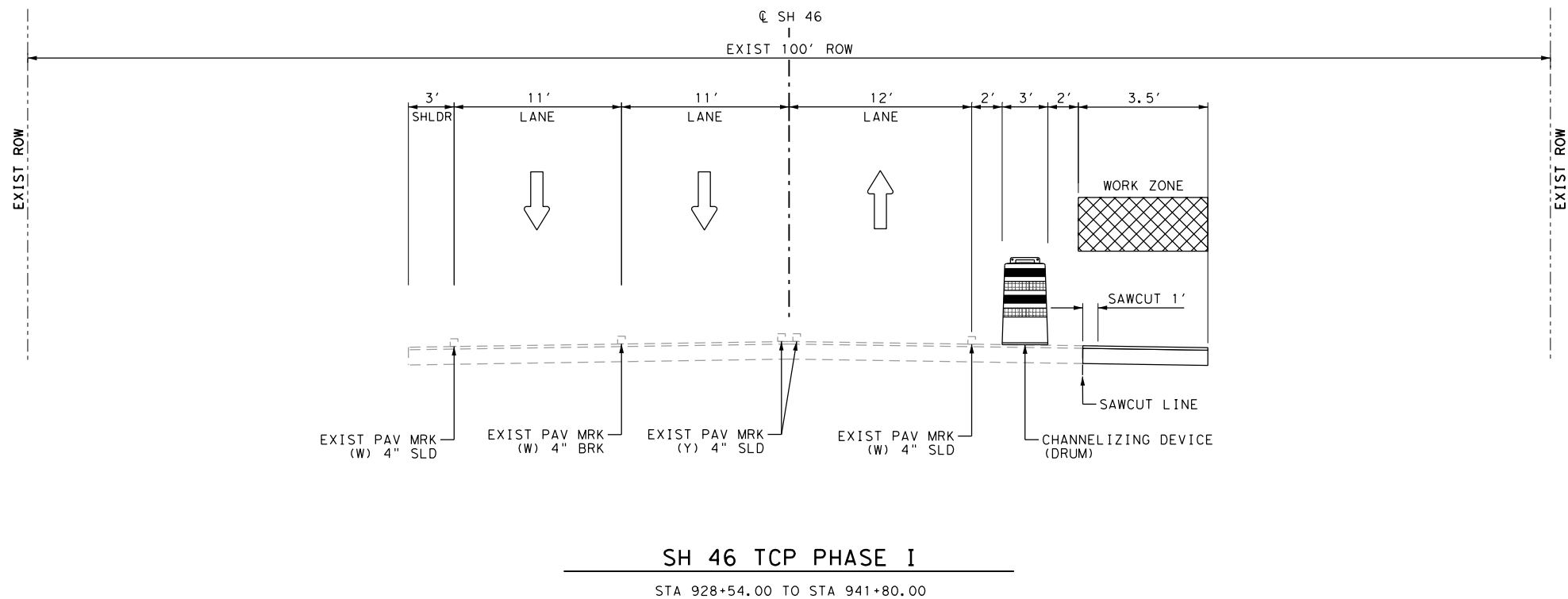
WALDSANGER TRACT

SUMMARY OF QUANTITIES

SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.			SHEET
6	-			9
STATE	DIST.	COUNTY		
TEXAS	SAT	COMAL		
CONT.	SECT.	JOB	ROADWAY	
0215	01	-	SH 46	

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11/18/2022

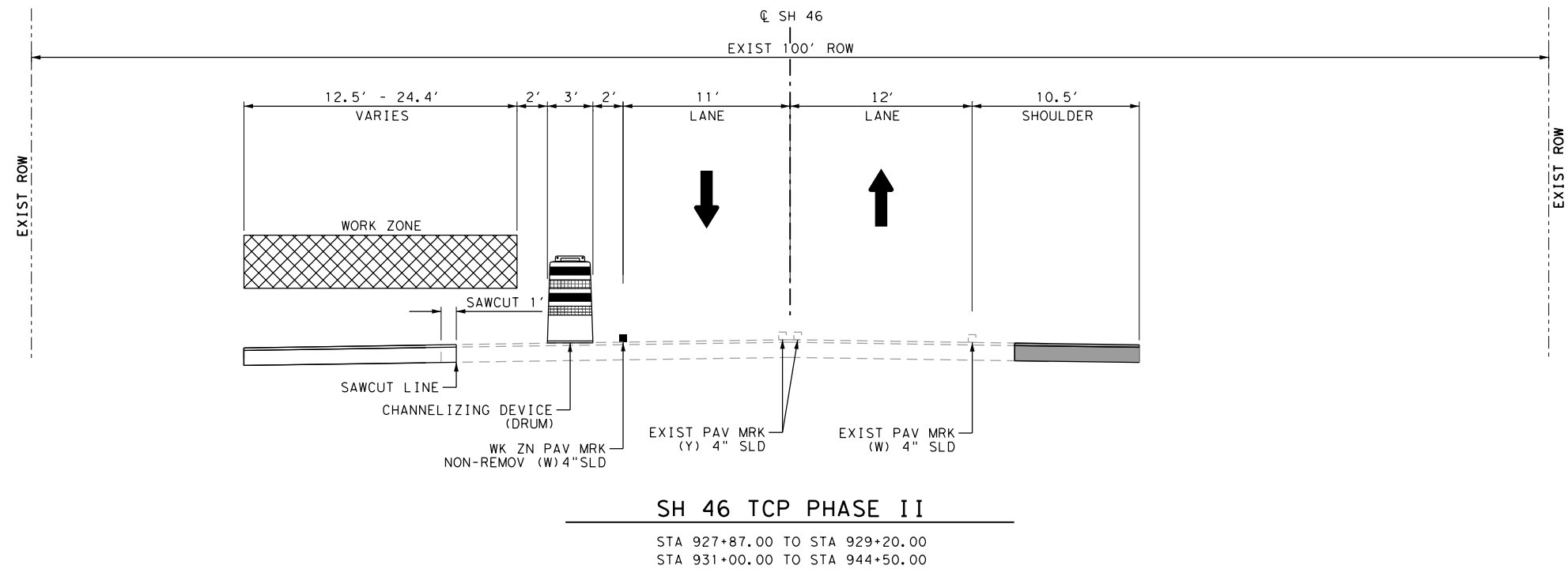
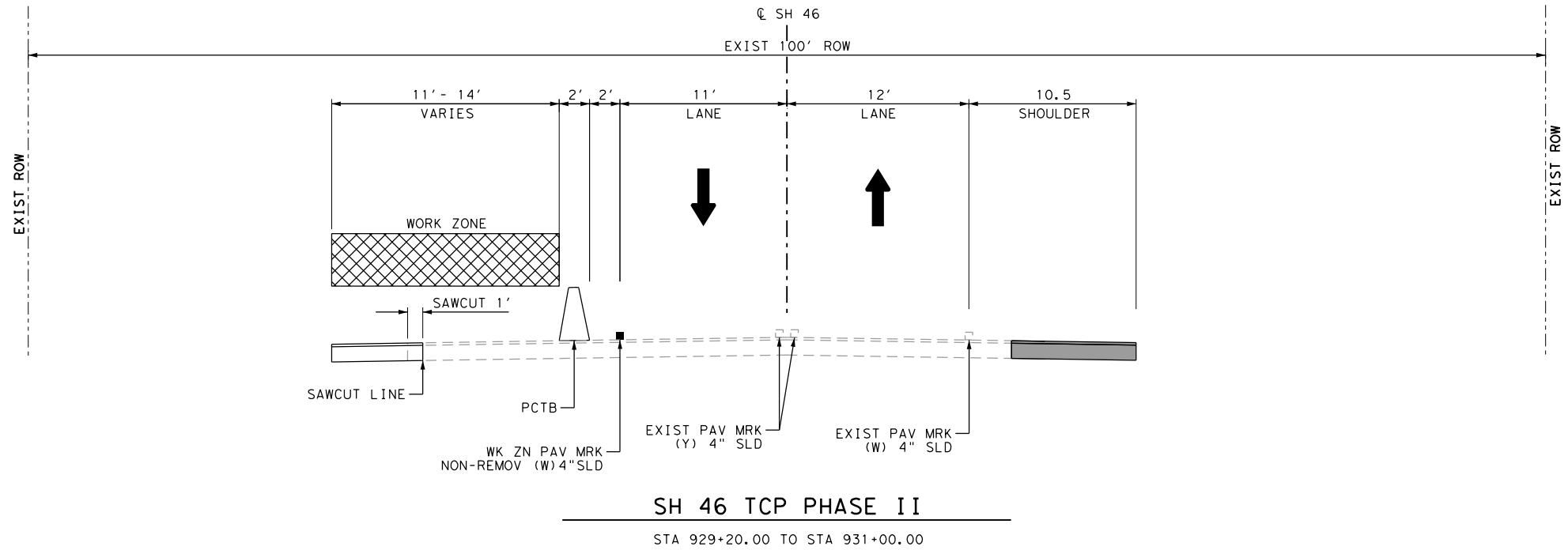


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WALDSANGER TRACT
TCP
TYPICAL SECTIONS

N. T. S.		SHEET 1 OF 2	
FED. RD. DIV. NO.	PROJECT NO.		SHEET
6	-		13
STATE	DIST.	COUNTY	
TEXAS	SAT	COMAL	
CONT.	SECT.	JOB	ROADWAY
0215	01	-	SH 46

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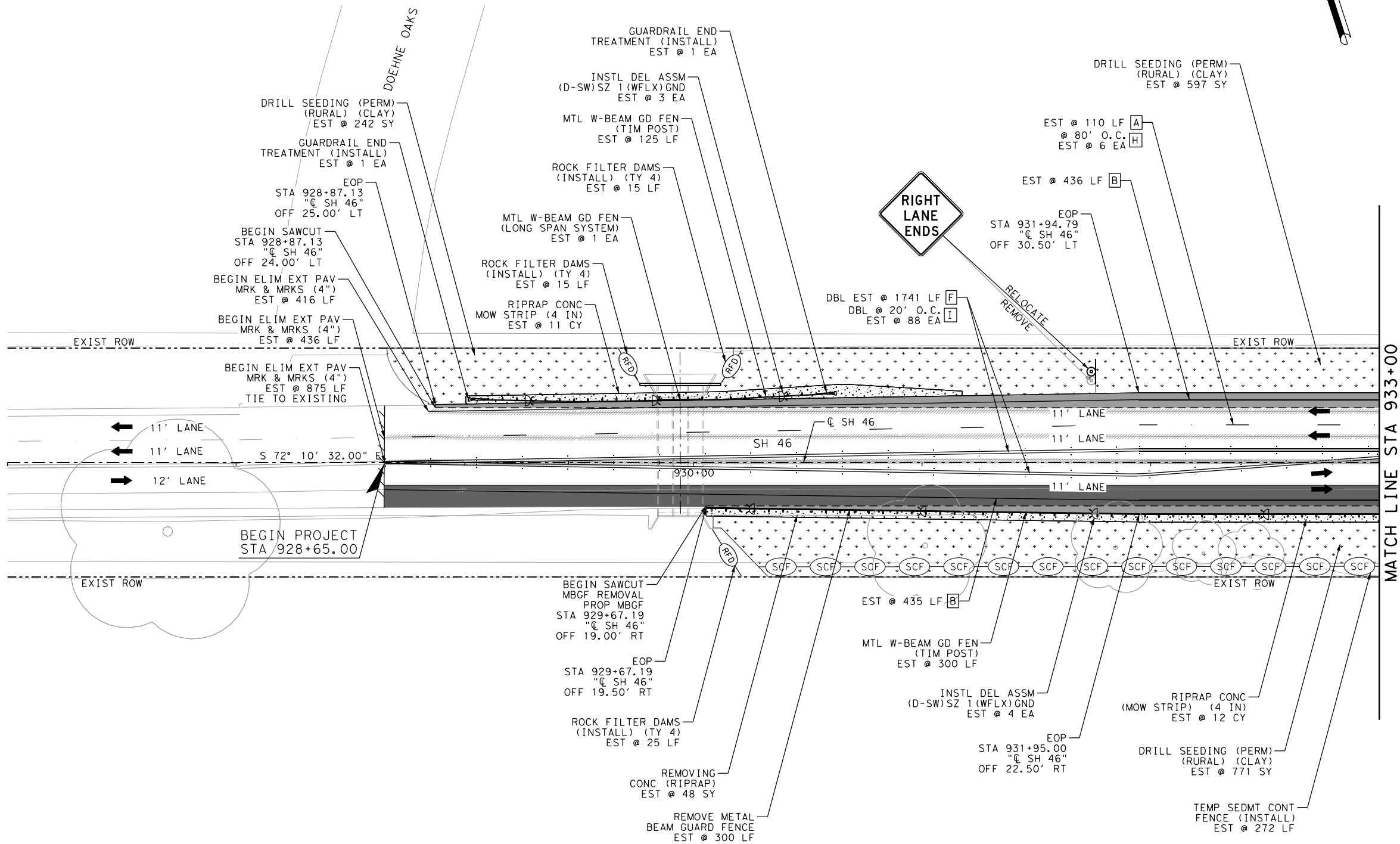


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WALDSANGER TRACT
TCP
TYPICAL SECTIONS

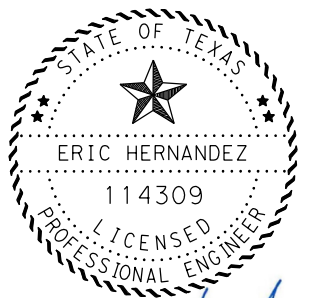
N. T. S.			SHEET 2 OF 2	
FED. RD. DIV. NO.	PROJECT NO.			SHEET
6	-			14
STATE	DIST.	COUNTY		
TEXAS	SAT	COMAL		
CONT.	SECT.	JOB	ROADWAY	
0215	01	-	SH 46	

11/18/2022
Legacy Engineering Group
Private Development Projects\CUDE\Bigbee Tract\4 - Design\Plan Set\3. Roadway\BIG_RDW_01.dgn



- LEGEND
- DIRECTION OF TRAFFIC
 - PROP WIDENING
 - 4" MILL & OVERLAY
 - PROPOSED DRIVEWAY
 - REMOVE EXISTING DRIVEWAY
 - SAWCUT LINE
 - OCST LIMITS
 - A RE PM W/RET REQ TY I (W) 4" (BRK) (100MIL)
 - B REF PROF PAV MRK TY I (W) 4" (SLD) (100MIL)
 - C REFL PAV MRK TY I (W) 8" (SLD) (100MIL)
 - D REFL PAV MRK TY I (W) (ARROW) (100MIL)
 - E REFL PAV MRK TY I (W) (WORD) (100MIL)
 - F RE PM W/RET REQ TY I (Y) 4" (SLD) (100MIL)
 - G REFL PAV MRK TY I (Y) (MED NOSE) (100MIL)
 - H REFL PAV MRKR TY I-C
 - I REFL PAV MRKR TY II-A-A
 - # SMALL SIGN NUMBER
 - DW# DRIVEWAY
 - TO# TURNOUT
 - ELIM EXT PAV MRK & MRKS
 - EXISTING SIGN
 - PROPOSED SIGN
 - SEEDING
 - SCF SEDIMENT CONTROL FENCE
 - RFD ROCK FILTER DAM

0 25 50
SCALE: 1"=50'



11/18/2022



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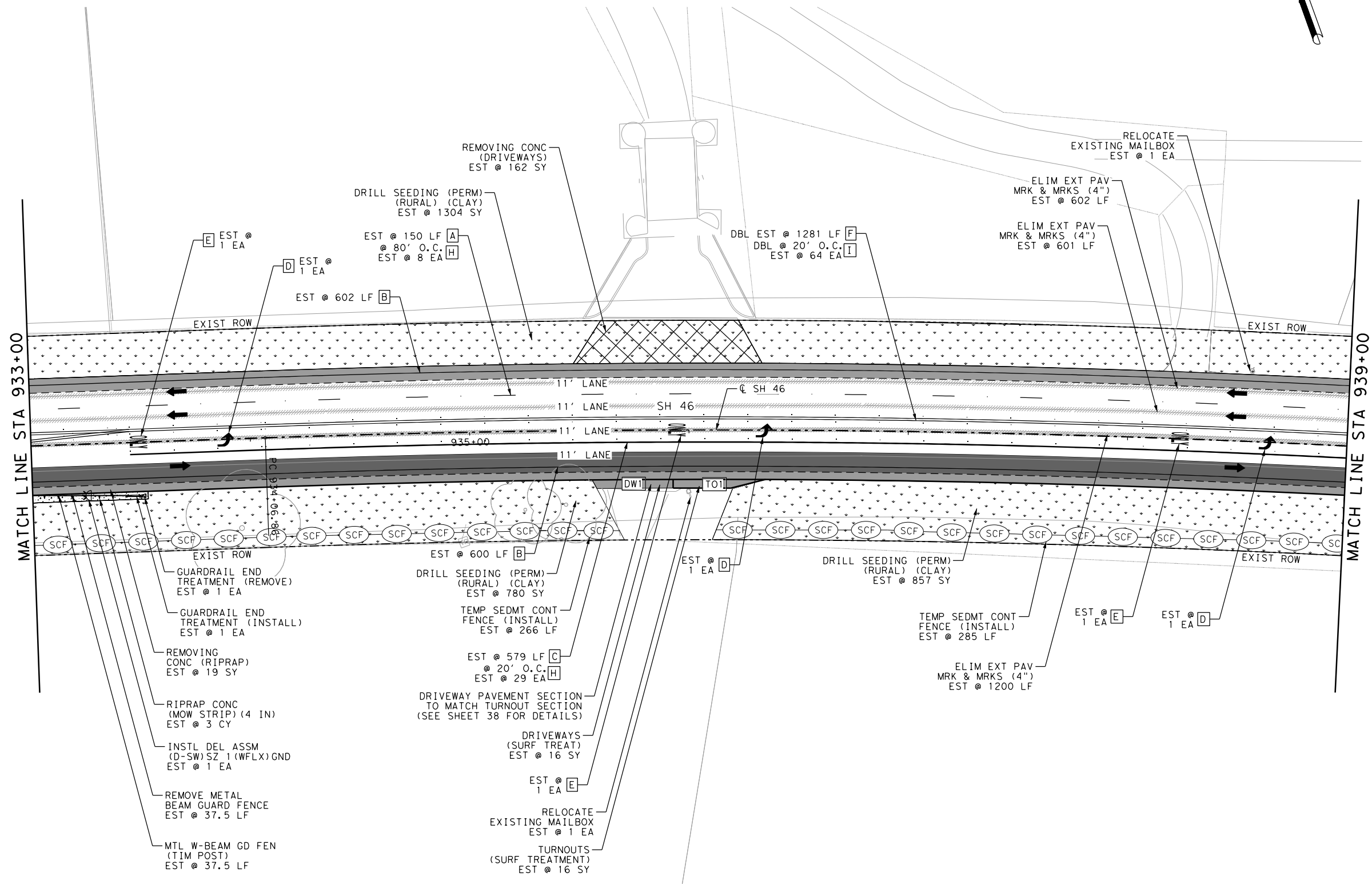
WALDSANGER TRACT

PLAN LAYOUT

SCALE: 1" = 50' SHEET 1 OF 3

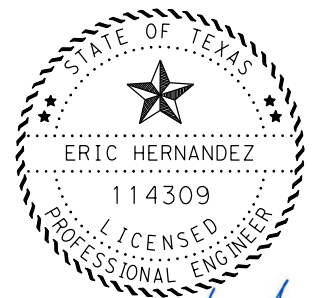
FED. RD. DIV. NO.	PROJECT NO.		SHEET
6			32
STATE	DIST.	COUNTY	
TEXAS	SAT	COMAL	
CONT.	SECT.	JOB	ROADWAY
0215	01	-	SH 46

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- LEGEND
- DIRECTION OF TRAFFIC
 - PROP WIDENING
 - 4" MILL & OVERLAY
 - PROPOSED DRIVEWAY
 - REMOVE EXISTING DRIVEWAY
 - SAWCUT LINE
 - OCST LIMITS
 - A RE PM W/RET REQ TY I (W) 4" (BRK) (100MIL)
 - B REF PROF PAV MRK TY I (W) 4" (SLD) (100MIL)
 - C REFL PAV MRK TY I (W) 8" (SLD) (100MIL)
 - D REFL PAV MRK TY I (W) (ARROW) (100MIL)
 - E REFL PAV MRK TY I (W) (WORD) (100MIL)
 - F RE PM W/RET REQ TY I (Y) 4" (SLD) (100MIL)
 - G REFL PAV MRK TY I (Y) (MED NOSE) (100MIL)
 - H REFL PAV MRKR TY I-C
 - I REFL PAV MRKR TY II-A-A
 - # SMALL SIGN NUMBER
 - DW# DRIVEWAY
 - TO# TURNOUT
 - ELIM EXT PAV MRK & MRKS
 - EXISTING SIGN
 - PROPOSED SIGN
 - SEEDING
 - SCF SEDIMENT CONTROL FENCE
 - RFD ROCK FILTER DAM

0 25 50
SCALE: 1"=50'



11/18/2022

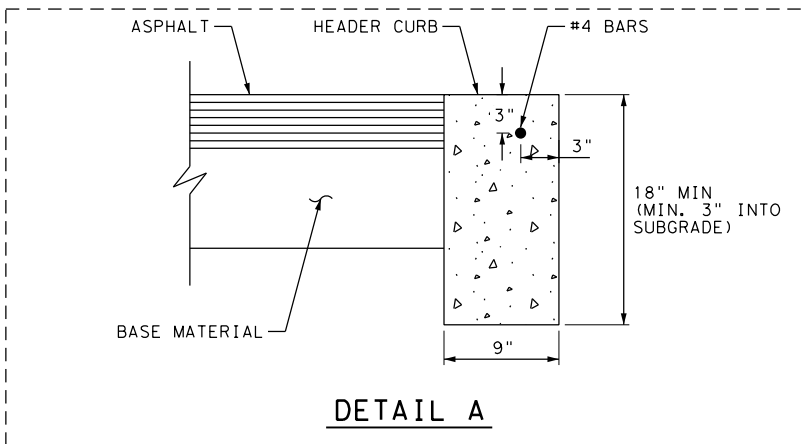


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210.660.1960/TBPE Firm Registration No. 20623

WALDSANGER TRACT

PLAN LAYOUT

SCALE: 1" = 50'				SHEET 2 OF 3	
FED. RD. DIV. NO.	PROJECT NO.				SHEET
6	-				33
STATE	DIST.	COUNTY			
TEXAS	SAT	COMAL			
CONT.	SECT.	JOB	ROADWAY		
0215	01	-	SH 46		



* CONTRACTOR SHALL FIELD VERIFY THE ELEVATIONS AT TIE-IN PRIOR TO CONSTRUCTION.

FED. RD. DIV. NO.	PROJECT NO.			SHEET
6	-			34
STATE	DIST.	COUNTY		
TEXAS	SAT	COMAL		
CONT.	SECT.	JOB	ROADWAY	
0215	01	-	SH 46	

Note To Designer:

1. Do not alter *Sheet Design* or *Font style*, *size* or *weight* - match text attributes.
2. If additional space is needed for a numbered section, fence and adjust sections up or down as needed for proportioning and readability but do not relocate from its relative position.

General timing or sequence for implementation of BMPs shall be as required and/or as directed/approved by the Engineer to provide adequate controls. BMPs shown on plan sheets are to be considered "proposed" unless/until install date is shown. BMPs are to reduce sediments from road construction activities.

1. **MAINTENANCE:** All erosion and sediment controls shall be maintained in good working order. If a repair is necessary, it shall be performed before the next anticipated storm event but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from equipment. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable. Disturbed areas on which construction activities have ceased, temporarily or permanently, shall be stabilized within 14 calendar days unless they are scheduled to and do resume within 21 calendar days. The areas adjacent to creeks and drainageways shall have priority followed by protecting storm sewer inlets.

For areas of the construction site that have not been finally stabilized, areas used for storage of materials, structural control measures, and locations where vehicles enter or exit the site, personnel provided by the permittee and familiar with the SW3P must inspect disturbed areas at least once every seven (7) calendar days. An Inspection and Maintenance Report shall be prepared for each inspection and the controls shall be revised on the SW3P within seven (7) calendar days following the inspection.

All non-hazardous municipal waste materials such as litter, rubbish, trash and garbage located on or originating from the project shall be collected and stored in a securely lidded metal dumpster, provided by the Contractor. The dumpster shall be emptied as necessary or as required by local regulation and the trash shall be hauled to a permitted disposal facility. The burying of non-hazardous municipal waste on the project shall not be permitted. Construction material waste sites, stockpiles and haul roads shall be constructed to minimize and control the amount of sediment that may enter receiving waters. Construction material waste sites shall not be located in any wetland, water body or stream bed. Construction staging areas and vehicle maintenance areas shall be constructed in a manner to minimize the runoff of pollutants.

Off-site vehicle tracking of sediments and the generation of dust must be minimized. Excess sediments on road shall be removed on a regular basis as directed/approved by the Engineer.

- Project Latitude 29.777641 Project Longitude 98.311067
- Project Location Map: Shown on Title Sheet
- Drainage Patterns: N/A
- Approx. Slopes Anticipated After Major Gradings and Areas of Soil Disturbance: Shown on Typical Sections
- Major Controls and Locations of Stabilization Practices: Shown on TCP & SW3P Layout Sheets
- Project Specific Locations: Off-site waste, borrow, or storage areas are not part of this SW3P.
- Surface Waters and Discharge Locations: Shown on Drainage and Culvert Layout Sheets

• PROJECT DESCRIPTION: *Same description as stated on Title Sheet*

1. *Install controls down-slope of work area and initiate inspection and maintenance activities.*
2. *Begin phased construction with interim stabilization practices. Adjust erosion and sedimentation controls during construction to meet requirements and changing conditions and as directed/ approved by the Engineer.*

 X Placement of road base
 Extensive ditch grading
 X Upgrading or replacing culverts or bridges
 Temporary detour road(s)
 Other: _____

Existing vegetative cover:(mark one) X Thick or uniformly established
_____ Thin and Patchy
_____ None or minimal cover

Acreage disturbed: 1.51 ACRES

Site runoff coefficient (post-construction): 0.35

____ A classified stream passes through project. Name _____ Segment Number _____

from disturbed areas of the project: _____

MS4 Operator (name): _____

<u> </u> P SEEDING	<u> </u> PRESERVATION OF NATURAL RESOURCES
<u> </u> MULCHING (Hay or Straw)	<u> </u> FLEXIBLE CHANNEL LINER
<u> </u> BUFFER ZONES	<u> </u> RIGID CHANNEL LINER
<u> </u> PLANTING	<u> </u> SOIL RETENTION BLANKET
<u> </u> COMPOST/MULCH FILTER BERM	<u> </u> P COMPOST MANUFACTURED TOPSOIL
<u> </u> SODDING	<u> </u> OTHER: (Specify Practice)

```

___ T SILT FENCES
___ HAY BALES
___ T ROCK FILTER DAMS
___ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
___ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
___ DIVERSION DIKE AND SWALE COMBINATIONS
___ PIPE SLOPE DRAINS
___ PAVED FLUMES
___ ROCK BEDDING AT CONSTRUCTION EXIT
___ TIMBER MATTING AT CONSTRUCTION EXIT
___ CHANNEL LINERS
___ SEDIMENT TRAPS
___ SEDIMENT BASINS
___ STORM INLET SEDIMENT TRAP
___ STONE OUTLET STRUCTURES
___ CURBS AND GUTTERS
___ STORM SEWERS
___ VELOCITY CONTROL DEVICES
___ OTHER:

```

The proposed facility was designed in consideration of hydraulic design standards to convey stormwater in a manner that is protective of public safety and property. The control of erosion from the facility is inherent to the design. Additional factors affecting post-construction stormwater at the project location include: (mark all that apply)

Other : _____

Off-site discharges are prohibited except as follows:

1. Discharges from fire fighting activities and/or fire hydrant flushings.
2. Vehicle, external building, and pavement wash water where detergents and soaps are not used and where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed).
3. Plain water used to control dust.
4. Plain water originating from potable water sources.
5. Uncontaminated groundwater, spring water or accumulated stormwater.
6. Foundation or footing drains where flows are not contaminated with process materials such as solvents.
7. Other: N/A

Concrete truck wash water discharges on the site should be prohibited or minimized. If allowed by the Engineer, they must be managed in a manner so as not to contaminate surface water. They must not be located in areas of concentrated flow. Concrete truck wash-out locations must be shown on the SW3P Layout and included in the inspections.

Hazardous material spill/leak shall be prevented or minimized. At a minimum, this includes asphalt products, fuels, oils, lubricants, solvents, paints, acids, concrete curing compounds and chemical additives for soil stabilization. BMPs shall be implemented to the storage areas of these products. All spills must be cleaned and disposed properly and reported to the Engineer. Report any release at or above the reportable quantity during a 24 hour period to the National Response Center at 1-800-424-8802.



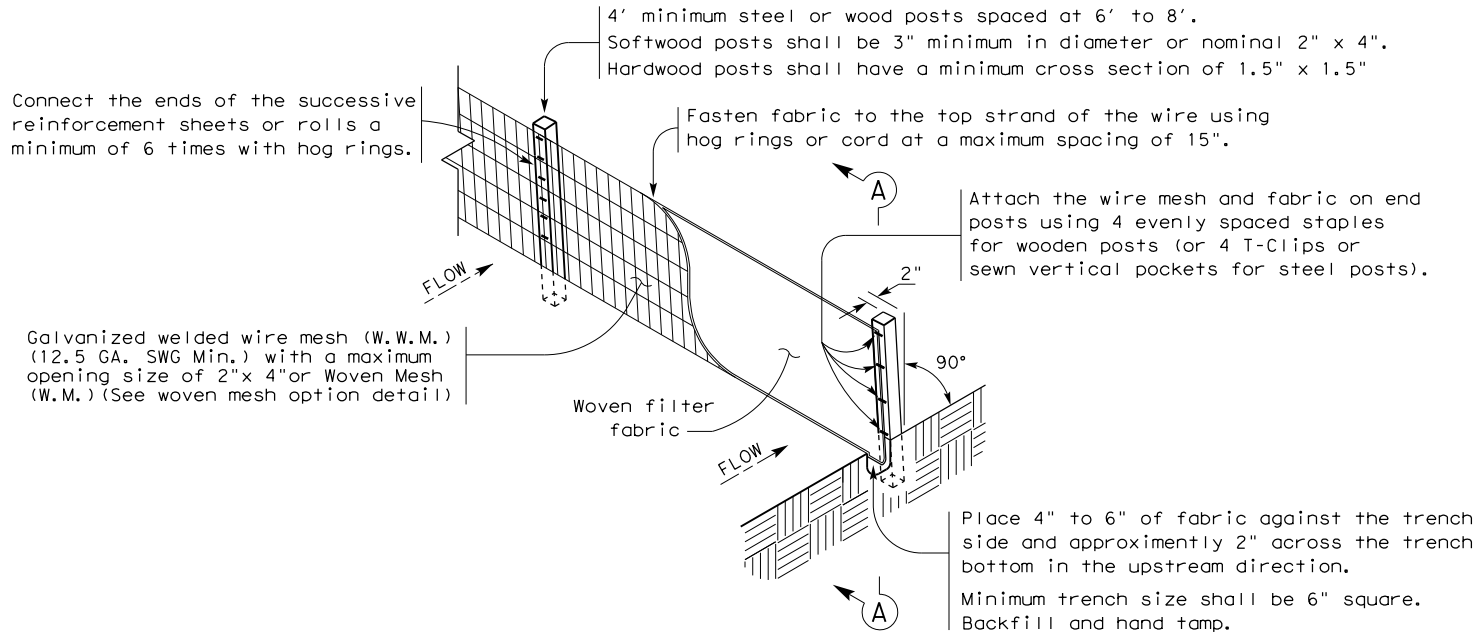
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STORM WATER POLLUTION PREVENTION PLAN (SW3P)

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6			SH 46
STATE	DISTRICT	COUNTY	
TEXAS	SAT	BEXAR	SHEET NO.
CONTROL	SECTION	JOB	
0215	01	-	37

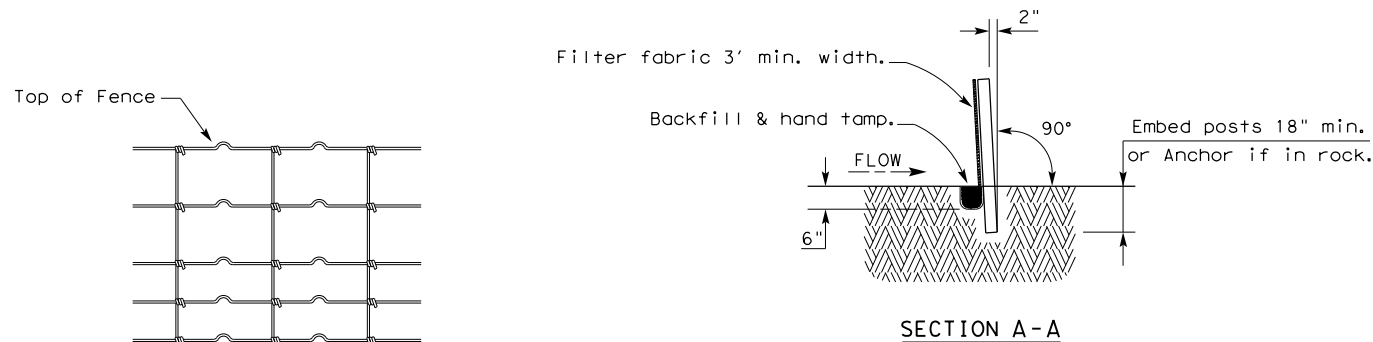
10/18/2022
Private Development Projects\CUDE\Bigbee Tract\4 - Design\Plan Set\2. TCP\Standards\ec116.dgn

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TEMPORARY SEDIMENT CONTROL FENCE

SCF



HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA. SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT². Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

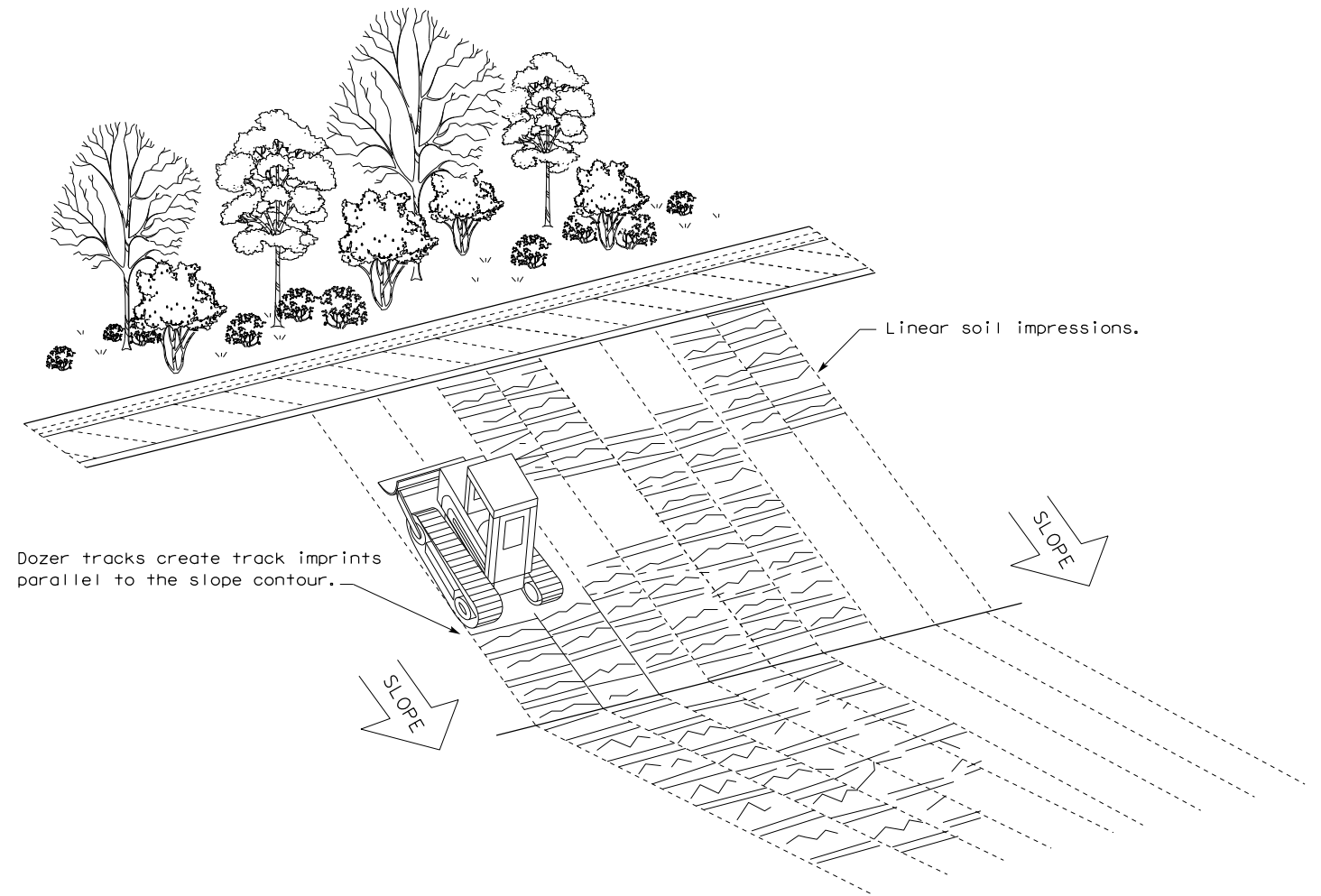
LEGEND

Sediment Control Fence


SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continuous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.

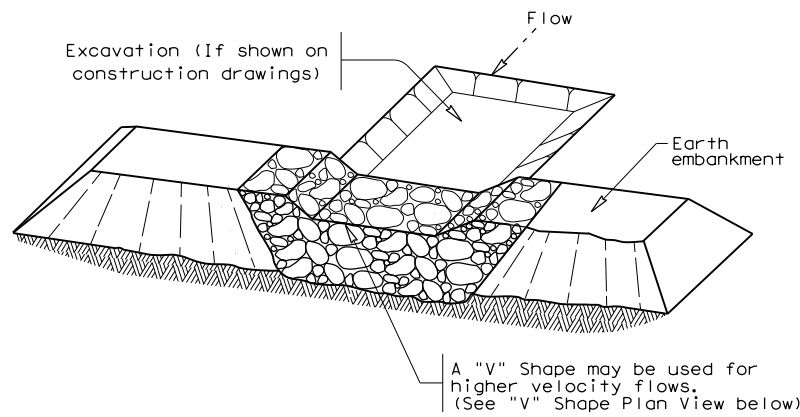
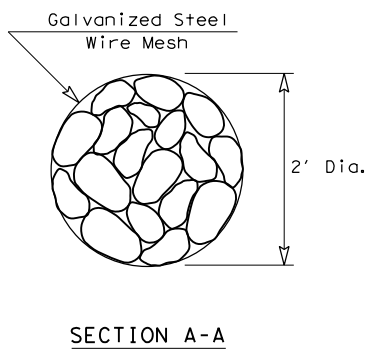
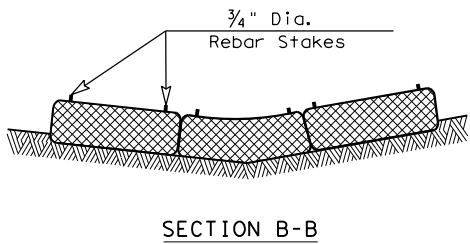
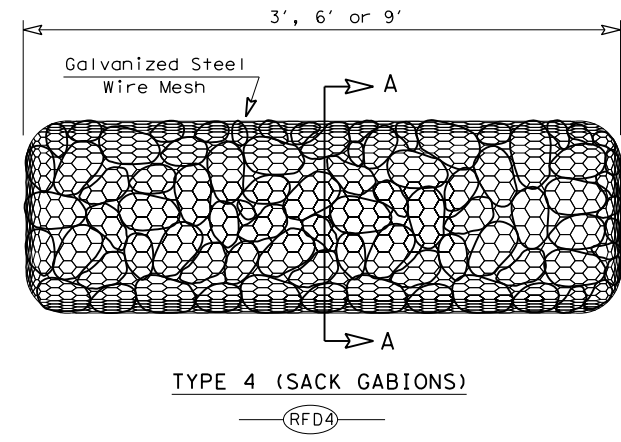
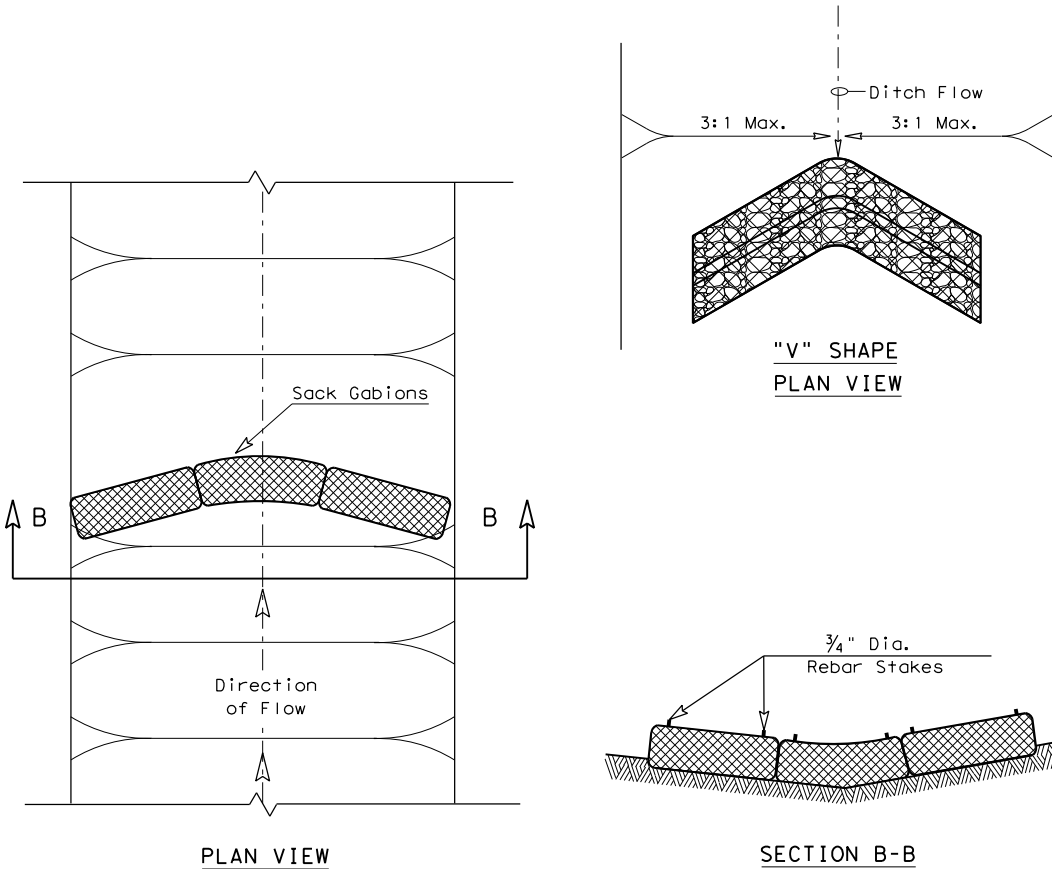
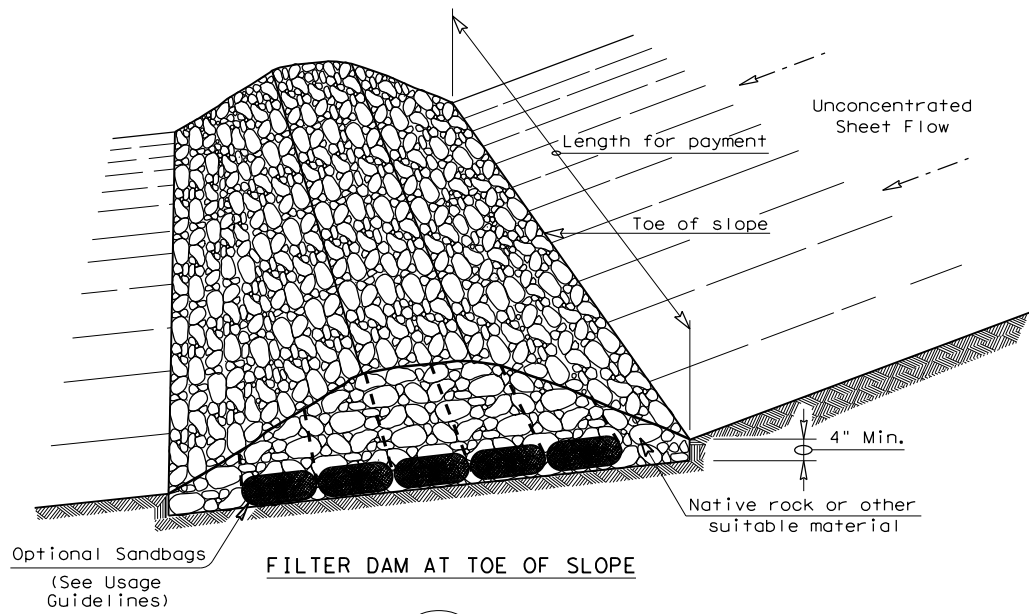


VERTICAL TRACKING

 <i>Texas Department of Transportation</i>				<i>Design Division Standard</i>	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & VERTICAL TRACKING EC(1) - 16					
FILE: ec116		DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
© TxDOT: JULY 2016		CONT	SECT	JOB	HIGHWAY
REVISIONS		0215	01	-	SH 46
		DIST		COUNTY	SHEET NO.
		SAT		COMAL	58

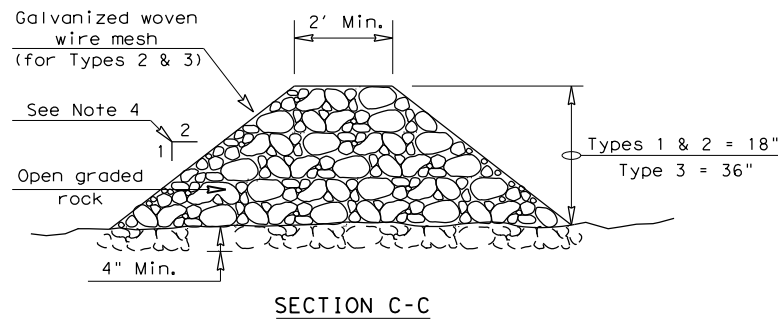
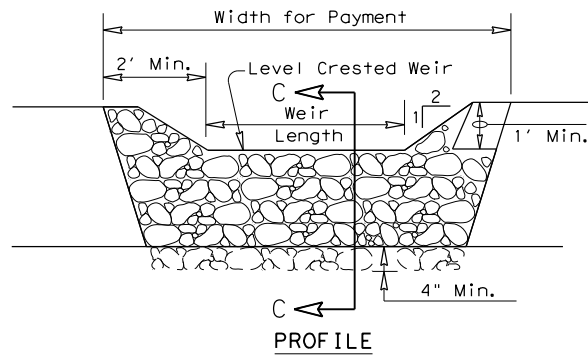
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FILTER DAM AT SEDIMENT TRAP

RFD1 OR RFD2



ROCK FILTER DAM USAGE GUIDELINES

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT² of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

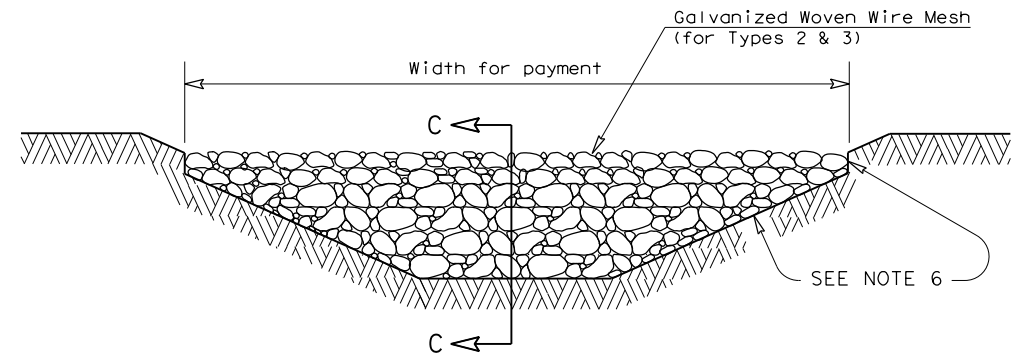
Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximately 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used in stream flow and should be secured to the stream bed.

Type 4 (Sack gabions) (3" to 6" aggregate): Type 4 May be used in ditches and smaller channels to form an erosion control dam.

Type 5: Provide rock filter dams as shown on plans.



FILTER DAM AT CHANNEL SECTIONS


RFD1 OR RFD2 OR RFD3

GENERAL NOTES

- If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
- Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
- The rock filter dam dimensions shall be as indicated on the SW3P plans.
- Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
- Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
- Filter dams should be embedded a minimum of 4" into existing ground.
- The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
- Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
- Sack Gabions should be staked down with 3/4" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 1/2" x 3 1/4".
- Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
- The guidelines shown hereon are suggestions only and may be modified by the Engineer.

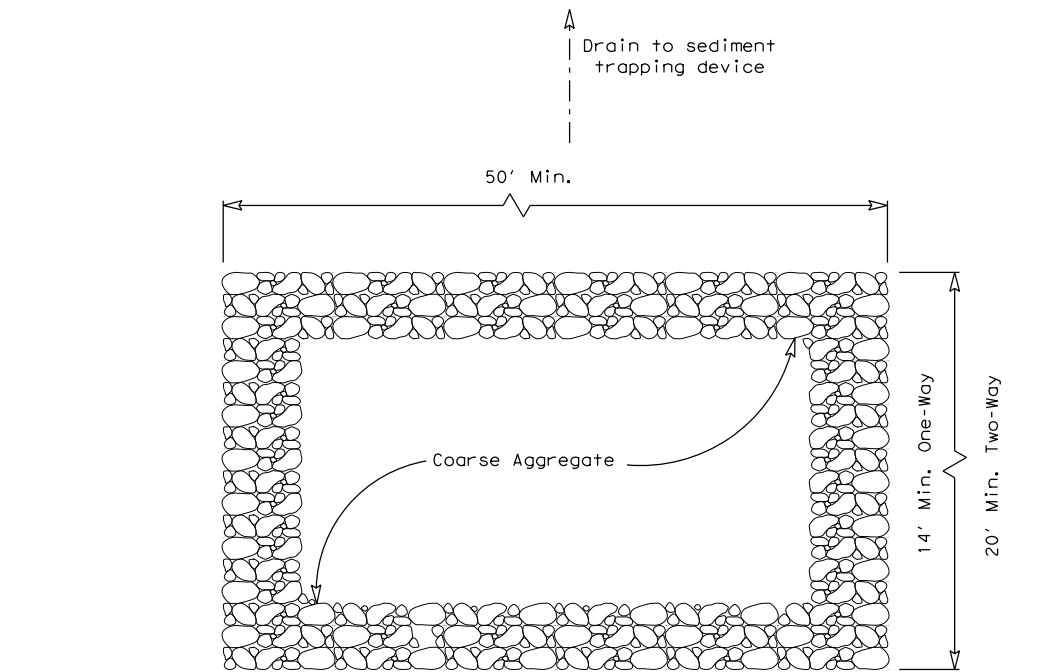
PLAN SHEET LEGEND

- Type 1 Rock Filter Dam — RFD1 —
Type 2 Rock Filter Dam — RFD2 —
Type 3 Rock Filter Dam — RFD3 —
Type 4 Rock Filter Dam — RFD4 —

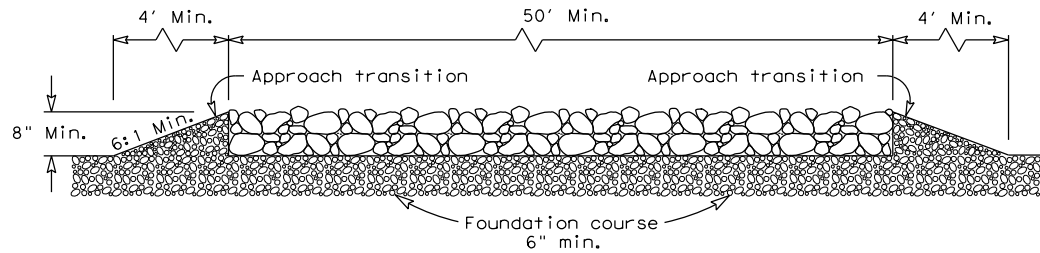


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PLAN VIEW

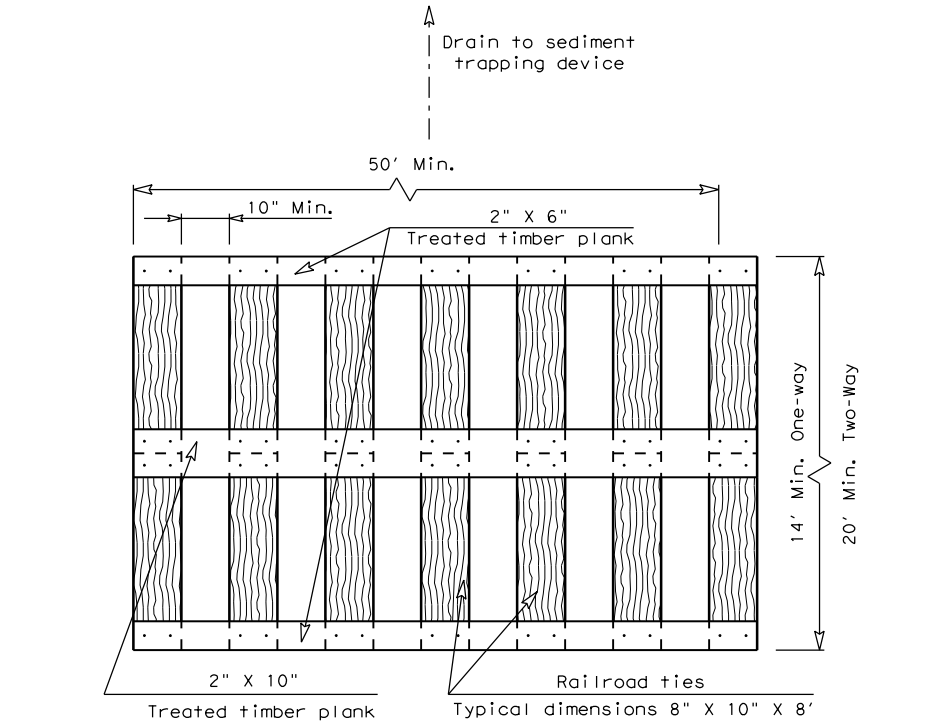


ELEVATION VIEW

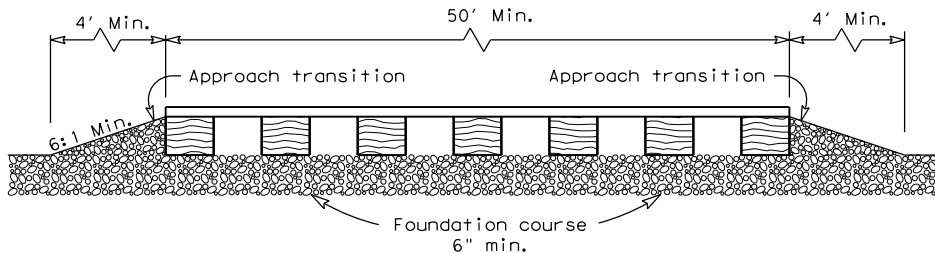
CONSTRUCTION EXIT (TYPE 1)
ROCK CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materials approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW

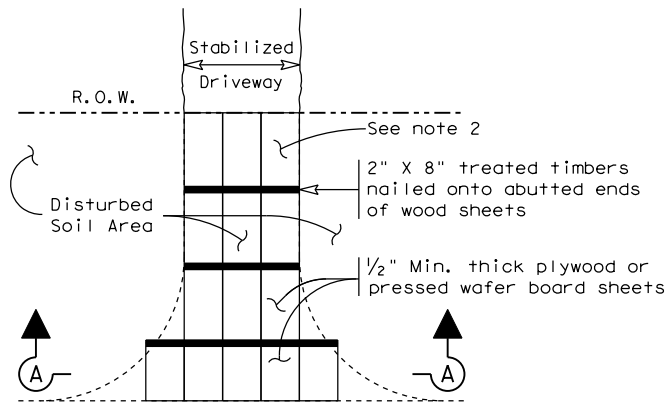


ELEVATION VIEW

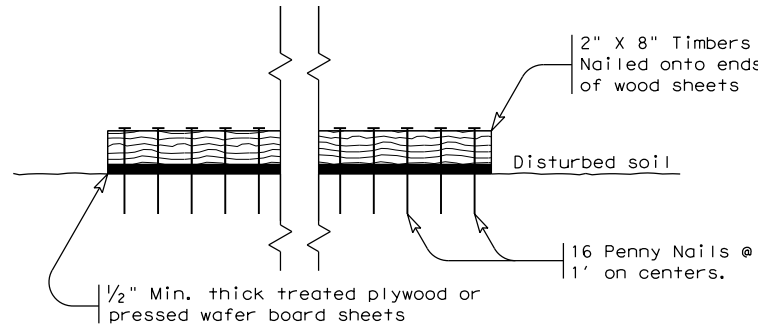
CONSTRUCTION EXIT (TYPE 2)
TIMBER CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 2)

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
2. The treated timber planks shall be attached to the railroad ties with 1/2"x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.




PLAN VIEW



SECTION A-A
CONSTRUCTION EXIT (TYPE 3)
SHORT TERM

GENERAL NOTES (TYPE 3)

1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES
CONSTRUCTION EXITS
EC(3)-16

FILE: ec316	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
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	DIST	COUNTY	SHEET NO.	
	SAT	COMAL	60	